

World Organisation for Animal Health Founded as OIE

WOAH Reference Laboratory for FMD (1995)

FAO Reference Centre for FMD (2013)

Strategy employed to gradually establish the WOAH recognized FMD-free zones, based on the experience of the Russian Federation and the WOAH Reference Laboratory for FMD.

> Viktor Nikiforov, DVM, Ph.D Head of Reference Laboratory for FMD Diagnosis FGBI ''ARRIAH''

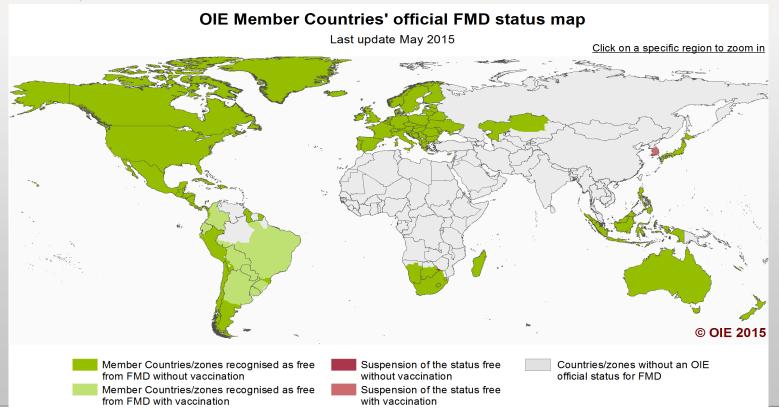


One of the main requirements for the WOAH recognition of FMDfree countries or zones

Article 8.8.5.

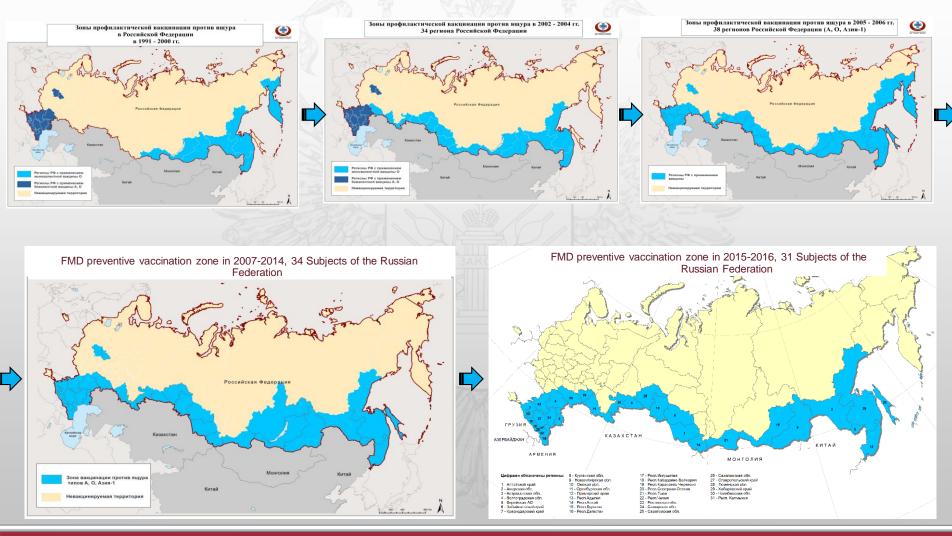
FMD infected country or zone

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.





Expansion of the FMD preventive vaccination zone (buffer zone of Russia) depending on the FMD situation and the WOAH recommendations





