WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 25 avril 2023 16:02

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Foot and mouth disease
Address of laboratory:	600901 Yur'evets Vladimir RUSSIA
Tel.:	+7-4922 26 06 14
E-mail address:	arriah@fsvps.gov.ru
Website:	www.arriah.ru
Name (including Title) of Head of Laboratory (Responsible Official):	Roman N. Rybin Director of Federal State-Financed Institution «Federal Centre for Animal Health» of Federal Service for Veterinary and Phytosanitary Surveillance (FGBI "ARRIAH")
Name (including Title and Position) of WOAH Reference Expert:	Valery Zakharov, ARRIAH expert, Doctor of Science (Veterinary Medicine), professor
Which of the following defines your laboratory? Check all that apply:	Governmental

TOR1: DIAGNOSTIC METHODS

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Liquid-phase blocking ELISA (LPB ELISA)	Yes	205026	900
Virus neutralization test (VNT)	Yes	11346	900
Indirect NSP-ELISA (ELISA-NSP)	Yes	53954	0
Antigenic matching in VNT	Yes	18	78
Direct diagnostic tests		Nationally	Internationally

Virus isolation in cell cultures	Yes	450	15
Indirect double sandwich ELISA	Yes	450	15
CFT	Yes	450	0
Real-time RT-PCR, 3D gene	Yes	1464	5
Real-time RT-PCR, 5'HTO gene	Yes	1464	5
RT-PCR, VP1 gene	Yes	0	5
VP1 gene sequencing	Yes	0	5

TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED NATIONALLY (ML, MG)	AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)	NO. OF RECIPIENT WOAH MEMBER COUNTRIES	COUNTRY OF RECIPIENTS
Kit for detection of FMD antibodies in animal sera by ELISA	LPB ELISA	.....	1861 kits	33 kits	2	Asia and Pacific Europe
Kit for FMDV antigen detection by ELISA	ELISA (Ag detection ELISA)	.....	20 kits	-	-	
FMD NSP-ELISA kit	NSP-ELISA	.....	314 kits	4 kits	2	Asia and Pacific
FMD RT-PCR kit	PCR	----------	18 kits	-	-	

4. Did your laboratory produce vaccines?

Yes

5. Did your laboratory supply vaccines to WOAH Members?

Yes

VACCINE NAME	AMOUNT SUPPLIED NATIONALLY	AMOUNT SUPPLIED NATIONALLY (ML, MG)	NAME OF RECIPIENT WOAH MEMBERS
Adsorbed FMD vaccine	contract	contract	AFGHANISTAN EGYPT GEORGIA INDONESIA IRAQ JORDAN KAZAKHSTAN KUWAIT KYRGYZSTAN LEBANON MOROCCO PAKISTAN RUSSIA SAUDI ARABIA SYRIA
Emulsion ARRIAH-VAC FMD vaccine	contract	contract	KAZAKHSTAN KOREA (REP. OF) MONGOLIA PAKISTAN RUSSIA

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

No

7. Did your laboratory validate diagnostic methods according to WOAH Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

Yes

9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?

Yes

NAME OF THE NEW VACCINE DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
Inactivated emulsion vaccine for early protection against Type A FMD	Russian Federation, MPK A61K 39/135 (2006.01)/A61K 39/135 (2021.08). Pat. 2772713 Vaccine for early protection against foot-and-mouth disease from strain A 2205/G IV cultural inactivated emulsion/ Pat. 2772713, D. V. Mikhalishin, M. I. Doronin, Yu. S. Yelkina [et al.]; FGI "ARRIAH"}. – No. 2021113565 ; Appl. 2021.5.12.0 ; Pubished on 5.24.0.2022, Bul. No. 15. – Introduced from 12.05.2021 to 12.05.2041
Method for indirect control of completeness of FMD virus antigen inactivation using nested reverse transcriptase polymerase chain reaction followed by electrophoresis of amplicons in agarose gel	Russian Federation, MPK C12Q 1/68 (2006.01); C12N 7/00 (2006.01)/C12Q 1/68 (2022/02); C12N 7/00 (2022/02). Pat. 2773654 Method for indirect control of completeness of FMD virus antigen inactivation using nested reverse transcriptase polymerase chain reaction followed by electrophoresis of amplicons in agarose gel / Pat. 2773654, M. I. Doronin, D. V. Mikhalishin, A. V. Borisov, N. S. Mudrak; FGBI «ARRIAH»}. – No. 2021128361 ; Appl 27.09.2021; Published on 07.06.2022, Bul. No. 16. – Introduced from 27.09.2021 to 27.09.2041

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAH Members?

