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31st edition

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Terrestrial Animal Health Code

Recommendations applicable to WOAH listed diseases

World Organisation for Animal Health

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VOL. 2

FOREWORD

The Terrestrial Animal Health Code (the Terrestrial Code) provides standards for the improvement of animal health, animal welfare and veterinary public health worldwide. These standards should be used by Members to set up measures for the prevention, early detection, reporting and control of pathogenic agents in terrestrial animals (mammals, reptiles, birds and bees), including zoonotic agents. Implementation of the recommendations in the Terrestrial Code ensures the safety of international trade in animals and animal products, while avoiding unjustified sanitary barriers.

The World Organisation for Animal Health (WOAH, founded as OIE) has developed and published international standards since 1968. The World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) recognises the role of the Organisation (under its foundational name "Office International des Epizooties") as the international standard setting organisation for animal health and zoonoses.

The development of new and revised standards for the Terrestrial Code is under the responsibility of the Terrestrial Animal Health Standards Commission (the Code Commission), which comprises six elected members. The Code Commission draws upon the expertise of internationally renowned experts to contribute to standards development to ensure that the standards are based on the latest scientific information. Comments from Members and partner International Organisations are sought through the twice-yearly circulation of new or revised texts. The Code Commission collaborates closely with other Specialist Commissions.

The Terrestrial Code is published annually in English, French and Spanish and may be viewed and downloaded from the World Organisation for Animal Health website (www.woah.org).

This edition includes new and amended texts in the following sections and chapters that were adopted by the World Assembly of Delegates of the World Organisation for Animal Health at the 90th General Session in May 2023:

- *User's Guide*
- *Glossary*
- *Chapter 1.3. Diseases, infections and infestations listed by WOAH*
- *Chapter 1.8. Application for official recognition by WOAH of risk status for bovine spongiform encephalopathy*
- *Chapter 7.8. Use of animals in research and education*
- *Infection with Leishmania spp. (Leishmaniosis) (a new Chapter 8.11.)*
- *Chapter 8.15. Infection with rabies virus*
- *Chapter 8.16. Infection with Rift Valley fever virus*
- *Chapter 10.9. Infection with Newcastle disease virus*
- *Chapter 11.4. Bovine spongiform encephalopathy*
- *Chapter 12.2. Contagious equine metritis*
- *Chapter 12.6. Infection with equine influenza virus*
- *Chapter 12.7. Equine piroplasmosis*
- *Infection with Theileria lestoquardi, T. luwenshuni and T. uilenbergi (a new Chapter 14.10.)*
- *Infection with Middle East respiratory syndrome coronavirus (a new Chapter 16.1.)*
- *Addition of a new Section 16 Camelidae; 'foetal / foetus' were replaced with 'fetal / fetus' in Article 4.10.3. and 'enzootic / epizootic' were replaced with 'endemic / epidemic' in Articles 4.19.1. and 9.3.1.*

Details of the amendments made in this edition can be found in the 90th General Session report and Specialist Commissions reports, available on the World Organisation for Animal Health website (www.woah.org).

In this edition of the Terrestrial Code, OIE was replaced with WOAH in accordance with Resolution No. 10 that had been adopted by the World Assembly of Delegates at the 89th General Session in May 2022.

I wish to thank the members of the Code Commission, Delegates, international experts and other Specialist Commissions for their expert advice. Thanks also to the World Organisation for Animal Health staff who contributed to the work that has resulted in the publication of this 31st edition of the Terrestrial Code.

Dr Monique Eloit
Director General
World Organisation for Animal Health

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Members: Dr Lucio Ignacio Carbajo Goñi, Dr Kiyokazu Murai and Dr Bernardo Todeschini.

July 2023

USER'S GUIDE

A. Introduction

1) The WOAH *Terrestrial Animal Health Code* (hereafter referred to as the *Terrestrial Code*) establishes standards for the improvement of terrestrial animal health and welfare and veterinary public health worldwide. The purpose of this guide is to advise the Veterinary Authorities of WOAH Member Countries on how to use the *Terrestrial Code*.

2) Veterinary Authorities should use the standards in the *Terrestrial Code* to set up measures providing for early detection, internal reporting, notification, control or eradication of pathogenic agents, including zoonotic ones, in terrestrial animals (mammals, birds, reptiles and bees) and preventing their spread via international trade in animals and animal products, while avoiding unjustified sanitary barriers to trade.

3) WOAH standards are based on the most recent scientific and technical information. Correctly applied, they protect animal health and welfare and veterinary public health during production and trade in animals and animal products, and in the use of animals.

4) The absence of chapters, articles or recommendations on particular pathogenic agents or commodities does not preclude the application of appropriate sanitary measures by the Veterinary Authorities, provided they are based on risk analyses conducted in accordance with the *Terrestrial Code*.

5) The year that a chapter was first adopted and the year of its last revision are noted at the end of each chapter.

6) The complete text of the *Terrestrial Code* is available on WOAH Web site and individual chapters may be downloaded from: https://www.woah.org/.

B. Terrestrial Code content

1) Key terms and expressions used in more than one chapter in the *Terrestrial Code* are defined in the Glossary, in the case where common dictionary definitions are not deemed to be adequate. The reader should be aware of the definitions given in the Glossary when reading and using the *Terrestrial Code*. Defined terms appear in italics. In the on-line version of the *Terrestrial Code*, a hyperlink leads to the relevant definition.

2) The term "(under study)" is found in some rare instances, with reference to an article or part of an article. This means that this part of the text has not been adopted by the World Assembly of Delegates and the particular provisions are thus not part of the *Terrestrial Code*.

3) The standards in the chapters of Section 1 are designed for the implementation of measures for the diagnosis, surveillance and notification of diseases, infections and infestations. The standards include procedures for notification to WOAH and procedures for the recognition of the animal health status of a country, zone or compartment.

4) The standards in Section 2 are designed to guide the importing country in conducting import risk analysis in the absence of WOAH recommendations on particular pathogenic agents or commodities. The importing country should also use these standards to justify import measures which are more stringent than existing WOAH standards.

5) The standards in the chapters of Section 3 are designed for the establishment, maintenance and evaluation of Veterinary Services, including veterinary legislation and communication. These standards are intended to assist the Veterinary Services and Veterinary Authority of Member Countries to meet their objectives of improving terrestrial animal health and welfare and veterinary public health, as well as to establish and maintain confidence in their international veterinary certificates.

6) The standards in the chapters of Section 4 are designed for the implementation of measures for the prevention and control of pathogenic agents. Measures in this section include animal identification, traceability, zoning, compartmentalisation, disposal of dead animals, disinfection, disinsection and general hygiene precautions. Some chapters address the specific sanitary measures to be applied for the collection and processing of semen and embryos of animals.

7) The standards in the chapters of Section 5 are designed for the implementation of general sanitary measures for trade. They address veterinary certification and the measures applicable by the exporting, transit and importing countries. A range of model veterinary certificates is provided to facilitate consistent documentation in international trade.

8) The standards in the chapters of Section 6 are designed for the implementation of preventive measures in animal production systems. These measures are intended to assist Member Countries in meeting their veterinary public health objectives. They include ante- and post-mortem inspection, control of hazards in feed, biosecurity at the animal production level, and the control of antimicrobial resistance in animals.

9) The standards in the chapters of Section 7 are designed for the implementation of animal welfare measures. The standards cover production, transport, and slaughter or killing, as well as the animal welfare aspects of free-roaming dog population control and the use of animals in research and education.

10) The standards in each of the chapters of Sections 8 to 16 are designed to prevent the pathogenic agents of WOAH listed diseases, infections or infestations from being introduced into an importing country. The standards take into account the nature of the traded commodity, the animal health status of the exporting country, zone or compartment, and the risk reduction measures applicable to each commodity.

These standards assume that the agent is either not present in the importing country or is the subject of a control or eradication programme. Sections 8 to 16 each relate to the host species of the pathogenic agent: multiple species or species of Apinae, Aves, Bovinae, Equidae, Leporidae, Caprinae, Suidae and Camelidae. Some chapters include specific measures to prevent and control the infections of global concern. Although WOAH aims to include a chapter for each WOAH listed disease, not all WOAH listed diseases have been covered yet by a specific chapter. This is work in progress, depending on available scientific knowledge and the priorities set by the World Assembly of Delegates.

C. Specific issues

1) Notification

Chapter 1.1. describes Member Countries' obligations under Organic Statutes of the Office International des Epizooties. Listed and emerging diseases, as prescribed in Chapter 1.1., are compulsorily notifiable. Member Countries are encouraged to also provide information to WOAH on other animal health events of epidemiological significance.

Chapter 1.2. describes the criteria for the inclusion of an infection or infestation in the WOAH List and Chapter 1.3. gives the current list. Diseases are divided into nine categories based on the host species of the aetiological agents.

2) Diagnostic tests and vaccines

It is recommended that specified diagnostic tests and vaccines in *Terrestrial Code* chapters be used with a reference to the relevant section in the WOAH *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals* (hereafter referred to as the *Terrestrial Manual*). Experts responsible for facilities used for disease diagnosis and vaccine production should be fully conversant with the standards in the *Terrestrial Manual*.

3) Freedom from a disease, infection or infestation

Article 1.4.6. provides general principles for declaring a country or zone free from a disease, infection or infestation. This article applies when there are no specific requirements in the listed disease-specific chapter.

4) Prevention and control

Chapters 4.4. and 4.5. describe the measures that should be implemented to establish zones and compartments. Zoning and compartmentalisation should be considered as some of the tools used to control diseases and to facilitate safe trade.

Chapters 4.6. to 4.12. describe the measures which should be implemented during collection and processing of semen and embryos of animals, including micromanipulation and cloning, in order to prevent animal health risks, especially when trading these commodities. Although the measures relate principally to WOAH listed diseases or infections, general standards apply to all infectious disease risks. Moreover, in Chapter 4.8. diseases that are not listed are marked as such but are included for the information of Member Countries.

Chapter 4.15. addresses the specific issue of the control of bee diseases and some of its trade implications. This chapter should be read in conjunction with the specific bee disease chapters in Section 9.

Chapter 6.5. is designed for the implementation of general biosecurity measures in intensive poultry production. Chapters 6.6., 6.13. and 6.14. provide recommendations for some specific on-farm prevention and control plans for the unlisted foodborne pathogenic agent *Salmonella* as part of the Veterinary Services mission to prevent, eliminate or control food safety hazards in animal production.

Chapter 6.12. deals specifically with the zoonotic risk associated with the movements of non-human primates and gives standards for certification, transportation and import conditions for these animals.

5) Trade requirements

Animal health measures related to international trade should be based on WOAH standards. A Member Country may authorise the importation of animals or animal products into its territory under conditions different from those recommended by the *Terrestrial Code*. To scientifically justify more stringent measures, the importing country

should conduct a risk analysis in accordance with WOAH standards, as described in Chapter 2.1. Members of the WTO should refer to the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).

Chapters 5.1. to 5.3. describe the general obligations and ethical responsibilities of importing and exporting countries in international trade. Veterinary Authorities and all veterinarians directly involved in international trade should be familiar with these chapters. Chapter 5.3. also describes the WOAH informal procedure for dispute mediation.

WOAH aims to include an article listing the commodities that are considered safe for trade without the need for risk mitigation measures specifically directed against a particular listed disease, infection or infestation, regardless of the status of the country or zone of origin for the agent in question, at the beginning of each listed disease-specific chapter in Sections 8 to 16. This is work in progress and some chapters do not yet contain articles listing safe commodities. When a list of safe commodities is present in a chapter, importing countries should not apply trade restrictions to such commodities with respect to the agent in question. Chapter 2.2. describes the criteria used to assess the safety of commodities.

6) International veterinary certificates

An international veterinary certificate is an official document that the Veterinary Authority of an exporting country issues in accordance with Chapters 5.1. and 5.2. It lists animal health requirements and, where appropriate, public health requirements for the exported commodity. The quality of the exporting country's Veterinary Services is essential in providing assurances to trading partners regarding the safety of exported animals and products. This includes the Veterinary Authority's ethical approach to the provision of veterinary certificates and their history in meeting their notification obligations.

International veterinary certificates underpin international trade and provide assurances to the importing country regarding the health status of the animals and products imported. The measures prescribed should take into account the health status of both exporting and importing countries, and zones or compartments within them, and be based upon the standards in the *Terrestrial Code*.

The following steps should be taken when drafting international veterinary certificates:

a) identify the diseases, infections or infestations from which the importing country is justified in seeking protection because of its own health status. Importing countries should not impose measures in regards to diseases that occur in their own territory but are not subject to official control programmes;

b) for commodities capable of transmitting these diseases, infections or infestations through international trade, the importing country should apply the relevant articles in the listed disease-specific chapters. The application of the articles should be adapted to the disease status of the country, zone or compartment of origin. Such status should be established according to Article 1.4.6. except when articles of the relevant listed disease chapter specify otherwise;

c) when preparing international veterinary certificates, the importing country should endeavour to use terms and expressions in accordance with the definitions given in the Glossary. International veterinary certificates should be kept as simple as possible and should be clearly worded, to avoid misunderstanding of the importing country's requirements;

d) Chapters 5.10. to 5.13. provide, as further guidance to Member Countries, model certificates that should be used as a baseline.

7) Guidance notes for importers and exporters

It is recommended that Veterinary Authorities prepare “guidance notes” to assist importers and exporters understand trade requirements. These notes should identify and explain the trade conditions, including the measures to be applied before and after export and during transport and unloading, and the relevant legal obligations and operational procedures. The guidance notes should advise on all details to be included in the health certification accompanying the consignment to its destination. Exporters should also be reminded of the International Air Transport Association rules governing air transport of animals and animal products.

GLOSSARY

For the purposes of the *Terrestrial Code*:

ANIMAL

means a mammal, reptile, bird or bee.

ANIMAL FOR BREEDING OR REARING

means a domesticated or confined *animal* which is not intended for *slaughter* within a short time.

ANIMAL FOR SLAUGHTER

means an *animal* intended for *slaughter* within a short time, under the control of the relevant *Veterinary Authority*.

ANIMAL HANDLER

means a person with a knowledge of the behaviour and needs of *animals* who, with appropriate experience and a professional and positive response to an *animal*'s needs, can achieve effective management and good *welfare*. Competence should be gained through formal training or practical experience.

ANIMAL HEALTH MANAGEMENT

means a system designed to optimise the physical and behavioural health and welfare of *animals*. It includes the prevention, treatment and control of diseases and conditions affecting the individual *animal* and *herd* or *flock*, including the recording of illness, injuries, mortalities and medical treatments where appropriate.

ANIMAL HEALTH STATUS

means the status of a country, *zone* or *compartment* with respect to an animal disease in accordance with the criteria listed in the relevant disease-specific chapter or Chapter 1.4. of the *Terrestrial Code*.

ANIMAL IDENTIFICATION

means the combination of the identification and *registration* of an *animal* individually, with a unique identifier, or collectively by its *epidemiological unit* or group, with a unique group identifier.

ANIMAL IDENTIFICATION SYSTEM

means the inclusion and linking of components such as identification of *establishments* or owners, the persons responsible for the *animals*, movements and other records with *animal identification*.

ANIMAL TRACEABILITY

means the ability to follow an *animal* or group of *animals* during all stages of its life.

ANIMAL WELFARE

means the physical and mental state of an *animal* in relation to the conditions in which it lives and dies.

ANTIMICROBIAL AGENT

means a naturally occurring, semi-synthetic or synthetic substance that exhibits antimicrobial activity (kill or inhibit the growth of micro-organisms) at concentrations attainable *in vivo*. Anthelmintics and substances classed as disinfectants or antiseptics are excluded from this definition.

APIARY

means a *beehive* or group of *beehives* whose management allows them to be considered as a single *epidemiological unit*.

APPROVED

means officially approved, accredited or registered by the *Veterinary Authority*.

ARTIFICIAL INSEMINATION CENTRE

means a facility approved by the *Veterinary Authority* and which meets the conditions set out in the *Terrestrial Code* for the collection, processing and/or storage of semen.

BEEHIVE

means a structure for the keeping of honey bee colonies that is being used for that purpose, including frameless hives, fixed frame hives and all designs of moveable frame hives (including nucleus hives), but not including packages or cages used to confine bees for the purposes of transport or isolation.

BIOSECURITY

means a set of management and physical measures designed to reduce the *risk* of introduction, establishment and spread of animal diseases, *infections* or *infestations* to, from and within an animal population.

BIOSECURITY PLAN

means a plan that identifies potential pathways for the introduction and spread of disease in a *zone* or *compartment*, and describes the measures which are being or will be applied to mitigate the disease *risks*, if applicable, in accordance with the recommendations in the *Terrestrial Code*.

BORDER POST

means any airport, or any port, railway station or road check-point open to *international trade* of *commodities*, where import veterinary inspections can be performed.

CAPTIVE WILD [ANIMAL]

means an *animal* that has a phenotype not significantly affected by human selection but that is captive or otherwise lives under or requires human supervision or control.

CASE

means an individual *animal* infected by a pathogenic agent, with or without clinical signs.

CASINGS

means intestines and bladders that, after cleaning, have been processed by tissue scraping, defatting and washing, and have been treated with salt.

COLLECTION CENTRE

means a facility approved by the *Veterinary Authority* for the collection of oocytes or embryos and used exclusively for donor animals which meet the conditions of the *Terrestrial Code*.

COMMODITY

means live *animals*, products of animal origin, animal genetic material, biological products and *pathological material*.

COMPARTMENT

means an animal *subpopulation* contained in one or more *establishments*, separated from other susceptible *populations* by a common *biosecurity* management system, and with a specific *animal health status* with respect to one or more *infections* or *infestations* for which the necessary *surveillance*, *biosecurity* and control measures have been applied for the purposes of *international trade* or disease prevention and control in a country or *zone*.

COMPETENT AUTHORITY

means a Governmental Authority of a Member Country having the responsibility in the whole or part of the territory for the implementation of certain standards of the *Terrestrial Code*.

CONTAINER

means a non-self-propelled receptacle or other rigid structure for holding *animals* during a *journey* by one or several means of transport.

CONTAINMENT ZONE

means an *infected zone* defined within a previously free country or *zone*, which includes all suspected or confirmed *cases* that are epidemiologically linked and where movement control, *biosecurity* and *sanitary measures* are applied to prevent the spread of, and to eradicate, the *infection* or *infestation*.

DAY-OLD BIRDS

means birds aged not more than 72 hours after hatching.

DEATH

means the irreversible loss of brain activity demonstrable by the loss of brain stem reflexes.

DISINFECTION

means the application, after thorough cleansing, of procedures intended to destroy the infectious or parasitic agents of animal diseases, including zoonoses; this applies to premises, *vehicles* and different objects which may have been directly or indirectly contaminated.

DISINFESTATION

means the application of procedures intended to eliminate *infestation*.

DISTRESS

means the state of an animal, that has been unable to adapt to stressors, and that manifests as abnormal physiological or behavioural responses. It can be acute or chronic and may result in pathological conditions.

EARLY WARNING SYSTEM

means a system for the timely detection, reporting and communication of occurrence, incursion or emergence of diseases, *infections* or *infestations* in a country, *zone* or *compartment*.

EMERGING DISEASE

means a new occurrence in an *animal* of a disease, *infection* or *infestation*, causing a significant impact on animal or public health resulting from:

a) a change of a known pathogenic agent or its spread to a new geographic area or species; or

b) a previously unrecognised pathogenic agent or disease diagnosed for the first time.

EPIDEMIOLOGICAL UNIT

means a group of *animals* with the same likelihood of exposure to a pathogenic agent. In certain circumstances, the epidemiological unit may be a single *animal*.

ERADICATION

means the elimination of a pathogenic agent from a country or *zone*.

ESTABLISHMENT

means the premises in which *animals* are kept.

EUTHANASIA

means the act of inducing *death* using a method that causes a rapid and irreversible loss of consciousness with minimum *pain* and *distress* to *animal*.

EXPORTING COUNTRY

means a country from which *commodities* are sent to another country.

FEED

means any material (single or multiple), whether processed, semi-processed or raw, which is intended to be fed directly to terrestrial *animals* (except bees).

FEED INGREDIENT

means a component part or constituent of any combination or mixture making up a *feed*, whether or not it has a nutritional value in the *animal*'s diet, including feed additives. Ingredients are of plant (including aquatic plants) or terrestrial or aquatic animal origin, or other organic or inorganic substances.

FERAL [ANIMAL]

means an *animal* of a domesticated species that lives without requiring human supervision or control.

FLOCK

means a number of *animals* of one kind kept together under human control or a congregation of gregarious *wild animals*. A *flock* is usually regarded as an *epidemiological unit*.

FREE COMPARTMENT

means a *compartment* in which the absence of the animal pathogenic agent causing the disease under consideration has been demonstrated by all requirements specified in the *Terrestrial Code* for free status being met.

FREE-ROAMING DOG

means any *owned dog* or unowned dog that is without direct human supervision or control, including *feral* dogs.

FREE ZONE

means a *zone* in which the absence of a specific *infection* or *infestation* in an animal *population* has been demonstrated in accordance with the relevant requirements of the *Terrestrial Code*.

FRESH MEAT

means *meat* that has not been subjected to any treatment irreversibly modifying its organoleptic and physicochemical characteristics. This includes frozen *meat*, chilled *meat*, minced *meat* and mechanically recovered *meat*.

GOOD MANUFACTURING PRACTICE

means a production and testing practice recognised by the *Competent Authority* to ensure the quality of a product.

GREAVES

means the protein-containing residue obtained after the partial separation of fat and water during the process of rendering.

HATCHING EGGS

means fertilised bird eggs, suitable for incubation and hatching.

HAZARD

means a biological, chemical or physical agent in, or a condition of, an *animal* or animal product with the potential to cause an adverse health effect.

HEADQUARTERS

means the Permanent Secretariat of the World Organisation for Animal Health located at:

12, rue de Prony, 75017 Paris, FRANCE
Telephone: 33-(0)1 44 15 18 88
Fax: 33-(0)1 42 67 09 87
Electronic mail: woah@woah.org
WWW: http://www.woah.org

HERD

means a number of *animals* of one kind kept together under human control or a congregation of gregarious *wild animals*. A *herd* is usually regarded as an *epidemiological unit*.

IMPORTING COUNTRY

means a country that is the final destination to which *commodities* are sent.

INCIDENCE

means the number of new *cases* or *outbreaks* of a disease that occur in a population at risk in a particular geographical area within a defined time interval.

INCUBATION PERIOD

means the longest period that elapses between the introduction of the pathogenic agent into the *animal* and the occurrence of the first clinical signs of the disease.

INFECTED ZONE

means a *zone* either in which an *infection* or *infestation* has been confirmed, or one that is defined as such in the relevant chapters of the *Terrestrial Code*.

INFECTION

means the entry and development or multiplication of a pathogenic agent in the body of humans or *animals*.

INFECTIVE PERIOD

means the longest period during which an affected *animal* can be a source of *infection*.

INFESTATION

means the external invasion or colonisation of *animals* or their immediate surroundings by arthropods, which may cause clinical signs or are potential *vectors* of pathogenic agents.

INTERNATIONAL TRADE

means importation, exportation and transit of *commodities*.

INTERNATIONAL VETERINARY CERTIFICATE

means a certificate, issued in accordance with Chapter 5.2., describing the animal health and public health requirements that are fulfilled by the exported *commodities*.

JOURNEY

An *animal* transport journey commences when the first *animal* is loaded onto a *vehicle*/*vessel* or into a *container* and ends when the last *animal* is unloaded, and includes any stationary resting/holding periods. The same *animals* do not commence a new journey until after a suitable period for rest and recuperation, with adequate *feed* and water.

KILLING

means any procedure that causes the *death* of an *animal*.

LABORATORY

means a properly equipped institution staffed by technically competent personnel under the control of a specialist in veterinary diagnostic methods, who is responsible for the validity of the results. The *Veterinary Authority* approves and monitors such laboratories with regard to the diagnostic tests required for *international trade*.

LAIRAGE

means pens, yards and other holding areas used for accommodating *animals* in order to give them necessary attention (such as water, *feed*, rest) before they are moved on or used for specific purposes including *slaughter*.

LISTED DISEASE

means a disease, *infection* or *infestation* listed in Chapter 1.3. after adoption by the World Assembly of Delegates.

LOADING/UNLOADING

Loading means the procedure of moving *animals* onto a *vehicle*/*vessel* or into a *container* for transport purposes, while unloading means the procedure of moving *animals* off a *vehicle*/*vessel* or out of a *container*.

MARKET

means a place where *animals* are assembled for the purposes of trade or sale.

MEAT

means all edible parts of an *animal*.

MEAT PRODUCTS

means *meat* that has been subjected to a treatment irreversibly modifying its organoleptic and physicochemical characteristics.

MILK

means the normal mammary secretion of milking *animals* obtained from one or more milkings without either addition to it or extraction from it.

MILK PRODUCT

means the product obtained by any processing of *milk*.

MONITORING

means the intermittent performance and analysis of routine measurements and observations, aimed at detecting changes in the environment or health status of a *population*.

NOTIFIABLE DISEASE

means a disease listed by the *Veterinary Authority*, and that, as soon as detected or suspected, should be brought to the attention of this *Authority*, in accordance with national regulations.

NOTIFICATION

means the procedure by which:

a) the *Veterinary Authority* informs the *Headquarters*,

b) the *Headquarters* inform the *Veterinary Authority*,

of the occurrence of disease, *infection* or *infestation* in accordance with Chapter 1.1.

OFFICIAL CONTROL PROGRAMME

means a programme which is approved, and managed or supervised by the *Veterinary Authority* of a Member Country for the purposes of controlling a *vector*, pathogenic agent or disease by specific measures applied throughout that Member Country, or within a *zone* or *compartment* of that Member Country.

OFFICIAL VETERINARIAN

means a *veterinarian* authorised by the *Veterinary Authority* of the country to perform certain designated official tasks associated with animal health or public health and inspections of *commodities* and, when appropriate, to certify in accordance with Chapters 5.1. and 5.2.

OFFICIAL VETERINARY CONTROL

means the operations whereby the *Veterinary Services*, knowing the location of the *animals* and after taking appropriate actions to identify their owner or responsible keeper, are able to apply appropriate animal health measures, as required. This does not exclude other responsibilities of the *Veterinary Services* e.g. food safety.

OUTBREAK

means the occurrence of one or more *cases* in an *epidemiological unit*.

OWNED DOG

means a dog for which a person claims responsibility.

PAIN

means an unpleasant sensory and emotional experience associated with actual or potential tissue damage. It may elicit protective actions, result in learned avoidance and *distress* and may modify species-specific traits of behaviour, including social behaviour.

PATHOLOGICAL MATERIAL

means samples obtained from live or dead *animals*, containing or suspected of containing infectious or parasitic agents, to be sent to a *laboratory*.

PLACE OF SHIPMENT

means the place where the *commodities* are loaded into the *vehicle* or handed to the agency that will transport them to another country.

POPULATION

means a group of *units* sharing a common defined characteristic.

POULTRY

means all birds reared or kept in captivity for the production of any commercial animal products or for breeding for this purpose, fighting cocks used for any purpose, and all birds used for restocking supplies of game or for breeding for this purpose, until they are released from captivity.

Birds that are kept in a single household, the products of which are used within the same household exclusively, are not considered *poultry*, provided that they have no direct or indirect contact with *poultry* or *poultry* facilities.

Birds that are kept in captivity for other reasons, including those that are kept for shows, racing, exhibitions, zoological collections and competitions, and for breeding or selling for these purposes, as well as pet birds, are not considered *poultry*, provided that they have no direct or indirect contact with *poultry* or *poultry* facilities.

PRE-JOURNEY PERIOD

means the period during which *animals* are identified, and often assembled for the purposes of *loading* them.

PREVALENCE

means the total number of *cases* or *outbreaks* of a disease that are present in a population at risk, in a particular geographical area, at one specified time or during a given period.

PROTEIN MEAL

means any final or intermediate solid protein-containing product, obtained when animal tissues are rendered, excluding peptides of a molecular mass less than 10,000 daltons and amino-acids.

PROTECTION ZONE

means a *zone* where specific *biosecurity* and *sanitary measures* are implemented to prevent the entry of a pathogenic agent into a free country or *zone* from a neighbouring country or *zone* of a different *animal health status*.

QUALITATIVE RISK ASSESSMENT

means an assessment where the outputs on the likelihood of the outcome or the magnitude of the consequences are expressed in qualitative terms such as 'high', 'medium', 'low' or 'negligible'.

QUANTITATIVE RISK ASSESSMENT

means an assessment where the outputs of the *risk assessment* are expressed numerically.

QUARANTINE STATION

means an establishment under the control of the *Veterinary Authority* where *animals* are maintained in isolation with no direct or indirect contact with other *animals*, to ensure that there is no transmission of specified pathogenic agents outside the establishment while the *animals* are undergoing observation for a specified length of time and, if appropriate, testing or treatment.

REGISTRATION

is the action by which information on *animals* (such as identification, animal health, movement, certification, epidemiology, *establishments*) is collected, recorded, securely stored and made appropriately accessible and able to be utilised by the *Competent Authority*.

RESPONSIBLE DOG OWNERSHIP

means the situation whereby a person accepts and commits to perform various duties in accordance with the legislation in place and focused on the satisfaction of the behavioural, environmental and physical needs of a dog and to the prevention of risks (aggression, disease transmission or injuries) that the dog may pose to the community, other *animals* or the environment.

RESTING POINT

means a place where the *journey* is interrupted to rest, *feed* or water the *animals*; the *animals* may remain in the *vehicle*/*vessel* or *container*, or be unloaded for these purposes.

RESTRAINT

means the application to an *animal* of any procedure designed to restrict its movements.

RISK

means the likelihood of the occurrence and the likely magnitude of the biological and economic consequences of an adverse event or effect to animal or human health.

RISK ANALYSIS

means the process composed of *hazard* identification, *risk assessment*, *risk management* and *risk communication*.

RISK ASSESSMENT

means the evaluation of the likelihood and the biological and economic consequences of entry, establishment and spread of a *hazard*.

RISK COMMUNICATION

is the interactive transmission and exchange of information and opinions throughout the *risk analysis* process concerning *risk*, *risk*-related factors and *risk* perceptions among *risk* assessors, *risk* managers, *risk* communicators, the general public and other interested parties.

RISK MANAGEMENT

means the process of identifying, selecting and implementing measures that can be applied to reduce the level of *risk*.

SAFE COMMODITY

means a *commodity* that can be traded without the need for *risk* mitigation measures specifically directed against a particular *listed disease*, *infection* or *infestation* and regardless of the status of the country or *zone* of origin for that disease, *infection* or *infestation*.

SANITARY MEASURE

means a measure, such as those described in various chapters of the *Terrestrial Code*, designed to protect animal or human health or life within the whole territory or a *zone* of a Member Country from *risks* arising from the entry, establishment or spread of a *hazard*.

SLAUGHTER

means any procedure that causes the *death* of an *animal* by bleeding.

SLAUGHTERHOUSE/ABATTOIR

means premises, including facilities for moving or lairaging *animals*, used for the *slaughter* of *animals* to produce animal products and approved by the *Veterinary Services* or other *Competent Authority*.

SPACE ALLOWANCE

means the measure of the floor area and height allocated per individual or body weight of *animals*.

SPECIFIC SURVEILLANCE

means the *surveillance* targeted to a specific disease or *infection*.

STAMPING-OUT POLICY

means a policy designed to eliminate an *outbreak* by carrying out under the authority of the *Veterinary Authority* the following:

a) the *killing* of the *animals* which are affected and those suspected of being affected in the *herd* or *flock* and, where appropriate, those in other *herds* or *flocks* which have been exposed to *infection* by direct animal to animal contact, or by indirect contact with the causal pathogenic agent; *animals* should be killed in accordance with Chapter 7.6.;

b) the disposal of carcasses and, where relevant, animal products by rendering, burning or burial, or by any other method described in Chapter 4.13.;

c) the cleansing and *disinfection* of *establishments* through procedures defined in Chapter 4.14.

STOCKING DENSITY

means the number or body weight of *animals* per unit area on a *vehicle*/*vessel* or *container*.

STUNNING

means any mechanical, electrical, chemical or other procedure that causes immediate loss of consciousness; when used before *slaughter*, the loss of consciousness lasts until *death* from the *slaughter* process; in the absence of *slaughter*, the procedure would allow the *animal* to recover consciousness.

SUBPOPULATION

means a distinct part of a *population* identifiable in accordance with specific common animal health characteristics.

SURVEILLANCE

means the systematic ongoing collection, collation, and analysis of information related to animal health and the timely dissemination of information so that action can be taken.

TERRESTRIAL CODE

means the WOAH *Terrestrial Animal Health Code*.

TERRESTRIAL MANUAL

means the WOAH *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*.

TRANSIT COUNTRY

means a country through which *commodities* destined for an *importing country* are transported or in which a stopover is made at a *border post*.

UNIT

means an individually identifiable element used to describe, for example, the members of a *population* or the elements selected when sampling; examples of *units* include individual *animals*, *herds*, *flocks* and *apiaries*.

VACCINATION

means the administration of a vaccine, in accordance with the manufacturer's instructions and the *Terrestrial Manual*, when relevant, with the intention of inducing immunity in an *animal* or group of *animals* against one or more pathogenic agents.

VECTOR

means an insect or any living carrier that transports an infectious agent from an infected individual to a susceptible individual or its food or immediate surroundings. The organism may or may not pass through a development cycle within the *vector*.

VEHICLE/VESSEL

means any means of conveyance including train, truck, aircraft or ship that is used for carrying *animals*.

VETERINARIAN

means a person with appropriate education, registered or licensed by the relevant *veterinary statutory body* of a country to practice veterinary medicine/science in that country.

VETERINARY AUTHORITY

means the Governmental Authority of a Member Country having the primary responsibility in the whole territory for coordinating the implementation of the standards of the *Terrestrial Code*.

VETERINARY LEGISLATION

means laws, regulations and all associated legal instruments that pertain to the veterinary domain.

VETERINARY MEDICINAL PRODUCT

means any product with approved claims to having a prophylactic, therapeutic or diagnostic effect or to alter physiological functions when administered or applied to an *animal*.

VETERINARY PARAPROFESSIONAL

means a person who, for the purposes of the *Terrestrial Code*, is authorised by the *veterinary statutory body* to carry out certain designated tasks (dependent upon the category of *veterinary paraprofessional*) in a territory, and delegated to them under the responsibility and direction of a *veterinarian*. The tasks for each category of *veterinary paraprofessional* should be defined by the *veterinary statutory body* depending on qualifications and training, and in accordance with need.

VETERINARY SERVICES

means the combination of governmental and non-governmental individuals and organisations that perform activities to implement the standards of the *Terrestrial Code*.

VETERINARY STATUTORY BODY

means an autonomous regulatory body for *veterinarians* and *veterinary paraprofessionals*.

WILD [ANIMAL]

means an *animal* that has a phenotype unaffected by human selection and lives independently without requiring human supervision or control.

WILDLIFE

means *feral animals*, *captive wild animals* and *wild animals*.

ZONE

means a part of a country defined by the *Veterinary Authority*, containing an animal *population* or *subpopulation* with a specific *animal health status* with respect to an *infection* or *infestation* for the purposes of *international trade* or disease prevention or control.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2023.

SECTION 8.

MULTIPLE SPECIES

CHAPTER 8.1.

ANTHRAX

Article 8.1.1.

General provisions

This chapter is intended to manage the human and animal health risks associated with the presence of *Bacillus anthracis (B. anthracis)* in *commodities* and the environment.

There is no evidence that anthrax is transmitted by animals before the onset of clinical and pathological signs. Early detection of *outbreaks*, quarantine of affected premises, destruction of diseased animals and fomites, and implementation of appropriate sanitary procedures at *abattoirs* and dairy factories will ensure the safety of products of animal origin intended for human consumption.

For the purposes of the *Terrestrial Code*, the *incubation period* for anthrax shall be 20 days.

Anthrax should be notifiable in the whole country.

When authorising import or transit of *commodities* covered in the chapter, with the exception of those listed in Article 8.1.2., *Veterinary Authorities* should require the conditions prescribed in this chapter.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.1.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any anthrax-related conditions: semen and embryos collected and processed in accordance with Chapters 4.6., 4.7., 4.8., 4.9. and 4.10., as relevant.

Article 8.1.3.

Recommendations for the importation of ruminants, equids and pigs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of anthrax on the day of shipment;

AND

2) were kept for the 20 days prior to shipment in an *establishment* where no *case* of anthrax was officially declared during that period; or
3) were vaccinated, not less than 20 days and not more than 12 months prior to shipment in accordance with the *Terrestrial Manual*.

Article 8.1.4.

Recommendations for the importation of fresh meat and meat products destined for human consumption

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the products originate from animals that:

1) have shown no sign of anthrax during ante- and post-mortem inspections; and
2) were not vaccinated against anthrax using live vaccine during the 14 days prior to *slaughter* or a longer period depending on the manufacturer's recommendations; and
3) come from *establishments* that are not placed under movement restrictions for the control of anthrax and where there has been no *case* of anthrax during the 20 days prior to *slaughter*.

Article 8.1.5.

Recommendations for the importation of hides, skins and hair (from ruminants, equids and pigs)

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the products originate from animals that:
   a) have shown no sign of anthrax during ante- and post-mortem inspections; and
   b) come from *establishments* that are not placed under movement restrictions for the control of anthrax;

OR

2) hair from ruminants or equids has been treated in accordance with the recommendations in Article 8.1.11.

Article 8.1.6.

Recommendations for the importation of wool

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the product:

1) originates from live animals; and
2) originates from animals that, at the time of shearing, were part of a *flock* that was not subject to movement restrictions for the control of anthrax;

OR

3) has been treated in accordance with the recommendations in Article 8.1.11.

Article 8.1.7.

Recommendations for the importation of milk and milk products intended for human consumption

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the *milk* originates from animals showing no clinical sign of anthrax at the time of milking;
2) if the *milk* originates from *herds* or *flocks* that have had a *case* of anthrax within the previous 20 days, it has been chilled promptly and processed using a heat treatment at least equivalent to pasteurisation.

Article 8.1.8.

Recommendations for the importation of bristles (from pigs)

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the products originate from animals which:

1) have shown no sign of anthrax during ante- and post-mortem inspections; and
2) come from *establishments* that are not placed under movement restrictions for the control of anthrax;

OR

3) have been processed to ensure the destruction of *B. anthracis* by boiling for 60 minutes.

Article 8.1.9.

Procedures for the inactivation of *B. anthracis* spores in skins and trophies from wild animals

In situations in which skins and trophies from *wild animals* may be contaminated with *B. anthracis* spores, the following *disinfection* procedure is recommended:

1) fumigation with ethylene oxide 500 mg/litre, at relative humidity 20–40%, at 55°C for 30 minutes; or
2) fumigation with formaldehyde 400 mg/m³ at relative humidity 30%, at >15°C for 4 hours; or
3) gamma irradiation with a dose of 40 kilogray.

Article 8.1.10.

Procedures for the inactivation of *B. anthracis* spores in bone-meal and protein meal

In situations where raw materials used to produce bone-meal or *protein meal* may be contaminated with *B. anthracis* spores, the following inactivation procedures should be used:

1) the raw material should be reduced to a maximum particle size of 50 mm before heating; and
2) the raw material should be subjected to moist heat at one of the following temperature and time regimes:
   a) 105°C for at least 8 minutes; or
   b) 100°C for at least 10 minutes; or
   c) 95°C for at least 25 minutes; or
   d) 90°C for at least 45 minutes;

OR

3) the raw material should be subjected to dry heat at one of the following temperature and time regimes:
   a) 130°C for at least 20 minutes; or
   b) 125°C for at least 25 minutes; or
   c) 120°C for at least 45 minutes;

OR

4) an industrial process demonstrated to be of equivalent efficacy.

Article 8.1.11.

Procedures for the inactivation of *B. anthracis* spores in wool and hair

In situations in which wool or hair may be contaminated with *B. anthracis* spores, the following procedures are recommended:

1) gamma irradiation with a dose of 25 kilogray; or
2) a five-step washing procedure:
   a) immersion in 0.25–0.3% soda liquor for 10 minutes at 40.5°C;
   b) immersion in soap liquor for 10 minutes at 40.5°C;
   c) immersion in 2% formaldehyde solution for 10 minutes at 40.5°C;
   d) a second immersion in 2% formaldehyde solution for 10 minutes at 40.5°C;
   e) rinsing on cold water followed by drying in hot air.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2011.

CHAPTER 8.2.

INFECTION WITH AUJESZKY'S DISEASE VIRUS

Article 8.2.1.

General provisions

Pigs are the natural host for Aujeszky's disease (AD) virus, although it can infect cattle, sheep, cats, dogs and rats causing fatal disease. The definition of pig includes all varieties of *Sus scrofa*, both domestic and *wild*.

For the purposes of the *Terrestrial Code*, AD is defined as an *infection* of domestic pigs or *captive wild* pigs, which are under direct human supervision or control.

For the purposes of this chapter, a distinction is made between domestic pig and *captive wild* pig populations on the one hand, and *wild* pig and *feral* pig populations on the other hand.

A Member Country should not impose trade bans in response to a *notification* of *infection* with AD virus in *wild* and *feral* pigs in accordance with Article 1.1.3.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.2.3., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the AD status of the *exporting country* or *zone*.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.2.2.

Determination of the AD status of a country or zone

The AD free or provisionally free status of a country or *zone* can only be determined after considering the following criteria, as applicable:

1) AD is notifiable in the whole country, and all clinical signs suggestive of AD are subjected to field and *laboratory* investigations;
2) an ongoing awareness programme is in place to encourage reporting of all cases suggestive of AD;
3) the *Veterinary Authority* has current knowledge of, and authority over, all domestic and *captive wild* pig *establishments* in the country or *zone*;
4) the *Veterinary Authority* has current knowledge about the population and habitat of *wild* and *feral* pigs in the country or *zone*;
5) appropriate *surveillance*, capable of detecting the presence of *infection* even in the absence of clinical signs, is in place; this may be achieved through a *surveillance* programme in accordance with Chapter 1.4.

Article 8.2.3.

Safe commodities

When authorising import or transit of the following *commodities* and any products made from these, *Veterinary Authorities* should not require any AD-related conditions, regardless of the AD status of the *exporting country* or *zone*:

1) *fresh meat* of domestic and *wild* pigs not containing offal (head, and thoracic and abdominal viscera);
2) *meat products* of domestic and *wild* pigs not containing offal (head, and thoracic and abdominal viscera);
3) products of animal origin not containing offal (head, and thoracic and abdominal viscera).

Article 8.2.4.

AD free country or zone

1. Qualification

a) A country or *zone* may be considered free from the disease without formally applying a specific *surveillance* programme (historical freedom) if the disease has not been reported for at least 25 years, and if for at least the past 10 years:

i) it has been a *notifiable disease*;

ii) an *early warning system* has been in place;

iii) measures to prevent the introduction of the AD virus into the country or *zone* have been in place;

iv) no *vaccination* against the disease has been carried out;

v) *infection* is not known to be established in *wild* and *feral* pigs, or appropriate measures have been implemented to prevent any transmission of the AD virus from *wild* and *feral* pigs to domestic and *captive wild* pigs.

b) A country or *zone* which does not meet the conditions of the above paragraph may be considered free from AD when:

i) animal health regulations to control the movement of *commodities* with the exception of those listed in Article 8.2.3. in order to prevent the introduction of *infection* into the *establishments* of the country or *zone* have been in place for at least two years;

ii) *vaccination* against AD has been banned for all domestic and *captive wild* pigs in the country or *zone* for at least two years unless there are means, validated to WOAH standards (Chapter 3.1.2. of the *Terrestrial Manual*), of distinguishing between vaccinated and infected pigs;

iii) if AD has never been reported in the country or *zone*, serological surveys, with negative results, have been conducted on a representative sample of all pig *establishments* in accordance with the recommendations in Chapter 1.4. at an acceptable level of confidence, no more than three years prior to qualification; the serological surveys should be directed at the detection of antibodies to the whole virus, and based on the breeding pig population or, for *establishments* that contain no breeding pigs, on a comparable number of fattening pigs; or

iv) if AD has been reported in the country or *zone*, a *surveillance* and control programme has been in place to detect every infected *establishment* and eradicate AD from it; the *surveillance* programme should be carried out in accordance with the recommendations in Chapter 1.4. and demonstrate that no *establishments* within the country or *zone* have had any clinical, virological or serological evidence of AD for at least two years.

In countries or *zones* with *wild* and *feral* pigs, measures should be implemented to prevent any transmission of the AD virus from *wild* and *feral* pigs to domestic and *captive wild* pigs.

2. Maintenance of free status

In order to maintain its free status, a country or *zone* should comply with the following requirements:

a) periodic serological surveys directed at the detection of antibodies to the whole AD virus should be carried out on a statistically significant number of breeding pigs in accordance with the recommendations in Chapter 1.4.;

b) the importation of the *commodities* with the exception of those listed in Article 8.2.3. into the country or *zone* is carried out in accordance with the import conditions contained in the relevant articles of the present chapter;

c) the ban on AD *vaccination* remains in force;

d) appropriate measures aimed at preventing the transmission of the AD virus from *wild* and *feral* pigs to domestic and *captive wild* pigs remain in force.

3. Recovery of free status

Should an AD *outbreak* occur in an *establishment* of a free country or *zone*, the status of the country or *zone* may be restored if either:

a) all the pigs in the infected *epidemiological units* have been slaughtered; and, during and after the application of this measure, an epidemiological investigation including clinical examination, and serological or virological testing has been carried out in all pig *establishments* which have been directly or indirectly in contact with the infected *establishment* and in all pig *establishments* located within a prescribed radius from the infected *epidemiological units*, demonstrating that these *establishments* are not infected; or

b) *vaccination* with gE- deleted vaccines has been applied and:

i) a serological testing procedure (differential ELISA) has been implemented in the *establishments* where *vaccination* has been applied to demonstrate the absence of *infection*;

ii) the movement of pigs from these *establishments* has been banned, except for immediate *slaughter*, until the above procedure has demonstrated the absence of *infection*;

iii) during and after the application of the measures described in points i) to ii) above, a thorough epidemiological investigation including clinical examination and serological or virological testing has been carried out in all pig *establishments* which have been directly or indirectly in contact with the infected *establishment* and in all pig *establishments* located within a prescribed radius from the *outbreak*, demonstrating that these *establishments* are not infected.

Article 8.2.5.

AD provisionally free country or zone

1. Qualification

A country or *zone* may be considered as provisionally free from AD if the following conditions are complied with:

a) animal health regulations to control the movement of *commodities* with the exception of those listed in Article 8.2.3. in order to prevent the introduction of *infection* into the *establishments* of the country or *zone* have been in place for at least two years;

b) if AD has never been reported in the country or *zone*, a serological survey, with negative results, has been conducted on a representative sample of all pig *establishments* in accordance with the recommendations in Chapter 1.4. (but not at an acceptable level of confidence); the serological survey should be directed at the detection of antibodies to the whole virus, and based on the breeding pig population or, for *establishments* that contain no breeding pigs, on a comparable number of fattening pigs; or

c) if AD has been reported in the country or *zone*, a *surveillance* and control programme has been in place to detect infected *establishments* and eradicate AD from these *establishments*, the *herd* prevalence rate in the country or *zone* has not exceeded 1% for at least three years (the sampling procedure described in point 1 e) of the definition of 'AD free establishment' should be applied within the *establishments* of the country or *zone*), and at least 90% of the *establishments* in the country or *zone* are qualified free;

d) in countries or *zones* with *wild* and *feral* pigs, appropriate measures should be taken to prevent any transmission of the AD virus between *wild* and *feral* pigs and domestic and *captive wild* pigs.

2. Maintenance of provisionally free status

In order to maintain its provisionally free status, a country or *zone* should comply with the following requirements:

a) the measures described in points 1 b) and 1 d) above should be continued;

b) the percentage of infected *establishments* remains $\leq$ 1%;

c) the importation of the *commodities* with the exception of those listed in Article 8.2.3. into the country or *zone* is carried out in accordance with the import conditions contained in the relevant articles of the present chapter.

3. Recovery of provisionally free status

Should the percentage of infected *establishments* exceed 1% in a provisionally free country or *zone*, the status of the country or *zone* is cancelled and may be restored only once the percentage of infected *establishments* has remained $\leq$ 1% for at least six months, and this result is confirmed by a serological survey conducted in accordance with point 1 c) above.

Article 8.2.6.

AD infected country or zone

For the purposes of this chapter, countries and *zones* which do not fulfil the conditions to be considered free or provisionally free of AD should be considered as infected.

Article 8.2.7.

AD free establishment

1. Qualification

To qualify as free from AD, an *establishment* should satisfy the following conditions:

a) it is under the control of the *Veterinary Authority*;

b) no clinical, virological or serological evidence of AD has been found for at least one year;

c) the introduction of pigs, semen, oocytes and embryos into the *establishment* is carried out in accordance with the import conditions for these *commodities* contained in the relevant articles of the present chapter;

d) *vaccination* against AD has not been carried out in the *establishment* for at least 12 months, and any previously vaccinated pigs are free from gE antibodies;

e) a representative sample of breeding pigs from the *establishment* has been subjected, with negative results, to serological tests to the whole AD virus, applying a sampling procedure set out in accordance with the recommendations in Chapter 1.4.; these tests should have been carried out on two occasions, at an interval of two months; for *establishments* that contain no breeding pigs, the tests should be carried out only once on a comparable number of fattening or weaning pigs;

f) a *surveillance* and control programme has been in place to detect infected *establishments* located within a prescribed radius from the *establishment* and no *establishment* is known to be infected within this *zone*.

2. Maintenance of free status

For *establishments* located in an infected country or *zone*, the testing procedure described in point 1 e) above should be carried out every four months.

For *establishments* located in a provisionally free country or *zone*, the testing procedure described in point 1 e) above should be carried out every year.

3. Recovery of free status

Should a free *establishment* become infected, or should an *outbreak* occur within a prescribed radius from a free *establishment*, the free status of the *establishment* should be suspended until the following conditions are met:

a) in the infected *establishment*:

i) all the pigs in the *establishment* have been slaughtered; or

ii) at least 30 days after removal of all infected animals, all breeding animals have been subjected to a serological test to the whole AD virus, with negative results, on two occasions, at an interval of 2 months;

b) in other *establishments* located within the prescribed radius: a number of breeding pigs from each *establishment* has been subjected, with negative results, to serological tests to the whole AD virus (non-vaccinated *establishments*) or to gE antibodies (vaccinated *establishments*), applying the sampling procedure described in point 1 e) above.

Article 8.2.8.

Recommendations for importation from AD free countries or zones

For domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of AD on the day of shipment;

2) come from an *establishment* located in an AD free country or *zone*;

3) have not been vaccinated against AD.

Article 8.2.9.

Recommendations for importation from AD provisionally free countries or zones

For domestic and captive wild pigs for breeding or rearing

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of AD on the day of shipment;
2) have been kept exclusively in AD free *establishments* since birth;
3) have not been vaccinated against AD;
4) were subjected to a serological test to the whole AD virus, with negative results, within 15 days prior to shipment.

Article 8.2.10.

Recommendations for importation from AD infected countries or zones

For domestic and captive wild pigs for breeding or rearing

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of AD on the day of shipment;
2) were kept exclusively in AD free *establishments* since birth;
3) have not been vaccinated against AD;
4) were isolated in the *establishment* of origin or a *quarantine station*, and were subjected to a serological test to the whole AD virus, with negative results, on two occasions, at an interval of not less than 30 days between each test, the second test being performed during the 15 days prior to shipment.

Article 8.2.11.

Recommendations for importation from AD provisionally free countries or zones or AD infected countries or zones

For domestic and captive wild pigs for slaughter

The pigs should be transported directly from the *place of shipment* to the *slaughterhouse/abattoir* from immediate *slaughter*.

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) a *surveillance* and control programme is in place in the country or *zone* to detect infected *establishments* and eradicate AD;
2) the animals:
    a) are not being eliminated as part of an *eradication* programme;
    b) showed no clinical sign of AD on the day of shipment; and
        i) have been kept exclusively in AD free *establishments* since birth; or
        ii) have been vaccinated against AD at least 15 days prior to shipment.

Article 8.2.12.

Recommendations for importation from AD free countries or zones

For wild and feral swine

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of AD on the day of shipment;
2) were captured in an AD free country or *zone*;
3) have not been vaccinated against the disease;

4) were isolated in a *quarantine station*, and were subjected to a serological test to the whole AD virus, with negative results, on two occasions, at an interval of not less than 30 days between each test, the second test being performed during the 15 days prior to shipment.

Article 8.2.13.

Recommendations for importation from AD free countries or zones

For semen of pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:

   a) showed no clinical sign of AD on the day of collection of the semen;

   b) were kept in an *establishment* or *artificial insemination centre* located in an AD free country or *zone* at the time of semen collection;

2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.2.14.

Recommendations for importation from AD provisionally free countries or zones

For semen of pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:

   a) have been kept for at least four months prior to semen collection in an *artificial insemination centre* which has the status of AD free *establishment*, and where all boars are subjected to a serological test to the whole AD virus, with negative results, every four months;

   b) showed no clinical sign of AD on the day of collection;

2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.2.15.

Recommendations for importation from AD infected countries or zones

For semen of pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:

   a) were kept in an AD free *establishment* for at least six months prior to entering the *artificial insemination centre*;

   b) have been kept for at least four months prior to semen collection in the *artificial insemination centre* which has the status of AD free *establishment*, and where all boars are subjected to a serological test to the whole AD virus, with negative results, every four months;

   c) were subjected to a serological test to the whole AD virus, with negative results, within 10 days prior to or 21 days after semen collection;

   d) showed no clinical sign of AD on the day of collection;

2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.2.16.

Recommendations for importation from AD free countries or zones

For *in vivo* derived embryos of pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of AD on the day of collection of the embryos;
   b) were kept in an *establishment* located in an AD free country or *zone* prior to collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant.

Article 8.2.17.

Recommendations for importation from AD provisionally free countries or zones

For *in vivo* derived embryos of pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of AD on the day of collection of the embryos;
   b) were kept in an AD free *establishment* for at least three months prior to collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant.

Article 8.2.18.

Recommendations for importation from AD infected countries or zones

For *in vivo* derived embryos of pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of AD on the day of collection of the embryos;
   b) were kept in an AD free *establishment* for at least three months prior to collection;
   c) were subjected to a serological test to the whole AD virus, with negative results, within ten days prior to collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant.

Article 8.2.19.

Recommendations for importation from AD free countries or zones

For offal (head, and thoracic and abdominal viscera) of pigs or products containing pig offal

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of offal or products containing pig offal comes from animals which come from *establishments* located in an AD free country or *zone*.

Article 8.2.20.

Recommendations for importation from AD provisionally free countries or zones or from AD infected countries or zones

For offal (head, and thoracic and abdominal viscera) of pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of offal comes from animals:

1) which have been kept in an AD free *establishment* since birth;

2) which have not been in contact with animals from *establishments* not considered free from AD during their transport to the approved *slaughterhouse/abattoir* and therein.

Article 8.2.21.

Recommendations for importation from AD provisionally free countries or zones or from AD infected countries or zones

For products containing pig offal (head, and thoracic and abdominal viscera)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) either the entire consignment of offal used to prepare the products complied with the conditions referred to in Article 8.2.20.; or
2) the products have been processed to ensure the destruction of the AD virus; and
3) the necessary precautions were taken after processing to avoid contact of the products with any source of AD virus.

NB: FIRST ADOPTED IN 1986; MOST RECENT UPDATE ADOPTED IN 2012.

CHAPTER 8.3.

INFECTION WITH BLUETONGUE VIRUS

Article 8.3.1.

General provisions

For the purposes of the *Terrestrial Code*, bluetongue is defined as an *infection* of ruminants and camelids with bluetongue virus (BTV), that is transmitted by *Culicoides vectors*.

The following defines the occurrence of *infection* with BTV:

1) BTV has been isolated from a sample from a ruminant or camelid or a product derived from that ruminant or camelid; or
2) antigen or ribonucleic acid specific to BTV has been identified in a sample from a ruminant or camelid showing clinical signs consistent with bluetongue, or epidemiologically linked to a suspected or confirmed *case*; or
3) antigen or ribonucleic acid specific to a BTV live vaccine strain has been identified in a sample from a ruminant or camelid that is unvaccinated, or has been vaccinated with an inactivated vaccine, or with a different live vaccine strain, showing clinical signs consistent with bluetongue, or epidemiologically linked to a suspected or confirmed *case*; or
4) antibodies to structural or nonstructural proteins of BTV that are not a consequence of *vaccination* have been detected in a sample from a ruminant or camelid that either shows clinical signs consistent with bluetongue, or is epidemiologically linked to a suspected or confirmed *case*.

For the purposes of the *Terrestrial Code*, the *infective period* for bluetongue shall be 60 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.3.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the BTV status of the ruminant and camelid populations of the *exporting country* or *zone*.

Article 8.3.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any bluetongue-related conditions regardless of the bluetongue status of the *exporting country*:

1) *milk* and *milk products*;
2) *meat* and *meat products*;
3) hides and skins;
4) wool and fibre;
5) *in vivo* derived bovine embryos collected, processed and stored in accordance with Chapter 4.8.

Article 8.3.3.

Country or zone free from bluetongue

1) Historical freedom as described in Chapter 1.4. does not apply to bluetongue.
2) A country or a *zone* may be considered free from bluetongue when *infection* with BTV is notifiable in the entire country and either:
   a) a *surveillance* programme in accordance with Articles 8.3.14. to 8.3.17. has demonstrated no evidence of *infection* with BTV in the country or *zone* during the past two years; or
   b) an ongoing *surveillance* programme has found no *Culicoides* for at least two years in the country or *zone*.

3) A country or *zone* free from bluetongue in which ongoing *vector surveillance*, performed in accordance with point 5 of Article 8.3.16., has found no *Culicoides* will not lose its free status through the introduction of vaccinated, seropositive or infective ruminants or camelids, or their semen or embryos from infected countries or *zones*.

4) A country or *zone* free from bluetongue in which *surveillance* has found evidence that *Culicoides* are present will not lose its free status through the introduction of seropositive or vaccinated ruminants or camelids, or semen or embryos from infected countries or *zones*, provided:

   a) an ongoing *surveillance* programme focused on transmission of BTV and a consideration of the epidemiology of *infection* with BTV, in accordance with Articles 8.3.14. to 8.3.17. and Chapter 4.4., has demonstrated no evidence of transmission of BTV in the country or *zone*; or

   b) the ruminants or camelids, their semen and embryos were introduced in accordance with this chapter.

5) A country or *zone* free from bluetongue adjacent to an infected country or *zone* should include a *zone* in which *surveillance* is conducted in accordance with Articles 8.3.14. to 8.3.17.

Article 8.3.4.

Country or zone seasonally free from bluetongue

1) A country or *zone* seasonally free from bluetongue is, respectively, an infected country or a part of an infected country or *zone*, for which *surveillance* conducted in accordance with Articles 8.3.14. to 8.3.17. demonstrates no evidence either of transmission of BTV or of adult *Culicoides* for part of a year.

2) For the application of Articles 8.3.7., 8.3.9. and 8.3.11., the free season is taken to commence the day following the last evidence of transmission of BTV (as demonstrated by the *surveillance* programme), and of the cessation of activity of adult *Culicoides*.

3) For the application of Articles 8.3.7., 8.3.9. and 8.3.11., the free season is taken to conclude either:

   a) at least 28 days before the earliest date that historical data show transmission of BTV may recommence; or

   b) immediately if current climatic data or data from a *surveillance* programme indicate transmission of BTV or an earlier resurgence of activity of adult *Culicoides*.

4) A seasonally free *zone* in which ongoing *surveillance* has found no evidence that *Culicoides* are present will not lose its free status through the introduction of vaccinated, seropositive or infective ruminants or camelids, or semen or embryos from infected countries or *zones*.

Article 8.3.5.

Country or zone infected with BTV

For the purposes of this chapter, a country or *zone* infected with BTV is one that does not fulfil the requirements to qualify as either free or seasonally free from bluetongue.

Article 8.3.6.

Recommendations for importation from countries or zones free from bluetongue

For ruminants and camelids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of bluetongue on the day of shipment;

AND

2) the animals were kept in a country or *zone* free from bluetongue since birth or for at least 60 days prior to shipment; or

3) the animals were kept in a country or *zone* free from bluetongue for at least 28 days, then were subjected, with negative results, to a serological test to detect antibodies to the BTV group and remained in the free country or *zone* until shipment; or

4) the animals were kept in a country or *zone* free from bluetongue for at least 14 days, then were subjected, with negative results, to an agent identification test, and remained in the free country or *zone* until shipment; or

5) the animals:

   a) were vaccinated, at least 60 days before the introduction into the free country or *zone*, from which they are to be exported, against all serotypes demonstrated to be present in the source population through a *surveillance* programme as described in Articles 8.3.14. to 8.3.17.;

   b) were identified as having been vaccinated;

   c) remained in the free country or *zone* for at least seven days until shipment;

AND

6) if the animals were exported from a free *zone* within an infected country, either:

   a) did not transit through an infected *zone* during transportation to the *place of shipment*; or

   b) were protected from attacks from *Culicoides* in accordance with point 2 of Article 8.3.13. at all times when transiting through an infected *zone*; or

   c) had been vaccinated in accordance with point 5 above.

Article 8.3.7.

Recommendations for importation from countries or zones seasonally free from bluetongue

For ruminants and camelids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of bluetongue on the day of shipment;

AND

2) were kept during the free season in a seasonally free country or *zone* since birth or for at least 60 days prior to shipment; or

3) were kept during the free season in a seasonally free country or *zone* for at least 28 days prior to shipment, and were subjected during that residence period to a serological test to detect antibodies to the BTV group, with negative results, carried out at least 28 days after the commencement of the residence period; or

4) were kept during the free season in a seasonally free country or *zone* for at least 14 days prior to shipment, and were subjected during that residence period to an agent identification test, with negative results, carried out at least 14 days after the commencement of the residence period; or

5) were:

   a) vaccinated, at least 60 days before shipment, against all serotypes demonstrated to be present in the source population through a *surveillance* programme in accordance with Articles 8.3.14. to 8.3.17.;

   b) identified as having been vaccinated;

   c) kept during the free season in the seasonally free country or *zone* for at least seven days, and until shipment;

AND

6) either:

   a) did not transit through an infected *zone* during transportation to the *place of shipment*; or

   b) were protected from attacks from *Culicoides* in accordance with point 2 of Article 8.3.13. at all times when transiting through an infected *zone*; or

   c) were vaccinated in accordance with point 5 above.

Article 8.3.8.

Recommendations for importation from countries or zones infected with BTV

For ruminants and camelids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of bluetongue on the day of shipment;

AND

2) were protected from attacks from *Culicoides* in accordance with Article 8.3.13. in a *vector*-protected *establishment* for at least 60 days prior to shipment and during transportation to the *place of shipment*; or

3) were protected from attacks from *Culicoides* in accordance with Article 8.3.13. in a *vector*-protected *establishment* for at least 28 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to a serological test to detect antibodies to the BTV group, with negative results, carried out at least 28 days after introduction into the *vector*-protected *establishment*; or

4) were protected from attacks from *Culicoides* in accordance with Article 8.3.13. in a *vector*-protected *establishment* for at least 14 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to an agent identification test, with negative results, carried out at least 14 days after introduction into the *vector*-protected *establishment*; or

5) were:

   a) vaccinated, at least 60 days before shipment, against all serotypes demonstrated to be present in the source population through a *surveillance* programme in accordance with Articles 8.3.14. to 8.3.17.;

   b) identified as having been vaccinated; or

6) were demonstrated to have antibodies for at least 60 days prior to shipment against all serotypes demonstrated to be present in the source population through a *surveillance* programme in accordance with Articles 8.3.14. to 8.3.17.

Article 8.3.9.

Recommendations for importation from countries or zones free or seasonally free from bluetongue

For semen of ruminants and camelids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:

   a) showed no clinical sign of bluetongue on the day of collection and were kept in a country or *zone* free from bluetongue or in a seasonally free country or *zone* during the free season for at least 60 days before commencement of, and during, collection of the semen; or

   b) comply with point 1 of Article 8.3.10.;

2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.3.10.

Recommendations for importation from countries or zones infected with BTV

For semen of ruminants and camelids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:

   a) showed no clinical sign of bluetongue on the day of collection;

   AND

   b) were kept in a *vector*-protected *establishment* in accordance with point 1 of Article 8.3.13. for at least 60 days before commencement of, and during, collection of the semen; or

   c) were subjected to a serological test to detect antibodies to the BTV group, with negative results, between 28 and 60 days after each collection for this consignment; or

   d) were subjected to an agent identification test on blood samples collected at commencement and conclusion of, and at least every 7 days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;

2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.3.11.

Recommendations for importation from countries or zones free or seasonally free from bluetongue

For *in vivo* derived embryos of ruminants (other than bovine embryos) and other BTV susceptible herbivores and for *in vitro* produced bovine embryos

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of bluetongue on the day of collection and were kept in a country or *zone* free from bluetongue or in a seasonally free country or *zone* during the free season for at least the 60 days prior to, and at the time of, collection of the embryos; or
   b) comply with point 1 of Article 8.3.12.;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant;
3) the semen used to fertilise the oocytes complied with Article 8.3.9. or Article 8.3.10.

Article 8.3.12.

Recommendations for importation from countries or zones infected with BTV

For *in vivo* derived embryos of ruminants (other than bovine embryos) and other BTV susceptible animals and for *in vitro* produced bovine embryos

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of bluetongue on the day of collection;

   AND

   b) were kept in a *vector*-protected *establishment* in accordance with point 1 of Article 8.3.13. for at least 60 days before commencement of, and during, collection of the embryos; or
   c) were subjected to a serological test to detect antibodies to the BTV group, between 28 and 60 days after collection, with negative results; or
   d) were subjected to an agent identification test on a blood sample taken on the day of collection, with negative results;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant;
3) the semen used to fertilise the oocytes complied with Article 8.3.9. or Article 8.3.10.

Article 8.3.13.

Protecting animals from *Culicoides* attacks

1) Vector-protected establishment or facility

   The *establishment* or facility should be approved by the *Veterinary Authority* and the means of protection should at least comprise the following:
   a) appropriate physical barriers at entry and exit points, such as double-door entry-exit system;
   b) openings of the building are *vector* screened with mesh of appropriate gauge impregnated regularly with an approved insecticide in accordance with manufacturers' instructions;
   c) *vector surveillance* and control within and around the building;
   d) measures to limit or eliminate breeding sites for *vectors* in the vicinity of the *establishment* or facility;
   e) standard operating procedures, including description of back-up and alarm systems, for operation of the *establishment* or facility and transport of animals to the place of *loading*.

2) During transportation

When transporting animals through infected countries or *zones*, *Veterinary Authorities* should require strategies to protect animals from attacks from *Culicoides* during transport, taking into account the local ecology of the *vector*.

a) Transport by road

Risk management strategies may include:

i) treating animals with insect repellents prior to and during transportation;

ii) *loading*, transporting and *unloading* animals at times of low *vector* activity (i.e. bright sunshine, low temperature);

iii) ensuring *vehicles* do not stop en route during dawn or dusk, or overnight, unless the animals are held behind insect-proof netting;

iv) darkening the interior of the *vehicle*, for example by covering the roof or sides of *vehicles* with shade cloth;

v) *surveillance* for *vectors* at common stopping and *unloading* points to gain information on seasonal variations;

vi) using historical information or information from appropriately verified and validated bluetongue epidemiological models to identify low risk ports and transport routes.

b) Transport by air

Prior to *loading* the animals, the crates, *containers* or jet stalls should be sprayed with an insecticide approved in the country of dispatch.

Crates, *containers* or jet stalls in which animals are being transported and the cargo hold of the aircraft should be sprayed with an approved insecticide when the doors have been closed and prior to take-off. All possible insect harbourage should be treated. The spray *containers* should be retained for inspection on arrival.

In addition, during any stopover in countries or *zones* not free from bluetongue prior to the opening of any aircraft door and until all doors are closed, netting of appropriate gauge impregnated with an approved insecticide should be placed over crates, *containers* or jet stalls.

Article 8.3.14.

Introduction to surveillance

Articles 8.3.14. to 8.3.17. define the principles and provide guidance on *surveillance* for *infection* with BTV, complementary to Chapter 1.4. and for *vectors* complementary to Chapter 1.5.

Bluetongue is a *vector*-borne *infection* transmitted by various species of *Culicoides* in a range of ecosystems.

The purpose of *surveillance* is the detection of transmission of BTV in a country or *zone* and not determination of the status of an individual animal or *herds* or *flocks*. *Surveillance* deals with the evidence of *infection* with BTV in the presence or absence of clinical signs.

An important component of the epidemiology of bluetongue is the capacity of its *vector*, which provides a measure of disease *risk* that incorporates *vector* competence, abundance, biting rates, survival rates and extrinsic *incubation period*. However, methods and tools for measuring some of these *vector* factors remain to be developed, particularly in a field context. Therefore, *surveillance* for bluetongue should focus on transmission of BTV in domestic ruminants and camelids.

The impact and epidemiology of bluetongue widely differ in different regions of the world and therefore it is not appropriate to provide specific recommendations for all situations. Member Countries should provide scientific data that explain the epidemiology of bluetongue in the country or *zone* concerned and adapt the *surveillance* strategies for defining their status to the local conditions. There is considerable latitude available to Member Countries to justify their status at an acceptable level of confidence.

Surveillance for bluetongue should be in the form of a continuing programme.

Article 8.3.15.

General conditions and methods for surveillance

1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. In particular:
   a) a formal and ongoing system for detecting and investigating *outbreaks* of disease should be in place;
   b) a procedure should be in place for the rapid collection and transport of samples from suspected *cases* of *infection* with BTV to a *laboratory* for diagnosis;
   c) a system for recording, managing and analysing diagnostic and *surveillance* data should be in place.
2) The bluetongue *surveillance* programme should:
   a) in a free country or *zone* or seasonally free *zone*, have an *early warning system* which obliges farmers and workers, who have regular contact with domestic ruminants, as well as diagnosticians, to report promptly any suspicion of bluetongue to the *Veterinary Authority*.

      An effective *surveillance* system will periodically identify suspected *cases* that require follow-up and investigation to confirm or exclude whether the cause of the condition is bluetongue. The rate at which such suspected *cases* are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. All suspected *cases* of bluetongue should be investigated immediately and samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment be available for those responsible for *surveillance*;

   AND

   b) conduct random or targeted serological and virological *surveillance* appropriate to the status of the country or *zone*.

Article 8.3.16.

Surveillance strategies

The target population for *surveillance* aimed at identification of disease or *infection* should cover susceptible domestic ruminants and camelids, and other susceptible herbivores of epidemiological significance within the country or *zone*. Active and passive *surveillance* for bluetongue should be ongoing as epidemiologically appropriate. *Surveillance* should be composed of random or targeted approaches using virological, serological and clinical methods appropriate for the status of the country or *zone*.

It may be appropriate to focus *surveillance* in an area adjacent to a border of an infected country or *zone* for up to 100 kilometres, taking into account relevant ecological or geographical features likely to interrupt the transmission of BTV or the presence in the bordering infected country or *zone* of a bluetongue *surveillance* programme (in accordance with Articles 8.3.14. to 8.3.17.) that supports a lesser distance.

A Member Country should justify the *surveillance* strategy chosen as being adequate to detect the presence of *infection* with BTV in accordance with Chapter 1.4. and the prevailing epidemiological situation. It may, for example, be appropriate to target clinical *surveillance* at particular species likely to exhibit clinical signs (e.g. sheep).

Similarly, virological and serological testing may be targeted to species that rarely show clinical signs (e.g. bovines).

In vaccinated populations, serological and virological *surveillance* is necessary to detect the BTV serotypes circulating to ensure that all circulating serotypes are included in the *vaccination* programme.

If a Member Country wishes to declare freedom from bluetongue in a specific *zone*, the design of the *surveillance* strategy should be aimed at the population within the *zone*.

For random surveys, the design of the sampling strategy should incorporate epidemiologically appropriate design prevalence. The sample size selected for testing should be large enough to detect evidence of *infection* if it were to occur at a predetermined minimum rate. The sample size and expected prevalence determine the level of confidence in the results of the survey. The Member Country should justify the choice of design prevalence and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the design prevalence in particular should be based on the prevailing or historical epidemiological situation.

Irrespective of the survey approach selected, the sensitivity and specificity of the diagnostic tests employed are key factors in the design, sample size determination and interpretation of the results obtained. Ideally, the sensitivity and specificity of the tests used should be validated for the *vaccination* and *infection* history and the different species in the target population.

Irrespective of the testing system employed, *surveillance* system design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following up positive reactions to ultimately determine with a high level of confidence, whether they are indicative of *infection* or not. This should involve both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as those which may be epidemiologically linked to it.

The principles involved in *surveillance* for disease or *infection* are technically well defined. The design of *surveillance* programmes to prove the absence of *infection* with, and transmission of, BTV should be carefully followed to avoid producing results that are either insufficiently reliable to be accepted by international trading partners, or excessively costly and logistically complicated.

1. Clinical surveillance

   Clinical *surveillance* aims to detect clinical signs of bluetongue at the *herd* or *flock* level, particularly during a newly introduced *infection*. In sheep and occasionally goats, clinical signs may include oedema, hyperaemia of mucosal membranes, coronitis and cyanotic tongue.

   Suspected *cases* of bluetongue detected by clinical *surveillance* should always be confirmed by *laboratory* testing.

2. Serological surveillance

   An active programme of *surveillance* of host populations to detect evidence of transmission of BTV is essential to establish the bluetongue status of a country or *zone*. Serological testing of ruminants is one of the most effective methods of detecting the presence of BTV. The species tested should reflect the epidemiology of bluetongue. Bovines are usually the most sensitive indicator species. Management variables that may influence likelihood of *infection*, such as the use of insecticides and animal housing, should be considered.

   Samples should be examined for antibodies against BTV. Positive test results can have four possible causes:

   a) natural *infection*,
   b) *vaccination*,
   c) maternal antibodies,
   d) the lack of specificity of the test.

   It may be possible to use sera collected for other survey purposes for bluetongue *surveillance*. However, the principles of survey design described in these recommendations and the requirements for a statistically valid survey for the presence of *infection* with BTV should not be compromised.

   The results of random or targeted serological surveys are important in providing reliable evidence that no *infection* with BTV is present in a country or *zone*. It is, therefore, essential that the survey is thoroughly documented. It is critical to interpret the results in light of the movement history of the animals being sampled.

   Serological *surveillance* in a free *zone* should target those areas that are at highest risk of transmission of BTV, based on the results of previous *surveillance* and other information. This will usually be towards the boundaries of the free *zone*. In view of the epidemiology of bluetongue, either random or targeted sampling is suitable to select *herds*, *flocks* or animals for testing.

   Serological *surveillance* in infected *zones* will identify changes in the boundary of the *zone*, and can also be used to identify the BTV types circulating. In view of the epidemiology of bluetongue, either random or targeted sampling is suitable.

3. Virological surveillance

   Isolation and genetic analysis of BTV from a proportion of infected animals provides information on serotype and genetic characteristics of the viruses concerned.

   Virological *surveillance* can be conducted:

   a) to identify virus transmission in at risk populations,
   b) to confirm clinically suspected *cases*,
   c) to follow up positive serological results,
   d) to better characterise the genotype of circulating virus in a country or *zone*.

4. Sentinel animals

   Sentinel animals are a form of targeted *surveillance* with a prospective study design. They are the preferred strategy for bluetongue *surveillance*. They comprise groups of unexposed animals that have not been vaccinated and are managed at fixed locations and sampled regularly to detect new *infections* with BTV.

   The primary purpose of a sentinel animal programme is to detect *infections* with BTV occurring at a particular place, for instance sentinel groups may be located on the usual boundaries of infected *zones* to detect changes in

distribution of BTV. In addition, sentinel animal programmes allow the timing and dynamics of *infections* to be observed.

A sentinel animal programme should use animals of known source and history of exposure, control management variables such as use of insecticides and animal housing (depending on the epidemiology of bluetongue in the area under consideration), and be flexible in its design in terms of sampling frequency and choice of tests.

Care is necessary in choosing the sites for the sentinel groups. The aim is to maximise the chance of detecting transmission of BTV at the geographical location for which the sentinel site acts as a sampling point. The effect of secondary factors that may influence events at each location, such as climate, may also be analysed. To avoid bias, sentinel groups should comprise animals selected to be of similar age and susceptibility to *infection* with BTV. Bovines are the most appropriate sentinels but other domestic ruminant species may be used. The only feature distinguishing groups of sentinels should be their geographical location.

Sera from sentinel animal programmes should be stored methodically in a serum bank to allow retrospective studies to be conducted in the event of new serotypes being isolated.

The frequency of sampling will depend on the reason for choosing the sampling site. In endemic areas, virus isolation will allow monitoring of the serotypes and genotypes of BTV circulating during each time period. The borders between infected and uninfected areas can be defined by serological detection of *infective period*. Monthly sampling intervals are frequently used. Sentinels in declared free *zones* add to confidence that *infection* with BTV is not occurring unobserved. In such cases, sampling prior to and after the possible period of transmission is sufficient.

Definitive information on the presence of BTV in a country or *zone* is provided by isolation and identification of the viruses. If virus isolation is required, sentinels should be sampled at sufficiently frequent intervals to ensure that samples are collected during the period of viraemia.

5. Vector surveillance

BTV is transmitted between ruminant hosts by species of *Culicoides* which vary around the world. It is therefore important to be able to identify potential *vector* species accurately although many such species are closely related and difficult to differentiate with certainty.

Vector surveillance aims to demonstrate the absence of *vectors* or to determine areas of different levels of risk and local details of seasonality by determining the various *vector* species present in an area, their respective seasonal occurrence, and abundance. *Vector surveillance* has particular relevance to potential areas of spread.

Long term *surveillance* can also be used to assess *vector* abatement measures or to confirm continued absence of *vectors*.

The most effective way of gathering this information should take account of the biology and behavioural characteristics of the local *vector* species of *Culicoides* and may include the use of Onderstepoort-type light traps or similar, operated from dusk to dawn in locations adjacent to domestic ruminants, or the use of drop traps over ruminants.

Vector surveillance should be based on scientific sampling techniques. The choice of the number and type of traps to be used and the frequency of their use should take into account the size and ecological characteristics of the area to be surveyed.

The operation of *vector surveillance* sites at the same locations as sentinel animals is advisable.

The use of a *vector surveillance* system to detect the presence of circulating virus is not recommended as a routine procedure as the typically low *vector infection* rates mean that such detections can be rare.

Animal-based *surveillance* strategies are preferred to detect virus transmission.

Article 8.3.17.

Documentation of bluetongue free status

1. Additional surveillance requirements for Member Countries declaring freedom from bluetongue

In addition to the general requirements described above, a Member Country declaring freedom from bluetongue for the entire country or a *zone* should provide evidence for the existence of an effective *surveillance* programme. The strategy and design of the *surveillance* programme will depend on the prevailing epidemiological circumstances and should be planned and implemented in accordance with general conditions and methods described in this chapter, to demonstrate absence of *infection* with BTV during the preceding 24 months in susceptible domestic ruminant populations. This requires the support of a *laboratory* able to undertake identification of *infection* with BTV through virus detection and antibody tests. This *surveillance* should be targeted to unvaccinated animals. Clinical *surveillance* may be effective in sheep while serological *surveillance* is more appropriate in bovines.

2. Additional requirements for countries or zones that practise vaccination

Vaccination to prevent the transmission of BTV may be part of a disease control programme. The level of *flock* or *herd* immunity required to prevent transmission will depend on the *flock* or *herd* size, composition (e.g. species) and density of the susceptible population. It is therefore impossible to be prescriptive. The vaccine should also comply with the provisions stipulated for BTV vaccines in the *Terrestrial Manual*. Based on the epidemiology of bluetongue in the country or *zone*, it may be decided to vaccinate only certain species or other subpopulations.

In countries or *zones* that practise *vaccination*, virological and serological tests should be carried out to ensure the absence of virus transmission. These tests should be performed on unvaccinated subpopulations or on sentinels. The tests should be repeated at appropriate intervals in accordance with the purpose of the *surveillance* programme. For example, longer intervals may be adequate to confirm endemicity, while shorter intervals may allow on-going demonstration of absence of transmission.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2018.

CHAPTER 8.4.

INFECTION WITH *BRUCELLA ABORTUS*, *B. MELITENSIS* AND *B. SUIS*

Article 8.4.1.

General provisions

1) The aim of this chapter is to mitigate the risk of spread of, and the risk to human health from, *Brucella abortus*, *B. melitensis* and *B. suis* in animals.

2) For the purposes of this chapter:

   a) '*Brucella*' means *B. abortus*, *B. melitensis* or *B. suis*, excluding vaccine strains.

   b) 'Animals' means domestic and *captive wild* animal populations of the following categories:

      i) bovids: this term means cattle (*Bos taurus*, *B. indicus*, *B. frontalis*, *B. javanicus* and *B. grunniens*), bison (*Bison bison* and *B. bonasus*) and water buffalo *(Bubalus bubalis)*;

      ii) sheep *(Ovis aries)* and goats *(Capra aegagrus)*;

      iii) pigs *(Sus scrofa)*;

      iv) camelids: this term means dromedary camel *(Camelus dromedarius)*, Bactrian camel *(Camelus bactrianus)*, llama *(Lama glama)*, alpaca *(Lama pacos)*, guanaco *(Lama guanicoe)* and vicuna *(Vicugna vicugna)*;

      v) cervids: this term means roe deer *(Capreolus capreolus)*, red deer *(Cervus elaphus elaphus)*, wapiti/elk *(C. elaphus canadensis)*, sika *(C. nippon)*, samba *(C. unicolor unicolor)*, rusa *(C. timorensis)*, fallow deer *(Dama dama)*, white-tailed, black-tailed, mule deer (*Odocoileus* spp.) and reindeer/caribou *(Rangifer tarandus)*;

      vi) European hare *(Lepus europaeus)*.

3) For the purposes of the *Terrestrial Code*, a case is an animal infected with *Brucella*.

4) The chapter deals not only with the occurrence of clinical signs caused by *infection* with *Brucella*, but also with the presence of *infection* with *Brucella* in the absence of clinical signs.

5) The following defines *infection* with *Brucella*:

   a) *Brucella* has been isolated from a sample from an animal;

   OR

   b) positive results to a diagnostic test have been obtained, and there is an epidemiological link to a case.