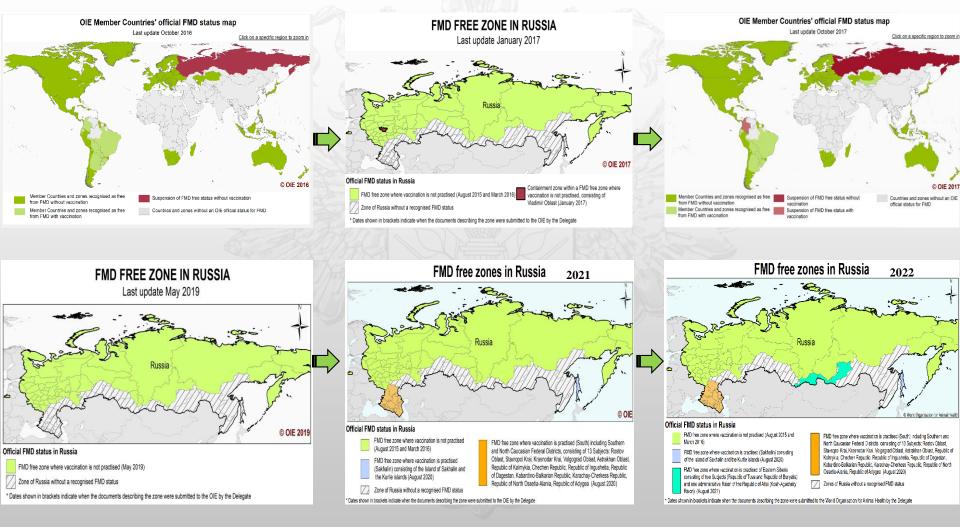


Federal Service for Veterinary and Phytosanitary Surveillance (Rosselkhoznadzor), FGBI «ARRIAH»



Michael General

Gradual establishment of the WOAH-recognized FMD-free zones depending on the FMD situation and the WOAH recommendations





Gradual establishment of the WOAH-recognized FMD-free zones depending on the FMD situation and the WOAH recommendations

FMD free zones in Russia



Official FMD status in Russia

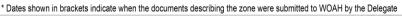
FMD free zone where vaccination is not practised (August 2015 and March 2016)

FMD free zone where vaccination is practised (Sakhalin) consisting of the Island of Sakhalin and the Kurile islands (August 2020)

FMD free zone where vaccination is practised of Eastern Siberia consisting of two Subjects (Republic of Tuva and Republic of Buryatia) and one Raion of the Republic of Altai (Kosh-Agachsky Raion) (August 2021) FMD free zone where vaccination is practised (South) including Southern and North Caucasian Federal Districts, consisting of 13 Subjects: Rostov Oblast, Volgograd Oblast, Astrakhan Oblast, Stavropol Krai, Krasnodar Krai, Chechen Republic, Republics of Ingushetia, Dagestan, Kalmykia, Kabardino-Balkarian, Karachay-Cherkess, North Ossetia-Alania, and Adygea (August 2020)

FMD free zone where vaccination is practised consisting of five Subjects: Amur Oblast, Jewish Autonomous Oblast, Primorsky Krai, Khabarovsky Krai, Zabaykalsky Krai (September 2022)

Zone of Russia without a recognised FMD status







Foot and mouth disease status of Russia

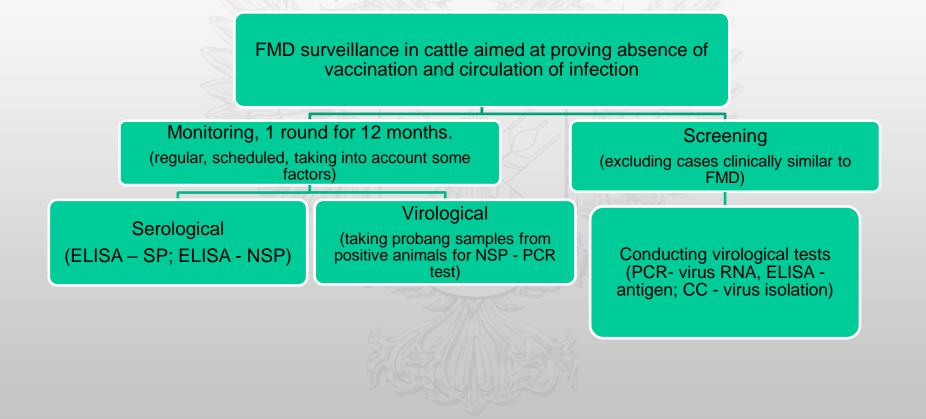
This is to certify that, following a recommendation of the WOAH Scientific Commission for Animal Diseases, the World Assembly of Delegates of WOAH approved on 25 May 2023 that a zone of Russia, namely Zone V 'Far East' consisting of five Subject: Amur Oblast, Jewish Autonomous Oblast, Primorsky Krai, Khabarovsky Krai, Zabaykalsky Krai, as designated by the Delegate of Russia be recognised by WOAH as a zone free from foot and mouth disease (FMD) where vaccination is practised in accordance with the *Terrestral Animal Health Code* (2022).