Yes

NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
KAZAKHSTAN	2022-01-19	ELISA, RT-PCR, sequencing, virus isolation, antigenic matching in VNT	0	2
MONGOLIA	2022-02-04	ELISA, RT-PCR, sequencing, virus isolation, antigenic matching in VNT	0	3

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?

Yes

NAME OF THE WOAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
PAKISTAN	Analysis of causes of FMD outbreak occurrence in Pakistan and ways of addressing the issues related to the FMD outbreaks in the region	Recommendations on the selection of the vaccine strains and use of monovalent vaccines (immunogenicity at least 6,5 PD50)

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
Assessment of immunity level in animals vaccinated against FMD and detection of possible virus circulation in zones where vaccination is practiced	2020-2025	Eradication of highly dangerous diseases including FMD in Mongolian Livestock, stage 3	State Central Veterinary Laboratory, Ulan Bator	MONGOLIA
Agreement on crossborder trade and TADs risk reduction between China, Mongolia and Russia	Not defined	Interactions in case of emergencies associated with dangerous animal diseases including FMD	Veterinary Service Department of the Ministry of Agriculture, PRC; Veterinary and Animal Breeding Agency, Governmental Executive Authority, Mongolia European Commission for the Control of Foot-and-Mouth Disease (EuFMD)	CHINA (PEOPLE'S REP. OF) MONGOLIA
Cooperation on the prevention and control of foot and mouth disease and other transboundary animal diseases between the countries of the Caucasus, Russia and Iran (GF-TADs)	Not defined	Exchange of information on outbreaks of diseases, vaccination of animals		ARMENIA AZERBAIJAN GEORGIA IRAN TURKEY
Joint CIS measures for FMD prevention and control	Until 2025	-	-	ARMENIA AZERBAIJAN BELARUS KAZAKHSTAN KYRGYZSTAN MOLDOVA TAJIKISTAN TURKMENISTAN UKRAINE UZBEKISTAN

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

- The information is collected online on the Rosselkhoznadzor website in the "Epizootic Situation" section, subsections "Russia" and Foreign Countries
http://www.fsvps.ru/fsvps/ya/, http://www.fsvps.ru/fsvps/iac/foreign.html
- epidemiological data are used for compilation of the annual forecasts on farm animal FMD in the Russian Federation, FMD introduction and spread risk analysis, training webinars.
- epidemic data are collected for application for recognition of the WOAH statuses of FMD free zones with/without vaccination

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

- The information is collected online on the Rosselkhoznadzor website in the "Epizootic Situation" section, subsections "Russia" and Foreign Countries
http://www.fsvps.ru/fsvps/ya/, http://www.fsvps.ru/fsvps/iac/foreign.html
- epidemiological data are used for compilation of the annual forecasts on farm animal FMD in the Russian Federation, FMD introduction and spread risk analysis, training webinars.
- epidemic data are collected for application for recognition of the WOAH statuses of FMD free zones with/without vaccination

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

6

1. Doronin M.I. Indirect determination of the FMD virus titer in raw materials for the vaccine using the method of isothermal amplification of viral RNA (NASBA)/ M.I. Doronin // Actual Questions of Veterinary Biology, 2022. v.V. 54, No. 2.-P. 29-37

2. Determination of indicators for tests of polysept (polyhexamethylene guanidine hydrochloride) for flocculation properties/ M.N. Guseva, M.I. Doronin, M.A. Shevchenko, et al.// Veterinary Science Today, 2022. v.V. 11, No. 3. – P. 254-261

3. Determination of the titer of antibodies against the FMD virus strain A NO.2269/ARRIAH/2015 genotype A/Asia/G-VII using a liquid phase blocking indirect variant of ELISA/ M.I. Doronin, N.N. Lugovskaya, D.V. Mikhalishin, et al. // Actual Questions of Veterinary Biology, 2022. v. No. 3 (55).-P. 75-83

4. Construction of the plasmid P JET 1.2 SF GFP-146S FMDV to obtain positive control for the indirect determination of the 146S particles of the foot-and-mouth disease virus in the raw materials for inactivated vaccines/ M.I. Doronin, D.V. Mikhalishin, M.N. Guseva, et al. // Actual Questions of Veterinary Biology, 2022. v. No. 3 (55).-P. 68-74

5. Economic damage from foot-and-mouth disease/ A.V. Mischenko, A.M. Gulyukin, V.A. Mischenko, et al. // Veterinary Medicine, 2022. v. No. 10. – P. 3-8