6) When authorising import or transit of *commodities* listed in this chapter, with the exception of those listed in Article 8.4.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the *Brucella infection* status of the animal population of the *exporting country*, *zone*, *herd* or *flock*.

7) Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.4.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any *Brucella*-related conditions, regardless of the *Brucella infection* status of the animal population of the *exporting country*:

1) skeletal muscle *meat*, brain and spinal cord, digestive tract, thymus, thyroid and parathyroid glands and derived products;

2) cured hides and skins;

3) gelatine, collagen, tallow and .

Article 8.4.3.

Country or zone historically free from infection with *Brucella* in specified animal categories

A country or *zone* may be considered free from *infection* with *Brucella* in specified animal categories when:

1) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;
2) historical freedom in the relevant animal categories has been demonstrated as described in Article 1.4.6.

Article 8.4.4.

Country or zone free from infection with *Brucella* in bovids without vaccination

1) To qualify as free from *infection* with *Brucella* in bovids without *vaccination*, a country or *zone* should satisfy the following requirements:
   a) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;
   b) no case has been recorded in bovids for at least the past three years;
   c) regular testing of all *herds* has been in place for the past three years; and this testing has demonstrated that during this period, *infection* with *Brucella* was not present in at least 99.8% of the *herds* representing at least 99.9% of bovids in the country or *zone*;
   d) regulatory measures have been implemented for the early detection of *infection* with *Brucella* in bovids, including at least the regular submission of samples from abortion cases to diagnostic laboratories;
   e) no bovids have been vaccinated against *infection* with *Brucella* for at least the past three years, and no bovids introduced into the country or *zone* have been vaccinated in the past three years;
   f) bovids and their genetic materials introduced into the country or *zone* comply with the recommendations in Articles 8.4.14. and 8.4.16. to 8.4.18.
2) To maintain the status as free from *infection* with *Brucella* in bovids without *vaccination*, a country or *zone* should satisfy the following requirements:
   a) the requirements in points 1 a), 1 b) and 1 d) to 1 f) above are met;
   b) a *surveillance* programme based on regular testing of bovids is in place in the country or *zone* to detect *infection* with *Brucella* in accordance with Article 1.4.4.;
   c) if the *surveillance* programme described in b) above has not detected *infection* with *Brucella* for two consecutive years, *surveillance* may be maintained in accordance with Article 1.4.5.
3) The country or *zone* status of free from *infection* with *Brucella* in bovids without *vaccination* is not affected by the occurrence of *infection* with *Brucella* in other animal categories or *feral* or *wild animals* provided that effective measures have been implemented to prevent transmission of *infection* with *Brucella* to bovids.

Article 8.4.5.

Country or zone free from infection with *Brucella* in bovids with vaccination

1) To qualify as free from *infection* with *Brucella* in bovids with *vaccination*, a country or *zone* should satisfy the following requirements:
   a) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;
   b) no case has been recorded in bovids for at least the past three years;
   c) regular testing of all *herds* has been in place for the past three years; and this testing has demonstrated that during this period, *infection* with *Brucella* was not present in at least 99.8% of the *herds* representing at least 99.9% of bovids in the country or *zone*;
   d) regulatory measures have been implemented for the early detection of *infection* with *Brucella* in bovids, including at least the regular submission of samples from abortion cases to diagnostic laboratories;
   e) vaccinated bovids should be permanently identified as such;
   f) bovids and their genetic materials introduced into the country or *zone* comply with the recommendations in Articles 8.4.14. and 8.4.16. to 8.4.18.
2) To maintain the status as free from *infection* with *Brucella* in bovids with *vaccination*, a country or *zone* should satisfy the following requirements:
   a) the requirements in points 1 a), 1 b) and 1 d) to 1 f) above are met;
   b) a *surveillance* programme based on regular testing of bovids is in place in the country or *zone* to detect *infection* with *Brucella* in accordance with Article 1.4.4.;

c) if the *surveillance* programme described in b) above has not detected *infection* with *Brucella* for two consecutive years, *surveillance* may be maintained in accordance with Article 1.4.5.

3) The country or *zone* status of free from *infection* with *Brucella* in bovids with *vaccination* is not affected by the occurrence of *infection* with *Brucella* in other animal categories or *feral* or *wild animals* provided that effective measures have been implemented to prevent transmission of *infection* with *Brucella* to bovids.

4) The status of a country or *zone* free from *infection* with *Brucella* in bovids with *vaccination* remains unchanged for a period of three years after *vaccination* has ceased, provided that the requirements in points 1 a), 1 b) and 1 d) to 1 f) of Article 8.4.4. are met, at which time this status may be changed to free from *infection* with *Brucella* in bovids without *vaccination*.

Article 8.4.6.

Country or zone free from infection with *Brucella* in sheep and goats without vaccination

1) To qualify as free from *infection* with *Brucella* in sheep and goats without *vaccination*, a country or *zone* should satisfy the following requirements:

a) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;

b) no case has been recorded in sheep and goats for at least the past three years;

c) regular testing of all *flocks* has been in place for the past three years; and this testing has demonstrated that during this period, *infection* with *Brucella* was not present in at least 99.8% of the *flocks* representing at least 99.9% of sheep and goats in the country or *zone*;

d) regulatory measures have been implemented for the early detection of *infection* with *Brucella* in sheep and goats, including at least the regular submission of samples from abortion cases to diagnostic laboratories;

e) no sheep and goats have been vaccinated against *infection* with *Brucella* for at least the past three years and no sheep and goats introduced into the country or *zone* have been vaccinated in the past three years;

f) sheep and goats and their genetic materials introduced into the country or *zone* comply with the recommendations in Articles 8.4.14. and 8.4.16. to 8.4.18.

2) To maintain the status as free from *infection* with *Brucella* in sheep and goats without *vaccination*, a country or *zone* should satisfy the following requirements:

a) the requirements in points 1 a), 1 b) and 1 d) to 1 f) of above are met;

b) a *surveillance* programme based on regular testing of sheep and goats is in place in the country or *zone* to detect *infection* with *Brucella* in accordance with Article 1.4.4.;

c) if the *surveillance* programme described in b) above has not detected *infection* with *Brucella* for two consecutive years, *surveillance* may be maintained in accordance with Article 1.4.5.

3) The country or *zone* status of free from *infection* with *Brucella* in sheep and goats without *vaccination* is not affected by the occurrence of *infection* with *Brucella* in other animal categories or *feral* or *wild animals* provided that effective measures have been implemented to prevent transmission of *infection* with *Brucella* to sheep and goats.

Article 8.4.7.

Country or zone free from infection with *Brucella* in sheep and goats with vaccination

1) To qualify as free from *infection* with *Brucella* in sheep and goats with *vaccination*, a country or *zone* should satisfy the following requirements:

a) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;

b) no case has been recorded in sheep and goats for at least the past three years;

c) regular testing of all *flocks* has been in place for the past three years; and this testing has demonstrated that during this period, *infection* with *Brucella* was not present in at least 99.8% of the *flocks* representing at least 99.9% of sheep and goats in the country or *zone*;

d) regulatory measures have been implemented for the early detection of *infection* with *Brucella* in sheep and goats, including at least the regular submission of samples from abortion cases to diagnostic laboratories;

e) vaccinated sheep and goats should be permanently identified as such;

f) sheep and goats and their genetic materials introduced into the country or *zone* comply with the recommendations in Articles 8.4.14. and 8.4.16. to 8.4.18.

2) To maintain the status as free from *infection* with *Brucella* in sheep and goats with *vaccination*, a country or *zone* should satisfy the following requirements:

   a) the requirements in points 1 a), 1 b) and 1 d) to 1 f) of above are met;

   b) a *surveillance* programme based on regular testing of sheep and goats is in place in the country or *zone* to detect *infection* with *Brucella* in accordance with Article 1.4.4.;

   c) if the *surveillance* programme described in b) above has not detected *infection* with *Brucella* for two consecutive years, *surveillance* may be maintained in accordance with Article 1.4.5.

3) The country or *zone* status of free from *infection* with *Brucella* in sheep and goats with *vaccination* is not affected by the occurrence of *infection* with *Brucella* in other animal categories or *feral* or *wild animals* provided that effective measures have been implemented to prevent transmission of *infection* with *Brucella* to sheep and goats.

4) The status of a country or *zone* free from *infection* with *Brucella* in sheep and goats with *vaccination* remains unchanged for a period of three years after *vaccination* has ceased, provided that the requirements in points 1 a), 1 b) and 1 d) to 1 f) of Article 8.4.6. are met, at which time this status may be changed to free from *infection* with *Brucella* in sheep and goats without *vaccination*.

Article 8.4.8.

Country or zone free from infection with *Brucella* in camelids

1) To qualify as free from *infection* with *Brucella* in camelids, a country or *zone* should satisfy the following requirements:

   a) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;

   b) no case has been recorded in camelids for at least the past three years;

   c) regular testing of all *herds* has been in place for the past three years; and this testing has demonstrated that during this period, *infection* with *Brucella* was not present in at least 99.8% of the *herds* representing at least 99.9% of camelids in the country or *zone*;

   d) regulatory measures have been implemented for the early detection of *infection* with *Brucella* in camelids, including at least the regular submission of samples of abortion cases to diagnostic laboratories;

   e) no camelids have been vaccinated against *infection* with *Brucella* for at least the past three years and no camelids introduced into the country or *zone* have been vaccinated in the past three years;

   f) camelids and their genetic materials introduced into the country or *zone* comply with the recommendations in Articles 8.4.14. and 8.4.16. to 8.4.18.

2) To maintain the status as free from *infection* with *Brucella* in camelids, a country or *zone* should satisfy the following requirements:

   a) the requirements in points 1 a), 1 b) and 1 d) to 1 f) of above are met;

   b) a *surveillance* programme based on regular testing of camelids is in place in the country or *zone* to detect *infection* with *Brucella* in accordance with Article 1.4.4.;

   c) if the *surveillance* programme described in b) above has not detected *infection* with *Brucella* for two consecutive years, *surveillance* may be maintained in accordance with Article 1.4.5.

3) The country or *zone* status of free from *infection* with *Brucella* in camelids is not affected by the occurrence of *infection* with *Brucella* in other animal categories or *feral* or *wild animals* provided that effective measures have been implemented to prevent transmission of *infection* with *Brucella* to camelids.

Article 8.4.9.

Country or zone free from infection with *Brucella* in cervids

1) To qualify as free from *infection* with *Brucella* in cervids, a country or *zone* should satisfy the following requirements:
   a) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;
   b) no case has been recorded in cervids for at least the past three years;
   c) regular testing of all *herds* has been in place for the past three years; and this testing has demonstrated that during this period, *infection* with *Brucella* was not present in at least 99.8% of the *herds* representing at least 99.9% of cervids in the country or *zone*;
   d) regulatory measures have been implemented for the early detection of *infection* with *Brucella* in cervids, including at least the regular submission of samples from abortion cases to diagnostic laboratories;
   e) no cervids have been vaccinated against *infection* with *Brucella* for at least the past three years and no cervids introduced into the country or *zone* have been vaccinated in the past three years;
   f) cervids and their genetic materials introduced into the country or *zone* comply with the recommendations in Articles 8.4.14. and 8.4.16. to 8.4.18.
2) To maintain the status as free from *infection* with *Brucella* in cervids, a country or *zone* should satisfy the following requirements:
   a) the requirements in points 1 a), 1 b) and 1 d) to 1 f) of above are met;
   b) a *surveillance* programme based on regular testing of cervids is in place in the country or *zone* to detect *infection* with *Brucella* in accordance with Article 1.4.4.;
   c) if the *surveillance* programme described in b) above has not detected *infection* with *Brucella* for two consecutive years, *surveillance* may be maintained in accordance with Article 1.4.5.
3) The country or *zone* status of free from *infection* with *Brucella* in cervids is not affected by the occurrence of *infection* with *Brucella* in other animal categories or *feral* or *wild animals* provided that effective measures have been implemented to prevent transmission of *infection* with *Brucella* to cervids.

Article 8.4.10.

Herd or flock free from infection with *Brucella* in bovids, sheep and goats, camelids or cervids without vaccination

1) To qualify as free from *infection* with *Brucella* without *vaccination*, a *herd* or *flock* of bovids, sheep and goats, camelids or cervids should satisfy the following requirements:

   a) the *herd* or *flock* is in a country or *zone* free from *infection* with *Brucella* without *vaccination* in the relevant animal category and is certified free without *vaccination* by the *Veterinary Authority*;

   OR

   b) the *herd* or *flock* is in a country or *zone* free from *infection* with *Brucella* with *vaccination* in the relevant animal category and is certified free without *vaccination* by the *Veterinary Authority*; and no animal of the *herd* or *flock* has been vaccinated in the past three years;

   OR

   c) the *herd* or *flock* met the following conditions:

      i) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;
      ii) no animal of the relevant category of the *herd* or *flock* has been vaccinated in the past three years;
      iii) no case has been detected in the *herd* or *flock* for at least the past year;
      iv) animals showing clinical signs consistent with *infection* with *Brucella* such as abortions have been subjected to the necessary diagnostic tests with negative results;
      v) for at least the past year, there has been no evidence of *infection* with *Brucella* in other *herds* or *flocks* of the same *establishment*, or measures have been implemented to prevent any transmission of the *infection* with *Brucella* from these other *herds* or *flocks*;
      vi) two tests have been performed with negative results on all sexually mature animals, i.e. except castrated males and spayed females, present in the *herd* at the time of testing, the first test being performed not before 3 months after the *slaughter* of the last case and the second test at an interval of more than 6 and less than 12 months.

2) To maintain the free status, the following conditions should be met:

   a) the requirements in points 1 a) or 1 b) or 1 c) i) to 1 c) v) above are met;

   b) regular tests, at a frequency depending on the prevalence of *herd* or *flock infection* in the country or *zone*, demonstrate the continuing absence of *infection* with *Brucella*;

   c) animals of the relevant category introduced into the *herd* or *flock* are accompanied by a certificate from an *Official Veterinarian* attesting that they come from:

      i) a country or *zone* free from *infection* with *Brucella* in the relevant category without *vaccination*;

      OR

      ii) a country or *zone* free from *infection* with *Brucella* with *vaccination* and the animals of the relevant category have not been vaccinated in the past three years;

      OR

      iii) a *herd* or *flock* free from *infection* with *Brucella* with or without *vaccination* and that the animals have not been vaccinated in the past three years and were tested for *infection* with *Brucella* within 30 days prior to shipment with negative results; in the case of post-parturient females, the test is carried out at least 30 days after giving birth. This test is not required for sexually immature animals including castrated males and spayed females.

Article 8.4.11.

Herd or flock free from infection with *Brucella* in bovids, sheep and goats with vaccination

1) To qualify as free from *infection* with *Brucella* with *vaccination*, a *herd* of bovids or *flock* of sheep and goats should satisfy the following requirements:

   a) the *herd* or *flock* is in a country or *zone* free from *infection* with *Brucella* with *vaccination* for the relevant animal category and is certified free with *vaccination* by the *Veterinary Authority*;

   OR

   b) the *herd* or *flock* met the following conditions:

      i) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;

      ii) vaccinated animals of the relevant categories are permanently identified as such;

      iii) no case has been detected in the *herd* or *flock* for at least the past year;

      iv) animals showing clinical signs consistent with *infection* with *Brucella* such as abortions have been subjected to the necessary diagnostic tests with negative results;

      v) for at least the past year, there has been no evidence of *infection* with *Brucella* in other *herds* or *flocks* of the same *establishment*, or measures have been implemented to prevent any transmission of the *infection* with *Brucella* from these other *herds* or *flocks*;

      vi) two tests have been performed with negative results on all sexually mature animals present in the *herd* at the time of testing, the first test being performed not before 3 months after the *slaughter* of the last case and the second test at an interval of more than 6 and less than 12 months.

2) To maintain the free status, the following conditions should be met:

   a) the requirements in points 1 a) or 1 b) i) to 1 b) v) above are met;

   b) regular tests, at a frequency depending on the prevalence of *herd* or *flock infection* in the country or *zone*, demonstrate the continuing absence of *infection* with *Brucella*;

   c) animals of the relevant category introduced into the *herd* or *flock* should be accompanied by a certificate from an *Official Veterinarian* attesting that they come from either:

      i) a country or *zone* free from *infection* with *Brucella* in the relevant category with or without *vaccination*;

      OR

      ii) a *herd* or *flock* free from *infection* with *Brucella* with or without *vaccination* and that the animals were tested for *infection* with *Brucella* within 30 days prior to shipment with negative results; in the case of post-parturient females, the test is carried out at least 30 days after giving birth. This test is not required for sexually immature animals or vaccinated animals less than 18 months of age.

Article 8.4.12.

Herd free from infection with *Brucella* in pigs

1) To qualify as free from *infection* with *Brucella*, a *herd* of pigs should satisfy the following requirements:
   a) *infection* with *Brucella* in animals is a *notifiable disease* in the entire country;
   b) no case has been detected in the *herd* for at least the past three years;
   c) animals showing clinical signs consistent with *infection* with *Brucella* such as abortions or orchitis have been subjected to the necessary diagnostic tests with negative results;
   d) no pigs of the *herd* have been vaccinated for at least the past three years and no pigs introduced into the *herd* have been vaccinated in the past three years;
   e) for at least the past three years, there has been no evidence of *infection* with *Brucella* in other *herds* of the same *establishment*, or measures have been implemented to prevent any transmission of *infection* with *Brucella* from these other *herds*.
2) To maintain the free status, the following conditions should be met:
   a) the requirements in point 1 above are met;
   b) animals introduced into the *herd* are accompanied by a certificate from an *Official Veterinarian* attesting that:
      i) they come from a *herd* free from *infection* with *Brucella*;
      OR
      ii) they come from a *herd* in which a statistically valid sample of the breeding pigs, selected in accordance with Article 1.4.4., was tested within 30 days prior to shipment, demonstrating the absence of *infection* with *Brucella*;
      OR
      iii) they were tested within 30 days prior to shipment with negative results.

Article 8.4.13.

Recovery of the *Brucella* infection free status in a country or a zone

Should a case of *infection* with *Brucella* in one or more animal categories occur in a free country or *zone* as described in Articles 8.4.4. to 8.4.9., the free status may be recovered once the following requirements are met:

1) all infected animals of the relevant category have been slaughtered or destroyed as soon as *infection* with *Brucella* is confirmed;
2) an epidemiological investigation has been performed within 60 days of confirmation of *infection* with *Brucella* in the *herd* or *flock*, aiming at identifying the likely source and the distribution of the *infection*, and shows that the number of *outbreaks* is limited and all are epidemiologically linked;
3) in the index *herd* or *flock* and *herds* or *flocks* identified by the epidemiological investigation:
   a) whole *herd* or *flock* depopulation has been practised; or
   b) whole *herd* or *flock* depopulation has not been practised, and all remaining sexually mature animals except castrated males have been tested, with negative results, on three occasions, at an interval of not less than two months, then a fourth test six months later and a final fifth test a year later;
   AND
   c) no animals are moved from the *herds* or *flocks* except directly for *slaughter* until the processes in point a) or b) above are completed;
4) cleansing and *disinfection* procedures have been applied at the end of the *slaughter* process and before new animals are introduced.

If these requirements have not been met, the status is not recovered and Articles 8.4.4. to 8.4.9. apply as relevant.

Article 8.4.14.

Recommendations for the importation of bovids, sheep and goats, camelids or cervids for breeding or rearing

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals of the relevant category:

1) showed no clinical sign of *infection* with *Brucella* on the day of shipment;

2) originate from:

   a) a country or *zone* free from *infection* with *Brucella* as relevant;

   OR

   b) a *herd* or *flock* free from *infection* with *Brucella* and all sexually mature animals were tested for *infection* with *Brucella* with negative results within 30 days prior to shipment;

   OR

   c) a *herd* or *flock* not qualified free from *infection* with *Brucella*:

      i) in which no case has been reported during the year prior to shipment;

      ii) the animals were isolated for 30 days prior to shipment and all animals in isolation were tested for *infection* with *Brucella* within that period with negative results; in the case of post-parturient females, the test was carried out at least 30 days after giving birth.

Article 8.4.15.

Recommendations for the importation of pigs for breeding or rearing

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the pigs:

1) showed no clinical sign of *infection* with *Brucella* on the day of shipment;

2) EITHER

   a) originate from a *herd* free from *infection* with *Brucella*;

   OR

   b) originate from a *herd* in which a statistically valid sample of the breeding pigs, selected in accordance with Article 1.4.4., was tested within 30 days prior to shipment, demonstrating the absence of *infection* with *Brucella*;

   OR

   c) were isolated for 30 days prior to shipment and all pigs in isolation were tested for *infection* with *Brucella* within that period with negative results.

Article 8.4.16.

Recommendations for the importation of animals for slaughter

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of *infection* with *Brucella* on the day of shipment;

2) originate from a country, *zone*, *herd* or *flock* free from *infection* with *Brucella*;

OR

3) are not being culled as part of an eradication programme against *Brucella infection* and in the case of sexually mature bovids, sheep and goats, camelids or cervids, were tested for *infection* with *Brucella* with negative results within 30 days prior to shipment.

Article 8.4.17.

Recommendations for the importation of semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals showed no clinical sign of *infection* with *Brucella* on the day of collection of the semen;

2) the donor animals were not vaccinated against *infection* with *Brucella* and either:
   a) were kept in an *artificial insemination centre* complying with Chapter 4.6. and the semen was collected and processed in accordance with Chapter 4.7.;

   OR

   b) were kept in a *herd* or *flock* free from *infection* with *Brucella* and tested every six months for *infection* with *Brucella* with negative results, and the semen was collected, processed and stored in accordance with Articles 4.6.3. to 4.6.5., and Articles 4.7.5. to 4.7.7.

Article 8.4.18.

Recommendations for the importation of embryos

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals showed no clinical sign of *infection* with *Brucella* on the day of collection;
2) the donor animals were not vaccinated against *infection* with *Brucella* in the past three years and either:
   a) were kept in a country or *zone* free from *infection* with *Brucella*, as relevant;

   OR

   b) were kept in a *herd* or *flock* free from *infection* with *Brucella* and tested every six months for *infection* with *Brucella* with negative results;
3) the embryos were collected, processed and stored in accordance with Chapters 4.8. to 4.10.

Article 8.4.19.

Recommendations for the importation of fresh meat and meat products other than mentioned in Article 8.4.2.

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *meat* and *meat products* come from animals:

1) which have been subjected to ante-and post-mortem inspections as described in Chapter 6.3.;
2) which:
   a) originate from a country or *zone* free from *infection* with *Brucella*, as relevant;

   OR

   b) originate from a *herd* or *flock* free from *infection* with *Brucella*;

   OR

   c) have not been culled as part of an eradication programme against *infection* with *Brucella*.

Article 8.4.20.

Recommendations for the importation of milk and milk products

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *milk* or the *milk products*:

1) have been derived from animals in a country, *zone*, *herd* or *flock* free from *infection* with *Brucella* as relevant;

OR

2) were subjected to pasteurisation or any combination of control measures with equivalent performance as described in the Codex Alimentarius Code of Hygienic Practice for Milk and Milk Products.

Article 8.4.21.

Recommendations for importation of wool and hair

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that these products:

1) have not been derived from animals culled as part of an eradication programme against *infection* with *Brucella*;

OR

2) have been processed to ensure the destruction of *Brucella*.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2018.

CHAPTER 8.5.

INFECTION WITH *ECHINOCOCCUS GRANULOSUS*

Article 8.5.1.

General provisions

Echinococcus granulosus (E. granulosus) is a widely distributed cestode (tapeworm). The adult worms occur in the small intestine of canids (definitive host). Larval stages (hydatid) occur in tissues of liver, lung and other organs of other mammals (intermediate host), including humans. *Infection* with the larval stage of the parasite in the intermediate host, referred to as 'cystic echinococcosis' or 'hydatidosis', is associated with significant economic losses in livestock production and causes a major disease burden in humans.

For the purposes of the *Terrestrial Code*, *infection* with *E. granulosus* is defined as a zoonotic parasitic *infection* of canids, ungulates and macropod marsupials with *E. granulosus* (ovine, bovine, cervid, camelid and porcine strains).

For the purposes of this chapter, offal is defined as internal organs of ungulates and macropod marsupials.

Transmission of *E. granulosus* to canids occurs through ingestion of hydatid-infected offal.

Infection in intermediate hosts, as well as in humans, occurs by ingestion of *E. granulosus* eggs from contaminated environments. In humans, *infection* may also occur following contact with infected canids or by consumption of food or water contaminated with *E. granulosus* eggs from canine faeces.

Infection in humans can be prevented by good food hygiene and personal hygiene, community health education and preventing *infection* of canids. Collaboration between the *Competent Authority* and the public health authority is an essential component in preventing and controlling *E. granulosus* transmission.

This chapter provides recommendations for prevention of, control of, and *surveillance* for *infection* with *E. granulosus* in dogs and livestock.

When authorising the import or transit of the *commodities* covered in this chapter, with the exception of those listed in Article 8.5.2., *Veterinary Authorities* should apply the recommendations in this chapter.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.5.2.

Safe commodities

When authorising import or transit of the following *commodities* of livestock, *Veterinary Authorities* should not require any *E. granulosus*-related conditions regardless of the status of the animal population of the *exporting country* or *zone*:

1) skeletal muscle *meat* and skeletal muscle *meat products*;
2) processed fat;
3) *casings*;
4) *milk* and *milk products*;
5) hides and skins;
6) semen, oocytes and embryos.

Article 8.5.3.

Programmes for the prevention and control of infection with *E. granulosus*

In order to prevent and control *infection* with *E. granulosus*, the *Veterinary Authority* or other *Competent Authority* should carry out community awareness programmes about the risk factors associated with transmission of *E. granulosus*, the role of dogs (including *free-roaming dogs*) and the importance of *responsible dog ownership*. The

Veterinary Authority or other *Competent Authority* should also implement the following prevention and control measures.

1) Prevention of infection in dogs
   a) Dogs should not be fed offal unless it has been treated in accordance with Article 8.5.6.
   b) Dogs should be prevented from scavenging on dead ungulates and macropod marsupials. Dead animals should be disposed of in accordance with Article 4.13.6.
   c) The *Veterinary Authority* or other *Competent Authority* should ensure that *slaughterhouses/abattoirs* have implemented measures that prevent access of dogs to the premises, and to animal carcasses and waste containing offal.
   d) When livestock cannot be slaughtered in a *slaughterhouse/abattoir* and are slaughtered on-farm, dogs should be prevented from having access to raw offal, and not be fed offal unless it has been treated in accordance with Article 8.5.6.
2) Control of infection in dogs
   a) For control of *free-roaming dog* populations, the *Veterinary Authority* or other *Competent Authority* should implement relevant aspects of Chapter 7.7.
   b) Dogs known to be infected or suspected of having access to raw offal or in contact with livestock should be dewormed at least every 4-6 weeks with praziquantel (5 mg/kg) or another cestocidal product with comparable efficacy. Where possible, faeces excreted up to 72 hours post treatment should be disposed of by incineration or burial.
   c) In areas of persistent transmission, the *Veterinary Authority* and other *Competent Authority* should collaborate to identify the possible origins of the *infection*, and review and amend the control programme, as appropriate.
3) Food safety and control of infection in livestock
   a) The *Veterinary Authority* should ensure that all slaughtered livestock are subjected to post-mortem *meat* inspection in accordance with Chapter 6.3., including inspection of offal for hydatids.
   b) When hydatids are detected during post-mortem *meat* inspection:
      i) offal containing hydatids should be disposed of in accordance with Article 4.13.6., or treated in accordance with Article 8.5.6.;
      ii) an investigation should be carried out by the *Veterinary Authority* and other *Competent Authority* to identify the possible origin of the *infection*, and review and amend, as appropriate, the control programme.
   c) Where indicated, control programmes should include the *vaccination* of livestock with the objective of decreasing the prevalence of *infection* in livestock.

Article 8.5.4.

Surveillance and monitoring for infection with *E. granulosus*

An *animal identification* and *animal traceability* system should be implemented in accordance with Chapters 4.2. and 4.3.

1) Monitoring in dogs
   a) Monitoring for *infection* with *E. granulosus* in dogs should be undertaken at regular intervals as it is an essential activity for assessing the risk of transmission to dog populations and for evaluating the success of control programmes. This can be achieved through testing of faeces from dogs, and canine faecal samples from the environment.
   b) Monitoring strategies should be appropriate to local conditions, in particular where large populations of *free-roaming dogs* and *wild* canids exist. Under these circumstances testing of environmental samples (faeces, soil) may provide a useful indicator of *infection* pressure.
2) Surveillance in slaughterhouses/abattoirs
   a) The *Veterinary Services* should carry out systematic *surveillance* for hydatids in livestock in *slaughterhouses/abattoirs*.
   b) Data collected should be used for the design or amendment of control programmes.

Veterinary Authorities should use information from public health authorities on cases of human hydatidosis in initial design and any subsequent modification of *surveillance* and monitoring programmes.

Article 8.5.5.

Recommendations for the importation of dogs and wild canids from an infected country

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animal has been treated between 24 and 72 hours prior to embarkation with praziquantel (5 mg/kg), or another cestocidal product with comparable efficacy against intestinal forms of *E. granulosus*;
2) adequate precautions have been taken to avoid reinfection of the animal between treatment and embarkation.

Article 8.5.6.

Procedures for the inactivation of *E. granulosus* hydatids in offal

For the inactivation of *E. granulosus* hydatids present in offal, one of the following procedures should be used:

1) heat treatment to a core temperature of at least 80°C for ten minutes or an equivalent time and temperature;
2) freezing to minus 20°C or below for at least two days.

NB: FIRST ADOPTED IN 1982; MOST RECENT ADOPTION IN 2022.

CHAPTER 8.6.

INFECTION WITH *ECHINOCOCCUS MULTILOCULARIS*

Article 8.6.1.

General provisions

Echinococcus multilocularis (E. multilocularis) is a cestode (tapeworm) which is widespread in some parts of the Northern Hemisphere, and it is maintained mainly in *wild animal* populations. The adult worms occur in the small intestine of canids (definitive hosts), particularly foxes. Larval stages (metacestode) occur in tissues of liver and other organs of other mammals (commonly rodents) (intermediate hosts). Humans are infected occasionally with the larval stage, which causes severe disease, referred to as 'alveolar echinococcosis'. *Infection* does not cause discernible health impacts in livestock.

Foxes and some other *wild* canids are the most important definitive hosts in maintaining the cycle at the *wildlife*-human interface through contaminating both rural and urban environments. Dogs may also act as important and efficient definitive hosts in both rural and urban environments, providing an important potential source for human *infections*. Even though the potential role of felids in transmission of *infection* to humans cannot be excluded, their epidemiological role is considered negligible. Pigs may become infected but the parasite remains infertile; therefore, they have no role in transmission of the parasite.

For the purposes of the *Terrestrial Code*, *infection* with *E. multilocularis* is defined as a zoonotic parasitic *infection* of domestic and *wild* canids, and rodents.

Transmission of *E. multilocularis* to canids occurs through ingestion of metacestode-infected organs from a range of *wild* small mammals.

Infection in intermediate hosts, as well as in humans, occurs by ingestion of *E. multilocularis* eggs from contaminated environments. In humans, *infection* may also occur following contact with infected definitive hosts or by consumption of food or water contaminated with faeces of canids.

Prevention of *infection* in humans is difficult, particularly in areas with a high *infection* pressure maintained by rural and urban foxes. Good food hygiene and personal hygiene, community health education and preventing *infection* of dogs reduces the risk of human *infection*. Good communication and collaboration between the *Competent Authority* and public health authorities is an important component in monitoring the extent of *infection* with *E. multilocularis* in human and animal populations.

This chapter provides recommendations for prevention, control and monitoring of *infection* with *E. multilocularis* in dogs, and monitoring in *wild* canids.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 8.6.2.

Safe commodities

When authorising import or transit of any *commodities* of livestock, *Veterinary Authorities* should not require any related conditions regardless of the status of the animal population of the *exporting country* or *zone*.

Article 8.6.3.

Programmes for the prevention and control of infection with *E. multilocularis* in owned and free-roaming dogs

In order to achieve success in the prevention and control of *infection* with *E. multilocularis*, the *Competent Authority* should carry out community awareness programmes to inform people of the risk factors associated with transmission of *E. multilocularis*. Such programmes should include information on the importance of echinococcosis in animals and

humans, the role of foxes, other *wild* canids, and dogs, the need to implement preventive and control measures, and the importance of *responsible dog ownership*.

Whenever the epidemiological situation indicates that a control programme is necessary, the following measures should be undertaken:

1) *Owned dogs* should not be allowed to roam freely unless treated in accordance with point 3.
2) For control of populations, the *Competent Authority* should ensure compliance with relevant aspects of Chapter 7.7.
3) Dogs known to be infected should immediately be treated with praziquantel (5 mg/kg) or another cestocidal product with a comparable efficacy; dogs suspected of having access to rodents or other small mammals should be treated every 21-26 days. Where possible, faeces excreted up to 72 hours post treatment should be disposed of by incineration or burial.

Article 8.6.4.

Monitoring for infection with *E. multilocularis*

1) Monitoring in foxes and other wild canids
   a) Monitoring for *infection* with *E. multilocularis* in foxes and other *wild* canids should be undertaken as it is an essential component for assessing the prevalence of *infection*.
   b) Monitoring strategies should be appropriate to local conditions, in particular where large populations of definitive hosts exist. Under these circumstances testing of environmental samples (faeces) may provide a useful indicator of *infection* pressure.
2) Surveillance in slaughterhouses/abattoirs

   As an indicator of the presence of the parasite in the environment, *Veterinary Services* should consider carrying out targeted *surveillance* for larval lesions of *E. multilocularis* in livers of pigs raised in outdoor conditions.

Veterinary Authorities should use information from public health authorities on cases of human *infection*, in the initial design and any subsequent modification of *surveillance* and monitoring programmes.

Article 8.6.5.

Recommendations for the importation of dogs and wild canids from an infected country

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animal has been treated between 24 and 72 hours prior to embarkation with praziquantel (5 mg/kg), or another cestocidal product with a comparable efficacy against intestinal forms of *E. multilocularis*;
2) adequate precautions have been taken to avoid reinfection of the animal between treatment and embarkation.

NB: FIRST ADOPTED IN 1982.

CHAPTER 8.7.

INFECTION WITH EPIZOOTIC HEMORRHAGIC DISEASE VIRUS

Article 8.7.1.

General provisions

For the purposes of the *Terrestrial Code*, epizootic hemorrhagic disease (EHD) is defined as an *infection* of cervids and bovids with epizootic hemorrhagic disease virus (EHDV) that is transmitted by *Culicoides vectors*.

The following defines the occurrence of *infection* with EHDV:

1) EHDV has been isolated from a sample from a cervid or bovid; or
2) antigen or ribonucleic acid specific to EHDV has been identified in samples from a cervid or bovid showing clinical signs consistent with EHD, or epidemiologically linked to a suspected or confirmed *case*; or
3) antibodies to structural or nonstructural proteins of EHDV that are not a consequence of *vaccination* have been detected in a cervid or bovid that either shows clinical signs consistent with EHD, or is epidemiologically linked to a suspected or confirmed *case*.

For the purposes of the *Terrestrial Code*, the *infective period* for EHD shall be 60 days.

In the absence of clinical disease in a country or *zone*, its EHD status should be determined by an ongoing *surveillance* programme in accordance with Article 8.7.14.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.7.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any EHD-related conditions regardless of the EHD status of the ruminant population of the *exporting country*:

1) *milk* and *milk products*;
2) *meat* and *meat products*;
3) hides, skins, antlers and hooves;
4) wool and fibre.

Article 8.7.3.

Country or zone free from EHD

1) Historical freedom as described in Chapter 1.4. does not apply to EHD.
2) A country or a *zone* may be considered free from EHD when *infection* with EHDV is notifiable in the entire country, importation of animals and their semen or embryos is carried out in accordance with this chapter and either:
    a) a *surveillance* programme in accordance with Article 8.7.14. has demonstrated no evidence of transmission of EHDV in the country or *zone* during the past two years; or
    b) an ongoing *surveillance* programme in accordance with Article 8.7.14. and Chapter 4.4. has found no *Culicoides* for at least two years in the country or *zone*.
3) A country or *zone* free from EHD in which ongoing *vector surveillance* has found no evidence of *Culicoides* will not lose its free status through the introduction of seropositive or infective animals, or semen or embryos from countries or *zones* infected with EHDV.

4) A country or *zone* free from EHD in which *Culicoides* are present will not lose its free status through the introduction of seropositive animals, or semen or embryos provided that:

   a) an ongoing *surveillance* programme has focused on transmission of EHDV in domestic bovids and farmed cervids and has demonstrated no evidence of transmission in the country or *zone*; or

   b) the animals, semen and embryos were introduced in accordance with this chapter.

Article 8.7.4.

Zone seasonally free from EHD

A seasonally free *zone* is a part of an infected country or an infected *zone* in which for part of a year, *surveillance* demonstrates no evidence either of transmission of EHDV or of adult *Culicoides*.

For the application of Articles 8.7.7., 8.7.9. and 8.7.11., the seasonally free period is taken to commence the day following the last evidence of transmission of EHDV (as demonstrated by the *surveillance* programme), and of the cessation of activity of adult *Culicoides*.

For the application of Articles 8.7.7., 8.7.9. and 8.7.11., the seasonally free period is taken to conclude either:

1) at least 28 days before the earliest date that historical data show *vector* activity may recommence; or

2) immediately if current climatic data or data from a *surveillance* programme indicate an earlier resurgence of activity of adult *Culicoides*.

A seasonally free *zone* in which ongoing *surveillance* has found no evidence that *Culicoides* are present will not lose its free status through the introduction of vaccinated, seropositive or infective animals, or semen or embryos from countries or *zones* infected with EHDV.

Article 8.7.5.

Country or zone infected with EHDV

For the purposes of this chapter, a country or *zone* infected with EHDV is one that does not fulfil the requirements to qualify as either a country or *zone* free from EHD or a *zone* seasonally free from EHD.

Article 8.7.6.

Recommendations for importation from countries or zones free from EHD

For bovids and cervids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of EHD on the day of shipment;

2) the animals were kept in a country or *zone* free from EHD since birth or for at least 60 days prior to shipment; or

3) the animals were kept in a country or *zone* free from EHD for at least 28 days, then were subjected, with negative results, to a serological test to detect antibody to the EHDV group and remained in the free country or *zone* until shipment; or

4) the animals were kept in a country or *zone* free from EHD for at least 14 days, then were subjected, with negative results, to an agent identification test and remained in the free country or *zone* until shipment; or

5) the animals:

   a) were kept in a country or *zone* free from EHD for at least seven days;

   b) were vaccinated at least 60 days before the introduction into the free country or *zone* against all serotypes demonstrated to be present in the source population through a *surveillance* programme as described in Article 8.7.14.;

   c) were identified as having been vaccinated;

   d) remained in the free country or *zone* until shipment;

AND

6) if the animals were exported from a free *zone* within an infected country either:
   a) did not transit through an infected *zone* during transportation to the *place of shipment*; or
   b) were protected from attacks from *Culicoides* at all times when transiting through an infected *zone*.

Article 8.7.7.

Recommendations for importation from zones seasonally free from EHD

For bovids and cervids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of EHD on the day of shipment;
2) were kept in a *zone* seasonally free from EHD during the seasonally free period since birth or for at least 60 days prior to shipment; or
3) were kept in a *zone* seasonally free from EHD during the seasonally free period for at least 28 days prior to shipment, and were subjected during the residence period in the *zone* to a serological test to detect antibodies to the EHDV group with negative results, carried out at least 28 days after the commencement of the residence period; or
4) were kept in a *zone* seasonally free from EHD during the seasonally free period for at least 14 days prior to shipment, and were subjected during the residence period in the *zone* to an agent identification test with negative results, carried out at least 14 days after the commencement of the residence period; or
5) were kept in a *zone* seasonally free from EHD during the seasonally free period and were vaccinated, at least 60 days before the introduction into the free country or *zone*, against all serotypes the presence of which in the source population has been demonstrated through a *surveillance* programme in accordance with Article 8.7.14. and were identified as having been vaccinated and remained in the free country or *zone* until shipment;

AND

6) either:
   a) did not transit through an infected *zone* during transportation to the *place of shipment*; or
   b) were protected from attacks from *Culicoides* at all times when transiting through an infected *zone*; or
   c) were vaccinated in accordance with point 5 above.

Article 8.7.8.

Recommendations for importation from countries or zones infected with EHDV

For bovids and cervids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of EHD on the day of shipment;
2) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 60 days prior to shipment and during transportation to the *place of shipment*; or
3) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 28 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to a serological test to detect antibodies to the EHDV group, with negative results, carried out at least 28 days after introduction into the *vector*-protected *establishment*; or
4) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 14 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to an agent identification test with negative results, carried out at least 14 days after introduction into the *vector*-protected *establishment*; or
5) were demonstrated to have antibodies for at least 60 days prior to dispatch against all serotypes whose presence has been demonstrated in the source population through a *surveillance* programme in accordance with Article 8.7.14.

Article 8.7.9.

Recommendations for importation from countries or zones free or zones seasonally free from EHD

For semen of bovids and cervids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) showed no clinical sign of EHD on the day of collection;
   b) were kept in a country or *zone* free from EHD or in a seasonally free *zone* during the seasonally free period for at least 60 days before commencement of, and during, collection of the semen; or
   c) were subjected to a serological test to detect antibodies to the EHDV group, between 28 and 60 days after the last collection for this consignment, with negative results; or
   d) were subjected to an agent identification test on blood samples collected at commencement and conclusion of, and at least every 7 days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.7.10.

Recommendations for importation from countries or zones infected with EHDV

For semen of bovids and cervids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) showed no clinical sign of EHD on the day of collection;
   b) were kept in a *vector*-protected *establishment* for at least 60 days before commencement of, and during, collection of the semen; or
   c) were subjected to a serological test to detect antibodies to the EHDV group, with negative results, at least every 60 days throughout the collection period and between 28 and 60 days after the final collection for this consignment; or
   d) were subjected to an agent identification test on blood samples collected at commencement and conclusion of, and at least every 7 days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.7.11.

Recommendations for importation from countries or zones free or zones seasonally free from EHD

For embryos of bovids and cervids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of EHD on the day of collection;
   b) were kept in a country or *zone* free from EHD or in a seasonally free *zone* during the seasonally free period for at least the 60 days prior to, and at the time of, collection of the embryos; or
   c) were subjected to a serological test to detect antibodies to the EHDV group, between 28 and 60 days after collection, with negative results; or
   d) were subjected to an agent identification test on a blood sample taken on the day of collection, with negative results;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 8.7.12.

Recommendations for importation from countries or zones infected with EHDV

For embryos of bovids and cervids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of EHD on the day of collection;
   b) were kept in a *vector*-protected *establishment* for at least 60 days before commencement of, and during, collection of the embryos; or
   c) were subjected to a serological test to detect antibodies to the EHDV group, between 28 and 60 days after collection, with negative results; or
   d) were subjected to an agent identification test on a blood sample taken on the day of collection, with negative results;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 8.7.13.

Protecting animals from *Culicoides* attacks

1) Vector-protected establishment or facility

   The *establishment* or facility should be approved by the *Veterinary Authority* and the means of protection should at least comprise the following:
   a) appropriate physical barriers at entry and exit points, such as double-door entry-exit system;
   b) openings of the building are *vector* screened with mesh of appropriate gauge impregnated regularly with an approved insecticide in accordance with the manufacturers' instructions;
   c) *vector surveillance* and control within and around the building;
   d) measures to limit or eliminate breeding sites for *vectors* in the vicinity of the *establishment* or facility;
   e) standard operating procedures, including description of back-up and alarm systems, for operation of the *establishment* or facility and transport of animals to the place of *loading*.
2) During transportation

   When transporting animals through countries or *zones* infected with EHDV, *Veterinary Authorities* should require strategies to protect animals from attacks from *Culicoides* during transport., taking into account the local ecology of the *vector*.

   a) Transport by road

      Risk management strategies may include:
      i) treating animals with insect repellents prior to and during transportation;
      ii) *loading*, transporting and *unloading* animals at times of low *vector* activity (i.e. bright sunshine, low temperature);
      iii) ensuring *vehicles* do not stop en route during dawn or dusk, or overnight, unless the animals are held behind insect-proof netting;
      iv) darkening the interior of the *vehicle*, for example by covering the roof or sides of *vehicles* with shade cloth;
      v) *surveillance* for *vectors* at common stopping and *unloading* points to gain information on seasonal variations;
      vi) using historical information or information from appropriately verified and validated EHD epidemiological models to identify low risk ports and transport routes.

b) Transport by air

Prior to *loading* the animals, the crates, *containers* or jet stalls should be sprayed with an insecticide approved in the country of dispatch.

Crates, *containers* or jet stalls in which animals are being transported and the cargo hold of the aircraft should be sprayed with an approved insecticide when the doors have been closed and prior to take-off. All possible insect harbourage should be treated. The spray *containers* should be retained for inspection on arrival.

In addition, during any stopover in countries or *zones* not free from EHD, prior to the opening of any aircraft door and until all doors are closed, netting of appropriate gauge impregnated with an approved insecticide should be placed over crates, *containers* or jet stalls.

Article 8.7.14.

Surveillance

This article is complementary to Chapter 1.4. and, for *vectors*, complementary to Chapter 1.5. and outlines the principles for *surveillance* for EHD applicable to Member Countries seeking to determine the EHD status of a country or a *zone*.

EHD is a *vector*-borne *infection* transmitted by different species of *Culicoides* in a range of ecosystems.

An important component of the epidemiology of EHD is the capacity of its *vector*, which provides a measure of disease *risk* that incorporates *vector* competence, abundance, seasonal incidence, biting rates, survival rates and extrinsic *incubation period*. However, methods and tools for measuring some of these *vector* factors remain to be developed, particularly in a field context. Therefore, *surveillance* for EHD should focus on transmission of EHDV in domestic bovids and farmed cervids.

The purpose of *surveillance* is the detection of transmission of EHDV in a country or *zone* and not determination of the status of an individual animal or *herd*.

The impact and epidemiology of EHD differ widely in different regions of the world and it is not appropriate to provide specific recommendations for all situations. Member Countries should provide scientific data that explain the epidemiology of EHD in the country or *zone* concerned and adapt the *surveillance* strategies for defining their status to the local conditions. There is considerable latitude available to Member Countries to justify their status at an acceptable level of confidence.

Surveillance for EHD should be in the form of a continuing programme.

General provisions on *surveillance* for arthropod *vectors* are in Chapter 1.5.

More specific approaches to *surveillance* for *Culicoides* transmitted *Orbivirus infections* are described in Chapters 8.3. and 12.1. Passive *surveillance* for clinical *cases* of EHD in *wild* cervids can be a useful tool for detecting disease, based on lesions of haemorrhagic disease combined with appropriate diagnostic tests.

NB: FIRST ADOPTED IN 2015; MOST RECENT UPDATE ADOPTED IN 2016.

CHAPTER 8.8.

INFECTION WITH FOOT AND MOUTH DISEASE VIRUS

Article 8.8.1.

1) Many different species belonging to diverse taxonomic orders are known to be susceptible to *infection* with foot and mouth disease virus (FMDV). Their epidemiological significance depends upon the degree of susceptibility, the husbandry system, the density and extent of populations and the contacts between them. Amongst *Camelidae*, only Bactrian camels *(Camelus bactrianus)* are sufficiently susceptible to have potential for epidemiological significance. Dromedaries *(Camelus dromedarius)* are not susceptible to *infection* with FMDV while South American camelids are not considered to be of epidemiological significance.
2) For the purposes of the *Terrestrial Code*, foot and mouth disease (FMD) is defined as an *infection* of animals of the suborder *ruminantia* and of the family *suidae* of the order *Artiodactyla*, and *Camelus bactrianus* with FMDV.
3) The following defines the occurrence of *infection* with FMDV:
    a) FMDV has been isolated from a sample from an animal listed in point 2; or
    b) viral antigen or viral ribonucleic acid specific to FMDV has been identified in a sample from an animal listed in point 2, showing clinical signs consistent with FMD, or epidemiologically linked to a suspected or confirmed *outbreak* of FMD, or giving cause for suspicion of previous association or contact with FMDV; or
    c) antibodies to structural or nonstructural proteins of FMDV, that are not a consequence of *vaccination*, have been detected in a sample from an animal listed in point 2, showing clinical signs consistent with FMD, or epidemiologically linked to a suspected or confirmed *outbreak* of FMD, or giving cause for suspicion of previous association or contact with FMDV.
4) Transmission of FMDV in a vaccinated population is demonstrated by change in virological or serological evidence indicative of recent *infection*, even in the absence of clinical signs.
5) For the purposes of the *Terrestrial Code*, the *incubation period* of FMD shall be 14 days.
6) *Infection* with FMDV can give rise to disease of variable severity and to FMDV transmission. FMDV may persist in the pharynx and associated lymph nodes of ruminants for a variable but limited period of time beyond 28 days. Such animals have been termed carriers. However, the only persistently infected species from which transmission of FMDV has been proven is the African buffalo *(Syncerus caffer)*.
7) This chapter deals not only with the occurrence of clinical signs caused by FMDV, but also with the presence of *infection* with FMDV and transmission, in the absence of clinical signs.
8) Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.8.2.

FMD free country or zone where vaccination is not practised

In defining a *zone* where *vaccination* is not practised the principles of Chapter 4.4. should be followed.

Susceptible animals in the FMD free country or *zone* where *vaccination* is not practised should be protected by the application of *biosecurity* measures that prevent the entry of FMDV into the free country or *zone*. Taking into consideration physical or geographical barriers with any neighbouring infected country or *zone*, these measures may include a *protection zone*.

To qualify for inclusion in the list of FMD free countries or *zones* where *vaccination* is not practised, a Member Country should:

1) have a record of regular and prompt animal disease reporting;
2) send a declaration to WOAH stating that during the past 12 months, within the proposed FMD free country or *zone*:
    a) there has been no *case* of FMD;
    b) no *vaccination* against FMD has been carried out;

3) supply documented evidence that for the past 12 months:
   a) *surveillance* in accordance with Articles 8.8.40. to 8.8.42. has been implemented to detect clinical signs of FMD and demonstrate no evidence of:
      i) *infection* with FMDV in unvaccinated animals;
      ii) FMDV transmission in previously vaccinated animals when the FMD free country or *zone* where *vaccination* is practised is seeking to become one where *vaccination* is not practised;
   b) regulatory measures for the prevention and early detection of FMD have been implemented;
4) describe in detail and supply documented evidence that for the past 12 months the following have been properly implemented and supervised:
   a) in the case of a FMD free *zone*, the boundaries of the proposed FMD free *zone*;
   b) the boundaries and measures of a *protection zone*, if applicable;
   c) the system for preventing the entry of FMDV into the proposed FMD free country or *zone*;
   d) the control of the movement of susceptible animals, their *meat* and other products into the proposed FMD free country or *zone*, in particular the measures described in Articles 8.8.8., 8.8.9. and 8.8.12.;
   e) no vaccinated animal has been introduced except in accordance with Articles 8.8.8. and 8.8.9.

The Member Country or the proposed free *zone* will be included in the list of FMD free countries or *zones* where *vaccination* is not practised only after the submitted evidence, based on the provisions of Chapter 1.11., has been accepted by WOAH.

Retention on the list requires that the information in points 2, 3 and 4 above be re-submitted annually and changes in the epidemiological situation or other significant events including those relevant to points 3 b) and 4 should be reported to WOAH in accordance with the requirements in Chapter 1.1.

Provided the conditions of points 1 to 4 are fulfilled, the status of a country or *zone* will not be affected by applying official emergency *vaccination* to FMD susceptible animals in zoological collections in the face of a FMD threat identified by the *Veterinary Authorities*, provided that the following conditions are met:

- the zoological collection has the primary purpose of exhibiting animals or preserving rare species, has been identified, including the boundaries of the facility, and is included in the country's contingency plan for FMD;
- appropriate *biosecurity* measures are in place, including effective separation from other susceptible domestic populations or *wildlife*;
- the animals are identified as belonging to the collection and any movements can be traced;
- the vaccine used complies with the standards described in the *Terrestrial Manual*;
- *vaccination* is conducted under the supervision of the *Veterinary Authority*;
- the zoological collection is placed under *surveillance* for at least 12 months after *vaccination*.

In the event of the application for the status of a FMD free *zone* where *vaccination* is not practised to be assigned to a new *zone* adjacent to another FMD free *zone* where *vaccination* is not practised, it should be stated if the new *zone* is being merged with the adjacent *zone* to become one enlarged *zone*. If the two *zones* remain separate, details should be provided on the control measures to be applied for the maintenance of the status of the separate *zones* and particularly on the identification and the control of the movement of animals between the *zones* of the same status in accordance with Chapter 4.4.

Article 8.8.3.

FMD free country or zone where vaccination is practised

In defining a *zone* where *vaccination* is practised the principles of Chapter 4.4. should be followed.

Susceptible animals in the FMD free country or *zone* where *vaccination* is practised should be protected by the application of *biosecurity* measures that prevent the entry of FMDV into the free country or *zone*. Taking into consideration physical or geographical barriers with any neighbouring infected country or *zone*, these measures may include a *protection zone*.

Based on the epidemiology of FMD in the country, it may be decided to vaccinate only a defined *subpopulation* comprised of certain species or other subsets of the total susceptible population.

To qualify for inclusion in the list of FMD free countries or *zones* where *vaccination* is practised, a Member Country should:

1) have a record of regular and prompt animal disease reporting;
2) send a declaration to WOAH stating that, based on the *surveillance* described in point 3, within the proposed FMD free country or *zone*:
    a) there has been no *case* of FMD during the past two years;
    b) there has been no evidence of FMDV transmission during the past 12 months;
3) supply documented evidence that:
    a) *surveillance* in accordance with Articles 8.8.40. to 8.8.42. has been implemented to detect clinical signs of FMD and demonstrate no evidence of:
        i) *infection* with FMDV in unvaccinated animals;
        ii) FMDV transmission in vaccinated animals;
    b) regulatory measures for the prevention and early detection of FMD have been implemented;
    c) compulsory systematic *vaccination* in the target population has been carried out to achieve adequate *vaccination* coverage and population immunity;
    d) *vaccination* has been carried out following appropriate vaccine strain selection;
4) describe in detail and supply documented evidence that the following have been properly implemented and supervised:
    a) in case of FMD free *zone*, the boundaries of the proposed FMD free *zone*;
    b) the boundaries and measures of a *protection zone*, if applicable;
    c) the system for preventing the entry of FMDV into the proposed FMD free country or *zone*, in particular the measures described in Articles 8.8.8., 8.8.9. and 8.8.12.;
    d) the control of the movement of susceptible animals and their products into the proposed FMD free country or *zone*.

The Member Country or the proposed free *zone* will be included in the list of FMD free countries or *zones* where *vaccination* is practised only after the submitted evidence, based on the provisions of Chapter 1.11., has been accepted by WOAH.

Retention on the list requires that the information in points 2, 3 and 4 above be re-submitted annually and changes in the epidemiological situation or other significant events including those relevant to points 3 b) and 4 should be reported to WOAH in accordance with the requirements in Chapter 1.1.

If a Member Country that meets the requirements of a FMD free country or *zone* where *vaccination* is practised wishes to change its status to FMD free country or *zone* where *vaccination* is not practised, it should notify WOAH in advance of the intended date of cessation of *vaccination* and apply for the new status within 24 months of the cessation. The status of this country or *zone* remains unchanged until compliance with Article 8.8.2. is approved by WOAH. If the dossier for the new status is not provided within 24 months then the status of the country or *zone* as being free with *vaccination* will be suspended. If the country does not comply with requirements of Article 8.8.2., evidence should be provided within three months that it complies with Article 8.8.3. Otherwise the status will be withdrawn.

In the event of the application for the status of a FMD free *zone* where *vaccination* is practised to be assigned to a new *zone* adjacent to another FMD free *zone* where *vaccination* is practised, it should be stated if the new *zone* is being merged with the adjacent *zone* to become one enlarged *zone*. If the two *zones* remain separate, details should be provided on the control measures to be applied for the maintenance of the status of the separate *zones* and particularly on the identification and the control of the movement of animals between the *zones* of the same status in accordance with Chapter 4.4.

Article 8.8.4.

FMD free compartment

A FMD free *compartment* can be established in either a FMD free country or *zone* or in an infected country or *zone*. In defining such a *compartment* the principles of Chapters 4.4. and 4.5. should be followed. Susceptible animals in the FMD free *compartment* should be separated from any other susceptible animals by the application of an effective *biosecurity* management system.

A Member Country wishing to establish a FMD free *compartment* should:

1) have a record of regular and prompt animal disease reporting and, if not FMD free, have an *official control programme* and a *surveillance* system for FMD in place in accordance with Articles 8.8.40. to 8.8.42. that allows knowledge of the prevalence, distribution and characteristics of FMD in the country or *zone*;
2) declare for the FMD free *compartment* that:
   a) there has been no *case* of FMD during the past 12 months;
   b) no evidence of *infection* with FMDV has been found during the past 12 months;
   c) *vaccination* against FMD is prohibited;
   d) no animal vaccinated against FMD within the past 12 months is in the *compartment*;
   e) animals, semen, embryos and animal products may only enter the *compartment* in accordance with relevant articles in this chapter;
   f) documented evidence shows that *surveillance* in accordance with Articles 8.8.40. to 8.8.42. is in operation;
   g) an *animal identification* and *traceability* system in accordance with Chapters 4.2. and 4.3. is in place;
3) describe in detail:
   a) the animal *subpopulation* in the *compartment*;
   b) the *biosecurity plan* to mitigate the risks identified by the *surveillance* carried out in accordance with point 1.

The *compartment* should be approved by the *Veterinary Authority*. The first approval should only be granted when no *case* of FMD has occurred within a ten-kilometre radius of the *compartment* during the past three months.

Article 8.8.5.

FMD infected country or zone

For the purposes of this chapter, a FMD infected country or *zone* is one that does not fulfil the requirements to qualify as either FMD free where *vaccination* is not practised or FMD free where *vaccination* is practised.

Article 8.8.6.

Establishment of a containment zone within a FMD free country or zone

In the event of limited *outbreaks* within a FMD free country or *zone*, including within a *protection zone*, with or without *vaccination*, a single *containment zone*, which includes all *outbreaks*, may be established for the purpose of minimising the impact on the entire country or *zone*.

For this to be achieved and for the Member Country to take full advantage of this process, the *Veterinary Authority* should submit as soon as possible to WOAH, in support of the application, documented evidence that:

1) on suspicion, a strict standstill has been imposed on the suspected *establishments* and in the country or *zone* animal movement control has been imposed and effective controls on the movement of other *commodities* mentioned in this chapter are in place;
2) on confirmation, an additional standstill of susceptible animals has been imposed in the entire *containment zone* and the movement controls described in point 1 have been reinforced;
3) the definitive boundaries of the *containment zone* have been established after an epidemiological investigation (trace-back, trace-forward) has demonstrated that the *outbreaks* are epidemiologically related and limited in number and geographic distribution;
4) investigations into the likely source of the *outbreaks* have been carried out;
5) a *stamping-out policy*, with or without the use of emergency *vaccination*, has been applied;
6) no new *cases* have been found in the *containment zone* within a minimum of two *incubation periods* as defined in Article 8.8.1. after the application of a *stamping-out policy* to the last detected *case*;
7) the susceptible domestic and *captive wild* animal populations within the *containment zone* are clearly identified as belonging to the *containment zone*;
8) *surveillance* in accordance with Articles 8.8.40. to 8.8.42. is in place in the *containment zone* and in the rest of the country or *zone*;
9) measures that prevent the spread of FMDV to the rest of the country or *zone*, taking into consideration physical and geographical barriers, are in place.

The free status of the areas outside the *containment zone* is suspended while the *containment zone* is being established. The free status of these areas may be reinstated irrespective of the provisions of Article 8.8.7., once the *containment zone* has been approved by WOAH as complying with points 1 to 9 above. *Commodities* from susceptible animals for *international trade* should be identified as to their origin, either from inside or outside the *containment zone*.

In the event of recurrence of *infection* with FMDV in unvaccinated animals or FMDV transmission in vaccinated animals in the *containment zone*, the approval of the *containment zone* is withdrawn and the FMD status of the whole country or *zone* is suspended until the relevant requirements of Article 8.8.7. are fulfilled.

The recovery of the FMD free status of the *containment zone* should be achieved within 12 months of its approval and follow the provisions of Article 8.8.7.

Article 8.8.7.

Recovery of free status (see Figures 1 and 2)

1) When a FMD *case* occurs in a FMD free country or *zone* where *vaccination* is not practised, one of the following waiting periods is required to regain this free status:

   a) three months after the disposal of the last animal killed where a *stamping-out policy*, without emergency *vaccination*, and *surveillance* are applied in accordance with Articles 8.8.40. to 8.8.42.; or

   b) three months after the disposal of the last animal killed or the *slaughter* of all vaccinated animals, whichever occurred last, where a *stamping-out policy*, emergency *vaccination* and *surveillance* in accordance with Articles 8.8.40. to 8.8.42. are applied; or

   c) six months after the disposal of the last animal killed or the last *vaccination* whichever occurred last, where a *stamping-out policy*, emergency *vaccination* not followed by the slaughtering of all vaccinated animals, and *surveillance* in accordance with Articles 8.8.40. to 8.8.42. are applied. However, this requires a serological survey based on the detection of antibodies to nonstructural proteins of FMDV to demonstrate no evidence of *infection* in the remaining vaccinated population.

   The country or *zone* will regain the status of FMD free country or *zone* where *vaccination* is not practised only after the submitted evidence, based on the provisions of Chapter 1.11., has been accepted by WOAH.

   The time periods in points 1 a) to 1 c) are not affected if official emergency *vaccination* of zoological collections has been carried out following the relevant provisions of Article 8.8.2.

   Where a *stamping-out policy* is not practised, the above waiting periods do not apply, and Article 8.8.2. applies.

2) When a FMD *case* occurs in a FMD free country or *zone* where *vaccination* is not practised, the following waiting period is required to gain the status of FMD free country or *zone* where *vaccination* is practised: six months after the disposal of the last animal killed where a *stamping-out policy* has been applied and a continued *vaccination* policy has been adopted, provided that *surveillance* is applied in accordance with Articles 8.8.40. to 8.8.42., and a serological survey based on the detection of antibodies to nonstructural proteins of FMDV demonstrates no evidence of FMDV transmission.

   The country or *zone* can gain the status of FMD free country or *zone* where *vaccination* is practised only after the submitted evidence, based on the provisions of Chapter 1.11., has been accepted by WOAH.

   Where a *stamping-out policy* is not practised, the above waiting periods do not apply, and Article 8.8.3. applies.

3) When a *case* of FMD occurs in a FMD free country or *zone* where *vaccination* is practised, one of the following waiting periods is required to regain this free status:

   a) six months after the disposal of the last animal killed where a *stamping-out policy*, with emergency *vaccination*, and *surveillance* in accordance with Articles 8.8.40. to 8.8.42. are applied, provided that serological *surveillance* based on the detection of antibodies to nonstructural proteins of FMDV demonstrates no evidence of virus transmission; or

   b) 12 months after the detection of the last *case* where a *stamping-out policy* is not applied, but where emergency *vaccination* and *surveillance* in accordance with Articles 8.8.40. to 8.8.42. are applied, provided that serological *surveillance* based on the detection of antibodies to nonstructural proteins of FMDV demonstrates no evidence of virus transmission.

   Where emergency *vaccination* is not applied, the above waiting periods do not apply, and Article 8.8.3. applies.

   The country or *zone* will regain the status of FMD free country or *zone* where *vaccination* is practised only after the submitted evidence, based on the provisions of Chapter 1.11., has been accepted by WOAH.

4) When a FMD *case* occurs in a FMD free *compartment*, Article 8.8.4. applies.

5) Member Countries applying for the recovery of status should do so only when the respective requirements for the recovery of status are met. When a *containment zone* has been established, the restrictions within the *containment zone* should be lifted in accordance with the requirements of this article only when the disease has been successfully eradicated within the *containment zone*.

   For Member Countries not applying for recovery within 24 months after suspension, the provisions of Article 8.8.2., Article 8.8.3. or Article 8.8.4. apply.

Article 8.8.8.

Direct transfer of FMD susceptible animals from an infected zone for slaughter in a free zone (whether vaccination is practised or not)

In order not to jeopardise the status of a free *zone*, FMD susceptible animals should only leave the infected *zone* if transported directly to *slaughter* in the nearest designated *slaughterhouse/abattoir* under the following conditions:

1) no FMD susceptible animal has been introduced into the *establishment* of origin and no animal in the *establishment* of origin has shown clinical signs of FMD for at least 30 days prior to movement;

2) the animals were kept in the *establishment* of origin for at least three months prior to movement;

3) FMD has not occurred within a 10 kilometre radius of the *establishment* of origin for at least four weeks prior to movement;

4) the animals should be transported under the supervision of the *Veterinary Authority* in a *vehicle*, which was cleansed and disinfected before *loading*, directly from the *establishment* of origin to the *slaughterhouse/abattoir* without coming into contact with other susceptible animals;

5) such a *slaughterhouse/abattoir* is not approved for the export of *fresh meat* during the time it is handling the *meat* of animals from the infected *zone*;

6) *vehicles* and the *slaughterhouse/abattoir* should be subjected to thorough cleansing and *disinfection* immediately after use.

The animals should have been subjected to ante- and post-mortem inspection within 24 hours before and after *slaughter* with no evidence of FMD, and the *meat* derived from them treated in accordance with point 2 of Article 8.8.22. or Article 8.8.23. Other products obtained from the animals and any products coming into contact with them should be treated in accordance with Articles 8.8.31. to 8.8.38. in order to destroy any FMDV potentially present.

Article 8.8.9.

Direct transfer of FMD susceptible animals from a containment zone for slaughter in a free zone (whether vaccination is practised or not)

In order not to jeopardise the status of a free *zone*, FMD susceptible animals should only leave the *containment zone* if transported directly to *slaughter* in the nearest designated *slaughterhouse/abattoir* under the following conditions:

1) the *containment zone* has been officially established in accordance with the requirements in Article 8.8.6.;

2) the animals should be transported under the supervision of the *Veterinary Authority* in a *vehicle*, which was cleansed and disinfected before *loading*, directly from the *establishment* of origin to the *slaughterhouse/abattoir* without coming into contact with other susceptible animals;

3) such an *slaughterhouse/abattoir* is not approved for the export of *fresh meat* during the time it is handling the *meat* of animals from the *containment zone*;

4) *vehicles* and the *slaughterhouse/abattoir* should be subjected to thorough cleansing and *disinfection* immediately after use.

The animals should have been subjected to ante- and post-mortem inspection within 24 hours before and after *slaughter* with no evidence of FMD and the *meat* derived from them treated in accordance with point 2 of Article 8.8.22. or Article 8.8.23. Other products obtained from the animals and any products coming into contact with them should be treated in accordance with Articles 8.8.31. to 8.8.38. in order to destroy any FMDV potentially present.

Article 8.8.10.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For FMD susceptible animals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of FMD on the day of shipment;

2) were kept since birth or for at least the past three months in a FMD free country or *zone* where *vaccination* is not practised or a FMD free *compartment*;

3) if transiting an infected *zone*, were not exposed to any source of FMDV during transportation to the *place of shipment*.

Article 8.8.11.

Recommendations for importation from FMD free countries or zones where vaccination is practised

For domestic ruminants and pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of FMD on the day of shipment;

2) were kept since birth or for at least the past three months in a FMD free country or *zone* where *vaccination* is practised;

3) were subjected to a test for FMD with negative results;

4) if transiting an infected *zone*, were not exposed to any source of FMDV during transportation to the *place of shipment*.

Article 8.8.12.

Recommendations for importation from FMD infected countries or zones where an official control programme exists

For domestic ruminants and pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of FMD on the day of shipment;

2) prior to isolation, the animals were kept in the *establishment* of origin:

   a) for 30 days, or since birth if younger than 30 days, if a *stamping-out policy* is applied to control FMD in the *exporting country* or *zone*, or

   b) for three months, or since birth if younger than three months if a *stamping-out policy* is not applied to control FMD in the *exporting country* or *zone*;

3) FMD has not occurred within the *establishment* of origin for the relevant period as defined in points 2 a) and 2 b) above;

4) the animals were isolated in an *establishment* for the 30 days prior to shipment, and all animals in isolation were subjected to diagnostic virological and serological tests for evidence of FMDV with negative results on samples collected at least 28 days after the start of isolation period, and that FMD did not occur within a 10 kilometre radius of the *establishment* during that period, or the *establishment* is a *quarantine station*;

5) the animals were not exposed to any source of FMDV during their transportation from the *establishment* to the *place of shipment*.

Article 8.8.13.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For fresh semen of domestic ruminants and pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) showed no clinical sign of FMD on the day of collection of the semen;
   b) were kept for at least three months prior to collection in a FMD free country or *zone* where *vaccination* is not practised or FMD free *compartments*;
   c) were kept in an *artificial insemination centre* where none of the animals had a history of *infection* with FMDV;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.8.14.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For frozen semen of domestic ruminants and pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) showed no clinical sign of FMD on the day of collection of the semen and for the following 30 days;
   b) were kept for at least three months prior to collection in a FMD free country or *zone* where *vaccination* is not practised or FMD free *compartments*;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 8.8.15.

Recommendations for importation from FMD free countries or zones where vaccination is practised

For frozen semen of domestic ruminants and pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) showed no clinical sign of FMD on the day of collection of the semen and for the following 30 days;
   b) were kept for at least three months prior to collection in a FMD free country or *zone* where *vaccination* is practised;
   c) either
      i) have been vaccinated at least twice, with the last *vaccination* not less than one month and not more than six months prior to collection, unless protective immunity has been demonstrated for more than six months;
      or
      ii) were subjected, not less than 21 days after collection of the semen, to tests for antibodies against FMDV, with negative results;
2) the semen:
   a) was collected, processed and stored in accordance with Chapters 4.6. and 4.7.;
   b) was stored in the country of origin for a period of at least one month following collection, and during this period no animal on the *establishment* where the donor animals were kept showed any sign of FMD.

Article 8.8.16.

Recommendations for importation from FMD infected countries or zones

For frozen semen of domestic ruminants and pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) showed no clinical sign of FMD on the day of collection of the semen and for the following 30 days;
   b) were kept in an *artificial insemination centre* where no animal had been added in the 30 days before collection, and that FMD has not occurred within a 10 kilometre radius of the *artificial insemination centre* for the 30 days before and after collection;
   c) either
      i) have been vaccinated at least twice, with the last *vaccination* not less than one month and not more than six months prior to collection, unless protective immunity has been demonstrated for more than six months;
      or
      ii) were subjected, not less than 21 days after collection of the semen, to tests for antibodies against FMDV, with negative results;
2) the semen:
   a) was collected, processed and stored in accordance with Chapters 4.6. and 4.7.;
   b) was subjected, with negative results, to a test for evidence of FMDV if the donor male has been vaccinated within the 12 months prior to collection;
   c) was stored in the country of origin for a period of at least one month following collection, and that during this period no animal on the *establishment* where the donor males were kept showed any sign of FMD.

Article 8.8.17.

Recommendations for the importation of *in vivo* derived embryos of cattle

Irrespective of the FMD status of the *exporting country*, *zone* or *compartment*, *Veterinary Authorities* should authorise without restriction on account of FMD the import or transit through their territory of *in vivo* derived embryos of cattle subject to the presentation of an *international veterinary certificate* attesting that the embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant.

Article 8.8.18.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For *in vitro* produced embryos of cattle

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of FMD at the time of collection of the oocytes;
   b) were kept for at least three months prior to collection in a FMD free country or *zone* where *vaccination* is not practised or FMD free *compartments*;
2) fertilisation was achieved with semen meeting the conditions referred to in Articles 8.8.13., 8.8.14., 8.8.15. or 8.8.16., as relevant;
3) the oocytes were collected, and the embryos were processed and stored in accordance with Chapters 4.9. and 4.10., as relevant.

Article 8.8.19.

Recommendations for importation from FMD free countries or zones where vaccination is practised

For *in vitro* produced embryos of cattle

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of FMD at the time of collection of the oocytes;
   b) were kept for at least three months prior to collection in a FMD free country or *zone* where *vaccination* is practised;
   c) either
      i) have been vaccinated at least twice, with the last *vaccination* not less than one month and not more than six months prior to collection, unless protective immunity has been demonstrated for more than six months;
      or
      ii) were subjected, not less than 21 days after collection, to tests for antibodies against FMDV, with negative results;
2) fertilisation was achieved with semen meeting the conditions referred to in Articles 8.8.13., 8.8.14., 8.8.15. or 8.8.16., as relevant;
3) the oocytes were collected, and the embryos were processed and stored in accordance with Chapters 4.9. and 4.10., as relevant.

Article 8.8.20.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For fresh meat or meat products of FMD susceptible animals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* comes from animals which:

1) have been kept in a FMD free country or *zone* where *vaccination* is not practised or FMD free *compartment*, or which have been imported in accordance with Article 8.8.10., Article 8.8.11. or Article 8.8.12.;
2) have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results.

Article 8.8.21.

Recommendations for importation from FMD free countries or zones where vaccination is practised

For fresh meat and meat products of ruminants and pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* comes from animals which:

1) have been kept in the FMD free country or *zone* where *vaccination* is practised, or which have been imported in accordance with Article 8.8.10., Article 8.8.11. or Article 8.8.12.;
2) have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections for FMD with favourable results;
3) for ruminants the head, including the pharynx, tongue and associated lymph nodes, has been excluded from the shipment.

Article 8.8.22.

Recommendations for importation from FMD infected countries or zones where an official control programme exists

For fresh meat of cattle and water buffaloes *(Bubalus bubalis)* (excluding feet, head and viscera)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat*:

1) comes from animals which:
   a) have remained, for at least three months prior to *slaughter*, in a *zone* of the *exporting country* where cattle and water buffaloes are regularly vaccinated against FMD and where an *official control programme* is in operation;
   b) have been vaccinated at least twice with the last *vaccination* not more than six months, unless protective immunity has been demonstrated for more than six months, and not less than one month prior to *slaughter*;
   c) were kept for the past 30 days in an *establishment*, and that FMD has not occurred within a 10 kilometre radius of the *establishment* during that period, or the *establishment* is a *quarantine station*;
   d) have been transported, in a *vehicle* which was cleansed and disinfected before the cattle and water buffaloes were loaded, directly from the *establishment* of origin or *quarantine station* to the approved *slaughterhouse/abattoir* without coming into contact with other animals which do not fulfil the required conditions for export;
   e) have been slaughtered in an approved *slaughterhouse/abattoir*:
      i) which is officially designated for export;
      ii) in which no FMD has been detected during the period between the last *disinfection* carried out before *slaughter* and the shipment for export has been dispatched;
   f) have been subjected to ante- and post-mortem inspections within 24 hours before and after *slaughter* with no evidence of FMD;
2) comes from deboned carcasses:
   a) from which the major lymphatic nodes have been removed;
   b) which, prior to deboning, have been submitted to maturation at a temperature greater than + 2°C for a minimum period of 24 hours following *slaughter* and in which the pH value was less than 6.0 when tested in the middle of both the longissimus dorsi muscle.

Article 8.8.23.

Recommendations for importation from FMD infected countries or zones

For meat products of FMD susceptible animals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the entire consignment of *meat products* come from animals which have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections for FMD with favourable results;
2) the *meat products* have been processed to ensure the destruction of FMDV in accordance with one of the procedures in Article 8.8.31.;
3) the necessary precautions were taken after processing to avoid contact of the *meat products* with any potential source of FMDV.

Article 8.8.24.

Recommendations for importation from FMD free countries or zones where vaccination either is or is not practised or FMD free compartments

For milk and milk products intended for human consumption and for products of animal origin (from FMD susceptible animals) intended for use in animal feeding or for agricultural or industrial use

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products come from animals which have been kept in a FMD free country, *zone* or *compartment*, or which have been imported in accordance with Article 8.8.10., Article 8.8.11. or Article 8.8.12.

Article 8.8.25.

Recommendations for importation from FMD infected countries or zones where an official control programme exists

For milk and milk products

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) these products:
   a) originate from *establishments* which were not infected or suspected of being infected with FMD at the time of *milk* collection;
   b) have been processed to ensure the destruction of FMDV in accordance with one of the procedures in Article 8.8.35. and in Article 8.8.36.;
2) the necessary precautions were taken after processing to avoid contact of the products with any potential source of FMDV.

Article 8.8.26.

Recommendations for importation from FMD infected countries

For blood-meal and meat-meals from FMD susceptible animals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the manufacturing method for these products included heating to a minimum core temperature of 70°C for at least 30 minutes.

Article 8.8.27.

Recommendations for importation from FMD infected countries

For wool, hair, bristles, raw hides and skins from FMD susceptible animals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) these products have been processed to ensure the destruction of FMDV in accordance with one of the procedures in Articles 8.8.32., 8.8.33. and 8.8.34.;
2) the necessary precautions were taken after collection or processing to avoid contact of the products with any potential source of FMDV.

Veterinary Authorities should authorise, without restriction, the import or transit through their territory of semi-processed hides and skins (limed hides, pickled pelts, and semi-processed leather such as wet blue and crust leather), provided that these products have been submitted to the usual chemical and mechanical processes in use in the tanning industry.

Article 8.8.28.

Recommendations for importation from FMD infected countries or zones

For straw and forage

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these *commodities*:

1) are free of grossly identified contamination with material of animal origin;
2) have been subjected to one of the following treatments, which, in the case of material sent in bales, has been shown to penetrate to the centre of the bale:
   a) either to the action of steam in a closed chamber such that the centre of the bales has reached a minimum temperature of 80°C for at least ten minutes,
   b) or to the action of formalin fumes (formaldehyde gas) produced by its commercial solution at 35-40% in a chamber kept closed for at least eight hours and at a minimum temperature of 19°C;

OR

3) have been kept in bond for at least four months before being released for export.

Article 8.8.29.

Recommendations for importation from FMD free countries or zones where vaccination either is or is not practised

For skins and trophies derived from FMD susceptible wildlife

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products are derived from animals that have been killed in such a country or *zone* or which have been imported from a country, *zone* or *compartment* free from FMD.

Article 8.8.30.

Recommendations for importation from FMD infected countries or zones

For skins and trophies derived from FMD susceptible wildlife

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products have been processed to ensure the destruction of FMDV in accordance with the procedures in Article 8.8.37.

Article 8.8.31.

Procedures for the inactivation of FMDV in meat and meat products

For the inactivation of FMDV present in *meat* and *meat products*, one of the following procedures should be used:

1. Canning

   Meat and *meat products* are subjected to heat treatment in a hermetically sealed container to reach an internal core temperature of at least 70°C for a minimum of 30 minutes or to any equivalent treatment which has been demonstrated to inactivate FMDV.

2. Thorough cooking

   Meat, previously deboned and defatted, and *meat products* are subjected to a heat treatment that results in a core temperature of at least 70°C for a minimum of 30 minutes.

   After cooking, they should be packed and handled in such a way they are not exposed to a source of FMDV.

3. Drying after salting

   When *rigor mortis* is complete, the *meat* is deboned, treated with salt (NaCl) and 'completely dried'. It should not deteriorate at ambient temperature.

   'Completely dried' is defined as a moisture protein ratio that is not greater than 2.25:1 or a water activity (Aw) that is not greater than 0.85.

Article 8.8.32.

Procedures for the inactivation of FMDV in wool and hair

For the inactivation of FMDV present in wool and hair for industrial use, one of the following procedures should be used:

1) industrial washing, which consists of the immersion of the wool in a series of baths of water, soap and sodium hydroxide (soda) or potassium hydroxide (potash);
2) chemical depilation by means of slaked lime or sodium sulphide;
3) fumigation with formaldehyde in a hermetically sealed chamber for at least 24 hours;
4) industrial scouring which consists of the immersion of wool in a water-soluble detergent held at 60-70°C;
5) storage of wool at 4°C for four months, 18°C for four weeks or 37°C for eight days.

Article 8.8.33.

Procedures for the inactivation of FMDV in bristles

For the inactivation of FMDV present in bristles for industrial use, one of the following procedures should be used:

1) boiling for at least one hour; or

2) immersion for at least 24 hours in a 1% aqueous solution of formaldehyde.

Article 8.8.34.

Procedures for the inactivation of FMDV in raw hides and skins

For the inactivation of FMDV present in raw hides and skins for industrial use, the following procedure should be used: treatment for at least 28 days with salt (NaCl) containing 2% sodium carbonate (Na_2CO_3).

Article 8.8.35.

Procedures for the inactivation of FMDV in milk and cream for human consumption

For the inactivation of FMDV present in *milk* and cream for human consumption, one of the following procedures should be used:

1) a process applying a minimum temperature of 132°C for at least one second (ultra-high temperature [UHT]), or

2) if the *milk* has a pH less than 7.0, a process applying a minimum temperature of 72°C for at least 15 seconds (high temperature - short time pasteurisation [HTST]), or

3) if the *milk* has a pH of 7.0 or greater, the HTST process applied twice.

Article 8.8.36.

Procedures for the inactivation of FMDV in milk for animal consumption

For the inactivation of FMDV present in *milk* for animal consumption, one of the following procedures should be used:

1) the HTST process applied twice; or

2) HTST combined with another physical treatment, e.g. maintaining a pH 6 for at least one hour or additional heating to at least 72°C combined with desiccation; or

3) UHT combined with another physical treatment referred to in point 2 above.

Article 8.8.37.

Procedures for the inactivation of FMDV in skins and trophies from wildlife susceptible to the disease

For the inactivation of FMDV present in skins and trophies from *wild animals* susceptible to FMD, one of the following procedures should be used prior to complete taxidermal treatment:

1) boiling in water for an appropriate time so as to ensure that any matter other than bone, horns, hooves, claws, antlers or teeth is removed; or

2) gamma irradiation at a dose of at least 20 kilogray at room temperature (20°C or higher); or

3) soaking, with agitation, in a 4% (weight/volume) solution of sodium carbonate (Na_2CO_3) maintained at pH 11.5 or greater for at least 48 hours; or

4) soaking, with agitation, in a formic acid solution (100 kg salt [NaCl] and 12 kg formic acid per 1,000 litres water) maintained at pH less than 3.0 for at least 48 hours; wetting and dressing agents may be added; or

5) in the case of raw hides, treating for at least 28 days with salt (NaCl) containing 2% sodium carbonate (Na_2CO_3).

