

AFRICAN SWINE FEVER



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Information for Veterinary Practitioners

Introduction

African swine fever (ASF) is a highly contagious, often fatal disease of pigs of all ages. It is caused by a DNA-virus belonging to the family *Asfarviridae*. The virus is extremely resistant and can remain viable for months in pig carcasses, blood, faeces, meat (fresh/frozen/salted/dried/smoked). It can be transmitted through direct contact, swill-feeding and soft-shelled *Ornithodoros* ticks. Although these ticks are implicated in spread of the disease on the African continent, they are not believed to play a role in the current spread of ASF on the European continent. These ticks are not present in Ireland. Iatrogenic transmission is also possible.

Only one serotype of ASF exists, but different genotypes of varying virulence occur. The disease may occur in peracute, acute, sub-acute and chronic forms. There is currently no commercially available vaccine for ASF, though research into vaccine development continues. There are no implications for human health or food safety.

Geographical distribution

ASF has never been confirmed in Ireland. The disease was first discovered in Kenya in 1921. ASF is present in certain regions of sub-Saharan Africa where it is regularly found to in wild bush pigs and warthogs without causing signs of disease. The disease was confirmed in Georgia in 2007 and first entered the European Union in 2014. ASF is currently present in >50 countries worldwide. China first confirmed the presence of ASF in 2018. ASF has had particularly devastating economic and food security impacts on the Asian continent where over 60% of the global pig population is kept.

Species affected

ASF affects members of the *suidae* family i.e. domestic pigs, European wild boar, warthogs and wild pigs. All age groups are equally susceptible. There are no public health implications of ASF.

Clinical signs

Clinical signs can appear anywhere from 3-15 days (most typically 4-7 days) after becoming infected with the virus. Large amounts of virus are typically shed for 24-48 hrs prior to development of clinical signs, as well as during the acute stage. When the disease is newly introduced to an area, it usually presents with acute or peracute clinical signs. Clinical signs of ASF can be very similar to other diseases such as Classical swine fever (CSF) and porcine dermatitis and nephropathy syndrome (PDNS). For this reason, any suspicion of ASF needs to be confirmed by laboratory testing.

Spread of infection

The virus can be found in all body fluids and tissues of infected pigs. Spread of disease occurs through:

- Direct contact with infected pigs, faeces and body fluids (including semen)
- Indirect contact via objects such as equipment, vehicles, dirty boots or contaminated clothing of people who have been in contact with infected pigs
- Pigs eating infected meat or meat products
- Biological vectors- ASF can be spread by a type of soft tick (*Ornithodoros spp*) However, these ticks are not present in Ireland

Signs of African swine fever

Peracute

- Sudden death – animals may die before any clinical signs develop

Acute

- High fever (40.5-42°C)
- Depression, recumbency, dyspnoea, inappetence
- Erythema +/- cyanosis -tips of ears, tail, extremities, underside of chest and belly
- Haemorrhages due to vascular damage
- Reduced movement, huddling together
- Vomiting, diarrhoea (can be bloody), constipation
- Nasal and ocular discharge
- Abortion in pregnant sows
- Death usually occurs within 1-7 days after onset of clinical signs
- Death rates can approach 100% in domestic swine
- Survivors may carry the virus for several months, progressing to subacute or chronic stages

Subacute

- Similar presentation in a less pronounced form
- Pigs may linger for several weeks prior to death
- Abortion
- Outbreak mortality 30-70%

Chronic

- Clinical signs may be non-specific, variable
 - Weight loss, undulating fever, arthritis, joint swelling
- Hair may become long and dull
- Can take months to develop



Pictures courtesy of the European Union Reference Laboratory for African swine fever
Centro de Investigacion en Sanidad Animal (INIA-CISA) Spain

Differential Diagnoses

ASF can present in a similar manner to other swine diseases and is clinically indistinguishable from Classical swine fever (CSF) which is also a notifiable disease. Any suspicion of ASF must be either confirmed or ruled out by the use of laboratory testing.

Other differential diagnoses include:

Porcine Dermatitis Nephropathy Syndrome (PDNS), Post-weaning Multisystemic Wasting Syndrome (PMWS).

Bacterial diseases such as erysipelas, salmonellosis and pasteurellosis may also present with signs similar to ASF. However, such bacterial diseases will often respond to antimicrobials and have lower morbidity and mortality rates.

What should I do if I suspect ASF?

ASF is a **notifiable** disease. If you suspect the disease you are legally obliged to report it **immediately**. Contact should be made, without delay, to your **Regional Veterinary Office (RVO)** or the Department of Agriculture Food and the Marine HQ on **(01) 607 2000**. Contact details of RVOs can be found at www.gov.ie/agriculture/contact. Outside office hours, call the National Disease Emergency Hotline on **01 492 8026**.

An automatic standstill on animals, animal products, feed, waste or any other thing which could spread the disease both on and off the premises. If you are present on a farm at the time of suspicion, you should remain onsite until a veterinary inspector from the Department of Agriculture Food and the Marine arrives. You should then stand down from any contact with pigs until ASF has been ruled out.

Veterinary practitioners should not perform post-mortem examinations, or take samples from pigs for laboratory testing suspected of being infected with a notifiable disease. The facts below are for information only:

Post Mortem findings

External lesions

- Carcasses of pigs are often in good condition- if they die in the peracute/acute stage of disease
- Erythema +/- cyanosis of the extremities, chest and abdomen. Areas are often clearly demarcated
- Subcutaneous haemorrhage may be visible in light skinned pigs
- Bloody froth from the nose and mouth, ocular discharge, soiling of the tail and perineum with bloody faeces

Internal lesions may include:

- Sero-sanguinous fluid in the thoracic and abdominal cavities
- Hydropericardium
- Petechial haemorrhages in kidneys, visceral surfaces of organs, mucous membranes
- Enlarged friable spleen
- Enlarged haemorrhagic lymph nodes that may resemble blood clots
- Congested intestines with bloody contents
- Gastric ulceration

Laboratory Diagnosis

Samples taken as part of an official investigation, are sent to the Central Veterinary Research Laboratory, Backweston. Clotted blood and EDTA samples are required. Tissue samples required for ASF diagnosis are:

- Tonsils
- Spleen
- Kidney
- At least two lymph nodes
- Lung (plus distal ileum for Classical swine fever differentiation)
- Long bone or sternum in the case of autolysed carcasses

Control measures where ASF is confirmed

In the event that ASF is confirmed, European Union legislation requires that all infected and exposed pigs on infected premises are killed, carcasses must be appropriately disposed of, premises are cleaned and disinfected, surveillance and tracing of potentially infected or exposed pigs are carried out. Strict controls are placed on movements of pigs and pig products within a 3 km (minimum) Protection Zone and a 10 km (minimum) Surveillance Zone are imposed. ASF can be successfully eradicated if the disease is detected early and appropriate controls are rapidly introduced, as has been demonstrated by Belgium and the Czech Republic.

Find more information on African swine fever at: www.gov.ie/asf