This recognition is based on the documentation submitted to WOAH by Russia. Russia has the obligation to notify WOAH immediately if there is any change in the epidemiological situation relating to FMD in Russia and to confirm annually that the epidemiological situation has remained unchanged, according to the requirements of the Terrestrial Animal Health Code.



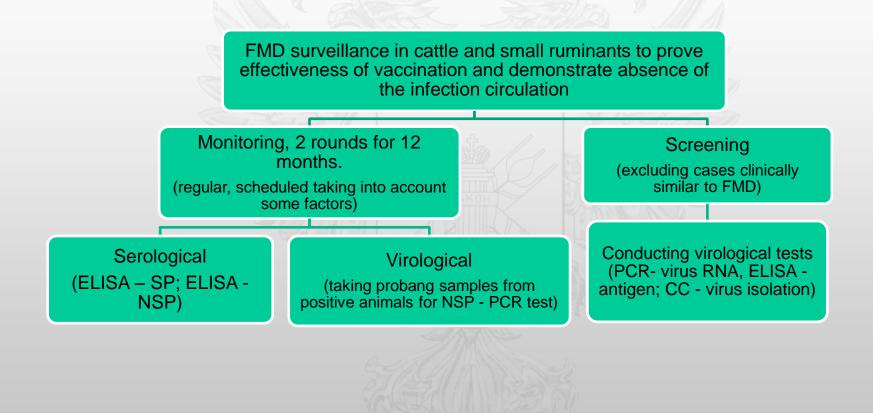


FMD surveillance scheme used in the Russian Federation for farm animals, in the *zone without vaccination*, as part of maintaining the WOAH-recognized FMD-free status





FMD surveillance scheme used in the Russian Federation for farm animals, in the *zone with vaccination*, as part of maintaining WOAH -recognized FMD-free status





FMD surveillance scheme used in the Russian Federation for wild animals, in the zone without vaccination and with vaccination, as part of maintaining the WOAH-recognized FMD-free status

FMD surveillance in wild fauna to prove absence of infection circulation

Monitoring, 1 round for 12 months. (scheduled, seasonal)

Serological and virological tests of samples taken during hunting and population control seasons (deer, roe deer, elk, wild boar) Serological and virological tests of samples taken during seasonal migrations of susceptible wild animals (Mongolian dzerens, saigas) Screening

Testing samples from dead susceptible wild animals





Controlling imports of animal products and animals into the Russian Federation and movements within the country between zones with different FMD statuses

Decision of the Customs Union Commission No. 607 of April 7, 2011 "On the Forms of the Unified Veterinary Certificates for Controlled Goods Imported into the Customs Territory of the Eurasian Economic Union from Third Countries

Decision of the Customs Union Commission No. 317 of June 18, 2010" No. 317 "On the application of veterinary and sanitary measures in the Eurasian Economic Union"