Article 8.8.38.

Procedures for the inactivation of FMDV in casings of ruminants and pigs

For the inactivation of FMDV present in *casings* of ruminants and pigs, the following procedures should be used: treating for at least 30 days either with dry salt (NaCl) or with saturated brine (NaCl, $a_w < 0.80$), or with phosphate supplemented salt containing 86.5% NaCl, 10.7% Na_2HPO_4 and 2.8% Na_3PO_4 (weight/weight/weight), either dry or as a saturated brine ($a_w < 0.80$), and kept at a temperature of greater than 12°C during this entire period.

Article 8.8.39.

WOAH endorsed official control programme for FMD

The overall objective of a WOAH endorsed *official control programme* for FMD is for countries to progressively improve the situation and eventually attain FMD free status. The *official control programme* should be applicable to the entire country even if certain measures are directed towards defined *subpopulations* only.

Member Countries may, on a voluntary basis, apply for endorsement of their *official control programme* for FMD when they have implemented measures in accordance with this article.

For a Member Country's *official control programme* for FMD to be endorsed by WOAH, the Member Country should:

1) have a record of regular and prompt animal disease reporting in accordance with the requirements in Chapter 1.1.;
2) submit documented evidence of the capacity of the *Veterinary Services* to control FMD; one way of providing this evidence is through WOAH PVS Pathway;
3) submit a detailed plan of the programme to control and eventually eradicate FMD in the country or *zone* including:
    a) the timeline;
    b) the performance indicators for assessing the efficacy of the control measures to be implemented;
    c) documentation indicating that the *official control programme* for FMD is applicable to the entire country;
4) submit a dossier on the epidemiology of FMD in the country describing the following:
    a) the general epidemiology in the country highlighting the current knowledge and gaps and the progress that has been made in controlling FMD;
    b) the measures implemented to prevent introduction of *infection*, the rapid detection of, and response to, all FMD *outbreaks* in order to reduce the incidence of FMD *outbreaks* and to eliminate FMDV transmission in at least one *zone* in the country;
    c) the main livestock production systems and movement patterns of FMD susceptible animals and their products within and into the country;
5) submit evidence that FMD *surveillance* is in place:
    a) taking into account provisions in Chapter 1.4. and the provisions on *surveillance* of this chapter;
    b) have diagnostic capability and procedures, including regular submission of samples to a *laboratory* that carries out diagnosis and further characterisation of strains;
6) where *vaccination* is practised as a part of the *official control programme* for FMD, provide:
    a) evidence (such as copies of legislation) that *vaccination* of selected populations is compulsory;
    b) detailed information on *vaccination* campaigns, in particular on:
        i) target populations for *vaccination*;
        ii) monitoring of *vaccination* coverage, including serological monitoring of population immunity;
        iii) technical specification of the vaccines used, including matching with the circulating FMDV strains, and description of the licensing procedures in place;
        iv) the proposed timeline for the transition to the use of vaccines fully compliant with the standards and methods described in the *Terrestrial Manual*;
7) provide an emergency preparedness and response plan to be implemented in case of *outbreaks*.

The Member Country's *official control programme* for FMD will be included in the list of programmes endorsed by WOAH only after the submitted evidence, based on the provisions of Article 1.11.5., has been accepted by WOAH. Retention on the list requires an annual update on the progress of the *official control programme* and information on significant changes concerning the points above. Changes in the epidemiological situation and other significant events should be reported to WOAH in accordance with the requirements in Chapter 1.1.

WOAH may withdraw the endorsement of the *official control programme* if there is evidence of:

– non-compliance with the timelines or performance indicators of the programme; or
– significant problems with the performance of the *Veterinary Services*; or
– an increase in the incidence of FMD that cannot be addressed by the programme.

Article 8.8.40.

General principles of surveillance

Articles 8.8.40. to 8.8.42. define the principles and provide a guide for the *surveillance* of FMD in accordance with Chapter 1.4. applicable to Member Countries seeking establishment, maintenance or recovery of freedom from FMD at the country, *zone* or *compartment* level or seeking endorsement by WOAH of their *official control programme* for FMD, in accordance with Article 8.8.39. *Surveillance* aimed at identifying disease and FMDV *infection* or transmission should cover domestic and, where appropriate, *wildlife* species as indicated in point 2 of Article 8.8.1.

1. Early detection

A *surveillance* system in accordance with Chapter 1.4. should be the responsibility of the *Veterinary Authority* and should provide an *early warning system* to report suspected *cases* throughout the entire production, marketing and processing chain. A procedure should be in place for the rapid collection and transport of samples to a *laboratory* for FMD diagnosis. This requires that sampling kits and other equipment be available to those responsible for *surveillance*. Personnel responsible for *surveillance* should be able to seek assistance from a team with expertise in FMD diagnosis and control.

2. Demonstration of freedom

The impact and epidemiology of FMD widely differ in different regions of the world and therefore it is inappropriate to provide specific recommendations for all situations. *Surveillance* strategies employed for demonstrating freedom from FMD in the country, *zone* or *compartment* at an acceptable level of confidence should be adapted to the local situation. For example, the approach to demonstrating freedom from FMD following an *outbreak* caused by a pig-adapted strain of FMDV should differ significantly from an approach designed to demonstrate freedom from FMD in a country or *zone* where African buffaloes *(Syncerus caffer)* provide a potential reservoir of *infection*.

Surveillance for FMD should be in the form of a continuing programme. Programmes to demonstrate no evidence of *infection* with FMDV and transmission should be carefully designed and implemented to avoid producing results that are insufficient to be accepted by WOAH or trading partners, or being excessively costly and logistically complicated.

The strategy and design of the *surveillance* programme will depend on the historical epidemiological circumstances including whether or not *vaccination* has been used.

A Member Country wishing to substantiate FMD freedom where *vaccination* is not practised should demonstrate no evidence of *infection* with FMDV.

A Member Country wishing to substantiate FMD freedom where *vaccination* is practised should demonstrate that FMDV has not been transmitted in any susceptible populations. Within vaccinated populations, serological surveys to demonstrate no evidence of FMDV transmission should target animals that are less likely to show vaccine-derived antibodies to nonstructural proteins, such as young animals vaccinated a limited number of times, or unvaccinated animals. In any unvaccinated *subpopulation*, *surveillance* should demonstrate no evidence of *infection* with FMDV.

Surveillance strategies employed for establishing and maintaining a *compartment* should identify the prevalence, distribution and characteristics of FMD outside the *compartment*.

3. WOAH endorsed official control programme

Surveillance strategies employed in support of a WOAH endorsed *official control programme* should demonstrate evidence of the effectiveness of any *vaccination* used and of the ability to rapidly detect all FMD *outbreaks*.

Therefore considerable latitude is available to Member Countries to design and implement *surveillance* to establish that the whole territory or part of it is free from FMDV *infection* and transmission and to understand the epidemiology of FMD as part of the *official control programme*.

The Member Country should submit a dossier to WOAH in support of its application that not only explains the epidemiology of FMD in the region concerned but also demonstrates how all the risk factors, including the role of *wildlife*, if appropriate, are identified and managed. This should include provision of scientifically based supporting data.

4. Surveillance strategies

The strategy employed to establish the prevalence of *infection* with FMDV or to substantiate freedom from FMDV *infection* or transmission may be based on randomised or targeted clinical investigation or sampling at an acceptable level of statistical confidence, as described in Chapter 1.4. If an increased likelihood of *infection* in particular localities or species can be identified, targeted sampling may be appropriate. Clinical inspection may be targeted at particular species likely to exhibit clear clinical signs (e.g. cattle and pigs). The Member Country should justify the *surveillance* strategy chosen and the frequency of sampling as adequate to detect the presence of FMDV *infection* or transmission in accordance with Chapter 1.4. and the epidemiological situation.

The design of the sampling strategy should incorporate an epidemiologically appropriate design prevalence. The sample size selected for testing should be adequate to detect *infection* or transmission if it were to occur at a predetermined minimum rate. The sample size and expected disease prevalence determine the level of confidence in the results of the survey. The Member Country should justify the choice of design prevalence and confidence level based on the objectives of *surveillance* and the prevailing or historical epidemiological situation, in accordance with Chapter 1.4.

5. Follow-up of suspected cases and interpretation of results

An effective *surveillance* system will identify suspected *cases* that require immediate follow-up and investigation to confirm or exclude that the cause of the condition is FMDV. Samples should be taken and submitted for diagnostic testing, unless the suspected *case* can be confirmed or ruled out by epidemiological and clinical investigation. Details of the occurrence of suspected *cases* and how they were investigated and dealt with should be documented. This should include the results of diagnostic testing and the control measures to which the animals concerned were subjected during the investigation.

The sensitivity and specificity of the diagnostic tests employed, including the performance of confirmatory tests, are key factors in the design, sample size determination and interpretation of the results obtained. The sensitivity and specificity of the tests used should be validated for the *vaccination* or *infection* history and production class of animals in the target population.

The *surveillance* design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following-up positives to determine with a high level of confidence, whether or not they are indicative of *infection* or transmission. This should involve supplementary tests and follow-up investigation to collect diagnostic material from the original *epidemiological unit* and *herds* or *flocks* which may be epidemiologically linked to it.

Laboratory results should be examined in the context of the epidemiological situation. Corollary information needed to complement the serological survey and assess the possibility of viral transmission includes but is not limited to:

- characterisation of the existing production systems;
- results of clinical *surveillance* of the suspects and their cohorts;
- description of number of, and protocol for, *vaccinations* performed in the area under assessment;
- *biosecurity* and history of the *establishments* with reactors;
- identification and traceability of animals and control of their movements;
- other parameters of regional significance in historic FMDV transmission.

6. Demonstration of population immunity

Following routine *vaccination*, evidence should be provided to demonstrate the effectiveness of the *vaccination* programme such as adequate *vaccination* coverage and population immunity. This can help to reduce reliance on

post-*vaccination* surveys for residual *infection* and transmission.

In designing serological surveys to estimate population immunity, blood sample collection should be stratified by age to take account of the number of *vaccinations* the animals have received. The interval between last *vaccination* and sampling depends upon the intended purpose. Sampling at one or two months after *vaccination* provides information on the efficiency of the *vaccination* programme, while sampling before or at the time of revaccination provides information on the duration of immunity. When multivalent vaccines are used, tests should be carried out to determine the antibody level at least for each serotype, if not for each antigen blended into the vaccine. The test cut-off for an acceptable level of antibody should be selected with reference to protective levels demonstrated by vaccine-challenge test results for the antigen concerned. Where the threat from circulating virus has been characterised as resulting from a field virus with significantly different antigenic properties from the vaccine virus, this should be taken into account when interpreting the protective effect of population immunity. Figures for population immunity should be quoted with reference to the total of susceptible animals in a given *subpopulation* and in relation to the subset of vaccinated animals.

The entire investigative process should be documented within the *surveillance* programme.

All the epidemiological information should be substantiated, and the results should be collated in the final report.

Article 8.8.41.

Methods of surveillance

1. Clinical surveillance

Farmers and workers who have day-to-day contact with livestock, as well as *veterinary paraprofessionals*, *veterinarians* and diagnosticians, should report promptly any suspicion of FMD. The *Veterinary Authority* should implement programmes to raise awareness among them.

Clinical *surveillance* requires the physical examination of susceptible animals. Although significant emphasis is placed on the diagnostic value of mass serological screening, *surveillance* based on clinical inspection may provide a high level of confidence of detection of disease if a sufficient number of clinically susceptible animals is examined at an appropriate frequency and investigations are recorded and quantified.

Clinical examination and diagnostic testing should be applied to clarify the status of suspected *cases*. Diagnostic testing may confirm clinical suspicion, while clinical *surveillance* may contribute to confirmation of positive laboratory test results. Clinical *surveillance* may be insufficient in *wildlife* and domestic species that usually do not show clinical signs or husbandry systems that do not permit sufficient observations. In such situations, serological *surveillance* should be used. Hunting, capture and non-invasive sampling and observation methods can be used to obtain information and diagnostic samples from *wildlife* species.

2. Virological surveillance

Establishment of the molecular, antigenic and other biological characteristics of the causative virus, as well as its source, is mostly dependent upon clinical *surveillance* to provide samples. FMDV isolates should be sent regularly to a WOAH Reference Laboratory.

Virological *surveillance* aims to:

a) confirm clinically suspected *cases*;

b) follow up positive serological results;

c) characterise isolates for epidemiological studies and vaccine matching;

d) monitor populations at risk for the presence and transmission of the virus.

3. Serological surveillance

Serological *surveillance* aims to detect antibodies resulting from *infection* or *vaccination* using nonstructural protein tests or structural protein tests.

Serological *surveillance* may be used to:

a) estimate the prevalence or substantiate freedom from FMDV *infection* or transmission;

b) monitor population immunity.

Serum collected for other purposes can be used for FMD *surveillance*, provided the principles of survey design described in this chapter are met.

The results of random or targeted serological surveys are important in providing reliable evidence of the FMD situation in a country, *zone* or *compartment*. It is therefore essential that the survey be thoroughly documented.

Article 8.8.42.

The use and interpretation of serological tests (see Figure 3)

The selection and interpretation of serological tests should be considered in the context of the epidemiological situation. Test protocols, reagents, performance characteristics and validation of all tests used should be known. Where combinations of tests are used, the overall test system performance characteristics should also be known.

Animals infected with FMDV produce antibodies to both the structural proteins and the nonstructural proteins of the virus. Vaccinated animals produce antibodies mainly or entirely to the structural proteins of the virus depending upon vaccine purity. The structural protein tests are serotype specific and for optimal sensitivity one should select an antigen or virus closely related to the field strain expected. In unvaccinated populations, structural protein tests may be used to screen sera for evidence of FMDV *infection* or transmission or to detect the introduction of vaccinated animals. In vaccinated populations, structural protein tests may be used to monitor the serological response to the *vaccination*.

Nonstructural protein tests may be used to screen sera for evidence of *infection* or transmission of all serotypes of FMDV regardless of the *vaccination* status of the animals provided the vaccines comply with the standards of the *Terrestrial Manual* with respect to purity. However, although animals vaccinated and subsequently infected with FMDV develop antibodies to nonstructural proteins, the levels may be lower than those found in infected animals that have not been vaccinated. To ensure that all animals that had contact with FMDV have seroconverted, it is recommended that for each *vaccination* area samples for nonstructural protein antibody testing are taken not earlier than 30 days after the last *case* and in any case not earlier than 30 days after the last *vaccination*.

Positive FMDV antibody test results can have four possible causes:

– *infection* with FMDV;

– *vaccination* against FMD;

– maternal antibodies (maternal antibodies in cattle are usually found only up to six months of age but in some individuals and in some other species, maternal antibodies can be detected for longer periods);

– non-specific reactivity of the serum in the tests used.

1. Procedure in case of positive test results

The proportion and strength of seropositive reactors should be taken into account when deciding if they are *laboratory* confirmed reactors or further investigation and testing are required.

When false positive results are suspected, seropositive reactors should be retested in the *laboratory* using repeat and confirmatory tests. Tests used for confirmation should be of high diagnostic specificity to minimise false positive test results. The diagnostic sensitivity of the confirmatory test should approach that of the screening test.

All *herds* or *flocks* with at least one *laboratory* confirmed reactor should be investigated. The investigation should examine all evidence, which may include the results of virological tests and of any further serological tests that

might confirm or refute the hypothesis that the positive results to the serological tests employed in the initial survey were due to FMDV transmission. This investigation should document the status for each positive *herd*. Epidemiological investigation should be continued concurrently.

Clustering of seropositive results within *herds* or *flocks* or within a region should be investigated as it may reflect any of a series of events, including the demographics of the population sampled, vaccinal exposure or the presence of *infection* or transmission. As clustering may signal *infection* or transmission, the investigation of all instances should be incorporated in the survey design.

Paired serology can be used to identify FMDV transmission by demonstrating an increase in the number of seropositive animals or an increase in antibody titre at the second sampling.

The investigation should include the reactor animals, susceptible animals of the same *epidemiological unit* and susceptible animals that have been in contact or otherwise epidemiologically associated with the reactor animals. The animals sampled should remain in the *establishment* pending test results, should be clearly identified, accessible and should not be vaccinated during the investigations, so that they can be retested after an appropriate period of time. Following clinical examination, a second sample should be taken, after an appropriate time has lapsed, from the animals tested in the initial survey with emphasis on animals in direct contact with the reactors. If the animals are not individually identified, a new serological survey should be carried out in the *establishments* after an appropriate time, repeating the application of the primary survey design. If FMDV is not circulating, the magnitude and prevalence of antibody reactivity observed should not differ in a statistically significant manner from that of the primary sample.

In some circumstances, unvaccinated sentinel animals may also be used. These can be young animals from unvaccinated dams or animals in which maternally conferred immunity has lapsed and preferably of the same species as in the positive sampling units. If other susceptible, unvaccinated animals are present, they could act as sentinels to provide additional serological evidence. The sentinels should be kept in close contact with the animals of the *epidemiological unit* under investigation for at least two *incubation periods* and should remain serologically negative if FMDV is not circulating.

2. Follow-up of field and laboratory findings

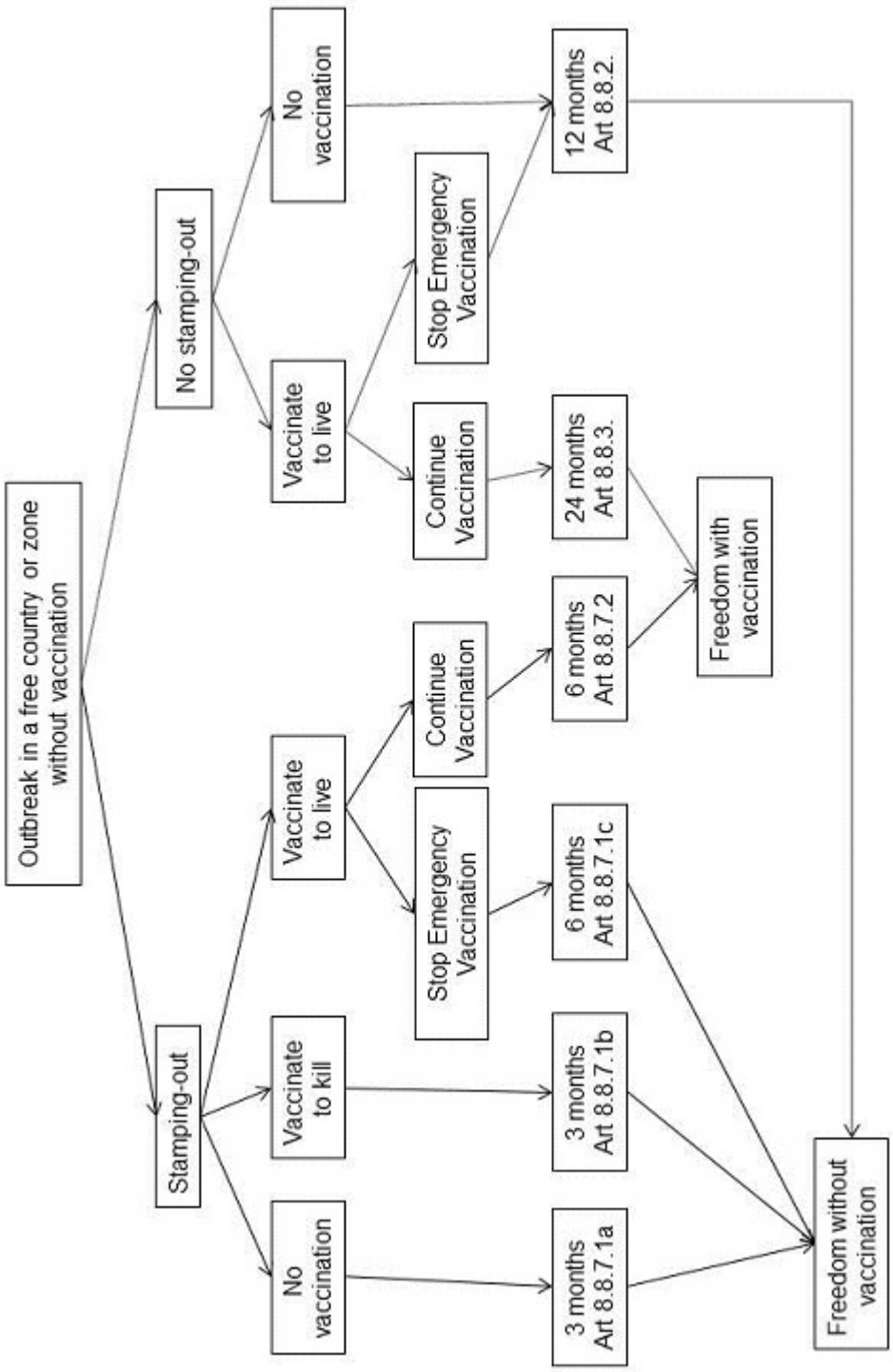
If transmission is demonstrated, an *outbreak* is declared.

The significance of small numbers of seropositive animals in the absence of current FMDV transmission is difficult to determine. Such findings may be an indication of past *infection* followed by recovery or by the development of a carrier state, in ruminants, or due to non-specific serological reactions. Antibodies to nonstructural proteins may be induced by repeated *vaccination* with vaccines that do not comply with the requirements for purity. However, the use of such vaccines is not permissible in countries or *zones* applying for an official status. In the absence of evidence of FMDV *infection* and transmission, such findings do not warrant the declaration of a new *outbreak* and the follow-up investigations may be considered complete.

However, if the number of seropositive animals is greater than the number of false positive results expected from the specificity of the diagnostic tests used, susceptible animals that have been in contact or otherwise epidemiologically associated with the reactor animals should be investigated further.

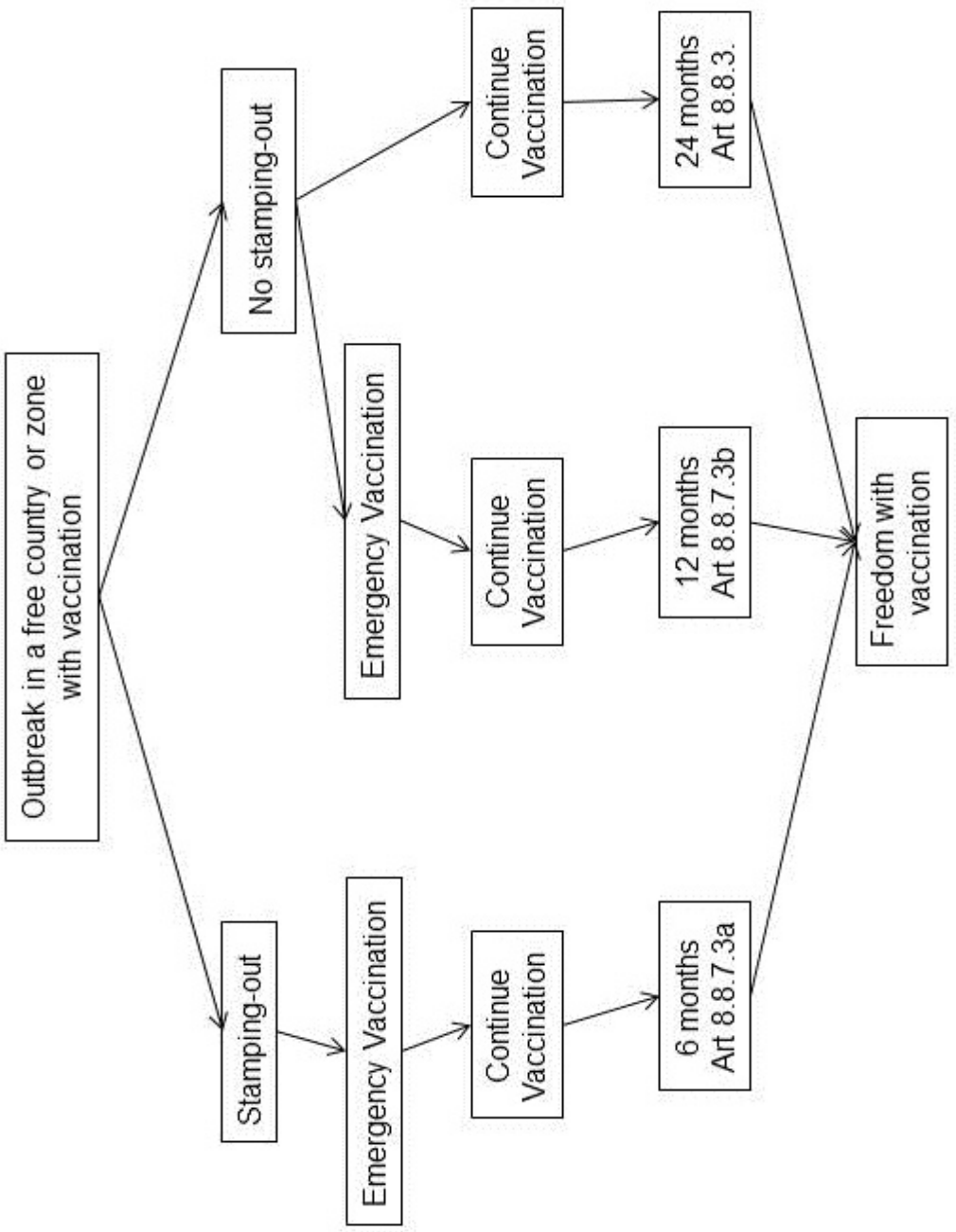
Abbreviations and acronyms:	
ELISA	Enzyme-linked immunosorbent assay
VNT	Virus neutralisation test
NSP	Nonstructural protein(s) of foot and mouth disease virus (FMDV)
3ABC	NSP antibody test
SP	Structural protein of foot and mouth disease virus

Fig. 1. *Schematic representation of the minimum waiting periods and pathways for recovery of FMD free status after an outbreak in a free country or zone where vaccination is not practised*



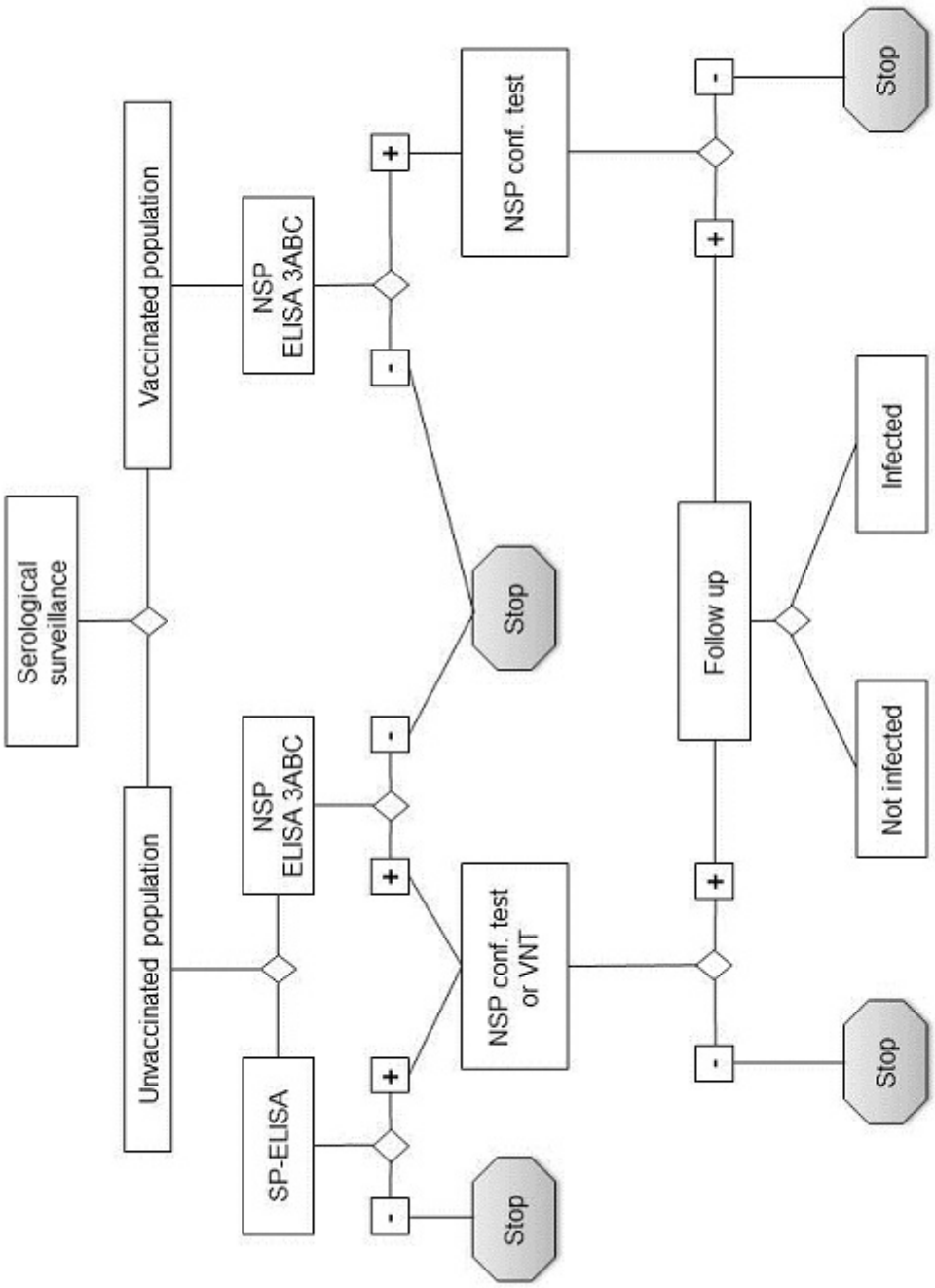
Waiting periods are minima depending upon outcome of *surveillance* specified in respective articles. If there are multiple waiting periods because of different control measures, the longest applies.

Fig. 2. *Schematic representation of the minimum waiting periods and pathways for recovery of FMD free status after an outbreak in a free country or zone where vaccination is practised*



Waiting periods are minima depending upon outcome of *surveillance* specified in respective articles. If there are multiple waiting periods because of different control measures, the longest applies.

Fig. 3. *Schematic representation of laboratory tests for determining evidence of infection with FMDV by means of serological surveys*



NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2015.

CHAPTER 8.9.

HEARTWATER

Article 8.9.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 8.9.2.

Trade in commodities

Veterinary Authorities of countries free from heartwater may prohibit importation or transit through their territory, from countries considered infected with heartwater, of domestic and *wild* ruminants.

Article 8.9.3.

Recommendations for importation from countries considered infected with heartwater

For domestic and wild ruminants

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of heartwater on the day of shipment;
2) were subjected to a diagnostic test for heartwater with negative results during the 15 days prior to shipment;
3) were treated with acaricides prior to shipment and were completely free of ticks.

NB: FIRST ADOPTED IN 1992.

CHAPTER 8.10.

JAPANESE ENCEPHALITIS

Article 8.10.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for Japanese encephalitis shall be 21 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.10.2.

Recommendations for importation from countries or zones infected with Japanese encephalitis

For horses

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of Japanese encephalitis on the day of shipment; and

EITHER

2) were kept for the 21 days prior to shipment, in an insect-proof *quarantine station* and were protected from insect *vector* attacks during their transportation from the *quarantine station* to the *place of shipment*;

OR

3) were vaccinated against Japanese encephalitis not less than 7 days and no more than 12 months prior to shipment.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 2000.

CHAPTER 8.11.

INFECTION WITH *LEISHMANIA* SPP. (LEISHMANIOSIS)

Article 8.11.1.

General provisions

For the purposes of the *Terrestrial Code*, leishmaniosis is defined as an *infection* of dogs and cats (hereafter 'susceptible animal') by protozoan parasites of the genus *Leishmania*, family *Trypanosomatidae*, order *Kinetoplastida*.

The *infection* is usually transmitted by the bite of an infected phlebotomine sand fly belonging to the genera *Phlebotomus* (Old World) or *Lutzomyia* (New World).

The following defines the occurrence of *infection* with *Leishmania* spp.:

1) *Leishmania* spp. amastigotes have been observed and identified as such in a sample from a susceptible animal; or
2) nucleic acid specific to *Leishmania* spp. has been detected in a sample from a susceptible animal showing clinical signs or pathological lesions consistent with *infection* with *Leishmania* spp., or epidemiologically linked to a confirmed or suspected *case*, or giving cause for suspicion of previous association or contact with *Leishmania* spp.; or
3) antibodies specific to *Leishmania* spp. that are not the consequence of *vaccination* have been detected in a sample from a susceptible animal showing clinical signs or pathological lesions consistent with *infection* with *Leishmania* spp., or epidemiologically linked to a confirmed or suspected *case*, or giving cause for suspicion of previous association or contact with *Leishmania* spp.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

NB: FIRST ADOPTED IN 2023.

CHAPTER 8.12.

INFECTION WITH *MYCOBACTERIUM TUBERCULOSIS* COMPLEX

Article 8.12.1.

General provisions

The recommendations in this chapter are intended to manage the human and animal health risks associated with *infection* of animals with a member of the *Mycobacterium tuberculosis (M. tuberculosis)* complex.

For the purposes of the *Terrestrial Code*, *M. tuberculosis* complex comprises *M. bovis*, *M. caprae* and *M. tuberculosis*, but excludes vaccine strains.

Many different domestic and *wild animal* species belonging to diverse mammalian taxa are known to be susceptible to *infection* with *M. tuberculosis* complex. Their epidemiological significance depends on the degree of susceptibility, the husbandry system, the density, spatial distribution and ecology of populations as well as the pathogenesis and transmission pathways. In some geographical regions, certain *wild animal* species can act as reservoirs.

For the purposes of this chapter, 'animals' means domestic and *captive wild animal* populations of the following categories:

1) bovids: this term means bovines (*Bos taurus*, *B. indicus*, *B. frontalis*, *B. javanicus* and *B. grunniens*), water buffaloes *(Bubalus bubalis)*, and bison (*Bison bison* and *B. bonasus*);
2) cervids: this term means red deer *(Cervus elaphus elaphus)*, wapiti/elk *(C. elaphus canadensis)*, sika *(C. nippon)*, samba *(C. unicolor unicolor)*, rusa *(C. timorensis)*, roe deer *(Capreolus capreolus)*, fallow deer *(Dama dama)*, white-tailed, black-tailed and mule deer (*Odocoileus* spp.) and reindeer/caribou *(Rangifer tarandus)*;
3) goats *(Capra hircus)*;
4) New World camelids: this term means alpacas *(Lama guanicoe pacos)* and llamas *(Lama guanicoe glama)*.

The chapter deals not only with the occurrence of clinical signs caused by *infection* with *M. tuberculosis* complex, but also with the presence of *infection* with *M. tuberculosis* complex in the absence of clinical signs.

For the purposes of the *Terrestrial Code*, the following defines the occurrence of *infection* with *M. tuberculosis* complex:

– a member of *M. tuberculosis* complex has been identified in a sample from an animal or a product derived from that animal;

OR

– positive results to a diagnostic test have been obtained and there is an epidemiological link to a *case* of *infection* with *M. tuberculosis* complex or there is other reason to suspect *infection* with *M. tuberculosis* complex.

When authorising import or transit of *commodities* listed in this chapter, with the exception of those listed in Article 8.12.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the *M. tuberculosis* complex *infection* status of the animal population of the country, *zone* or *herd* of origin.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 8.12.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any *M. tuberculosis* complex-related conditions, regardless of the *M. tuberculosis* complex *infection* status of the animal populations of the country, *zone* or *herd* of origin:

1) *fresh meat* and *meat products* originating from animals that have been subjected to ante- and post-mortem inspections as described in Chapter 6.3.;
2) cured hides, skins and trophies;

3) gelatine, collagen, tallow and *protein meal*.

Article 8.12.3.

Country or zone historically free from infection with *M. tuberculosis* complex in specified animal categories

A country or *zone* may be considered historically free from *infection* with *M. tuberculosis* complex in specified animal categories when the requirements in Article 1.4.6. have been met for the relevant animal categories.

Article 8.12.4.

Country or zone free from infection with *M. tuberculosis* complex in bovids

1) To qualify as free from *infection* with *M. tuberculosis* complex in bovids, a country or *zone* should satisfy the following requirements:
   a) *infection* in animals is a *notifiable disease* in the entire country;
   b) a *surveillance* programme based on regular testing of all *herds* has been in place for at least three years and for the past three years this testing has demonstrated that *infection* with *M. tuberculosis* complex was not present in at least 99.8% of the *herds* representing at least 99.9% of the bovids in the country or *zone*;
   c) a *surveillance* programme in accordance with Chapter 1.4. is in place to detect *infection* with *M. tuberculosis* complex in the country or *zone* through ante- and post-mortem inspections of bovids as described in Chapter 6.3.;
   d) regulatory measures have been implemented for the early detection of *infection* with *M. tuberculosis* complex in bovids;
   e) bovids and their germplasm introduced into the country or *zone* comply with the recommendations in Articles 8.12.7., 8.12.10. and 8.12.12.
2) To maintain the status as free from *infection* with *M. tuberculosis* complex in bovids, a country or *zone* should satisfy the following requirements:
   a) the requirements in points 1 a), 1 c), 1 d) and 1 e) above are met;
   b) a *surveillance* programme based on regular testing of bovids is in place in the country or *zone* to detect *infection* with *M. tuberculosis* complex in accordance with Article 1.4.4.;
   c) once the *surveillance* programme described in point b) has demonstrated that *infection* with *M. tuberculosis* complex has not been present in at least 99.8% of the *herds* representing 99.9% of the bovids in the country or *zone* for two consecutive years, *surveillance* may be maintained through ante- and post-mortem inspections as described in Chapter 6.3.
3) The country or *zone* status of free from *infection* with *M. tuberculosis* complex in bovids is not affected by the occurrence of *infection* with *M. tuberculosis* complex in other animal categories or *feral* or *wild animals* provided that measures intended to prevent transmission of *infection* with *M. tuberculosis* complex to bovids have been implemented and are periodically reassessed.

Article 8.12.5.

Country or zone free from infection with *M. tuberculosis* complex in cervids

1) To qualify as free from *infection* with *M. tuberculosis* complex in cervids, a country or *zone* should satisfy the following requirements:
   a) *infection* with *M. tuberculosis* complex in animals is a *notifiable disease* in the entire country;
   b) regular testing of all cervid *herds* has been in place for at least three years and for the past three years this testing has demonstrated that *infection* with *M. tuberculosis* complex was not present in at least 99.8% of the *herds* representing at least 99.9% of the cervids in the country or *zone*;
   c) a *surveillance* programme is in place to detect *infection* with *M. tuberculosis* complex in the country or *zone* through ante- and post-mortem inspections as described in Chapter 6.3.;
   d) regulatory measures have been implemented for the early detection of *infection* with *M. tuberculosis* complex in cervids;
   e) cervids and their germplasm introduced into the country or *zone* comply with the recommendations in Articles 8.12.7., 8.12.11. and 8.12.12.

2) To maintain the status as free from *infection* with *M. tuberculosis* complex in cervids, a country or *zone* should satisfy the following requirements:

   a) the requirements in points 1 a), 1 c), 1 d) and 1 e) above are met;

   b) a *surveillance* programme based on regular testing of cervids is in place in the country or *zone* to detect *infection* with *M. tuberculosis* complex in accordance with Article 1.4.4.;

   c) once the *surveillance* programme described in point b) has demonstrated that *infection* with *M. tuberculosis* complex has not been present in at least 99.8% of the *herds* representing 99.9% of the cervids in the country or *zone* for two consecutive years, *surveillance* may be maintained through ante- and post-mortem inspections as described in Chapter 6.3.

3) The country or *zone* status free from *infection* with *M. tuberculosis* complex in cervids is not affected by the occurrence of *infection* with *M. tuberculosis* complex in other animal categories or *feral* or *wild animals* provided that measures intended to prevent transmission of *infection* with *M. tuberculosis* complex to cervids have been implemented and are periodically reassessed.

Article 8.12.6.

Herd free from infection with *M. tuberculosis* complex in bovids or cervids

1) To qualify as free from *infection* with *M. tuberculosis* complex, a *herd* of bovids or cervids should satisfy the following requirements:

   a) the *herd* is in a country or *zone* free from *infection* with *M. tuberculosis* complex in bovids or in cervids and is certified free by the *Veterinary Authority*;

   OR

   b) the *herd* satisfies the following requirements:

      i) *infection* with *M. tuberculosis* complex in animals is a *notifiable disease* in the entire country;

      ii) no occurrence of *infection* with *M. tuberculosis* complex has been detected in the *herd* for at least the past 12 months;

      iii) bovids or cervids in the *herd* have shown no clinical signs of *infection* with *M. tuberculosis* complex or lesions at ante- or post-mortem inspections for at least the past 12 months;

      iv) two tests have been performed with negative results at a minimum interval of six months on all bovids or cervids over six weeks of age present in the *herd* at the time of testing. The first test was performed at least six months after the removal of the last *case*;

      v) bovids or cervids and their germplasm introduced into the *herd* comply with Articles 8.12.7., 8.12.10., 8.12.11. and 8.12.12.;

      vi) for at least the past 12 months, there has been no occurrence of *infection* with *M. tuberculosis* complex in other *herds* of the same *establishments* or measures have been implemented to prevent any transmission of *infection* with *M. tuberculosis* complex from these other *herds*.

2) To maintain the free status, either:

   a) the requirements in point 1 a) are met;

   OR

   b) the requirements in points 1 b) i) to iii), v) and vi) are met and bovids or cervids in the *herd*:

      i) showed a negative result to an annual test to ensure the continuing absence of *infection* with *M. tuberculosis* complex; OR

      ii) showed a negative result to a test every two years to ensure the continuing absence of *infection* with *M. tuberculosis* complex if it has been confirmed that the annual percentage of *herds* infected with *M. tuberculosis* complex is not more than 1% of all *herds* in the country or *zone* during the past two years; OR

      iii) showed a negative result to a test every three years to ensure the continuing absence of *infection* with *M. tuberculosis* complex if it has been confirmed that the annual percentage of *herds* infected with *M. tuberculosis* complex is not more than 0.2% of all *herds* in the country or *zone* during the past four years; OR

      iv) showed a negative result to a test every four years to ensure the continuing absence of *infection* with *M. tuberculosis* complex if it has been confirmed that the annual percentage of *herds* infected with

M. tuberculosis complex is not more than 0.1% of all *herds* in the country or *zone* during the past six years;

OR

c) the requirements in points 1 b) i) to iii), v) and vi) are met; and

i) the risk of transmission of *infection* with *M. tuberculosis* complex from known *wildlife* reservoirs has been assessed through active *surveillance*;

ii) all *herds* identified as being at risk are subjected to a testing programme commensurate with the assessed epidemiological risk of *infection* with *M. tuberculosis* complex. In identifying *herds* at risk, the following should be considered:

- a location associated with suspected or confirmed *infection* with *M. tuberculosis* complex in *wildlife*; or
- a history of *infection* with *M. tuberculosis* complex within last five years; or
- an epidemiological link with *herds* in either of the two points above.

Article 8.12.7.

Recommendations for the importation of bovids or cervids for breeding or rearing

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bovids or cervids:

1) showed no clinical signs of *infection* with *M. tuberculosis* complex on the day of shipment;

2)

a) originate from a *herd* free from *infection* with *M. tuberculosis* complex that is in a country or *zone* free from *infection* with *M. tuberculosis* complex; or

b) originate from a *herd* free from *infection* with *M. tuberculosis* complex and have been tested for *infection* with *M. tuberculosis* complex with negative results within 30 days prior to shipment; or

c) have been isolated for at least six months prior to shipment including protection from contact with any reservoir of *M. tuberculosis* complex and all isolated animals showed negative results to at least two consecutive tests carried out at a six-month interval, with the second test performed within 30 days prior to shipment.

Article 8.12.8.

Recommendations for the importation of goats for breeding or rearing

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) *infection* with *M. tuberculosis* complex in animals is a *notifiable disease* in the entire country;

2) the goats showed no clinical signs of *infection* with *M. tuberculosis* complex on the day of shipment;

3) either:

a) the goats have been kept since birth in *herds* in which no *case* of *infection* with *M. tuberculosis* complex has been detected for the past three years; or

b) have been isolated for at least six months prior to shipment including protection from contact with any reservoir of *M. tuberculosis* complex and all isolated animals showed negative results to at least two consecutive tests carried out at a six-month interval, with the second test performed within 30 days prior to shipment.

Article 8.12.9.

Recommendations for the importation of bovids or cervids for slaughter

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bovids or cervids:

1) showed no clinical signs of *infection* with *M. tuberculosis* complex on the day of shipment;

2) either:

   a) originate from a country, *zone* or *herd* free from *infection* with *M. tuberculosis* complex; or

   b) are not being culled as part of an eradication programme against *infection* with *M. tuberculosis* complex and were tested for *infection* with *M. tuberculosis* complex with negative results within 30 days prior to shipment.

Article 8.12.10.

Recommendations for the importation of semen of bovids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males showed no clinical signs of *infection* with *M. tuberculosis* complex on the day of collection of the semen;

2) the donor males:

   a) were kept in an *artificial insemination centre* complying with the provisions of Chapter 4.6. and complied with Article 4.7.2.; or

   b) were kept in a *herd* free from *infection* with *M. tuberculosis* complex that is in a country or *zone* free from *infection* with *M. tuberculosis* complex; or

   c) were kept in a *herd* free from *infection* with *M. tuberculosis* complex and showed negative results to a test performed within 30 days prior to collection of the semen, which was collected, processed and stored in accordance with Articles 4.6.4., 4.6.5., and 4.7.5. to 4.7.7.

Article 8.12.11.

Recommendations for the importation of semen of cervids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males showed no clinical signs of *infection* with *M. tuberculosis* complex on the day of collection of the semen;

2) the donor males either:

   a) were kept in a *herd* free from *infection* with *M. tuberculosis* complex in a country or *zone* free from *infection* with *M. tuberculosis* complex; or

   b) were kept in a *herd* free from *infection* with *M. tuberculosis* complex and showed negative results to a test performed within 30 days prior to collection of the semen, which was collected, processed and stored in accordance with Articles 4.6.4., 4.6.5., and 4.7.5. to 4.7.7.

Article 8.12.12.

Recommendations for the importation of embryos of bovids or cervids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females either:

   a) originated from a *herd* free from *infection* with *M. tuberculosis* complex in a country or *zone* free from *infection* with *M. tuberculosis* complex; or

   b) were kept in a *herd* free from *infection* with *M. tuberculosis* complex, and were subjected to a test for *infection* with *M. tuberculosis* complex with negative results during an isolation period of 30 days in the *establishment* of origin prior to collection;

2) the semen used for embryo production complied with Article 8.12.10. or Article 8.12.11.;

3) the embryos were collected, processed and stored in accordance with the relevant provisions of Chapters 4.8. to 4.10.

Article 8.12.13.

Recommendations for the importation of milk and milk products of bovids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *milk* or *milk products*:

1) have been derived from bovids in a *herd* free from *infection* with *M. tuberculosis* complex; or
2) were subjected to pasteurisation or any combination of control measures with equivalent performance as described in the Codex Alimentarius Code of Hygienic Practice for Milk and Milk Products.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2017.

CHAPTER 8.13.

NEW WORLD SCREWWORM (*COCHLIOMYIA HOMINIVORAX*) AND OLD WORLD SCREWWORM (*CHRYSOMYA BEZZIANA*)

Article 8.13.1.

Recommendations for importation from countries considered infested with New World or Old World screwworm

For domestic and wild mammals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) immediately prior to loading, the animals to be exported have been inspected, on the premises of origin, by an *official veterinarian*. After inspection for wounds with egg masses or larvae of New World or Old World screwworm, any infested animal has been rejected for export;

2) immediately prior to entering the quarantine pens in the *exporting country*:

   a) each animal has been thoroughly examined for infested wounds, under the direct supervision of an *official veterinarian*, and that no *infestation* has been found in any animal; and

   b) any wounds have been prophylactically treated with an officially approved oily larvicide at the recommended dose; and

   c) all animals have been dipped, sprayed, or otherwise treated, immediately after inspection, with a product officially approved by the *importing* and *exporting countries* for the control of New World or Old World screwworm, under the supervision of an *official veterinarian* and in accordance with the manufacturer's recommendations;

3) at the end of the quarantine and immediately prior to shipment for export:

   a) all animals have been re-examined for the presence of *infestation* and all animals have been found free of *infestation*;

   b) all wounds have been prophylactically treated with an approved oily larvicide under the supervision of an *official veterinarian*;

   c) all animals have been prophylactically treated again by dipping or spraying as in point 2 above.

Article 8.13.2.

Quarantine and transportation recommendations

1) The floor of the quarantine area and the *vehicles* must be thoroughly sprayed with an officially approved larvicide before and after each use.

2) The transit route must be the most direct, with no stopover without prior permission of the *importing country.*

Article 8.13.3.

Post importation inspection

1) On arrival at the importation point, all animals must be thoroughly inspected for wounds and possible New World or Old World screwworm *infestation* under the supervision of an *official veterinarian*.

2) The bedding material of the *vehicle* and the quarantine area should immediately be gathered and burned following each consignment.

Article 8.13.4.

Import/export of animal products

The larval stage of the New World or Old World screwworm fly is dependent on live animals and cannot survive for any length of time in dead tissue or animal products; therefore, restrictions on these products are not considered necessary.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 1998.

CHAPTER 8.14.

PARATUBERCULOSIS

Article 8.14.1.

General provisions

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2004.

CHAPTER 8.15.

INFECTION WITH RABIES VIRUS

Article 8.15.1.

General provisions

Rabies is a disease caused by neurotropic viruses of the Genus *Lyssavirus* in the family *Rhabdoviridae* of the order Mononegavirales and is transmissible to all mammals. Populations of the orders Carnivora and Chiroptera are considered to be the main reservoir hosts.

Rabies virus, the taxonomic prototype species in the *Lyssavirus* Genus formerly referred to as 'classical rabies virus, genotype-1', is found in most parts of the world, and is responsible for the vast majority of reported animal and human rabies cases. The most common source of exposure of humans to rabies virus is the dog.

Other *Lyssavirus* species can cause clinical signs similar to those caused by rabies virus, but have more restricted geographical and host range, with the majority having been isolated only from bats, thus having limited public and animal health implications.

The aim of this chapter is to mitigate the *risk* to the public and animal health posed by *infection* with rabies virus and to prevent the international spread of rabies virus.

Official control programmes to reduce the economic and public health burden of rabies are recommended, even in those countries where only bat-mediated rabies or wild carnivore-mediated rabies are present.

The *incubation period* for rabies is highly variable depending on viruses, hosts and sites of entry, and the majority of infected animals will develop disease within six months of exposure.

The *infective period* for rabies virus is variable and can start before the onset of clinical signs. In dogs, cats and ferrets virus shedding can start up to ten days before the onset of the first clinical signs and last until death.

For the purposes of the *Terrestrial Code*:

- a *case* is any *animal* infected with rabies virus;
- dog-mediated rabies is defined as any *case* caused by rabies virus maintained in the dog population *(Canis lupus familiaris)* independently of other animal reservoir species, as determined by epidemiological studies;
- the *incubation period* of *infection* with rabies virus shall be six months.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.15.2.

Country or zone free from infection with rabies virus

1) A country or *zone* may be considered free from *infection* with rabies virus when:
   a) it has a record of regular and prompt animal disease reporting in accordance with Chapter 1.1.;
   b) *infection* with rabies virus is a *notifiable disease* in the entire country and any change in the epidemiological situation or relevant events are reported in accordance with Chapter 1.1.;
   c) all susceptible animals showing clinical signs suggestive of rabies are subjected to appropriate field and laboratory investigations;
   d) an ongoing system of *surveillance* in accordance with Chapter 1.4. and Article 8.15.13. has been in place for the past 24 months, with a minimum requirement being an *early warning system* to ensure investigation and reporting of animals suspected of being infected;
   e) regulatory measures for the prevention of *infection* with rabies virus are implemented in accordance with the relevant recommendations in the *Terrestrial Code* including Articles 8.15.5. to 8.15.10.;
   f) no *case* of indigenously acquired *infection* with rabies virus has been confirmed during the past 24 months;
   g) if an imported *case* is confirmed outside a *quarantine station*, epidemological investigations have ruled out the possibility of secondary *cases*.

2) Preventive vaccination of animals does not affect the free status.
3) An imported human case of rabies does not affect the free status.

Article 8.15.3.

Country or zone infected with rabies virus

A country or *zone* that does not fulfil the requirements of Article 8.15.2. is considered to be infected with rabies virus.

Article 8.15.4.

Country or zone free from dog-mediated rabies

1) A country or *zone* may be considered free from dog-mediated rabies when:
   a) it has a record of regular and prompt animal disease reporting in accordance with Chapter 1.1.;
   b) dog-mediated rabies is a *notifiable disease* in the entire country and any change in the epidemiological situation or relevant events are reported in accordance with Chapter 1.1.;
   c) an ongoing system of *surveillance* in accordance with Chapter 1.4. and Article 8.15.13. has been in place for the past 24 months, with a minimum requirement being an *early warning system* to ensure investigation and reporting of animals suspected of *infection* with rabies virus;
   d) regulatory measures for the prevention of *infection* with rabies virus are implemented in accordance with the relevant recommendations in the *Terrestrial Code* including Articles 8.15.5. to 8.15.10.;
   e) no *case* of indigenously acquired dog-mediated rabies has occurred during the past 24 months;
   f) a dog population control programme has been implemented and maintained in accordance with Chapter 7.7.
2) The following do not affect the status of a country or *zone* free from dog-mediated rabies:
   – preventive vaccination;
   – presence of rabies virus in *wild animals*;
   – imported human cases of rabies;
   – imported *case* outside a *quarantine station* whenever epidemological investigations have ruled out the possibility of secondary *cases*.

Article 8.15.5.

Recommendations for importation of domestic and captive wild mammals from countries or zones free from infection with rabies virus

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of rabies the day prior to or on the day of shipment;
2) and either:
   a) were kept since birth or at least six months prior to shipment in a free country or *zone*; or
   b) were imported in accordance with Articles 8.15.7., 8.15.8., 8.15.9. or 8.15.10.

Article 8.15.6.

Recommendations for importation of wild and feral mammals from countries or zones free from infection with rabies virus

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of rabies the day prior to or on the day of shipment;
2) and either:
   a) have been captured at a distance that precludes any contact with animals in an infected country or *zone*. The distance should be defined in accordance with the biology of the species exported, including home range and long distance movements; or

b) have been kept in captivity for the six months prior to shipment in a country or *zone* free from *infection* with rabies virus.

Article 8.15.7.

Recommendations for importation of dogs, cats and ferrets from countries or zones infected with rabies virus

Veterinary Authorities should require the presentation of an *international veterinary certificate* complying with the model of Chapter 5.11. attesting that the animals:

1) showed no clinical sign of rabies the day prior to or on the day of shipment;
2) were permanently identified and their identification number stated in the certificate;
3) and either:
   a) were vaccinated or revaccinated in accordance with the recommendations of the manufacturer, with a vaccine that was produced in accordance with the *Terrestrial Manual* and were subjected not less than 3 months and not more than 12 months prior to shipment to an antibody titration test as prescribed in the *Terrestrial Manual* with a positive result of at least 0.5 IU/ml;

   or

   b) were kept in a *quarantine station* for six months prior to shipment.

Article 8.15.8.

Recommendations for importation of domestic ruminants, equids, camelids and suids from countries considered infected with rabies

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of rabies the day prior to or on the day of shipment;
2) were permanently identified and the identification number stated in the certificate;
3) EITHER
   a) were kept for the 6 months prior to shipment in an *establishment* where there has been no case of rabies for at least 12 months prior to shipment;

   OR

   b) were vaccinated or revaccinated in accordance with the recommendations of the manufacturer. The vaccine was produced and used in accordance with the *Terrestrial Manual*.

Article 8.15.9.

Recommendations for importation of susceptible laboratory animals from countries or zones infected with rabies virus

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of rabies the day prior to or on the day of shipment;
2) were born and kept since birth in a biosecure facility as described in the *Terrestrial Manual* chapter on Management of veterinary diagnostic laboratories, and where there has been no *case* for at least 12 months prior to shipment.

Article 8.15.10.

Recommendations for importation of wildlife from countries considered infected with rabies

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of rabies the day prior to or on the day of shipment;

2) were kept for the six months prior to shipment in an *establishment* where separation from susceptible animals was maintained and where there has been no *case* of rabies for at least 12 months prior to shipment.

Article 8.15.11.

WOAH endorsed official control programme for dog-mediated rabies

The overall objective of a WOAH endorsed *official control programme* for dog-mediated rabies is for Member Countries to progressively improve their dog-mediated rabies situation and eventually be able to make a self-declaration in accordance with Chapter 1.6. as a country free from dog-mediated rabies. The *official control programme* should be applicable to the entire country even if certain measures are directed towards defined subpopulations only.

Member Countries may, on a voluntary basis, apply for endorsement of their *official control programme* for dog-mediated rabies when they have implemented measures in accordance with this article.

For its *official control programme* for dog-mediated rabies to be endorsed by WOAH, the Member Country should:

1) have a record of regular and prompt animal disease reporting in accordance with Chapter 1.1.;
2) submit documented evidence (including relevant legislation) of its capacity to control dog-mediated rabies. This evidence may be provided using data generated by the PVS Pathway;
3) submit a detailed plan of the programme to control and eventually eradicate dog-mediated rabies in the country including:
    a) the timeline;
    b) the performance indicators for assessing the effectiveness of the control measures to be implemented;
    c) documentation indicating that dog-mediated rabies is a *notifiable disease* and that the *official control programme* for dog-mediated rabies is applicable to the entire country;
4) submit a dossier on dog-mediated rabies in the country describing the following:
    a) the general epidemiology in the country highlighting the current knowledge and gaps in knowledge and the progress that has been made in controlling dog-mediated rabies;
    b) the measures implemented to prevent introduction of *infection*;
    c) the rapid detection of, and response to, dog-mediated rabies *cases*, to reduce the *incidence* and to eliminate transmission in at least one *zone* in the country;
    d) dog population control programme in accordance with Chapter 7.7.;
    e) collaboration agreements or programmes with other *Competent Authorities* such as those responsible for public health and management of *wild* and *feral animals*;
5) submit evidence that *surveillance* of dog-mediated rabies is in place:
    a) by taking into account provisions in Chapter 1.4. and Article 8.15.13.;
    b) by having diagnostic capability and procedures, including regular submission of samples to a *laboratory* that carries out diagnosis to support epidemiological investigation;
6) where *vaccination* is practised as part of the *official control programme* for dog-mediated rabies, provide:
    a) evidence (such as copies of legislation) that *vaccination* of selected populations is compulsory and the vaccines are produced in accordance with the *Terrestrial Manual*;
    b) detailed information on *vaccination* campaigns, in particular on:
        i) target *populations*;
        ii) monitoring of *vaccination* coverage;
        iii) technical specifications of the vaccines used and description of the regulatory procedures in place;
7) provide preparedness and contingency plans.

The Member Country's *official control programme* for dog-mediated rabies will be included in the list of programmes endorsed by WOAH only after the submitted evidence has been accepted by WOAH. Retention on the list requires an annual update on the progress of the *official control programme* and information on significant changes concerning the points above. Changes in the epidemiological situation and other significant events should be reported to WOAH in accordance with Chapter 1.1.

WOAH may withdraw the endorsement of the *official control programme* if there is evidence of:

– non-compliance with the timelines or performance indicators of the programme; or
– significant problems with the quality of the *Veterinary Services* as per Section 3 of the *Terrestrial Code*; or

– an increase in the *incidence* of dog-mediated rabies that cannot be explained or addressed by the programme.

Article 8.15.12.

Recommendations for dog-mediated rabies vaccination programmes

When developing and implementing *vaccination* programmes for dog-mediated rabies, in addition to provisions in Chapter 4.18., Member Countries should:

1. Prepare for the vaccination programme:
   a) consult with all relevant stakeholders, including target communities to define the most appropriate time to increase community participation and reduce the time required to complete *vaccination*;
   b) ensure safety of vaccination teams including training in humane dog capture and handling, and a strategy to manage exposure to suspect rabid animals.

2. Choose a vaccine and the vaccination strategy:
   a) Priority should be given to vaccinating *free-roaming dogs*, including puppies, to quickly interrupt the rabies virus transmission cycle.
   b) *Vaccination* campaigns should be conducted recurrently (usually annually). More frequent *vaccination* campaigns may be considered in especially high-risk areas, or to quickly interrupt the cycle of virus transmission.
   c) The *vaccination* strategy should take into account simultaneous dog population management programmes as described in Chapter 7.7.

3. Monitor the vaccination programme:
   a) To monitor the *vaccination* coverage, vaccinated dogs should be identified and registered in an *animal identification system*.
   b) *Vaccination* certificates which state identification of the dog, date of *vaccination* and product should be provided to dog owners as proof of *vaccination*.
   c) *Vaccination* coverage should be monitored at the smallest administrative level possible.

Article 8.15.13.

Surveillance

1) A Member Country should justify the *surveillance* strategy chosen in accordance with Chapter 1.4., as being adequate to detect the presence of *infection* with rabies virus, given the prevailing epidemiological situation. *Surveillance* should be under the responsibility of the *Veterinary Authority*.

   For the purposes of rabies *surveillance* a suspected *case* is a susceptible animal that shows any change in behaviour followed by death within ten days or that displays any of the following clinical signs: hypersalivation, paralysis, lethargy, abnormal aggression, abnormal vocalisation.

   In particular, Member Countries should have in place:

   a) a formal and ongoing system for detecting and investigating suspected *cases*;
   b) a procedure for the rapid collection and transport of samples from suspected *cases* to a *laboratory* for diagnosis;
   c) a system for recording, managing and analysing diagnostic and *surveillance* data.

   Rabies *surveillance* provides data that are indicators of the effectiveness of a rabies control programme and of the maintenance of freedom from *infection* with rabies virus in a country or *zone*.

2) In addition to principles in Chapter 1.4. the following are critical for rabies *surveillance*:

   a) Public awareness

      The *Veterinary Services* should implement programmes to raise awareness among the public, as well as *veterinary paraprofessionals*, *veterinarians* and diagnosticians, who should report promptly any *cases* or suspected *cases*.

   b) Clinical surveillance

      Clinical *surveillance* is a critical component of rabies *surveillance* and essential for detecting suspected *cases*. Therefore, a process should be in place and documented for the identification and investigation of suspected *cases* as well as for sample collection for laboratory diagnosis when rabies cannot be ruled out.

Animals (especially carnivores and bats) found dead are recognised as an important source of information for rabies *surveillance* and should be part of the clinical *surveillance*.

Laboratory testing should use the recommended sampling techniques, types of samples and tests described in the *Terrestrial Manual*.

c) Sampling

Surveillance should target suspected *cases*. Probability sampling strategies are not always useful, as sampling of healthy animals (e.g. not involved in human exposure) rarely returns useful *surveillance* data.

d) Epidemiological investigation

In all situations, especially in countries or *zones* considering self-declaration of freedom, routine epidemiological investigation of *cases* and molecular characterisation of virus isolates from human and animal cases is encouraged. Such an investigation allows identification of sources of *infection*, their geographic origin and their epidemiological significance.

Article 8.15.14.

Cooperation with other Competent Authorities

The *Veterinary Authority* should coordinate in a timely manner with public health and other *Competent Authorities* and share information to support the decision-making process for the management of human and animal exposure.

In all regions, *Veterinary Authorities* of neighbouring countries should cooperate in the control of dog-mediated rabies.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2023.

CHAPTER 8.16.

INFECTION WITH RIFT VALLEY FEVER VIRUS

Article 8.16.1.

General provisions

1) The aim of this chapter is to mitigate the animal and public health risks posed by Rift Valley fever (RVF) and to prevent its international spread.

2) For the purposes of this chapter:

   a) 'epidemic area' means a part of a country or *zone* in which an epidemic of RVF is occurring, and which does not correspond to the definition of *zone*;

   b) 'epidemic of RVF' means a sudden and unexpected change in the distribution or increase in *incidence* of, or morbidity or mortality of RVF;

   c) 'inter-epidemic period' means a period between two epidemics;

   d) 'susceptible animals' means ruminants and dromedary camels.

3) Humans and many animal species can be affected by RVF. For the purposes of the *Terrestrial Code*, RVF is defined as an *infection* of susceptible animals with Rift Valley fever virus (RVFV).

4) The following defines the occurrence of *infection* with RVFV:

   a) RVFV, excluding vaccine strains, has been isolated and identified as such from a sample from a susceptible animal; or

   b) antigen or nucleic acid specific to RVFV, excluding vaccine strains, has been detected in a sample from a susceptible animal showing clinical signs or pathological lesions consistent with RVF, or with epidemiological links either to a confirmed or suspected *case* of RVF or to a human infected with RVFV, or giving cause for suspicion of association or contact with RVFV; or

   c) antibodies specific to RVFV that are not the consequence of *vaccination*, have been detected in a sample from a susceptible animal showing clinical signs or pathological lesions consistent with RVF, or with epidemiological links either to a confirmed or suspected *case* of RVF or to a human infected with RVFV, or giving cause for suspicion of association or contact with RVFV.

5) For the purposes of the *Terrestrial Code*, the *infective period* for RVF shall be 14 days and the *incubation period* shall be seven days.

6) In areas where RVFV is present, epidemics of RVF may occur following favourable climatic and other environmental conditions and availability of susceptible animal and competent *vector* populations. Epidemics are separated by inter-epidemic periods. The transition from an inter-epidemic period to an epidemic complies with point 1 e) of Article 1.1.3. in terms of *notification*.

7) When authorising importation or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.16.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the RVF status of the susceptible animal population of the *exporting country*.

8) Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.16.2.

Safe commodities

When authorising the importation or transit of the following *commodities*, *Veterinary Authorities* should not require any RVF-related conditions, regardless of the *animal health status* of the *exporting country* or *zone*:

1) hides and skins;

2) wool and fibre;

3) extruded dry pet food;

4) heat-treated *meat products* in a hermetically sealed container with an F0 value of 3 or above.

Article 8.16.3.

Country or zone free from RVF

A country or a *zone* may be considered free from RVF when *infection* with RVFV is notifiable in the entire country and either:

1) it meets the requirements for historical freedom in Article 1.4.6.; or
2) it meets the following conditions:
    a) an on-going specific *surveillance* programme in accordance with Chapter 1.4. has demonstrated no evidence of *infection* with RVFV in susceptible animals in the country or *zone* for a minimum of ten years; and
    b) during that period no indigenous infections in humans have been reported by the public health authorities in the country or *zone*.

A country or *zone* free from RVF will not lose its free status through the importation of susceptible animals that are seropositive, so long as they are either permanently identified as such or destined for immediate *slaughter*.

Article 8.16.4.

Country or zone infected with RVFV

A country or *zone* infected with RVFV is one that does not meet the requirements of Article 8.16.3.

Article 8.16.5.

Strategies to protect from vector attacks during transport

Strategies to protect susceptible animals from *vector* attacks during transport should take into account the local ecology and potential insecticide resistance of the *vectors*. Protection measures include:

1) treating animals and *vehicles/vessels* with insect repellents and insecticides prior to and during transportation;
2) *loading*, transporting and *unloading* animals at times of low *vector* activity;
3) ensuring *vehicles/vessels* do not stop en route unless the animals are protected from *vector* attacks;
4) using historical and current information to identify lower risk ports and transport routes.

Article 8.16.6.

Recommendations for importation of susceptible animals from countries or zones free from RVF

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the susceptible animals:

1) were kept in a country or *zone* free from RVF since birth or for at least 14 days prior to shipment;

AND

2) either:
    a) were vaccinated at least 14 days prior to leaving the free country or *zone*; or
    b) did not transit through an epidemic area.

Article 8.16.7.

Recommendations for importation of susceptible animals from countries or zones infected with RVFV

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the susceptible animals:

1) showed no clinical signs of RVF on the day of shipment;
2) met one of the following conditions:
    a) were vaccinated against RVF at least 14 days prior to shipment; or

b) were held for at least 14 days prior to shipment in a *vector*-protected *quarantine station*, which is located in an area of demonstrated low *vector* activity. During this period the animals showed no clinical sign of RVF;

AND

3) did not originate in or transit through an epidemic area.

Article 8.16.8.

Recommendations for importation of semen and *in vivo* derived embryos of susceptible animals from countries or zones infected with RVFV

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor animals:

1) showed no clinical signs of RVF within the period from 14 days prior to and 14 days following collection of the semen or embryos;

AND

2) either:
   a) were vaccinated against RVF at least 14 days prior to collection; or
   b) were subjected to a serological test on the day of collection, with positive result; or
   c) were subjected to a serological test on two occasions with negative results on the day of collection and at least 14 days after collection.

Article 8.16.9.

Recommendations for importation of fresh meat and meat products from susceptible animals from countries or zones infected with RVFV

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the entire consignment of *meat* or *meat products* comes from:
   a) susceptible animals that showed no clinical signs of RVF within 24 hours before *slaughter*;
   b) susceptible animals that were slaughtered in an approved *slaughterhouse/abattoir* and were subjected to ante- and post-mortem inspections in accordance with Chapter 6.3. with favourable results;
   c) carcasses that were submitted to maturation at a temperature above 2°C for a minimum period of 24 hours following *slaughter*;
2) the necessary precautions were taken to avoid contact of the *meat* or *meat products* with any potential source of RVFV.

Article 8.16.10.

Recommendations for importation of milk and milk products from susceptible animals from countries or zones infected with RVFV

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the consignment:

1) was subjected to pasteurisation; or
2) was subjected to a combination of treatments with equivalent performance as described in the Codex Alimentarius Code of Hygienic Practice for Milk and Milk Products.

Article 8.16.11.

Surveillance

Surveillance for RVF should be carried out in accordance with Chapter 1.4.

Surveillance for arthropod *vectors* should be carried out in accordance with Chapter 1.5., especially to determine areas of low *vector* activity.

Detection of RVFV in *vectors* has low sensitivity and therefore is not a recommended *surveillance* method.

An epidemic should be suspected in countries or *zones* infected with RVFV, or countries or *zones* adjacent to a country or *zone* in which epidemics have been notified, when ecological conditions favour the breeding of large numbers of mosquitoes and other *vectors* with concurrent or consequent occurrence of an increased number of abortions, and mortality particularly in new-born susceptible animals showing clinical signs or pathological lesions consistent with RVF, or reports of indigenous infection in humans.

Ecological conditions can be assessed through the sharing and analysis of meteorological data, and data on precipitation and water levels, as well as the monitoring of *vector* activity. Clinical *surveillance* targeted at abortions and the use of sentinel *herds* can support detection of epidemics. Serological *surveillance* can also be used to assess the increase in the number of seroconversions.

During an epidemic, *surveillance* should be conducted to define the extent of the epidemic area for the purpose of disease prevention and control as well as the extent of movements and trade of susceptible animals.

During inter-epidemic periods:

1) the level of virus transmission should be assessed and determined by *surveillance* in sentinel *herds* of susceptible animals;
2) monitoring of ecological and meteorological factors should be carried out.

Countries or *zones* adjacent to a country or *zone* in which epidemics have been notified should determine their RVF status through an on-going specific *surveillance* programme.

The *Veterinary Authority* should coordinate in a timely manner with public health and other relevant authorities and share information to support the *surveillance* outcomes, the use of public health messages to prevent human exposure and the decision-making process for the prevention and control of RVF.

NB: FIRST ADOPTED IN 1986; MOST RECENT UPDATE ADOPTED IN 2023.

CHAPTER 8.17.

INFECTION WITH RINDERPEST VIRUS

Article 8.17.1.

General provisions

1) The global eradication of rinderpest has been achieved and was announced in mid-2011 based on the following:
   a) Evidence demonstrating that there is no significant likelihood that rinderpest virus (RPV) remains in susceptible domesticated or *wildlife* host populations anywhere in the world.
   b) WOAH Member and non-member countries have completed the pathway defined by WOAH for recognition of national rinderpest freedom and have been officially recognised by WOAH as free from *infection* with RPV.
   c) All *vaccinations* against rinderpest are banned and have ceased throughout the world. A ban on *vaccination* against rinderpest means a ban on administering any vaccine containing RPV or any components derived from RPV to any animal.

   However, RPV-containing material including live vaccines continues to be held in a number of institutions around the world and this poses a *risk* of virus re-introduction into susceptible animals. Therefore, Member Countries should not manipulate existing RPV-containing material, or synthesise or produce RPV-containing material, unless authorised by the FAO and WOAH.

   As sequestration and destruction of virus stocks proceed, the *risks* of re-occurrence of *infection* are expected to diminish progressively. The possibility of deliberate or accidental release of virus demands continuing vigilance, especially in the case of those countries hosting an institution holding RPV-containing material.

   This chapter takes into account the global freedom status of rinderpest and provides recommendations to prevent re-emergence of the disease, to ensure adequate *surveillance* and protection of livestock and to manage any re-emergence and facilitate recovery of global freedom from rinderpest.

   A *case* of *infection* with RPV shall be confirmed in a WOAH Reference Laboratory for rinderpest.
2) For the purposes of the *Terrestrial Code*:
   a) Rinderpest is defined as an *infection* of susceptible animals with RPV, with or without clinical signs.
   b) The following defines the occurrence of a *case* of *infection* with RPV:
      i) RPV has been isolated from a susceptible animal or a product derived from that animal and identified; or
      ii) viral antigen or viral RNA specific to RPV has been identified in samples from a susceptible animal; or
      iii) antibodies to RPV, that are not a consequence of *vaccination*, have been identified in a susceptible animal with either epidemiological links to a confirmed or suspected *outbreak* of rinderpest, or showing clinical signs consistent with recent *infection* with RPV.
   c) The following defines a 'suspected *case*' of *infection* with RPV:
      i) a potential *case* for which other diseases compatible with 'stomatitis-enteritis syndrome' have been ruled out by clinical and laboratory investigation; or
      ii) a potential *case* which has given a positive reaction in a diagnostic test for RPV conducted outside of a WOAH Reference Laboratory for rinderpest; or
      iii) the detection of RPV-specific antibodies that are not a consequence of *vaccination* in a susceptible animal without clinical signs.
   d) The *incubation period* for *infection* with RPV shall be 21 days.
   e) RPV-containing material means field and laboratory strains of RPV; vaccine strains of RPV including valid and expired vaccine stocks; tissues, sera and other material from animals known or suspected to be infected; laboratory-generated diagnostic material containing live virus, recombinant morbilliviruses (segmented or nonsegmented) containing unique RPV nucleic acid or amino acid sequences; and full length genomic material including viral RNA and its cDNA copies.

      Subgenomic fragments of RPV genome (either as plasmids or incorporated into recombinant viruses) that cannot be incorporated into a replicating morbillivirus or morbillivirus-like virus are not considered to be RPV-containing material, neither are sera that have been either heat-treated to at least 56°C for at least two hours, or shown to be free from RPV genome sequences by a validated RT-PCR assay.
3) For the purposes of this chapter:
   a) 'Susceptible animals' means domestic, *feral*, *captive wild* and *wild* artiodactyls.

b) A 'potential *case*' of *infection* with RPV means a susceptible animal showing clinical signs consistent with 'stomatitis-enteritis syndrome' and where these signs cannot be ascribed to another disease compatible with 'stomatitis-enteritis syndrome' by clinical or epidemiological investigation.

The occurrence of a potential *case* should draw special attention if it is linked to identified risks such as proximity to facilities holding RPV-containing material.

c) 'Stomatitis-enteritis syndrome' is defined as fever with ocular and nasal discharges in combination with clinical signs of erosions in the oral cavity with diarrhoea, dysentery, dehydration or death or necropsy findings of haemorrhages on serosal surfaces, haemorrhages and erosions on alimentary mucosal surfaces and lymphadenopathy.

4) Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.17.2.

Safe commodities

1. Safe commodities during global freedom

When authorising import or transit of *commodities* of susceptible animals, *Veterinary Authorities* should not require any conditions related to rinderpest.

2. Safe commodities in the event of re-emergence of rinderpest

Regardless of the rinderpest status of the *exporting country*, *Veterinary Authorities* should not require any conditions related to rinderpest for:

a) semi-processed hides and skins (limed hides, pickled pelts, and semi-processed leather);

b) *meat products* in hermetically sealed containers with a F0 value of 3 or above;

c) gelatine.

Article 8.17.3.

Article 8.17.4., Article 8.17.5. and point 1 of Article 8.17.6. apply during global freedom.

Point 2 of Article 8.17.6. and Articles 8.17.7. to 8.17.14. apply in the event of re-emergence of rinderpest.

Article 8.17.4.

Ongoing surveillance during global freedom

All countries in the world, whether or not Member Countries of WOAH, have completed all the procedures necessary to be recognised as free from rinderpest, and annual re-confirmation of absence of *infection* with RPV is no longer required. However, rinderpest should still be notifiable in the whole territory and countries are still required to carry out general *surveillance* in accordance with Chapter 1.4. to detect rinderpest should it recur and to comply with WOAH reporting obligations concerning the occurrence of unusual epidemiological events in accordance with Chapter 1.1. Countries should either maintain the capacity for local investigation of potential *cases* or have protocols in place to send samples from such potential *cases* to an *approved laboratory*, which can be a WOAH Reference Laboratory for rinderpest. Countries should also maintain national contingency plans for responding to events suggestive of rinderpest including the checking of potential *cases* and the prompt identification of suspected *cases*.

The Global Rinderpest Action Plan (GRAP) complements all national and regional contingency plans and lays out the roles and responsibilities of all relevant stakeholders to prepare for, prevent, detect, respond to and recover from a rinderpest *outbreak*. If needed, expertise from the region or continent, or international organisations may be requested to provide resources to help confirm or rule out whether the potential *case* meets the definition for a suspected *case* or a *case*.

Article 8.17.5.

Annual update on RPV-containing material

Annual reports on RPV-containing material should be submitted to WOAH each year by the *Veterinary Authority* of a Member Country hosting an institution or institutions holding RPV-containing material, using the online platform designated for such a purpose. A final report should be submitted to WOAH for each institution when all RPV-containing materials have been destroyed and no new related activities are foreseen.

Article 8.17.6.

Response to a recurrence of rinderpest

1. Procedures to be followed in the event of the suspicion of rinderpest

   Any suspected *case* of *infection* with RPV should be immediately reported to the *Veterinary Authority*.

   Veterinary Authorities shall immediately notify any suspected *case* of *infection* with RPV to WOAH.

   Upon detection of a suspected *case*, the national contingency plan should be implemented immediately. If the presence of rinderpest cannot be ruled out or if there is a positive reaction in a diagnostic test for RPV conducted outside of a WOAH Reference Laboratory for rinderpest, samples should be collected in accordance with the *Terrestrial Manual* and dispatched to one of WOAH Reference Laboratories for rinderpest for confirmation and, if applicable, for molecular characterisation of the virus to facilitate identification of its source. A full epidemiological investigation should be conducted simultaneously to provide supporting information and to assist in identifying the possible source and spread of the virus.

2. Procedures to be followed after confirmation of rinderpest

   Veterinary Authorities shall immediately notify any *case* of *infection* with RPV to WOAH.

   A *case* of *infection* with RPV shall constitute a global emergency requiring immediate, concerted action for its investigation and elimination.

   Immediately following the confirmation of the presence of RPV, viral RNA or antibody as described in Article 8.17.1., the WOAH Reference Laboratory for rinderpest should inform the country concerned, the WOAH and the FAO, allowing the initiation of the response operations described in the GRAP.

   When epidemiological investigation has indicated the extent of the infected area, zoning can be implemented for the purposes of disease control. In the event of a limited *outbreak*, a *containment zone* should be established in accordance with Article 8.17.9.

   Emergency *vaccination* is acceptable only with rinderpest vaccines produced in accordance with the *Terrestrial Manual*. Vaccinated animals should always be clearly and permanently identified at the individual level.

   Global rinderpest freedom is suspended and the *sanitary measures* for trade shall be those in Articles 8.17.13. and 8.17.14.

Article 8.17.7.

Country free from rinderpest

In the event of re-emergence of rinderpest, all WOAH Member Countries without a *case* will remain free from rinderpest. However, all WOAH Member Countries will be asked to provide a *risk assessment* to WOAH and free status will be suspended if their *risk assessment* is not accepted by WOAH.

Some countries will be at heightened *risk*. In particular, countries meeting the conditions below would be regarded as being at heightened *risk* and should carry out appropriate *surveillance*, capable of detecting the presence of *infection* with RPV even in the absence of clinical signs; this may be achieved through a *surveillance* programme in accordance with Article 8.17.12. in addition to ongoing *surveillance* in accordance with Article 8.17.4.

1) Countries that are adjacent to a country infected with RPV; or

2) Countries that have relevant epidemiological or ecological links through trade or animal movements to a country infected with RPV.

Article 8.17.8.

Country infected with RPV

A country infected with RPV is one in which a *case* of *infection* with RPV has occurred.

Article 8.17.9.

Establishment of a containment zone within a country previously free from rinderpest

In the event of a limited *outbreak* within a country previously free from rinderpest, a *containment zone* for the purposes of disease control and eradication should be established in accordance with Article 4.4.7. Notwithstanding the establishment of a *containment zone* for disease control and eradication, *international trade* of *commodities* of susceptible species from the entire country will be limited to the *commodities* listed in point 2 of Article 8.17.2. until free status is recovered for the whole country in accordance with Article 8.17.10.

Article 8.17.10.

Recovery of free status for a country

Should a *case* of *infection* with RPV occur, a country is considered infected with RPV until shown to be free from rinderpest in accordance with the procedures below.

The time needed to recover free status of a country depends on the methods employed to achieve the elimination of *infection*.

One of the following waiting periods is applicable:

1) when a *stamping-out policy* has been applied:
    a) three months after the *disinfection* of the last affected *establishment* where a *stamping-out policy* without *vaccination* and targeted *surveillance* in accordance with Article 8.17.12. have been applied; or
    b) three months after the *disinfection* of the last affected *establishment* and the *slaughter* of all vaccinated animals, where a *stamping-out policy*, emergency *vaccination* and targeted *surveillance* in accordance with Article 8.17.12. have been applied; or
    c) 18 months after the *disinfection* of the last affected *establishment* and the last *vaccination*, where a *stamping-out policy*, emergency *vaccination* not followed by the *slaughter* of all vaccinated animals, and targeted *surveillance* in accordance with Article 8.17.12. have been applied;
2) when a *stamping-out policy* is not practised, the above waiting periods do not apply. Instead, the country must be in compliance with the requirements below:
    a) have a record of regular and prompt disease *notification* in accordance with Chapter 1.1.;
    b) send a declaration to WOAH stating that:
        i) there has been no *case* of *infection* with RPV during the past 24 months;
        ii) no suspected *case* of *infection* with RPV has been found during the past 24 months;
        iii) no *vaccination* against rinderpest has been carried out during the past 24 months;
    c) supply documented evidence that targeted *surveillance* for *infection* with RPV in accordance with Chapter 1.4. and Article 8.17.12. is in operation and that regulatory measures for the prevention and control of rinderpest have been implemented;
    d) not have imported, since the cessation of *vaccination*, any animals vaccinated against rinderpest.