В соответствии со статьей 2.6 Закона Российской Федерация от 14 мая 1993 г. № 4979-1 «О ветеринарии» (Ведомости Съекда народнах денутатов Российской Федерации и Верховного Совета Российскоя Федерация, 1993, № 24, ст. 857, Собрание законскатот болг 2005, № 19, ст. 1752; 2006, № 1, ст. 10, № 1, ст. 17, ст. 2017, № 13, ст. 2017, 2005, № 19, ст. 1752; 2006, № 1, ст. 10, № 1, ст. 17, ст. 2017, № 1, ст. 29, № 30, ст. 380; 2008, № 24, ст. 2801; 2009, № 27, ст. 2007, № 1, ст. 29, № 30, ст. 380; 2008, № 24, ст. 2801; 2009, 2015, № 29, ст. 4339, ст. 4359, ст. 4369, ст. 6, № 30, с. 2.9 иодпункта 5.2 прикта 5. Положения о Министерстве истоитель Российской Федерации, упередсивного постановлением Правительства Российской Федерации, 2008, № 45, ст. 293; № 32, ст. 3791; № 42, ст. 4825; № 46, ст. 5337; 2009, № 1, ст. 150; № 3, ст. 3378; № 6, ст. 738; № 9, ст. 1119, ст. 1121; № 27, ст. 3364; № 3, ст. 3353; ст. 338; № 16, ст. 4251; № 31, ст. 426; № 43, ст. 4350; № 40, ст. 5306; 2011, № 6, ст. 888; № 3, ст. 983; № 12, ст. 1652; № 14, ст. 1935; № 18, ст. 2649; № 22, ст. 3139; № 36, ст. 515; 2102, № 28, ст. 3300; № 30, ст. 4386; со. т. 888; № 7, ст. 983; № 12, ст. 1652; № 14, ст. 1935; № 18, ст. 2649; № 22, ст. 3139; № 36, ст. 515; 2102, № 28, ст. 3300; № 33, ст. 4388; 2011; № 1, ст. 382; № 10, ст. 105; № 13, ст. 4356; № 43, ст. 3522; 2014, № 4; 382; № 10, ст. 1035; № 12, ст. 1367; № 23, ст. 4381; № 26, ст. 3101; 2013, № 10, ст. 1038; № 12, ст. 1652; № 13, ст. 4386; № 43, ст. 5227; № 47, ст. 6603), п. р. и ка за ва 10:

The Ministry of Agriculture of the Russian Federation

ORDER

Of December 14, 2015 No 635

On Approval of Veterinary Rules of Regionalization of the territory of the Russian Federation



WOAH/FAO FMD Reference Laboratory Network Members



The purpose of the Network of WOAH\FAO FMD Reference Laboratories:

- is to make available accurate and timely data to support global surveillance and control of Foot-and-Mouth Disease - understanding global Foot-and-mouth disease virus distribution and patterns in order to identify threats and make vaccine recommendations - improving the quality of laboratory tests from international and national reference laboratories - building up local capability in support of regional control programmes.



Main activities of the WOAH Reference Laboratory for FMD in the Russian Federation (ARRIAH)

The main activities of the FMD Reference Laboratory:

- Implementation and improvement of the FMD surveillance programs and assessment of the herd immunity post-vaccination in order to maintain the WOAH official status of FMD-free zones in the Russian Federation;
- Performing diagnostic tests within the FMD serological (SP/NSPmonitoring) and virological surveillance (ELISA, RT-PCR, CFT, VI);
- Vaccine matching and selection of new vaccine strains;
- Epidemic investigations of FMD outbreaks;
- Development and validation of FMD diagnostic methods and tools;
- Educational activities.





Total number of ELISA tests performed by the ARRIAH within the FMD surveillance, in 2014 - 2023





Options for cooperation in the framework of FMD control

Methods of testing FMD isolates:

- Virus isolation and adaptation of FMDV isolates on cell culture.
- Phylogenetic analysis.
- Antigenic matching between the epizootic FMDV isolate and FMDV production strains.



Options for cooperation in the framework of FMD control

Phylogenetic analysis and vaccine matching results obtained at the FGBI "ARRIAH" for FMD Type O that caused outbreaks in Russia, Kazakhstan and Mongolia in 2021 – 2022