In point 1 and point 2 above, the recovery of free status requires an international expert mission to verify the successful application of containment and eradication measures, as well as a review of documented evidence by WOAH. The country shall be considered free only after the outcome of the mission and submitted evidence have been accepted by WOAH.

Article 8.17.11.

Recovery of global freedom

The suspension of global freedom will be lifted when all countries infected with RPV have recovered freedom in accordance with Article 8.17.10.

Unless it is verified through a WOAH expert mission that the conditions below are met for all countries having experienced an *outbreak* within 12 months of suspension, then global rinderpest freedom is lost and recovery of freedom would require an assessment of free status of all countries by WOAH. If the conditions below are met within 12 months, then global freedom will remain suspended, subject to periodic review by WOAH.

1) The *outbreak* is limited to a country or *zone*, without any further *outbreaks* outside the ecosystem of the first *outbreak*.

2) The *outbreak* is handled in a prompt and efficient manner, with robust control measures including movement controls, which were rapidly implemented and were shown to be successful in mitigating the spread of rinderpest and reducing its *incidence*.

Article 8.17.12.

Surveillance for recovery of free status

A country infected with RPV applying for recovery of free status in accordance with Article 8.17.10. should provide evidence demonstrating effective *surveillance* in accordance with Chapter 1.4. and the points below.

1) The target for *surveillance* should be all populations of susceptible animals within the country. In certain areas some *wildlife* populations, such as African buffaloes, act as sentinels for *infection* with RPV.

2) An awareness programme should be established for all animal health professionals including *veterinarians*, both official and private, and livestock owners to ensure that clinical and epidemiological characteristics of rinderpest and *risks* of its recurrence are understood. Farmers and workers who have day-to-day contact with livestock, as well as diagnosticians, should report promptly any potential *case*.

3) Differing clinical presentations can result from variations in levels of innate host resistance (*Bos indicus* breeds being more resistant than *B. taurus*), and variations in the virulence of the attacking strain. In the case of sub-acute (mild) cases, clinical signs are irregularly displayed and difficult to detect. Experience has shown that syndromic *surveillance* strategies, i.e. *surveillance* based on a predefined set of clinical signs ('stomatitis-enteritis syndrome'), are useful to increase the sensitivity of the system.

4) Given these differing clinical presentations, virological *surveillance* should be conducted in addition to clinical surveillance. A procedure should be established for the rapid collection and transport of samples from suspected *cases* to a WOAH Reference Laboratory for rinderpest.

5) Since rinderpest is an acute *infection* with no known carriers, serological *surveillance* should be conducted to detect mild *infections* that are not detected clinically. There are no serological means to differentiate animals infected with field virus from vaccinated animals. Consequently, serological surveys should target unvaccinated animals and young animals devoid of maternal antibodies.

Article 8.17.13.

Recommendations for importation of susceptible animals and their products from countries free from rinderpest

1) For susceptible animals, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the animals remained in a country free from rinderpest since birth or for at least 30 days prior to shipment. Animals must not transit through a country infected with RPV, in accordance with Chapter 5.7.

2) For *fresh meat* or *meat products* (except those listed in point 2 of Article 8.17.2.) of susceptible animals, for *milk* or *milk products* from susceptible animals, and for all products of animal origin intended for use in animal feeding, for agricultural use or for industrial use, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of product is derived from animals that remained in a country free from rinderpest since birth or for at least 30 days prior to *slaughter* or harvesting of the product.

3) For semen and oocytes of susceptible animals, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

   a) the donor animals showed no clinical signs of *infection* with RPV on the day of collection and had been kept in a country free from rinderpest for at least 30 days prior to collection;

b) the semen and oocytes were collected, processed and stored in conformity with the provisions of Chapters 4.6., 4.7. or 4.9., as relevant.

4) For *in vivo* derived embryos of susceptible animals, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

a) the donor females showed no clinical signs of *infection* with RPV on the day of collection and had been kept in a country free from rinderpest for at least 30 days prior to collection;

b) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.8. and 4.10., as relevant.

Article 8.17.14.

Recommendations for importation from countries not free from rinderpest

From countries not free from rinderpest, only *commodities* listed in point 2 of Article 8.17.2. can be traded.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2022.

CHAPTER 8.18.

INFECTION WITH *TRICHINELLA* SPP.

Article 8.18.1.

General provisions

Trichinellosis is a widely distributed zoonosis caused by eating raw or undercooked *meat* from *Trichinella* infected food-producing animals or *wildlife*. Given that clinical signs of trichinellosis are not generally recognised in animals, the importance of trichinellosis lies exclusively in the *risk* posed to humans and costs of control in *slaughter* populations.

The adult parasite and the larval forms live in the small intestine and muscles (respectively) of many mammalian, avian and reptile host species. Within the genus *Trichinella*, twelve genotypes have been identified, nine of which have been designated as species. There is geographical variation amongst the genotypes.

Prevention of *infection* in susceptible species of domestic animals intended for human consumption relies on the prevention of exposure of those animals to the *meat* and *meat products* of *Trichinella* infected animals. This includes consumption of food waste of domestic animal origin, rodents and *wildlife*.

Meat and *meat products* derived from *wildlife* should be considered a potential source of *infection* for humans. Therefore untested *meat* and *meat products* of *wildlife* may pose a public health *risk*.

For the purposes of the *Terrestrial Code*, *infection* with *Trichinella* spp. is defined as an *infection* of suids or equids by parasites of the genus *Trichinella*.

This chapter provides recommendations for on-farm prevention of *Trichinella infection* in domestic pigs (*Sus scrofa domesticus)*, and safe trade of *meat* and *meat products* derived from suids and equids. This chapter should be read in conjunction with the Codex Alimentarius Code of Hygienic Practice for Meat (CAC/RCP 58-2005) and Guidelines for the control of *Trichinella* spp. in meat of Suidae (CAC/GL 86-2015).

Methods for the detection of *Trichinella infection* in pigs and other animal species include direct demonstration of *Trichinella* larvae in muscle samples. Demonstration of the presence of *Trichinella*-specific circulating antibodies using a validated serological test may be useful for epidemiological purposes.

When authorising the import or transit of the *commodities* covered in this chapter, with the exception of those listed in Article 8.18.2., *Veterinary Authorities* should apply the recommendations in this chapter.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 8.18.2.

Safe commodities

When authorising the import or transit of the following *commodities*, *Veterinary Authorities* should not require any *Trichinella*-related conditions, regardless of the status of the animal population of the *exporting country* or *zone*:

1) hides, skins, hair and bristles;

2) semen, oocytes and embryos.

Article 8.18.3.

Measures to prevent infection in domestic pig herds kept under controlled management conditions

1) Prevention of *infection* is dependent on minimising exposure to potential sources of *Trichinella*:
   a) facilities and the surrounding environment should be managed to prevent exposure of pigs to rodents and *wildlife*;
   b) raw food waste of animal origin should not be present on pig *establishments* and should not be fed to pigs;
   c) *feed* should comply with the requirements in Chapter 6.4. and should be stored in a manner to prevent access by rodents and *wildlife*;
   d) a rodent control programme should be in place;
   e) dead animals should be immediately removed and disposed of in accordance with Chapter 4.13.;
   f) introduced pigs should originate from *herds* officially recognised as being under controlled management conditions as described in point 2, or from *herds* of a *compartment* with a negligible risk of *Trichinella infection*, as described in Article 8.18.5.
2) The *Veterinary Authority* may officially recognise pig *herds* as being under controlled management conditions if:
   a) all management practices described in point 1 are complied with and recorded;
   b) visits by approved auditors have been made periodically to verify compliance with good management practices described in point 1; the frequency of inspections should be *risk*-based, taking into account historical information, *slaughterhouse/abattoir* monitoring results, knowledge of established farm management practices and the presence of susceptible *wildlife*;
   c) a subsequent programme of audits is conducted, taking into account the factors described in point b).

Article 8.18.4.

Prerequisite criteria for the establishment of compartments with a negligible risk of *Trichinella* infection in domestic pigs kept under controlled management conditions

Compartments with a negligible risk of *Trichinella infection* in domestic pigs kept under controlled management conditions can only be established in countries, in which the following criteria, as applicable, are met:

1) *Trichinella infection* is notifiable in the whole territory and communication procedures on the occurrence of *Trichinella infection* are established between the *Veterinary Authority* and the public health authority;
2) the *Veterinary Authority* has knowledge of, and authority over, all domestic pigs;
3) the *Veterinary Authority* has current knowledge of the distribution of susceptible species of *wildlife*;
4) an *animal identification* and *animal traceability* system for domestic pigs is implemented in accordance with Chapters 4.2. and 4.3.;
5) *Veterinary Services* have the capability to assess the epidemiological situation, detect the presence of *Trichinella infection* (including genotype, if relevant) in domestic pigs and identify exposure pathways.

Article 8.18.5.

Compartment with a negligible risk of *Trichinella* infection in domestic pigs kept under controlled management conditions

The *Veterinary Authority* may recognise a *compartment* in accordance with Chapter 4.5. as having negligible risk of *Trichinella infection* in domestic pigs kept under controlled management conditions if the following conditions are met:

1) all *herds* of the *compartment* comply with the requirements in Article 8.18.3.;
2) Article 8.18.4. has been complied with for at least 24 months;
3) the absence of *Trichinella infection* in the *compartment* has been demonstrated by a *surveillance* programme which takes into account current and historical information, and *slaughterhouse/abattoir* monitoring results, as appropriate, in accordance with Chapter 1.4.;
4) once a *compartment* is established, a subsequent programme of audits of all *herds* within the *compartment* is in place to ensure compliance with Article 8.18.3.;
5) if an audit identifies a lack of compliance with the criteria described in Article 8.18.3. and the *Veterinary Authority* determines this to be a significant breach of *biosecurity*, the *herd(s)* concerned should be removed from the *compartment* until compliance is re-established.

Article 8.18.6.

Recommendations for the importation of meat or meat products of domestic pigs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* or *meat products*:

1) has been produced in accordance with the Codex Code of Hygienic Practice for Meat (CAC/RCP 58-2005);

AND

2) either:

   a) comes from domestic pigs originating from a *compartment* with a negligible risk for *Trichinella infection* in accordance with Article 8.18.5.;

   OR

   b) comes from domestic pigs that tested negative by an approved method for the detection of *Trichinella* larvae;

   OR

   c) was processed to ensure the inactivation of *Trichinella* larvae in accordance with the Codex Guidelines for the control of *Trichinella* spp. in meat of Suidae (CAC/GL 86-2015).

Article 8.18.7.

Recommendations for the importation of meat or meat products of wild or feral pigs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* or *meat products*:

1) has been produced in accordance with the Codex Code of Hygienic Practice for Meat (CAC/RCP 58-2005);

AND

2) either:

   a) comes from *wild* or *feral* pigs that tested negative by an approved method for the detection of *Trichinella* larvae;

   OR

   b) was processed to ensure the inactivation of *Trichinella* larvae in accordance with the Codex Guidelines for the control of *Trichinella* spp. in meat of Suidae (CAC/GL 86-2015).

Article 8.18.8.

Recommendations for the importation of meat or meat products of domestic equids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* or *meat products*:

1) has been produced in accordance with the Codex Code of Hygienic Practice for Meat (CAC/RCP 58-2005);

AND

2) comes from domestic equids that tested negative by an approved method for the detection of *Trichinella* larvae.

Article 8.18.9.

Recommendations for the importation of meat or meat products of wild and feral equids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* or *meat products*:

1) has been inspected in accordance with Chapter 6.3.;

AND

2) comes from *wild* or *feral* equids that tested negative by an approved method for the detection of *Trichinella* larvae.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2016.

CHAPTER 8.19.

INFECTION WITH *TRYPANOSOMA BRUCEI*, *T. CONGOLENSE*, *T. SIMIAE* AND *T. VIVAX*

Article 8.19.1.

General provisions

1) This chapter adresses a disease complex caused by several protozoan parasites of the genus *Trypanosoma*, transmitted mainly cyclically by the genus *Glossina* (tsetse flies), but also mechanically by several biting flies (e.g. tabanids, *Stomoxys* spp.). The disease can be caused by many different trypanosomes and can affect various mammals such as horses, donkeys, camels, goats, sheep, pigs, dogs, cats and non-human primates. The disease has a significant socio-economic impact on animal production. *Trypanosoma brucei gambiense* and *T. brucei rhodesiense* can also affect humans and are responsible for a disease known as sleeping sickness or human African trypanosomosis, which is almost always fatal if untreated.

2) *Infection* with several trypanosome species in the same animal may occur although this may not always be detected using routine testing methods.

3) For the purposes of this chapter, "susceptible animals" means domestic and *wild* animals from the following families: bovidae, suidae, equidae, camelidae, canidae, felidae and non-human primates.

4) For the purposes of the *Terrestrial Code*, *infection* with *Trypanosoma brucei*, *T. congolense*, *T. simiae* and *T. vivax* is defined as an *infection* of susceptible animals with one or more salivarian trypanosomes of the subgenera *Duttonella* (only *T. vivax*), *Nannomonas* (only *T. congolense* and *T. simiae*) and *Trypanozoon* (*T. brucei* sspp. excluding *T. evansi* and *T. equiperdum*), hereafter referred to as "pathogenic agent".

5) *Infections* of susceptible animals with *T. evansi* and *T. equiperdum* are covered by Chapter 8.X. and Chapter 12.3., respectively.

6) Other trypanosomes including *T. uniforme*, *T. godfreyi* and *T. suis*, which are rarely reported and of limited distribution and impact, do not play a significant role in the epidemiology of the disease; however, they should be considered in the *surveillance* system owing to their interference (hidden *infection*) with the diagnosis of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*.

7) The following defines the occurrence of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*:

   a) the pathogenic agent has been observed in a sample from a susceptible animal; or

   b) genetic material specific to the pathogenic agent has been detected in a sample from a susceptible animal showing clinical signs consistent with *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* or which has an epidemiological link to a confirmed *case*; or

   c) antibodies have been detected in a sample from a susceptible animal showing clinical signs consistent with *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* or which has an epidemiological link to a confirmed *case*.

8) For the purposes of the *Terrestrial Code*, the *incubation period* of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* shall be 90 days.

9) Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 8.19.2.

Safe commodities

When authorising the import or transit of the following *commodities* from susceptible animals, *Veterinary Authorities* should not require conditions related to *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* regardless of the status of the *exporting country* or *zone*:

1) pasteurised *milk* and pasteurised *milk products*;

2) hair, wool and fibre;

3) gelatine and collagen;

4) horns, hooves and claws;

5) *meat* from animals that have been slaughtered in a *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results;
6) *meat products*;
7) hides and skins (except raw);
8) semen collected and processed in accordance with Chapter 4.6.;
9) embryos.

Article 8.19.3.

Country or zone free from infection with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*

A country or *zone* may be considered free from *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* when:

1) the *infection* is notifiable in the entire country;
2) measures to prevent the introduction of the *infection* have been in place; in particular, the importations or movements of susceptible animals and other *commodities* into the country or *zone* have been carried out in accordance with this chapter and other relevant chapters of the *Terrestrial Code*;
3) and either:
   a) the relevant provisions in point 2 of Article 1.4.6. have been complied with; or
   b) for at least the past two years, there has been no *case* in the country or *zone* and
      i) *surveillance* in accordance with Articles 8.19.7. to 8.19.10. has been in place in the entire country; or
      ii) the absence of competent *vectors* has been demonstrated by a *surveillance* programme in accordance with Chapter 1.5. and Article 8.19.9.

A country or *zone* free from *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* adjacent to an infected country or *zone* should include a *zone* in which *surveillance* is conducted in accordance with Articles 8.19.7. to 8.19.10.

Article 8.19.4.

Compartment free from infection with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*

The establishment and bilateral recognition of a *compartment* free from *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* should follow the provisions laid down in this chapter and in Chapters 4.4. and 4.5.

Susceptible animals in the free *compartment* should be protected against the *vectors* by the application of an effective *biosecurity* management system.

Article 8.19.5.

Recovery of free status

Should a *case* of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* occur in a previously free country or *zone*, its status may be recovered after the following:

1) infected *animals* have been isolated and then immediately treated, slaughtered or killed and appropriately disposed of;
2) *animals* in contact with infected *animals* have been put immediately under protection from *vector* attacks and tested;

AND

3) for six consecutive months, either:
   a) after the last *case* was slaughtered or killed, the *animals* in contact have undergone monthly repeated serological and agent detection tests with negative results in both tests; or
   b) when treatment is applied to the infected *animals*, both treated and in contact *animals* have undergone monthly repeated serological and agent detection tests with negative results in both tests;

AND

4) *surveillance* in accordance with Articles 8.19.7. to 8.19.10. has been carried out with negative results;

5) appropriate *biosecurity* is in place, including *vector* control or protection from *vector* attacks in the affected area.

Otherwise, Article 8.19.3. applies.

Article 8.19.6.

Recommendations for importation of susceptible animals from countries, zones or compartments free from infection with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical signs of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* on the day of shipment;
2) were kept since birth in a free country, *zone* or *compartment* or were imported from a free country, *zone* or *compartment*;
3) did not transit through an *infected zone* during transportation to the *place of shipment* or were protected from *vectors* or any source of the pathogenic agent by the application of effective *biosecurity* during transportation to the *place of shipment*.

Article 8.19.7.

Introduction to surveillance

Articles 8.19.7. to 8.19.10. define the principles and provide guidance on *surveillance* for *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*, complementary to Chapter 1.4. and to Chapter 1.5.

The purposes of *surveillance* could be the demonstration of the absence of *infection*, the early detection of *cases*, or the measurement and monitoring of the *prevalence* and distribution of the *infection* in a country, *zone* or *compartment*.

Vectors are an essential component of the epidemiology of the salivarian trypanosomes. Therefore, the *surveillance* system should include a *vector surveillance* component to detect the presence and estimate the abundance of tsetse flies. When appropriate, it should also allow estimation of the *vector infection* rate with the pathogenic agent. *Vector surveillance* may also assist with estimation of the abundance of mechanical *vectors*.

The impact and epidemiology of the pathogenic agent widely differs between different regions of the world and therefore, it is not appropriate to provide specific recommendations for all situations. Member Countries should provide scientific data explaining the epidemiology of the disease in the country or *zone* concerned and adapt the *surveillance* strategies for defining their status to the local conditions. There is considerable latitude available to Member Countries to justify their status at an acceptable level of confidence.

Although *surveillance* in *wildlife* presents challenges that may differ significantly from those in domestic *animals*, *wildlife* should be considered in the *surveillance* system because they can serve as reservoirs of *infection* and as indicators of *risk* to humans and domestic *animals*.

Article 8.19.8.

General conditions and methods for surveillance

1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. In particular, it should include:
   a) a formal and ongoing system for detecting and investigating *outbreaks* of disease;
   b) a procedure for the rapid diagnosis in the field or for the collection and transport of samples from suspected *cases* to a *laboratory* for diagnosis;
   c) a system for recording, managing, reporting and analysing diagnostic and *surveillance* data.
2) The *surveillance* programme for the pathogenic agent should, at least:
   a) in a free country or *zone*, have an *early warning system* which obliges animal owners and keepers and other stakeholders who have regular contact with susceptible animals, as well as *veterinarians* or *veterinary paraprofessionals*, to report promptly any suspicion of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* to the *Veterinary Authority*.

      An effective *surveillance* system will periodically identify suspected *cases* that require follow-up and investigation to confirm or exclude whether the cause of the condition is the pathogenic agent. The rate at

which such suspected *cases* are likely to occur will differ between epidemiological situations and cannot therefore be reliably predicted. All suspected *cases* should be investigated immediately, and samples should be taken and submitted to a *laboratory*;

b) include random or targeted serological or parasitological surveys appropriate to the status of the country or *zone*.

Article 8.19.9.

Surveillance strategies

The target population should include domestic and *wild* susceptible animals of epidemiological significance within the country or *zone*. Active and passive *surveillance* for the pathogenic agent should be ongoing as epidemiologically appropriate. *Surveillance* should be composed of random or targeted approaches using parasitological, serological, clinical and entomological methods appropriate for the status of the country or *zone*.

In a free country or *zone*, it is appropriate to focus *surveillance* in an area adjacent to an infected country or *zone*, considering relevant ecological or geographical features likely to interrupt the transmission of the pathogenic agent.

A Member Country should justify the *surveillance* strategy chosen as being adequate to detect the presence of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* in accordance with Chapter 1.4. and Chapter 1.5., and with the prevailing epidemiological situation.

If a Member Country wishes to declare freedom from *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* in a specific *zone*, the design of the *surveillance* strategy should be targeted to the susceptible population within the *zone*.

For random surveys, the sample size selected for testing should be large enough to detect evidence of *infection* if it were to occur at a predetermined minimum expected *prevalence*. The sample size and expected *prevalence* determine the level of confidence in the results of the survey. The Member Country should justify the choice of the minimum expected *prevalence* and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Irrespective of the survey approach selected, the sensitivity and specificity of the diagnostic tests employed are key factors in the design, sample size determination and interpretation of the results obtained. Ideally, the sensitivity and specificity of the tests used should be validated for the *infection* history and the different species in the target population.

Irrespective of the testing system employed, *surveillance* system design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following up positive reactions to determine, with a high level of confidence, whether they are indicative of *infection* or not. This should involve both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as those which may be epidemiologically linked to it.

The principles involved in *surveillance* are technically well defined. The design of *surveillance* programmes to prove the absence of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* should be carefully followed to avoid producing results that are either insufficiently reliable to be accepted by international trading partners, or excessively costly and logistically complicated.

The results of random or targeted surveys are important in providing reliable evidence that no *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* is present in a country or *zone*. It is, therefore, essential that the survey is thoroughly documented. It is critical to consider the movement history of the *animals* being sampled when interpreting the results.

An active programme of *surveillance* of susceptible populations to detect evidence of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* is essential to establish the *animal health status* of a country or *zone*.

1. Clinical surveillance

Clinical *surveillance* aims to detect clinical signs of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* in susceptible animals, particularly during a newly introduced *infection*. However, neither clinical nor post-mortem signs of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* origin are pathognomonic. Therefore, suspected *cases* of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* detected by clinical *surveillance* should always be confirmed by direct or indirect laboratory tests that confirm the presence of the pathogenic agent.

2. Parasitological surveillance

Parasitological *surveillance* can be conducted to:

a) confirm clinically suspected *cases*,

b) identify parasites at the subgenus level,

c) confirm active *infection* after positive serological results.

3. Molecular techniques

Molecular techniques increase the sensitivity of the detection of active *infections*. They can also be applied to identify the parasite and to better characterise the genotype of circulating parasites in a country or *zone*.

Molecular techniques can be used to:

a) detect an active *infection*,

b) characterise the parasite at the species, subspecies, group and population level.

4. Serological surveillance

a) Serological testing of susceptible animals is one of the most effective methods for detecting exposure to the pathogenic agent. The host species tested should reflect the epidemiology of the disease. Management variables that may influence likelihood of *infection*, such as the use of insecticides or animal treatment, should be considered.

b) Owing to cross reactions with *T. evansi*, *T. equiperdum*, *T. cruzi* and *Leishmania* spp., the presence of these pathogenic agents should be considered when interpreting the results of the serological *surveillance* system.

c) Serological *surveillance* can be used to:

   i) demonstrate individual or population freedom;

   ii) detect subclinical or latent *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*;

   iii) determine by seroprevalence the magnitude of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax* in the host population.

d) Positive test results can have different possible causes:

   i) *infection*;

   ii) antibodies from previous *infection* (after effective treatment or self-cure);

   iii) maternal antibodies;

   iv) cross reactions with *T. evansi*, *T. equiperdum*, *T. cruzi* and *Leishmania* spp.

5. Sentinel animals

Sentinel *surveillance* may provide evidence of freedom from *infection* or provide data on *prevalence* and *incidence* as well as the distribution of disease or *infection*. Sentinel *surveillance* may consist of:

a) the identification and regular testing of one or more of sentinel animal units of known health or immune status in a specified geographical location to detect the occurrence of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*;

b) the investigation of clinical suspect *cases* targeting highly susceptible animals such as dogs, donkeys or horses.

6. Vector surveillance

This point should be read in conjunction with Chapter 1.5.

For the purposes of this chapter, *vector surveillance* aims at determining different levels of *risk* by identifying the presence and abundance of various *vector* species in an area or by demonstrating the absence of *vectors*. Demonstration of the absence of competent *vectors* may support the claim of freedom from *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*.

The most effective way of gathering *vector surveillance* data should consider the biology and behavioural characteristics of the local *vector* species and include traps, fly rounds, sticky targets or other collection tools. The choice of the number and type of collecting tools to be used and the frequency of their use should be made by considering the size and ecological characteristics of the area to be surveyed.

When sentinel animals are used, *vector surveillance* should be conducted at the same locations.

Article 8.19.10.

Additional surveillance procedures for recovery of free status

In addition to the general conditions described in this chapter, a Member Country seeking recovery of country or *zone* free status, including a *containment zone* established in accordance with Article 4.4.7., should show evidence of an active *surveillance* programme to demonstrate absence of *infection* with *T. brucei*, *T. congolense*, *T. simiae* and *T. vivax*.

Populations under this *surveillance* programme should include:

1) *establishments* in the proximity of the *outbreak*;
2) *establishments* epidemiologically linked to the *outbreak*;
3) *animals* moved from or used to re-populate affected *establishments*.

NB: FIRST ADOPTED IN 2021

CHAPTER 8.20.

TULAREMIA

Article 8.20.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for tularemia (in hares, genus *Lepus*) shall be 15 days.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 8.20.2.

Tularemia free country

A country may be considered free from tularemia when it has been shown that tularemia has not been present for at least the past two years and when bacteriological or serological surveys in previously infected *zones* have given negative results.

Article 8.20.3.

Tularemia infected zone

A *zone* should be considered as infected with tularemia until:

1) at least one year has elapsed after the last *case* has been confirmed;

AND

2) a bacteriological survey on ticks within the infected *zone* has given negative results; or

3) regular serological testing of hares and rabbits from that *zone* have given negative results.

Article 8.20.4.

Trade in commodities

Veterinary Authorities of tularemia free countries may prohibit importation or transit through their territory, from countries considered infected with tularemia, of live hares.

Article 8.20.5.

Recommendations for importation from countries considered infected with tularemia

For live hares

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of tularemia on the day of shipment;

2) were not kept in a tularemia infected *zone*;
3) have been treated against ectoparasites; and
4) were kept in a *quarantine station* for the 15 days prior to shipment.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 2014.

CHAPTER 8.21.

WEST NILE FEVER

Article 8.21.1.

General provisions

West Nile fever (WNF) is a zoonotic disease caused by certain strains of the mosquito transmitted West Nile virus (WNV).

For the purposes of this chapter, the susceptible species are equidae, geese, ducks (under study) and birds other than *poultry*.

WNV is maintained in a mosquito–bird–mosquito transmission cycle, whereas humans and equidae are considered dead-end hosts. Most human *infections* occur by natural transmission from mosquitoes.

In relation to domestic animal trade, geese and ducks pose a *risk* for the spread of the WNV as some species have been documented to develop a viraemia sufficient to infect mosquitoes.

Surveillance for WNF should be carried out in accordance with Chapter X.X.

The following criteria define the occurrence of WNF:

1) WNV has been isolated from an animal that shows signs consistent with WNF; or
2) antigen or ribonucleic acid specific to WNV has been identified in samples from one or more animals that show clinical signs consistent with WNF, or that is epidemiologically linked to a confirmed or suspected *outbreak* of WNF; or
3) antibodies to WNV have been detected in an unvaccinated animal that shows clinical signs consistent with WNF, or that is epidemiologically linked to a confirmed or suspected *outbreak* of WNF.

For the purposes of the *Terrestrial Code*, the *incubation period* for WNF shall be 15 days.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.21.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the WNF status of the *exporting country* or *zone*.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 8.21.2.

Safe commodities

Member Countries should not impose trade restrictions on dead-end hosts such as horses.

When authorising import or transit of the following *commodities* and any products made from these, *Veterinary Authorities* should not require any WNV-related conditions, regardless of the WNF status of the *exporting country* or *zone*:

1) *hatching eggs*;
2) eggs for human consumption;
3) egg products;
4) *poultry* semen;
5) *fresh meat* and *meat products* of *poultry*;
6) products of *poultry* origin intended for use in animal feeding, or for agricultural or industrial use;
7) feathers and down from *poultry*;
8) semen of horses;
9) *meat* and *meat products* of horses.

Article 8.21.3.

WNF free country or zone

1) A country or *zone* may be considered free from WNF when WNF is notifiable in the whole country and either:
   a) no occurrence of WNF *cases*, where *infection* occurred within the territory of the Member Country, have been recorded for the past two years; or
   b) a *surveillance* programme in accordance with Chapter X.X. has demonstrated no evidence of WNV in the country or *zone* during the past two years.
2) A WNF free country or *zone* will not lose its free status through the importation from WNF infected countries or *zones* of:
   a) seropositive animals;
   b) semen, oocyte or embryo;
   c) animals vaccinated in accordance with the *Terrestrial Manual* at least 30 days prior to dispatch, and are identified in the accompanying certification as having been vaccinated; or
   d) animals not vaccinated if a *surveillance* programme in accordance with Chapter X.X. has been in place in the source population for a period of 30 days immediately prior to dispatch, and no evidence of WNV transmission has been detected.

Article 8.21.4.

WNF seasonally free country or zone

1) A WNF seasonally free country or *zone* is one in which for part of a year, *surveillance* demonstrates no evidence either of WNV transmission or presence of mosquitoes likely to be competent WNV *vectors*.
2) For the application of Article 8.21.6., the seasonally free period is taken to commence 21 days following the last evidence of WNV transmission (as demonstrated by the *surveillance* programme), or the cessation of activity of mosquitoes likely to be competent WNV *vectors*.
3) For the application of Article 8.21.6., the seasonally free period is taken to conclude either:
   a) at least 21 days before the earliest date that historical data show WNV transmission cycle has recommenced; or
   b) immediately if current climatic data or data from a *surveillance* programme indicate an earlier resurgence of activity of mosquitoes likely to be competent WNV *vectors*.
4) A WNF seasonally free country or *zone* will not lose its free status through the importation from WNF infected countries or *zones* of:
   a) seropositive animals;
   b) semen, oocyte or embryo;
   c) animals vaccinated in accordance with the *Terrestrial Manual* at least 30 days prior to dispatch, and are identified in the accompanying certification as having been vaccinated; or
   d) animals not vaccinated if a *surveillance* programme in accordance with Chapter X.X. has been in place in the source population for a period of 30 days immediately prior to dispatch, and no evidence of WNV transmission has been detected.

Article 8.21.5.

Recommendations for importation from WNF free countries or zones

For ducks (under study), geese and birds other than poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the animals were kept in a WNF free country or *zone* since birth or for at least 30 days prior to shipment; or
2) the animals were kept in a WNF free country or *zone* for at least 15 days, were subjected, with negative results, to an agent identification test in accordance with the *Terrestrial Manual* carried out on a sample collected at least 3 days after the commencement of the residence period and remained in the WNF free country or *zone* until shipment; or
3) the animals:
   a) were vaccinated in accordance with the *Terrestrial Manual* 30 days before introduction into the free country or *zone*; and

b) were identified as having been vaccinated; and

c) were kept in a WNF free country or *zone* for at least 15 days; and

d) remained in the WNF free country or *zone* until shipment;

AND

4) if the animals were exported from a WNF free *zone*, either:

a) did not transit through an infected country or *zone* during transportation to the *place of shipment*; or

b) were protected from mosquito attacks at all times when transiting through an infected country or *zone*; or

c) had been vaccinated in accordance with point 3 above.

Article 8.21.6.

Recommendations for importation from WNF seasonally free countries or zones

For ducks (under study), geese and birds other than poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) were kept during the seasonally free period in a WNF seasonally free country or *zone* since birth or for at least 30 days prior to shipment; or

2) were kept during the WNF seasonally free period in a WNF seasonally free country or *zone* for at least 15 days prior to shipment, and were subjected during the residence period in the country or *zone* to an agent identification test in accordance with the *Terrestrial Manual*, with negative results, carried out on a sample collected at least 3 days after the commencement of the residence period and remained in the WNF seasonally free country or *zone* until shipment; or

3) were kept during the seasonally free period in a WNF seasonally free country or *zone* for at least 15 days prior to shipment, and were vaccinated in accordance with the *Terrestrial Manual* 30 days before introduction into the free country or *zone* against WNF, were identified as having been vaccinated and remained in the WNF seasonally free country or *zone* until shipment;

AND

4) if the animals were exported from a WNF seasonally free country or *zone*, either:

a) did not transit through an infected country or *zone* during transportation to the *place of shipment*; or

b) were protected from mosquito attacks at all times when transiting through an infected country or *zone*; or

c) were vaccinated in accordance with point 3 above.

Article 8.21.7.

Recommendations for importation from WNF infected countries or infected zones

For ducks (under study) and geese

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) were protected from mosquito attacks for at least 30 days prior to shipment; or

2) were subjected to a serological test in accordance with the *Terrestrial Manual* to detect WNV neutralising antibodies with positive results; or

3) were protected from mosquito attacks for at least 15 days prior to shipment, and were subjected during that period to an agent identification test in accordance with the *Terrestrial Manual*, with negative results, carried out on a sample collected at least 3 days after being introduced in the mosquito-free *zone*; or

4) were vaccinated at least 30 days before shipment in accordance with the *Terrestrial Manual* against WNV and were identified in the accompanying certification as having been vaccinated; or

5) are not vaccinated and a *surveillance* programme in accordance with Chapter X.X. has been in place in the source population for a period of 30 days immediately prior to shipment, and no evidence of WNV transmission has been detected;

AND

6) were protected from mosquito attacks during transportation to the *place of shipment*.

Article 8.21.8.

Recommendations for the importation from WNF infected countries or zones

For birds other than poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the birds showed no clinical sign of WNF on the day of shipment; and
2) the birds were kept in a *quarantine station* in a mosquito-free environment for 30 days prior to shipment and a statistically valid sample was subjected, with negative results, to an agent identification test in accordance with the *Terrestrial Manual* at least 3 days after the commencement of the residence period.

Article 8.21.9.

Protecting animals from mosquito attacks

When transporting animals through WNF infected countries or *zones*, *Veterinary Authorities* should require strategies to protect susceptible animals from mosquito attacks during transport, taking into account the local ecology of the mosquitoes.

Potential *risk management* strategies include:

1) treating animals with insect repellents prior to and during transportation;
2) ensuring *vehicles* do not stop en route unless the animals are held behind insect-proof netting;
3) *surveillance* for *vectors* at common stopping and offloading points to gain information on seasonal variations;
4) integrated pest management practices at holding, common stopping and offloading points;
5) using historical, ongoing and/or WNF modelling information to identify low risk ports and transport routes.

NB: FIRST ADOPTED IN 2009.

SECTION 9.

APINAE

CHAPTER 9.1.

INFESTATION OF HONEY BEES WITH *ACARAPIS WOODI*

Article 9.1.1.

General provisions

For the purposes of the *Terrestrial Code*, acarapisosis, also known as acarine disease or tracheal mite *infestation*, is an *infestation* of adult honey bees (species of the genus *Apis*), primarily *Apis mellifera* L. with the mite *Acarapis woodi*, an internal obligate parasite of the respiratory system which spreads by direct contact from adult honey bee to adult honey bee.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 9.1.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the acarapisosis status of the honey bee population of the *exporting country* or *zone*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 9.1.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any acarapisosis-related conditions, regardless of the acarapisosis status of the honey bee population of the *exporting country* or *zone*:

1) pre-imago (eggs, larvae and pupae) of honey bees;
2) honey bee semen;
3) honey bee venom;
4) used apicultural equipment;
5) honey;
6) bee-collected pollen;
7) propolis;
8) beeswax;
9) royal jelly.

Article 9.1.3.

Determination of the acarapisosis status of a country or zone

The acarapisosis status of a country or *zone* can only be determined after considering the following criteria:

1) a *risk assessment* has been conducted, identifying all potential factors for acarapisosis occurrence and their historic perspective;

2) acarapisosis is notifiable in the whole country or *zone*, and all clinical signs suggestive of acarapisosis are subjected to field and *laboratory* investigations;

3) an ongoing awareness programme is in place to encourage reporting of all cases suggestive of acarapisosis;

4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* in the whole country.

Article 9.1.4.

Country or zone free from acarapisosis

1) Historically free status

A country or *zone* may be considered free from acarapisosis after conducting a *risk assessment* as referred to in Article 9.1.3. but without formally applying a specific *surveillance* programme if the country or *zone* complies with Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point 1 above may be considered free from acarapisosis after conducting a *risk assessment* as referred to in Article 9.1.3. and when:

a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone*;

b) acarapisosis is notifiable in the whole country or *zone*, and any clinical cases suggestive of acarapisosis are subjected to field and *laboratory* investigations;

c) for the three years following the past reported *case* of acarapisosis, annual surveys supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, have been carried out on a representative sample of *apiaries* in the country or *zone* to provide a confidence level of at least 95% of detecting acarapisosis if at least 1% of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5% of the hives; such surveys may be targeted towards *apiaries*, areas and seasons with a higher likelihood of disease;

d) to maintain free status, an annual survey supervised by the *Veterinary Authority*, with no positive results, is carried out on a representative sample of *apiaries* in the country or *zone* to indicate that there has been no new *cases*; such surveys may be targeted towards areas with a higher likelihood of disease;

e) either there is no *wild* or self-sustaining *feral* population of species of the genus *Apis* in the country or *zone*, or there is an ongoing *surveillance* programme of the *wild* or self-sustaining *feral* population of species of the genus *Apis* which demonstrates no evidence of the presence of the disease in the country or *zone*;

f) the importation of the *commodities* listed in this chapter into the country or *zone* is carried out in accordance with the recommendations of this chapter.

Article 9.1.5.

Recommendations for the importation of live queen, worker and drone honey bees with or without associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the honey bees come from *apiaries* situated in a country or *zone* free from acarapisosis or the *apiaries*

meet the conditions prescribed in Chapter 4.15. (Article 4.15.5.). With regards to the provisions detailed in point 2 of Article 4.15.5., this will be achieved by a statistically valid number of honey bees per colony being examined by any method complying with the relevant chapter of the *Terrestrial Manual* and found free of all life stages of *A. woodi*.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2013.

CHAPTER 9.2.

INFECTION OF HONEY BEES WITH *PAENIBACILLUS LARVAE* (AMERICAN FOULBROOD)

Article 9.2.1.

General provisions

For the purposes of the *Terrestrial Code*, American foulbrood is a disease of the larval and pupal stages of honey bees (species of the genus *Apis*) caused by *Paenibacillus larvae* (*P. larvae*), which is widely distributed. *P. larvae* is a bacterium that can produce over one billion spores in each infected larva. The spores are very long-living and extremely resistant to heat and chemical agents, and only the spores are capable of inducing the disease.

Combs with American foulbrood infected pre-imago of honey bees show distinctive clinical signs which can allow the disease to be diagnosed in the field. However, subclinical *infections* are common and require *laboratory* diagnosis.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 9.2.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the American foulbrood status of the honey bee population of the *exporting country* or *zone*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 9.2.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any American foulbrood-related conditions, regardless of the American foulbrood status of the honey bee population of the *exporting country* or *zone*:

1) honey bee semen;

2) honey bee venom;

3) honey bee eggs.

Article 9.2.3.

Determination of the American foulbrood status of a country or zone

The American foulbrood status of a country or *zone* can only be determined after considering the following criteria:

1) a *risk assessment* has been conducted, identifying all potential factors for American foulbrood occurrence and their historic perspective;

2) American foulbrood is notifiable in the whole country or *zone*, and all clinical signs suggestive of American foulbrood are subjected to field and *laboratory* investigations;

3) an ongoing awareness programme is in place to encourage reporting of all cases suggestive of American foulbrood;

4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.2.4.

Country or zone free from American foulbrood

1) Historically free status

A country or *zone* may be considered free from the disease after conducting a *risk assessment* as referred to in Article 9.2.3. but without formally applying a specific *surveillance* programme if the country or *zone* complies with Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point 1 above may be considered free from American foulbrood after conducting a *risk assessment* as referred to in Article 9.2.3. and when:

a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone*;

b) American foulbrood is notifiable in the whole country or *zone*, and any clinical cases suggestive of American foulbrood are subjected to field and *laboratory* investigations;

c) for the five years following the last reported isolation of the American foulbrood agent, annual surveys supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, have been carried out on a representative sample of *apiaries* in the country or *zone* to provide a confidence level of at least 95% of detecting American foulbrood if at least 1% of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5% of the hives; such surveys may be targeted towards areas with the last reported isolation of the American foulbrood agent;

d) to maintain free status, an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, is carried out on a representative sample of hives in the country or *zone* to indicate that there has been no new isolations; such surveys may be targeted towards areas with a higher likelihood of isolation;

e) either there is no *wild* or self-sustaining *feral* population of species of the genus *Apis* in the country or *zone*, or there is an ongoing *surveillance* programme of the *wild* or self-sustaining *feral* population of species of the genus *Apis* which demonstrates no evidence of the presence of the disease in the country or *zone*;

f) all equipment associated with previously infected *apiaries* has been sterilised or destroyed;

g) the importation of the *commodities* listed in this chapter into the country or *zone* is carried out in accordance with the recommendations of this chapter.

Article 9.2.5.

Recommendations for the importation of live queen, worker and drone honey bees with or without associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the honey bees come from *apiaries* situated in a country or *zone* free from American foulbrood; or

2) the shipment comprises only honey bees without associated brood combs and:

a) the honey bees come from *apiaries* meeting the conditions prescribed in Article 4.15.5.; and

b) the *apiaries* where the honey bees come from are situated in the centre of an area with a radius of 3 kilometres where there has been no *outbreak* of American foulbrood during the past 30 days.

Article 9.2.6.

Recommendations for the importation of larvae and pupae of honey bees

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

1) come from *apiaries* situated in a country or *zone* free from American foulbrood; or

2) have been isolated from queens in a *quarantine station*, and all workers which accompanied the queen or a representative sample of larvae were examined for the presence of *P. larvae* by bacterial culture or PCR in accordance with the *Terrestrial Manual*.

Article 9.2.7.

Recommendations for the importation of used apicultural equipment

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the equipment:

1) comes from *apiaries* situated in a country or *zone* free from American foulbrood; or

2) was sterilised under the supervision of the *Veterinary Authority* in accordance with one of the following procedures:

   a) by irradiation with 10 kilogray (suitable for all the used equipment); or

   b) by either immersion in 1% sodium hypochlorite for at least 30 minutes (suitable only for non-porous materials such as plastic and metal); or

   c) by immersion for at least 10 minutes in molten paraffin wax heated to 160°C (suitable only for wooden equipment); or

   d) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.2.8.

Recommendations for the importation of honey, honey bee-collected pollen, beeswax, propolis and royal jelly for use in apiculture

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

1) come from *apiaries* situated in a country or *zone* free from American foulbrood; or

2) have been processed to ensure the destruction of both bacillary and spore forms of *P. larvae* by irradiation with ten kilogray or any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*; or

3) have been found free from spore forms of *P. larvae* by a test method described in the relevant chapter of the *Terrestrial Manual*.

Article 9.2.9.

Recommendations for the importation of honey, honey bee-collected pollen, beeswax, propolis and royal jelly for human consumption

Veterinary Authorities of *importing countries* free from American foulbrood should require the presentation of an *international veterinary certificate* attesting that the products:

1) come from *apiaries* situated in a country or *zone* free from American foulbrood; or

2) have been processed to ensure the destruction of both bacillary and spore forms of *P. larvae* by irradiation with ten kilogray or any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*; or

3) have been found free from spore forms of *P. larvae* by a test method described in the relevant chapter of the *Terrestrial Manual*.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 2013.

CHAPTER 9.3.

INFECTION OF HONEY BEES WITH *MELISSOCOCCUS PLUTONIUS* (EUROPEAN FOULBROOD)

Article 9.3.1.

General provisions

For the purposes of the *Terrestrial Code*, European foulbrood is a disease of the larval and pupal stages of honey bees (species of the genus *Apis*), caused by *Melissococcus plutonius* (*M. plutonius*), a non-sporulating bacterium, which is widely distributed. Subclinical *infections* are common and require *laboratory* diagnosis. *Infection* remains endemic because of mechanical contamination of the honeycombs. Recurrences of disease can therefore be expected in subsequent years.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 9.3.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the European foulbrood status of the honey bee population of the *exporting country* or *zone*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 9.3.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any European foulbrood-related conditions, regardless of the European foulbrood status of the honey bee population of the *exporting country* or *zone*:

1) honey bee semen;
2) honey bee venom.

Article 9.3.3.

Determination of the European foulbrood status of a country or zone

The European foulbrood status of a country or *zone* can only be determined after considering the following criteria:

1) a *risk assessment* has been conducted, identifying all potential factors for European foulbrood occurrence and their historic perspective;
2) European foulbrood is notifiable in the whole country or *zone*, and all clinical signs suggestive of European foulbrood are subjected to field and *laboratory* investigations;
3) an ongoing awareness programme is in place to encourage reporting of all cases suggestive of European foulbrood;
4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all *apiaries* in the whole country.

Article 9.3.4.

Country or zone free from European foulbrood

1) Historically free status

   A country or *zone* may be considered free from the disease after conducting a *risk assessment* as referred to in Article 9.3.3. but without formally applying a specific *surveillance* programme if the country or *zone* complies with Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point 1 above may be considered free from European foulbrood after conducting a *risk assessment* as referred to in Article 9.3.3. and when:

a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone*;

b) European foulbrood is notifiable in the whole country or *zone*, and any clinical cases suggestive of European foulbrood are subjected to field and *laboratory* investigations;

c) for the three years following the last reported isolation of the European foulbrood agent, an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, have been carried out on a representative sample of *apiaries* in the country or *zone* to provide a confidence level of at least 95% of detecting European foulbrood if at least 1% of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5% of the hives; such surveys may be targeted towards areas with the last reported isolation of the European foulbrood agent;

d) to maintain free status, an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, is carried out on a representative sample of hives in the country or *zone* to indicate that there has been no new isolations; such surveys may be targeted towards areas with a higher likelihood of isolation;

e) either there is no *wild* or self-sustaining *feral* population of species of the genus *Apis* in the country or *zone*, or there is an ongoing *surveillance* programme of the *wild* or self-sustaining *feral* population of species of the genus *Apis* which demonstrates no evidence of the presence of the disease in the country or *zone*;

f) the importation of the *commodities* listed in this chapter into the country or *zone* is carried out in accordance with the recommendations of this chapter.

Article 9.3.5.

Recommendations for the importation of live queen, worker and drone honey bees with or without associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the honey bees come from *apiaries* situated in a country or *zone* free from European foulbrood; or

2) the shipment comprises only honey bees without associated brood combs and:

a) the honey bees come from *apiaries* meeting the conditions prescribed in Article 4.15.5.; and

b) the *apiaries* where the honey bees come from are situated in the centre of an area with a radius of 3 kilometres where there has been no *outbreak* of European foulbrood during the past 30 days.

Article 9.3.6.

Recommendations for the importation of eggs, larvae and pupae of honey bees

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

1) come from *apiaries* situated in a country or *zone* free from European foulbrood; or

2) have been isolated from queens in a *quarantine station*, and all workers which accompanied the queen or a representative sample of eggs or larvae were examined for the presence of *M. plutonius* by bacterial culture or PCR in accordance with the *Terrestrial Manual*.

Article 9.3.7.

Recommendations for the importation of used apicultural equipment

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the equipment:

1) comes from *apiaries* situated in a country or *zone* free from European foulbrood; or

2) was sterilised under the supervision of the *Veterinary Authority* in accordance with one of the following procedures:
   a) by immersion in 0.5% sodium hypochlorite for at least 20 minutes (suitable only for non-porous materials such as plastic and metal); or
   b) by irradiation with 15 kilogray; or
   c) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.3.8.

Recommendations for the importation of honey, honey bee-collected pollen, beeswax, propolis and royal jelly for use in apiculture

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

1) come from *apiaries* situated in a country or *zone* free from European foulbrood; or
2) have been processed to ensure the destruction of *M. plutonius* by irradiation with 15 kilogray or any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*; or
3) have been found free of *M. plutonius* by a test method described in the relevant chapter of the *Terrestrial Manual*.

Article 9.3.9.

Recommendations for the importation of honey, honey bee-collected pollen, beeswax, propolis and royal jelly for human consumption

Veterinary Authorities of *importing countries* free from European foulbrood should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

1) come from *apiaries* situated in a country or *zone* free from European foulbrood; or
2) have been processed to ensure the destruction of *M. plutonius* by irradiation with 15 kilogray or any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*; or
3) have been found free of *M. plutonius* by a test method described in the relevant chapter of the *Terrestrial Manual*.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 2023.

CHAPTER 9.4.

INFESTATION WITH *AETHINA TUMIDA* (SMALL HIVE BEETLE)

Article 9.4.1.

General provisions

For the purposes of the *Terrestrial Code*, *infestation* with *Aethina tumida* (also known as small hive beetle) is an *infestation* of bee colonies (species of the genera *Apis* and *Bombus* and also stingless bees) by the beetle *A. tumida*, which is a free-living predator and scavenger affecting bee populations.

The adult beetle is attracted to bee colonies to reproduce, although it can potentially survive and reproduce independently in other natural environments, using other food sources, including certain types of fruit. Hence once it is established within a localised environment, it is extremely difficult to eradicate.

The life span of an adult beetle depends on environmental conditions such as temperature and humidity but, in practice, adult female beetles can live for at least six months and, in favourable reproductive conditions, the female is capable of producing up to a thousand eggs over a lifespan of four to six months. The beetle is able to survive at least two weeks without food.

Early signs of *infestation* and reproduction may go unnoticed. When the bees cannot prevent beetle mass reproduction on the combs, this leads to abandonment or collapse of the colony. Because *A. tumida* can be found and can thrive within the natural environment, and can fly up to 6-13 km from its nest site, it is capable of dispersing rapidly and directly invading new hives. Spread of *infestation* does not require contact between adult bees. The movement of adult bees, honeycomb and other apiculture products and used apicultural equipment may all cause *infestations* to spread to previously unaffected colonies.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 9.4.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the *A. tumida* status of the honey bee and bumble bee population of the *exporting country* or *zone*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 9.4.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any *A. tumida*-related conditions, regardless of the *A. tumida* status of the *exporting country* or *zone*:

1) honey bee semen;
2) honey bee venom.

Article 9.4.3.

Determination of the *A. tumida* status of a country or zone

The *A. tumida* status of a country or *zone* can only be determined after considering the following criteria:

1) a *risk assessment* has been conducted, identifying all potential factors for*A. tumida* occurrence and their historic perspective;
2) the presence of *A. tumida* is notifiable in the whole country, and all signs suggestive of *A. tumida infestation* are subjected to field and *laboratory* investigations;
3) ongoing awareness and training programmes are in place to encourage reporting of all cases suggestive of *A. tumida infestation*;

4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.4.4.

Country or zone free from *A. tumida*

1) Historically free status

A country or *zone* may be considered free from *A. tumida* after conducting a *risk assessment* as referred to in Article 9.4.3. but without formally applying a specific *surveillance* programme if the country or *zone* complies with Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point 1 above may be considered free from *A. tumida* after conducting a *risk assessment* as referred to in Article 9.4.3. and when:

a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone*;

b) the presence of *A. tumida* is notifiable in the whole country or *zone*, and any clinical cases suggestive of *A. tumida infestation* are subjected to field and *laboratory* investigations; a contingency plan is in place describing controls and inspection activities;

c) for the five years following the last report of the presence of *A. tumida*, an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, has been carried out on a representative sample of *apiaries* in the country or *zone* to provide a confidence level of at least 95% of detecting *A. tumida* if at least 1% of the *apiaries* were infested at a within-*apiary* prevalence rate of at least 5% of the hives; such surveys may be targeted towards areas with a higher likelihood of *infestation*;

d) to maintain free status, an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, is carried out on a representative sample of *apiaries* to indicate that there have been no presence of *A. tumida*; such surveys may be targeted towards areas with a higher likelihood of *infestation*;

e) all equipment associated with previously infested *apiaries* has been destroyed, or cleaned and sterilised to ensure the destruction of *A. tumida* in accordance with one of the following procedures:

i) heating to 50°C core temperature and holding at that temperature for 24 hours; or

ii) freezing at core temperature of minus 12°C or less for at least 24 hours; or

iii) irradiation with 400 Gray; or

iv) by any procedure of equivalent efficacy recognised by the *Veterinary Authority* of the *importing* and *exporting countries*;

f) the soil and undergrowth in the immediate vicinity of all infested *apiaries* has been treated with a soil drench or similar suitable treatment that is efficacious in destroying incubating *A. tumida* larvae and pupae;

g) the importation of the *commodities* listed in this chapter into the country or *zone* is carried out in accordance with the recommendations of this chapter.

Article 9.4.5.

Recommendations for the importation of individual consignments containing a single live queen bee, accompanied by a small number of associated attendants (a maximum of 20 attendants per queen)

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the bees come from *apiaries* situated in a country or *zone* free from *A. tumida*;

OR

2) the bees come from hives or colonies which were inspected immediately prior to packing, with no evidence of *A. tumida* based on a visual inspection and one of the methods described in the relevant chapter of the *Terrestrial Manual*; and

3) the bees come from an area of at least 50 km radius where no *apiary* has been subject to any restrictions associated with the occurrence of *A. tumida* for the previous six months; and

4) the bees and accompanying packaging presented for export have been thoroughly and individually inspected and do not contain *A. tumida*; and

5) the packaging material, containers, accompanying products and food are new; and

6) all precautions have been taken to prevent *infestation* or contamination with *A. tumida*, in particular, measures that prevent *infestation* of queen cages such as no long-term storage of queens prior to shipment and covering the cages or the whole consignment of bees immediately after the packing with fine mesh through which a live beetle cannot enter.

Article 9.4.6.

Recommendations for the importation of live worker and drone bees with or without associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bees come from *apiaries* situated in a country or *zone* free from *A. tumida*.

Article 9.4.7.

Recommendations for the importation of eggs, larvae and pupae of bees

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the *commodities* come from *apiaries* situated in a country or *zone* free from *A. tumida*;

OR

2) the *commodities* have been bred and kept under a controlled environment within a recognised establishment which is supervised and controlled by the *Veterinary Authority* or other *Competent Authority*; and

3) the establishment was inspected immediately prior to dispatch and all eggs, larvae and pupae show no evidence of the presence of *A. tumida*; and

4) the packaging material, containers, accompanying products and food are new and all precautions have been taken to prevent *infestation* or contamination with *A. tumida*.

Article 9.4.8.

Recommendations for the importation of used apicultural equipment

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the equipment:

   EITHER

   a) comes from *apiaries* situated in a country or *zone* free from *A. tumida*;

   OR

   b) has been thoroughly cleaned, and treated to ensure the destruction of *A. tumida* in accordance with one of the following procedures:

      i) heating to 50°C core temperature and holding at that temperature for 24 hours; or

      ii) freezing at core temperature of minus 12°C or less for at least 24 hours; or

      iii) irradiation with 400 Gray; or

      iv) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*;

AND

2) all precautions have been taken to prevent contamination with *A. tumida*.

Article 9.4.9.

Recommendations for the importation of honey

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the honey:

   EITHER

   a) comes from *apiaries* situated in a country or *zone* free from *A. tumida*;

   OR

   b) has been strained through a filter of pore size no greater than 0.42 mm;

   OR

   c) has been treated to ensure the destruction of *A. tumida* in accordance with one of the following procedures:

      i) heating to 50°C core temperature and holding at that temperature for 24 hours; or

      ii) freezing at core temperature of minus 12°C or less for at least 24 hours; or

      iii) irradiation with 400 Gray; or

      iv) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*;

AND

2) all precautions have been taken to prevent contamination with *A. tumida*.

Article 9.4.10.

Recommendations for the importation of bee-collected pollen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the bee-collected pollen:

   EITHER

   a) comes from *apiaries* situated in a country or *zone* free from *A. tumida*;

   OR

   b) contains no live bees or bee brood; and

   c) has been treated to ensure the destruction of *A. tumida* in accordance with one of the following procedures:

      i) freezing at core temperature of minus 12°C or less for at least 24 hours; or

      ii) irradiation with 400 Gray; or

      iii) desiccation by freeze drying or equivalent; or

      iv) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*;

AND

2) all precautions have been taken to prevent contamination with *A. tumida*.

Article 9.4.11.

Recommendations for the importation of beeswax and propolis

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the *commodities*:

EITHER

a) come from *apiaries* situated in a country or *zone* free from *A. tumida*;

OR

b) contain no live bees or bee brood; and

c) are processed propolis or processed beeswax;

OR

d) contain no live bees or bee brood; and

e) have been treated to ensure the destruction of *A. tumida* in accordance with one of the following procedures:

i) freezing at core temperature of minus 12°C or less for at least 24 hours; or

ii) irradiation with 400 Gray; or

iii) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*;

AND

2) all precautions have been taken to prevent contamination with *A. tumida*.

Article 9.4.12.

Recommendations for the importation of royal jelly

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the royal jelly:

EITHER

a) comes from *apiaries* situated in a country or *zone* free from *A. tumida*;

OR

b) is encapsulated for human consumption;

OR

c) has been treated to ensure the destruction of *A. tumida* in accordance with one of the following procedures:

i) heating to 50°C core temperature and holding at that temperature for 24 hours; or

ii) freezing at core temperature of minus 12°C or less for at least 24 hours; or

iii) desiccation by freeze drying or equivalent; or

iv) irradiation with 400 Gray; or

v) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*;

AND

2) all precautions have been taken to prevent contamination with *A. tumida*.

NB: FIRST ADOPTED IN 2008; MOST RECENT UPDATE ADOPTED IN 2021.

CHAPTER 9.5.

INFESTATION OF HONEY BEES WITH *TROPILAELAPS* SPP.

Article 9.5.1.

General provisions

For the purposes of the *Terrestrial Code*, *Tropilaelaps infestation* of honey bees (species of the genus *Apis*) is caused by different species of *Tropilaelaps* mites (including the mites *Tropilaelaps clareae*, *T. koenigerum*, *T. thaii* and *T. mercedesae*). The mite is an ectoparasite of brood of honey bees, and cannot survive for periods of more than 21 days away from bee brood.

Early signs of *infestation* normally go unnoticed, but the growth in the mite population is rapid leading to high hive mortality. The *infestation* spreads by direct contact from adult honey bee to adult honey bee, and by the movement of infested honey bees and bee brood. The mite can also act as a *vector* for viruses of the honey bee.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 9.5.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the *Tropilaelaps* spp. status of the honey bee population of the *exporting country* or *zone*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 9.5.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any *Tropilaelaps* spp.-related conditions, regardless of the *Tropilaelaps* spp. status of the *exporting country* or *zone*:

1) honey bee semen;
2) honey bee venom;
3) honey bee eggs;
4) royal jelly.

Article 9.5.3.

Determination of the *Tropilaelaps* spp. status of a country or zone

The *Tropilaelaps* spp. status of a country or *zone* can only be determined after considering the following criteria:

1) a *risk assessment* has been conducted, identifying all potential factors for *Tropilaelaps* spp. occurrence and their historic perspective;
2) the presence of *Tropilaelaps* spp. is notifiable in the whole country or *zone*, and all clinical signs suggestive of *Tropilaelaps* spp. *infestation* are subjected to field and *laboratory* investigations;
3) an ongoing awareness programme is in place to encourage reporting of all cases suggestive of *Tropilaelaps* spp. *infestation*;
4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.5.4.

Country or zone free from *Tropilaelaps* spp.

1) Historically free status

A country or *zone* may be considered free from *Tropilaelaps* spp. after conducting a *risk assessment* as referred to in Article 9.5.3. but without formally applying a specific *surveillance* programme if the country or *zone* complies with Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point 1 above may be considered free from *Tropilaelaps* spp. after conducting a *risk assessment* as referred to in Article 9.5.3. and when:

a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone*;

b) the presence of *Tropilaelaps* spp. is notifiable in the whole country or *zone*, and any clinical cases suggestive of *Tropilaelaps* spp. *infestation* are subjected to field and *laboratory* investigations;

c) for the three years following the last report of the presence of *Tropilaelaps* spp., an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, have been carried out on a representative sample of *apiaries* in the country or *zone* to provide a confidence level of at least 95% of detecting *Tropilaelaps* spp. if at least 1% of the *apiaries* were infested at a within-apiary prevalence rate of at least 5% of the hives; such surveys may be targeted towards areas with a higher likelihood of *infestation*;

d) to maintain free status, an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, is carried out on a representative sample of *apiaries* in the country or *zone* to indicate that there has been no new *cases*; such surveys may be targeted towards areas with a higher likelihood of *infestation*;

e) either there is no *wild* or self-sustaining *feral* population of species of the genus *Apis* in the country or *zone*, or there is an ongoing *surveillance* programme of the *wild* or self-sustaining *feral* population of species of the genus *Apis* which demonstrates no evidence of the presence of the mite in the country or *zone*;

f) the importation of the *commodities* listed in this chapter into the country or *zone* is carried out in accordance with the recommendations of this chapter.

Article 9.5.5.

Recommendations for the importation of live queen honey bees, worker honey bees, drone honey bees, larvae of honey bees, pupae of honey bees, and brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the *commodities* come from *apiaries* situated in a country or *zone* free from *Tropilaelaps* spp.;

OR

2) the shipment comprises only queen honey bees with attendant worker honey bees without associated brood combs and the honey bees:

a) come from an artificial broodless swarm with the caged queen;

b) caged queen and swarm have been treated with an effective *veterinary medicinal product* and kept isolated for 21 days from brood prior to the shipment;

3) the honey bee queens were inspected by a representative of the *Veterinary Services* prior to the shipment and showed no evidence of the presence of the mites.

Article 9.5.6.

Recommendations for the importation of used apicultural equipment

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the equipment:

1) comes from *apiaries* situated in a country or *zone* free from *Tropilaelaps* spp.; or

2) contains no live honey bees or bee brood and has been held in a bee-proof environment for at least 21 days prior to shipment; or
3) has been treated to ensure the destruction of *Tropilaelaps* spp. in accordance with one of the following procedures:
   a) heating to 50°C core temperature and holding at that temperature for 20 minutes; or
   b) freezing at core temperature of minus 12°C or less for at least 24 hours; or
   c) fumigation with methyl bromide at a rate of 48 g per cubic metre at atmospheric pressure and at a temperature of 10-15°C for a period of 2 hours; or
   d) irradiation with 350 Gray; or
   e) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.5.7.

Recommendations for the importation of honey

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the honey:

1) comes from *apiaries* situated in a country or *zone* free from *Tropilaelaps* spp.; or
2) has been strained through a filter of pore size no greater than 0.42 mm; or
3) has been treated to ensure the destruction of *Tropilaelaps* spp. in accordance with one of the following procedures:
   a) heating to 50°C core temperature and holding at that temperature for 20 minutes; or
   b) freezing at core temperature of minus 12°C or less for at least 24 hours; or
   c) irradiation with 350 Gray; or
   d) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.5.8.

Recommendations for the importation of bee-collected pollen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bee-collected pollen:

1) comes from *apiaries* situated in a country or *zone* free from *Tropilaelaps* spp.; or
2) has been treated to ensure the destruction of *Tropilaelaps* spp. in accordance with one of the following procedures:
   a) freezing at core temperature of minus 12°C or less for at least 24 hours; or
   b) irradiation with 350 Gray; or
   c) desiccation by freeze drying or equivalent; or
   d) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.5.9.

Recommendations for the importation of beeswax and propolis

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

1) come from *apiaries* situated in a country or *zone* free from *Tropilaelaps* spp.; or
2) are processed beeswax or processed propolis; or
3) have been treated to ensure the destruction of *Tropilaelaps* spp. in accordance with one of the following procedures:
   a) freezing at core temperature of minus 12°C or less for at least 24 hours; or

b) fumigation with methyl bromide at a rate of 48 g per cubic metre at atmospheric pressure and at a temperature of 10-15°C for a period of 2 hours; or

c) irradiation with 350 Gray; or

d) desiccation by freeze drying or equivalent; or

e) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

NB: FIRST ADOPTED IN 2004; MOST RECENT UPDATE ADOPTED IN 2013.

CHAPTER 9.6.

INFESTATION OF HONEY BEES WITH *VARROA* SPP. (VARROOSIS)

Article 9.6.1.

General provisions

For the purposes of the *Terrestrial Code*, varroosis is a disease of honey bees (species of the genus *Apis*) caused by mites in the genus *Varroa*, primarily *Varroa destructor*. The mite is an ectoparasite of adults and brood of honey bees and spreads by direct contact from adult honey bee to adult honey bee, and by the movement of infested honey bees, bee brood, bee products and used apicultural equipment.

The number of mites steadily increases with increasing brood production and the growth of the honey bee population, especially late in the season when clinical signs of *infestation* can first be recognised. The lifespan of an individual mite depends on temperature and humidity but, in practice, it can be said to last from some days to a few months.

Honey bee colonies are often carriers of viruses. The mite acts as a *vector* for viruses (particularly deformed wing virus) facilitating their penetration and the *infection* of the honey bees. Most of the symptoms of varroosis are therefore the results of the combined action of *Varroa* spp. mites and viruses. The viral load within the colony increases with the mite *infestation*. Insufficient or late treatments lead to the killing of mites but the virus load remains high for several weeks with deleterious effects on the honey bee population. The control of the varroosis is mainly performed by the control of *Varroa* spp. and the diagnosis of varroosis is also performed by measuring the parasitic load.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 9.6.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the varroosis status of the honey bee population of the *exporting country* or *zone*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 9.6.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any *Varroa* spp.-related conditions, regardless of the *Varroa* spp. status of the honey bee population of the *exporting country* or *zone*:

1) honey bee semen;
2) honey bee venom;
3) honey bee eggs;
4) royal jelly.

Article 9.6.3.

Determination of *Varroa* spp. status of a country or zone

The *Varroa* spp. status of a country or *zone* can only be determined after considering the following criteria:

1) a *risk assessment* has been conducted, identifying all potential factors for *Varroa* spp. occurrence and their historic perspective;
2) the presence of *Varroa* spp. is notifiable in the whole country or *zone*, and all clinical signs suggestive of varroosis are subjected to field and *laboratory* investigations;
3) an ongoing awareness programme is in place to encourage reporting of all cases suggestive of varroosis;

4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.6.4.

Country or zone free from *Varroa* spp.

1) Historically free status

A country or *zone* may be considered free from *Varroa* spp. after conducting a *risk assessment* as referred to in Article 9.6.3. but without formally applying a specific *surveillance* programme (historical freedom) if the country or *zone* complies with Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point 1 above may be considered free from *Varroa* spp. after conducting a *risk assessment* as referred to in Article 9.6.3.and when:

a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone*;

b) the presence of *Varroa* spp. is notifiable in the whole country or *zone*, and any clinical cases suggestive of varroosis are subjected to field and *laboratory* investigations;

c) for the three years following the last report of the presence of *Varroa* spp., an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, have been carried out on a representative sample of *apiaries* in the country or *zone* to provide a confidence level of at least 95% of detecting *Varroa* spp. if at least 1% of the *apiaries* were infested at a within-*apiary* prevalence rate of at least 5% of the hives; such surveys may be targeted towards areas with a higher likelihood of *infestation*;

d) to maintain free status, an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, is carried out on a representative sample of *apiaries* in the country or *zone* to indicate there has been no new *cases*; such surveys may be targeted towards areas with a higher likelihood of *infestation*;

e) either there is no *wild* or self-sustaining *feral* population of species of the genus *Apis* in the country or *zone*, or there is an ongoing *surveillance* programme of the *wild* or self-sustaining *feral* population of species of the genus *Apis* which demonstrates no evidence of the presence of the mite in the country or *zone*;

f) the importation of the *commodities* listed in this chapter into the country or *zone* is carried out in accordance with the recommendations of this chapter.

Article 9.6.5.

Recommendations for the importation of live queen honey bees, worker honey bees, drone honey bees, larvae of honey bees, pupae of honey bees and brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the *commodities* come from *apiaries* situated in a country or *zone* free from *Varroa* spp.; or

2) the shipment comprises only queen honey bees with attendant worker honey bees without associated brood combs and:

a) the honey bees come from an artificial broodless swarm with the caged queen;

b) the caged queen and swarm have been treated with an effective *veterinary medicinal product*;

c) the honey bees were inspected by a representative of the *Veterinary Services* prior to the shipment and showed no evidence of the presence of the mites;

d) the queen honey bees were inspected by the *Veterinary Services* of the *importing country* based on a visual inspection described in the relevant chapter of the *Terrestrial Manual* and the attendant worker honey bees were killed.

Article 9.6.6.

Recommendations for the importation of used apicultural equipment

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the equipment:

1) comes from *apiaries* situated in a country or *zone* free from *Varroa* spp.; or
2) contains no live honey bees or bee brood and has been held in a bee-proof environment for at least 21 days prior to shipment; or
3) has been treated to ensure the destruction of *Varroa* spp. in accordance with one of the following procedures:
   a) heating to 50°C core temperature and holding at that temperature for 20 minutes; or
   b) freezing at core temperature of minus 12°C or less for at least 24 hours; or
   c) fumigation with methyl bromide at a rate of 48 g per cubic metre at atmospheric pressure and at a temperature of 10-15°C for a period of 2 hours; or
   d) irradiation with 350 Gray; or
   e) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.6.7.

Recommendations for the importation of honey

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the honey:

1) comes from *apiaries* situated in a country or *zone* free from *Varroa* spp.; or
2) has been strained through a filter of pore size no greater than 0.42 mm; or
3) has been treated to ensure the destruction of *Varroa* spp. in accordance with one of the following procedures:
   a) heating to 50°C core temperature and holding at that temperature for 20 minutes; or
   b) freezing at core temperature of minus 12°C or less for at least 24 hours; or
   c) irradiation with 350 Gray; or
   d) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.6.8.

Recommendations for the importation of bee-collected pollen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bee-collected pollen:

1) comes from *apiaries* situated in a country or *zone* free from *Varroa* spp.; or
2) has been treated to ensure the destruction of *Varroa* spp. in accordance with one of the following procedures:
   a) freezing at core temperature of minus 12°C or less for at least 24 hours; or
   b) irradiation with 350 Gray; or
   c) desiccation by freeze drying or equivalent; or
   d) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.6.9.

Recommendations for the importation of beeswax and propolis

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

1) come from *apiaries* situated in a country or *zone* free from *Varroa* spp.; or

2) are processed beeswax or processed propolis; or
3) have been treated to ensure the destruction of *Varroa* spp. in accordance with one of the following procedures:
   a) freezing at core temperature of minus 12°C or less for at least 24 hours; or
   b) fumigation with methyl bromide at a rate of 48 g per cubic metre at atmospheric pressure and at a temperature of 10-15°C for a period of 2 hours; or
   c) irradiation with 350 Gray; or
   d) desiccation by freeze drying or equivalent; or
   e) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 2013.

SECTION 10.

AVES

CHAPTER 10.1.

AVIAN CHLAMYDIOSIS

Article 10.1.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 10.1.2.

Trade in commodities

Veterinary Authorities of countries free from avian chlamydiosis may prohibit importation or transit through their territory, from countries considered infected with avian chlamydiosis, of birds of the *Psittacidae* family.

Article 10.1.3.

Recommendations for the importation of birds of the *Psittacidae* family

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the birds:

1) showed no clinical sign of avian chlamydiosis on the day of shipment;
2) were kept under veterinary supervision for the 45 days prior to shipment and were treated against avian chlamydiosis using chlortetracycline.

NB: FIRST ADOPTED IN 1998.

CHAPTER 10.2.

AVIAN INFECTIOUS BRONCHITIS

Article 10.2.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for avian infectious bronchitis shall be 50 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 10.2.2.

Recommendations for the importation of chickens

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the birds:

1) showed no clinical sign of avian infectious bronchitis on the day of shipment;
2) come from *establishments* which are recognised as being free from avian infectious bronchitis, based on the results of serological tests;
3) have not been vaccinated against avian infectious bronchitis; or
4) were vaccinated against avian infectious bronchitis (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*).

Article 10.2.3.

Recommendations for the importation of day-old birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *day-old birds*:

1) come from *establishments* which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.5.;
2) have not been vaccinated against avian infectious bronchitis; or
3) were vaccinated against avian infectious bronchitis (the nature of the vaccine used and the date of *vaccination* shall also be stated in the *certificate*);
4) are the progeny of parent *flocks* which:
    a) come from *establishments* and/or hatcheries which are recognised as being free from avian infectious bronchitis, based on the results of serological tests;
    b) come from *establishments* in which *vaccination* against avian infectious bronchitis is not practised on the parent stock; or
    c) come from *establishments* in which *vaccination* against avian infectious bronchitis is practised on the parent stock;
5) were shipped in clean and unused packages.

Article 10.2.4.

Recommendations for the importation of hatching eggs of chickens

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *hatching eggs*:

1) have been disinfected in accordance with the standards referred to in Chapter 6.5.;

2) come from *establishments* and/or hatcheries which are recognised as being free from avian infectious bronchitis and from hatcheries which comply with the standards referred to in Chapter 6.5.;

3) were shipped in clean and unused packages.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 1998.

CHAPTER 10.3.

AVIAN INFECTIOUS LARYNGOTRACHEITIS

Article 10.3.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for avian infectious laryngotracheitis (ILT) shall be 14 days (chronic carriers occur).

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 10.3.2.

Recommendations for the importation of chickens

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the birds:

1) showed no clinical sign of ILT on the day of shipment;
2) come from *establishments* which are recognised as being free from ILT, based on the results of serological tests;
3) have not been vaccinated against ILT; or
4) were vaccinated against ILT (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*).

Article 10.3.3.

Recommendations for the importation of day-old birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *day-old birds*:

1) come from *establishments* and/or hatcheries which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.5.;
2) have not been vaccinated against ILT; or
3) were vaccinated against ILT (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*);

4) are the progeny of parent *flocks* which:
   a) come from *establishments* and/or hatcheries which are recognised as being free from ILT, based on the results of serological tests;
   b) come from *establishments* in which *vaccination* against ILT is not practised on the parent stock; or
   c) come from *establishments* in which *vaccination* against ILT is practised on the parent stock;
5) were shipped in clean and unused packages.

Article 10.3.4.

Recommendations for the importation of hatching eggs of chickens

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *hatching eggs*:

1) have been disinfected in accordance with the standards referred to in Chapter 6.5.;

2) come from *establishments* and/or hatcheries which are recognised as being free from ILT and from hatcheries which comply with the standards referred to in Chapter 6.5.;

3) were shipped in clean and unused packages.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 1998.

CHAPTER 10.4.

INFECTION WITH HIGH PATHOGENICITY AVIAN INFLUENZA VIRUSES

Article 10.4.1.

General provisions

1) This chapter deals with the *listed disease*, *infection* with high pathogenicity avian influenza viruses.

2) For the purposes of the *Terrestrial Code*:

   a) High pathogenicity avian influenza means an *infection* of *poultry* by any influenza A virus that has been determined as high pathogenicity in accordance with the *Terrestrial Manual*.

   b) An occurrence of *infection* with a high pathogenicity avian influenza virus is defined by the isolation and identification of the virus or the detection of specific viral ribonucleic acid, in one or more samples from *poultry*.

   c) The *incubation period* at the *flock*-level for high pathogenicity avian influenza is 14 days.

3) Although the objective of this chapter is to mitigate animal and public health risks posed by *infection* with high pathogenicity avian influenza viruses, other influenza A viruses of avian host origin (i.e. low pathogenicity avian influenza viruses) may have the potential to exert a negative impact on animal and public health. A sudden and unexpected increase in virulence of low pathogenicity avian influenza viruses in *poultry* is notifiable as an *emerging disease* in accordance with Article 1.1.4. *Infection* of domestic and *captive wild* birds with low pathogenicity avian influenza viruses having proven natural transmission to humans associated with severe consequences, and *infection* of birds other than *poultry*, including *wild* birds, with influenza A viruses of high pathogenicity, are notifiable in accordance with Article 1.3.6.

4) A *notification* of *infection* of birds other than *poultry*, including *wild* birds, with influenza A viruses of high pathogenicity, or of *infection* of domestic or *captive wild* birds with low pathogenicity avian influenza viruses does not affect the high pathogenicity avian influenza status of the country or *zone*. A Member Country should not impose bans on the international trade of *poultry commodities* in response to such *notifications*, or to other information on the presence of any non-notifiable influenza A virus in birds.

5) This chapter includes *monitoring* considerations for low pathogenicity avian influenza viruses because some, especially H5 and H7 subtypes, have the potential to mutate into high pathogenicity avian influenza viruses.

6) The use of *vaccination* against avian influenza may be recommended under specific conditions. Any vaccine used should comply with the standards described in the *Terrestrial Manual*. *Vaccination* will not affect the high pathogenicity avian influenza status of a free country or *zone* if *surveillance* supports the absence of *infection*, in accordance with Article 10.4.28., in particular point 2. *Vaccination* can be used as an effective complementary control tool when a *stamping-out policy* alone is not sufficient. Whether to vaccinate or not should be decided by the *Veterinary Authority* on the basis of the avian influenza situation as well as the ability of the *Veterinary Services* to implement the *vaccination* strategy, as described in Chapter 4.18.

7) Standards for diagnostic tests and vaccines, including pathogenicity testing, are described in the *Terrestrial Manual*.

Article 10.4.2.

Safe commodities

When authorising importation or transit of the following *commodities*, *Veterinary Authorities* should not require any conditions related to high pathogenicity avian influenza, regardless of the high pathogenicity avian influenza status of the *exporting country* or *zone*:

1) heat-treated *poultry meat products* in a hermetically sealed container with an F0 value of 3 or above;

2) extruded dry pet food and coated ingredients after extrusion;

3) rendered *protein meal*, blood meal, feather meal, and *poultry* oil;

4) washed and steam-dried feathers and down from *poultry* and other birds.

Other *commodities* of *poultry* and other birds can be traded safely if in accordance with the relevant articles of this chapter.

Article 10.4.3.

Country or zone free from high pathogenicity avian influenza

A country or *zone* may be considered free from high pathogenicity avian influenza when:

- *infection* with high pathogenicity avian influenza viruses is a *notifiable disease* in the entire country;
- an ongoing awareness programme is in place to encourage reporting of suspicions of high pathogenicity avian influenza;
- absence of *infection* with high pathogenicity avian influenza viruses, based on *surveillance*, in accordance with Chapter 1.4. and Articles 10.4.26. to 10.4.30., has been demonstrated in the country or *zone* for the past 12 months;
- an awareness programme is in place related to avian influenza viruses *risks* and the specific *biosecurity* and management measures to address them;
- *commodities* are imported in accordance with Articles 10.4.7. to 10.4.22.

Surveillance should be adapted to parts of the country or existing *zones* depending on historical or geographical factors, industry structure, population data and proximity to recent *outbreaks* or the use of *vaccination*.

Article 10.4.4.

Compartment free from high pathogenicity avian influenza

The establishment of a *compartment* free from high pathogenicity avian influenza should be in accordance with relevant requirements of this chapter and the principles described in Chapters 4.4. and 4.5.

Article 10.4.5.

Establishment of a containment zone within a country or zone free from high pathogenicity avian influenza

In the event of *outbreaks* of high pathogenicity avian influenza within a previously free country or *zone*, a *containment zone*, which includes all epidemiologically linked *outbreaks*, may be established for the purpose of minimising the impact on the rest of the country or *zone*.

In addition to the requirements for the establishment of a *containment zone* outlined in Article 4.4.7., the *surveillance* programme should take into account the density of *poultry* production, types of *poultry*, local management practices (including inter-premises movement patterns of *poultry*, people and equipment), relevant *biosecurity*, the presence and potential role of birds other than *poultry*, including *wild* birds, and the proximity of *poultry establishments* to permanent and seasonal water bodies.

The free status of the areas outside the *containment zone* is suspended while the *containment zone* is being established. It may be reinstated, irrespective of the provisions of Article 10.4.6., once the *containment zone* is established. It should be demonstrated that *commodities* for *international trade* have originated from outside the *containment zone* or comply with the relevant articles of this chapter.

Article 10.4.6.

Recovery of free status

If *infection* with high pathogenicity avian influenza virus has occurred in *poultry* in a previously free country or *zone*, the free status may be regained after a minimum period of 28 days (i.e. two *flock*-level *incubation periods*) after a *stamping-out policy* has been completed (i.e. after the *disinfection* of the last affected *establishment*), provided that *surveillance* in accordance with Articles 10.4.26. to 10.4.30., in particular point 3 of Article 10.4.28., has been carried out during that period and has demonstrated the absence of *infection*.

If a *stamping-out policy* is not implemented, Article 10.4.3. applies.

Article 10.4.7.

Recommendations for importation from a country, zone or compartment free from high pathogenicity avian influenza

For live poultry (other than day-old poultry)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the *poultry* showed no clinical signs of avian influenza on the day of shipment;
2) the *poultry* originated from a country, *zone* or *compartment* free from high pathogenicity avian influenza;
3) the *poultry* originated from a *flock* that was monitored for avian influenza viruses and was found to be negative;
4) the *poultry* are transported in new or appropriately sanitised *containers*.

If the *poultry* have been vaccinated against avian influenza viruses, the nature of the vaccine used and the date of *vaccination* should be stated in the *international veterinary certificate*.

Article 10.4.8.

Recommendations for the importation of live birds other than poultry

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) on the day of shipment, the birds showed no clinical signs of avian influenza;
2) the birds had been kept in isolation facilities approved by the *Veterinary Services* since they were hatched or for at least 28 days (i.e. two *flock*-level *incubation periods*) prior to shipment and showed no clinical signs of avian influenza during the isolation period;
3) a statistically appropriate sample of the birds was subjected, with negative results, to a diagnostic test for avian influenza within 14 days prior to shipment;
4) the birds are transported in new or appropriately sanitised *containers*.