Viruses 2022, 14, x FOR PEER REVIEW BAN/GO/Ka-236(Pig)/2015(KX712091) O/PD126/IND/2015 (MT909626) Antigenic relationship (r_1) between FMDV type O isolates and production vaccine strains O/SAU/2/2016 (MG972594) O/SKR/1/2017 (MG972599) O/NEP/12/2015 (MG972545) Post-vaccination monovalent sera against "ARRIAH" production strains, r1 value O/XJBC/CHA/2017 (KY696708) – O/BHU/10/2016 (MG972484) O/PD252/IND/2016 (MT909680) - O/UAE/1/2015 (MG972605) Manisa (ME-SA) FMDV isolates Primorsky/2000 Primorsky/2014 O/Zabaikalskiv/RUS/2016 (MG972583) Zabaikalsky/201 (O/PanAsia) (O/Mya-98) O No. 2212 O No. 1734 O No. 2102 O/VIT/20/2016 (MG972619) Bankit2616542 O/MOG/14/Ca/Do/2018 OP320828 O/TAI-225-2016R3 (MG972601) r O/MOG/BU/2-7/2015 (LC320038) е Ind-2001 Bankit2616542 O/MOG/13/2017 OP320830 Bankit2616542 O/MOG/13/Ca/Kh/2018 OP320829 ō O/XJPS/CHA/2017 (KY696707) O/MYA/1/2017 (MG972517) Bankit2616542 O/Zabaikalskiy/RUS/2019 OP320831 O/GZZY/CHA/2018 (MH791318) O/Orenburg/2021 0,28 0,04 0,08 0,7 MOG/Khentii/2021 MOG/Khovd/2021 -O/Orenburg/RUS/2021 O/Kazakhstan/20 0,23 0,22 0,05 0,87 LO/KAZ/2022 MOG/Sukhbaatar/2021 O/CAM22/2019 (MZ634454) O/CAM29/2019 (MZ634455) 22 - O/CAM30/2019 (MZ634456) O/LIB/12/2013 (KM921837) d O/UAE/4/2008 (KM921876) С O/Mongolia/2021 0.28 0.44 0.06 0.66 O/KUW/3/97 (DQ164904) а O/OMN/7/2001 (DQ164941) h PanAsia The findings from Table 1 demonstrate that the isolates from Russia and Kazakhstan PanAsia-2 Mya-98 CATHAY

7 of 12

Figure 4. The phylogenetic relationship among the Russian, Kazakhstan and Mongolian FMDV isolates 2021-2022 based on the VP1 gene full-length sequences.

Viruses 2022, 14, x FOR PEER REVIEW

(2021–2022) antigenically differ from O1 Manisa (ME–SA), O №2102/ Zabaikalsky /2010 (O/Mya-98) (r₁ = 0,05–0,28) and bear close resemblance to O №2212/ Primorsky /2014 (O/Mya-98) and O №2311/ Zabaikalsky /2016 (O/Ind-2001) (r1 = 0,66–1,0). The Mongolian isolate is closely related to /Primorsky/2000 (r1 = 0,44).

Federal Service for Veterinary and Phytosanitary Surveillance (Rosselkhoznadzor), FGBI «ARRIAH»



8 of 12

(O/Ind-2001)

Zabaikalsky/2016

1,0

1,0

1.0

O No. 2311/

(O/Mya-98)

Options for cooperation in the framework of FMD control

منظمة (⁷⁷منظمة م الأغذية والزراغة للأم المتحدة 联合国

粮食及

农业组织



or son and the son of Продовольственная и Organización de los сельскохозяйственная Naciones Uni⁴os para & организация Agricultura y la Объединенных Наций Alimentación

ادارة خوراك، وزراعت اقوام متحدد باكتان

Islamabad, June 15, 2022

Dr. Rybin Roman N. Director "Federal Centre for Animal Health" (FGBI "ARRIAH") 600901, Yur'evets, Vladimir, RUSSIA

Subject: Serum samples for antibody analysis for FMD

Dear Dr. Rybin Roman,

FAO Pakistan office has been using FMD Vaccine prepared by your institute since 2012 for the control and prevention of FMD in Pakistan. While field efficacy of the vaccine has been generally good, we do not have evidence of serological conversion of the cattle and buffaloes following vaccination.

We would like to get the serum samples collected from the field prior and following vaccination tested for the development of antibodies. We plan to send 300 samples (one ml serum sample from each of <u>300 cattle and buffaloes</u>) for antibody analysis through serum neutralization and homologous ELISA (list of samples is attached). This will be purely for scientific research and samples will be delivered free of cost.

Kindly let us know if that will be feasible. Please also send us relevant documents including willingness of your institute to receive the samples and NOC (No Objection Certificate) from the relevant veterinary authority.

Thanking you in anticipation

Sincerely Dr. Muhammad Afzal FMD Management Specialist



Federal Service for Veterinary and Phytosanitary Surveillance

Federal State-Financed Institution «Federal Centre for Animal Health» (FGBI «ARRIAH»)

OIE Regional Reference Laboratory for FMD for Eastern Europe, Central Asia and Transcaucesia, OIE Collaborating Centre for Diagnosis and Control of Animal Diseases for Eastern Europe, Central Asia and Transcaucasia OIE Reference Laboratory for Highly Pathogenic Avian Influenza (Poultry) and Newcastle Disease FAO Reference Centre for Foot-and-Mouth Disease 600901 Yur/evets Vladimir Russia Ec: (4922) 26-06-14, Ich/Rav (1922) April 2012

tel.: (4922) 26-06-14, tel./fax: (4922) 26-38-77, e-mail arriah@fsvps.gov.ru, web-site: www.arriah.ru Dr. Muhammad Afzal

Food and Agriculture Organization

Islamabad, Pakistan

FAO-PK@fao.org

Dear Dr. Muhammad Afzal!

This is to inform that 300 bovine sera were delivered from Pakistan to the FGBI "ARRIAH" on 15 July 2022 for the detection of post-vaccinal FMDV antibodies using ELISA and microneutralization test.

ELISA tests of the sera demonstrated positive results for type A antigen in 62.3% of samples, for type Asia-1 antigen – in 71% of samples and for type O antigen – in 80.6% of samples.

Microneutralization test results (MNT) demonstrated type A FMDV antibodies in 79.6% of tested animals, type O FMDV antibodies - in 92.3% of animals and type Asia-1 FMDV antibodies - in 92% of animals. See the attachment for the detailed results.

Attachment on 14 pages.

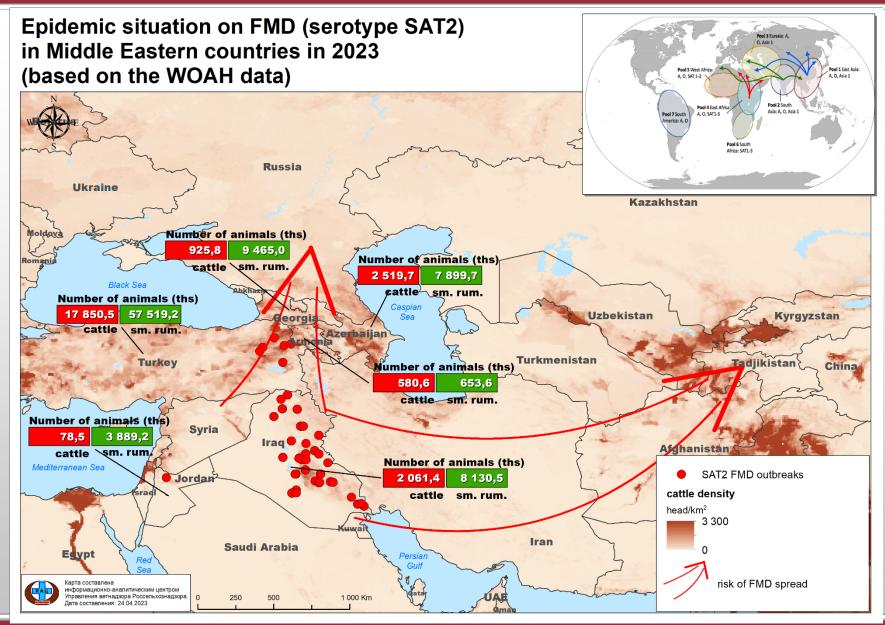
Please accept, Dr. Muhammad Afzal, the assuarances of my highest consideration,