If the birds have been vaccinated against avian influenza, the nature of the vaccine used and the date of *vaccination* should be stated in the *international veterinary certificate*.

Article 10.4.9.

Recommendations for importation from a country, zone or compartment free from high pathogenicity avian influenza

For day-old live poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the day-old live *poultry* had been kept in a country, *zone* or *compartment* free from high pathogenicity avian influenza since they were hatched;

   and

   a) the day-old live *poultry* were derived from parent *flocks* that were monitored for avian influenza viruses and were found to be negative at the time of collection of the eggs from which the day-old *poultry* hatched; or

   b) the day-old live *poultry* that hatched from eggs that had had their surfaces sanitised in accordance with point 4 d) of Article 6.5.5.;

AND

2) the day-old live *poultry* were transported in new or appropriately sanitised *containers*.

If the day-old live *poultry* or the parent *flocks* have been vaccinated against avian influenza, the nature of the vaccine used and the date of *vaccination* should be stated in the *international veterinary certificate*.

Article 10.4.10.

Recommendations for the importation of day-old live birds other than poultry

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) on the day of shipment, the birds showed no clinical signs of avian influenza;
2) the birds were hatched and kept in isolation facilities approved by the *Veterinary Services*;
3) a statistically appropriate sample of the parent *flock* birds were subjected, with negative results, to a diagnostic test for avian influenza at the time of collection of the eggs;
4) the birds were transported in new or appropriately sanitised *containers*.

If the birds or parent *flocks* have been vaccinated against avian influenza, the nature of the vaccine used and the date of *vaccination* should be stated in the *international veterinary certificate*.

Article 10.4.11.

Recommendations for importation from a country, zone or compartment free from high pathogenicity avian influenza

For hatching eggs of poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the hatching eggs came from a country, *zone* or *compartment* free from high pathogenicity avian influenza;
2)
   a) the hatching eggs were derived from parent *flocks* that were monitored for avian influenza viruses and were found to be negative at the time of collection of the hatching eggs; or
   b) the hatching eggs have had their surfaces sanitised in accordance with point 4 d) of Article 6.5.5.;
3) the hatching eggs are transported in new or appropriately sanitised packaging materials and *containers*.

If the parent *flocks* have been vaccinated against avian influenza, the nature of the vaccine used and the date of *vaccination* should be stated in the *international veterinary certificate*.

Article 10.4.12.

Recommendations for the importation of hatching eggs from birds other than poultry

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) a statistically appropriate sample of the parent *flock* birds was subjected, with negative results, to a diagnostic test for avian influenza 14 days prior to and at the time of collection of the hatching eggs;
2) the hatching eggs have had their surfaces sanitised in accordance with point 4 d) of Article 6.5.5.;
3) the hatching eggs are transported in new or appropriately sanitised packaging materials and *containers*.

If the parent *flocks* have been vaccinated against avian influenza, the nature of the vaccine used and the date of *vaccination* should be stated in the *international veterinary certificate*.

Article 10.4.13.

Recommendations for importation from a country, zone or compartment free from high pathogenicity avian influenza

For poultry semen

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor *poultry*:

1) showed no clinical signs of avian influenza on the day of semen collection;
2) were kept in a country, *zone* or *compartment* free from high pathogenicity avian influenza.

Article 10.4.14.

Recommendations for the importation of semen from birds other than poultry

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the donor birds:

1) were kept in isolation facilities approved by the *Veterinary Services* for at least 28 days (i.e. two *flock*-level *incubation periods*) prior to semen collection;
2) showed no clinical signs of avian influenza during the isolation period;
3) were subjected, with negative results, to a diagnostic test for avian influenza within 14 days prior to semen collection.

Article 10.4.15.

Recommendations for importation from a country, zone or compartment free from high pathogenicity avian influenza

For eggs for human consumption

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the eggs for human consumption were produced and packed in a country, *zone* or *compartment* free from high pathogenicity avian influenza;
2) the eggs for human consumption were transported in new or appropriately sanitised packaging materials and *containers*.

Article 10.4.16.

Recommendations for the importation of egg products from poultry

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) the egg products are derived from eggs which meet the requirements of Article 10.4.15.; or
2) the egg products have been processed to ensure the inactivation of high pathogenicity avian influenza viruses, in accordance with Article 10.4.23.;

AND

3) the necessary precautions were taken to avoid contact of the egg products with any source of high pathogenicity avian influenza viruses.

Article 10.4.17.

Recommendations for importation from a country, zone or compartment free from high pathogenicity avian influenza

For fresh meat of poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from *poultry*:

1) which originated from a country, *zone* or *compartment* free from high pathogenicity avian influenza;
2) which were slaughtered in an approved *slaughterhouse/abattoir* in a country, *zone* or *compartment* free from high pathogenicity avian influenza and were subjected to ante- and post-mortem inspections in accordance with Chapter 6.3., with favourable results.

Article 10.4.18.

Recommendations for the importation of meat products from poultry

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) the *meat products* from *poultry* are derived from *fresh meat* which meets the requirements of Article 10.4.17.; or

2) the *meat products* from *poultry* have been processed to ensure the inactivation of high pathogenicity avian influenza viruses in accordance with Article 10.4.24.;

AND

3) the necessary precautions were taken to avoid contact of the *meat products* from *poultry* with any source of high pathogenicity avian influenza viruses.

Article 10.4.19.

Recommendations for the importation of poultry products not listed in Article 10.4.2. and intended for use in animal feeding, or for agricultural or industrial use

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) these *commodities* were obtained from *poultry* which originated in a country, *zone* or *compartment* free from high pathogenicity avian influenza and that the necessary precautions were taken to avoid contamination during processing with any source of high pathogenicity avian influenza viruses;

OR

2) these *commodities* have been processed to ensure the inactivation of high pathogenicity avian influenza viruses using:
   a) moist heat treatment for 30 minutes at 56°C; or
   b) heat treatment where the internal temperature throughout the product reached at least 74°C; or
   c) any equivalent treatment that has been demonstrated to inactivate avian influenza viruses;

AND

3) the necessary precautions were taken to avoid contact of the *commodity* with any source of high pathogenicity avian influenza viruses.

Article 10.4.20.

Recommendations for the importation of feathers and down from poultry not listed in Article 10.4.2.

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) these *commodities* originated from *poultry* as described in Article 10.4.17. and were processed in a country, *zone* or *compartment* free from high pathogenicity avian influenza; or
2) these *commodities* have been processed to ensure the inactivation of high pathogenicity avian influenza viruses using one of the following:
   a) fumigation with formalin (10% formaldehyde) for 8 hours;
   b) irradiation with a dose of 20 kGy;
   c) any equivalent treatment which has been demonstrated to inactivate avian influenza viruses;

AND

3) the necessary precautions were taken to avoid contact of the *commodity* with any source of high pathogenicity avian influenza viruses.

Article 10.4.21.

Recommendations for the importation of feathers and down of birds other than poultry not listed in Article 10.4.2.

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) these *commodities* have been processed to ensure the inactivation of high pathogenicity avian influenza viruses using one of the following:
   a) fumigation with formalin (10% formaldehyde) for 8 hours;
   b) irradiation with a dose of 20 kGy;
   c) any equivalent treatment which has been demonstrated to inactivate avian influenza viruses;

2) the necessary precautions were taken to avoid contact of the *commodity* with any source of high pathogenicity avian influenza viruses.

Article 10.4.22.

Recommendations for the importation of collection specimens, skins and trophies of birds other than poultry

Regardless of the high pathogenicity avian influenza status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) these *commodities* have been processed to ensure the inactivation of high pathogenicity avian influenza viruses in accordance with Article 10.4.25.;

AND

2) the necessary precautions were taken to avoid contact of the *commodity* with any source of high pathogenicity avian influenza viruses.

Article 10.4.23.

Procedures for the inactivation of high pathogenicity avian influenza viruses in egg products from poultry

The following time/temperature combinations are suitable for the inactivation of high pathogenicity avian influenza viruses present in egg products:

	Core temperature (°C)	Time
Whole egg	60	188 seconds
Whole egg blends	60	188 seconds
Whole egg blends	61.1	94 seconds
Liquid egg white	55.6	870 seconds
Liquid egg white	56.7	232 seconds
Plain or pure egg yolk	60	288 seconds
10% salted yolk	62.2	138 seconds
Dried egg white	67	20 hours
Dried egg white	54.4	50.4 hours
Dried egg white	51.7	73.2 hours

These time/temperature combinations are indicative of a range that achieves a 7-$\log_{10}$ reduction of avian influenza virus infectivity. These are examples for a variety of egg products but, when supported by scientific evidence, variations of these time/temperature combinations may be used, and they may be used for other egg products, if they achieve equivalent inactivation of the virus.

Article 10.4.24.

Procedures for the inactivation of high pathogenicity avian influenza viruses in meat products from poultry

The following time/temperature combinations are suitable for the inactivation of high pathogenicity avian influenza viruses in *meat products*.

	Core temperature (°C)	Time
Meat products from poultry	60.0	507 seconds
	65.0	42 seconds
	70.0	3.5 seconds
	73.9	0.51 second

These time/temperature combinations are indicative of a range that achieves a 7-$\log_{10}$ reduction of avian influenza virus infectivity. When supported by scientific evidence, variations of these time/temperature combinations may be used if they achieve equivalent inactivation of the virus.

Article 10.4.25.

Procedures for the inactivation of high pathogenicity avian influenza viruses in collection specimens and in skins and trophies

For the inactivation of high pathogenicity avian influenza viruses in collection specimens and in skins and trophies, one of the following procedures should be used:

1) boiling in water for an appropriate time to ensure that any material other than bone, claws or beaks is removed; or
2) soaking, with agitation, in a 4% (w/v) solution of washing soda (sodium carbonate-Na_2CO_3) maintained at pH 11.5 or above for at least 48 hours; or
3) soaking, with agitation, in a formic acid solution (100 kg salt [NaCl] and 12 kg formic acid per 1,000 litres water) maintained below pH 3.0 for at least 48 hours; wetting and dressing agents may be added; or
4) in the case of raw hides, treatment for at least 28 days with salt (NaCl) containing 2% washing soda (sodium carbonate-Na_2CO_3); or
5) treatment with 1% formalin for a minimum of six days; or
6) any equivalent treatment which has been demonstrated to inactivate the virus.

Article 10.4.26.

Principles of surveillance for avian influenza

The following are complementary to Chapter 1.4. and should be applied by Member Countries seeking to determine their high pathogenicity avian influenza status.

These principles are also necessary to support *vaccination* programmes, to monitor low pathogenicity avian influenza viruses, especially H5 and H7, in *poultry* and to detect high pathogenicity avian influenza in *wild* birds.

The impact and epidemiology of avian influenza differ widely among different regions of the world and therefore it is impossible to provide detailed recommendations for all situations. Variables such as the frequency of contacts between *poultry* and *wild* birds, different *biosecurity* levels and production systems, and the commingling of different susceptible species including domestic waterfowl, may require different *surveillance* strategies to address each situation. Furthermore, domestic waterfowl typically do not show clinical signs and have longer infective periods than gallinaceous *poultry*. It is therefore incumbent upon the Member Country to provide scientific data that explain the epidemiology of avian influenza in the region of concern and also to demonstrate how all the risk factors have been taken into account. Member Countries have flexibility to provide a science-based approach to demonstrate absence of *infection* with high pathogenicity avian influenza viruses at an appropriate level of confidence, as described in Chapter 1.4.

There is an increased recognition of the value of the application of sequencing technologies and phylogenetic analyses to determine routes of introduction, transmission pathways and epidemiological patterns of *infection*. When avian influenza viruses are detected, Member Countries should apply these technologies, when possible, to enhance the evidence used to develop specific *surveillance* strategies and control activities.

A *monitoring* system for low pathogenicity avian influenza viruses in *poultry* should be in place for the following reasons:

1) H5 and H7 low pathogenicity avian influenza viruses have the potential to mutate into high pathogenicity avian influenza viruses, but it is not possible to predict which viruses will mutate or when these mutations will occur.

2) The detection of sudden and unexpected increases in virulence of low pathogenicity avian influenza viruses in *poultry* is notifiable as an *emerging disease* in accordance with Article 1.1.4.

3) The detection, in domestic or *captive wild* birds, of low pathogenicity avian influenza viruses that have been proven to be transmitted naturally to humans with severe consequences is notifiable in accordance with Article 1.1.3.

Article 10.4.27.

Surveillance for early warning of high pathogenicity avian influenza

1) An ongoing *surveillance* programme for avian influenza should be in place and be designed to detect the presence of *infection* with high pathogenicity avian influenza viruses in the country or *zone* in a timely manner.

2) The high pathogenicity avian influenza *surveillance* programme should include the following.

   a) An *early warning system* for reporting suspected *cases*, in accordance with Article 1.4.5. throughout the production, marketing and processing chain. Farmers and workers who have day-to-day contact with *poultry*, as well as diagnosticians, should report promptly any suspicion of avian influenza to the *Veterinary Authority*. All suspected *cases* of high pathogenicity avian influenza should be investigated immediately and samples should be taken and submitted to a *laboratory* for appropriate tests.

   b) Implementation, as relevant, of regular and frequent clinical inspection, or serological and virological testing of high-risk groups of *animals*, such as those adjacent to a country or *zone* infected with high pathogenicity avian influenza, places where birds and *poultry* of different origins are mixed, such as live bird markets, and *poultry* in close proximity to waterfowl or other potential sources of influenza A viruses. This activity is particularly applicable to domestic waterfowl, where detection of high pathogenicity avian influenza via clinical suspicion can be of low sensitivity.

   c) Immediate investigation of the presence of antibodies against influenza A viruses that have been detected in *poultry* and are not a consequence of *vaccination*. In the case of single or isolated serological positive results, *infection* with high pathogenicity avian influenza viruses may be ruled out on the basis of a thorough epidemiological and *laboratory* investigation that does not demonstrate further evidence of such an *infection*.

Article 10.4.28.

Surveillance for demonstrating freedom from infection with high pathogenicity avian influenza

1) A Member Country declaring freedom of the entire country, a *zone* or a *compartment* from high pathogenicity avian influenza in *poultry* should provide evidence of an effective *surveillance* programme.

   Transparency in the application of different methodologies is essential to ensure consistency in decision-making, ease of understanding, fairness and rationality. The assumptions made, the uncertainties, and the effect of these on the interpretation of the results, should be documented.

   The design of the *surveillance* programme will depend on the epidemiological circumstances and it should be planned and implemented in accordance with this chapter and Article 1.4.6.This requires the availability of demographic data on the *poultry* population and the support of a *laboratory* able to undertake identification of *infection* with avian influenza viruses through virus detection and antibody tests.

   The *surveillance* programme should demonstrate absence of *infection* with high pathogenicity avian influenza viruses during the preceding 12 months in susceptible *poultry* populations (vaccinated and non-vaccinated).

   The design of the sampling strategy should include an epidemiologically appropriate design prevalence. The design prevalence and desired level of confidence in the results will determine the sample size. The Member Country should justify the choice of design prevalence and confidence level used on the basis of the stated objectives of the *surveillance* and the epidemiological situation.

   The sampling strategy may be risk-based if scientific evidence is available, and provided, for the quantification of risk factors. Specific risks could include those linked to the types of production, possible direct or indirect contact with *wild* birds, multi-age *flocks*, local trade patterns including live bird markets, use of possibly contaminated surface water, the presence of more than one species at the *establishment* and poor *biosecurity* in place.

   Data from different *surveillance* activities can be included to increase the sensitivity of the *surveillance* system. If this is to be done, data from structured (e.g. surveys and active *surveillance*) and non-structured (e.g. passive

surveillance) sources should be combined and the sensitivity of each activity should be quantified in order to be able to quantify the sensitivity of the overall *surveillance* system.

The *surveillance* programme should include *surveillance* for high pathogenicity avian influenza viruses in birds other than *poultry*, including *wild* birds, and *monitoring* of low pathogenicity avian influenza viruses in *poultry*, in order to ensure that *biosecurity* and control measures are fit for purpose.

Documentation of freedom from *infection* with high pathogenicity avian influenza should provide details of the *poultry* population, the occurrence of suspected *cases* and how they were investigated and dealt with. This should include the results of *laboratory* testing and the *biosecurity* and control measures to which the animals concerned were subjected during the investigation.

2. Additional requirements for countries, zones or compartments that practise vaccination

Vaccination to prevent the transmission of high pathogenicity avian influenza virus may be part of a disease control programme. The level of *flock* immunity required to prevent transmission depends on the *flock* size, composition (e.g. species) and density of the susceptible *poultry* population. Based on the epidemiology of avian influenza in the country, *zone* or *compartment*, a decision may be reached to vaccinate only certain species or other *poultry subpopulations*.

In all vaccinated *flocks* tests should be performed to ensure the absence of virus circulation. The tests should be repeated at a frequency that is proportionate to the *risk* in the country, *zone* or *compartment*. The use of sentinel *poultry* may provide further confidence in the absence of virus circulation.

Member Countries seeking the demonstration of freedom from high pathogenicity avian influenza in vaccinated population should refer to the chapter on avian influenza (*infection* with avian influenza viruses) in the *Terrestrial Manual*.

Evidence to show the effectiveness of the *vaccination* programme should also be provided.

3. Additional requirements for recovery of free status

In addition to the conditions described in the point above, a Member Country declaring that it has regained country, *zone* or *compartment* freedom after an *outbreak* of high pathogenicity avian influenza in *poultry* should show evidence of an active *surveillance* programme, depending on the epidemiological circumstances of the *outbreak*, to demonstrate the absence of the *infection*. This will require *surveillance* incorporating virus detection and antibody tests. The Member Country should report the results of an active *surveillance* programme in which the susceptible *poultry* population undergoes regular clinical examination and active *surveillance* planned and implemented according to the general conditions and methods described in these recommendations. The *surveillance* samples should be representative of *poultry populations* at risk. The use of sentinel birds may facilitate the interpretation of *surveillance* results.

Populations under this *surveillance* programme should include:

a) *establishments* in the proximity of the *outbreaks*;

b) *establishments* epidemiologically linked to the *outbreaks*;

c) *poultry* used to re-populate affected *establishments*;

d) any *establishments* where preventive depopulation has been carried out.

Article 10.4.29.

Surveillance of wild bird populations

Passive *surveillance*, i.e. sampling of birds found dead, is an appropriate method of *surveillance* in *wild* birds because *infection* with high pathogenicity avian influenza can be associated with mortality in some species. Mortality events, or clusters of birds found dead should be reported to the local *Veterinary Authorities* and investigated, including through the collection and submission of samples to a *laboratory* for appropriate tests.

Active *surveillance*, i.e. sampling of live *wild* birds, may be necessary for detection of some strains of high pathogenicity avian influenza viruses that produce *infection* without mortality in *wild* birds. Furthermore, it increases knowledge of the ecology and evolution of avian influenza viruses.

Surveillance in *wild* birds should be targeted towards times of year, species and locations in which *infection* is more likely.

Surveillance in *wild* birds should be enhanced by raising awareness, and by active searching and *monitoring* for dead or moribund *wild* birds when high pathogenicity avian influenza has been detected in the region. The movements of

migratory water birds, in particular ducks, geese and swans, should be taken into account as a potential pathway for introduction of virus to uninfected areas.

Article 10.4.30.

Monitoring of low pathogenicity avian influenza in poultry populations

Outbreaks of low pathogenicity avian influenza viruses can be managed at the *establishment* level; however, spread to other *poultry establishments* increases the risk of virus mutation, particularly if it is not detected and managed. Therefore, a *monitoring* system should be in place.

Monitoring the presence and types of low pathogenicity avian influenza viruses can be achieved through a combination of clinical investigation when *infection* is suspected because of changes in production parameters, such as reductions in egg production or *feed* and water intake, and active serological and virological *surveillance*, which can be supported by the information obtained by the *surveillance* system for high pathogenicity avian influenza.

Serological and virological *monitoring* should aim at detecting clusters of infected *flocks* to identify spread between *establishments*. Epidemiological follow-up (tracing forward and back) of serologically positive *flocks* should be carried out to determine whether there is clustering of infected *flocks* regardless of whether the seropositive birds are still present at the *establishment* or whether active virus *infection* has been detected. Hence, *monitoring* of low pathogenicity avian influenza will also enhance early detection of high pathogenicity avian influenza.

NB: FIRST ADOPTED IN 1998; MOST RECENT UPDATE ADOPTED IN 2021.

CHAPTER 10.5.

INFECTION WITH *MYCOPLASMA GALLISEPTICUM* (AVIAN MYCOPLASMOSIS)

Article 10.5.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 10.5.2.

Establishment free from avian mycoplasmosis

To qualify as free from avian mycoplasmosis, an *establishment* should satisfy the following requirements:

1) it is under *official veterinary control*;
2) it contains no bird which has been vaccinated against avian mycoplasmosis;
3) 5% of the birds, with a maximum of 100 birds of different age groups present in the *establishment*, are subjected to:
    a) an agent identification test with negative results at the age of 10, 18 and 26 weeks, and thereafter at 4-week intervals; or
    b) a serological test with negative results at the age of 10, 18 and 26 weeks, and thereafter at 4-week intervals;
4) all birds introduced into the *flocks* come from an *establishment* free from avian mycoplasmosis.

Article 10.5.3.

Recommendations for the importation of chickens and turkeys

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the birds:

1) showed no clinical sign of avian mycoplasmosis on the day of shipment; and
2) come from an *establishment* free from avian mycoplasmosis; or
3) were kept in a *quarantine station* for the 28 days prior to shipment and were subjected to a serological test and an agent identification test for avian mycoplasmosis with negative results, at the beginning and at the end of the 28-day period.

Article 10.5.4.

Recommendations for the importation of day-old birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *day-old birds*:

1) come from *establishments* free from avian mycoplasmosis and from hatcheries which comply with the standards referred to in Chapter 6.5.;
2) were shipped in clean and unused packages.

Article 10.5.5.

Recommendations for the importation of hatching eggs of chickens and turkeys

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *hatching eggs*:

1) have been disinfected in accordance with the standards referred to in Chapter 6.5.;
2) come from *establishments* free from avian mycoplasmosis and from hatcheries which comply with the standards referred to in Chapter 6.5.;
3) were shipped in clean and unused packages.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 2021.

CHAPTER 10.6.

DUCK VIRUS HEPATITIS

Article 10.6.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for duck virus hepatitis (DVH) shall be seven days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 10.6.2.

Recommendations for the importation of ducks

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the birds:

1) showed no clinical sign of DVH on the day of shipment;
2) come from *establishments* which are recognised as being free from DVH;
3) have not been vaccinated against DVH; or
4) were vaccinated against DVH (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*).

Article 10.6.3.

Recommendations for the importation of day-old ducks

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *day-old birds*:

1) come from *establishments* and/or hatcheries which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.5.;
2) have not been vaccinated against DVH; or
3) were vaccinated against DVH (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*);
4) are the progeny of parent *flocks* which:
    a) come from *establishments* and/or hatcheries which are recognised as being free from DVH;
    b) come from *establishments* and/or hatcheries in which *vaccination* against DVH is not practised on the parent stock; or
    c) come from *establishments* and/or hatcheries in which *vaccination* against DVH is practised on the parent stock;
5) were shipped in clean and unused packages.

Article 10.6.4.

Recommendations for the importation of hatching eggs of ducks

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *hatching eggs*:

1) have been disinfected in accordance with the standards referred to in Chapter 6.5.;

2) come from *establishments* and/or hatcheries which are recognised as being free from DVH and from hatcheries which comply with the standards referred to in Chapter 6.5.;

3) were shipped in clean and unused packages.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 1998.

CHAPTER 10.7.

FOWL TYPHOID AND PULLORUM DISEASE

Article 10.7.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 10.7.2.

Recommendations for the importation of domestic birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the birds:

1) showed no clinical sign of fowl typhoid and pullorum disease on the day of shipment;

2) come from *establishments* which are recognised as being free from fowl typhoid and pullorum disease; and/or

3) have been subjected to a diagnostic test for fowl typhoid and pullorum disease with negative results; and/or

4) were kept in a *quarantine station* for not less than 21 days prior to shipment.

Article 10.7.3.

Recommendations for the importation of day-old birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *day-old birds*:

1) come from *establishments* and/or hatcheries which are recognised as being free from fowl typhoid and pullorum disease and from hatcheries which comply with the standards referred to in Chapter 6.5.;

2) were shipped in clean and unused packages.

Article 10.7.4.

Recommendations for the importation of hatching eggs of domestic birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *hatching eggs*:

1) have been disinfected in accordance with the standards referred to in Chapter 6.5.;

2) come from *establishments* and/or hatcheries which are recognised as being free from fowl typhoid and pullorum disease and from hatcheries which comply with the standards referred to in Chapter 6.5.;

3) were shipped in clean and unused packages.

NB: FIRST ADOPTED IN 1998.

CHAPTER 10.8.

INFECTIOUS BURSAL DISEASE
(GUMBORO DISEASE)

Article 10.8.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for infectious bursal disease shall be seven days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 10.8.2.

Recommendations for the importation of domestic birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the birds:

1) showed no clinical sign of infectious bursal disease on the day of shipment;
2) come from an *establishment* which is regularly inspected by the *Veterinary Authority*;
3) have not been vaccinated against infectious bursal disease and come from an *establishment* free from infectious bursal disease as demonstrated by the AGP test; or
4) were vaccinated against infectious bursal disease (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*).

Article 10.8.3.

Recommendations for importation from countries considered infected with infectious bursal disease

For day-old birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *day-old birds*:

1) come from *establishments* which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.5.;
2) have not been vaccinated against infectious bursal disease; or
3) were vaccinated against infectious bursal disease (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*);
4) are the progeny of parent *flocks* which come from *establishments*:
    a) which are recognised as being free from infectious bursal disease as demonstrated by the AGP test;
    b) in which *vaccination* against infectious bursal disease is not practised on the parent stock; or
    c) in which *vaccination* against infectious bursal disease is practised on the parent stock;
5) were shipped in clean and unused packages.

Article 10.8.4.

Recommendations for the importation of hatching eggs of domestic birds

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *hatching eggs*:

1) have been disinfected in accordance with the standards referred to in Chapter 6.5.;

2) come from *establishments* which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.5.;

3) were shipped in clean and unused packages.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 1998.

CHAPTER 10.9.

INFECTION WITH NEWCASTLE VIRUS

Article 10.9.1.

General provisions

1) For the purposes of the *Terrestrial Code*, Newcastle disease (ND) is defined as an *infection* of *poultry* caused by Newcastle disease virus (NDV), which is an avian paramyxovirus serotype 1 (APMV-1) that meets one of the following criteria for virulence:

   a) the virus has an intracerebral pathogenicity index (ICPI) in day-old chicks *(Gallus gallus)* of 0.7 or greater; or

   b) multiple basic amino acids have been demonstrated in the virus (either directly or by deduction) at the C-terminus of the F2 protein and phenylalanine at residue 117, which is the N-terminus of the F1 protein. The term 'multiple basic amino acids' refers to at least three arginine or lysine residues between residues 113 and 116. Failure to demonstrate the characteristic pattern of amino acid residues as described above would require characterisation of the isolated virus by an ICPI test.

   In this definition, amino acid residues are numbered from the N-terminus of the amino acid sequence deduced from the nucleotide sequence of the F0 gene, 113–116 corresponds to residues –4 to –1 from the cleavage site.'

2) For the purposes of the *Terrestrial Code*, the *incubation period* for ND shall be 21 days.

3) This chapter deals with NDV *infection* of *poultry* in the presence or absence of clinical signs.

4) The occurrence of *infection* with NDV is defined as the isolation and identification of NDV as such or the detection of viral ribonucleic acid specific for NDV.

5) A Member Country should not impose bans on the trade in *poultry commodities* in response to information on the presence of any APMV-1 in birds other than *poultry*, including *wild* birds.

6) Standards for diagnostic tests, including pathogenicity testing, are described in the *Terrestrial Manual*. When the use of ND vaccines is appropriate, those vaccines should comply with the standards described in the *Terrestrial Manual*.

Article 10.9.2.

Determination of the Newcastle disease status of a country, zone or compartment

The ND status of a country, a *zone* or a *compartment* can be determined on the basis of the following criteria:

1) ND is notifiable in the whole country, an ongoing ND awareness programme is in place, and all notified suspect occurrences of ND are subjected to field and, where applicable, *laboratory* investigations;

2) appropriate *surveillance* is in place to demonstrate the presence of NDV *infection* in the absence of clinical signs in *poultry*; this may be achieved through an ND *surveillance* programme in accordance with Articles 10.9.22. to 10.9.26.;

3) consideration of all epidemiological factors for ND occurrence and their historical perspective.

Article 10.9.3.

Newcastle disease free country, zone or compartment

A country, *zone* or *compartment* may be considered free from ND when it has been shown that NDV *infection* in *poultry* has not been present in the country, *zone* or *compartment* for the past 12 months, based on *surveillance* in accordance with Articles 10.9.22. to 10.9.26.

If *infection* has occurred in *poultry* in a previously free country, *zone* or *compartment*, ND free status can be regained three months after a *stamping-out policy* (including *disinfection* of all affected *establishments*) is applied, providing that *surveillance* in accordance with Articles 10.9.22. to 10.9.26. has been carried out during that three-month period.

Article 10.9.4.

Recommendations for importation from a Newcastle disease free country, zone or compartment as defined in Article 10.9.3.

For live poultry (other than day-old poultry)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the *poultry* showed no clinical sign suggestive of ND on the day of shipment;
2) the *poultry* were kept in an ND free country, *zone* or *compartment* since they were hatched or for at least the past 21 days;
3) the *poultry* are transported in new or appropriately sanitized *containers*.

If the *poultry* have been vaccinated against ND, the nature of the vaccine used and the date of *vaccination* should be attached to the *certificate*.

Article 10.9.5.

Recommendations for the importation of live birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) the birds showed no clinical sign suggestive of *infection* by NDV on the day of shipment;
2) the birds were kept in isolation approved by the *Veterinary Services* since they were hatched or for at least 21 days prior to shipment and showed no clinical sign of *infection* during the isolation period;
3) a statistically valid sample of the birds, selected in accordance with Article 10.9.24., was subjected to a diagnostic test within 14 days prior to shipment to demonstrate freedom from *infection* with NDV;
4) the birds are transported in new or appropriately sanitized *containers*.

If the birds have been vaccinated against ND, the nature of the vaccine used and the date of *vaccination* should be attached to the *certificate*.

Article 10.9.6.

Recommendations for importation from a Newcastle disease free country, zone or compartment

For day-old live poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the *poultry* were hatched and kept in an ND free country, *zone* or *compartment* since they were hatched;
2) the *poultry* were derived from parent *flocks* which had been kept in an ND free country, *zone* or *compartment* for at least 21 days prior to and at the time of the collection of the eggs;
3) the *poultry* are transported in new or appropriately sanitized *containers*.

If the *poultry* or parent *flocks* have been vaccinated against ND, the nature of the vaccine used and the date of *vaccination* should be attached to the *certificate*.

Article 10.9.7.

Recommendations for the importation of day-old live birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) the birds showed no clinical sign suggestive of *infection* by NDV on the day of shipment;
2) the birds were hatched and kept in isolation approved by the *Veterinary Services*;
3) the parent *flock* birds were subjected to a diagnostic test at the time of the collection of the eggs to demonstrate freedom from *infection* with NDV;
4) the birds are transported in new or appropriately sanitized *containers*.

If the birds or parent *flocks* have been vaccinated against ND, the nature of the vaccine used and the date of *vaccination* should be attached to the *certificate*.

Article 10.9.8.

Recommendations for importation from a Newcastle disease free country, zone or compartment

For hatching eggs of poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the eggs came from an ND free country, *zone* or *compartment*;
2) the eggs were derived from parent *flocks* which had been kept in an ND free country, *zone* or *compartment* for at least 21 days prior to and at the time of the collection of the eggs;
3) the eggs are transported in new or appropriately sanitized packaging materials.

If the parent *flocks* have been vaccinated against ND, the nature of the vaccine used and the date of *vaccination* should be attached to the *certificate*.

Article 10.9.9.

Recommendations for the importation of hatching eggs from birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) the parent *flock* birds were subjected to a diagnostic test seven days prior to and at the time of the collection of the eggs to demonstrate freedom from *infection* with NDV;
2) the eggs have had their surfaces sanitized (in accordance with Chapter 6.5.);
3) the eggs are transported in new or appropriately sanitized packaging materials.

If the parent *flocks* have been vaccinated against ND, the nature of the vaccine used and the date of *vaccination* should be attached to the *certificate*.

Article 10.9.10.

Recommendations for importation from a Newcastle disease free country, zone or compartment

For eggs for human consumption

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the eggs were produced and packed in an ND free country, *zone* or *compartment*;
2) the eggs are transported in new or appropriately sanitized packaging materials.

Article 10.9.11.

Recommendations for importation of egg products of poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) the *commodity* is derived from eggs which meet the requirements of Article 10.9.10.; or
2) the *commodity* has been processed to ensure the destruction of NDV in accordance with Article 10.9.20.;

AND

3) the necessary precautions were taken to avoid contact of the egg products with any source of NDV.

Article 10.9.12.

Recommendations for importation from a Newcastle disease free country, zone or compartment

For poultry semen

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor *poultry*:

1) showed no clinical sign suggestive of ND on the day of semen collection;

2) were kept in an ND free country, *zone* or *compartment* for at least 21 days prior to and at the time of semen collection.

Article 10.9.13.

Recommendations for the importation of semen of birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the donor birds:

1) were kept in isolation approved by the *Veterinary Services* for at least 21 days prior to and on the day of semen collection;

2) showed no clinical sign suggestive of *infection* with NDV during the isolation period and on the day of semen collection;

3) were subjected to a diagnostic test within 14 days prior to semen collection to demonstrate freedom from *infection* with NDV.

Article 10.9.14.

Recommendations for importation from a Newcastle disease free country, zone or compartment

For fresh meat of poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from *poultry*:

1) which have been kept in an ND free country, *zone* or *compartment* since they were hatched or for at least the past 21 days;

2) which have been slaughtered in an approved *abattoir* in an ND free country, *zone* or *compartment* and have been subjected to ante- and post-mortem inspections in accordance with Chapter 6.3. and have been found free of any sign suggestive of ND.

Article 10.9.15.

Recommendations for importation of meat products of poultry

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the *commodity* is derived from *fresh meat* which meet the requirements of Article 10.9.14.; or

2) the *commodity* has been processed to ensure the destruction of NDV in accordance with Article 10.9.21.;

AND

3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NDV.

Article 10.9.16.

Recommendations for the importation of products of poultry origin, other than feather meal and poultry meal, intended for use in animal feeding, or for agricultural or industrial use

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) these *commodities* were processed in a ND free country, *zone* or *compartment* from *poultry* which were kept in a ND free country, *zone* or *compartment* from the time they were hatched until the time of *slaughter* or for at least the 21 days preceding *slaughter*; or
2) these *commodities* have been processed to ensure the destruction of NDV using:
   a) moist heat treatment for 30 minutes at 56°C; or
   b) any equivalent treatment which has been demonstrated to inactivate NDV;

AND

3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NDV.

Article 10.9.17.

Recommendations for the importation of feathers and down of poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) these *commodities* originated from *poultry* as described in Article 10.9.14. and were processed in a ND free country, *zone* or *compartment*; or
2) these *commodities* have been processed to ensure the destruction of NDV using one of the following:
   a) washed and steam-dried at 100ºC for 30 minutes;
   b) fumigation with formalin (10% formaldehyde) for 8 hours;
   c) irradiation with a dose of 20 kilogray;
   d) any equivalent treatment which has been demonstrated to inactivate NDV;

AND

3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NDV.

Article 10.9.18.

Recommendations for the importation of feathers and down of birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) these *commodities* have been processed to ensure the destruction of NDV using one of the following:
   a) washed and steam-dried at 100ºC for 30 minutes;
   b) fumigation with formalin (10% formaldehyde) for 8 hours;
   c) irradiation with a dose of 20 kilogray;
   d) any equivalent treatment which has been demonstrated to inactivate NDV;
2) the necessary precautions were taken to avoid contact of the *commodity* with any source of NDV.

Article 10.9.19.

Recommendations for the importation of feather meal and poultry meal

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

1) these *commodities* were processed in a ND free country, *zone* or *compartment* from *poultry* which were kept in a ND free country, *zone* or *compartment* from the time they were hatched until the time of *slaughter* or for at least the 21 days preceding *slaughter*; or

2) these *commodities* have been processed either:

   a) with moist heat at a minimum temperature of 118ºC for minimum of 40 minutes; or

   b) with a continuous hydrolysing process under at least 3.79 bar of pressure with steam at a minimum temperature of 122ºC for a minimum of 15 minutes; or

   c) with an alternative rendering process that ensures that the internal temperature throughout the product reaches at least 74ºC for a minimum of 280 seconds;

AND

3) the necessary precautions were taken to avoid contact of the *commodity* with any source of ND virus.

Article 10.9.20.

Procedures for the inactivation of Newcastle disease virus in eggs and egg products

The following times and temperatures are suitable for the inactivation of ND virus present in eggs and egg products:

	Core temperature (°C)	Time
Whole egg	55	2,521 seconds
Whole egg	57	1,596 seconds
Whole egg	59	674 seconds
Liquid egg white	55	2,278 seconds
Liquid egg white	57	986 seconds
Liquid egg white	59	301 seconds
10% salted yolk	55	176 seconds
Dried egg white	57	50.4 hours

The listed temperatures are indicative of a range that achieves a 7-log kill. Where scientifically documented, variances from these times and temperatures may also be suitable when they achieve the inactivation of the virus.

Article 10.9.21.

Procedures for the inactivation of Newcastle disease virus in meat

The following times for industry standard temperatures are suitable for the inactivation of ND virus present in *meat*.

	Core temperature (°C)	Time
Poultry meat	65.0	39.8 seconds
	70.0	3.6 seconds
	74.0	0.5 second
	80.0	0.03 second

The listed temperatures are indicative of a range that achieves a 7-log kill. Where scientifically documented, variances from these times and temperatures may also be suitable when they achieve the inactivation of the virus.

Article 10.9.22.

Introduction to surveillance

Articles 10.9.22. to 10.9.26. define the principles and provide a guide on the *surveillance* for ND as defined in Article 10.9.1. and is complementary to Chapter 1.4. It is applicable to Member Countries seeking to determine their ND status. This may be for the entire country, *zone* or *compartment*. Guidance for Member Countries seeking free status following an *outbreak* and for the maintenance of ND status is also provided.

Surveillance for ND is complicated by the known occurrence of APMV-1 *infections* in many bird species, both domestic and *wild*, and the widespread utilisation of ND vaccines in domestic *poultry*.

The impact and epidemiology of ND differ widely in different regions of the world and therefore it is not possible to provide specific recommendations for all situations. Therefore, *surveillance* strategies employed for demonstrating freedom from ND at an acceptable level of confidence should be adapted to the local situation. Variables such as the frequency of contacts of *poultry* with *wild* birds, different *biosecurity* levels, production systems and the commingling of different susceptible species require specific *surveillance* strategies to address each specific situation. It is incumbent upon the Member Country to provide scientific data that explains the epidemiology of ND in the region concerned and also demonstrates how all the risk factors are managed. There is, therefore, considerable latitude available to Member Countries to provide a well-reasoned argument to prove freedom from NDV *infection*.

Surveillance for ND should be in the form of a continuing programme designed to establish that the country, *zone* or *compartment*, for which application is made, is free from NDV *infection*.

Article 10.9.23.

General conditions and methods for surveillance

1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. In particular there should be in place:

   a) a formal and ongoing system for detecting and investigating *outbreaks* of disease or NDV *infection*;

   b) a procedure for the rapid collection and transport of samples from suspect cases of ND to a *laboratory* for ND diagnosis;

   c) a system for recording, managing and analysing diagnostic and *surveillance* data.

2) The ND *surveillance* programme should:

   a) include an *early warning system* throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers, who have day-to-day contact with *poultry*, as well as diagnosticians, should report promptly any suspicion of ND to the *Veterinary Authority*. They should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary paraprofessionals*) by government information programmes and the *Veterinary Authority*. All suspected cases of ND should be investigated immediately. As suspicion cannot be resolved by epidemiological and clinical investigation alone, samples should be taken and submitted to a *laboratory* for appropriate tests. This requires that sampling kits and other equipment are available to those responsible for *surveillance*. Personnel responsible for *surveillance* should be able to call for assistance from a team with expertise in ND diagnosis and control;

   b) implement, when relevant, regular and frequent clinical, virological and serological *surveillance* of high risk groups of *poultry* within the target population (e.g. those adjacent to an ND infected country, *zone*, *compartment*, places where birds and *poultry* of different origins are mixed, or other sources of NDV).

An effective *surveillance* system may identify suspicious cases that require follow-up and investigation to confirm or exclude that the cause of the condition is due to NDV *infection*. The rate at which such suspicious cases are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. Applications for freedom from NDV *infection* should provide details of the occurrence of suspicious cases and how they were investigated and dealt with. This should include the results of *laboratory* testing and the control measures to which the animals concerned were subjected during the investigation (quarantine, movement stand-still orders, etc.).

Article 10.9.24.

Surveillance strategies

1. Introduction

Any *surveillance* programme requires inputs from professionals competent and experienced in this field and should be thoroughly documented. The design of *surveillance* programmes to prove the absence of NDV *infection* or circulation should be carefully followed to avoid producing results that are either unreliable, or excessively costly and logistically complicated.

If a Member Country wishes to declare freedom from NDV *infection* in a country, *zone* or *compartment*, the subpopulation used for the *surveillance* for the disease and *infection* should be representative of all *poultry* within the country, *zone* or *compartment*. Multiple *surveillance* methods should be used concurrently to accurately define the true ND status of *poultry* populations. Active and passive *surveillance* for ND should be ongoing with the frequency of active *surveillance* being appropriate to the disease situation in the country. *Surveillance* should be composed of random or targeted approaches, dependent on the local epidemiological situation and using clinical, virological and serological methods. If alternative tests are used they should have been validated as fit-for-purpose in accordance with WOAH standards. A Member Country should justify the *surveillance* strategy chosen as adequate to detect the presence of NDV *infection* in accordance with Chapter 1.4. and the prevailing epidemiological situation.

In surveys, the sample size selected for testing should be statistically justified to detect *infection* at a predetermined target prevalence. The sample size and expected prevalence determine the level of confidence in the results of the survey. The survey design and frequency of sampling should be dependent on the historical and current local epidemiological situation. The Member Country should justify the choice of survey design and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4.

Targeted *surveillance* (e.g. based on the increased likelihood of *infection* in a population) may be an appropriate strategy.

It may, for example, be appropriate to target clinical *surveillance* at particular species likely to exhibit clear clinical signs (e.g. unvaccinated chickens). Similarly, virological and serological testing could target species that may not show clinical signs (Article 10.9.2.) of ND and are not routinely vaccinated (e.g. ducks). *Surveillance* may also target *poultry* populations at specific risk, for example direct or indirect contact with *wild* birds, multi-age *flocks*, local trade patterns including live *poultry* markets, the presence of more than one species on the holding and poor *biosecurity* measures in place. In situations where *wild* birds have been shown to play a role in the local epidemiology of ND, *surveillance* of *wild* birds may be of value in alerting *Veterinary Services* to the possible exposure of *poultry* and, in particular, of free ranging *poultry*.

The sensitivity and specificity of the diagnostic tests are key factors in the choice of survey design, which should anticipate the occurrence of false positive and false negative reactions. Ideally, the sensitivity and specificity of the tests used should be validated for the *vaccination* and *infection* history and for the different species in the target population. If the characteristics of the testing system are known, the rate at which these false reactions are likely to occur can be calculated in advance. There should be an effective procedure for following up positives to ultimately determine with a high level of confidence, whether they are indicative of *infection* or not. This should involve both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as *flocks* which may be epidemiologically linked to it.

The results of active and passive *surveillance* are important in providing reliable evidence that no NDV *infection* is present in a country, *zone* or *compartment*.

2. Clinical surveillance

Clinical *surveillance* aims to detect clinical signs suggestive of ND at the *flock* level and should not be underestimated as an early indication of *infection*. Monitoring of production parameters (e.g. a drop in *feed* or water consumption or egg production) is important for the early detection of NDV *infection* in some populations, as there may be no, or mild, clinical signs, particularly if they are vaccinated. Any sampling unit within which suspicious animals are detected should be considered as infected until evidence to the contrary is produced. Identification of infected *flocks* is vital to the identification of sources of NDV.

A presumptive diagnosis of clinical ND in suspect infected populations should always be confirmed by virological testing in a *laboratory*. This will enable the molecular, antigenic and other biological characteristics of the virus to be determined.

It is desirable that NDV isolates are sent promptly to a WOAH Reference Laboratory for archiving and further characterisation if required.

3. Virological surveillance

Virological *surveillance* should be conducted to:

a) monitor at risk populations;

b) confirm suspect clinical cases;

c) follow up positive serological results in unvaccinated populations or sentinel birds;

d) test 'normal' daily mortalities (if warranted by an increased risk e.g. *infection* in the face of *vaccination* or in establishments epidemiologically linked to an *outbreak*).

4. Serological surveillance

Where *vaccination* is carried out, serological *surveillance* is of limited value. Serological *surveillance* cannot be used to discriminate between NDV and other APMV-1. Positive NDV antibody test results can have five possible causes:

a) natural *infection* with APMV-1;

b) *vaccination* against ND;

c) exposure to vaccine virus;

d) maternal antibodies derived from a vaccinated or infected parent *flock* are usually found in the yolk and can persist in progeny for up to four weeks;

e) non-specific test reactions.

It may be possible to use serum collected for other survey purposes for ND *surveillance*. However, the principles of survey design described in these recommendations and the requirement for a statistically valid survey for the presence of NDV should not be compromised.

Discovery of seropositive, unvaccinated *flocks* should be investigated further by conducting a thorough epidemiological investigation. Since seropositive results are not necessarily indicative of *infection*, virological methods should be used to confirm the presence of NDV in such populations. Until validated strategies and tools to differentiate vaccinated animals from those infected with field APMV-1 are available, serological tools should not be used to identify NDV *infection* in vaccinated populations.

5. Use of sentinel poultry

There are various applications of the use of sentinel *poultry* as a *surveillance* tool to detect virus circulation. They may be used to monitor vaccinated populations or species which are less susceptible to the development of clinical disease for the circulation of virus. Sentinel *poultry* should be immunologically naïve and may be used in vaccinated *flocks*. In case of the use of sentinel *poultry*, the structure and organisation of the *poultry* sector, the type of vaccine used and local epidemiological factors will determine the type of production systems where sentinels should be placed, the frequency of placement and monitoring of the sentinels.

Sentinel *poultry* should be in close contact with, but should be identified to be clearly differentiated from, the target population. Sentinel *poultry* should be observed regularly for evidence of clinical disease and any disease incidents investigated by prompt *laboratory* testing. The species to be used as sentinels should be proven to be highly susceptible to *infection* and ideally develop clear signs of clinical disease. Where the sentinel *poultry* do not necessarily develop overt clinical disease a programme of regular active testing by virological and serological tests should be used (the development of clinical disease may be dependent on the sentinel species used or use of live vaccine in the target population that may infect the sentinel *poultry*). The testing regime and the interpretation of the results will depend on the type of vaccine used in the target population. Sentinel birds should be used only if no appropriate *laboratory* procedures are available.

Article 10.9.25.

Additional surveillance requirements for declaration of freedom

The requirements for a country, *zone* or *compartment* to declare freedom from ND are given in Article 10.9.3.

A Member Country declaring freedom of a country, *zone* or *compartment* (with or without *vaccination*) should report the results of a *surveillance* programme in which the ND susceptible *poultry* population undergoes regular *surveillance* planned and implemented in accordance with the general conditions and methods described in these recommendations.

1. Member Countries declaring freedom from Newcastle disease for the country, zone or compartment

In addition to the general conditions described in the *Terrestrial Code*, a Member Country declaring freedom from ND for the entire country, or a *zone* or a *compartment* should provide evidence for the existence of an effective

surveillance programme. The *surveillance* programme should be planned and implemented in accordance with general conditions and methods described in this chapter to demonstrate absence of NDV *infection* in *poultry* during the preceding 12 months.

2. Additional requirements for countries, zones or compartments that practice vaccination

Vaccination against ND may be used as a component of a disease prevention and control programme.

In vaccinated populations there is a need to perform *surveillance* to ensure the absence of NDV circulation. The use of sentinel *poultry* may provide further confidence of the absence of virus circulation. The *surveillance* should be repeated at least every six months or at shorter intervals in accordance with the risk in the country, *zone* or *compartment*, or evidence to show the effectiveness of the *vaccination* programme is regularly provided.

Article 10.9.26.

Additional surveillance requirements for regaining freedom

A Member Country regaining country, *zone* or *compartment* freedom from ND should show evidence of an active *surveillance* programme depending on the epidemiological circumstances of the *outbreak* to demonstrate the absence of the *infection*.

A Member Country declaring freedom of a country, *zone* or *compartment* after an *outbreak* of ND (with or without *vaccination*) should report the results of a *surveillance* programme in which the ND susceptible *poultry* population undergoes regular *surveillance* planned and implemented in accordance with the general conditions and methods described in these recommendations.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2023.

SECTION 11.

BOVINAE

CHAPTER 11.1.

BOVINE ANAPLASMOSIS

Article 11.1.1.

General provisions

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 11.1.2.

Recommendations for importation from countries considered infected with bovine anaplasmosis

For cattle

Veterinary Authorities of free countries should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of bovine anaplasmosis on the day of shipment; and

2) were, since birth, kept in a *zone* known to be free from bovine anaplasmosis for the previous two years;

OR

3) showed no clinical sign of bovine anaplasmosis on the day of shipment; and

4) were subjected to a diagnostic test for bovine anaplasmosis with negative results during 30 days prior to shipment; and

5) were treated with an effective drug such as oxytetracycline for five consecutive days at a dose of 22 mg/kg (under study);

AND

in either of the above cases:

6) were treated with an acaricide and, if necessary, a repellent against biting insects prior to shipment and were completely free of ticks.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 2003.

CHAPTER 11.2.

BOVINE BABESIOSIS

Article 11.2.1.

General provisions

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 11.2.2.

Recommendations for importation from countries considered infected with bovine babesiosis

For cattle

Veterinary Authorities of free countries should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of bovine babesiosis on the day of shipment; and
2) were, since birth, resident in a *zone* known to be free of bovine babesiosis for the previous two years;

OR

3) showed no clinical sign of bovine babesiosis on the day of shipment; and
4) were subjected to a diagnostic test for bovine babesiosis with negative results during 30 days prior to shipment; and
5) were treated with an effective drug such as imidocarb as a single dose injection at 2 mg/kg or amicarbalide at 10 mg/kg (under study);

AND

in either of the above cases:

6) were treated with an acaricide prior to shipment and were completely free of ticks.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 2003.

CHAPTER 11.3.

BOVINE GENITAL CAMPYLOBACTERIOSIS

Article 11.3.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 11.3.2.

Recommendations for the importation of female bovines for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animals are virgin heifers; or

2) the animals were kept in a *herd* in which no *case* of bovine genital campylobacteriosis has been declared; and/or

3) for animals which have been mated, the culture of vaginal mucus for the presence of the causal agent of bovine genital campylobacteriosis proved negative.

Article 11.3.3.

Recommendations for the importation of bulls for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animals:

   a) have never been used for natural service; or

   b) have only mated virgin heifers; or

   c) were kept in an *establishment* in which no *case* of bovine genital campylobacteriosis has been declared;

2) the semen and preputial specimen cultures and/or the associated tests for the presence of the causal agent of bovine genital campylobacteriosis were negative.

Article 11.3.4.

Recommendations for the importation of bovine semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) have never been used for natural service; or
   b) have only mated virgin heifers; or
   c) were kept in an *establishment* or *artificial insemination centre* where no *case* of bovine genital campylobacteriosis has been reported;

2) the culture of semen and preputial specimens for the presence of the causal agent of bovine genital campylobacteriosis proved negative.

NB: FIRST ADOPTED IN 1986.

CHAPTER 11.4.

BOVINE SPONGIFORM ENCEPHALOPATHY

Article 11.4.1.

General provisions

1) Bovine spongiform encephalopathy (BSE) is an invariably fatal neurological prion disease of bovines caused by a misfolded form of the prion protein (PrP^{Sc}), which includes both C-type (classical BSE) and H- and L-type (atypical BSE) agents. Oral exposure to contaminated *feed* is the main route of transmission of classical BSE. Atypical BSE is a condition that occurs at a very low rate and is assumed to occur spontaneously in any bovine population. A bovine has been experimentally infected by the oral route with a low molecular weight type of atypical BSE (L-type BSE) and the potential for recycling of atypical BSE cannot be ruled out, although there is no evidence that it plays a significant role in the epidemiology of BSE.
2) BSE primarily affects bovines. Other animal species may be naturally and experimentally susceptible to BSE, but they are not regarded as being epidemiologically significant, particularly when feeding ruminants with ruminant-derived *protein meal* is not practised. The recommendations in this chapter are intended to mitigate the human and animal health risks associated with BSE in bovines only.
3) For the purposes of the *Terrestrial Code*, the occurrence of a *case* of BSE is defined by the detection of the classical BSE agent in brain tissue of a bovine.
4) For the purposes of this chapter, 'bovine' means an animal of the species *Bos taurus* or *Bos indicus*.
5) When *commodities* are imported in accordance with this chapter, the BSE risk of the *importing country* or *zone* of destination is not affected by the BSE risk of the *exporting country*, *zone* or *compartment* of origin.
6) Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 11.4.2.

Safe commodities

When authorising the importation or transit of the following *commodities* derived from bovines, *Veterinary Authorities* should not require any conditions related to BSE, regardless of the BSE risk posed by the bovine population of the *exporting country*, *zone* or *compartment*:

1) *milk* and *milk products*;
2) semen and *in vivo* derived bovine embryos collected and handled in accordance with the relevant chapters of the *Terrestrial Code*;
3) hides and skins;
4) gelatine and collagen;
5) tallow with maximum level of insoluble impurities of 0.15% in weight and derivatives made from this tallow;
6) dicalcium phosphate (with no trace of protein or fat);
7) fetal blood.

Other *commodities* of bovines can be traded safely if in accordance with the relevant articles of this chapter.

Article 11.4.3.

General criteria for the determination of the BSE risk of a country, zone or compartment

Owing to its specific etiological and epidemiological features, the BSE risk of a country, *zone* or *compartment* is determined on the basis of the following:

1) A BSE *risk assessment*, in accordance with the provisions of the 'Application for official recognition by WOAH of risk status for bovine spongiform encephalopathy' that evaluates the risk of the classical BSE agent being recycled within the bovine population by identifying all potential factors associated with the occurrence of BSE and their

historic perspective. Member Countries should review the *risk assessment* annually to determine whether the situation has changed.

The *risk assessment* for the purpose of BSE, based on the framework provided by Article 2.1.4., consists of:

a) Entry assessment

The entry assessment evaluates the likelihood that the classical BSE agent has been introduced into the country, *zone* or *compartment* through the importation of the following *commodities* in the preceding eight years:

i) bovines;

ii) ruminant-derived *protein meal*;

iii) *feed* (except packaged and labelled pet food) that contains ruminant-derived *protein meal*;

iv) fertilisers that contain ruminant-derived *protein meal*;

v) any other *commodity* that either is or could be contaminated by *commodities* listed in Article 11.4.15.

b) Exposure assessment

The exposure assessment evaluates the likelihood of bovines being exposed to the classical BSE agent during the preceding eight years, either through imported *commodities* or as a result of the presence of the classical BSE agent within the indigenous bovine population of the country, *zone* or *compartment*.

The first step in the exposure assessment involves an evaluation of livestock industry practices through a consideration of the impact of:

i) Livestock industry practices preventing bovines from being fed ruminant-derived *protein meal*, taking account of:

- demographics of the bovine population and production and farming systems;
- feeding practices, including the use of fertilisers containing ruminant proteins on land for grazing or harvesting forage;
- slaughtering and waste management practices;
- rendering practices;
- *feed* production, labelling, distribution and storage.

Depending on the outcome from this step, an evaluation of risk mitigation measures specifically targeting BSE may also need to be included through consideration of the impact of:

ii) Specific risk mitigation measures preventing bovines from being fed ruminant-derived *protein meal*, taking account of:

- the nature and scope of a *feed* ban on feeding ruminants with *protein meal* derived from ruminants;
- the fate of *commodities* with the greatest BSE infectivity as listed in point 1 of Article 11.4.15.;
- parameters of the rendering process;
- prevention of cross-contamination during rendering, *feed* production, transport, storage and feeding;
- an awareness programme under the scope of the *feed* ban;
- monitoring and enforcement of the *feed* ban.

Depending on the outcome of the exposure assessment, a consequence assessment (in point c) below) may not be required.

c) Consequence assessment

The consequence assessment evaluates the likelihood of bovines becoming infected following exposure to the classical BSE agent together with the likely extent and duration of any subsequent recycling and amplification within the bovine population during the preceding eight years. The factors to be considered in the consequence assessment are:

i) age at exposure;

ii) production type;

iii) the impact of bovine industry practices or the implementation of BSE-specific mitigation measures under a *feed* ban.

d) Risk estimation

The risk estimation combines the results and conclusions arising from the entry, exposure and consequence assessments to provide an overall measure of the risk of the classical BSE agent being recycled within the bovine population.

2) The ongoing implementation of a *surveillance* programme for BSE in the bovine population in accordance with Article 11.4.20.

3) The history of occurrence and management of *cases* of BSE and bovines affected by atypical BSE.

Determination of the date from which the risk of BSE agents being recycled within the bovine population has been negligible is based on points 1 to 3 above.

Article 11.4.4.

Negligible BSE risk

The BSE risk of a country or *zone* can be considered to be negligible if all the following conditions for the bovine population are met for at least the preceding eight years:

1) A *risk assessment* as described in point 1 of Article 11.4.3. that has identified all potential risk factors associated with classical BSE has been conducted, and the Member Country has demonstrated through documented evidence that any identified risk factors have been adequately managed and that the risk of the classical BSE agent being recycled within the bovine population has been negligible as a result of:

   EITHER

   a) livestock industry practices ensuring that *protein meal* derived from ruminants has not been fed to ruminants;

   OR

   b) effective and continuous mitigation of each identified risk ensuring that *protein meal* derived from ruminants has not been fed to ruminants.

2) The *surveillance* provisions as described in Article 11.4.20. have been implemented.

3) EITHER:

   a) there has been no *case* of BSE or, if there has been a *case*, each *case* of BSE has been demonstrated to have been imported;

   OR

   b) if there has been an indigenous *case* of BSE:

      either:

      i) all *cases* were born before the date from which the risk of BSE agents being recycled within the bovine population has been negligible;

      or

      ii) where a *case* was born after that date, subsequent investigations have confirmed that any identified source of *infection* has been controlled and the risk of BSE agents being recycled within the bovine population has continued to be negligible.

4) Any *cases* of BSE or any bovines affected by atypical BSE that have been detected have been completely destroyed or disposed of to ensure that they do not enter the *feed* or food chain.

The country or the *zone* will be included in the list of countries or *zones* posing a negligible risk for BSE in accordance with Chapter 1.6. Retention on the list requires annual confirmation of the conditions in points 1 to 4 above. Documented evidence should be resubmitted annually for points 1 to 4 above.

Any changes in the epidemiological situation or other significant events should be notified to WOAH in accordance with Chapter 1.1.

Article 11.4.5.

Controlled BSE risk

The BSE risk of a country or *zone* can be considered to be controlled provided all of the conditions of Article 11.4.4. are met, but one or more of these conditions has not been met for the preceding eight years.

The country or the *zone* will be included in the list of countries or *zones* posing a controlled risk for BSE in accordance with Chapter 1.6. Retention on the list requires annual confirmation of the conditions in points 1 to 4 of Article 11.4.4. Documented evidence should be resubmitted annually for points 1 to 4 of Article 11.4.4.

Any changes in the epidemiological situation or other significant events should be notified to WOAH in accordance with Chapter 1.1.

Article 11.4.6.

Compartment with negligible or controlled BSE risk

The establishment and bilateral recognition of a *compartment* posing negligible or controlled BSE risk should follow the relevant requirements of this chapter and the principles laid down in Chapters 4.4. and 4.5.

Article 11.4.7.

Undetermined BSE risk

The BSE risk of a country or *zone* is considered to be undetermined if it cannot be demonstrated that it meets the requirements for negligible or controlled BSE risk.

Article 11.4.8.

Maintenance of BSE risk status

The BSE risk status of a country or *zone* is not affected by imported *cases* of BSE or *cases* of BSE born before the date from which the risk of BSE agents being recycled within the bovine population has been negligible, or by any bovine affected by atypical BSE, as long as managed in accordance with point 4 of Article 11.4.4.

Should an indigenous *case* of BSE in a bovine born after the date from which the risk of BSE agents being recycled within the bovine population has been negligible occur in a country or *zone* recognised as posing a negligible or controlled risk for BSE, the status of the country or *zone* is maintained, provided that documented evidence regarding the outcome of subsequent investigations is submitted to WOAH within 90 days demonstrating that any identified source of *infection* has been controlled and the risk of BSE agents being recycled within the bovine population has continued to be negligible.

If no documented evidence is provided or if it is not accepted by WOAH, the provisions of Article 11.4.4. or Article 11.4.5. apply.

Article 11.4.9.

Recommendations for importation of bovines from a country, zone or compartment posing a negligible or controlled BSE risk

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) The bovines selected for export are identified through an *animal identification system* enabling them to be traced throughout their lifetime.

AND EITHER:

2) The bovines selected for export were born and kept in a country, *zone* or *compartment* posing a negligible or controlled BSE risk after the date from which the risk of BSE agents being recycled within the bovine population has been demonstrated to be negligible.

OR

3) It is demonstrated that the bovines selected for export have never been fed *protein meal* derived from ruminants.

Article 11.4.10.

Recommendations for importation of bovines from a country or zone posing an undetermined BSE risk

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) The bovines selected for export are identified through an *animal identification system* enabling them to be traced throughout their lifetime.
2) It is demonstrated that the bovines selected for export have never been fed *protein meal* derived from ruminants.

Article 11.4.11.

Recommendations for importation of fresh meat and meat products from a country, zone or compartment posing a negligible or controlled BSE risk

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the bovine from which the *fresh meat* and *meat products* were derived are identified through an *animal identification system*;
2) they have been subjected to an ante-mortem inspection with favourable results;
3) they were born and kept in:
   a) a country, *zone* or *compartment* posing a negligible BSE risk; or
   b) a country, *zone* or *compartment* posing a controlled BSE risk after the date from which the risk of the BSE agents being recycled within the bovine population has been demonstrated to be negligible; or
   c) a country, *zone* or *compartment* posing a controlled BSE risk before the date from which the risk of the BSE agents being recycled within the bovine population has been demonstrated to be negligible, and the *fresh meat* and *meat products*:
      i) were derived from bovines not subjected to a *stunning* process with a device injecting compressed air or gas into the cranial cavity, or to a pithing process, or to any other procedure that can contaminate blood with nervous tissue, prior to *slaughter*; and
      ii) were produced and handled in a manner which ensures that such products do not contain and are not contaminated with the *commodities* listed in point 1 of Article 11.4.15. or mechanically separated *meat* from the skull or from the vertebral column of bovines over 30 months of age.

Article 11.4.12.

Recommendations for importation of fresh meat and meat products from a country or zone posing an undetermined BSE risk

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the bovines from which the *fresh meat* and *meat products* were derived are identified through an *animal identification system*;
2) it is demonstrated that the bovines from which the *fresh meat* and *meat products* were derived have never been fed *protein meal* derived from ruminants;
3) the bovines from which the *fresh meat* and *meat products* were derived:
   a) were subjected to an ante-mortem inspection with favourable results;
   b) were not subjected to a *stunning* process with a device injecting compressed air or gas into the cranial cavity, or to a pithing process, or to any other procedure that can contaminate blood with nervous tissue, prior to *slaughter*;
4) the *fresh meat* and *meat products* were produced and handled in a manner which ensures that such products do not contain and are not contaminated with:
   a) the *commodities* listed in point 1 of Article 11.4.15.;
   b) mechanically separated *meat* from the skull or from the vertebral column of bovines over 30 months of age.

Article 11.4.13.

Recommendations for importation of bovine-derived protein meal from a country, zone or compartment posing a negligible BSE risk

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the bovines from which the *protein meal* was derived were identified through an *animal identification system* and were born and kept in a country, *zone* or *compartment* posing a negligible BSE risk, and

EITHER

1) they were born after the date from which the risk of BSE agents being recycled within the bovine population has been demonstrated to be negligible;

OR

2) the *protein meal* was processed in accordance with Article 11.4.19.

Article 11.4.14.

Recommendations for importation of blood and blood products derived from bovines (except fetal blood)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

EITHER

1) the blood and blood products were derived from bovines that were identified through an *animal identification system* and were born and kept in a country, *zone* or *compartment* posing a negligible risk, or a country, *zone* or *compartment* posing a controlled BSE risk after the date from which the risk of BSE agents being recycled within the bovine population has been demonstrated to be negligible;

OR

2) the blood and blood products were:
   a) collected from bovines not subjected to a *stunning* process with a device injecting compressed air or gas into the cranial cavity, or to a pithing process, or to any other procedure that can contaminate the blood with nervous tissue, prior to *slaughter*; and
   b) collected and processed in a manner that ensures they are not contaminated with nervous tissue.

Article 11.4.15.

Recommendations in relation to the trade of the commodities with the greatest BSE infectivity

Unless covered by other articles in this chapter, the following *commodities* should not be traded:

1) Distal ileum from bovines of any age; skull, brain, eyes, vertebral column and spinal cord from bovines that were at the time of *slaughter* over 30 months of age, or any *commodity* contaminated by them, which originate from a country, *zone* or *compartment* posing:
   a) an undetermined BSE risk;
   b) a controlled BSE risk if they are derived from bovines born before the date from which the risk of BSE agents being recycled within the bovine population has been demonstrated to be negligible.
2) Food, *feed*, fertilisers, cosmetics, pharmaceuticals including biologicals, medical devices or any other product containing proteins prepared using *commodities* listed in point 1 above.
3) Bovine-derived *protein meal* or any *commodities* containing such product which originate from a country, *zone* or *compartment* posing a controlled or undetermined BSE risk.

Article 11.4.16.

Recommendations for importation of tallow (other than as defined in Article 11.4.2.)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the tallow:

1) came from a country, *zone* or *compartment* posing a negligible BSE risk; or
2) is derived from bovines which have been subjected to an ante-mortem inspection with favourable results, and has not been prepared using the *commodities* listed in point 1 of Article 11.4.15.

Article 11.4.17.

Recommendations for importation of tallow derivatives (other than as defined in Article 11.4.2.)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the tallow derivatives either:

1) originate from a country, *zone* or *compartment* posing a negligible BSE risk; or
2) are derived from tallow that meets the conditions referred to in Article 11.4.16.; or
3) have been produced by hydrolysis, saponification, or transesterification that uses high temperature and pressure.

Article 11.4.18.

Recommendations for importation of dicalcium phosphate (other than as defined in Article 11.4.2.)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the dicalcium phosphate:

1) came from a country, *zone* or *compartment* posing a negligible BSE risk; or

2) is a co-product of bone gelatine.

Article 11.4.19.

Procedures for reduction of BSE infectivity in bovine protein meal

The following procedure should be used to reduce the infectivity of any BSE agents that may be present during the production of *protein meal* containing bovine proteins:

1) the raw material should be reduced to a maximum particle size of 50 mm before heating and the raw material should be heated under saturated steam conditions to a temperature of not less than 133°C for a minimum of 20 minutes at an absolute pressure of 3 bar; or

2) an alternative procedure that has been demonstrated to achieve at least an equivalent level of reduction in BSE infectivity.

Article 11.4.20.

Surveillance

The objective of BSE *surveillance* is to detect occurrence of BSE within the bovine population.

1) BSE is a progressive, fatal disease of the nervous system of bovines that usually has an insidious onset and that is refractory to treatment. A range of clinical signs that vary in severity and between animals have been described for classical BSE:

   a) progressive behavioural changes that are refractory to treatment such as increased excitability, depression, nervousness, excessive and asymmetrical ear and eye movements, apparent increased salivation, increased licking of the muzzle, teeth grinding, hypersensitivity to touch and/or sound (hyperaesthesia), tremors, excessive vocalisation, panic-stricken response and excessive alertness;

   b) postural and locomotory changes such as abnormal posture (dog sitting), abnormal gait (particularly pelvic limb ataxia), low carriage of the head, head shyness, difficulty avoiding obstacles, inability to stand and recumbency;

   c) generalised non-specific signs such as reduced *milk* yield, loss of body condition, weight loss, bradycardia and other disturbances of cardiac rhythm.

   Some of these signs are also likely to be relevant for atypical BSE, particularly those associated with difficulty in rising and recumbency. A nervous form of atypical BSE resembling classical BSE may be observed with over-reactivity to external stimuli, unexpected startle responses and ataxia. In contrast, a dull form of atypical BSE may be observed, with dullness combined with a low head carriage and compulsive behaviour (licking, chewing, pacing in circles).

   The clinical signs of BSE usually progress on a spectrum over a few weeks to several months, but on rare occasions cases can develop acutely and progress rapidly. The final stages of the disease are characterised by recumbency, coma and death.

   Since these signs are not pathognomonic for either classical or atypical BSE, all Member Countries with bovine populations are likely to observe individual animals displaying clinical signs suggestive of BSE. General statements about the likely frequency of occurrence of such animals cannot be made as they will vary depending on the epidemiological situation in a particular country.

2) *Surveillance* for BSE includes all bovines that show signs of the clinical spectrum of BSE.

   In production and farming systems that allow bovines to be subjected to regular observation, it is likely that animals that display clinical signs suggestive of BSE will be more readily seen. Behavioural changes, which may be very subtle in the early clinical phase, are best identified by those who handle animals on a daily basis and who can monitor them closely for a progression of the signs. In production and farming systems, where bovines are not monitored as closely, situations may arise where an animal might be considered as a clinical suspect, yet if It has

not been observed for a period of time, it may only be initially seen as unable to rise or walk without assistance or found dead (fallen stock).

The *surveillance* programme should take into account that the vast majority of *cases* of BSE arise as single, isolated events. The concurrence of multiple animals with behavioural or neurological signs, or non-ambulatory or fallen stock is most likely associated with other causes.

The animals that lie on the clinical spectrum of BSE should be targeted for BSE *surveillance* and the following animals should be reported and followed up with appropriate laboratory testing in accordance with the *Terrestrial Manual* to accurately confirm or rule out the presence of BSE agents, including discrimination between atypical and classical BSE strains:

a) those displaying progressive clinical signs suggestive of BSE mentioned in point 1 that are refractory to treatment, and where the clinical presentation cannot be attributed to other common causes of behavioural or neurological signs (e.g. infectious, metabolic, traumatic, neoplastic or toxic causes);

b) those showing behavioural or neurological signs at ante-mortem inspection at *slaughterhouses/abattoirs*;

c) those unable to rise or walk without assistance, with an appropriate supporting clinical history (i.e. the clinical presentation cannot be attributed to other common causes of recumbency);

d) those found dead (fallen stock), with an appropriate supporting clinical history (i.e. the clinical presentation cannot be attributed to other common causes of death).

3) The credibility of the *surveillance* programme is supported by:

a) ongoing awareness and training programmes to ensure that all those stakeholders involved in the rearing and production of livestock, including bovine breeders, owners and keepers, *veterinarians*, transporters and *slaughterhouse/abattoir* workers are familiar with the clinical signs suggestive of BSE as well as the statutory reporting requirements;

b) the fact that BSE is a *notifiable disease* throughout the whole territory;

c) appropriate *laboratory* testing in accordance with the *Terrestrial Manual*;

d) robust, documented, evaluation procedures and protocols for:

- the definition of the target population for BSE *surveillance*,
- the reporting of bovines described in points 2 a) to 2 d),
- the determination of animals to be subjected to laboratory testing,
- the collection and submission of samples for laboratory testing,
- the follow-up epidemiological investigations for BSE positive findings.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 2023.

CHAPTER 11.5.

INFECTION WITH *MYCOPLASMA MYCOIDES* SUBSP. *MYCOIDES SC* (CONTAGIOUS BOVINE PLEUROPNEUMONIA)

Article 11.5.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for contagious bovine pleuropneumonia (CBPP) shall be six months.

For the purposes of this chapter, a case of CBPP means an animal infected with *Mycoplasma mycoides* subspecies *mycoides* SC (*Mmm*SC), and freedom from CBPP means freedom from *Mmm*SC *infection*.

For the purposes of this chapter, susceptible animals include bovids (*Bos indicus*, *B. taurus* and *B. grunniens*) and water buffaloes (*Bubalus bubalis*).

For the purposes of *international trade*, this chapter deals not only with the occurrence of clinical signs caused by *Mmm*SC, but also with the presence of *infection* with *Mmm*SC in the absence of clinical signs.

The following defines the occurrence of *Mmm*SC *infection*:

1) *Mmm*SC has been isolated and identified as such from an animal, semen, oocytes or embryos; or
2) antibodies to *Mmm*SC antigens which are not the consequence of *vaccination*, or *Mmm*SC deoxyribonucleic acid have been detected in one or more animals showing pathological lesions consistent with *infection* with *Mmm*SC with or without clinical signs, and epidemiological links to a confirmed *outbreak* of CBPP in susceptible animals.

When authorising import or transit of the *commodities* listed in this chapter, with the exception of those listed in Article 11.5.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the CBPP status of the domestic bovids and water buffalo population of the *exporting country*, *zone* or *compartment*.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 11.5.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any CBPP-related conditions, regardless of the CBPP status of the domestic bovids and water buffalo population of the *exporting country*, *zone* or *compartment*:

1) *milk* and *milk products*;
2) hides and skins;
3) *meat* and *meat products* (excluding lung).

Article 11.5.3.

CBPP free country or zone

To qualify for inclusion in the existing list of CBPP free countries and *zones*, a Member Country should:

1) have a record of regular and prompt animal disease reporting;
2) send a declaration to WOAH stating that:
   a) there has been no *outbreak* of CBPP during the past 24 months;
   b) no evidence of CBPP *infection* has been found during the past 24 months;

c) no *vaccination* against CBPP has been carried out during the past 24 months,

and supply documented evidence that *surveillance* for CBPP in accordance with this chapter is in operation and that regulatory measures for the prevention and control of CBPP have been implemented;

3) not have imported since the cessation of *vaccination* any animals vaccinated against CBPP.

The country or *zone* will be included in the list only after the submitted evidence has been accepted by WOAH. Retention on the list requires that the information in points 2 a), 2 b), 2 c) and 3 above be re-submitted annually and changes in the epidemiological situation or other significant events should be reported to WOAH in accordance with the requirements in Chapter 1.1.

Article 11.5.4.

Recovery of free status

When a CBPP *outbreak* occurs in a CBPP free country or *zone*, one of the following waiting periods is required to regain the status of CBPP free country or *zone*:

1) 12 months after the last case where a *stamping-out policy* and serological *surveillance* and strict movement control are applied in accordance with this chapter;
2) if *vaccination* was used, 12 months after the *slaughter* of the last vaccinated animal.

Where a *stamping-out policy* is not practised, the above waiting periods do not apply but Article 11.5.3. applies.

Article 11.5.5.

CBPP infected country or zone

When the requirements for acceptance as a CBPP free country or *zone* are not fulfilled, a country or *zone* shall be considered as infected.

Article 11.5.6.

CBPP free compartment

The bilateral recognition of a CBPP free *compartment* should follow the principles laid down in this chapter and in Chapters 4.4. and 4.5.

Article 11.5.7.

Recommendations for importation from CBPP free countries or zones, or from CBPP free compartments

For domestic bovids and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of CBPP on the day of shipment;
2) were kept in a CBPP free country, *zone* or *compartment* since birth or for at least the past six months.

Article 11.5.8.

Recommendations for importation from CBPP infected countries or zones

For domestic bovids and water buffaloes for slaughter

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of CBPP on the day of shipment;
2) originate from an *establishment* where no case of CBPP was officially reported for the past six months; and
3) are transported directly to the *slaughterhouse/abattoir* in sealed *vehicles*.

Article 11.5.9.

Recommendations for importation from CBPP free countries or zones, or from CBPP free compartments

For bovine semen

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) showed no clinical sign of CBPP on the day of collection of the semen;
   b) were kept in a CBPP free country, *zone* or *compartment* since birth or for at least the past six months;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.5.10.

Recommendations for importation from CBPP infected countries

For bovine semen

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) showed no clinical sign of CBPP on the day of collection of the semen;
   b) were subjected to the complement fixation test for CBPP with negative results, on two occasions, with an interval of not less than 21 days and not more than 30 days between each test, the second test being performed within 14 days prior to collection;
   c) were isolated from other domestic bovids and water buffaloes from the day of the first complement fixation test until collection;
   d) were kept since birth, or for the past six months, in an *establishment* where no case of CBPP was reported during that period, and that the *establishment* was not situated in a CBPP infected *zone*;
   e) AND EITHER:
      i) have not been vaccinated against CBPP;

      OR

      ii) were vaccinated using a vaccine complying with the standards described in the *Terrestrial Manual* not more than four months prior to collection; in this case, the condition laid down in point b) above is not required;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.5.11.

Recommendations for importation from CBPP free countries or zones, or from CBPP free compartments

For *in vivo* derived or *in vitro* produced oocytes or embryos of domestic bovids and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) showed no clinical sign of CBPP on the day of collection of the oocytes or embryos;
   b) were kept in a CBPP free country, *zone* or *compartment* since birth or for at least the past six months;
2) the oocytes were fertilised with semen meeting the conditions of Article 11.5.9.;
3) the oocytes or embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 11.5.12.

Recommendations for importation from CBPP infected countries

For *in vivo* derived or *in vitro* produced oocytes or embryos of domestic bovids and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) showed no clinical sign of CBPP on the day of collection of the oocytes or embryos;
   b) were subjected to the complement fixation test for CBPP with negative results, on two occasions, with an interval of not less than 21 days and not more than 30 days between each test, the second test being performed within 14 days prior to collection;
   c) were isolated from other domestic bovids and water buffaloes from the day of the first complement fixation test until collection;
   d) were kept since birth, or for the past six months, in an *establishment* where no case of CBPP was reported during that period, and that the *establishment* was not situated in a CBPP infected *zone*;
   e) AND EITHER:
      i) have not been vaccinated against CBPP;
      OR
      ii) were vaccinated using a vaccine complying with the standards described in the *Terrestrial Manual* not more than four months prior to collection; in this case, the condition laid down in point b) above is not required;
2) the oocytes were fertilised with semen meeting the conditions of Article 11.5.10.;
3) the oocytes or embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 11.5.13.

Introduction to surveillance

Articles 11.5.13. to 11.5.17. define the principles and provide a guide for the *surveillance* of CBPP in accordance with Chapter 1.4. applicable to Member Countries seeking establishment of freedom from CBPP. Guidance is provided for Member Countries seeking reestablishment of freedom from CBPP for the entire country or for a *zone*, following an *outbreak* and for the maintenance of CBPP free status.

The impact and epidemiology of CBPP differ widely in different regions of the world and therefore it is impossible to provide specific recommendations for all situations. *Surveillance* strategies employed for demonstrating freedom from CBPP at an acceptable level of confidence should be adapted to the local situation. It is incumbent upon the applicant Member Country to submit a dossier to WOAH in support of its application that not only explains the epidemiology of CBPP in the region concerned but also demonstrates how all the risk factors are managed. This should include provision of scientifically-based supporting data. There is therefore considerable latitude available to Member Countries to provide a well-reasoned argument to prove that the absence of CBPP *infection* is assured at an acceptable level of confidence.

Surveillance for CBPP should be in the form of a continuing programme designed to establish that the whole territory or part of it is free from CBPP *infection*.

Article 11.5.14.

General conditions and methods for surveillance

1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. A procedure should be in place for the rapid collection and transport of samples from suspect cases of CBPP to a *laboratory* for CBPP diagnoses.
2) The CBPP *surveillance* programme should:
   a) include an *early warning system* throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers (such as community animal health workers) who have day-to-day contact with livestock, *meat* inspectors as well as *laboratory* diagnosticians, should report promptly any suspicion of CBPP. They should be integrated directly or indirectly (e.g. through private *veterinarians* or *veterinary paraprofessionals*) into the *surveillance* system. All suspect cases of CBPP should be investigated

immediately. Where suspicion cannot be resolved by epidemiological and clinical investigation, samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment are available for those responsible for *surveillance*. Personnel responsible for *surveillance* should be able to call for assistance from a team with expertise in CBPP diagnosis and control;

b) implement, when relevant, regular and frequent clinical inspection and testing of high-risk groups of animals, such as those adjacent to a CBPP infected country or *zone* (for example, areas of transhumant production systems);

c) take into consideration additional factors such as animal movement, different production systems, geographical and socio-economic factors that may influence the risk of disease occurrence.

An effective *surveillance* system will periodically identify suspicious cases that require follow-up and investigation to confirm or exclude that the cause of the condition is CBPP. The rate at which such suspicious cases are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. Applications for freedom from CBPP *infection* should, in consequence, provide details of the occurrence of suspicious cases and how they were investigated and dealt with. This should include the results of *laboratory* testing and the control measures to which the animals concerned were subjected during the investigation (quarantine, movement stand-still orders, etc.).

Article 11.5.15.

Surveillance strategies

1. Introduction

The target population for *surveillance* aimed at identifying disease and *infection* should cover all the susceptible species (*Bos taurus, B. indicus*, *B. grunniens* and *Bubalus bubalis*) within the country or *zone*.

Given the limitations of the diagnostic tools available, the interpretation of *surveillance* results should be at the *herd* level rather than at the individual *animal* level.

Randomised *surveillance* may not be the preferred approach given the epidemiology of the disease (usually uneven distribution and potential for occult foci of *infection* in small populations) and the limited sensitivity and specificity of currently available tests. Targeted *surveillance* (e.g. based on the increased likelihood of *infection* in particular localities or species, focusing on *slaughter* findings, and active clinical *surveillance*) may be the most appropriate strategy. The applicant Member Country should justify the *surveillance* strategy chosen as adequate to detect the presence of CBPP *infection* in accordance with Chapter 1.4. and the epidemiological situation.