Deputy Director

Il.A. Chvala

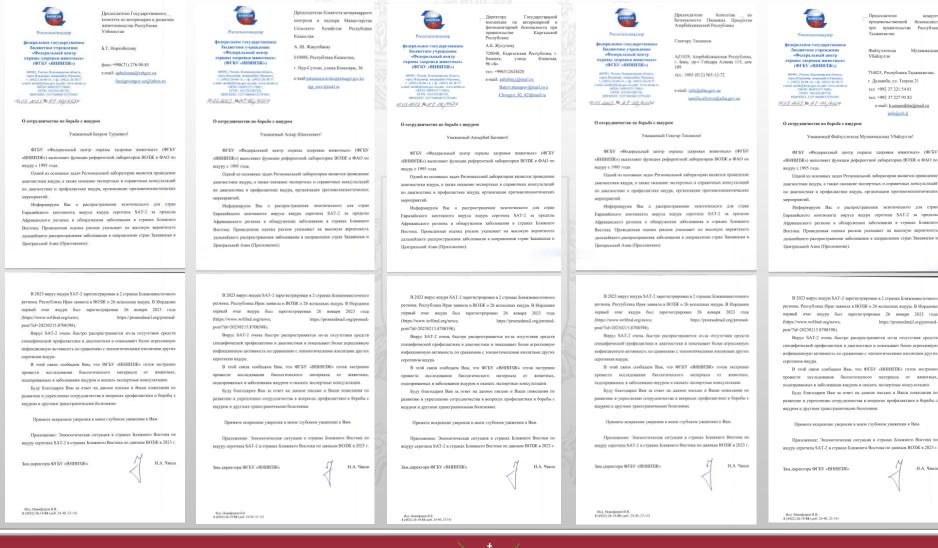
Done by: V.V. Nikiforov







Notifying countries about the risk of FMD SAT2 introduction in order to cooperate in studying the virus that caused the FMD outbreak, in vaccine development and in choosing measures to prevent the pathogen spread



Federal Service for Veterinary and Phytosanitary Surveillance (Rosselkhoznadzor), FGBI «ARRIAH»



В 2023 вирус ящура SAT-2 зарегистрирован в 2 странах Ближневосточно региона. Республика Ирак заявила в ВОЗЖ о 26 вспышках ящура. В Иордания первый очаг ящура был зарегистрирован 26 января 2023 года (https://www.wrlfmd.org/news:

Вирус SAT-2 очень быстро распространяется из-за отсутствия средств специфической профилактики и лиагностики и показывает более агрессивную инфекционную активность по сравнению с эпизоотическими изолятами других

В этой связи сообщаем Вам, что ФГБУ «ВНИИЗЖ» готов экстренно провести исследования биодогического материала от животных. озреваемых в заболевании ящуром и оказать экспертные консультации.

продовольственной безопасности

при правительстве Республики

734025. Республика Талжикистая

e-mail: b.umumikbo@mail.ru info@cfs.tj

https://promedmail.org/promed-

г. Душанбе, ул. Техрон 21

тел +992 37 221 54 01

тел: +992 37 227 95 82

Мухаммалсана

Талжикистан

Файзуллозода

Убайдулло

Буду благодарен Вам за ответ на данное письмо и Ваши пожелания по развитию и укреплению сотрудничества в вопросах профилактики и борьбы с яшуром и другими трансграничными болезнями.

Примите искренние уверения в моем глубоком уважении к Вам.

Приложение: Эпизоотическая ситуация в странах Ближнего Востока по ящуру серотипа SAT-2 в странах Ближнего Востока по данным ВОЗЖ в 2023 г.

И.А. Чвала Зам.директора ФГБУ «ВНИИЗЖ»

FGBI "ARRIAH" has also developed a new vaccine against SAT2 topotype XIV, which caused outbreaks in such countries as Iraq, Jordan, Turkey, Oman, Bahrain



Federal Service for Veterinary and Phytosanitary

Surveillance (Rosselkhoznadzor), FGBI «ARRIAH»





New diagnostic test kits for detection of FMDV SAT 2 SP antibodies have been developed

- The <u>same strains</u> are used both for vaccine production and production of diagnostic test kits in the FGBI "ARRIAH".
- Thus, we get a complete knowledge of the immune response in animals.
- If a diagnostic test kit from a different manufacturer is used, the genetic strain lineages in the test kit may differ from the vaccine strains used, which may negatively affect the detected antibody titers.









World Organisation for Animal Health Founded as OIE