Targeted *surveillance* may involve testing of the entire target subpopulation or a sample from it. In the latter case the sampling strategy should incorporate an epidemiologically appropriate design prevalence. The sample size selected for testing should be large enough to detect *infection* if it were to occur at a predetermined minimum rate. The sample size and expected disease prevalence determine the level of confidence in the results of the survey. The applicant Member Country should justify the choice of design prevalence and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the design prevalence in particular should be clearly based on the prevailing or historical epidemiological situation.

Irrespective of the survey design selected, the sensitivity and specificity of the diagnostic tests employed are key factors in the design, sample size determination and interpretation of the results obtained. Ideally, the sensitivity and specificity of the tests used should be validated.

Irrespective of the *surveillance* system employed, the design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following-up positives to ultimately determine with a high level of confidence, whether they are indicative of *infection* or not. This should involve follow-up with supplementary tests, clinical investigation and post-mortem examination in the original sampling unit as well as *herds* which may be epidemiologically linked to it.

2. Clinical surveillance

Clinical *surveillance* aims at detecting clinical signs of CBPP in a *herd* by close physical examination of susceptible animals. Clinical inspection is an important component of CBPP *surveillance* contributing to reach the desired level of confidence of detection of disease if a sufficiently large number of clinically susceptible animals is examined.

Clinical *surveillance* and *laboratory* testing should always be applied in series to clarify the status of CBPP suspects detected by either of these complementary diagnostic approaches. *Laboratory* testing and post-mortem examination may contribute to confirm clinical suspicion, while clinical *surveillance* may contribute to confirmation of positive serology. Any sampling unit within which suspicious animals are detected should be classified as infected until contrary evidence is produced.

3. Pathological surveillance

Systematic pathological *surveillance* for CBPP is the most effective approach and should be conducted at *slaughterhouses/abattoirs* and other *slaughter* facilities. Suspect pathological findings should be confirmed by agent identification. Training courses for *slaughter* personnel and *meat* inspectors are recommended.

4. Serological testing

Serological *surveillance* is not the preferred strategy for CBPP. However, in the framework of epidemiological investigations, serological testing may be used.

The limitations of available serological tests for CBPP make the interpretation of results difficult and useful only at the *herd* level. Positive findings should be followed up by clinical and pathological investigations and agent identification.

Clustering of seropositive reactions should be expected in CBPP *infections* and is usually accompanied by clinical signs. As clustering may signal field strain *infection*, the investigation of all instances should be incorporated in the *surveillance* strategy.

Following the identification of a CBPP infected *herd*, contact *herds* should be tested serologically. Repeated testing may be necessary to reach an acceptable level of confidence in *herd* classification.

5. Agent surveillance

Agent *surveillance* should be conducted to follow up and confirm or exclude suspect cases. Isolates should be typed to confirm *Mmm*SC.

Article 11.5.16.

Countries or zones applying for recognition of freedom from CBPP

In addition to the general conditions described in this chapter, a Member Country applying for recognition of CBPP freedom for the country or a *zone* should provide evidence for the existence of an effective *surveillance* programme. The strategy and design of the *surveillance* programme depend on the prevailing epidemiological circumstances and should be planned and implemented in accordance with general conditions and methods in this chapter, to demonstrate absence of CBPP *infection*, during the preceding 24 months in susceptible populations. This requires the support of a national or other *laboratory* able to undertake identification of CBPP *infection*.

Article 11.5.17.

Countries or zones re-applying for recognition of freedom from CBPP following an outbreak

In addition to the general conditions described in this chapter, a Member Country re-applying for recognition of country or *zone* freedom from CBPP should show evidence of an active *surveillance* programme for CBPP, following the recommendations of this chapter.

Two strategies are recognised by WOAH in a programme to eradicate CBPP *infection* following an *outbreak*:

1) *slaughter* of all clinically affected and in-contact susceptible animals;
2) *vaccination* used without subsequent *slaughter* of vaccinated animals.

The time periods before which an application can be made for re-instatement of freedom from CBPP depends on which of these alternatives is followed. The time periods are prescribed in Article 11.5.4.

Article 11.5.18.

WOAH endorsed official control programme for CBPP

The overall objective of a WOAH endorsed *official control programme* for CBPP is for Member Countries to progressively improve their situation and eventually attain CBPP free status. The *official control programme* should be applicable to the entire country even if certain measures are directed towards defined subpopulations.

Member Countries may, on a voluntary basis, apply for endorsement of their *official control programme* for CBPP when they have implemented measures in accordance with this article.

For an *official control programme* for CBPP to be endorsed by WOAH, the Member Country should:

1) have a record of regular and prompt animal disease reporting in accordance with the requirements in Chapter 1.1.;

2) submit documented evidence of the capacity of *Veterinary Services* to control CBPP; this evidence can be provided by countries following the PVS Pathway;

3) submit a detailed plan of the programme to control and eventually eradicate CBPP in the country or *zone* including:

   a) the timeline;

   b) the performance indicators for assessing the efficacy of the control measures to be implemented;

   c) submit documentation indicating that the *official control programme* for CBPP has been implemented and is applicable to the entire territory;

4) submit a dossier on the epidemiology of CBPP in the country describing the following:

   a) the general epidemiology in the country highlighting the current knowledge and gaps;

   b) the measures to prevent introduction of *infection*, the rapid detection of, and response to, all CBPP *outbreaks* in order to reduce the incidence of CBPP *outbreaks* and to eliminate CBPP in at least one *zone* in the country;

   c) the main livestock production systems and movement patterns of CBPP susceptible animals and their products within and into the country;

5) submit evidence that CBPP *surveillance* is in place,

   a) taking into account provisions in Chapter 1.4. and the provisions on *surveillance* of this chapter;

   b) have diagnostic capability and procedures, including regular submission of samples to a *laboratory* that carries out diagnosis and further characterisation of strains in accordance with the *Terrestrial Manual* including procedures to isolate and identify *M. mycoides* subsp. *mycoides* SC as opposed to *M. mycoides* subsp. *mycoides* LC;

6) where *vaccination* is practised as a part of the *official control programme* for CBPP, provide:

   a) evidence (such as copies of legislation) that *vaccination* of selected populations is compulsory;

   b) detailed information on *vaccination* campaigns, in particular on:

      i) target populations for *vaccination*;

      ii) monitoring of *vaccination* coverage;

      iii) technical specification of the vaccines used and description of the licensing procedures in place;

      iv) the proposed timeline and strategy for the cessation of *vaccination*;

7) provide an emergency preparedness and contingency response plan to be implemented in case of CBPP *outbreaks*.

The Member Country's *official control programme* for CBPP will be included in the list of programmes endorsed by WOAH only after the submitted evidence has been accepted by WOAH. Retention on the list requires an annual update on the progress of the *official control programme* and information on significant changes concerning the points above. Changes in the epidemiological situation and other significant events should be reported to WOAH in accordance with the requirements in Chapter 1.1.

WOAH may withdraw the endorsement of the *official control programme* if there is evidence of:

– non-compliance with the timelines or performance indicators of the programme; or

– significant problems with the performance of the *Veterinary Services*; or

– an increase in the incidence of CBPP that cannot be addressed by the programme.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2014.

CHAPTER 11.6.

ENZOOTIC BOVINE LEUKOSIS

Article 11.6.1.

General provisions

For the purposes of this chapter, susceptible animals include cattle (*Bos indicus* and *B. taurus*).

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 11.6.2.

EBL free country or zone

1. Qualification

   To qualify as free from enzootic bovine leukosis (EBL), a country or *zone* should satisfy the following requirements for at least three years:

   a) all tumours, suspected to be lymphosarcoma, are reported to the *Veterinary Authority*, and are examined at a *laboratory* by appropriate diagnostic techniques;

   b) all cattle with tumours in which EBL has been confirmed or cannot be ruled out are traced back to the *herds* in which they have been kept since birth; all cattle over 24 months of age in these *herds* are subjected to an individual diagnostic test for EBL;

   c) at least 99.8% of the *herds* are qualified as EBL free.

2. Maintenance of free status

   For a country or *zone* to maintain its EBL free status:

   a) a serological survey should be carried out annually on a random sample of the cattle population of the country or *zone* sufficient to provide a 99% level of confidence of detecting EBL if it is present at a prevalence rate exceeding 0.2% of the *herds*;

   b) all imported cattle (except for *slaughter*) comply with Article 11.6.5.;

   c) all imported bovine semen and oocytes or embryos fulfil the requirements referred to in Article 11.6.6. and in Article 11.6.7., respectively.

Article 11.6.3.

EBL free compartment

1. Qualification

   To qualify as free from EBL, a *compartment* should satisfy the following requirements.

   All *herds* in the *compartment* have satisfied the requirements of Article 11.6.4., and:

   a) all cattle introduced into the *compartment* come from a free *herd*;

   b) all bovine semen and oocytes or embryos introduced into the *compartment* after the first test have fulfilled the conditions referred to in Article 11.6.6. and in Article 11.6.7., respectively;

   c) the *compartment* is managed under a common *biosecurity plan* complying with Chapters 4.4. and 4.5., which protects the cattle from contact with EBL virus, which might occur from introduction of infected cattle, cattle products or material and through practices such as *vaccinations* and other injections, collection of blood and other biological samples, dehorning, ear-tagging, pregnancy diagnosis, etc.;

   d) the *compartment* has been approved by the *Veterinary Authority* in accordance with Chapters 4.4. and 4.5.

2. Maintenance of free status

For a *compartment* to maintain its EBL free status, all *herds* in the *compartment* should remain free in accordance with Article 11.6.4. and specific *surveillance* implemented in accordance with Article 4.5.5. has not detected the agent.

3. Revocation and re-approval of free status

If in an EBL free *compartment* any cattle react positively to a diagnostic test for EBL as described in the *Terrestrial Manual*, the status of the *compartment* shall be revoked until all *herds* have recovered their free status in accordance with Article 11.6.4. and the *compartment* has been re-approved in accordance with Chapters 4.4. and 4.5.

Article 11.6.4.

EBL free herd

1. Qualification

To qualify as free from EBL, a *herd* should satisfy the following requirements:

a) there has been no evidence of EBL either clinical, post-mortem, or as a result of a diagnostic test for EBL within the previous two years;

b) all cattle over 24 months of age have been subjected to a diagnostic test for EBL on two occasions with negative results, at an interval of not less than 4 months during the preceding 12 months;

c) cattle introduced into the *herd* after the first test have fulfilled the conditions of Article 11.6.5.;

d) all bovine semen and oocytes or embryos introduced into the *herd* after the first test have fulfilled the conditions referred to in Article 11.6.6. and in Article 11.6.7., respectively.

2. Maintenance of free status

For a *herd* to maintain its EBL free status, the cattle in the *herd* over 24 months of age on the day of sampling should be subjected to a diagnostic test for EBL with negative results at intervals of no more than 36 months and the conditions referred to in points 1 a), 1 c) and 1 d) above continue to be fulfilled.

3. Suspension and restoration of free status

If in an EBL free *herd* any cattle react positively to a diagnostic test for EBL as described in the *Terrestrial Manual*, the status of the *herd* shall be suspended until the following measures have been taken:

a) the cattle which have reacted positively, and their progeny since the last negative test, should be removed from the *herd* immediately; however, any cattle within the progeny which has been subjected to a PCR test with negative results (under study) may be retained in the *herd*;

b) the remaining cattle should have been subjected to a diagnostic test for EBL carried out as described in point 1 b) above with negative results at least four months after removal of the positive cattle and their progeny.

Article 11.6.5.

Recommendations for the importation of cattle for breeding or rearing

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the cattle:

1) come from a country, *zone* or *compartment* free from EBL; or

2) come from an EBL free *herd*; or

3) meet the following three conditions:

a) the cattle were kept in a *herd* in which:

i) there has been no evidence of EBL either clinical, post-mortem, or as a result of a diagnostic test for EBL within the previous two years;

ii) all cattle over 24 months of age have been subjected to a diagnostic test for EBL on a blood sample on two occasions with negative results during the preceding 12 months, at an interval of at least 4 months, or were tested on two occasions while segregated from the *herd* in an isolation unit approved by the *Veterinary Authority* at an interval of at least 4 months;

b) the cattle were subjected to a diagnostic test for EBL within 30 days prior to shipment with negative results;

c) if less than two years of age, the cattle come from 'uterine' dams which have been subjected to a diagnostic test for EBL on a blood sample on two occasions at intervals of at least 4 months within the preceding 12 months, with negative results.

Article 11.6.6.

Recommendations for the importation of bovine semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor bull was resident at the time of semen collection in an EBL free *herd*; and
2) if less than two years of age, the bull came from a serologically negative 'uterine' dam; or
3) the bull was subjected to diagnostic tests for EBL on blood samples on two occasions with negative results, the first test being carried out at least 30 days before and the second test at least 90 days after collection of the semen;
4) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.6.7.

Recommendations for the importation of bovine oocytes or embryos

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the oocytes or embryos have been collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

NB: FIRST ADOPTED IN 1971; MOST RECENT UPDATE ADOPTED IN 1998.

CHAPTER 11.7.

HAEMORRHAGIC SEPTICAEMIA (*PASTEURELLA MULTOCIDA* SEROTYPES 6:B AND 6:E)

Article 11.7.1.

General provisions

For the purposes of the *Terrestrial Code*, haemorrhagic septicaemia (HS) is defined as a highly fatal disease in cattle and buffaloes caused by specific serotypes of *Pasteurella multocida* designated as 6:B and 6:E. The *incubation period* for the disease shall be 90 days (active and latent carriers occur).

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 11.7.2.

HS free country

A country may be considered free from HS when:

1) the disease is notifiable in the country;

2) no *case* of HS has occurred during the past three years.

This period shall be six months after the *slaughter* of the last affected animal for countries in which a *stamping-out policy* is practised with or without *vaccination* against HS.

Article 11.7.3.

HS free zone

A *zone* may be considered free from the disease if it can be established that HS has not been present for at least the past three years and if the following conditions are met:

1) the disease is notifiable in the whole country;

2) the *zone* shall be delineated by natural or artificial barriers;

3) the introduction of animals into the *zone* shall be carried out in accordance with Article 11.7.6. or Article 11.7.7.

Article 11.7.4.

HS infected zone

A *zone* shall be considered as infected with HS until at least six months have elapsed after the confirmation of the last *case* and the completion of a *stamping-out policy* and *disinfection* procedures.

Article 11.7.5.

Trade in commodities

Veterinary Authorities of HS free countries may prohibit importation or transit through their territory, from countries considered infected with HS, of cattle and buffaloes.

Article 11.7.6.

Recommendations for importation from HS free countries or zones

For cattle and buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of HS on the day of shipment; and
2) were kept in a country or *zone* free from HS since birth or for at least six months.

Article 11.7.7.

Recommendations for importation from countries considered infected with HS

For cattle and buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of HS on the day of shipment; and
2) were kept in a *quarantine station* for three months prior to shipment; and
3) were examined for the presence of the pathogenic agent in the naso-pharynx in accordance with the procedures described in the *Terrestrial Manual*, on four occasions, at weekly intervals during the last month in quarantine with negative results; and
4) were vaccinated not less than 30 days prior to shipment (under study); or
5) showed a positive reaction to the passive mouse protection test (under study) conducted during pre-shipment quarantine.

NB: FIRST ADOPTED IN 1992.

CHAPTER 11.8.

INFECTIOUS BOVINE RHINOTRACHEITIS/ INFECTIOUS PUSTULAR VULVOVAGINITIS

Article 11.8.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for infectious bovine rhinotracheitis/infectious pustular vulvovaginitis (IBR/IPV) shall be 21 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 11.8.2.

Country or zone free from IBR/IPV

1. Qualification

   To qualify as free from IBR/IPV, a country or *zone* should satisfy the following requirements:

   a) the disease or suspicion of the disease is notifiable;

   b) no animal has been vaccinated against IBR/IPV for at least three years;

   c) at least 99.8% of the *herds* are qualified as free from IBR/IPV.

2. Maintenance of free status

   For a country or *zone* to maintain its status free from IBR/IPV:

   a) a serological survey should be carried out annually on a random sample of the cattle population of the country or *zone* sufficient to provide a 99% level of confidence of detecting IBR/IPV if it is present at a prevalence rate exceeding 0.2% of the *herds*;

   b) all imported bovines comply with Article 11.8.4.;

   c) all imported bovine semen and oocytes or embryos fulfil the requirements referred to in Article 11.8.6. or Article 11.8.7., and in Article 11.8.8., respectively.

Article 11.8.3.

Herd free from IBR/IPV

1. Qualification

   To qualify as free from IBR/IPV, a *herd* of cattle should satisfy the following requirements:

   a) all the animals in the *herd* have been subjected to a diagnostic test for IBR/IPV on a blood sample on two occasions with negative results, at an interval of not less than 2 months and not more than 12 months; or

   b) if the *herd* contains only dairy cattle of which at least a quarter are lactating cows, each of the latter has been subjected to a diagnostic test on individual milk samples carried out on three occasions at intervals of two months with negative results;

   c) animals introduced into the *herd* after the first tests referred to in point a) or point b) as relevant have been:

      i) kept in an IBR/IPV free *herd*; or

      ii) placed in isolation for a period of 30 days, and during this period have been subjected to a diagnostic test for IBR/IPV on a blood sample on two occasions with negative results, at an interval of not less than 21 days;

   d) all bovine semen and oocytes or embryos introduced into the *herd* after the first tests referred to in point a) or point b) as relevant have fulfilled the conditions provided in Article 11.8.6. or Article 11.8.7. and in Article 11.8.8., respectively.

2. Maintenance of free status

For a *herd* to maintain its status free from IBR/IPV, it should be subjected to the following tests with negative results:

EITHER

a) diagnostic tests for IBR/IPV on blood samples for all the animals repeated at maximum intervals of 12 months; in *herds* composed entirely of fattening animals, blood sampling may be limited to animals sent for *slaughter*;

OR

b) diagnostic tests on individual milk samples from all lactating cows repeated at intervals of six months; *Veterinary Authorities* applying an IBR/IPV eradication programme may extend these intervals (under study) if more than 98% of *herds* have been free from the disease for at least three years; and

c) diagnostic tests on blood samples for IBR/IPV of all breeding bulls repeated at maximum intervals of 12 months;

AND

d) diagnostic tests on blood samples for IBR/IPV of all cattle having aborted after more than three months of gestation.

Animals introduced into the *herd* should satisfy the conditions provided in point 1 c) above, and semen and oocytes or embryos used in the *herd* should satisfy the conditions provided in Article 11.8.6. or Article 11.8.7. and in Article 11.8.8., respectively.

Article 11.8.4.

Recommendations for the importation of cattle destined for herds free from IBR/IPV

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of IBR/IPV on the day of shipment;

2) come from an IBR/IPV free *herd*; or

3) were kept in a *quarantine station* for the 30 days prior to shipment and were subjected to a diagnostic test for IBR/IPV on a blood sample on two occasions with negative results, at an interval of not less than 21 days.

Article 11.8.5.

Recommendations for the importation of cattle intended for herds not qualified as free from IBR/IPV

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of IBR/IPV on the day of shipment;

2) were vaccinated with an inactivated virus vaccine not less than one month and not more than six months prior to shipment.

Article 11.8.6.

Recommendations for the importation of fresh semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals were kept in an IBR/IPV free *herd* at the time of collection of the semen;

2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.8.7.

Recommendations for the importation of frozen semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals were kept in an IBR/IPV free *herd* at the time of collection of the semen; or
2) the donor animals were held in isolation during the period of collection and for the 30 days following collection and were subjected to a diagnostic test for IBR/IPV on a blood sample taken at least 21 days after collection of the semen, with negative results; or
3) if the serological status of the bull is unknown or if the bull is serologically positive, an aliquot of each semen collection was subjected to a virus isolation test or PCR, performed in accordance with the *Terrestrial Manual*, with negative results; and
4) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.8.8.

Recommendations for the importation of oocytes or embryos

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the oocytes or embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 1998.

CHAPTER 11.9.

INFECTION WITH LUMPY SKIN DISEASE VIRUS

Article 11.9.1.

General provisions

Lumpy skin disease (LSD) susceptible animals are bovines (*Bos indicus* and *B. taurus*) and water buffaloes *(Bubalus bubalis)* and certain *wild* ruminants.

For the purposes of the *Terrestrial Code*, LSD is defined as an *infection* of bovines and water buffaloes with lumpy skin disease virus (LSDV).

The following defines the occurrence of *infection* with LSDV:

1) LSDV has been isolated from a sample from a bovine or a water buffalo; or
2) antigen or nucleic acid specific to LSDV, excluding vaccine strains, has been identified in a sample from a bovine or a water buffalo showing clinical signs consistent with LSD, or epidemiologically linked to a suspected or confirmed *case*, or giving cause for suspicion of previous association or contact with LSDV; or
3) antibodies specific to LSDV have been detected in a sample from a bovine or a water buffalo that either shows clinical signs consistent with LSD, or is epidemiologically linked to a suspected or confirmed *case*.

For the purposes of the *Terrestrial Code*, the *incubation period* for LSD shall be 28 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 11.9.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any LSD-related conditions regardless of the status of the animal population of the *exporting country*:

1) skeletal muscle *meat*;
2) *casings*;
3) gelatine and collagen;
4) tallow;
5) hooves and horns.

Article 11.9.3.

Country or zone free from LSD

A country or a *zone* may be considered free from LSD when *infection* with LSDV is notifiable in the entire country, importation of bovines and water buffaloes and their *commodities* is carried out in accordance with this chapter, and either:

1) the country or *zone* is historically free as described in Article 1.4.6.; or
2) for at least three years, *vaccination* has been prohibited in the country or *zone* and a clinical *surveillance* programme in accordance with Article 11.9.15. has demonstrated no occurrence of *infection* with LSDV; or
3) for at least two years, *vaccination* has been prohibited in the country or *zone* and a clinical, virological and serological *surveillance* programme in accordance with Article 11.9.15. has demonstrated no occurrence of *infection* with LSDV.

A country or *zone* free from LSD that is adjacent to an infected country or *zone* should include a *zone* in which *surveillance* is conducted in accordance with Article 11.9.15.

A country or *zone* free from LSD will not lose its status as a result of introduction of seropositive or vaccinated bovines or water buffaloes or their *commodities*, provided they were introduced in accordance with this chapter.

Article 11.9.4.

Recovery of free status

1) When a *case* of LSD occurs in a country or *zone* previously free from LSD, one of the following waiting periods is applicable to regain free status:

   a) when a *stamping-out policy* has been applied;

      i) 14 months after the *slaughter* or *killing* of the last *case*, or after the last *vaccination* if emergency *vaccination* has been used, whichever occurred last, and during which period clinical, virological and serological *surveillance* conducted in accordance with Article 11.9.15. has demonstrated no occurrence of *infection* with LSDV;

      ii) 26 months after the *slaughter* or *killing* of the last *case*, or after the last *vaccination* if emergency *vaccination* has been used, whichever occurred last, and during which period clinical *surveillance* alone conducted in accordance with Article 11.9.15. has demonstrated no occurrence of *infection* with LSDV;

   b) when a *stamping-out policy* is not applied, Article 11.9.3. applies.

2) When preventive *vaccination* is conducted in a country or *zone* free from LSD, in response to a threat but without the occurrence of a *case* of LSD, free status may be regained eight months after the last *vaccination* when clinical, virological and serological *surveillance* conducted in accordance with Article 11.9.15. has demonstrated no occurrence of *infection* with LSDV.

Article 11.9.5.

Recommendations for importation from countries or zones free from LSD

For bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of LSD on the day of shipment;

2) come from a country or *zone* free from LSD.

Article 11.9.6.

Recommendations for importation from countries or zones not free from LSD

For bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of LSD on the day of shipment;

2) were kept since birth, or for the past 60 days prior to shipment, in an *epidemiological unit* where no *case* of LSD occurred during that period;

3) were vaccinated against LSD according to manufacturer's instructions between 60 days and one year prior to shipment;

4) were demonstrated to have antibodies at least 30 days after *vaccination*;

5) were kept in a *quarantine station* for the 28 days prior to shipment during which time they were subjected to an agent identification test with negative results.

Article 11.9.7.

Recommendations for importation from countries or zones free from LSD

For semen of bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:

   a) showed no clinical sign of LSD on the day of collection;

   b) were kept in a free country or *zone* for at least 28 days prior to collection;

2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.9.8.

Recommendations for importation from countries or zones not free from LSD

For semen of bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:

   a) showed no clinical sign of LSD on the day of collection and the following 28 days;

   b) were kept for the 60 days prior to collection in an *artificial insemination centre* where no *case* of LSD occurred during that period;

   c) EITHER:

      i) were vaccinated regularly against LSD according to manufacturer's instructions, the first *vaccination* being administrated at least 60 days prior to the first semen collection; and

      ii) were demonstrated to have antibodies against LSDV at least 30 days after *vaccination*;

      OR

      iii) were subjected to a serological test to detect antibodies specific to LSDV, with negative results, at least every 28 days throughout the collection period and one test 21 days after the final collection for this consignment; and

      iv) were subjected to agent detection by PCR conducted on blood samples collected at commencement and conclusion of, and at least every 28 days during, semen collection for this consignment, with negative results;

2) the semen to be exported was subjected to agent detection by PCR;

3) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.9.9.

Recommendations for importation from countries or zones free from LSD

For embryos of bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:

   a) showed no clinical sign of LSD on the day of collection of the embryos;

   b) kept for at least 28 days prior to collection in a free country or *zone*;

2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant;

3) the semen used for the production of the embryos complied with Articles 11.9.7. and 11.9.8., as relevant.

Article 11.9.10.

Recommendations for importation from countries or zones not free from LSD

For embryos of bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of LSD on the day of collection and the following 28 days;
   b) were kept in an *establishment* where no *case* of LSD occurred during the 60 days prior to collection;
   c) EITHER:
      i) were vaccinated regularly against LSD according to manufacturer's instructions, the first *vaccination* being administrated at least 60 days prior to the first collection; and
      ii) were demonstrated to have antibodies against LSDV at least 30 days after *vaccination*;
      OR
      iii) were subjected to a serological test to detect antibodies specific to LSDV, with negative results, on the day of collection and at least 21 days after collection;
   d) were subjected to agent detection by PCR with negative results on a blood sample on the day of collection;
2) the semen used for the production of the embryos complied with Articles 11.9.7. and 11.9.8., as relevant;
3) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10.

Article 11.9.11.

Recommendations for the importation of milk and milk products

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *milk* or the *milk products*:

1) have been derived from animals in a country or *zone* free from LSD;

OR

2) were subjected to pasteurisation or any combination of control measures with equivalent performance as described in the Codex Alimentarius Code of Hygienic Practice for Milk and Milk Products.

Article 11.9.12.

Recommendations for importation of meal and flour from blood, meat other than skeletal muscle, or bones from bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting:

1) that these products were derived from animals in a country or *zone* free from LSD; or
2) that
   a) the products were processed using heat treatment to a minimum internal temperature of 65°C for at least 30 minutes;
   b) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of LSDV.

Article 11.9.13.

Recommendations for importation of hides of bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) these products were derived from animals that had been kept in a country or *zone* free from LSD since birth or for at least the past 28 days;

OR

2) these products were:
   a) derived from animals which had undergone ante- and post-mortem inspections in accordance with Chapter 6.3. with favourable results; and
   b) dry-salted or wet-salted for a period of at least 14 days prior to dispatch; or
   c) treated for a period of at least seven days in salt (NaCl) with the addition of 2% sodium carbonate (Na_2CO_3); or
   d) dried for a period of at least 42 days at a temperature of at least 20°C; and
3) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of LSDV.

Article 11.9.14.

Recommendations for importation of other products of animal origin from bovines and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) these products were derived from animals that have been kept in a country or *zone* free from LSD since birth or for at least the past 28 days; or
2) these products were processed to ensure the destruction of the LSDV and the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of LSDV.

Article 11.9.15.

Surveillance

1. General principles of surveillance

   A Member Country should justify the *surveillance* strategy chosen as being adequate to detect the presence of *infection* with LSDV even in the absence of clinical signs, given the prevailing epidemiological situation in accordance with Chapter 1.4. and Chapter 1.5. and under the responsibility of the *Veterinary Authority*.

   The *Veterinary Services* should implement programmes to raise awareness among farmers and workers who have day-to-day contact with livestock, as well as *veterinary paraprofessionals*, *veterinarians* and diagnosticians, who should report promptly any suspicion of LSD.

   In particular Member Countries should have in place:

   a) a formal and ongoing system for detecting and investigating *cases*;
   b) a procedure for the rapid collection and transport of samples from suspected *cases* to a *laboratory* for diagnosis;
   c) a system for recording, managing and analysing diagnostic and *surveillance* data.

2. Clinical surveillance

   Clinical *surveillance* is essential for detecting *cases* of *infection* with LSDV and requires the physical examination of susceptible animals.

   Surveillance based on clinical inspection provides a high level of confidence of detection of disease if a sufficient number of clinically susceptible animals is examined regularly at an appropriate frequency and investigations are recorded and quantified. Clinical examination and *laboratory* testing should be pre-planned and applied using appropriate types of samples to clarify the status of suspected *cases*.

3. Virological and serological surveillance

   An active programme of *surveillance* of susceptible populations to detect evidence of *infection* with LSDV is useful to establish the status of a country or *zone*. Serological and molecular testing of bovines and water buffaloes may be used to detect presence of *infection* with LSDV in naturally infected animals.

   The study population used for a serological survey should be representative of the population at *risk* in the country or *zone* and should be restricted to susceptible unvaccinated animals. Identification of vaccinated animals may minimise interference with serological *surveillance* and assist with recovery of free status.

4. Surveillance in high-risk areas

   Disease-specific enhanced *surveillance* in a free country or *zone* should be carried out over an appropriate distance from the border with an infected country or *zone*, based upon geography, climate, history of *infection* and

other relevant factors. The *surveillance* should be carried out over a distance of at least 20 kilometres from the border with that country or *zone*, but a lesser distance could be acceptable if there are relevant ecological or geographical features likely to interrupt the transmission of LSDV. A country or *zone* free from LSD may be protected from an adjacent infected country or *zone* by a *protection zone*.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2018.

CHAPTER 11.10.

INFECTION WITH *THEILERIA ANNULATA*, *T. ORIENTALIS* AND *T. PARVA*

Article 11.10.1.

General provisions

Theileriosis is a disease of bovines (*Bos indicus*, *B. taurus* and *B. grunniens*), water buffaloes (*Bubalus bubalis*), African buffaloes (*Syncerus caffer*), sheep (*Ovis aries*), goats (*Capra hircus*), camels (*Camellus dromedarius* and *C. bactrianus*) and some *wild* ruminants.

Theileriosis can give rise to disease of variable severity and the pathogenic agent may persist in ruminants for their lifetime. Such *animals* are considered carriers.

Only bovines and water buffaloes play a significant epidemiological role in the *infection* with *Theileria annulata*, *T. orientalis* and *T. parva*.

For the purposes of the *Terrestrial Code*, *infection* with *Theileria annulata*, *T. orientalis* and *T. parva* is defined as a tickborne *infection* of bovines and water buffaloes with *T. annulata*, *T. orientalis* Ikeda, *T. orientalis* Chitose or *T. parva*.

For the purposes of this chapter, *Theileria* means *T. annulata*, *T. orientalis* Ikeda, *T. orientalis* Chitose and *T. parva*.

The following defines the occurrence of *infection* with *Theileria*:

1) *Theileria* has been identified in a sample from a bovine or water buffalo; or
2) antigen or nucleic acid specific to *Theileria* has been identified in a sample from a bovine or water buffalo showing clinical signs consistent with *infection* with *Theileria*, or epidemiologically linked to a suspected or confirmed *case*, or giving cause for suspicion of previous association with *Theileria*; or
3) antibodies specific to *Theileria*, that are not the consequence of *vaccination*, have been detected in a sample from a bovine or water buffalo showing clinical signs consistent with *infection* with *Theileria*, or epidemiologically linked to a suspected or confirmed *case* or giving cause for suspicion of previous association with *Theileria*.

For the purposes of the *Terrestrial Code*, the *incubation period* for *infection* with *Theileria* shall be 35 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 11.10.2.

Safe commodities

When authorising the importation or transit of the following *commodities*, *Veterinary Authorities* should not require any *Theileria*-related conditions regardless of the health status of the *animal population* of the *exporting country* or *zone*:

1) *meat* and *meat products*;
2) *casings*;
3) *milk* and *milk products*;
4) gelatine and collagen;
5) tallow;
6) semen and embryos;
7) hooves and horns;
8) bones.

Article 11.10.3.

Country or zone free from infection with *Theileria*

1) A country or a *zone* may be considered free from *infection* with *Theileria* when the disease is notifiable in the entire country, importation of bovines and water buffaloes and their *commodities* is carried out in accordance with this chapter, and:
   a) the country or *zone* is historically free as described in Article 1.4.6.; or
   b) a *surveillance* programme in accordance with Chapter 1.4. has demonstrated no evidence of *infection* with *Theileria* in the country or *zone* for at least two years; or
   c) an ongoing *surveillance* programme in accordance with Chapter 1.5. has found no competent tick *vectors* for at least two years in the country or *zone*.
2) A country or *zone* free from *infection* with *Theileria* in which ongoing *vector surveillance*, performed in accordance with Chapter 1.5., has found no competent tick *vectors* will not lose its free status through the introduction of vaccinated, test-positive or infected bovines or water buffaloes from infected countries or *zones*.
3) A country or *zone* free from *infection* with *Theileria* will not lose its status as a result of introduction of seropositive or vaccinated bovines, water buffaloes or their *commodities*, provided they were introduced in accordance with this chapter.

Article 11.10.4.

Recommendations for importation of bovines and water buffaloes from countries or zones free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of *infection* with *Theileria* on the day of shipment;
2) come from a country or *zone* free from *infection* with *Theileria*.

Article 11.10.5.

Recommendations for importation of bovines and water buffaloes from countries or zones not free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of *infection* with *Theileria* and no *infestation* with tick *vectors* on the day of shipment;
2) were kept isolated for at least 35 days prior to shipment, in an *establishment* where no *case* of *infection* with *Theileria* has occurred during the preceding two years;
3) were treated with a registered acaricide, the efficacy of which has been confirmed in relation to the area of origin of the *animals*, at the time of entry to the isolation *establishment* and then at regular intervals, according to the manufacturer's instructions, allowing continuous protection against ticks until their shipment;
4) were subjected to serological and agent detection tests with negative results on samples taken immediately prior to entry and at least 25 days after entry to the isolation *establishment*.

Article 11.10.6.

Recommendations for importation of hides and skins from countries or zones not free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products have been:

1) dry-salted or wet-salted for a period of at least 14 days prior to dispatch; or
2) treated for a period of at least seven days in salt (NaCl) with the addition of 2% sodium carbonate (Na_2CO_3); or
3) dried for a period of at least 42 days at a temperature of at least 20°C; or
4) frozen to at least -20°C for at least 48 hours.

Article 11.10.7.

Recommendations for importation of trophies derived from susceptible ruminants from countries or zones not free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products have been processed to ensure the destruction of tick *vectors*.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 2022.

CHAPTER 11.11.

TRICHOMONOSIS

Article 11.11.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 11.11.2.

Recommendations for the importation of cattle for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of trichomonosis on the day of shipment;
2) the animals were kept in a *herd* in which no *case* of trichomonosis has been reported; and/or
3) for females which have been mated, direct microscopic examination and culture of vaginal mucus were negative.

Article 11.11.3.

Recommendations for the importation of bulls for breeding (natural service or artificial insemination)

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of trichomonosis on the day of shipment;
2) the animals were kept in a *herd* in which no *case* of trichomonosis has been reported; and/or
3) the animals have never been used for natural service; or
4) the animals have only mated virgin heifers; or
5) the animals were subjected to a direct microscopic and cultural examination of preputial specimens with negative results.

Article 11.11.4.

Recommendations for the importation of bovine semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals have never been used for natural service; or
2) the donor animals have only mated virgin heifers; or
3) the donor animals were kept in an *establishment* or *artificial insemination centre* where no *case* of trichomonosis has been reported;
4) the donor animals were subjected to a direct microscopic and cultural examination of preputial specimens with negative results;
5) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

NB: FIRST ADOPTED IN 1968.

SECTION 12.

EQUIDAE

CHAPTER 12.1.

INFECTION WITH AFRICAN HORSE SICKNESS VIRUS

Article 12.1.1.

General provisions

For the purposes of the *Terrestrial Code*, African horse sickness (AHS) is defined as an *infection* of equids with African horse sickness virus (AHSV).

The following defines an *infection* with AHSV:

1) AHSV has been isolated and identified from an equid or a product derived from that equid; or
2) antigen or ribonucleic acid specific to AHSV has been identified in samples from an equid showing clinical signs consistent with AHS, or epidemiologically linked to a suspected or confirmed *case*; or
3) serological evidence of active *infection* with AHSV by detection of seroconversion with production of antibodies against structural or nonstructural proteins of AHSV that are not a consequence of *vaccination* have been identified in an equid that either shows clinical signs consistent with AHS, or is epidemiologically linked to a suspected or confirmed *case*.

For the purposes of the *Terrestrial Code*, the *infective period* for AHS is 40 days for domestic horses. Although critical information is lacking for some species, this chapter applies to all equidae.

All countries or *zones* adjacent to a country or *zone* not having free status should determine their AHSV status from an ongoing *surveillance* programme. Throughout the chapter, *surveillance* is in all cases understood as being conducted as described in Articles 12.1.11. to 12.1.13.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 12.1.2.

AHS free country or zone

1) A country or *zone* may be considered free from AHS when *infection* with AHSV is notifiable in the whole country, systematic *vaccination* is prohibited, importation of equids and their semen, oocytes or embryos are carried out in accordance with this chapter, and either:
   a) historical freedom as described in Chapter 1.4. has demonstrated no evidence of AHSV in the country or *zone*; or
   b) the country or *zone* has not reported any *case* of AHS for at least two years and is not adjacent to an infected country or *zone*; or
   c) a *surveillance* programme has demonstrated no evidence of AHSV in the country or *zone* for at least two years; or
   d) the country or *zone* has not reported any *case* of AHS for at least 40 days and a *surveillance* programme has demonstrated no evidence of *Culicoides* for at least two years in the country or *zone*.

2) An AHS free country or *zone* which is adjacent to an infected country or *zone* should include a *zone* in which *surveillance* is conducted in accordance with Articles 12.1.11. to 12.1.13., as relevant.

3) An AHS free country or *zone* will not lose its free status through the importation of seropositive or vaccinated equids and their semen, oocytes or embryos from infected countries or *zones*, provided these imports are carried out in accordance with this chapter.

4) To qualify for inclusion in the list of AHS free countries or *zones*, a Member Country should:
   a) have a record of regular and prompt animal disease reporting;
   b) send a declaration to WOAH stating:
      i) the section under point 1 on which the application is based;
      ii) no routine *vaccination* against AHS has been carried out during the past year in the country or *zone*;
      iii) equids are imported in accordance with this chapter;
   c) supply documented evidence that:
      i) *surveillance* in accordance with Articles 12.1.11. to 12.1.13. is applied, unless historically free in accordance with Article 1.4.6.;
      ii) regulatory measures for the early detection, prevention and control of *infection* with AHSV have been implemented.

5) The Member Country will be included in the list only after the submitted evidence has been accepted by WOAH. Retention on the list requires that the information in points 4 b) ii) and iii) and 4 c) above be annually re-submitted and changes in the epidemiological situation or other significant events be reported to WOAH in accordance with the requirements in Chapter 1.1., and in particular, formally state that:
   a) there has been no *outbreak* of AHS during the past year in the country or *zone*;
   b) no evidence of *infection* with AHSV has been found during the past year in the country or *zone*.

Article 12.1.3.

AHS infected country or zone

For the purposes of this chapter, an AHS infected country or *zone* is one that does not fulfil the requirements to qualify as AHS free.

Article 12.1.4.

Establishment of a containment zone within an AHS free country or zone

In the event of limited *outbreaks* within an AHS free country or *zone*, a single *containment zone* can be established for the purpose of minimising the impact on the entire country or *zone*. Such a *zone* should include all *cases* and can be established within a *protection zone*. For this to be achieved, the *Veterinary Authority* should provide documented evidence that:

1) the *outbreaks* are limited based on the following factors:
   a) immediately on suspicion, a rapid response including *notification* has been made;
   b) standstill of movements of equids has been imposed, and effective controls on the movement of equids and their products specified in this chapter are in place;
   c) epidemiological investigation (trace-back, trace-forward) has been completed;
   d) the *infection* has been confirmed;
   e) investigations on the likely source of the *outbreak* have been carried out;
   f) all *cases* have been shown to be epidemiologically linked;
   g) no new *cases* have been found in the *containment zone* within a minimum of two *infective periods* as defined in Article 12.1.1.;

2) the equids within the *containment zone* are clearly identifiable as belonging to the *containment zone*;

3) increased passive and targeted *surveillance* in accordance with Articles 12.1.11. to 12.1.13. in the rest of the country or *zone* has not detected any evidence of *infection*;

4) animal health measures are in place to effectively prevent the spread of AHSV *infection* to the rest of the country or *zone*, taking into consideration the establishment of a *protection zone* within the *containment zone*, the seasonal *vector* conditions and existing physical, geographical and ecological barriers;

5) ongoing *surveillance* in accordance with Articles 12.1.11. to 12.1.13. is in place in the *containment zone*.

The free status of the areas outside the *containment zone* is suspended while the *containment zone* is being established in accordance with points 1 to 5 above. The free status of the areas outside the *containment zone* may be reinstated irrespective of Article 12.1.5. once the *containment zone* is recognised by WOAH.

In the event of the recurrence of AHSV *infection* in the *containment zone*, the approval of the *containment zone* is withdrawn.

The recovery of the AHS free status of the *containment zone* should follow Article 12.1.5.

Article 12.1.5.

Recovery of free status

To regain free status when an AHS *outbreak* occurs in a country or *zone* previously free, Article 12.1.2. applies, irrespective of whether emergency *vaccination* has been applied or not.

Article 12.1.6.

Recommendations for importation from AHS free countries or zones

For equids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of AHS on the day of shipment;
2) have not been vaccinated against AHS within the last 40 days;
3) were kept in an AHS free country or *zone* since birth or for at least 40 days prior to shipment;
4) either:
    a) did not transit through an infected *zone* during transportation to the *place of shipment*; or
    b) were protected from *Culicoides* attacks at all times when transiting through an infected *zone*.

Article 12.1.7.

Recommendations for importation from AHS infected countries or zones

For equids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of AHS on the day of shipment;
2) have not been vaccinated against AHS within the last 40 days;
3) were held in isolation in a *vector*-protected *establishment*:
    a) for a period of at least 28 days and a serological test to detect antibodies against the AHSV group, was carried out with a negative result on a blood sample collected at least 28 days after introduction into the *vector*-protected *establishment*; or
    b) for a period of at least 40 days and serological tests to detect antibodies against AHSV were carried out with no significant increase in antibody titre on blood samples collected on two occasions, with an interval of not less than 21 days, the first sample being collected at least 7 days after introduction into the *vector*-protected *establishment*; or
    c) for a period of at least 14 days and an agent identification test was carried out with a negative result on a blood sample collected not less than 14 days after introduction into the *vector*-protected *establishment*; or
    d) for a period of at least 40 days and were vaccinated, at least 40 days before shipment, against all serotypes whose presence in the source population has been demonstrated through a *surveillance* programme in accordance with Articles 12.1.12. and 12.1.13., and were identified in the accompanying certification as having been vaccinated;
4) were protected from *Culicoides* attacks at all times during transportation (including transportation to and at the *place of shipment*).

Article 12.1.8.

Recommendations for the importation of equine semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the donor animals:

1) showed no clinical sign of AHS on the day of collection of the semen and for the following 40 days;

2) had not been immunised against AHS with a live attenuated vaccine within 40 days prior to the day of collection;

3) were either:

   a) kept in an AHS free country or *zone* for at least 40 days before commencement of, and during collection of the semen; or

   b) kept in an AHS free *vector*-protected *artificial insemination centre* throughout the collection period, and subjected to either:

      i) a serological test to detect antibodies against the AHSV group, carried out with a negative result on a blood sample collected at least 28 days and not more than 90 days after the last collection of semen; or

      ii) agent identification tests carried out with negative results on blood samples collected at commencement and conclusion of, and at least every seven days, during semen collection for this consignment.

Article 12.1.9.

Recommendations for the importation of *in vivo* derived equine oocytes or embryos

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:

   a) showed no clinical sign of AHS on the day of collection of the oocytes or embryos and for the following 40 days;

   b) had not been immunised against AHS with a live attenuated vaccine within 40 days prior to the day of collection;

   c) were either:

      i) kept in an AHS free country or *zone* for at least 40 days before commencement of, and during collection of the oocytes or embryos, or

      ii) kept in an AHS free *vector*-protected *collection centre* throughout the collection period, and subjected to either:

         – a serological test to detect antibodies against the AHSV group carried out with a negative result on a blood sample collected at least 28 days and not more than 90 days after the last collection of oocytes or embryos; or

         – agent identification tests carried out with negative results on blood samples collected at commencement and conclusion of, and at least every seven days during oocytes or embryos collection for this consignment;

2) the embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant;

3) the semen used to fertilise the oocytes complies at least with the requirements in Article 12.1.8.

Article 12.1.10.

Protecting animals from *Culicoides* attacks

1. Vector-protected establishment or facility

   The *establishment* or facility should be approved by the *Veterinary Authority* and the means of protection should at least comprise the following:

   a) appropriate physical barriers at entry and exit points, for example double-door entry-exit system;

   b) openings of the building are *vector* screened with mesh of appropriate gauge impregnated regularly with an approved insecticide in accordance with the instructions of the manufacturer;

   c) *vector surveillance* and control within and around the building;

   d) measures to limit or eliminate breeding sites for *vectors* in vicinity of the *establishment* or facility;

   e) Standard Operating Procedure, including description of back-up and alarm systems, for operation of the *establishment* or facility and transport of equids to the place of *loading*.

2. During transportation

   When transporting equids through AHS infected countries or *zones*, *Veterinary Authorities* should require strategies to protect animals from *Culicoides* attacks during transport, taking into account the local ecology of the *vector*.

   a) Transport by road

      Potential *risk management* strategies include a combination of:

      i) treating animals with chemical repellents prior to and during transportation, in sanitized *vehicles* treated with appropriate residual contact insecticide;

      ii) *loading*, transporting and *unloading* animals at times of low *vector* activity (i.e. bright sunshine and low temperature);

      iii) ensuring *vehicles* do not stop en route during dawn or dusk, or overnight, unless the animals are held behind insect proof netting;

      iv) darkening the interior of the *vehicle*, for example by covering the roof or sides of *vehicles* with shade cloth;

      v) surveillance for *vectors* at common stopping and offloading points to gain information on seasonal variations;

      vi) using historical, ongoing or modelling information on AHS to identify low risk ports and transport routes.

   b) Transport by air

      Prior to *loading* the equids, the crates, *containers* or jet stalls are sprayed with an insecticide approved in the country of dispatch.

      Crates, *containers* or jet stalls in which equids are being transported and the cargo hold of the aircraft should be sprayed with an approved insecticide when the doors have been closed and prior to take off. All possible insect harbourage should be treated. The spray containers should be retained for inspection on arrival.

      In addition, during any stopover in countries or *zones* not free from AHS, prior to the opening of any aircraft door and until all doors are closed, netting of appropriate gauge impregnated with an approved insecticide should be placed over all crates, *containers* or jet stalls.

Article 12.1.11.

Introduction to surveillance

Articles 12.1.11. to 12.1.13. define the principles and provide guidance on *surveillance* for AHS, complementary to Chapter 1.4. and, for *vectors*, complementary to Chapter 1.5.

AHS is a *vector*-borne *infection* transmitted by a limited number of species of *Culicoides* insects. Unlike the related bluetongue virus, AHSV is so far geographically restricted to sub Saharan Africa with periodic excursions into North Africa, southwest Europe, the Middle East and adjacent regions of Asia. An important component of AHSV epidemiology is vectorial capacity which provides a measure of disease *risk* that incorporates *vector* competence, abundance, seasonal incidence, biting rates, survival rates and the extrinsic *incubation period*. However, methods and tools for measuring some of these *vector* factors remain to be developed, particularly in a field context.

According to this chapter, a Member Country demonstrating freedom from *infection* with AHSV for the entire country or a *zone* should provide evidence for the existence of an effective *surveillance* programme. The strategy and design of the

surveillance programme will depend on the prevailing epidemiological circumstances and should be planned and implemented in accordance with general conditions and methods described in this chapter. This requires the support of a *laboratory* able to undertake identification of *infection* with AHSV through the virus detection and antibody tests.

Susceptible *captive wild*, *feral* and *wild* equine populations should be included in the *surveillance* programme.

The purpose of *surveillance* is to determine if a country or *zone* is free from AHS. *Surveillance* deals not only with the occurrence of clinical signs caused by AHSV, but also with evidence of *infection* with AHSV in the absence of clinical signs.

Article 12.1.12.

General conditions and methods for surveillance

1) A *surveillance* system should be under the responsibility of the *Veterinary Authority*. In particular the following should be in place:
   a) a formal and ongoing system for detecting and investigating *outbreaks* of disease;
   b) a procedure for the rapid collection and transport of samples from suspected cases of AHS to a *laboratory* for diagnosis;
   c) a system for recording, managing and analysing diagnostic, epidemiological and *surveillance* data.
2) In a free country or *zone*, the *surveillance* programme for AHS should include an *early warning system* for reporting suspected cases. Persons who have regular contact with equids, as well as diagnosticians, should report promptly any suspicion of AHS to the *Veterinary Authority*. An effective *surveillance* system will periodically identify suspected cases that require follow-up and investigation to confirm or exclude that the cause of the condition is AHS. The rate at which such suspected cases are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. All suspected cases of AHS should be investigated immediately and samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment be available to those responsible for *surveillance*.
3) In an AHS infected country or *zone*, random or targeted serological and virological *surveillance*, appropriate to the epidemiological situation, should be conducted in accordance with Chapter 1.4.

Article 12.1.13.

Surveillance strategies

The target population for *surveillance* aimed at identification of disease or *infection* should cover susceptible equids within the country or *zone*. Active and passive *surveillance* for *infection* with AHSV should be ongoing. *Surveillance* should be composed of random or targeted approaches using virological, serological and clinical methods appropriate to the epidemiological situation.

A Member Country should justify the *surveillance* strategy chosen as appropriate to detect the presence of *infection* with AHSV in accordance with Chapter 1.4. and the prevailing epidemiological situation. It may, for example, be appropriate to target clinical *surveillance* at particular species likely to exhibit clinical signs (e.g. horses). Similarly, virological and serological testing may be targeted to species that rarely show clinical signs (e.g. donkeys).

In vaccinated populations serological and virological *surveillance* is necessary to detect the AHSV types circulating to ensure that all circulating types are included in the *vaccination* programme.

For random surveys, the design of the sampling strategy should incorporate epidemiologically appropriate design prevalence. The sample size selected for testing should be large enough to detect *infection* if it were to occur at a predetermined minimum rate. The sample size, expected prevalence and diagnostic sensitivity of the tests determine the level of confidence in the results of the survey. The Member Country should justify the choice of design prevalence and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the design prevalence, in particular, should be based on the prevailing or historical epidemiological situation.

Irrespective of the survey approach selected, the sensitivity and specificity of the diagnostic tests employed are key factors in the design, sample size determination and interpretation of the results obtained. Ideally, the sensitivity and specificity of the tests used should be validated for the *vaccination* or *infection* history and the different species in the target population.

Irrespective of the testing system employed, *surveillance* system design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following up positives to ultimately determine with a high level of confidence, whether they are indicative of *infection* or not. This should involve both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as those which may be epidemiologically linked to it.

The principles for *surveillance* for disease or *infection* are technically well defined. *Surveillance* programmes to prove the absence of AHSV *infection* or transmission, should be carefully designed to avoid producing results that are insufficiently reliable to be accepted by WOAH for official recognition of status. The design of any *surveillance* programme, therefore, requires inputs from professionals competent and experienced in this field.

1. Clinical surveillance

   Clinical *surveillance* aims at the detection of clinical signs of AHS in equids particularly during a newly introduced *infection*. In horses, clinical signs may include pyrexia, oedema, hyperaemia of mucous membranes and dyspnoea.

   Suspected cases detected by clinical *surveillance* should always be confirmed by *laboratory* testing.

2. Serological surveillance

   Serological *surveillance* of equine populations is an important tool to confirm absence of AHSV transmission in a country or *zone*. The species tested should reflect the local epidemiology of *infection* with AHSV, and the equine species available. Management variables that may reduce the likelihood of *infection*, such as the use of insecticides and animal housing, should be taken into account when selecting equids to be included in the *surveillance* system.

   Samples should be examined for antibodies against AHSV. Positive AHSV antibody tests results can have four possible causes:

   a) natural *infection* with AHSV;

   b) *vaccination* against AHS;

   c) maternal antibodies;

   d) lack of specificity of the test.

   Sera collected for other purposes may be used for AHSV *surveillance*. However, the principles of survey design described in these recommendations and the requirements for a statistically valid survey for the presence of *infection* with AHSV should not be compromised.

   The results of random or targeted serological surveys are important in providing reliable evidence that no *infection* with AHSV is present in a country or *zone*. It is, therefore, essential that the survey is thoroughly documented. It is critical to interpret the results in light of the movement history of the animals being sampled.

   Serological *surveillance* in a free *zone* should target those areas that are at highest risk of AHSV transmission, based on the results of previous *surveillance* and other information. This will usually be towards the boundaries of the free *zone*. In view of the epidemiology of AHSV, either random or targeted sampling is suitable to select *herds* or animals for testing.

   Serological *surveillance* in a free country or *zone* should be carried out over an appropriate distance from the border with an infected country or *zone*, based upon geography, climate, history of *infection* and other relevant factors. The *surveillance* should be carried out over a distance of at least 100 kilometres from the border with that country or *zone*, but a lesser distance could be acceptable if there are relevant ecological or geographical features likely to interrupt the transmission of AHSV. An AHS free country or *zone* may be protected from an adjacent infected country or *zone* by a *protection zone*.

   Serological *surveillance* in infected *zones* will identify changes in the boundary of the *zone*, and can also be used to identify the AHSV types circulating. In view of the epidemiology of *infection* with AHSV, either random or targeted sampling is suitable.

3. Virological surveillance

   Isolation and genetic analysis of AHSV from a proportion of infected animals is beneficial in terms of providing information on serotype and genetic characteristics of the viruses concerned.

   Virological *surveillance* can be conducted:

   a) to identify virus transmission in at risk populations;

   b) to confirm clinically suspected cases;

   c) to follow up positive serological results;

   d) to better characterise the genotype of circulating virus in a country or *zone*.

4. Sentinel animals

Sentinel animals are a form of targeted *surveillance* with a prospective study design. They comprise groups of unexposed equids that have not been vaccinated and are managed at fixed locations and observed and tested regularly to detect new *infections* with AHSV.

The primary purpose of a sentinel equid programme is to detect *infections* with AHSV occurring at a particular place, for instance sentinel groups may be located on the boundaries of infected *zones* to detect changes in distribution of AHSV. In addition, sentinel equid programmes allow the timing and dynamics of *infections* to be observed.

A sentinel equid programme should use animals of known source and history of exposure, control management variables such as use of insecticides and animal housing (depending on the epidemiology of AHSV in the area under consideration), and be flexible in its design in terms of sampling frequency and choice of tests.

Care is necessary in choosing the sites for the sentinel groups. The aim is to maximise the chance of detecting AHSV activity at the geographical location for which the sentinel site acts as a sampling point. The effect of secondary factors that may influence events at each location, such as climate, may also be analysed. To avoid confounding factors sentinel groups should comprise animals selected to be of similar age and susceptibility to *infection* with AHSV. The only feature distinguishing groups of sentinels should be their geographical location. Sera from sentinel animal programmes should be stored methodically in a serum bank to allow retrospective studies to be conducted in the event of new serotypes being isolated.

The frequency of sampling should reflect the equine species used and the reason for choosing the sampling site. In endemic areas virus isolation will allow monitoring of the serotypes and genotypes of AHSV circulating during each time period. The borders between infected and non-infected areas can be defined by serological detection of *infection*. Monthly sampling intervals are frequently used. Sentinels in declared free *zones* add to confidence that *infections* with AHSV are not occurring unobserved. Here sampling prior to and after the possible period of transmission is sufficient.

Definitive information on AHSV circulating in a country or *zone* is provided by isolation and identification of the viruses. If virus isolation is required sentinels should be sampled at sufficiently frequent intervals to ensure that some samples are collected during the period of viraemia.

5. Vector surveillance

AHSV is transmitted between equine hosts by species of *Culicoides* which vary across the world. It is therefore important to be able to identify potential *vector* species accurately although many such species are closely related and difficult to differentiate with certainty.

Vector surveillance is aimed at demonstrating the absence of *vectors* or defining high, medium and low-risk areas and local details of seasonality by determining the various species present in an area, their respective seasonal occurrence, and abundance. *Vector surveillance* has particular relevance to potential areas of spread. Long term *surveillance* can also be used to assess *vector* abatement measures or to confirm continued absence of *vectors*.

The most effective way of gathering this information should take account of the biology and behavioural characteristics of the local *vector* species of *Culicoides* and may include the use of Onderstepoort-type light traps or similar, operated from dusk to dawn in locations adjacent to equids.

Vector surveillance should be based on scientific sampling techniques. The choice of the number and types of traps to be used in *vector surveillance* and the frequency of their use should take into account the size and ecological characteristics of the area to be surveyed.

The operation of *vector surveillance* sites at the same locations as sentinel animals is advisable.

The use of a *vector surveillance* system to detect the presence of circulating viruses is not recommended as a routine procedure as the typically low *vector infection* rates mean that such detections can be rare. Animal-based *surveillance* strategies are preferred to detect virus transmission.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2014.

CHAPTER 12.2.

INFECTION WITH *TAYLORELLA EQUIGENITALIS* (CONTAGIOUS EQUINE METRITIS)

Article 12.2.1.

General provisions

This chapter addresses the occurrence of clinical or asymptomatic *infection* of a mare caused by *Taylorella equigenitalis* as well as the presence of *T. equigenitalis* on the genital mucous membrane surface in the male horse.

For the purposes of the *Terrestrial Code*, the following defines *infection* with *T. equigenitalis*:

1) *T. equigenitalis* has been isolated and identified as such from a genital swab sample from a horse; or

2) nucleic acid specific to *T. equigenitalis* has been detected in a sample from a horse; or

3) antigen specific to *T. equigenitalis* has been detected in a sample from a horse showing clinical or pathological signs consistent with *infection* with *T. equigenitalis*, or epidemiologically linked to a confirmed or suspected *case* of *infection* with *T. equigenitalis*.

For the purposes of the *Terrestrial Code*:

– due to long-term persistence of *T. equigenitalis* in horses, in the absence of effective treatment, the *infective period* shall be lifelong;

– the *incubation period* in mares shall be 14 days.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

For the purposes of this chapter, a temporary importation refers to the introduction of horses into a country or *zone*, for a defined period of time, not exceeding 90 days, during which the *risk* of transmission of the *infection* is mitigated through specific measures under the supervision of the *Veterinary Authority*. Temporary imported horses are re-exported at the end of this period. The duration of the temporary importation period and the destination after this period, as well as the conditions required to leave the country or *zone*, should be defined in advance.

When authorising the importation or transit of the *commodities* listed in this chapter, with the exception of those listed in Article 12.2.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the *T. equigenitalis* status of the *exporting country*, *zone* or *herd*.

Article 12.2.2.

Safe commodities

When authorising importation or transit of the following *commodities*, *Veterinary Authorities* should not require any *T. equigenitalis*-related conditions, regardless of the *animal health status* of the *exporting country*, *zone* or *herd*:

1) geldings;

2) *milk* and *milk products*;

3) *meat* and *meat products*;

4) hides and skins;

5) hooves;

6) gelatine and collagen.

Article 12.2.3.

Herd free from infection with *T. equigenitalis*

1. Prerequisite

Infection with *T. equigenitalis* has been a *notifiable disease* in the entire country for at least the past two years.

2. Qualification

To qualify as free from *infection* with *T. equigenitalis*, a *herd* should satisfy the following conditions:

a) it is under the control of the *Veterinary Authority*;

b) no *case* has occurred for at least two years;

c) all horses from the *herd* have been subjected to *T. equigenitalis* tests, with negative results, on samples collected on three occasions within a 12-day period, with an interval of no less than three days between sample collections. Horses must have not been treated with antibiotics for at least 7 days prior to the first sampling, nor subjected to antiseptic washing of genital mucous membrane for at least 21 days prior to the first sampling;

d) any stored semen was subjected to a test for detection of nucleic acid of *T. equigenitalis* with negative results, carried out on an aliquot of the stored semen.

3. Maintenance of freedom

a) the requirements in points 1, 2 a) and 2 b) of Article 12.2.3. are met;

b) appropriate *surveillance* capable of detecting *infection* with *T. equigenitalis* even in the absence of clinical signs is in place; this may be achieved through a *surveillance* programme in accordance with Chapter 1.4. and this chapter;

c) the introduction of horses and their germinal products into the *herd* is carried out in accordance with the importation conditions for these *commodities* listed in this chapter.

4. Recovery of freedom

When a *case* is detected in a previously free *herd* the free status should be suspended until the following conditions are met:

a) the *disinfection* of the *establishment* has been applied;

b) not before 21 days after the last removal or the last treatment of an infected horse, all horses have been subjected to a test for the detection of the agent, with negative results, on samples collected on three occasions, within a 12-day period with an interval of no less than three days between sample collections;

c) any fresh semen from all infected horses in the *herd* has been destroyed; aliquots of each collection of stored semen from all infected horses in the *herd* were subjected to a test for detection of nucleic acid of *T. equigenitalis* with negative results; and all positive stored semen has been destroyed;

d) the introduction of horses and their germinal products into the *herd* is carried out in accordance with the importation conditions for these *commodities* listed in this chapter.

Article 12.2.4.

Recommendations for importation of stallions or mares

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) mares showed no clinical sign of *infection* with *T. equigenitalis* on the day of shipment;

AND

2) horses have been:

a) kept since birth or for at least two years prior to shipment in a *herd* that has been free from *infection* with *T. equigenitalis*;

OR

b)

i) kept for at least the last 60 days in a *herd* in which no *case* has been reported during that period;

AND

ii) subjected to tests for the detection of the agent, with negative results, carried out on samples collected on three occasions within a 12-day period, with an interval of no less than three days between sample collections, the last one being carried out within 30 days prior to shipment. Horses have not been treated with antibiotics for at least 7 days nor subjected to antiseptic washing of genital mucous membranes for at least 21 days prior to the first sample collection, and have not been mated or inseminated after the first sampling.

Article 12.2.5.

Recommendations for temporary importation of stallions and mares

When importing on a temporary basis stallions or mares that do not comply with recommendations in Article 12.2.4. for purposes other than breeding and rearing, *Veterinary Authorities* should:

1) require:

a) the horses be accompanied by a passport in accordance with the model contained in Chapter 5.12. or be individually identified as belonging to a high health status *subpopulation* as defined in Chapter 4.17.;

b) the presentation of an *international veterinary certificate* attesting that the mares showed no clinical sign of *infection* with *T. equigenitalis* on the day of shipment;

c) the duration of the temporary importation period, the destination after this period, and the conditions required to leave the country or *zone* be defined;

2) ensure that during their stay in the country or *zone*, the horses:

a) are not used for breeding (including artificial insemination, semen collection, use as teasers) and do not have any sexual contact with other horses;

b) are not subjected to any practice that may represent a risk of transmission of *infection* with *T. equigenitalis*;

c) are kept and transported individually in stalls and *vehicles/vessels* which are subsequently cleaned and disinfected before re-use.

Article 12.2.6.

Recommendations for importation of semen from stallions

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) semen was collected in an *approved* centre and collection, processing and storing were done in accordance with Chapter 4.6.; and

EITHER

2) the donor stallion was kept in a *herd* free from *infection* with *T. equigenitalis*;

OR

3)

a) the donor stallion was kept for at least 60 days prior to semen collection in a *herd* in which no *case* has been reported during that period; and

b) the donor stallion was subjected to tests for the detection of the agent, with negative results, carried out on samples collected on three occasions, within a 12-day period with an interval of no less than three days between sample collections, the last one being carried out within 30 days prior to shipment. Horses have not been treated with antibiotics for at least 7 days nor subjected to antiseptic washing of genital mucous membranes for at least 21 days prior to the first sample collection, and have not been mated or inseminated after the first sampling;

OR

4) aliquots of fresh semen were subjected to culture and a test for detection of nucleic acid of *T. equigenitalis* with negative results, carried out immediately prior to processing and on an aliquot of semen collected within 15-30 days after the first collection of the semen to be exported;

OR

5) aliquots of stored semen corresponding to the oldest and the most recent collection were subjected to culture and a test for detection of nucleic acid for *T. equigenitalis* with negative results.

Article 12.2.7.

Recommendations for importation of oocytes or embryos of horses

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the oocytes and embryos were collected, processed and stored in *approved* centres following the general provisions in accordance with Chapters 4.8., 4.9. and 4.10.;

2) the donor mare showed no clinical signs of *infection* with *T. equigenitalis* on the day of collection;

AND

for the importation of embryos:

3) the semen used for embryo production complied with Article 12.2.6. and Chapters 4.6. and 4.7.

Article 12.2.8.

Surveillance

1. General principles of surveillance

Surveillance for *infection* with *T. equigenitalis* is relevant for *establishments* seeking to achieve and demonstrate freedom from *infection*, as well as being part of an *official control programme* in countries where the disease is endemic.

The *surveillance* strategy chosen should be adequate to detect *infection* with *T. equigenitalis* even in the absence of clinical signs.

The *Veterinary Services* should implement programmes to raise awareness among owners, breeders and workers who have day-to-day contact with horses, as well as *veterinarians*, *veterinary paraprofessionals* and diagnosticians, who should report promptly any suspicion of *infection* with *T. equigenitalis* to the *Veterinary Authority*.

Under the responsibility of the *Veterinary Authority*, Member Countries should have in place an *early warning system* in accordance with Article 1.4.5. and a system for recording, managing and analysing diagnostic and *surveillance* data.

2. Clinical surveillance

Clinical *surveillance* aims at detecting clinical signs by close physical examination of horses and based on reproductive performance. However, clinical *surveillance* should be complemented by culture for *T. equigenitalis* and molecular testing, as asymptomatic carriers play an important role in the maintenance and transmission of the *infection*.

3. Agent surveillance

An active programme of *surveillance* of horses to detect *cases* should be implemented to establish the status of a country, *zone* or *herd*. Culture for *T. equigenitalis* and molecular testing are the most effective methods of detection of a *case*.

Stored semen should be included in *surveillance* programmes. It represents a valuable source of material and may be very helpful in contributing to retrospective studies, including providing support for claims of freedom from *infection* and may allow certain studies to be conducted more quickly and at lower cost than other approaches. Samples can be gathered through representative sampling or following a *risk*-based approach.

4. Serological surveillance

Serological *surveillance* is not the preferred strategy for detecting *T. equigenitalis*. If used, serology should be done in conjunction with agent identification in assessing the status of a mare that may have been infected with *T. equigenitalis*. The usefulness of serological tests is further described in the *Terrestrial Manual*.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 2023.

CHAPTER 12.3.

DOURINE

Article 12.3.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for dourine shall be six months.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 12.3.2.

Dourine free country

A country formerly infected with dourine may be considered free again when:

1) a *stamping-out policy* has been practised for affected animals;
2) no clinical *case* of dourine has been observed during the past two years;
3) breeding horses have been subjected to a diagnostic test for dourine with negative results performed annually over a two-year period.

Article 12.3.3.

Recommendations for importation from dourine free countries for the past six months

For equines

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of dourine on the day of shipment;
2) were kept since birth, or for the six months prior to shipment, in a country which has been free from dourine for not less than the past six months.

Article 12.3.4.

Recommendations for importation from countries considered infected with dourine

For equines

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of dourine on the day of shipment;
2) were kept for the six months prior to shipment in an *establishment* where no *case* of dourine was officially reported during that period;
3) were subjected to a diagnostic test for dourine with negative results during the 15 days prior to shipment.

Article 12.3.5.

Recommendations for importation from dourine free countries for the past six months

For semen of equines

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor animals were kept since birth, or for the six months prior to collection of the semen, in a country which has been free from dourine for not less than the past six months.

Article 12.3.6.

Recommendations for importation from countries considered infected with dourine

For semen of equines

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) were kept for the six months prior to collection of the semen in an *establishment* or *artificial insemination centre* where no *case* of dourine was reported during that period;
   b) were subjected to a diagnostic test for dourine with negative results;
2) the microscopic examination of the semen for dourine was negative.

NB: FIRST ADOPTED IN 1968.

CHAPTER 12.4.

EQUINE ENCEPHALOMYELITIS (EASTERN AND WESTERN)

Article 12.4.1.

General provisions

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 12.4.2.

Recommendations for the importation of equines

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of equine encephalomyelitis on the day of shipment and during the three months prior to shipment;
2) were kept for the three months prior to shipment in an *establishment* where no *case* of equine encephalomyelitis was officially reported during that period; or
3) were kept in a *quarantine station* for the 21 days prior to shipment and were protected from insect *vectors* during quarantine and transportation to the *place of shipment*; or
4) were vaccinated not less than 15 days and not more than one year prior to shipment.

NB: FIRST ADOPTED IN 1968.

CHAPTER 12.5.

EQUINE INFECTIOUS ANAEMIA

Article 12.5.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 12.5.2.

Recommendations for the importation of equines

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of equine infectious anaemia (EIA) on the day of shipment and during the 48 hours prior to shipment; and
2) no *case* of EIA has been associated with any premises where the animals were kept during the three months prior to shipment; and
3) if imported on a permanent basis, the animals were subjected to a diagnostic test for EIA with negative results on blood samples collected during the 30 days prior to shipment; or
4) if imported on a temporary basis, the animals were subjected to a diagnostic test for EIA with negative results on blood samples collected during the 90 days prior to shipment.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2007.

CHAPTER 12.6.

INFECTION WITH EQUINE INFLUENZA VIRUS

Article 12.6.1.

General provisions

For the purposes of the *Terrestrial Code*, equine influenza (EI) is defined as an *infection* of domestic and *captive wild* equids with equine influenza virus (EIV), i.e. subtypes H3N8 and H7N7 of influenza A viruses.

This chapter deals not only with the occurrence of clinical signs caused by *infection* with EIV, but also with the presence of *infection* with EIV in the absence of clinical signs.

The following defines the occurrence of *infection* with EIV:

1) EIV, excluding modified-live virus vaccine strains following recent *vaccination*, has been isolated and identified as such in a sample from a domestic or *captive wild* equid; or
2) antigen or nucleic acid specific to EIV has been detected in a sample from a domestic or *captive wild* equid showing clinical signs or pathological lesions consistent with equine influenza, or epidemiologically linked to a confirmed or suspected *case* of equine influenza; or
3) seroconversion due to recent exposure to EIV which is not the consequence of *vaccination*, has been detected in paired samples from a domestic or *captive wild* equid showing clinical signs or pathological lesions consistent with equine influenza, or epidemiologically linked to a confirmed or suspected *case* of *infection* with EIV.

For the purposes of the *Terrestrial Code*, the *infective period* for EI shall be 14 days.

For the purposes of this chapter, a temporary importation refers to the introduction of horses into a country or *zone*, for a defined period of time, not exceeding 90 days, during which the *risk* of transmission of the *infection* is mitigated through specific measures under the supervision of the *Veterinary Authority*. Temporarily imported horses are re-exported at the end of this period. The duration of the temporary importation period and the destination after this period, as well as the conditions required to leave the country or *zone*, should be defined in advance.

When authorising the importation or transit of the *commodities* listed in this chapter, with the exception of those listed in Article 12.6.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the EI status of the equine population of the *exporting country*, *zone* or *compartment*.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 12.6.2.

Safe commodities

When authorising the importation or transit of the following *commodities*, *Veterinary Authorities* should not require any EIV-related conditions, regardless of the *animal health status* of the *exporting country*, *zone* or *compartment*:

1) equine semen;
2) *in vivo* derived equine embryos collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant;
3) *meat* and *meat products* from equids that have been slaughtered in a *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results.

Article 12.6.3.

Determination of the EI status of a country, a zone or a compartment

The EI status of a country, a *zone* or a *compartment* can be determined on the basis of the following criteria:

1) the outcome of a *risk assessment* identifying all risk factors and their historic relevance;

2) whether EI is notifiable in the whole country, an ongoing EI awareness programme is in place, and all notified suspect occurrences of EI are subjected to field and, where applicable, *laboratory* investigations;

3) appropriate *surveillance* is in place to demonstrate the presence of *infection* in the absence of clinical signs in domestic and *captive wild* equids.

Article 12.6.4.

Country, zone or compartment free from EI

A country, *zone* or *compartment* may be considered free from EI provided that *infection* with EIV is notifiable in the whole country and it shows evidence, through an effective *surveillance* programme, planned and implemented in accordance with the general principles in Chapter 1.4., that no *case* of *infection* with EIV occurred in the past two years. The *surveillance* may need to be adapted to parts of the country, *zone* or *compartment* depending on historical or geographical factors, industry structure, population data, movements of equids within and into the country, *zone* or *compartment*, *wild* equine populations or proximity to recent *outbreaks*.

A country, *zone* or *compartment* seeking freedom from EI, in which *vaccination* is practised, should also demonstrate that EIV has not been circulating in the population of domestic, *captive wild*, *feral*, and *wild* equids during the past 12 months, through *surveillance*, in accordance with Chapter 1.4.

In a country in which *vaccination* is not practised, *surveillance* may be conducted using serological testing alone. In countries where *vaccination* is practised, the *surveillance* should include agent identification methods described in the *Terrestrial Manual* for evidence of *infection*.

A country, *zone* or *compartment* seeking freedom from EI should apply appropriate movement controls to minimise the risk of introduction of EIV in accordance with this chapter and should be in accordance with relevant requirements and principles described in Chapter 4.4. and Chapter 4.5.

Article 12.6.5.

Recovery of free status

If a *case* of *infection* with EIV occurs in a previously free country, *zone* or *compartment*, free status can be regained 12 months after the last *case*, provided that *outbreaks* were managed in accordance with Chapter 4.19. and that *surveillance*, in accordance with Article 12.6.4., has been carried out during that 12-month period, with negative results.

Article 12.6.6.

Recommendations for the importation of domestic and captive wild equids for immediate slaughter

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the domestic or *captive wild* equids showed no clinical sign of EI on the day of shipment.

Article 12.6.7.

Recommendations for the importation of domestic and captive wild equids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the domestic or *captive wild* equids:

1) came from an EI free country, *zone* or *compartment* in which they had been resident for at least 14 days; in the case of vaccinated equids, information on their *vaccination* status should be included in the veterinary certificate;

OR

2)

a) were subjected to pre-export isolation for 14 days and showed no clinical sign of EI during isolation nor on the day of shipment; and

b) were vaccinated in accordance with the recommendations of the manufacturer with a vaccine complying with the standards described in the *Terrestrial Manual* and considered effective against the epidemiologically relevant virus strains, in accordance with one of the following procedures:

i) between 14 and 90 days before shipment with either a primary course or a booster; or

ii) between 14 and 180 days before shipment, if they are older than four years of age, having received up to the date of this pre-shipment *vaccination*, at least four doses of vaccine at intervals not greater than 180 days.

Information on the *vaccination* status should be included in the *international veterinary certificate* or the passport in accordance with Chapter 5.12. as relevant.

Countries that are free from EI or undertaking an eradication programme may also request that the equids were subjected to an agent identification test for EI described in the *Terrestrial Manual* with negative results, conducted on samples collected on two occasions, four to six days after commencement of pre-export isolation and within four days prior to shipment.

Article 12.6.8.

Recommendations for the temporary importation of horses

If the importation of horses on a temporary basis does not comply with the recommendations in Article 12.6.7., *Veterinary Authorities* of *importing countries* should:

1) require:

a) that the horses be accompanied by a passport in accordance with the model contained in Chapter 5.12. or be individually identified as belonging to a high health status *subpopulation* as defined in Chapter 4.17.;

b) the presentation of an *international veterinary certificate* attesting that the horses:

i) came from a country, *zone* or *compartment* free from EI, in which they had been resident for at least 14 days; in the case of vaccinated horses, information on their *vaccination* status should be included in the veterinary certificate;

OR

ii) showed no clinical sign of EI in any premises in which the horses had been resident for the 14 days prior to shipment nor on the day of shipment; and

iii) were vaccinated with a vaccine complying with the standards described in the *Terrestrial Manual*; information on their *vaccination* status should be included in the veterinary certificate or the passport in accordance with Chapter 5.12.;

2) ensure that during their stay in the country or *zone* horses are kept separated from domestic and *captive wild* equids of a different EI health status through appropriate *biosecurity*.

NB: FIRST ADOPTED IN 1986; MOST RECENT UPDATE ADOPTED IN 2023.

CHAPTER 12.7.

INFECTION WITH *THEILERIA EQUI* AND *BABESIA CABALLI* (EQUINE PIROPLASMOSIS)

Article 12.7.1.

General provisions

The *infection* with *Theileria equi* (*T. equi*) or *Babesia caballi* (*B. caballi*) established after transmission of these pathogenic agents through competent ticks or iatrogenic practices may be asymptomatic or may cause a clinical disease known as equine piroplasmosis. Vertical transmission from mares to foals has also been reported. This chapter deals not only with clinical disease, but also with asymptomatic infections.

Animals susceptible to *infection* with *T. equi* or *B. caballi* are primarily domestic and *wild* equids. Although old-world camelids are susceptible to *infection* and are potential reservoirs, they are not found to play a significant role in the epidemiology of the disease.

Equids infected with *T. equi* or *B. caballi* may remain carriers of these blood parasites for long periods, sometimes lifelong and act as sources of *infection* for competent tick *vectors*, including species of the genera *Dermacentor*, *Rhipicephalus*, *Hyalomma* and *Amblyomma*.

For the purposes of the *Terrestrial Code*, the following defines *infection* with *T. equi* or *B. caballi*:

1) *T. equi* or *B. caballi* has been observed and identified as such in a sample from an equid; or
2) nucleic acid specific to *T. equi* or *B. caballi* has been detected in a sample from an equid showing clinical or pathological signs consistent with *infection* with *T. equi* or *B. caballi*, or epidemiologically linked to a confirmed or suspected *case* of *infection* with *T. equi* or *B. caballi*; or
3) antibodies specific to *T. equi* or *B. caballi* have been detected in a sample from an equid showing clinical or pathological signs consistent with *infection* with *T. equi* or *B. caballi*, or epidemiologically linked to a confirmed or suspected *case* of *infection* with *T. equi* or *B. caballi*.

For the purposes of the *Terrestrial Code*, the *incubation period* of *infection* with *T. equi* or *B. caballi* in equids shall be 30 days and the *infective period* shall be lifelong.

For the purposes of this chapter, a temporary importation refers to the introduction of horses into a country or *zone*, for a defined period of time not exceeding 90 days, during which the *risk* of transmission of the *infection* is mitigated through specific measures under the supervision of the *Veterinary Authority*. Temporarily imported horses are re-exported at the end of this period. The duration of the temporary importation period and the destination after this period, as well as the conditions required to leave the country or *zone*, should be defined in advance.

When authorising the importation or transit of the *commodities* listed in this chapter, with the exception of those listed in Article 12.7.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the status of *infection* with *T. equi* and *B. caballi* of the *exporting country* or *zone*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 12.7.2.

Safe commodities

When authorising importation or transit of the following *commodities*, *Veterinary Authorities* should not require any conditions related to *infection* with *T. equi* or *B. caballi*, regardless of the *animal health status* of the *exporting country* or *zone*:

1) *milk* and *milk products*;
2) *meat* and *meat products*;
3) hides and skins;

4) hooves;

5) gelatine and collagen;

6) semen collected in accordance with the relevant chapters of the *Terrestrial Code*;

7) sterile filtered horse serum;

8) embryos collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10.

Article 12.7.3.

Country or zone free from infection with *T. equi* and *B. caballi*

1) Historical freedom as described in Chapter 1.4. does not apply to *infection* with *T. equi* and *B. caballi*.

2) A country or a *zone* may be considered free from *infection* with *T. equi* and *B. caballi* when:

   a) *infection* with *T. equi* and *infection* with *B. caballi* have been notifiable diseases in the entire country for at least the past 10 years and, in the country or *zone*:

      i) there has been no *case* of *infection* with *T. equi* and no *case* of *infection* with *B. caballi* during the past six years; and

      ii) a *surveillance* programme performed in accordance with Article 12.7.8. has demonstrated no evidence of *infection* with *T. equi* and no evidence of *infection* with *B. caballi* for the past six years and has considered the presence or absence of competent *vectors* in the epidemiological situation;

   b) importation of equids into the country or *zone* is carried out in accordance with this chapter. A country or *zone* free from *infection* with *T. equi* and *B. caballi* in which seropositive or infective horses were imported temporarily in accordance with Article 12.7.6. will not lose its free status provided an epidemiological investigation demonstrates that there has been no transmission of *infection*;

   c) a country or *zone* free from *infection* with *T. equi* and *B. caballi* adjacent to an infected country or *zone* should include a high-risk area in which *surveillance* is conducted in accordance with Article 12.7.8.

Article 12.7.4.

Recovery of a free status

When *infection* with *T. equi* or *B. caballi* is detected in a previously free country or *zone*, Article 12.7.3. applies.

Article 12.7.5.

Recommendations for the importation of equids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical signs of *infection* with *T. equi* or *B. caballi* on the day of shipment, and

2) EITHER:

   a) the animals were kept in a country or *zone* free from *infection* with *T. equi* and *B. caballi* since birth;

   OR

   b)

      i) were subjected to serological and agent identification tests with molecular techniques for the detection of *T. equi* and *B. caballi* with negative results carried out on a blood sample taken within the 14 days prior to shipment; and

      ii) were maintained free from competent ticks in accordance with Article 12.7.7. and not subjected to any practice that may present a risk of iatrogenic transmission of *infection* with *T. equi* or *B. caballi* during the 30 days prior to sampling and after sampling until shipment; and

      iii) have not been treated with antiparasitic drugs capable of masking an *infection* with *T. equi* and *B. caballi*, for at least six months prior to sampling.

Article 12.7.6.

Recommendations for the temporary importation of horses

If the importation of horses on a temporary basis does not comply with the recommendations in Article 12.7.5., *Veterinary Authorities* of *importing countries* should:

1) require:
   a) that the horses be accompanied by a passport in accordance with the model contained in Chapter 5.12. or be individually identified as belonging to a high health status *subpopulation* as defined in Chapter 4.17.;
   b) the presentation of an *international veterinary certificate* attesting that the horses:
      i) showed no clinical sign of *infection* with *T. equi* or *B. caballi* on the day of shipment;
      ii) were maintained free from ticks in accordance with Article 12.7.7. during the 30 days prior to shipment and during transport;
   c) that the duration of the temporary importation period and the destination after this period, as well as the conditions required to leave the country or *zone*, be defined;
2) ensure that during their stay in the country or *zone*:
   a) the horses are protected from ticks in accordance with Article 12.7.7.;
   b) horses are examined daily for the presence of ticks with particular attention to the ears, false nostrils, inter-mandibular space, mane, lower body areas, including the axillae, and inguinal region, and the perineum and tail, with negative results;
   c) the horses are not subjected to any practice that may represent a risk of iatrogenic transmission of *infection* with *T. equi* or *B. caballi*.

Article 12.7.7.

Protecting equids from ticks

1) Under the direct supervision of the *Veterinary Authority*:
   a) equids are kept in tick-protected facilities and transported in protected *vehicles/vessels* according to point 3;
   b) equids have received preventive treatment in accordance with the manufacturer's recommendations with an acaricide effective against the competent ticks.
2) The *establishment* or facility should be approved by the *Veterinary Authority* and the means of protection should at least comprise the following:
   a) measures to limit or eliminate habitats for competent tick *vectors* should be implemented for an appropriate time and over an appropriate distance in the vicinity of the area where equids are kept;
   b) the facility and immediate surroundings of the stables and exercise or competition areas should be treated with an effective acaricide before the arrival of equids.
3) When transporting equids through infected countries or *zones*:
   a) the *vehicle/vessel* should be treated with an effective acaricide before transporting the animals;
   b) preventive treatment of the equids with an acaricide with an extended residual effect that lasts at least for the duration of any stopover during the trip should be conducted.

Article 12.7.8.

Surveillance strategies

1. General principles of surveillance

   A Member Country should justify the *surveillance* strategy chosen as being adequate to detect the presence of *infection* with *T. equi* and the presence of *infection* with *B. caballi*, given the prevailing epidemiological situation in accordance with Chapter 1.4. and Chapter 1.5. and under the responsibility of the *Veterinary Authority*.

   An active programme of *surveillance* of equids to detect evidence of *infection* with *T. equi* and evidence of *infection* with *B. caballi* by serological or agent identification molecular testing is required to establish the status of a country or *zone*, considering that asymptomatic carriers play an important role in the maintenance and transmission of the *infection*.

   The *Veterinary Services* should implement programmes to raise awareness among *veterinarians*, horse breeders, owners, keepers, and riders who have day-to-day contact with equids, as well as *veterinary paraprofessionals* and

diagnosticians, who should report promptly any suspicion of *infection* with *T. equi* and any suspicion of *infection* with *B. caballi* to the *Veterinary Authority*.

Under the responsibility of the *Veterinary Authority*, Member Countries should have in place an *early warning system* in accordance with Article 1.4.5. and a system for recording, managing and analysing diagnostic and surveillance data.

2. Clinical surveillance

Clinical *surveillance* aims at detecting clinical signs by close physical examination of equids.

3. Serological and agent surveillance

An active programme of *surveillance* of equids to detect evidence of *infection* with *T. equi* and evidence of *infection* with *B. caballi* by serological or agent identification testing with molecular techniques is required to establish the status of a country or *zone* considering that asymptomatic carriers play an important role in the maintenance and transmission of the *infection*.

The study population used for a serological survey should be representative of the population at risk in the country or *zone*.

4. Surveillance in high-risk areas

Disease-specific enhanced *surveillance* in a free country or *zone* should be carried out over an appropriate distance from the border with an *infected* country or *zone*, based upon geography, climate, history of *infection* and other relevant factors. The *surveillance* should be carried out particularly over the border with that country or *zone* unless there are relevant ecological or geographical features likely to limit the spatial distribution and thereby prevent the *infestation* of equids from competent ticks and interrupt the transmission of *infection* with *T. equi* or *B. caballi*.

5. Vector surveillance

Infection with *T. equi* or *B. caballi* is transmitted between equine hosts by species of competent ticks including species of the genera *Dermacentor*, *Rhipicephalus*, *Hyalomma*, and *Amblyomma*.

Vector surveillance is aimed at demonstrating the absence of tick *vectors* or defining high, medium and low-risk areas and local details of seasonality by determining the various species present in an area, their respective seasonal occurrence, and abundance. *Vector surveillance* has particular relevance to potential areas of spread. Long term *surveillance* can also be used to assess *vector* abatement measures or to confirm the continued absence of *vectors*.

Vector surveillance sampling should be scientifically based. The choice of collection methods to be used in *vector surveillance* and the frequency of their use should consider the size and ecological characteristics of the area to be surveyed as well as the biology and behavioural characteristics of the local *vector* species of competent ticks.

The use of a *vector surveillance* system to detect the presence of circulating *T. equi* or *B. caballi* is not recommended as a routine procedure. Rather, animal-based *surveillance* strategies are preferred to detect *T. equi* or *B. caballi* transmission.

NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 2023.

CHAPTER 12.8.

INFECTION WITH EQUID HERPESVIRUS-1 (EQUINE RHINOPNEUMONITIS)

Article 12.8.1.

General provisions

Equine rhinopneumonitis is a collective term for any one of several highly contagious, clinical disease entities of equids that may occur as a result of *infection* with equid herpesvirus-1 (EHV-1).

Infection with EHV-1 is characterised by a primary respiratory tract disease of varying severity that is related to the age and immunological status of the infected animal. *Infections* with EHV-1 are capable of progression beyond the respiratory mucosa to cause abortion, perinatal foal death, or neurological dysfunction.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 12.8.2.

Recommendations for the importation of equids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of EHV-1 *infection* on the day of shipment;
2) were kept for the 21 days prior to shipment in an *establishment* where no *case* of EHV-1 *infection* was reported during that period.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2014.

CHAPTER 12.9.

INFECTION WITH EQUINE ARTERITIS VIRUS

Article 12.9.1.

General provisions

For the purposes of the *Terrestrial Code*, equine viral arteritis (EVA) is defined as an *infection* of domestic equids with equine arteritis virus.

This chapter deals not only with the occurrence of clinical signs caused by equine arteritis virus, but also with the presence of *infection* with equine arteritis virus in the absence of clinical signs.

For the purposes of this chapter, isolation is defined as the separation of domestic equids from those of a different EVA health status, utilising appropriate *biosecurity* measures, with the objective of preventing the transmission of *infection*.

The *infective period* for EVA shall be 28 days for all categories of equids except sexually mature stallions where the *infective period* may be for the life of the animal. Because the *infective period* may be extended in the case of virus shedding in semen, the status of seropositive stallions should be checked to ensure that they do not shed virus in their semen.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 12.9.2.

Recommendations for the importation of uncastrated male equids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals showed no clinical sign of EVA on the day of shipment and during the 28 days prior to shipment and met one of the following requirements:

1) were isolated for the 28 days prior to shipment and were subjected to a test for EVA carried out on a single blood sample collected during the 21 days prior to shipment with a negative result; or
2) were subjected between six and nine months of age to a test for EVA:

   EITHER:

   a) with a negative result,

   OR

   b) with a positive result, followed at least 14 days later by a second test showing a stable or decreasing titre;

   and were immediately vaccinated against EVA and regularly revaccinated in accordance with the recommendations of the manufacturer; or
3) met the following requirements:
   a) were isolated; and
   b) not earlier than seven days of commencing isolation were subjected to a test for EVA on a blood sample with a negative result; and
   c) were then immediately vaccinated; and
   d) were kept separated from other equids for 21 days following *vaccination*; and
   e) were regularly revaccinated in accordance with the recommendations of the manufacturer; or
4) have been subjected to a test for EVA carried out on a blood sample with a positive result and then: either
   a) were subsequently test mated to two mares within six months prior to shipment which were subjected to two tests for EVA with negative results on blood samples collected at the time of test mating and again 28 days after the mating; or
   b) were subjected to a test for EVA with a negative result, carried out on semen collected during the six months prior to shipment; or

c) were subjected to a test for EVA with a negative result, carried out on semen collected within six months after the blood sample was tested, then immediately vaccinated, and regularly revaccinated in accordance with the recommendations of the manufacturer.

Article 12.9.3.

Recommendations for the importation of equids other than uncastrated males

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals showed no clinical sign of EVA on the day of shipment; and

EITHER

1) were kept in an *establishment* where no animals have shown any signs of EVA for the 28 days prior to shipment; and
   a) were subjected to a test for EVA carried out on blood samples collected either once within 21 days prior to shipment with a negative result, or on two occasions at least 14 days apart within 28 days prior to shipment, which demonstrated stable or declining antibody titres; or
   b) were regularly vaccinated in accordance with the recommendations of the manufacturer;

OR

2) were isolated for the 28 days prior to shipment and during this period the animals showed no sign of EVA.

Article 12.9.4.

Recommendations for the importation of equine semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the donors were kept for the 28 days prior to semen collection in an *establishment* where no equid has shown any clinical sign of EVA during that period and showed no clinical sign of EVA on the day of semen collection; and

1) were subjected between six and nine months of age to a test for EVA:

   EITHER:

   a) with a negative result,

   OR

   b) with a positive result, followed at least 14 days later by a second test showing a stable or decreasing titre;

   and were immediately vaccinated against EVA and regularly revaccinated in accordance with the recommendations of the manufacturer; or

2) were isolated and not earlier than 7 days of commencing isolation were subjected to a test for EVA on a blood sample with a negative result, immediately vaccinated for EVA, kept for 21 days following *vaccination* separated from other equids and regularly revaccinated in accordance with the recommendations of the manufacturer; or

3) were subjected to a test for EVA on a blood sample with a negative result within 14 days prior to semen collection, and had been separated from other equids not of an equivalent EVA status for 14 days prior to blood sampling until the end of semen collection; or

4) have been subjected to a test for EVA carried out on a blood sample with a positive result and then: either
   a) were subsequently test mated to two mares within six months prior to semen collection, which were subjected to two tests for EVA with negative results on blood samples collected at the time of test mating and again 28 days after the test mating; or
   b) were subjected to a test for EVA with a negative result, carried out on semen collected within six months prior to collection of the semen to be exported; or
   c) were subjected to a test for EVA with a negative result, carried out on semen collected within six months after the blood sample was collected, then immediately vaccinated, and regularly revaccinated; or

5) for frozen semen, were subjected with negative results either:
   a) to a test for EVA carried out on a blood sample taken not earlier than 14 days and not later than 12 months after the collection of the semen for export; or
   b) to a test for EVA carried out on an aliquot of the semen collected immediately prior to processing or on an aliquot of semen collected within 14 to 30 days after the first collection of the semen to be exported.

Article 12.9.5.

Recommendations for the importation of *in vivo* derived equine embryos

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the donor animals showed no clinical sign of EVA on the day of embryo collection; and

EITHER

1) were kept in an *establishment* where no animals have shown any signs of EVA for the 28 days prior to collection; and
   a) were subjected to a test for EVA carried out on blood samples collected either once within 21 days prior to collection with negative results, or on two occasions at least 14 days apart within 28 days prior to collection, which demonstrated stable or declining antibody titres; or
   b) were regularly vaccinated in accordance with the recommendations of the manufacturer;

OR

2) were isolated for the 28 days prior to collection and during this period the animals showed no sign of EVA;

AND

3) semen used to fertilise the oocytes complies with the requirements in Article 12.9.4.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2014.

CHAPTER 12.10.

INFECTION WITH *BURKHOLDERIA MALLEI* (GLANDERS)

Article 12.10.1.

General provisions

Equids are the major hosts and reservoirs of glanders although scientific data are not available on the occurrence of *infection* in zebras. Camelids, goats and various carnivores including bears, canids and felids can also be infected but play no significant role in the epidemiology of the disease. Glanders in humans is a rare but potentially fatal disease.

For the purposes of the *Terrestrial Code*, glanders is defined as an *infection* of equids with *Burkholderia mallei* with or without the presence of clinical signs.

The following defines the occurrence of *infection* with *B. mallei*:

1) *B. mallei* has been isolated from a sample from an equid; or
2) antigen or genetic material specific to *B. mallei* has been identified in a sample from an equid showing clinical or pathological signs consistent with glanders, or epidemiologically linked to a confirmed or suspected *case* of *infection* with *B. mallei*, or giving cause for suspicion of previous contact with *B. mallei*; or
3) antibodies specific to *B. mallei* have been detected by a testing regime appropriate to the species in a sample from an equid showing clinical or pathological signs consistent with glanders, or epidemiologically linked to a confirmed or suspected *case* of *infection* with *B. mallei*, or giving cause for suspicion of previous contact with *B. mallei*.

For the purposes of the *Terrestrial Code*, the *infective period* of *B. mallei* in equids is lifelong and the *incubation period* shall be six months.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 12.10.2.

Country or zone free from infection with *B. mallei*

A country or a *zone* that does not comply with Article 1.4.6. may be considered free from *infection* with *B. mallei* when:

1) *infection* with *B. mallei* has been a *notifiable disease* in the entire country for at least the past three years;
2) there has been no *case* of *infection* with *B. mallei* during the past three years;
3) a *surveillance* programme in accordance with Article 12.10.8. has demonstrated no evidence of *infection* with *B. mallei* in the past 12 months;
4) imports of equids and their germplasm into the country or *zone* are carried out in accordance with this chapter.

Article 12.10.3.

Recovery of free status

When a *case* is detected in a previously free country or *zone*, freedom from *infection* with *B. mallei* can be regained after the following:

1) a standstill of equids and their germplasm from *establishments* affected or suspected of being affected has been imposed until the destruction of the last *case*;
2) an epidemiological investigation, including trace-back and trace-forward to determine the likely source of the *outbreak*, has been carried out;
3) a *stamping-out policy*, which includes at least the destruction of all infected equids and the *disinfection* of the affected *establishments*, has been applied;

4) *surveillance* in accordance with Article 12.10.8. has been carried out and has demonstrated no evidence of *infection* in the 12 months after *disinfection* of the last affected *establishment* and during that period measures have been in place to control the movement of equids.

When the measures above are not carried out, Article 12.10.2. applies.

Article 12.10.4.

Recommendations for importation of equids from countries or zones free from infection with *B. mallei*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the equid:

1) showed no clinical signs of *infection* with *B. mallei* on the day of shipment;
2) either:
   a) was kept for six months prior to shipment, or since birth, in a country or *zone* or countries or *zones* free from *infection* with *B. mallei*; or
   b) if kept at any time in the past six months in a country or *zone* not free from *infection* with *B. mallei*, was imported in accordance with Article 12.10.5. into a country or *zone* free from *infection* with *B. mallei*.

Article 12.10.5.

Recommendations for importation of equids from countries or zones not free from infection with *B. mallei*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the equid:

1) showed no clinical signs of *infection* with *B. mallei* on the day of shipment;
2) was kept for six months prior to shipment, or since birth, in an *establishment* where no *case* of *infection* with *B. mallei* was reported during the 12 months prior to shipment;
3) was isolated for at least 30 days prior to shipment, and during that time was subjected to a test for *infection* with *B. mallei* with negative result carried out on two samples taken 21 to 30 days apart.

Article 12.10.6.

Recommendations for the importation of equine semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) on the day of collection, the donor males:
   a) showed no clinical signs of *infection* with *B. mallei*;
   b) were examined clinically for signs of orchitis and cutaneous lesions on the penis or other parts of the body, with negative results;
2) the semen was collected, processed and stored in accordance with the relevant recommendations in Chapter 4.6. and in Articles 4.7.5. to 4.7.7.

Article 12.10.7.

Recommendations for the importation of *in vivo* derived equine embryos

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females showed no clinical signs of *infection* with *B. mallei* on the day of collection;
2) the embryos were collected, processed and stored in accordance with the relevant recommendations in Chapters 4.8. and 4.10.;
3) the semen used for embryo production complies with Article 12.10.6.

Article 12.10.8.

General principles of surveillance

This article and Article 12.10.9. provide recommendations for *surveillance* for *infection* with *B. mallei* and are complementary to Chapter 1.4. The impact and epidemiology of *infection* with *B. mallei* vary in different regions of the world. The *surveillance* strategies employed should be adapted to the respective epidemiological situation.

Surveillance should address not only the occurrence of clinical signs caused by *B. mallei*, but also evidence of *infection* with *B. mallei* in the absence of clinical signs.

The *surveillance* systems should be designed:

- to demonstrate that equine populations in a country or *zone* show no evidence of *infection* with *B. mallei*; or
- to detect its introduction into a free population; or
- if *B. mallei* is known to be present, to allow the estimation of the *prevalence* and the determination of the distribution of the *infection*.

The *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority* and should have in place:

1) a system for detecting and investigating *outbreaks*;
2) a procedure for the collection and transport of samples from suspected *cases* to a *laboratory* with appropriate testing capability for diagnosis of *infection* with *B. mallei*;
3) a system for recording, managing and analysing diagnostic, epidemiological and *surveillance* data;
4) a procedure for confirmation of inconclusive test results in a WOAH Reference Laboratory.

Diagnosticians and those with regular contact with equids, including private *veterinarians*, *veterinary paraprofessionals* and *animal handlers* should report promptly any suspicion of *infection* with *B. mallei*. The reporting system efficacy should be enhanced by awareness programmes and *animal identification* of equids.

The *Veterinary Services* should implement, when relevant and taking into account the results of previous *surveillance*, regular and frequent clinical inspections of equids and targeted serological surveys of high-risk *subpopulations* or those neighbouring a country or *zone* infected with *B. mallei*.

An effective *surveillance* system is likely to identify suspected *cases* that require follow-up investigation to confirm or exclude that the cause of the condition is *infection* with *B. mallei*. All suspected *cases* should be investigated as soon as possible and samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment be available to those responsible for the *surveillance*. Details of the occurrence of suspected *cases* and how they were investigated and dealt with should be documented. This should include the results of diagnostic testing and the control measures to which the equids concerned or affected *establishments* were subjected during the investigation (quarantine, movement control, euthanasia).

Captive wild, *feral* and *wild* equine populations should be included in the *surveillance*.

Article 12.10.9.

Surveillance strategies

The strategy employed should be based on the current knowledge of the epidemiological situation, and the expected results of the *surveillance*, such as the demonstration of a supposed free status. The *populations* of equids subject to the *surveillance* can be covered by passive clinical *surveillance*, active investigation of suspected *cases*, or randomised or targeted sampling.

Because *infection* with *B. mallei* usually occurs at a very low *prevalence*, randomised samples should be collected in high numbers. If an increased likelihood of *infection* in particular geographical locations or *subpopulations* can be identified, targeted sampling may be more appropriate.

To substantiate freedom from *infection* in a country or *zone*, *surveillance* should be conducted in accordance with the relevant provisions in Article 1.4.6.The relatively high rate of occurrence of false positive reactions to tests for *B. mallei* should be considered and the rate at which these false positives are likely to occur should be calculated in advance. Every positive result should be investigated to determine whether it is indicative of *infection* or not. This involves supplementary tests, trace-back and trace-forward, and inspection of individual *animals* and *herds* for clinical signs.

Clinical or pathological *surveillance* and laboratory testing are complementary diagnostic approaches that should always be applied in series to clarify the status of suspected *cases*. Agent identification should be carried out on any equid serologically positive or showing clinical signs consistent with glanders. Any suspected *cases* should be considered infected until contrary evidence is produced.

1. Clinical surveillance

   Clinical *surveillance* aims at detecting clinical signs by close physical examination of equids. However, systematic clinical *surveillance* is of limited use only, as asymptomatic carrier animals are the main reservoir of the disease.

2. Pathological surveillance

   Systematic pathological *surveillance* is an effective approach for the detection of *infection* with *B. mallei* and should be conducted on dead equids on farms, at *slaughterhouses/abattoirs* and facilities for the disposal of carcasses of equids. Pathological findings indicating possible *infection* with *B. mallei* should be confirmed by agent identification and any isolate should be characterised.

3. Serological surveillance

   Serological *surveillance* for *infection* with *B. mallei* is the preferred strategy. *Animal identification* and repeated testing of the population are necessary to establish its *infection* status.

4. Malleinisation

   Frequently used as a *surveillance* method, malleinisation demonstrates hypersensitivity to antigens of *B. mallei*. However, this method has shortcomings, such as low sensitivity, interference with other tests and *animal welfare* concerns.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2018.

CHAPTER 12.11.

VENEZUELAN EQUINE ENCEPHALOMYELITIS

Article 12.11.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for Venezuelan equine encephalomyelitis (VEE) shall be 14 days, and the *incubation period* 5 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 12.11.2.

VEE free country

A country formerly infected with VEE may be considered free when:

1) VEE is notifiable and a *surveillance* system is in place and provides that all VEE suspected animals are investigated promptly; specimens are collected, and all specimens are submitted for *laboratory* examination, including virus isolation;

2) no *case* of VEE has been confirmed for the past two years;

3) no equine animal has been imported from any country where VEE has been confirmed during the past two years.

If a country considered free from VEE imports horses from an infected country, the *importing country* will not be considered infected, provided that the importation has been carried out in accordance with Article 12.11.5.

Article 12.11.3.

Trade in commodities

Veterinary Authorities of VEE free countries may prohibit importation or transit through their territory, from countries considered infected with VEE, of domestic and *wild* equines, and may prohibit the importation into their territory, from countries considered infected with VEE, of semen and oocytes or embryos of domestic and *wild* equines.

Article 12.11.4.

Recommendations for importation from VEE free countries

For domestic and wild equines

The *Veterinary Authorities* of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of VEE on the day of shipment;

2) have not, during the past six months, been in any country in which VEE has occurred in the last two years;

3) have not been vaccinated against VEE within 60 days prior to shipment.

Article 12.11.5.

Recommendations for importation from countries considered infected with VEE

For domestic and wild equines

The *Veterinary Authorities* of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) vaccinated animals:
   a) were vaccinated against VEE not less than 60 days prior to shipment and were clearly identified with a permanent mark at the time of *vaccination*;
   b) were kept in a *quarantine station* in the country of origin under official veterinary supervision for three weeks prior to shipment and remained clinically healthy during that period; any animal which showed a rise in temperature (taken daily) was subjected to a blood test for virus isolation, with negative results;
   c) were protected from insect *vectors* during transportation to and from the *quarantine station* and during the quarantine period;
   d) showed no clinical sign of VEE on the day of shipment;
2) unvaccinated animals:
   a) were kept in a *quarantine station* in the country of origin under official veterinary supervision for three weeks prior to shipment and remained clinically healthy during that period; any animal which showed a rise in temperature (taken daily) was subjected to a blood test for virus isolation, with negative results;
   b) were subjected to a diagnostic test for VEE with negative results conducted not less than 14 days after the commencement of quarantine;
   c) were protected from insect *vectors* during transportation to and from the *quarantine station* and during the quarantine period;
   d) showed no clinical sign of VEE on the day of shipment.

In addition, animals may be isolated in the *importing country* for seven days under official veterinary supervision. Any animal which shows a rise in temperature (taken daily) shall be subjected to a blood test for virus isolation.

NB: FIRST ADOPTED IN 1976; MOST RECENT UPDATE ADOPTED IN 1998.

SECTION 13.

LEPORIDAE

CHAPTER 13.1.

MYXOMATOSIS

Article 13.1.1.

General provisions

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 13.1.2.

Recommendations for the importation of domestic rabbits

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of myxomatosis on the day of shipment;
2) were kept since birth, or for the six months prior to shipment, in an *establishment* where no *case* of myxomatosis was officially reported during that period.

Article 13.1.3.

Recommendations for the importation of skins and fur of domestic and wild rabbits

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the skins and fur were treated (dried and tanned) to ensure the destruction of the myxomatosis virus.

NB: FIRST ADOPTED IN 1968.

CHAPTER 13.2.

RABBIT HAEMORRHAGIC DISEASE

Article 13.2.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for rabbit haemorrhagic disease (RHD) shall be 60 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 13.2.2.

RHD free country

A country may be considered free from RHD when it has been shown that the disease has not been present for at least one year, that no *vaccination* has been carried out in the previous 12 months, and that virological or serological surveys in both domestic and *wild* rabbits have confirmed the absence of the disease.

This period may be reduced to six months after the last *case* has been eliminated and *disinfection* procedures completed in countries adopting a *stamping-out policy*, and where the serological survey confirmed that the disease had not occurred in the *wild* rabbits.

Article 13.2.3.

RHD free establishment

An *establishment* may be considered free from RHD when it has been shown, by serological testing, that the disease has not been present for at least one year, and that no *vaccination* has been carried out in the previous 12 months. Such *establishments* should be regularly inspected by the *Veterinary Authority*.

A previously infected *establishment* may be considered free when six months have elapsed after the last *case* has been eliminated, and after:

1) a *stamping-out policy* has been adopted and carcasses have been disposed of by burning;
2) the rabbitry has been thoroughly disinfected and kept empty for at least six weeks;
3) the rabbitry is properly fenced to prevent the straying of *wild* lagomorphs into the rabbitry.

Article 13.2.4.

Trade in commodities

Veterinary Authorities of RHD free countries may prohibit importation or transit through their territory, from countries considered infected with RHD, of live rabbits, semen, *meat* and non-treated pelts.

Article 13.2.5.

Recommendations for importation from RHD free countries

For domestic rabbits destined for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of RHD on the day of shipment;
2) were kept in a RHD free country since birth or for at least the past 60 days.

Article 13.2.6.

Recommendations for importation from RHD free countries

For day-old rabbits destined for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of RHD on the day of shipment;

2) were born from female rabbits which had been kept in a country free from RHD for at least the past 60 days.

Article 13.2.7.

Recommendations for importation from countries considered infected with RHD

For domestic rabbits destined for breeding or pharmaceutical or surgical or agricultural or industrial use

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of RHD on the day of shipment;

AND

2) were kept in a RHD free *establishment* where no clinical *case* of RHD was found when inspected by an *Official Veterinarian* immediately prior to shipment;

OR

3) were kept in an *establishment* where no *case* of RHD was reported during the 60 days prior to shipment and no clinical *case* of RHD was found when inspected by an *Official Veterinarian* immediately prior to shipment; and

4) were kept in an *establishment* where no animal has been vaccinated against RHD; and

5) were kept in an *establishment* where breeding rabbits (at least 10% of the animals) were subjected to the serological test for RHD with negative results during the 60 days prior to shipment; and

6) have not been vaccinated against RHD; or

7) were vaccinated against RHD immediately before shipment (the nature of the vaccine used and the date of *vaccination* shall also be stated in the certificate).

Article 13.2.8.

Recommendations for importation from countries considered infected with RHD

For day-old rabbits destined for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) were kept in a RHD free *establishment* where no clinical *case* of RHD was found when inspected by an *Official Veterinarian* immediately prior to shipment;

OR

2) were kept in an *establishment* where no *case* of RHD was reported during the 30 days prior to shipment and no clinical *case* of RHD was found when inspected by an *Official Veterinarian* immediately before shipment; and

3) have not been vaccinated against RHD; and

4) were born from female rabbits which were subjected to the serological test for RHD with negative results during the 60 days prior to shipment.

Article 13.2.9.

Recommendations for importation from countries considered infected with RHD

For domestic rabbits destined for immediate slaughter

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of RHD on the day of shipment;
2) were kept in an *establishment* where no *case* of RHD was reported during the 60 days prior to shipment.

Article 13.2.10.

Recommendations for importation from countries considered infected with RHD

For semen

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the donor animals:

1) showed no clinical sign of RHD on the day of collection of the semen;
2) were subjected to the serological test for RHD with negative results during the 30 days prior to collection.

Article 13.2.11.

Recommendations for importation from countries considered infected with RHD

For domestic rabbit meat

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *meat* comes from animals which:

1) were kept in an *establishment* where no *case* of RHD was reported during the 60 days prior to transport to the approved *slaughterhouse/abattoir*;
2) were subjected to ante-mortem inspections for RHD with favourable results;
3) showed no lesions of RHD at post-mortem inspections.

Article 13.2.12.

Recommendations for importation from RHD free countries

For non-treated pelts

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the pelts come from rabbits which had been kept in a country free from RHD for at least 60 days before *slaughter*.

Article 13.2.13.

Recommendations for importation from countries considered infected with RHD

For pelts

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the pelts were subjected to a drying treatment for at least one month and a formalin-based treatment by spraying at a 3% concentration, or by fumigation carried out, not more than seven days prior to shipment.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 2012.

SECTION 14.

CAPRINAE

CHAPTER 14.1.

CAPRINE ARTHRITIS/ENCEPHALITIS

Article 14.1.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 14.1.2.

Recommendations for the importation of goats for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of caprine arthritis/encephalitis on the day of shipment;
2) animals over one year of age were subjected to a diagnostic test for caprine arthritis/encephalitis with negative results during the 30 days prior to shipment; or
3) caprine arthritis/encephalitis was neither clinically nor serologically diagnosed in the sheep and goats present in the *flocks* of origin during the past three years, and also that no sheep or goat from a *flock* of inferior health status was introduced into these *flocks* during that period.

NB: FIRST ADOPTED IN 1992.

CHAPTER 14.2.

CONTAGIOUS AGALACTIA

Article 14.2.1.

Recommendations for the importation of sheep and goats

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of contagious agalactia on the day of shipment;
2) were kept since birth or for the six months prior to shipment in an *establishment* where no *case* of contagious agalactia was officially reported during that period;
3) were kept in a *quarantine station* for the 21 days prior to shipment.

NB: FIRST ADOPTED IN 1968.

CHAPTER 14.3.

CONTAGIOUS CAPRINE PLEUROPNEUMONIA

Article 14.3.1.

General provisions

For the purposes of the *Terrestrial Code*, contagious caprine pleuropneumonia (CCPP) is defined as a disease of goats caused by *Mycoplasma capricolum* subspecies *capripneumoniae*. The *incubation period* for the disease shall be 45 days (chronic carriers occur).

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 14.3.2.

CCPP free country

A country may be considered free from CCPP when it has been shown that CCPP is not present and that one year has elapsed after the *slaughter* of the last affected animal for countries in which a *stamping-out policy* is practised.

Article 14.3.3.

CCPP infected zone

A *zone* shall be considered as infected with CCPP until at least 45 days have elapsed after the confirmation of the last *case* and the completion of a *stamping-out policy* and *disinfection* procedures.

Article 14.3.4.

Trade in commodities

Veterinary Authorities of CCPP free countries may prohibit importation or transit through their territory, from countries considered infected with CCPP, of domestic and *wild* goats, and may prohibit importation into their territory, from countries considered infected with CCPP, of semen of domestic and *wild* goats and of oocytes or embryos of domestic goats.

Article 14.3.5.

Recommendations for importation from CCPP free countries

For domestic goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of CCPP on the day of shipment;

2) were kept in a CCPP free country since birth or for at least three months.

Article 14.3.6.

Recommendations for importation from CCPP free countries

For wild goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of CCPP on the day of shipment;
2) were kept in a CCPP free country;

if the animals originated from an area adjacent to a country considered infected with CCPP:

3) were kept in a *quarantine station* for at least the 45 days prior to shipment.

Article 14.3.7.

Recommendations for importation from countries considered infected with CCPP

For domestic goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of CCPP on the day of shipment;
2) were subjected to a complement fixation test for CCPP with negative results, on two occasions, with an interval of not less than 21 days and not more than 30 days between each test, the second test being performed within 14 days prior to shipment (under study);
3) were isolated from other domestic goats from the day of the first complement fixation test until shipment;
4) were kept since birth, or for at least the past 45 days, in an *establishment* where no *case* of CCPP was officially reported during that period, and that the *establishment* of origin was not situated in a CCPP infected *zone*;
5) have not been vaccinated against CCPP; or
6) were vaccinated not more than four months prior to shipment. In this case, point 2 above is not required (under study).

Article 14.3.8.

Recommendations for importation from countries considered infected with CCPP

For goats for immediate slaughter

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of CCPP on the day of shipment;
2) were kept since birth, or for at least the past 45 days, in an *establishment* where no *case* of CCPP was officially reported during that period, and that the *establishment* of origin was not situated in a CCPP infected *zone*.

Article 14.3.9.

Recommendations for importation from countries considered infected with CCPP

For wild goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of CCPP on the day of shipment;
2) were kept, for at least the past 45 days prior to shipment, in a *quarantine station* where no *case* of CCPP was officially reported during that period, and that the *quarantine station* was not situated in a CCPP infected *zone*;
3) have not been vaccinated against CCPP; or
4) were vaccinated not more than four months prior to shipment (under study).

Article 14.3.10.

Recommendations for importation from CCPP free countries

For oocytes or embryos of goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) showed no clinical sign of CCPP on the day of collection;
   b) were kept in a CCPP free country;
2) the oocytes or embryos were collected in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 14.3.11.

Recommendations for importation from countries considered infected with CCPP

For oocytes or embryos of goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) showed no clinical sign of CCPP on the day of collection; and
   b) were isolated from other domestic goats from the day of the test until collection;
   c) were kept since birth, or for at least the 45 days prior to collection, in an *establishment* where no *case* of CCPP was officially reported during that period, and that the *establishment* of origin was not situated in a CCPP infected *zone*;
2) the collection fluids and/or degenerated and unfertilised oocytes were subjected to a validated culture or PCR test for CCPP with negative results;
3) the oocytes or embryos were collected in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 14.3.12.

Recommendations for importation from countries considered infected with CCPP

For fresh meat of goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from animals:

1) which originate from *establishments* free of CCPP;
2) which have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to an ante-mortem inspection for CCPP with favourable results; and
3) which showed no lesions of CCPP at the post-mortem inspection.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 2008.

CHAPTER 14.4.

INFECTION WITH *CHLAMYDIA ABORTUS* (ENZOOTIC ABORTION OF EWES, OVINE CHLAMYDIOSIS)

Article 14.4.1.

General provisions

For the purposes of the *Terrestrial Code*, enzootic abortion of ewes (EAE), also known as ovine chlamydiosis or ovine enzootic abortion, is an *infection* of domestic sheep and goats by the bacterium *Chlamydia abortus*.

Susceptible animals become infected through ingestion of infectious materials. In lambs and non-pregnant ewes, the *infection* remains latent until conception. Ewes exposed to *infection* late in pregnancy may not exhibit signs of *infection* until the subsequent pregnancy. Countries should take account of these risk factors.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 14.4.2.

Recommendations for the importation of sheep or goats for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) have remained since birth, or for the previous two years, in *establishments* where no EAE has been diagnosed during the past two years;

2) showed no clinical sign of EAE on the day of shipment;

3) were subjected to a diagnostic test for EAE with negative results within the 30 days prior to shipment.

Article 14.4.3.

Sheep or goat flocks free from EAE infection

To qualify as free from EAE *infection*, a sheep or goat *flock* shall satisfy the following requirements:

1) it is under official veterinary *surveillance*;

2) all sheep and goats showed no clinical evidence of EAE *infection* during the past two years;

3) a statistically valid number of sheep and goats over six months of age were subjected to a diagnostic test for EAE with negative results within the past six months;

4) all sheep or goats are permanently identified;

5) no sheep or goat has been added to the *flock* since 30 days prior to the *flock* test referred to in point 3 above unless:

   a) either the additions were isolated from other members of the *flock* in the *establishment* of origin for a minimum period of 30 days and then were subjected to a diagnostic test for EAE with negative results, before entry into the new *flock*; or

   b) they originated from an *establishment* of equal health status.

Article 14.4.4.

Recommendations for the importation of semen of sheep or goats

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the donor animals showed no clinical sign on the day of the semen collection; and

1) have been kept in *establishments* or *artificial insemination centres* free from EAE in accordance with Article 14.4.3. for the two years prior to collection, and have not been in contact with animals of a lower health status; or
2) have remained since birth, or for the two years prior to collection, in *establishments* where no EAE has been diagnosed and were subjected to a diagnostic test for EAE with negative results two to three weeks after collection of the semen.

Article 14.4.5.

Recommendations for the importation of embryos of sheep or goats

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the donor animals showed no clinical sign on the day of collection; and

1) have been kept in *establishments* free from EAE in accordance with Article 14.4.3. for the two years prior to collection, and have not been in contact with animals of a lower health status; or
2) have remained since birth, or for the two years prior to collection, in *establishments* where no EAE has been diagnosed and were subjected to a diagnostic test for EAE with negative results two to three weeks after collection.

The embryos should be collected, processed and stored in accordance with Chapter 4.8.

NB: FIRST ADOPTED IN 1992; MOST RECENT UPDATE ADOPTED IN 2019.

CHAPTER 14.5.

MAEDI-VISNA

Article 14.5.1.

General provisions

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 14.5.2.

Recommendations for the importation of sheep and goats for breeding

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of maedi-visna on the day of shipment;
2) animals over one year of age were subjected to a diagnostic test for maedi-visna with negative results during the 30 days prior to shipment;
3) maedi-visna was neither clinically nor serologically diagnosed in the sheep and goats present in the *flocks* of origin during the past three years, and also that no sheep or goat from a *flock* of inferior health status was introduced into these *flocks* during that period.

NB: FIRST ADOPTED IN 1992.

CHAPTER 14.6.

OVINE EPIDIDYMITIS (*BRUCELLA OVIS*)

Article 14.6.1.

General provisions

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 14.6.2.

Sheep flock free from ovine epididymitis

To qualify as free from ovine epididymitis, a sheep *flock* shall satisfy the following requirements:

1) it is under *official veterinary control*;
2) all sheep in the *flock* showed no clinical evidence of ovine epididymitis during the past year;
3) all sheep in the *flock* are permanently identified.

If some or all the males in the *flock* are vaccinated, the *flock* should still be regarded as free.

Article 14.6.3.

Recommendations for the importation of sheep for breeding or rearing (except castrated males)

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of ovine epididymitis on the day of shipment;
2) the animals come from a sheep *flock* free from ovine epididymitis;
3) for sheep over six months of age, the animals were isolated in the *establishment* of origin for the 30 days prior to shipment and were subjected to the diagnostic tests for *Brucella ovis (B. ovis)* with negative results; or
4) for sheep from a *flock* other than that stated in point 2 above, the animals were isolated prior to shipment and were subjected to the diagnostic tests for *B. ovis* with negative results on two occasions, with an interval of 30 to 60 days between each test, the second test being performed during the 15 days prior to shipment.

Article 14.6.4.

Recommendations for the importation of semen of sheep

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
    a) showed no clinical sign of ovine epididymitis on the day of collection of the semen;
    b) come from a sheep *flock* free from ovine epididymitis;
    c) were kept in the *exporting country* for the 60 days prior to collection, in an *establishment* or *artificial insemination centre* where all animals are free from ovine epididymitis;
    d) were subjected to the diagnostic tests for *B. ovis* with negative results during the 30 days prior to collection;

2) the semen does not contain *B. ovis* or other *Brucella* antibodies.

NB: FIRST ADOPTED IN 1982.

CHAPTER 14.7.

INFECTION WITH PESTE DES PETITS RUMINANTS VIRUS

Article 14.7.1.

General provisions

Peste des petits ruminants (PPR) susceptible animals are primarily domestic sheep and goats although cattle, camels, buffaloes and some *wild* ruminant species can also be infected and may act as sentinels indicating the spill over of peste des petits ruminants virus (PPRV) from domestic small ruminants. Even if some *wild* small ruminants can be infective, only domestic sheep and goats play a significant epidemiological role.

For the purposes of the *Terrestrial Code*, PPR is defined as an *infection* of domestic sheep and goats with PPRV.

This chapter deals not only with the occurrence of clinical signs caused by PPRV, but also with the presence of *infection* with PPRV in the absence of clinical signs.

The following defines the occurrence of PPRV *infection*:

1) PPRV, excluding vaccine strains, has been isolated and identified as such from a domestic sheep or goat or a product derived from it; or

2) antigen or ribonucleic acid specific to PPRV, excluding vaccine strains, has been identified in samples from a domestic sheep or goat showing clinical signs consistent with PPR, or epidemiologically linked to an *outbreak* of PPR, or giving cause for suspicion of association or contact with PPR; or

3) antibodies to PPRV antigens which are not the consequence of *vaccination*, have been detected in a domestic sheep or goat with either epidemiological links to a confirmed or suspected *outbreak* of PPR or showing clinical signs consistent with recent *infection* of PPRV.

For the purposes of the *Terrestrial Code*, the *incubation period* for PPR shall be 21 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 14.7.2.

Safe commodities

When authorising import or transit through their territory of semi-processed hides and skins (limed hides, pickled pelts, and semi-processed leather, e.g. wet blue and crust leather) which have been submitted to the usual chemical and mechanical processes in use in the tanning industry, *Veterinary Authorities* should not require any PPR-related conditions regardless of PPR status of the *exporting country* or *zone*.

Article 14.7.3.

Country or zone free from PPR

A country or *zone* may be considered free from PPR when the relevant provisions in point 2 of Article 1.4.6. have been complied with, and when within the proposed free country or *zone* for at least the past 24 months:

1) there has been no *case* of *infection* with PPRV;
2) the *Veterinary Authority* has current knowledge of, and authority over, all domestic sheep and goats in the country or *zone*;

3) appropriate *surveillance* has been implemented in accordance with:
   a) Article 1.4.6. where historical freedom can be demonstrated; or
   b) Articles 14.7.27. to 14.7.33. where historical freedom cannot be demonstrated;
4) measures to prevent the introduction of the *infection* have been in place: in particular, the importations or movements of *commodities* into the country or *zone* have been carried out in accordance with this chapter and other relevant chapters of the *Terrestrial Code*;
5) no *vaccination* against PPR has been carried out;
6) no animals vaccinated against PPR have been introduced since the cessation of *vaccination*.

The country or *zone* will be included in the list of countries or *zones* free from PPR in accordance with Chapter 1.6.

Retention on the list requires annual reconfirmation of compliance with all points above and relevant provisions under point 4 of Article 1.4.6. Documented evidence should be resubmitted annually for points 1 to 4 above. Any changes in the epidemiological situation or other significant events should be notified to WOAH in accordance with Chapter 1.1.

Article 14.7.4.

PPR free compartment

A PPR free *compartment* can be established in either a PPR free country or *zone* or in an infected country or *zone*. In defining such a *compartment* the principles of Chapters 4.4. and 4.5. should be followed. Domestic sheep and goats in the PPR free *compartment* should be separated from any other susceptible animals by the application of an effective *biosecurity* management system.

A Member Country wishing to establish a PPR free *compartment* should:

1) have a record of regular and prompt animal disease reporting and if not PPR free, have an *official control programme* and a *surveillance* system for PPR in place in accordance with Articles 14.7.27. to 14.7.33. that allows an accurate knowledge of the prevalence of PPR in the country or *zone*;
2) declare for the PPR free *compartment* that:
   a) there has been no *outbreak* of PPR during the past 24 months;
   b) no evidence of PPRV *infection* has been found during the past 24 months;
   c) *vaccination* against PPR is prohibited;
   d) no small ruminant in the *compartment* has been vaccinated against PPR within the past 24 months;
   e) animals, semen and embryos only enter the *compartment* in accordance with relevant articles in this chapter;
   f) documented evidence shows that *surveillance* in accordance with Articles 14.7.27. to 14.7.33. is in place;
   g) an *animal identification* and *traceability* system in accordance with Chapters 4.2. and 4.3. is in place;
3) describe in detail the animal subpopulation in the *compartment* and the *biosecurity plan* for PPRV *infection*.

The *compartment* should be approved by the *Veterinary Authority*.

Article 14.7.5.

PPRV infected country or zone

A country or *zone* shall be considered as PPRV infected when the requirements for acceptance as a PPR free country or *zone* are not fulfilled.

Article 14.7.6.

Establishment of a containment zone within a PPR free country or zone

In the event of limited *outbreaks* within a PPR free country or *zone*, including within a *protection zone*, a single *containment zone*, which includes all *cases*, can be established for the purposes of minimising the impact on the entire country or *zone*.

For this to be achieved and for the Member Country to take full advantage of this process, the *Veterinary Authority* should submit documented evidence as soon as possible to WOAH that:

1) the *outbreaks* are limited based on the following factors:
   a) immediately on suspicion, a rapid response including *notification* has been made;
   b) standstill of animal movements has been imposed, and effective controls on the movement of other *commodities* mentioned in this chapter are in place;
   c) epidemiological investigation (trace-back, trace-forward) has been completed;
   d) the *infection* has been confirmed;
   e) the primary *outbreak* has been identified, and investigations on the likely source of the *outbreak* have been carried out;
   f) all *cases* have been shown to be epidemiologically linked;
   g) no new *cases* have been found in the *containment zone* with a minimum of two *incubation periods* as defined in Article 14.7.1. after the stamping-out of the last detected *case* is completed;
2) a *stamping-out policy* has been applied;
3) the susceptible animal population within the *containment zones* is clearly identifiable as belonging to the *containment zone*;
4) increased passive and targeted *surveillance* in accordance with Articles 14.7.27. to 14.7.33. in the rest of the country or *zone* has not detected any evidence of *infection*;
5) animal health measures that effectively prevent the spread of the PPRV to the rest of the country or *zone*, taking into consideration physical and geographical barriers, are in place;
6) ongoing *surveillance* is in place in the *containment zone*.

The free status of the areas outside the *containment zone* is suspended while the *containment zone* is being established. The free status of these areas may be reinstated irrespective of Article 14.7.7., once the *containment zone* is clearly established, by complying with points 1 to 6 above. It should be demonstrated that *commodities* for *international trade* have originated outside the *containment zone*.

The recovery of the PPR free status of the *containment zone* should follow Article 14.7.7.

Article 14.7.7.

Recovery of free status

Should an *outbreak* of PPR occur in a previously free country or *zone*, its status may be recovered six months after the *disinfection* of the last affected *establishment*, provided that:

1) a *stamping-out policy* has been implemented;
2) *surveillance* in accordance with Article 14.7.32. has been carried out with negative results.

Otherwise, Article 14.7.3. applies.

The PPR free status of the country or *zone* will be reinstated only after the submitted evidence has been accepted by WOAH.

Article 14.7.8.

Recommendations for importation from PPR free countries or zones

For domestic sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of PPR on the day of shipment;
2) were kept in a PPR free country or *zone* since birth or for at least the past 21 days.

Article 14.7.9.

Recommendations for importation from PPR free countries or zones

For wild ruminants

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign suggestive of PPRV *infection* on the day of shipment;
2) come from a PPR free country or *zone*;
3) if the country or *zone* of origin has a common border with a country considered infected with PPRV:
   a) were captured at a distance from the border that precludes any contact with animals in an infected country, the distance should be defined in accordance with the biology of the species exported, including home range and long distance movements;

   OR

   b) were kept in a *quarantine station* for at least 21 days prior to shipment.

Article 14.7.10.

Recommendations for importation from countries or zones considered infected with PPRV

For domestic sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign suggestive of PPRV *infection* for at least the 21 days prior to shipment;
2) either:
   a) were kept since birth, or for at least the 21 days prior to shipment, in an *establishment* where no *case* of PPR was reported during that period, and that the *establishment* was not situated in a PPRV infected *zone*; or
   b) were kept in a *quarantine station* for at least the 21 days prior to shipment;
3) either:
   a) were not vaccinated against PPR and were submitted to a diagnostic test for PPRV *infection* with negative result no more than 21 days prior to shipment; or
   b) were vaccinated against PPR with live attenuated PPRV vaccines at least 21 days prior to shipment.

Article 14.7.11.

Recommendations for importation from countries or zones considered infected with PPRV

For wild ruminants

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign suggestive of PPRV *infection* for at least the 21 days prior to shipment;
2) were submitted to a diagnostic test for PPRV *infection* with negative results no more than 21 days prior to shipment;
3) were kept in a *quarantine station* for at least the 21 days prior to shipment.

Article 14.7.12.

Recommendations for importation from PPR free countries or zones

For semen of domestic sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor animals:

1) showed no clinical sign of PPR on the day of the collection of the semen and during the following 21 days;
2) were kept in a PPR free country or *zone* for at least the 21 days prior to collection.

Article 14.7.13.

Recommendations for importation from countries or zones considered infected with PPRV

For semen of domestic sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor animals:

1) showed no clinical sign suggestive of PPRV *infection* for at least the 21 days prior to collection of the semen and during the following 21 days;

2) were kept, for at least the 21 days prior to collection, in an *establishment* or *artificial insemination centre* where no *case* of PPR was reported during that period, which was not situated in a PPRV infected *zone* and to which no animals had been added during the 21 days prior to collection;

3) were not vaccinated against PPR and were submitted to a diagnostic test for PPRV *infection* with negative results at least 21 days prior to collection of the semen;

OR

4) were vaccinated against PPR with live attenuated PPRV vaccines at least 21 days prior to semen collection.

Article 14.7.14.

Recommendations for importation from PPR free countries or zones

For embryos of domestic sheep and goats and captive wild ruminants

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals were kept in an *establishment* located in a PPR free country or *zone* at least 21 days prior to embryo collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant;
3) semen of domestic sheep and goats used to fertilise the oocytes complies at least with the requirements in Article 14.7.12. or Article 14.7.13.

Article 14.7.15.

Recommendations for importation from countries or zones considered infected with PPRV

For embryos of domestic sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
    a) and all other animals in the *establishment* showed no clinical sign suggestive of PPRV *infection* at the time of collection and during the following 21 days;
    b) were kept, for at least the 21 days prior to collection, in an *establishment* where no *case* of PPR was reported during that period, and to which no susceptible animals had been added during the 21 days prior to collection;
    c) were not vaccinated against PPR and were subjected to a diagnostic test for PPRV *infection* with negative results at least 21 days prior to collection;

    OR

    d) were vaccinated against PPR with live attenuated PPRV vaccines at least 21 days prior to embryo collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant;
3) semen of domestic sheep and goats used to fertilise the oocytes complies at least with the requirements in Article 14.7.12. or Article 14.7.13.

Article 14.7.16.

Recommendations for importation from countries or zones considered infected with PPRV

For embryos of captive wild ruminants

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) showed no clinical sign suggestive of *infection* with PPRV for at least the 21 days prior to embryo collection;
   b) were not vaccinated against PPR and were subjected to a diagnostic test for PPRV *infection* with negative results at least 21 days prior to collection;
   c) were kept, for at least the 21 days prior to collection, in an *establishment* where no *case* of PPR or of *infection* with PPRV was reported during that period, and to which no susceptible animals had been added during the 21 days prior to collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 14.7.17.

Recommendations for importation of fresh meat and meat products from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* comes from animals which:

1) showed no clinical sign of PPR within 24 hours before *slaughter*;
2) have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results.

Article 14.7.18.

Recommendations for importation from PPR free countries or zones

For milk and milk products from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products come from animals which have been kept in a PPR free country or *zone* for at least the 21 days prior to milking.

Article 14.7.19.

Recommendations for importation from countries or zones considered infected with PPRV

For milk from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the *milk*:
   a) originates from *flocks* which were not subjected to any restrictions due to PPR at the time of *milk* collection;

   OR

   b) has been processed to ensure the destruction of the PPRV in accordance with one of the procedures referred to in Articles 8.8.35. and 8.8.36.;
2) the necessary precautions were taken to avoid contact of the products with any potential source of PPRV.

Article 14.7.20.

Recommendations for importation from countries or zones considered infected with PPRV

For milk products from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) these products are derived from *milk* complying with the requirements of Article 14.7.19.;
2) the necessary precautions were taken after processing to avoid contact of the *milk products* with any potential source of PPRV.

Article 14.7.21.

Recommendations for importation from PPR free countries or zones

For products of sheep and goats, other than milk, fresh meat and their products

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products are derived from animals:

1) which have been kept in a PPR free country or *zone* since birth or for at least the past 21 days;
2) which have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results.

Article 14.7.22.

Recommendations for importation from countries or zones considered infected with PPRV

For meal and flour from blood, meat, defatted bones, hooves, claws and horns from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the products were processed using heat treatment to a minimum internal temperature of 70°C for at least 30 minutes;
2) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of PPRV.

Article 14.7.23.

Recommendations for importation from countries or zones considered infected with PPRV

For hooves, claws, bones and horns, hunting trophies and preparations destined for museums from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the products were completely dried and had no trace on them of skin, flesh or tendon or were adequately disinfected; and
2) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of PPRV.

Article 14.7.24.

Recommendations for importation from countries or zones infected with PPRV

For wool, hair, raw hides and skins from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products were processed in accordance with one of the following, in premises controlled and approved by the *Veterinary Authority* of the *exporting country*:

1. For wool and hair:
   a) industrial washing, which consists of the immersion of the wool in a series of baths of water, soap and sodium hydroxide (soda) or potassium hydroxide (potash);
   b) chemical depilation by means of slaked lime or sodium sulphide;
   c) fumigation with formaldehyde in a hermetically sealed chamber for at least 24 hours;
   d) industrial scouring which consists of the immersion of wool in a water-soluble detergent held at 60-70°C;
   e) storage of wool at 4°C for four months, 18°C for four weeks or 37°C for eight days.

2. For raw hides and skins:
   a) treatment for at least 28 days with salt (NaCl) containing 2% sodium carbonate (Na_2CO_3).

And

The necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of PPRV.

Article 14.7.25.

Recommendations for importation from countries or zones considered infected with PPRV

For products of animal origin from sheep and goats intended for pharmaceutical or surgical use

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products:

1) come from animals which were slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results;
2) were processed to ensure the destruction of the PPRV in accordance with one of the procedures referred to in Article 8.8.26. or in Articles 8.8.31. to 8.8.34. as appropriate and in premises controlled and approved by the *Veterinary Authority* of the *exporting country*.

Article 14.7.26.

Procedures for the inactivation of the PPRV in casings of sheep and goats

For the inactivation of PPRV in *casings* of sheep and goats, the following procedures should be used: treatment for at least 30 days either with dry salt (NaCl) or with saturated brine (a_w< 0.80), or with phosphate supplemented salt containing 86.5% NaCl, 10.7% Na_2HPO_4 and 2.8% Na_3PO_4 (weight/weight/weight), either dry or as a saturated brine (a_w< 0.80), and kept at a temperature of 20°C or more during this entire period.

Article 14.7.27.

Introduction to surveillance

Articles 14.7.27. to 14.7.33. define the principles and provide a guide for the *surveillance* of PPR in accordance with Chapter 1.4. applicable to Member Countries seeking recognition of country or zonal freedom from PPR. Guidance is provided for Member Countries seeking reestablishment of freedom following an *outbreak* and for the maintenance of PPR free status.

Surveillance strategies employed for demonstrating freedom from PPR at an acceptable level of confidence should be adapted to the local situation. *Outbreaks* of PPR may vary in severity with differing clinical presentations believed to reflect variations in host resistance and variations in the virulence of the attacking strain. Experience has shown that *surveillance* based on a predefined set of clinical signs (e.g. searching for 'pneumo-enteritis syndrome') increases the sensitivity of the system. In the case of peracute cases the presenting sign may be sudden death. In the case of sub-acute (mild) cases, clinical signs are displayed irregularly and are difficult to detect.

Where they exist, susceptible domestic species, and *feral* populations of these species, should be included in the design of the *surveillance* strategy.

Surveillance for PPR should be in the form of a continuing programme designed to establish that the whole country or *zone* is free from PPRV *infection*.

Article 14.7.28.

General conditions and methods for surveillance

1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. A procedure should be in place for the rapid collection and transport of samples from suspected *cases* to a *laboratory* for PPR diagnosis.
2) The PPR *surveillance* programme should:
    a) include an *early warning system* throughout the production, marketing and processing chain for reporting suspected *cases*. Farmers and workers who have day-to-day contact with livestock, as well as diagnosticians, should report promptly any suspicion of PPR. They should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary paraprofessionals*) by government information programmes and the *Veterinary Authority*. All significant epidemiological events consistent with PPR, such as pneumo-enteritis syndrome, should be reported and investigated immediately. Where suspicion cannot be resolved by epidemiological and clinical investigation, samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment be available to those responsible for *surveillance*. Personnel

responsible for *surveillance* should be able to call for assistance from a team with expertise in PPR diagnosis and control;

b) implement, when relevant, regular and frequent clinical inspection and serological testing of high-risk groups of animals, such as those adjacent to a PPRV infected country.

An effective *surveillance* system will periodically identify animals with signs suggestive of PPR that require follow-up and investigation to confirm or exclude that the cause of the condition is PPRV. The rate at which such suspected *cases* are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. Applications for freedom from PPRV *infection* should, in consequence, provide details of the occurrence of suspected *cases* and how they were investigated and dealt with. This should include the results of *laboratory* testing and the control measures to which the animals concerned were subjected during the investigation (quarantine, movement stand-still orders, etc.).

Article 14.7.29.

Surveillance strategies

1. Clinical surveillance

Clinical *surveillance* aims to detect clinical signs of PPR by close physical examination. Clinical *surveillance* and epidemiological investigations are the cornerstone of all *surveillance* systems and should be supported by additional strategies such as virological and serological *surveillance*. Clinical *surveillance* may be able to provide a high level of confidence of detection of disease if sufficiently large numbers of clinically susceptible animals are examined. It is essential that clinical *cases* detected be followed up by the collection of appropriate samples such as ocular and nasal swabs, blood or other tissues for virus isolation or virus detection by other means. Sampling units within which suspicious animals are detected should be classified as infected until fully investigated.

Active search for clinical disease can include participatory disease searching, tracing backwards and forwards, and follow-up investigations. Participatory *surveillance* is a form of targeted active *surveillance* based upon methods to capture livestock owners' perceptions on the prevalence and patterns of disease.

The labour requirements and the logistical difficulties involved in conducting clinical examinations should be taken into account.

PPRV isolates may be sent to a WOAH Reference Laboratory for further characterisation.

2. Virological surveillance

Given that PPR is an acute *infection* with no known carrier state, virological *surveillance* should only be conducted as a follow-up to clinically suspected *cases*.

3. Serological surveillance

Serological *surveillance* aims to detect antibodies against PPRV. Positive antibody test results can have four possible causes:

a) natural *infection* with PPRV;

b) *vaccination* against PPR;

c) maternal antibodies derived from an immune dam (maternal antibodies in small ruminants can be found only up to six months of age);

d) heterophile (cross) and other non-specific reactions.

It may be possible to use serum collected for other survey purposes for PPR *surveillance*. However, the principles of survey design described in this chapter and the requirement for a statistically valid survey for the presence of PPRV should not be compromised.

The discovery of clustering of seropositive reactions should be foreseen. It may reflect any of a series of events, including but not limited to the demographics of the population sampled, vaccinal exposure or the presence of field strain *infection*. As clustering may signal field strain *infection*, the investigation of all instances must be incorporated in the survey design.

The results of random or targeted serological surveys are important in providing reliable evidence that PPRV *infection* is not present in a country or *zone*. It is therefore essential that the survey be adequately documented.

Article 14.7.30.

Surveillance in wildlife

Where a population of a susceptible *wildlife* species may act as sentinels indicating the spill over of PPRV from domestic sheep and goats, serosurveillance data should be collected.

Obtaining meaningful data from *surveillance* in *wildlife* can be enhanced by close coordination of activities in a region. Both purposive and opportunistic samplings are used to obtain material for analysis in national or reference *laboratories*. The latter are required because many countries do not have adequate facilities to perform the full testing protocol for detecting antibodies against PPRV in *wildlife* sera.

Targeted sampling is the preferred method to provide *wildlife* data to evaluate the status of *infection* with PPRV. In reality, the capacity to perform *wildlife* sampling is minimal in most countries. However, samples can be obtained from hunted animals, and these may provide useful background information.

Article 14.7.31.

Additional surveillance requirements for Member Countries applying for WOAH recognition of PPR free status

The strategy and design of the *surveillance* programme will depend on the prevailing epidemiological circumstances in and around the country or *zone* and should be planned and implemented in accordance with the conditions for status recognition described in Article 14.7.3. and methods in this chapter, to demonstrate absence of PPRV *infection* during the preceding 24 months. This requires the support of a *laboratory* able to undertake identification of PPRV *infection* through virus, antigen or viral nucleic acid detection and antibody tests.

The target population for *surveillance* aimed at identifying disease and *infection* should cover significant populations within the country or *zone* to be recognised as free from PPRV *infection*.

The strategy employed should be based on an appropriate combination of randomised and targeted sampling requiring *surveillance* consistent with demonstrating the absence of PPRV *infection* at an acceptable level of statistical confidence. The frequency of sampling should be dependent on the epidemiological situation. *Risk*-based approaches (e.g. based on the increased likelihood of *infection* in particular localities or species) may be appropriate to refine the *surveillance* strategy. The Member Country should justify the *surveillance* strategy chosen as adequate to detect the presence of PPRV *infection* in accordance with Chapter 1.4. and the epidemiological situation. It may, for example, be appropriate to target clinical *surveillance* at particular subpopulations likely to exhibit clear clinical signs.

Consideration should be given to the risk factors for the presence of PPRV, including:

1) historical disease patterns;
2) critical population size, structure and density;
3) livestock husbandry and farming systems;
4) movement and contact patterns, such as market and other trade-related movements;
5) virulence and infectivity of the strain.

The sample size selected for testing should be large enough to detect *infection* if it were to occur at a predetermined minimum rate. The sample size and predetermined minimum disease prevalence determine the level of confidence in the results of the survey. The applicant Member Country should justify the choice of design, minimum prevalence and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the minimum prevalence in particular should be based on the prevailing or historical epidemiological situation.

Irrespective of the survey design selected, the sensitivity and specificity of the diagnostic tests employed are key factors in the design, sample size determination and interpretation of the results obtained.

Irrespective of the testing system employed, *surveillance* design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following-up positives to subsequently determine with a high level of confidence, whether they are indicative of *infection* or not. This should involve both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as *herds* or *flocks* which may be epidemiologically linked to it.

The principles involved in *surveillance* for disease or *infection* are technically well defined in Chapter 1.4. The design of *surveillance* programmes to demonstrate the absence of PPRV *infection* should be carefully followed to ensure the

reliability of results. The design of any *surveillance* programme, therefore, requires inputs from professionals competent and experienced in this field.

Article 14.7.32.

Additional surveillance requirements for recovery of free status

Following an *outbreak* of PPR in a Member Country at any time after recognition of PPR freedom, the origin of the virus strain should be thoroughly investigated. In particular it is important to determine if this is due to the re-introduction of virus or re-emergence from an undetected focus of *infection*. Ideally, the virus should be isolated and compared with historical strains from the same area as well as those representatives of other possible sources.

After elimination of the *outbreak*, a Member Country wishing to regain the free status should undertake *surveillance* in accordance with this chapter to demonstrate the absence of PPRV *infection*.

Article 14.7.33.

The use and interpretation of serological tests for serosurveillance of PPR

Serological testing is an appropriate tool to use for PPR *surveillance* where *vaccination* has not been practised. There is only one serotype of virus and the tests will detect antibodies elicited by *infection* with all PPRV but the tests cannot discriminate between antibodies against field *infection* and those from *vaccination* with attenuated vaccines. This fact compromises serosurveillance in vaccinated populations and meaningful serosurveillance can only commence once *vaccination* has ceased for several years. Antibodies against virulent and vaccine strains of PPRV can be detected in small ruminants from about 14 days post *infection* or *vaccination* and peak around 30 to 40 days. Antibodies then persist for many years, possibly for life, although titres decline with time.

It is necessary to demonstrate that positive serological results have been adequately investigated.

Article 14.7.34.

WOAH endorsed official control programme for PPR

A Member Country may, on a voluntary basis, apply for endorsement of its *official control programme* for PPR in accordance with Chapter 1.6., when it has implemented measures in accordance with this article.

For a Member Country's *official control programme* for PPR to be endorsed by WOAH, the Member Country should provide a detailed *official control programme* for the control and eventual eradication of PPR in the country or *zone*. This document should address and provide documented evidence on the following:

1) epidemiology:
   a) the detailed epidemiological situation of PPR in the country, highlighting the current knowledge and gaps;
   b) the main production systems and movement patterns of sheep and goats and their products within and into the country and, where applicable, the specific *zone*;
2) *surveillance* and diagnostic capabilities:
   a) PPR *surveillance* in place, in accordance with Chapter 1.4. and Articles 14.7.27. to 14.7.33.;
   b) diagnostic capability and procedures, including regular submission of samples to a *laboratory* that performs diagnostic testing and further characterisation of strains;
   c) serosurveillance conducted in susceptible species, including *wildlife*, to serve as sentinels for PPRV circulation in the country;
3) *vaccination*:
   a) *vaccination* is compulsory in the target population and is practised in accordance with Chapter 4.18.;
   b) detailed information on *vaccination* campaigns, in particular:
      i) the strategy that is adopted for the *vaccination* campaign;
      ii) target *populations* for *vaccination*;
      iii) target geographical area for *vaccination*;
      iv) monitoring of *vaccination* coverage, including serological monitoring of population immunity;
      v) the strategy to identify vaccinated animals;

vi) technical specification of the vaccines used and description of the vaccine licensing procedures in place;

vii) use of vaccines fully compliant with the standards and methods described in the *Terrestrial Manual*;

viii) the proposed strategy and work plan including the timeline for transition to the cessation of *vaccination*;

4) the measures implemented to prevent the introduction of the pathogenic agent and to ensure the rapid detection of all PPR *outbreaks*;

5) an emergency preparedness plan and an emergency response plan to be implemented in case of PPR *outbreaks*;

6) work plan and timelines of the *official control programme*;

7) performance indicators for assessing the effectiveness of the control measures to be implemented;

8) monitoring, evaluation and review of the *official control programme* to demonstrate the effectiveness of the strategies.

The country will be included in the list of countries having a WOAH endorsed *official control programme* for PPR in accordance with Chapter 1.6.

Retention on the list requires an annual update on the progress of the *official control programme* and information on significant changes concerning the points above.

NB: FIRST ADOPTED IN 1986; MOST RECENT UPDATE ADOPTED IN 2021.

CHAPTER 14.8.

SCRAPIE

Article 14.8.1.

General provisions and safe commodities

Scrapie is a neurodegenerative disease of sheep and goats. The main mode of transmission is from mother to offspring immediately after birth and to other susceptible neonates exposed to the birth fluids and tissues of an infected animal. Transmission occurs at a much lower frequency to adults exposed to the birth fluids and tissues of an infected animal. A variation in genetic susceptibility of sheep has been recognised. The *incubation period* of the disease is variable; however, it is usually measured in years. The duration in *incubation period* can be influenced by a number of factors including host genetics and strain of agent.

Scrapie is not considered to pose a risk to human health. The recommendations in this chapter are intended to manage the animal health risks associated with the presence of the scrapie agent in sheep and goats. The chapter excludes so-called 'atypical' scrapie because this condition is clinically, pathologically, biochemically and epidemiologically unrelated to 'classical' scrapie, may not be contagious and may, in fact, be a spontaneous degenerative condition of older sheep.

1) When authorising import or transit of the following *commodities* derived from sheep or goats and any products made from these *commodities* and containing no other tissues from sheep or goats, *Veterinary Authorities* should not require any scrapie-related conditions, regardless of the scrapie risk status of the sheep and goat populations of the *exporting country*, *zone* or *compartment*:
   a) *in vivo* derived sheep embryos handled in accordance with Chapter 4.8.;
   b) *meat* (excluding materials as referred to in Article 14.8.12.);
   c) hides and skins;
   d) gelatine;
   e) collagen prepared from hides or skins;
   f) tallow (maximum level of insoluble impurities of 0.15% in weight) and derivatives made from this tallow;
   g) dicalcium phosphate (with no trace of protein or fat);
   h) wool or fibre.
2) When authorising import or transit of other *commodities* listed in this chapter, *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the scrapie risk status of the sheep and goat populations of the *exporting country*, *zone* or *compartment*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 14.8.2.

Determination of the scrapie status of the sheep and goat populations of a country, zone, compartment or establishment

The scrapie status of the sheep and goat populations of a country, *zone*, *compartment* or *establishment* should be determined on the basis of the following criteria:

1) the outcome of a *risk assessment* identifying all potential factors for scrapie occurrence and their historic perspective, in particular the:
   a) importation or introduction of sheep and goats or their semen, *in vivo* derived goat embryos or *in vitro* processed sheep and goat oocytes or embryos potentially infected with scrapie;
   b) extent of knowledge of the population structure and husbandry practices of sheep and goats;
   c) feeding practices, including consumption of *protein meal* or *greaves* derived from ruminants;
   d) importation of *milk* and *milk products* of sheep or goats origin intended for use in feeding of sheep and goats;

2) an ongoing awareness programme for *veterinarians*, farmers, and workers involved in transportation, marketing and *slaughter* of sheep and goats to facilitate recognition and encourage reporting of all animals with clinical signs compatible with scrapie;
3) a *surveillance* and monitoring system including the following:
   a) official veterinary *surveillance*, reporting and regulatory control in accordance with Chapter 1.4.;
   b) a *Veterinary Authority* with current knowledge of, and authority over, all *establishments* which contain sheep and goats in the whole country;
   c) compulsory notification and clinical investigation of sheep and goats showing clinical signs compatible with scrapie;
   d) examination, in accordance with the *Terrestrial Manual*, in a *laboratory* of appropriate material from sheep and goats older than 18 months displaying clinical signs compatible with scrapie;
   e) maintenance of records including the number and results of all investigations for at least seven years.

Article 14.8.3.

Scrapie free country or zone

Countries or *zones* may be considered free from scrapie if within the said territory:

1) a *risk assessment*, as described in point 1 of Article 14.8.2., has been conducted, and it has been demonstrated that appropriate measures are currently in place and have been taken for the relevant period of time to manage any *risk* identified and points 2 and 3 have been complied with for the preceding seven years;

AND

2) one of the following conditions should be met:
   a) the country or the *zone* has demonstrated historical freedom as follows:
      i) scrapie has been notifiable for at least 25 years; and
      ii) a formal programme of targeted *surveillance* and monitoring, which includes testing of sheep and goats displaying clinical signs compatible with scrapie and those over 18 months of age slaughtered, culled or found dead on farm, can be documented as having been in place for at least 10 years; and
      iii) appropriate measures to prevent scrapie introduction can be documented as having been in place for at least 25 years; and
         – either scrapie has never been reported; or
         – no *case* of scrapie has been reported for at least 25 years;
   b) for at least seven years, sheep and goats displaying clinical signs compatible with scrapie have been tested. Also a sufficient number of sheep and goats over 18 months of age, representative of slaughtered, culled or found dead on farm, have been tested annually, to provide a 95% level of confidence of detecting scrapie if it is present in that population at a prevalence rate exceeding 0.1% and no *case* of scrapie has been reported during this period; or
   c) all *establishments* containing sheep or goats have been accredited free as described in Article 14.8.5.;

AND

3) the feeding to sheep and goats of *protein meal* or *greaves* of ruminant origin has been banned and effectively enforced in the whole country for at least seven years;

AND

4) introductions of sheep and goats or their semen, *in vivo* derived goat embryos or *in vitro* processed sheep and goat oocytes or embryos from countries or *zones* not free from scrapie are carried out in accordance with Articles 14.8.6., 14.8.7., 14.8.8. or 14.8.9., as relevant.

Article 14.8.4.

Compartment free from scrapie

To qualify as a *compartment* free from scrapie, all sheep and goats in a *compartment* should be certified by the *Veterinary Authority* as satisfying the following requirements:

1) all *establishments* within the *compartment* are free from scrapie in accordance with Article 14.8.5.;

2) all *establishments* within the *compartment* are managed under a common *biosecurity plan* protecting them from introduction of scrapie, and the *compartment* has been approved by the *Veterinary Authority* in accordance with Chapters 4.4. and 4.5.;

3) introductions of sheep and goats are allowed only from free *establishments* or free countries;

4) introductions of *in vivo* derived goat embryos and *in vitro* processed sheep and goat oocytes or embryos are allowed either from free *establishments* or in accordance with Article 14.8.9.;

5) sheep and goat semen should be introduced into the *compartment* in accordance with Article 14.8.8.;

6) sheep and goats in the *compartment* should have no direct or indirect contact, including shared grazing, with sheep or goats from *establishments* not within the *compartment*.

Article 14.8.5.

Scrapie free establishment

To qualify as free from scrapie, an *establishment* of sheep and goats should satisfy the following requirements:

1) in the country or *zone* where the *establishment* is situated, the following conditions are fulfilled:
   a) the disease is compulsorily notifiable;
   b) an awareness, *surveillance* and monitoring system as referred to in Article 14.8.2. is in place;
   c) affected sheep and goats are killed and completely destroyed;
   d) the feeding to sheep and goats of *protein meal* or *greaves* of ruminant origin has been banned and effectively enforced in the whole country for at least seven years;
   e) an official accreditation scheme is in operation under the supervision of the *Veterinary Authority*, including the measures described in point 2 below;
2) in the *establishment* the following conditions have been complied with for at least seven years:
   a) sheep and goats are permanently identified and records maintained, to enable trace back to their *establishment* of birth;
   b) records of movements of sheep and goats in and out of the *establishment* are maintained;
   c) introductions of sheep and goats are allowed only from free *establishments* or *establishment* at an equal or higher stage in the process of accreditation;
   d) introduction of *in vivo* derived goat embryos and *in vitro* processed sheep and goat oocytes or embryos should comply with Article 14.8.9.;
   e) sheep and goat semen should be introduced into the *establishment* in accordance with Article 14.8.8.;
   f) an *Official Veterinarian* inspects sheep and goats in the *establishments* and audits the records at least once a year;
   g) no *case* of scrapie has been reported;
   h) sheep and goats of the *establishments* should have no direct or indirect contact, including shared grazing, with sheep or goats from *establishments* of a lower status;
   i) all culled sheep and goats over 18 months of age are inspected by an *Official Veterinarian*, and a proportion of those exhibiting wasting signs and all those exhibiting neurological signs are tested in a *laboratory* for scrapie. The selection of the sheep and goats to be tested should be made by the *Official Veterinarian*. Sheep and goats over 18 months of age that have died or have been killed for reasons other than routine *slaughter* should also be tested (including 'fallen' stock and those sent for emergency *slaughter*).

Article 14.8.6.

Recommendations for importation from countries or zones not considered free from scrapie

For sheep and goats for breeding or rearing

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals come from an *establishment* free from scrapie as described in Article 14.8.5.

Article 14.8.7.

Recommendations for importation from countries or zones not considered free from scrapie

For sheep and goats for slaughter

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) in the country or *zone*:
   a) the disease is compulsorily notifiable;
   b) an awareness, *surveillance* and monitoring system as referred to in Article 14.8.2. is in place;
   c) affected sheep and goats are killed and completely destroyed;
2) the sheep and goats selected for export showed no clinical sign of scrapie on the day of shipment.

Article 14.8.8.

Recommendations for importation from countries or zones not considered free from scrapie

For semen of sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals:
   a) are permanently identified to enable trace back to their *establishment* of origin;
   b) showed no clinical sign of scrapie at the time of semen collection;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 14.8.9.

Recommendations for importation from countries or zones not considered free from scrapie

For *in vivo* derived goat embryos and *in vitro* processed sheep and goat oocytes or embryos

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) in the country or *zone*:
   a) the disease is compulsorily notifiable;
   b) an awareness, *surveillance* and monitoring system as referred to in Article 14.8.2. is in place;
   c) affected sheep and goats are killed and completely destroyed;
   d) the feeding to sheep and goats of *protein meal* or *greaves* of ruminant origin has been banned and effectively enforced in the whole country;
2) the donor animals either have been kept since birth in a free *establishment*, or meet the following conditions:
   a) are permanently identified to enable trace back to their *establishment* of origin;
   b) have been kept since birth in *establishments* in which no *case* of scrapie had been confirmed during their residency;
   c) showed no clinical sign of scrapie at the time of oocyte or embryo collection;
3) the oocytes or embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 14.8.10.

Recommendations for importation from countries or zones not considered free from scrapie

For milk and milk products of sheep or goat origin intended for use in feeding of sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the *milk* and *milk products* come from scrapie free *establishments*.

Article 14.8.11.

Recommendations on protein meal

Protein meal containing any sheep or goat protein, or any feedstuffs containing that type of *protein meal*, which originate from countries not considered free from scrapie should not be traded between countries for ruminant feeding.

Article 14.8.12.

Recommendations for importation from countries or zones not considered free from scrapie

For skulls including brains, ganglia and eyes, vertebral column including ganglia and spinal cord, tonsils, thymus, spleen, intestine, adrenal gland, pancreas, or liver, and protein products derived therefrom, from sheep and goats

1) These *commodities* should not be traded for use in ruminant *feed*.
2) For purposes other than ruminant feeding, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:
   a) in the country or *zone*:
      i) the disease is compulsorily notifiable;
      ii) an awareness, *surveillance* and monitoring system as referred to in Article 14.8.2. is in place;
      iii) affected sheep and goats are killed and completely destroyed;
   b) the materials come from sheep and goats that showed no clinical sign of scrapie on the day of *slaughter*.

Article 14.8.13.

Recommendations for the importation of ovine and caprine materials destined for the preparation of biologicals

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the products originate from sheep and goats born and raised in a scrapie free country, *zone* or *establishment*.

NB: FIRST ADOPTED IN 2002; MOST RECENT UPDATE ADOPTED IN 2011.

CHAPTER 14.9.

SHEEP POX AND GOAT POX

Article 14.9.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for sheep pox and goat pox shall be 21 days.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 14.9.2.

Sheep pox and goat pox free country

A country may be considered free from sheep pox and goat pox when it has been shown that sheep pox and goat pox has not been present for at least the past three years.

This period shall be six months after the *slaughter* of the last affected animal for countries in which a *stamping-out policy* is practised with or without *vaccination* against sheep pox and goat pox.

Article 14.9.3.

Sheep pox and goat pox infected zone

A *zone* shall be considered as infected with sheep pox and/or goat pox until:

1) at least 21 days have elapsed after the confirmation of the last *case* and the completion of a *stamping-out policy* and *disinfection* procedures; or

2) six months have elapsed after the clinical recovery or *death* of the last affected animal if a *stamping-out policy* was not practised.

Article 14.9.4.

Trade in commodities

Veterinary Authorities of sheep pox and goat pox free countries may prohibit importation or transit through their territory, from countries considered infected with sheep pox and goat pox, of domestic sheep and goats.

Article 14.9.5.

Recommendations for importation from sheep pox and goat pox free countries

For domestic sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of sheep pox or goat pox on the day of shipment;

2) were kept in a sheep pox and goat pox free country since birth or for at least the past 21 days.

Article 14.9.6.

Recommendations for importation from countries considered infected with sheep pox and goat pox

For domestic sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of sheep pox or goat pox on the day of shipment;

2) were kept since birth, or for the past 21 days, in an *establishment* where no *case* of sheep pox and goat pox was officially reported during that period, and that the *establishment* was not situated in a sheep pox and goat pox infected *zone*; or

3) were kept in a *quarantine station* for the 21 days prior to shipment;

4) have not been vaccinated against sheep pox and goat pox; or

5) were vaccinated using a vaccine complying with the standards described in the *Terrestrial Manual* not less than 15 days and not more than 4 months prior to shipment (the nature of the vaccine used, whether inactivated or modified live virus, and the virus types and strains included in the vaccine shall also be stated in the certificate).

Article 14.9.7.

Recommendations for importation from sheep pox and goat pox free countries

For semen of sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor animals:

1) showed no clinical sign of sheep pox or goat pox on the day of collection of the semen and for the following 21 days;

2) were kept in a sheep pox and goat pox free country.

Article 14.9.8.

Recommendations for importation from countries considered infected with sheep pox and goat pox

For semen of sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor animals:

1) showed no clinical sign of sheep pox or goat pox on the day of collection of the semen and for the following 21 days;

2) were kept in the *exporting country* for the 21 days prior to collection, in an *establishment* or *artificial insemination centre* where no *case* of sheep pox and goat pox was officially reported during that period, and that the *establishment* or *artificial insemination centre* was not situated in a sheep pox and goat pox infected *zone*;

3) have not been vaccinated against sheep pox and goat pox; or

4) were vaccinated using a vaccine complying with the standards described in the *Terrestrial Manual* (the nature of the vaccine used, whether inactivated or modified live virus, and the virus types and strains included in the vaccine shall also be stated in the certificate).

Article 14.9.9.

Recommendations for importation from countries considered infected with sheep pox and goat pox

For skins, fur, wool and hair (from sheep or goats)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products:

1) come from animals which have not been kept in a sheep pox and goat pox infected *zone*; or
2) have been processed to ensure the destruction of the sheep pox and goat pox virus, in premises controlled and approved by the *Veterinary Authority* of the *exporting country*.

NB: FIRST ADOPTED IN 1986.

CHAPTER 14.10.

INFECTION WITH *THEILERIA LESTOQUARDI*, *T. LUWENSHUNI* AND *T. UILENBERGI*

Article 14.10.1.

General provisions

Theileriosis is a disease of bovines (*Bos indicus*, *B. taurus*, *B. grunniens*, *Bubalus bubalis* and *Syncerus caffer*), sheep (*Ovis aries*), goats (*Capra hircus*), camels (*Camellus dromedarius* and *C. bactrianus*) and some *wild* ruminants.

Theileriosis can give rise to disease of variable severity and the pathogenic agent may persist in ruminants for their lifetime. Such animals are considered carriers.

Only sheep and goats play a significant epidemiological role in the *infection* with *Theileria lestoquardi*, *T. luwenshuni* and *T. uilenbergi*.

For the purposes of the *Terrestrial Code*, *infection* with *Theileria lestoquardi*, *T. luwenshuni* and *T. uilenbergi* are defined as a tickborne *infection* of sheep and goats with *T. lestoquardi*, *T. luwenshuni* and *T. uilenbergi.*

For the purposes of this chapter, *Theileria* means *T. lestoquardi*, *T. luwenshuni* and *T. uilenbergi*.

The following defines the occurrence of *infection* with *Theileria*:

1) *Theileria* has been observed and identified as such in a sample from a sheep or goat; or
2) nucleic acid specific to *Theileria* has been detected in a sample from a sheep or goat showing clinical signs consistent with *infection* with *Theileria*, or epidemiologically linked to a confirmed or suspected *case*, or giving cause for suspicion of previous association with *Theileria*; or
3) antibodies specific to *Theileria* have been detected in a sample from a sheep or goat showing clinical signs consistent with *Theileria*, or epidemiologically linked to a confirmed or suspected *case*, or giving cause for suspicion of previous association with *Theileria*.

For the purposes of the *Terrestrial Code*, the *incubation period* for *infection* with *Theileria* shall be 35 days.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 14.10.2.

Safe commodities

When authorising the importation or transit of the following *commodities*, *Veterinary Authorities* should not require any *Theileria*-related conditions regardless of the *animal health status* of the *exporting country* or *zone*:

1) *meat* and *meat products*;
2) *casings*;
3) *milk* and *milk products*;
4) gelatine and collagen;
5) tallow;
6) semen and embryos collected in accordance with the relevant chapters of the *Terrestrial Code*;
7) hooves and horns;
8) bones.

Article 14.10.3.

Country or zone free from infection with *Theileria* in sheep and goats

1) A country or a *zone* may be considered free from *infection* with *Theileria* when the disease is notifiable in the entire country, importation of sheep and goats and their *commodities* is carried out in accordance with this chapter, and:

   a) the country or *zone* is historically free as described in Article 1.4.6.; or

   b) a *surveillance* programme in accordance with Chapter 1.4. has demonstrated no evidence of *infection* with *Theileria* in the country or *zone* for at least two years; or

   c) an ongoing *surveillance* programme in accordance with Chapter 1.5. has found no competent tick *vectors* for at least two years in the country or *zone*.

2) A country or *zone* free from *infection* with *Theileria* will not lose its status as a result of introduction of seropositive sheep and goats or their *commodities*, provided they were introduced in accordance with this chapter.

Article 14.10.4.

Recommendations for importation of sheep and goats from countries or zones free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of *infection* with *Theileria* on the day of shipment;

2) come from a country or *zone* free from *infection* with *Theileria*.

Article 14.10.5.

Recommendations for importation of sheep and goats from countries or zones not free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of *infection* with *Theileria* and no *infestation* with tick *vectors* on the day of shipment;

2) were kept isolated for at least 35 days prior to shipment in an *establishment* where no *case* of *infection* with *Theileria* has occurred during the preceding two years;

3) were treated with a registered acaricide, the efficacy of which has been confirmed in relation to the area of origin of the *animals*, at the time of entry into the isolation *establishment* and then at regular intervals, according to manufacturer's instructions, allowing continuous protection against ticks until their shipment;

4) were subjected to agent detection tests with negative results on samples taken immediately prior to entry and at least 25 days after entry into the isolation *establishment*.

Article 14.10.6.

Recommendations for importation of hides and skins from countries or zones not free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products have been:

1) dry-salted or wet-salted for a period of at least 14 days prior to dispatch; or

2) treated for a period of at least seven days in salt (NaCl) with the addition of 2% sodium carbonate (Na_2CO_3); or

3) dried for a period of at least 42 days at a temperature of at least 20°C; or

4) frozen to at least -20°C for at least 48 hours.

Article 14.10.7.

Recommendations for importation of wool and fibre of sheep and goats from countries or zones not free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products were subjected to:

1) industrial washing, which consists of the immersion of the wool in a series of baths of water, soap and sodium hydroxide or potassium hydroxide; or
2) industrial scouring, which consists of the immersion of wool in a water-soluble detergent held at 60–70°C.

Article 14.10.8.

Recommendations for importation of trophies derived from susceptible ruminants from countries or zones not free from infection with *Theileria*

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products have been processed to ensure the destruction of tick *vectors*.

NB: FIRST ADOPTED IN 2023.

SECTION 15.

SUIDAE

CHAPTER 15.1.

INFECTION WITH AFRICAN SWINE FEVER VIRUS

Article 15.1.1.

General provisions

Suids are the only natural non-arthropod hosts for African swine fever virus (ASFV). These include all varieties of *Sus scrofa* (pig), both domestic and *wild*, and African *wild* suid species including warthogs (*Phacochoerus* spp.), bushpigs (*Potamochoerus* spp.) and the giant forest hog *(Hylochoerus meinertzhageni)*.

For the purposes of this chapter, a distinction is made among:

– domestic and *captive wild* pigs, permanently captive or farmed free range, used for the production of *meat*, or other commercial products or use, or for breeding;

– *wild* and *feral* pigs;

– African *wild* suid species.

All varieties of *Sus scrofa* are susceptible to the pathogenic effects of ASFV, while the African *wild* suids are not and may act as reservoirs of the virus. Ticks of the genus *Ornithodoros* are the only known natural arthropod hosts of the virus and act as reservoirs and biological *vectors*.

For the purposes of the *Terrestrial Code*, African swine fever (ASF) is defined as an *infection* of suids with ASFV.

The following defines the occurrence of *infection* with ASFV:

1) ASFV has been isolated from samples from a suid;

OR

2) antigen or nucleic acid specific to ASFV has been identified in samples from a suid showing clinical signs or pathological lesions suggestive of ASF or epidemiologically linked to a suspected or confirmed *case* of ASF, or from a suid giving cause for suspicion of previous association or contact with ASFV;

OR

3) antibodies specific to ASFV have been detected in samples from a suid showing clinical signs or pathological lesions consistent with ASF, or epidemiologically linked to a suspected or confirmed *case* of ASF, or giving cause for suspicion of previous association or contact with ASFV.

For the purposes of the *Terrestrial Code*, the *incubation period* in *Sus scrofa* shall be 15 days.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 15.1.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any ASF-related conditions, regardless of the ASF status of the *exporting country* or *zone*:

1) *meat* in a hermetically sealed container with a F0 value of 3 or above;
2) gelatine.

Other *commodities* of suids can be traded safely if in accordance with the relevant articles of this chapter.

Article 15.1.3.

General criteria for the determination of the ASF status of a country, zone or compartment

1) ASF is a *notifiable disease* in the entire country, and all suids showing clinical signs or pathological lesions suggestive of ASF are subjected to appropriate field and *laboratory* investigations;
2) an ongoing awareness programme is in place to encourage reporting of all suids showing clinical signs or pathological lesions suggestive of ASF;
3) the *Veterinary Authority* has current knowledge of, and authority over, all domestic and *captive wild* pig *herds* in the country, *zone* or *compartment*;
4) the *Veterinary Authority* has current knowledge of the species of *wild* and *feral* pigs and African *wild* suids present, their distribution and habitat in the country or *zone*;
5) for domestic and *captive wild* pigs, an appropriate *surveillance* programme in accordance with Articles 15.1.28. to 15.1.31. and 15.1.33. is in place;
6) for *wild* and *feral* pigs, and for African *wild* suids, if present in the country or *zone*, a *surveillance* programme is in place in accordance with Article 15.1.32., considering the presence of natural and artificial boundaries, the ecology of the *wild* and *feral* pig and African *wild* suid populations and an assessment of the likelihood of ASF spread including taking into account the presence of *Ornithodoros* ticks where relevant;
7) the domestic and *captive wild* pig populations are separated by appropriate *biosecurity*, effectively implemented and supervised, from the *wild* and *feral* pig and African *wild* suid populations, based on the assessed likelihood of spread within the *wild* and *feral* pig and African *wild* suid populations, and *surveillance* in accordance with Article 15.1.32.; they are also protected from *Ornithodoros* ticks where relevant.

Article 15.1.4.

Country or zone free from ASF

1. Historical freedom

   A country or *zone* may be considered historically free from ASF without pathogen-specific *surveillance* if the provisions in Article 1.4.6. are complied with and *commodities* of suids are imported in accordance with the relevant articles of this chapter.

2. Freedom in all suids

   A country or *zone* which does not meet the conditions of point 1 above may be considered free from ASF in all suids when it complies with all the criteria of Article 15.1.3. and when:

   a) *surveillance* in accordance with Articles 15.1.28. to 15.1.33. has been in place for the past three years;
   b) there has been no *case* of *infection* with ASFV during the past three years; this period can be reduced to 12 months when the *surveillance* has demonstrated no evidence of presence or involvement of *Ornithodoros* ticks;
   c) *commodities* of suids are imported in accordance with the relevant articles of this chapter.

3. Freedom in domestic and captive wild pigs

   A country or *zone* which does not meet the conditions of point 1 or point 2 b), i.e. when there are *cases* of *infection* with ASFV in *feral* or *wild* suids, may be considered free from ASF in domestic and *captive wild* pigs when it complies with all the criteria of Article 15.1.3., especially point 7, and when:

   a) *surveillance* in accordance with Articles 15.1.28. to 15.1.33. has been in place for the past three years;

b) there has been no *case* of *infection* with ASFV in domestic or *captive wild* pigs during the past three years; this period can be reduced to 12 months when the *surveillance* has demonstrated no evidence of presence or involvement of *Ornithodoros* ticks;

c) *commodities* of suids are imported in accordance with the relevant articles of this chapter.

Article 15.1.5.

Compartment free from ASF

The establishment of *compartment* free from ASF should follow the relevant requirements of this chapter and the principles in Chapters 4.4. and 4.5.

Article 15.1.6.

Establishment of a containment zone within a country or zone free from ASF

In the event of limited *outbreaks* of ASF within a country or *zone* previously free from ASF, including within a *protection zone*, a *containment zone*, which includes all *outbreaks*, may be established for the purposes of minimising the impact on the entire country or *zone*.

In addition to the requirements for the establishment of a *containment zone* outlined in Article 4.4.7., the *surveillance* programme should take into account the presence and potential role of *Ornithodoros* ticks and of *wild* and *feral* pigs and African *wild* suids and any measures in place to avoid their dispersion.

The free status of the areas outside the *containment zone* is suspended while the *containment zone* is being established. The free status of these areas outside the *containment zone* may be reinstated irrespective of the provisions of Article 15.1.7., once the *containment zone* is clearly established. It should be demonstrated that *commodities* for *international trade* either have originated outside the *containment zone* or comply with the provisions in Articles 15.1.9., 15.1.11., 15.1.13. and Articles 15.1.15. to 15.1.21.

The recovery of the free status of the *containment zone* should follow the provisions of Article 15.1.7.

Article 15.1.7.

Recovery of free status

Should an *outbreak* of ASF occur in a previously free country or *zone*, its status may be restored three months after the *disinfection* of the last infected *establishment*, provided that:

1) a *stamping-out policy* has been implemented and, in the case where ticks are suspected or known to be involved in the epidemiology of the *infection*, has been followed by the use of sentinel pigs in the infected *establishments* for two months;

2) *surveillance* in accordance with Article 15.1.31. has been carried out with negative results.

Otherwise, the provisions of point 2 of Article 15.1.4. apply.

Article 15.1.8.

Recommendations for importation from countries, zones or compartments free from ASF

For domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the animals showed no clinical sign of ASF on the day of shipment;

2) the animals were kept in a country, *zone* or *compartment* free from ASF since birth or for at least the past three months;

3) if the animals are exported from a free *zone* or *compartment* within an infected country or *infected zone*, necessary precautions were taken to avoid contact with any source of ASFV until shipment.

Article 15.1.9.

Recommendations for importation from countries or zones not free from ASF

For domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of ASF on the day of shipment;
2) and either:
   a) were kept since birth or for the past three months in a *compartment* free from ASF; or
   b) were kept in a *quarantine station*, isolated for 30 days prior to shipment, and were subjected to a virological test and a serological test performed at least 21 days after entry into the *quarantine station*, with negative results.

Article 15.1.10.

Recommendations for importation from countries, zones or compartments free from ASF

For semen of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) were kept in a country, *zone* or *compartment* free from ASF since birth or for at least three months prior to collection;
   b) showed no clinical sign of ASF on the day of collection of the semen;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 15.1.11.

Recommendations for importation from countries or zones not free from ASF

For semen of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) were kept since birth or for at least three months prior to collection in an *establishment*, in which *surveillance* in accordance with Articles 15.1.28. to 15.1.30. demonstrates that no *case* of ASF has occurred in the past three years; this period can be reduced to 12 months when the *surveillance* demonstrates that there is no evidence of tick involvement in the epidemiology of the *infection*;
   b) showed no clinical sign of ASF on the day of collection of the semen;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 15.1.12.

Recommendations for importation from countries, zones or compartments free from ASF

For *in vivo* derived embryos of domestic pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) were kept in a country, *zone* or *compartment* free from ASF since birth or for at least three months prior to collection;
   b) showed no clinical sign of ASF on the day of collection of the embryos;
2) the semen used to fertilise the oocytes complied with the conditions referred to in Article 15.1.10. or Article 15.1.11., as relevant;
3) the embryos were collected, processed and stored in accordance with the relevant provisions of Chapters 4.8. and 4.10.

Article 15.1.13.

Recommendations for importation from countries or zones not free from ASF

For *in vivo* derived embryos of domestic pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) were kept since birth or for at least three months prior to collection in an *establishment*, in which *surveillance* in accordance with Articles 15.1.28. to 15.1.30. demonstrates that no *case* of ASF has occurred in the past three years; this period can be reduced to 12 months when the *surveillance* demonstrates that there is no evidence of tick involvement in the epidemiology of the *infection*;
   b) showed no clinical sign of ASF on the day of collection of the embryos;
   c) were subjected to a serological test performed at least 21 days after collection, with negative results;
2) the semen used to fertilise the oocytes complied with the conditions referred to in Article 15.1.10. or Article15.1.11., as relevant;
3) the embryos were collected, processed and stored in accordance with the relevant provisions of Chapters 4.8. and 4.10.

Article 15.1.14.

Recommendations for importation from countries, zones or compartments free from ASF

For fresh meat of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from animals which:

1) have been kept in a country, *zone* or *compartment* free from ASF since birth or have been imported or introduced in accordance with Article 15.1.8. or Article 15.1.9.;
2) have been slaughtered in an approved *slaughterhouse/abattoir*, where they have been subjected with favourable results to ante- and post-mortem inspections in accordance with Chapter 6.3.

Article 15.1.15.

Recommendations for importation from countries or zones not free from ASF

For fresh meat of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the entire consignment of *fresh meat* comes from animals which originated from *herds* in which *surveillance* in accordance with Articles 15.1.28. to 15.1.30. demonstrates that no *case* of ASF has occurred in the past three years. This period can be reduced to 12 months when the *surveillance* demonstrates that there is no evidence of tick involvement in the epidemiology of the *infection*. In addition, samples from a statistically representative number of animals were tested for ASF, with negative results;
2) the entire consignment of *fresh meat* comes from animals which have been slaughtered in an approved *slaughterhouse/abattoir*, have been subjected with favourable results to ante- and post-mortem inspections in accordance with Chapter 6.3.;
3) necessary precautions have been taken after *slaughter* to avoid contact of the *fresh meat* with any source of ASFV.

Article 15.1.16.

Recommendations for importation of fresh meat of wild and feral pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from animals which:

1) have been killed in a country or *zone* free from ASF in accordance with point 1 or point 2 of Article 15.1.4.;
2) have been subjected with favourable results to a post-mortem inspection in accordance with Chapter 6.3. in an examination facility approved by the *Veterinary Authority* for export purposes.

Article 15.1.17.

Recommendations for the importation of meat products of pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products:

1) have been prepared:
   a) exclusively from *fresh meat* meeting the relevant conditions in Articles 15.1.14., 15.1.15. and 15.1.16.;
   b) in a processing facility:
      i) approved by the *Veterinary Authority* for export purposes;
      ii) processing only *meat* meeting the relevant conditions in Articles 15.1.14., 15.1.15. and 15.1.16.;

OR

2) have been processed in a facility approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of ASFV in accordance with Article 15.1.23., and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASFV.

Article 15.1.18.

Recommendations for the importation of bristles from pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that bristles:

1) originated from domestic or *captive wild* pigs in a country, *zone* or *compartment* free from ASF and have been processed in a facility approved by the *Veterinary Authority* for export purposes; or

2) have been processed in a facility approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of ASFV in accordance with one of the processes listed in Article 15.1.26., and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASFV.

Article 15.1.19.

Recommendations for the importation of litter and manure from pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products:

1) originated from domestic or *captive wild* pigs in a country, *zone* or *compartment* free from ASF; or

2) have been processed in a facility approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the ASFV in accordance with one of the processes listed in Article 15.1.27., and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASFV.

Article 15.1.20.

Recommendations for the importation of skins and trophies from suids

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the products:

1) originated from suids in a country or *zone* free from ASF in accordance with point 1 or point 2 of Article 15.1.4. and have been processed in a facility approved by the *Veterinary Authority* for export purposes; or

2) originated from domestic or *captive wild* pigs in a country, *zone* or *compartment* free from ASF and have been processed in a facility approved by the *Veterinary Authority* for export purposes; or

3) have been processed in a facility approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of ASFV in accordance with one of the procedures referred to in Article 15.1.25., and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASFV.

Article 15.1.21.

Recommendations for the importation of other pig products

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products:

1) originated from domestic or *captive wild* pigs in a country, *zone* or *compartment* free from ASF and have been prepared in a processing facility approved by the *Veterinary Authority* for export purposes;

OR

2) have been processed in a facility approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of ASFV, and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASFV.

Article 15.1.22.

Procedures for the inactivation of ASFV in swill

For the inactivation of ASFV in swill, one of the following procedures should be used:

1) the swill is maintained at a temperature of at least 90°C for at least 60 minutes, with continuous stirring; or
2) the swill is maintained at a temperature of at least 121°C for at least 10 minutes at an absolute pressure of 3 bar; or
3) the swill is subjected to an equivalent treatment that has been demonstrated to inactivate ASFV.

Article 15.1.23.

Procedures for the inactivation of ASFV in meat

For the inactivation of ASFV in *meat*, one of the following procedures should be used:

1. Heat treatment

   Meat should be subjected to:

   a) heat treatment for at least 30 minutes at a minimum temperature of 70°C, which should be reached throughout the *meat*; or

   b) any equivalent heat treatment which has been demonstrated to inactivate ASFV in *meat*.

2. Dry cured pig meat

   Meat should be cured with salt and dried for a minimum of six months.

Article 15.1.24.

Procedures for the inactivation of ASFV in casings of pigs

For the inactivation of ASFV in *casings* of pigs, the following procedures should be used: treating for at least 30 days either with dry salt (NaCl) or with saturated brine (Aw < 0.80), or with phosphate supplemented dry salt containing 86.5% NaCl, 10.7% Na_2HPO_4 and 2.8% Na_3PO_4 (weight/weight/weight) at a temperature of 12°C or above.

Article 15.1.25.

Procedures for the inactivation of ASFV in skins and trophies

For the inactivation of ASFV in skins and trophies, one of the following procedures should be used:

1) boiling in water for an appropriate time so as to ensure that any matter other than bone, tusks or teeth is removed; or
2) soaking, with agitation, in a 4% (w/v) solution of washing soda (sodium carbonate-Na_2CO_3) maintained at pH 11.5 or above for at least 48 hours; or
3) soaking, with agitation, in a formic acid solution (100 kg salt [NaCl] and 12 kg formic acid per 1,000 litres water) maintained below pH 3.0 for at least 48 hours; wetting and dressing agents may be added; or

4) in the case of raw hides, treating for at least 28 days with salt (NaCl) containing 2% washing soda (sodium carbonate-Na_2CO_3); or
5) treatment with 1% formalin for a minimum of six days.

Article 15.1.26.

Procedures for the inactivation of ASFV in bristles

For the inactivation of ASFV in bristles for industrial use, one of the following procedures should be used:

1) boiling for at least 30 minutes;
2) immersion for at least 24 hours in a 1% solution of formaldehyde.

Article 15.1.27.

Procedures for the inactivation of ASFV in litter and manure from pigs

For the inactivation of ASFV in litter and manure of pigs, one of the following procedures should be used:

1) moist heat treatment for at least one hour at a minimum temperature of 55°C;
2) moist heat treatment for at least 30 minutes at a minimum temperature of 70°C.

Article 15.1.28.

Introduction to surveillance

Articles 15.1.28. to 15.1.33. provide recommendations for *surveillance* for ASF, and are complementary to Chapters 1.4. and 1.5. The impact and epidemiology of ASF may vary in different regions of the world, as does the routine *biosecurity* in different production systems. The *surveillance* strategies employed for determining ASF status should be adapted to the situation. The approach used should take into account the presence of *wild* or *feral* pigs or African *wild* suids, the presence of *Ornithodoros* ticks, and the presence of ASF in adjacent countries or *zones*.

Surveillance for ASF should be in the form of an ongoing programme designed to establish that susceptible populations in a country, *zone* or *compartment* are free from *infection* with ASFV or to detect the introduction of ASFV into a free population. Consideration should be given to the specific characteristics of ASF epidemiology which include:

- the role of swill feeding;
- the impact of different systems of production of domestic and *captive wild* pigs;
- the role of *wild* and *feral* pigs and African *wild* suids on the maintenance and spread of the disease;
- whether *Ornithodoros* ticks are present and the role they may play in the maintenance and spread of the disease;
- the lack of pathognomonic gross lesions and clinical signs;
- the occurrence of carriers;
- the genotypic variability of ASFV.

Article 15.1.29.

General conditions and methods for surveillance

1) A *surveillance* system in accordance with Chapter 1.4. and under the responsibility of the *Veterinary Authority* should address the following:
   a) a formal and ongoing system for detecting and investigating *cases* of ASF;
   b) a procedure for the rapid collection and transport of samples from suspected *cases* to a *laboratory*;
   c) appropriate *laboratory* testing capability for ASF diagnosis;
   d) a system for recording, managing and analysing diagnostic and *surveillance* data.
2) The ASF *surveillance* programme should:
   a) include an *early warning system* throughout the production, marketing and processing chain for reporting suspected *cases*. Diagnosticians and those with regular contact with pigs should report promptly any suspicion of ASF to the *Veterinary Authority*. The reporting system under the *Veterinary Authority* should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary paraprofessionals*) by

government or private sector awareness programmes targeted to all relevant stakeholders. Personnel responsible for *surveillance* should be able to seek expertise in ASF diagnosis, epidemiological evaluation and control;

b) conduct, when relevant, regular and frequent clinical inspections and *laboratory* testing of high-risk groups (for example, where swill feeding is practised), or those adjacent to an ASF infected country or *zone* (for example, bordering areas where infected *wild* and *feral* pigs or African *wild* suids are present).

Article 15.1.30.

Surveillance strategies

1. Introduction

The population covered by *surveillance* aimed at detecting disease and *infection* should include domestic, *captive wild*, *wild* and *feral* suid populations within the country or *zone*. *Surveillance* should be composed of random and non-random approaches using clinical, virological and serological methods appropriate for the *infection* status of the country or *zone*.

The strategy employed to establish the *prevalence* or absence of *infection* with ASFV may be based on randomised or non-randomised clinical investigation or sampling at an acceptable level of statistical confidence. If an increased likelihood of *infection* in particular localities or *subpopulations* can be identified, targeted sampling may be an appropriate strategy. This may include:

a) specific high-risk *wild* and *feral* suid populations and their proximity;

b) farms which *feed* swill;

c) pigs reared outdoors.

Risk factors may include, for example, temporal and spatial distribution of past *outbreaks*, and pig movements and demographics.

Member Countries should review their *surveillance* strategies whenever an increase in the *risk* of incursion of ASFV is perceived. Such changes include but are not limited to:

- an emergence or an increase in the *prevalence* of ASF in countries or *zones* from which live pigs or products are imported;
- an increase in the *prevalence* of ASF in *wild* or *feral* suids in the country or *zone*;
- an increase in the *prevalence* of ASF in adjacent countries or *zones*;
- an increased entry of, or exposure to, infected *wild* or *feral* suid populations from adjacent countries or *zones*;
- evidence of involvement of ticks in the epidemiology of ASF as demonstrated by *surveillance* implemented in accordance with Chapter 1.5.

2. Clinical surveillance

Clinical *surveillance* is the most effective tool for detecting ASF due to severe clinical signs and pathology associated with *infection* with ASFV. However, due to the clinical similarity with other diseases such as classical swine fever, porcine reproductive and respiratory syndrome and erysipelas, and those associated with porcine circovirus 2 *infection*, clinical *surveillance* should be supplemented, as appropriate, by serological and virological *surveillance*.

Clinical signs and pathological findings are useful for early detection; in particular, any *cases* where clinical signs or lesions suggestive of ASF are accompanied by high mortality should be investigated without delay.

Wild and *feral* suids rarely present the opportunity for clinical observation, but should form part of any *surveillance* scheme and should, ideally, be monitored for virus as well as antibodies.

3. Virological surveillance

Virological *surveillance* is important for early detection, differential diagnosis and for systematic sampling of target populations. It should be conducted:

a) to investigate clinically suspected *cases*;

b) to monitor at risk populations;

c) to follow up positive serological results;

d) to investigate increased mortality when ASF cannot be ruled out;

e) to confirm eradication after a *stamping-out policy* has been applied.

Molecular detection methods can be applied to large-scale screening for the presence of virus. If targeted at high-risk groups, they provide an opportunity for early detection that can considerably reduce the subsequent

spread of ASFV. Epidemiological understanding of the pathways of spread of ASFV can be greatly enhanced by molecular analyses of viruses in endemic areas and those involved in *outbreaks* in areas previously free from ASF. Therefore, ASFV isolates should be sent to a WOAH Reference Laboratory for further characterisation.

4. Serological surveillance

Serology is an effective and efficient *surveillance* tool. Serological *surveillance* aims at detecting antibodies against ASFV. Positive ASFV antibody test results can indicate an ongoing or past *outbreaks*, since some animals may recover and remain seropositive for a significant period, possibly life. This may include carrier animals. However, ASF serology is not suitable for early detection.

It may be possible to use sera collected for other survey purposes for ASF *surveillance*. However, the principles of survey design and the requirement for statistical validity should not be compromised.

Article 15.1.31.

Surveillance for recovery of free status

In addition to the general conditions described in Articles 15.1.4. and 15.1.7., a Member Country seeking recovery of free status for the entire country or a *zone*, including for a *containment zone*, should show evidence of an active *surveillance* programme to demonstrate no evidence of *infection* with ASFV.

The domestic and *captive wild* pig populations should undergo regular clinical and pathological examinations and virological and serological testing, planned and implemented according to the general conditions and methods described in this chapter.

This *surveillance* programme should include:

1) *establishments* in the proximity of the *outbreaks*;
2) *establishments* epidemiologically linked to the *outbreaks*;
3) animals moved from or used as sentinels or to repopulate affected *establishments*;
4) all *establishments* where contiguous culling has been carried out;
5) *wild* and *feral* suid populations in the area of the *outbreaks*.

Article 15.1.32.

Surveillance for ASFV in wild and feral pigs and African wild suids

1) The objective of a *surveillance* programme is either to demonstrate that *infection* with ASFV is not present in *wild* and *feral* suids or, if known to be present, to estimate the geographical distribution of the *infection*.

   Surveillance in *wild* and *feral* suids presents additional challenges including:

   a) determination of the distribution, size and movement patterns of the *wild* and *feral* suid population;
   b) relevance and practicality of assessing the possible presence of *infection* with ASFV in the population;
   c) determination of the practicability of establishing a *zone* taking into account the degree of interaction with domestic and *captive wild* pigs within the proposed *zone*.

   The geographic distribution and estimated size of *wild* and *feral* suid populations should be assessed as a prerequisite for designing a population monitoring system following Chapter 1.4.

2) For implementation of the *surveillance* programme, the limits of the area over which *wild* and *feral* pigs range should be defined. *Subpopulations* of *wild* and *feral* suids may be separated from each other by natural or artificial barriers.
3) The *surveillance* programme should include animals found dead, road kills, animals showing abnormal behaviour and hunted animals, and should also include awareness campaigns targeted at hunters and farmers.
4) There may be situations where a more targeted *surveillance* programme can provide additional assurance. The criteria to define high risk areas for targeted *surveillance* include:

   a) areas with past history of ASF;
   b) subregions with large populations of *wild* or *feral* pigs or African *wild* suids;
   c) border regions with ASF affected countries or *zones*;
   d) interface between *wild* and *feral* pig populations, and domestic and *captive wild* pig populations;
   e) areas with farms with free-ranging and outdoor pigs;

f) areas with a high level of hunting activity, where animal dispersion and feeding as well as inappropriate disposal of waste can occur;

g) other risk areas determined by the *Veterinary Authority* such as ports, airports, garbage dumps and picnic and camping areas.

Article 15.1.33.

Surveillance for arthropod vectors

Vector surveillance aims at defining the type and distribution of ticks of the genus *Ornithodoros*. Any species of *Ornithodoros* should be considered to be a potential *vector* or reservoir of ASFV. The virus is generally transmitted transstadially. Transovarial transmission has been observed only in ticks of the *Ornithodoros moubata* complex.

The *Veterinary Authority* should have knowledge of the presence, distribution and identity of *Ornithodoros*, taking into account climatic or habitat changes that may affect distribution.

When *vector surveillance* is considered necessary, a sampling plan in accordance with Chapter 1.5. should take into account the biology and ecology of species present and, in particular, the favoured habitat of these species in burrows and structures associated with pig production. The plan should also take into account the distribution and density of pigs in the country or *zone*.

Sampling methods include CO_2 trapping and flagging, and vacuuming of burrows or structures.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2019.

CHAPTER 15.2.

INFECTION WITH CLASSICAL SWINE FEVER VIRUS

Article 15.2.1.

General provisions

The pig (*Sus scrofa*, both domestic and *wild*) is the only natural host for classical swine fever virus (CSFV). For the purposes of this chapter, a distinction is made between:

– domestic and *captive wild* pigs, permanently captive or farmed free range, used for the production of *meat*, or other commercial products or use, or for breeding; and

– *wild* and *feral* pigs.

For the purposes of the *Terrestrial Code*, classical swine fever (CSF) is defined as an *infection* of pigs with CSFV.

The following defines the occurrence of *infection* with CSFV:

1) a strain of CSFV (excluding vaccine strains) has been isolated from samples from a pig;

OR

2) antigen or nucleic acid specific to CSFV (excluding vaccine strains) has been identified in samples from a pig showing clinical signs or pathological lesions suggestive of CSF, or epidemiologically linked to a suspected or confirmed *case* of CSF, or giving cause for suspicion of previous association or contact with CSFV;

OR

3) antibodies specific to CSFV that are not a consequence of *vaccination* or *infection* with other pestiviruses, have been identified in samples from a pig showing clinical signs or pathological lesions consistent with CSF, or epidemiologically linked to a suspected or confirmed *case* of CSF, or giving cause for suspicion of previous association or contact with CSFV.

A *notification* of *infection* of *wild* and *feral* pigs with CSFV does not affect the free status of a country or *zone* as recognised by WOAH provided that the provisions of Article 15.2.3. are complied with. A Member Country should not impose bans on the international trade of domestic and *captive wild* pig *commodities* in response to such *notifications*.

For the purposes of the *Terrestrial Code*, the *incubation period* shall be 14 days.

Pigs exposed to CSFV postnatally have an *infective period* of up to three months. Pigs exposed to CSFV prenatally may not show clinical signs at birth and may be persistently infected throughout life.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 15.2.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any CSF-related conditions, regardless of the CSF status of the *exporting country* or *zone*:

1) *meat* in a hermetically sealed container with an F0 value of 3 or above;

2) gelatine.

Other pig *commodities* can be traded safely if in accordance with the relevant articles of this chapter.

Article 15.2.3.

Country or zone free from CSF

A country or *zone* may be considered free from CSF when the relevant provisions in point 2 of Article 1.4.6. have been complied with, and when within the proposed free country or *zone* for at least the past 12 months:

1) there has been no *case* of *infection* with CSFV in domestic and *captive wild* pigs;
2) the *Veterinary Authority* has current knowledge of, and authority over, all domestic and *captive wild* pig *herds* in the country or *zone*;
3) the *Veterinary Authority* has current knowledge of the distribution, habitat and indication of disease occurrence through passive *surveillance* of *wild* and *feral* pigs in the country or *zone*;
4) appropriate *surveillance* has been implemented in accordance with:
   a) Article 1.4.6. where historical freedom can be demonstrated; or
   b) Articles 15.2.28. to 15.2.33. where historical freedom cannot be demonstrated;
5) measures to prevent the introduction of the *infection* have been in place: in particular, the importations or movements of *commodities* into the country or *zone* have been carried out in accordance with this chapter and other relevant chapters of the *Terrestrial Code*;
6) no *vaccination* against CSF has been carried out in domestic and *captive wild* pigs unless there are means, validated according to Chapter 3.8.3. of the *Terrestrial Manual*, of distinguishing between vaccinated and infected pigs;
7) if relevant, the domestic and *captive wild* pig populations have been separated by appropriate *biosecurity*, effectively implemented and supervised, from the *wild* and *feral* pig populations, based on the assessed likelihood of spread of the disease within the *wild* and *feral* pig populations and *surveillance* in accordance with Article 15.2.33.

The country or *zone* will be included in the list of countries or *zones* free from CSF in accordance with Chapter 1.6.

Retention on the list requires annual reconfirmation of compliance with all points above and relevant provisions under point 4 of Article 1.4.6. Documented evidence should be resubmitted annually for points 1 to 5 above. Any changes in the epidemiological situation or other significant events should be notified to WOAH in accordance with Chapter 1.1.

Article 15.2.4.

Compartment free from CSF

The establishment and bilateral recognition of a *compartment* free from CSF should follow the relevant requirements of this chapter and the principles laid down in Chapters 4.4. and 4.5.

Article 15.2.5.

Country or zone infected with CSFV

A country or *zone* is considered as infected with CSFV when the requirements for acceptance as a free country or *zone* are not fulfilled.

Article 15.2.6.

Establishment of a containment zone within a country or zone previously free from CSF

In the event of *outbreaks* of CSF within a country or *zone* previously free from CSF, including within a *protection zone*, a *containment zone*, which includes all epidemiologically linked *outbreaks*, can be established, in accordance with Article 4.4.7., to minimise the impact on the rest of the country or *zone*.

For this to be achieved and for the Member Country to take full advantage of this process, the *Veterinary Authority* should submit documented evidence as soon as possible to WOAH.

The *surveillance* programme should take into consideration the involvement of *wild* and *feral* pigs and measures to avoid their dispersion.

The free status of the areas outside the *containment zone* is suspended while the *containment zone* is being established. The free status of the areas outside the *containment zone* may be reinstated, irrespective of the provisions of Article 15.2.7., once the *containment zone* has been approved by WOAH.

In the event of the recurrence of CSF in the *containment zone*, as described in point 7 of Article 4.4.7., the approval of the *containment zone* is withdrawn and the free status of the country or *zone* is suspended until the relevant requirements of Article 15.2.7. have been fulfilled.

The recovery of the CSF free status of the *containment zone* should follow the provisions of Article 15.2.7. and be achieved within 12 months of its approval.

Article 15.2.7.

Recovery of free status

Should an *outbreak* of CSF occur in a previously free country or *zone*, its status may be recovered when *surveillance* in accordance with Article 15.2.32. has been carried out with negative results and three months after:

1) the *disinfection* of the last affected *establishment*, provided that a *stamping-out policy* without *vaccination* has been implemented; or

2) the *disinfection* of the last affected *establishment* and the *slaughter* of all vaccinated *animals*, provided that a *stamping-out policy* with emergency *vaccination* and *slaughter* of vaccinated *animals* has been implemented; or

3) the *disinfection* of the last affected *establishment* provided that a *stamping-out policy* with emergency *vaccination* without the *slaughter* of vaccinated *animals* has been implemented, when there are means, validated according to Chapter 3.8.3. of the *Terrestrial Manual*, of distinguishing between vaccinated and infected pigs.

The CSF free status of the country or *zone* will be reinstated only after the submitted evidence has been accepted by WOAH.

Article 15.2.8.

Direct transfer of pigs within a country from an infected zone to a free zone for slaughter

In order not to jeopardise the status of a free *zone*, pigs should only leave the *infected zone* if transported by mechanised *vehicle* directly for *slaughter* in the nearest designated *slaughterhouse/abattoir* under the following conditions:

1) no pig has been introduced into the *establishment* of origin and no pig in the *establishment* of origin has shown clinical signs of CSF for at least 30 days prior to movement for *slaughter*;

2) the pigs were kept in the *establishment* of origin under *approved biosecurity* for at least three months prior to movement for *slaughter*;

3) CSF has not occurred within a 10-kilometre radius of the *establishment* of origin for at least three months prior to movement;

4) the pigs should be transported, under biosecure conditions under the supervision of the *Veterinary Authority* in a *vehicle*, which was subjected to *disinfection* before *loading*, directly from the *establishment* of origin to the *slaughterhouse/abattoir* without coming into contact with other pigs;

5) such a *slaughterhouse/abattoir* is under *approved biosecurity* and is not approved for the export of *fresh meat* from the time the pigs arrive from the *infected zone* until the *meat* of those pigs has left the premises and the *vehicles* and the *slaughterhouse/abattoir* have been subjected to *disinfection* immediately after use.

The pigs should be subjected to ante- and post-mortem inspections in accordance with Chapter 6.2. with favourable results and the *meat* should be treated in accordance with Article 15.2.23. The *fresh meat* from those pigs should be identified and kept separate from other pig products until treated.

Any other products obtained from the pigs, and any products coming into contact with them, should be considered contaminated and treated in accordance with Article 15.2.22. or Articles 15.2.24. to 15.2.26. to destroy any CSFV potentially present.

Article 15.2.9.

Recommendations for importation from countries, zones or compartments free from CSF

For domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the pigs:

1) showed no clinical sign of CSF on the day of shipment;

2) were kept since birth or for at least the past three months in a country, *zone* or *compartment* free from CSF;

3) were not vaccinated against CSF, nor are they the progeny of vaccinated sows, unless there are means, validated in accordance with Chapter 3.8.3. of the *Terrestrial Manual*, of distinguishing between vaccinated and infected pigs.

Article 15.2.10.

Recommendations for importation from countries or zones infected with CSFV

For domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the pigs:

1) showed no clinical sign of CSF on the day of shipment;

2) and either:

   a) were kept since birth or for the past three months in a CSF free *compartment*; or

   b) were isolated for 28 days prior to shipment in a *quarantine station*, and were subjected to a virological test and a serological test performed on a sample collected at least 21 days after entry into the *quarantine station*, with negative results;

3) were not vaccinated against CSF, nor are they the progeny of vaccinated sows, unless there are means, validated in accordance with Chapter 3.8.3. of the *Terrestrial Manual*, of distinguishing between vaccinated and infected pigs.

Article 15.2.11.

Recommendations for importation from countries, zones or compartments free from CSF

For semen of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:

   a) were kept since birth or for at least three months prior to collection of the semen in a country, *zone* or *compartment* free from CSF;

   b) showed no clinical sign of CSF on the day of collection;

2) the semen was collected, processed and stored in accordance with the provisions of Chapters 4.6. and 4.7.

Article 15.2.12.

Recommendations for importation from countries or zones infected with CSFV

For semen of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) were kept for at least three months prior to collection of the semen in an *establishment* in which *surveillance*, in accordance with Articles 15.2.28. to 15.2.33., demonstrated that no *case* of CSF occurred during that period;
   b) showed no clinical sign of CSF on the day of collection;
   c) met one of the following conditions:
      i) were subjected to a virological test performed on a blood sample taken on the day of collection, with negative results; or
      ii) were not vaccinated against CSF and were subjected to a serological test performed on a sample taken at least 21 days after collection, with negative results; or
      iii) have been vaccinated against CSF and were subjected to a serological test performed on a sample taken at least 21 days after collection, which demonstrated that any antibody was elicited by the vaccine;
2) the semen was collected, processed and stored in accordance with the provisions of Chapters 4.6. and 4.7.

Article 15.2.13.

Recommendations for importation from countries, zones or compartments free from CSF

For *in vivo* derived embryos of domestic pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) were kept since birth or for at least three months prior to collection of the embryos in a country, *zone* or *compartment* free from CSF;
   b) showed no clinical sign of CSF on the day of collection;
2) the semen used to inseminate the donors complied with the conditions in Article 15.2.11. or Article 15.2.12., as relevant;
3) the embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant.

Article 15.2.14.

Recommendations for importation from countries or zones infected with CSFV

For *in vivo* derived embryos of domestic pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) were kept for at least three months prior to collection of the embryos in an *establishment* in which *surveillance*, in accordance with Articles 15.2.28. to 15.2.33., demonstrated that no *case* of CSF occurred during that period;
   b) showed no clinical sign of CSF on the day of collection;
   c) met one of the following conditions:
      i) were subjected to a virological test performed on a blood sample taken on the day of collection, with negative results; or
      ii) were not vaccinated against CSF and were subjected, with negative results, to a serological test performed at least 21 days after collection; or
      iii) were vaccinated against CSF and were subjected to a serological test performed on a sample taken at least 21 days after collection, which demonstrated that any antibody was elicited by the vaccine;
2) the semen used to inseminate the donors complied with the conditions in Article 15.2.11. or Article 15.2.12., as relevant;
3) the embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant.

Article 15.2.15.

Recommendations for importation from countries, zones or compartments free from CSF

For fresh meat of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from pigs which:

1) were kept in a country, *zone* or *compartment* free from CSF, or which were imported in accordance with Article 15.2.9. or Article 15.2.10.;

2) were slaughtered in an approved *slaughterhouse/abattoir*, where they were subjected to ante- and post-mortem inspections in accordance with Chapter 6.2. with favourable results.

Article 15.2.16.

Recommendations for importation from countries or zones infected with CSFV, where an official control programme exists

For fresh meat of domestic pigs and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the pigs from which the *meat* is derived complied with Article 15.2.10.;

2) the pigs were transported under the supervision of the *Veterinary Authority*, in a *vehicle* which was subjected to *disinfection* before the pigs were loaded;

3) the pigs were transported directly to the *approved slaughterhouse/abattoir* without coming into contact either during transport or at the *slaughterhouse/abattoir* with other pigs that did not fulfil the conditions of Article 15.2.10.;

4) the pigs were slaughtered in a *slaughterhouse/abattoir*:

   a) which is approved for export by the *Veterinary Authority*;

   b) in which no *case* of CSF was detected during the period between the last *disinfection* carried out before *slaughter* and the consignment for export has been dispatched from the *slaughterhouse/abattoir*;

5) the pigs were subjected to ante- and post-mortem inspections in accordance with Chapter 6.2. with favourable results;

6) appropriate precautions were taken after *slaughter* to avoid cross-contamination of the *fresh meat* with any source of CSFV.

Article 15.2.17.

Recommendations for the importation of meat products of pigs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the meat products:

1) were prepared:

   a) exclusively from *fresh meat* meeting the conditions laid down in Article 15.2.15. or Article 15.2.16.;

   b) in a processing facility that, at the time of processing:

      i) was approved for export by the *Veterinary Authority*;

      ii) processed only *meat* from pigs satisfying the conditions in Article 15.2.15. or Article 15.2.16.;

OR

2) were processed in accordance with one of the processes in Article 15.2.23. in a facility approved by the *Veterinary Authority* for export purposes, and that appropriate precautions were taken after processing to avoid cross-contamination of the product with any source of CSFV.

Article 15.2.18.

Recommendations for the importation of bristles

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bristles:

1) originated from domestic or *captive wild* pigs in a country, *zone* or *compartment* free from CSF and were processed in a facility approved by the *Veterinary Authority* for export purposes; or
2) were processed in accordance with one of the processes in Article 15.2.25. in a facility approved by the *Veterinary Authority* for export purposes, and that appropriate precautions were taken after processing to avoid cross-contamination of the product with any source of CSFV.

Article 15.2.19.

Recommendations for the importation of litter and manure from pigs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the litter or manure:

1) originated from domestic or *captive wild* pigs in a country, *zone* or *compartment* free from CSF and were processed in a facility approved by the *Veterinary Authority* for export purposes; or
2) were processed in accordance with one of the procedures in Article 15.2.26. in a facility approved by the *Veterinary Authority* for export purposes, and that appropriate precautions were taken after processing to avoid cross-contamination of the product with any source of CSFV.

Article 15.2.20.

Recommendations for the importation of skins and trophies from pigs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the skins or trophies:

1) originated from domestic or *captive wild* pigs in a country, *zone* or *compartment* free from CSF and were processed in a facility approved by the *Veterinary Authority* for export purposes; or
2) were processed in accordance with one of the procedures in Article 15.2.27. in a facility approved by the *Veterinary Authority* for export purposes, and that appropriate precautions were taken after processing to avoid cross-contamination of the product with any source of CSFV.

Article 15.2.21.

Recommendations for the importation of other pig commodities

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

1) originated from domestic or *captive wild* pigs in a country, *zone* or *compartment* free from CSF and were processed in a facility approved by the *Veterinary Authority* for export purposes; or
2) were processed in a manner that has been demonstrated to inactivate CSFV in a facility approved by the *Veterinary Authority* for export purposes, and that appropriate precautions were taken after processing to avoid cross-contamination of the product with any source of CSFV.

Article 15.2.22.

Procedures for the inactivation of CSFV in swill

For the inactivation of CSFV in swill, one of the following procedures should be used:

1) the swill is maintained at a temperature of at least 90°C for at least 60 minutes, with continuous stirring; or
2) the swill is maintained under saturated steam conditions at a temperature of at least 121°C for at least 10 minutes at an absolute pressure of 2 bar; or
3) the swill is subjected to an equivalent treatment that has been demonstrated to inactivate CSFV.

Article 15.2.23.

Procedures for the inactivation of CSFV in meat

For the inactivation of CSFV in *meat*, one of the following procedures should be used:

1. Heat treatment

   Meat should be subjected to:

   a) a heat treatment for at least 30 minutes at a minimum temperature of 70°C, which should be reached throughout the *meat*;

   b) any equivalent heat treatment which has been demonstrated to inactivate CSFV in *meat*.

2. Natural fermentation and maturation

   The *meat* should be subjected to a treatment consisting of natural fermentation and maturation resulting in the following characteristics:

   a) an a_w value of not more than 0.93; or

   b) a pH value of not more than 6.0.

3. Dry cured pig meat

   Meat should be cured with salt and dried for a minimum of six months.

Article 15.2.24.

Procedures for the inactivation of CSFV in casings of pigs

For the inactivation of CSFV in *casings* of pigs, the following procedure should be used: treatment for at least 30 days with: phosphate supplemented salt, containing 86.5% NaCl, 10.7% Na_2HPO_4 and 2.8% Na_3PO_4 (weight/weight/weight), either dry, or as or saturated brine (a_w< 0.80), and at a temperature of 20°C or above.

Article 15.2.25.

Procedures for the inactivation of CSFV in bristles

For the inactivation of CSFV in bristles for industrial use, they should be boiled for at least 30 minutes.

Article 15.2.26.

Procedures for the inactivation of CSFV in litter and manure from pigs

For the inactivation of CSFV in litter and manure from pigs, one of the following procedures should be used:

1) moist heat treatment for at least one hour at a minimum temperature of 55°C, which should be reached throughout the product;
2) moist heat treatment for at least 30 minutes at a minimum temperature of 70°C, which should be reached throughout the product;
3) any equivalent treatment that has been demonstrated to inactivate CSFV.

Article 15.2.27.

Procedures for the inactivation of CSFV in skins and trophies

For the inactivation of CSFV in skins and trophies, one of the following procedures should be used:

1) boiling in water for an appropriate time, to ensure that any matter other than bone, tusks or teeth is removed;
2) gamma irradiation at a dose of at least 20 kiloGray at room temperature (20°C or higher);
3) soaking, with agitation, in a 4% (w/v) solution of washing soda (sodium carbonate [Na_2CO_3]) maintained at pH 11.5 or above for at least 48 hours;

4) soaking, with agitation, in a formic acid solution (100 kg salt [NaCl] and 12 kg formic acid per 1,000 litres water) maintained below pH 3.0 for at least 48 hours,wetting and dressing agents may be added to the solution;

5) in the case of raw hides, salting for at least 28 days with sea salt containing 2% washing soda (sodium carbonate [Na_2CO_3]).

Article 15.2.28.

Introduction to surveillance

Articles 15.2.28. to 15.2.33. define the principles and provide guidance on the *surveillance* for CSF, complementary to Chapter 1.4., applicable to Member Countries seeking the WOAH recognition of free status. This may be for the entire country or a *zone*. Guidance is also provided for Member Countries seeking recovery of free status for the entire country or for a *zone* following an *outbreak* and for the maintenance of free status.

The impact and epidemiology of CSF may vary in different regions of the world. The *surveillance* strategies employed for demonstrating freedom from CSF at an acceptable level of confidence should be adapted to the local situation. For example, the approach should be tailored in order to prove freedom from CSF for a country or *zone* where *wild* or *feral* pigs provide a potential reservoir of *infection*, or where CSF is present in neighbouring countries. The method should examine the epidemiology of CSF in the region concerned and adapt to the specific risk factors encountered. This should include provision of scientifically based supporting data. There is, therefore, latitude available to Member Countries to provide a well-reasoned argument to prove that absence of *infection* with CSFV is assured at an acceptable level of confidence.

Surveillance for CSF should be in the form of a continuing programme designed to establish that susceptible populations in a country, *zone* or *compartment* are free from *infection* with CSFV or to detect the introduction of CSFV into a population already defined as free. Consideration should be given to the specific characteristics of CSF epidemiology which include:

- the role of swill feeding, the impact of different production systems and the role of *wild* and *feral* pigs in disease spread;
- the role of semen in transmission of the virus;
- the lack of pathognomonic gross lesions and clinical signs;
- the frequency of clinically inapparent *infections*;
- the occurrence of persistent and chronic *infections*;
- the variability in genotype, antigens, and virulence exhibited by different strains of CSFV.

Article 15.2.29.

General conditions and methods for surveillance

1) A *surveillance* system in accordance with Chapter 1.4. and under the responsibility of the *Veterinary Authority* should address the following aspects:
   a) formal and ongoing system for detecting and investigating *outbreaks* of disease or CSFV *infection* should be in place;
   b) a procedure should be in place for the rapid collection and transport of samples from suspected *cases* to a *laboratory*;
   c) appropriate laboratory testing capability for CSF diagnosis;
   d) a system for recording, managing and analysing diagnostic and *surveillance* data should be in place.
2) The CSF *surveillance* programme should:
   a) include an *early warning system* throughout the production, marketing and processing chain for reporting suspected *cases*. Diagnosticians and those with regular contact with pigs should report promptly any suspicion of CSF to the *Veterinary Authority*. The reporting system under the *Veterinary Authority* should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary paraprofessionals*) by information programmes. Given that many strains of CSFV do not induce pathognomonic gross lesions or clinical signs, *cases* in which CSF cannot be ruled out should be immediately investigated. Other important diseases such as African swine fever should also be considered in any differential diagnosis.

      As part of the contingency plan, personnel responsible for *surveillance* should be able to call for assistance from a team with expertise in CSF diagnosis, epidemiological evaluation, and control;

b) implement, when relevant, regular and frequent clinical inspections and laboratory testing of high-risk groups (for example, where swill feeding is practised), or those neighbouring a country or *zone* infected with CSFV (for example, bordering areas where infected *wild* and *feral* pigs are present).

An effective *surveillance* system will periodically identify suspected *cases* that require follow-up and investigation to confirm or exclude *infection* with CSFV. The rate at which such suspected *cases* are likely to occur will differ among epidemiological situations and cannot, therefore, be reliably predicted. Applications for recognition of free status should, as a consequence, provide details in accordance with Chapter 1.9. of the occurrence of suspected *cases* and how they were investigated and dealt with.

Member Countries should review their *surveillance* strategies whenever an increase in the likelihood of incursion of CSFV is identified. Such changes include but are not limited to:

a) an emergence or an increase in the prevalence of CSF in countries or *zones* from which live pigs or products are imported;

b) an increase in the prevalence of CSF in *wild* or *feral* pigs in the country or *zone*;

c) an increase in the prevalence of CSF in neighbouring countries or *zones*;

d) increased entry of, or exposure to, infected *wild* or *feral* pig populations from neighbouring countries or *zones*.

Article 15.2.30.

Surveillance strategies

1. Introduction

The population covered by *surveillance* aimed at detecting disease and *infection* should include the domestic and *captive wild* pig populations and *wild* and *feral* pig populations within the country or *zone* to be recognised as free from CSF.

The strategy employed to estimate the prevalence or demonstrate the absence of *infection* with CSFV may be based on clinical investigation or on randomised or targeted sampling at an acceptable level of statistical confidence. If an increased likelihood of *infection* in particular localities or subpopulations can be identified, targeted sampling may be an appropriate strategy. This may include:

a) swill fed farms;

b) pigs reared outdoors;

c) specific high-risk *wild* and *feral* pig subpopulations and their proximity.

Risk factors may include, among others, temporal and spatial distribution of past *outbreaks*, pig movements and demographics, and types of production system.

Serology in unvaccinated populations is often the most effective and efficient *surveillance* methodology, for reasons of cost, extended duration of antibody levels, and the existence of clinically inapparent *infections*. In some circumstances, such as differential diagnosis of other diseases, clinical and virological *surveillance* may also have value.

The *surveillance* strategy chosen should be justified as adequate to detect the presence of *infection* with CSFV in accordance with Chapter 1.4. and the epidemiological situation. Cumulative survey results in combination with the results of routine *surveillance*, over time, will increase the level of confidence in the *surveillance* strategy.

When applying randomised sampling, either at the level of the entire population or within targeted sub-populations, the design of the sampling strategy should incorporate epidemiologically appropriate design prevalences for the selected populations. The sample size selected for testing should be large enough to detect *infection* if it were to occur at a predefined minimum rate. The choice of design prevalence and confidence level should be justified based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the design prevalence in particular, needs to be based on the prevailing or historical epidemiological situation.

Irrespective of the approach selected, the sensitivity and specificity of the diagnostic tests should be considered in the survey design, the sample size determination, and the interpretation of the results obtained.

The design of the *surveillance* system should anticipate the occurrence of false positive reactions. This is especially true of the serological diagnosis of *infection* with CSFV because of the recognised cross-reactivity with ruminant pestiviruses, among other factors mentioned in point 4. There should be an effective procedure for following up positives to determine with a high level of confidence, whether or not they are indicative of *infection* with CSFV. This should involve confirmatory and differential tests for pestiviruses, as well as further investigations concerning the original sampling unit, as well as *animals* which may be epidemiologically linked.

2. Clinical surveillance

Clinical *surveillance* continues to be the cornerstone of detection of *infection* with CSFV. However, owing to the low virulence of some CSFV strains and the spread of diseases such as African swine fever, and those associated with porcine circovirus 2 *infection*, clinical *surveillance* should be supplemented, as appropriate, by serological and virological *surveillance*.

Clinical signs and pathological findings are useful for early detection; in particular, any situations in which clinical signs or lesions suggestive of *infection* with CSFV are accompanied by high morbidity or mortality should be investigated without delay. In CSFV *infections* involving low virulence strains, high mortality may only be seen in young *animals* and adults may not present clinical signs.

Wild and *feral* pigs rarely present the opportunity for clinical observation, but should form part of any *surveillance* scheme and should, ideally, be monitored for virus as well as antibodies.

3. Virological surveillance

Virological *surveillance* should be conducted:

a) to monitor at risk populations;
b) to investigate clinically suspected *cases*;
c) to follow up positive serological results;
d) to investigate increased mortality.

Molecular detection methods can be applied to large-scale screening for the presence of virus. If targeted at high-risk groups, they provide an opportunity for early detection that can considerably reduce the subsequent spread of disease. Epidemiological understanding of the pathways of spread of CSF can be greatly enhanced by molecular analyses of viruses in endemic areas and those involved in *outbreaks* in areas previously free from CSF. Therefore, CSFV isolates should be sent to a WOAH Reference Laboratory for further characterisation.

4. Serological surveillance

Serological *surveillance* is aimed at detecting antibodies against CSFV. Positive CSFV antibody test results can have five possible causes:

a) natural *infection* with CSFV;
b) *vaccination* against CSF;
c) maternal antibodies;
d) cross-reactions with other pestiviruses;
e) non-specific reactors.

The *infection* of pigs with other pestiviruses may complicate a *surveillance* strategy based on serology. Antibodies to bovine viral diarrhoea viruses (BVDV) and Border disease virus (BDV) can give positive results in serological tests for CSF, due to common antigens. Such samples will require differential tests to confirm their identity. One route by which ruminant pestiviruses can infect pigs is the use of vaccines contaminated with BVDV.

Infection with CSFV may lead to persistently infected, seronegative young animals, which continuously shed virus. CSFV *infection* may also lead to chronically infected pigs that may have undetectable or fluctuating antibody levels. Even though serological methods will not detect these animals, such animals are likely to be a minority in a *herd* and would not confound a diagnosis based on serology as part of a *herd* investigation.

It may be possible to use, for *surveillance* of CSF sera collected for other survey purposes. However, the principles of survey design and statistical validity should not be compromised.

In countries or *zones* where *vaccination* has been recently discontinued, targeted serosurveillance of young unvaccinated animals can indicate the presence of *infection*. Maternal antibodies are usually found at up to 8-10 weeks of age but may be occasionally last up to 4.5 months and can interfere with the interpretation of serological results.

Marker vaccines and accompanying DIVA tests which fulfil the requirements of the *Terrestrial Manual* may allow discrimination between vaccinal antibody and that induced by natural *infection*. The serosurveillance results using DIVA techniques may be interpreted either at animal or at *herd* level.

Article 15.2.31.

Additional surveillance for Member Countries applying for WOAH recognition of free status

The strategy and design of the *surveillance* programme will depend on the prevailing epidemiological circumstances in and around the country or *zone* and should be planned and implemented according to the conditions for status recognition described in Article 15.2.3. and methods described elsewhere in this chapter. The objective is to demonstrate the absence of *infection* with CSFV in domestic and *captive wild* pigs during the last 12 months and to assess the *infection* status in *wild* and *feral* pig populations as described in Article 15.2.33.

Article 15.2.32.

Additional surveillance for recovery of free status

In addition to the general conditions described in this chapter, a Member Country seeking recovery of free status of a country or *zone*, including a *containment zone*, should show evidence of an active *surveillance* programme to demonstrate absence of *infection* with CSFV.

Populations under this *surveillance* programme should include:

1) *establishments* in the proximity of the *outbreaks*;
2) *establishments* epidemiologically linked to the *outbreaks*;
3) animals moved from or used to repopulate affected *establishments*;
4) any *establishments* where contiguous culling has been carried out;
5) *wild* and *feral* pig populations in the area of the *outbreaks*.

The domestic and *captive wild* pig populations should undergo regular clinical, pathological, virological and serological examinations, planned and implemented according to the general conditions and methods described in this chapter. Epidemiological evidence of the *infection* status in *wild* and *feral* pigs should be compiled. To regain free status, the *surveillance* approach should provide at least the same level of confidence as the original application for recognition of freedom.

Article 15.2.33.

Surveillance for CSFV in wild and feral pigs

1) The objective of a *surveillance* programme is either to demonstrate that *infection* with CSFV is not present in *wild* and *feral* pigs or, if it is known to be present, to estimate the distribution and prevalence of the *infection*. While the same principles apply, *surveillance* in *wild* and *feral* pigs presents additional challenges including:
   a) determination of the distribution, size and movement patterns associated with the *wild* and *feral* pig population;
   b) relevance and practicality of assessing the possible presence of *infection* with CSFV within the population;
   c) determination of the practicability of establishing a *zone* taking into account the degree of interaction with domestic and *captive wild* pigs within the proposed *zone*.

   The geographical distribution and estimated size of *wild* and *feral* pig populations need to be assessed as a prerequisite for designing a monitoring system. Sources of information to aid in the design of a monitoring system may include governmental and non-governmental *wildlife* organisations such as hunting associations.
2) For implementation of the *surveillance* programme, the limits of the area over which *wild* and *feral* pigs range should be defined. *Subpopulations* of *wild* and *feral* pigs may be separated from each other by natural or artificial barriers.
3) The *surveillance* programme should involve serological and virological testing, including pigs hunted or found dead, road kills, and pigs showing abnormal behaviour or exhibiting gross lesions during dressing.
4) There may be situations in which a more targeted *surveillance* programme can provide additional assurance. The criteria to define high risk areas for targeted *surveillance* include:
   a) areas with past history of CSF;
   b) subregions with large populations of *wild* and *feral* pigs;
   c) regions bordering countries or *zones* infected with CSFV;

d) interface between *wild* and *feral* pig populations, and domestic and *captive wild* pig populations;

e) areas with farms with free-ranging and outdoor pigs;

f) *establishments* that feed swill;

g) areas with a high level of hunting activity, where animal dispersion and feeding as well as inappropriate disposal of waste can occur;

h) other *risk* areas determined by the *Veterinary Authority* such as ports, airports, garbage dumps and picnic and camping areas.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2021.

CHAPTER 15.3.

INFECTION WITH PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS

Article 15.3.1.

General provisions

The pig is the only natural host for porcine reproductive and respiratory syndrome virus (PRRSV).

For the purposes of the *Terrestrial Code*, porcine reproductive and respiratory syndrome (PRRS) is defined as an *infection* of domestic and *captive wild* pigs with PRRSV.

The following defines the occurrence of *infection* with PRRSV:

1) PRRSV, excluding vaccine strains, has been isolated from a sample from a domestic or *captive wild* pig;

OR

2) antigen or ribonucleic acid specific to PRRSV, which is not a consequence of *vaccination*, has been identified in a sample from a domestic or *captive wild* pig epidemiologically linked to a confirmed or suspected *case* of PRRS, or giving cause for suspicion of previous association or contact with PRRSV, with or without clinical signs consistent with PRRS;

OR

3) a live PRRSV vaccine strain has been isolated or antigen or ribonucleic acid specific to a live PRRSV vaccine strain has been detected in a sample from a domestic or *captive wild* pig that is unvaccinated, or has been vaccinated with an inactivated vaccine, or with a different vaccine strain, showing clinical signs suggestive of PRRS, or epidemiologically linked to a suspected or confirmed *case*;

OR

4) antibodies specific to PRRSV, unless they are demonstrated to be a consequence of *vaccination*, have been detected in samples from a domestic or *captive wild* pig in a *herd* showing clinical signs consistent with PRRS, or epidemiologically linked to a confirmed or suspected *outbreak* of PRRS, or giving cause for suspicion of previous association or contact with PRRSV.

For the purposes of the *Terrestrial Code*, the *incubation period* of PRRS shall be 14 days.

Commodities of domestic or *captive wild* pigs can be traded safely in accordance with the relevant articles of this chapter, even if *exporting countries* inform WOAH of the presence of *infection* with PRRSV in *wild* or *feral* pigs.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 15.3.2.

Safe commodities

When authorising import or transit of the following *commodities* and any products made from these *commodities* and containing no other tissues from pigs, *Veterinary Authorities* should not require any PRRS-related conditions, regardless of the PRRS status of the *exporting country*, *zone* or *compartment*:

1) hides, skins and trophies;
2) bristles;
3) *meat products*;
4) *protein meal*;
5) blood-products;
6) *casings*;
7) gelatine.

Article 15.3.3.

Country, zone or compartment free from PRRS

A country, *zone* or *compartment* may be considered free from PRRS when the following conditions are met:

1) PRRS is a *notifiable disease* in the entire country;
2) an *early warning system* is in place;
3) *surveillance* in accordance with Articles 15.3.13. to 15.3.16. has been in place for at least 12 months;
4) there has been no occurrence of *infection* with PRRSV in domestic and *captive wild* pigs during the past 12 months;
5) no *vaccination* against PRRS with inactivated vaccines has been carried out during the past 12 months;
6) no *vaccination* against PRRS with modified live vaccines has been carried out during the past 24 months;
7) pigs and pig *commodities* are imported or introduced in accordance with Articles 15.3.5. to 15.3.12.

Article 15.3.4.

Recovery of free status

Should a PRRS *outbreak* occur in a previously free country, *zone* or *compartment*, the free status may be restored three months after the disposal or *slaughter* of the last *case*, provided that:

1) a *stamping-out policy* or the *slaughter* of all susceptible animals in the infected *herds* followed by *disinfection* of the *establishments*, has been implemented;
2) *surveillance* has been carried out in accordance with Articles 15.3.13. to 15.3.16. with negative results.

Where a *stamping-out policy* or depopulation by means of *slaughter* are not practised, Article 15.3.3. applies.

Article 15.3.5.

Recommendations for importation from countries, zones or compartments free from PRRS

For domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of PRRS on the day of shipment;
2) were kept in a country, *zone* or *compartment* free from PRRS since birth or for at least the past three months.

Article 15.3.6.

Recommendations for importation from countries or zones not free from PRRS

For domestic and captive wild pigs for breeding or rearing

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the pigs:

1) were kept, since birth or for at least three months prior to isolation, in an *establishment* in which no *infection* with PRRSV was detected within that period;
2) showed no clinical sign of PRRS on the day of shipment;
3) have not been vaccinated against PRRS nor are they the progeny of vaccinated sows;
4) were isolated for 28 days by application of *biosecurity* and subjected to a serological test for *infection* with PRRSV, with negative results, on two occasions, at an interval of not less than 21 days, the second test being performed within 15 days prior to shipment.

Article 15.3.7.

Recommendations for importation from countries or zones not free from PRRS

For domestic and captive wild pigs for slaughter

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals showed no clinical sign of PRRS on the day of shipment.

The pigs should be transported directly with appropriate *biosecurity* from the *place of shipment* to the *slaughterhouse/abattoir* for immediate *slaughter*.

Article 15.3.8.

Recommendations for importation from countries, zones or compartments free from PRRS

For semen of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males:
   a) were kept in a country, *zone* or *compartment* free from PRRS since birth or for at least three months prior to collection;
   b) showed no clinical sign of PRRS on the day of collection of the semen;
2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 15.3.9.

Recommendations for importation from countries or zones not free from PRRS

For semen of domestic and captive wild pigs

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor males have not been vaccinated against PRRS; and
   a) were kept, since birth or for at least three months prior to entry into the pre-entry isolation facility, in an *establishment* in which no pigs have been vaccinated against PRRS and no *infection* with PRRSV was detected within that period;
   b) showed no clinical sign of PRRS on the day of entry into the pre-entry isolation facility and were subjected to a serological test with negative results on samples collected on the same day;
   c) were kept in the pre-entry isolation facility for at least 28 days and were subjected to a serological test with negative results on samples collected no less than 21 days after entry;
   d) EITHER
      i) have been kept in an *artificial insemination centre* where, at least every month, serum samples from a statistically representative number of all donor males are subjected, to an appropriate test for *infection* with PRRSV with negative results. The sampling scheme should be designed to ensure that all donor males are tested every 12 months and at least once during their stay;

      OR

      ii) have been kept in an *artificial insemination centre* where all donor males were subjected to serological and virological examinations for *infection* with PRRSV, with negative results, on serum samples taken on the day of collection;
2) the semen was collected, processed and stored in accordance with the relevant articles in Chapters 4.6. and 4.7.

Article 15.3.10.

Recommendations for importation of *in vivo* derived embryos of domestic and captive wild pigs from countries, zones or compartments free from PRRS

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females were kept in a country, *zone* or *compartment* free from PRRS since birth or for at least three months prior to collection;

2) the donor females showed no clinical sign of PRRS on the day of collection;

3) the embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant;

4) the semen used for the production of embryos complied with the provisions of Article 15.3.8. or Article 15.3.9.

Article 15.3.11.

Recommendations for importation of *in vivo* derived embryos of domestic and captive wild pigs from countries or zones not free from PRRS

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

1) the donor females:
   a) showed no clinical sign of PRRS on the day of collection;
   b) were subjected to a serological test for *infection* with PRRSV, with negative results, on two occasions, at an interval of not less than 21 days, the second test being performed within 15 days prior to embryo collection;

2) the embryos were collected, processed and stored in accordance with Chapters 4.8.and 4.10., as relevant;

3) the semen used for the production of embryos complied with the provisions of Article 15.3.8. or Article 15.3.9.

Article 15.3.12.

Recommendations for importation of fresh meat of domestic and captive wild pigs

Regardless of the PRRS status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from pigs that have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected with favourable results to ante- and post-mortem inspections in accordance with Chapter 6.3.

Article 15.3.13.

Introduction to surveillance

The following defines the principles and provides a guide to the *surveillance* for PRRS, complementary to Chapter 1.4. This may be for the entire country, a *zone* or a *compartment*. Guidance is also provided for Member Countries seeking recovery of PRRS status for the entire country, for a *zone* or for a *compartment*, following an *outbreak* and for the maintenance of PRRS status.

Surveillance should be capable of detecting the presence of *infection* with PRRSV even in the absence of clinical signs. *Surveillance* for PRRS should be in the form of a continuing programme designed to establish that domestic and *captive wild* pig populations in a country, *zone* or *compartment* are free from *infection* with PRRSV or to detect the introduction of PRRSV into a population already defined as free. Consideration should be given to the specific characteristics of PRRS epidemiology that include:

- the role of pig-to-pig contact;
- the role of semen in transmission of the virus;
- the possible occurrence of aerosol transmission;
- the existence of two distinct genotypes of PRRSV, also with antigenic and virulence variability among strains of both genotypes;
- the frequency of clinically inapparent *infections*, particularly in older pigs;
- the possible occurrence of long-term virus-shedding even in the presence of antibodies;
- the lack of a differentiating test for vaccinal antibodies and the inherent *risks* associated with the use of modified live vaccines for PRRS.

Veterinary Authorities may have information on the genotype prevailing in the country but it should not be assumed that the other genotype is absent. Therefore, virological and serological tests used for *surveillance* should be able to detect both genotypes and antibodies to both genotypes with similar sensitivity.

Article 15.3.14.

General conditions and methods for surveillance

1) A *surveillance* system in accordance with Chapter 1.4. and under the responsibility of the *Veterinary Authority* should be in place and include the following elements:
   a) formal and ongoing system for detecting and investigating *outbreaks* of PRRS;
   b) a system for recording, managing and analysing diagnostic and *surveillance* data.
2) Any PRRS *surveillance* programme should:
   a) include the reporting and investigation of suspected *cases*. Diagnosticians and those with regular contact with pigs should report promptly any suspicion of PRRS to the *Veterinary Authority*;
   b) implement, when relevant, regular and frequent clinical inspections and *laboratory* testing of populations at high-risk of contracting or spreading disease, such as *artificial insemination centres* and nucleus *herds*, *establishments* in high pig density areas or with lax *biosecurity*.

Article 15.3.15.

Surveillance strategies

1. Introduction

The objective of *surveillance* is to estimate the *prevalence* of *infection*, demonstrate freedom or detect introduction of PRRSV as soon as possible.

The *surveillance* strategy chosen should be justified as adequate to detect the presence of *infection* with PRRSV in accordance with Chapter 1.4. and the epidemiological situation. Cumulative results of targeted and general *surveillance* will increase the level of confidence in the *surveillance* strategy.

2. Clinical surveillance

Clinical signs and pathological findings are useful for early detection. Episodes of high morbidity or mortality in young piglets and reproductive disorders in sows should also be investigated. Highly pathogenic strains may affect pigs of all ages and can include severe respiratory signs. In PRRSV *infections* involving low virulence strains, clinical signs may not be present or are seen only in young animals. Therefore, clinical *surveillance* should be supplemented by serological and virological *surveillance*.

3. Virological surveillance

In some circumstances such as clinical disease investigations and in high-risk populations, virological *surveillance* may provide an advantage through earlier detection.

Virological *surveillance* should be conducted:

a) to monitor high-risk populations;
b) to investigate clinically suspected *cases*;
c) to follow up positive serological results.

Molecular detection methods are most commonly used for virological *surveillance* and can be also applied to large-scale screening. If targeted at high-risk populations, they provide an opportunity for early detection that can considerably reduce the subsequent spread of disease. Molecular analysis can provide valuable information on genotype circulating in the country and enhance epidemiological understanding of the pathways of spread in endemic areas and those involved in *outbreaks* in disease free areas.

4. Serological surveillance

Serology in unvaccinated populations is often the most effective and efficient *surveillance* methodology. In some pigs, antibodies against PRRSV can disappear after approximately three to six months in the absence of further exposure and this should be considered when interpreting serological *surveillance* results.

In the absence of a test differentiating infected from vaccinated animals (DIVA), serology in vaccinated populations is less useful.

Maternal antibodies are generally detectable until four to eight weeks of age. The collection of samples should therefore take account of the type of *herd* and the age structure of the pigs, with an emphasis on older pigs. However, in countries or *zones* where *vaccination* has been recently discontinued, targeted serological *surveillance* of young unvaccinated pigs older than eight weeks can indicate the presence of *infection*.

Article 15.3.16.

Additional surveillance requirements for recovery of free status

In addition to the general conditions described in this chapter, a Member Country declaring the recovery of country, *zone* or *compartment* PRRS free status should provide evidence of an active *surveillance* programme to demonstrate absence of *infection* with PRRSV.

This *surveillance* programme should cover:

1) *establishments* in the proximity of the *outbreaks*;
2) *establishments* epidemiologically linked to the *outbreaks*;
3) pigs moved from or used to repopulate affected *establishments*.

The pig *herds* should undergo regular clinical, pathological, virological and serological examinations, planned and implemented according to the general conditions and methods described in these recommendations.

NB: FIRST ADOPTED IN 2017.

CHAPTER 15.4.

INFECTION WITH *TAENIA SOLIUM* (PORCINE CYSTICERCOSIS)

Article 15.4.1.

General provisions

Taenia solium (T. solium) is a zoonotic cestode (tapeworm) parasite of pigs and occasionally of other animals. The adult cestode occurs in the small intestine of humans (definitive host) causing taeniosis. The larval stage (cysticercus) occurs in striated muscles, subcutaneous tissues and central nervous system of pigs (intermediate hosts), causing cysticercosis. Other suids and some carnivores can be infected but are not epidemiologically significant. Humans may also become infected with the larval stage through the ingestion of eggs shed in faeces of infected humans. The most severe form of human *infection* by the larval stage is neurocysticercosis which causes neurological disorders including seizures (epilepsy) and sometimes death. Cysticercosis, although normally clinically inapparent in pigs, is associated with significant economic losses due to carcass condemnation and decreased value of pigs, and causes a major disease burden in humans.

In humans, taeniosis occurs following ingestion of pig *meat* containing viable cysticerci and can be prevented by avoiding consumption of raw or undercooked contaminated pig *meat*. In humans, cysticercosis occurs following ingestion of *T. solium* eggs and can be prevented by avoiding exposure to *T. solium* eggs through detection and treatment of human tapeworm carriers, community health education, appropriate sanitation, personal hygiene, and good food hygiene. Collaboration between the *Veterinary Authority* and the public health authority is essential in preventing and controlling *T. solium* transmission.

In pigs, cysticercosis occurs by ingestion of *T. solium* eggs from faeces, or environments contaminated with faeces of humans harbouring adult *T. solium*.

For the purposes of the *Terrestrial Code*, *infection* with *T. solium* is defined as an *infection* of pigs.

The aim of this chapter is to reduce the risk of *infection* with *T. solium* of humans and pigs and to minimise the international spread of *T. solium*. The chapter provides recommendations for prevention, control and *surveillance* of *infection* with *T. solium* in pigs.

This chapter should be read in conjunction with the Codex Alimentarius Code of Hygienic Practice for Meat (CAC/RCP 58-2005).

When authorising the import or transit of the *commodities* covered in this chapter, with the exception of those listed in Article 15.4.2., *Veterinary Authorities* should apply the recommendations in this chapter.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 15.4.2.

Safe commodities

When authorising import or transit of the following *commodities* of pigs, *Veterinary Authorities* should not require any *T. solium*-related conditions regardless of the status of the animal population of the *exporting country*:

1) processed fat;
2) *casings*;
3) semi-processed skins which have been submitted to the usual chemical and mechanical processes in use in the tanning industry;
4) bristles, hooves and bones;
5) semen, oocytes and embryos.

Article 15.4.3.

Measures to prevent and control infection with *T. solium*

The *Veterinary Authority* and other *Competent Authorities* should carry out community awareness and education programmes on the risk factors associated with transmission of *T. solium* emphasising the role of pigs and humans.

The *Veterinary Authority* or other *Competent Authorities* should promote the comprehensive *animal health management* of pigs, which should include the following measures:

1. Prevention of infection in pigs

   Transmission of *T. solium* eggs from humans to pigs can be avoided by:

   a) preventing the exposure of pigs to environments contaminated with human faeces;

   b) preventing the deliberate use of human faeces as pig *feed* or the use of pigs as a means of human faeces disposal;

   c) preventing the use of untreated sewage effluent to irrigate or fertilise land to be used by pigs for forage or for food crops;

   d) ensuring that any treated sewage effluent used to irrigate or fertilise land to be used by pigs for forage or for food crops has been treated in a manner shown to inactivate *T. solium* eggs;

   e) providing adequate toilet and sanitation facilities for people in areas and *establishments* where pigs are kept to prevent the exposure of pigs and their environment to human faeces;

   f) where indicated, vaccinating pigs in combination with an anthelmintic treatment in accordance with the *Terrestrial Manual*.

2. Food safety and control of infection in pigs

   a) The *Veterinary Authority* should ensure that all slaughtered pigs are subjected to post-mortem *meat* inspection in accordance with Chapter 6.3., and with reference to Chapter 3.9.5. of the *Terrestrial Manual*.

   b) When cysticerci are detected during post-mortem *meat* inspection:

      i) if cysticerci are detected in a carcass of a pig in multiple locations (systemic infection), that carcass and its viscera, as well as all pigs from the same *establishment* of origin should be disposed of in accordance with Article 4.13.6.;

      ii) if only localised cysticerci are detected in a carcass of a pig, the *meat* from that carcass and from all pigs from the same *establishment* of origin should be treated in accordance with Article 15.4.6. or may be disposed of in accordance with Article 4.13.6.;

      iii) an investigation should be carried out by the *Veterinary Authority* and the public health authority to identify the possible source of the *infection* in order to target an intervention;

      iv) post-mortem examination of pigs at *slaughter* from known infected *establishments* should be intensified until evidence has been obtained indicating that the *infection* has been eliminated from the *establishment*.

   An optimal control programme should include detection and treatment of human tapeworm carriers and control of sewage used for agricultural production.

Article 15.4.4.

Surveillance for infection with *T. solium* in pigs

Communication procedures on the occurrence of *T. solium* should be established between the *Veterinary Authority* and public health authorities.

The *Veterinary Authority* should use information from public health authorities and other sources on human cases of taeniosis or cysticercosis in the initial design and any subsequent modification of *surveillance* programmes.

Surveillance can be conducted by:

1) *meat* inspection at *slaughterhouses/abattoirs*;

2) tongue inspection of live pigs at markets provided that the methods used do not cause injury and avoid unnecessary suffering;

3) other diagnostic tests on live pigs.

The data collected should be used for investigations and for the design or amendment of control programmes as described in Article 15.4.3.

Animal identification and *animal traceability* systems should be implemented in accordance with the provisions of Chapters 4.2. and 4.3.

Article 15.4.5.

Recommendations for the importation of meat and meat products of pigs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* or *meat products*:

1) has been produced in accordance with the Codex Code of Hygienic Practice for Meat (CAC/RCP 58-2005);

AND

2) comes from pigs which have been slaughtered in an approved *slaughterhouse/abattoir*;

AND

3) either
   a) comes from pigs born and raised in a country, *zone* or *compartment* demonstrated to be free from *T. solium* in accordance with Article 1.4.6.;
   or
   b) comes from pigs which have been subjected to post-mortem inspections for *T. solium* cysticerci with favourable results;
   or
   c) has been processed to ensure the inactivation of the *T. solium* cysticerci in accordance with one of the procedures referred to in Article 15.4.6.

Article 15.4.6.

Procedures for the inactivation of *T. solium* cysticerci in meat of pigs

For the inactivation of *T. solium* cysticerci in *meat* of pigs, one of the following procedures should be used:

1) heat treatment to a core temperature of at least 60°C; or
2) freezing to minus 10°C or less for at least ten days or any time and temperature equivalent.

NB: FIRST ADOPTED IN 2015; MOST RECENT UPDATE ADOPTED IN 2022.

CHAPTER 15.5.

TRANSMISSIBLE GASTROENTERITIS

Article 15.5.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for transmissible gastroenteritis (TGE) shall be 40 days.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

Article 15.5.2.

Recommendations for the importation of pigs for breeding or rearing

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of TGE on the day of shipment;

AND EITHER

2) come from an *establishment* in which no *case* of TGE was reported during the 12 months prior to shipment;

and

3) showed negative results to a diagnostic test for TGE during the 30 days prior to shipment, and were kept isolated during this period;

OR

4) come from a country in which TGE is officially notifiable and no clinical *case* has been recorded in the previous three years.

Article 15.5.3.

Recommendations for the importation of pigs for slaughter

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the animals:

1) showed no clinical sign of TGE on the day of shipment;
2) come from an *establishment* in which no *case* of TGE was officially reported during the 40 days prior to shipment.

Article 15.5.4.

Recommendations for the importation of semen of pigs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

1) the donor animals showed no clinical sign of TGE on the day of collection of the semen;

AND EITHER

2) the donor animals have been resident for at least 40 days on an *artificial insemination centre*, and all the pigs on this *artificial insemination centre* were free from clinical signs of TGE during the 12 months prior to collection;

and

3) for fresh semen, the donor animals were subjected to a diagnostic test for TGE with negative results during the 30 days prior to collection;

4) for frozen semen, the donor animals were subjected to a diagnostic test for TGE with negative results at least 14 days after collection;

OR

5) the donor animals have been resident since birth in a country in which TGE is officially notifiable and no clinical *case* has been recorded in the previous three years;

and in all situations:

6) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

NB: FIRST ADOPTED IN 1992.

SECTION 1.

CAMELIDAE

CHAPTER 1.1.

INFECTION WITH MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS

Article 1.1.1.

General provisions

Middle East respiratory syndrome (MERS) is a viral respiratory infection of humans and dromedary camels *(Camelus dromedarius)* which is caused by a coronavirus called Middle East Respiratory Syndrome Coronavirus (MERS-CoV).

Dromedary camels are the natural host and zoonotic source of the MERS-CoV infection in humans. Other species may be susceptible to *infection* with MERS-CoV. However, their epidemiological significance has not been demonstrated.

MERS-CoV has been associated with mild upper respiratory signs in some dromedary camels. While the impact of MERS-CoV on animal health is very low, it can cause severe and sometimes fatal disease in humans.

For the purposes of the *Terrestrial Code*, MERS is defined as an *infection* of dromedary camels with MERS-CoV.

The following defines the occurrence of *infection* with MERS-CoV:

1) MERS-CoV has been isolated and identified as such in a sample from a dromedary camel; or
2) nucleic acid specific to MERS-CoV has been detected in a sample from a dromedary camel showing clinical signs or pathological lesions consistent with MERS, or with epidemiological links either to a confirmed or suspected *case* or to a human infected with MERS-CoV, or giving cause for suspicion of previous association or contact with MERS-CoV.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

NB: FIRST ADOPTED IN 2023.

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