6. Analysis of the spread of FMD virus with milk and dairy products/ A.V. Mischenko, A.M. Gulyukin, A.S. Oganesyan, V.A. Mischenko, M.I. Gulyukin/ Veterinaria i kormlenie. 2022. No. 6. P. 62-64

b) International conferences:

2
1. Immunobiological properties of the FMDV isolates recovered in Mongolia and Republic of Kazakhstan in 2021-2022/ A.K. Soloshenko, T.K. Mayorova, S.N. Fomina, et al // Proceedings of the research to practice conference "Modern achievements in solving urgent problems of the agro-industrial complex", Minsk, Republic of Belarus, 2022.-P.39-43
2. Achievements made by the Russian Federation within FMD surveillance/ V.V. Nikiforov, A.A. Shmelyov, S.R. Kremenchugskaya, et al. // Proceedings of the research to practice conference "Modern achievements in solving urgent problems of the agro-industrial complex", Minsk, Republic of Belarus, 2022.-P.252-256

c) National conferences:

0
none

d) Other (Provide website address or link to appropriate information):

3
1. Measures taken for FMD surveillance in wild fauna of Zabaikalsky Krai during annual migration of dzerens in 2018-2020/ V.V. Nikiforov, E.N. Kalinina, T.K. Mayorova, et al. // Proceedings of the Federal Centre for Animal Health. – Vladimir, 2022. v.V. XVIII.-P. 21-39
2. Estimated economic impact of foot and mouth disease in the Russian Federation in 2018-2020/ V.M. Gulyonkin, O.N. Petrova, A.K. Karaulov // Proceedings of the Federal Centre for Animal Health. – Vladimir, 2022. V. 18.-P. 40-53
3. http://www.fsvps.ru/fsvps/iac

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?

Yes

a) Technical visit : 6

b) Seminars : 3

c) Hands-on training courses: 2

d) Internships (>1 month) 0

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
a	Indonesia	5
a	Azerbaijan	5
a	Kazakhstan	2
a	Pakistan	3
a	Kyrgyzstan	2
a	Mongolia	2
b	Pakistan	160

b	Russia	25
b	Russia	52
c	Russia	3

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 17025		аттестат_ЛДЦ.pdf
GOST R ISO 9001-2015		22г ISO 9001-2015 Анг. яз.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Virus isolation	National accreditation system "Federal accreditation service" (RusAccreditation)
FMDV antigen detection ELISA	National accreditation system "Federal accreditation service" (RusAccreditation)
FMDV antigen detection CFT	National accreditation system "Federal accreditation service" (RusAccreditation)
FMD antibody detection LPB ELISA	National accreditation system "Federal accreditation service" (RusAccreditation)
FMDV NSP antibody detection	National accreditation system "Federal accreditation service" (RusAccreditation)
FMDV genome RT-PCR	National accreditation system "Federal accreditation service" (RusAccreditation)

20. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?

Yes

The laboratory complies with the biosafety standards for handling Pathogenicity group II agents that are compatible with biosafety level 3 (BSL-3)

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?

Yes

NATIONAL/ INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
	VI International Scientific Conference "Achievements of Scientists for Veterinary Practice"	WOAH Regional		Vladimir, FGBI	

International	dedicated to the 60th anniversary of the FGBI "ARRIAH" Postgraduate Department	Representation for Europe in Moscow	2022-03-23	"ARRIAH"	100

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
Scientific and practical conference "Topical animal health issues"	2022-04-26	Saransk, Republic of Mordovia, Russia	Speaker	Russian Federation achievements in recognition of the official WOAH status of FMD free country in light of the animal health situation in the country
FAO/WOAH Consultative Seminar on Progress Made in the FMD and PPR Regional Roadmap for East Mediterranean Countries	2022-09-11	Beirut, Lebanon	Speaker	FMDV genetic lineages reported in the Middle East countries. Vaccine matching strains. Examples of the use of ARRIAH-manufactured FMD vaccines in different countries
44th meeting of the Intergovernmental council on cooperation in the veterinary field	2022-10-20	Bishkek, Kyrgyz Republic	Speaker	Progress made in 2021-2002 in implementation of the Complex of joint measures to be taken by the CIS members for FMD prevention and control until 2025
17th WOAH/FAO FMD Network meeting	2022-11-29	Lelystad, Netherlands (online)	Speaker	Progress report of the WOAH Regional reference laboratory for FMD (FGBI "ARRIAH") for 2022

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOAH Reference Laboratories designated for the same pathogen or disease?

Yes

24. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.

Specificity of the FMD diagnostic tests	participant	12	Pirbright Institute, UK

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.
Specificity of the FMD diagnostic tests	participant		Pirbright Institute, UK

26. Did your laboratory collaborate with other WOAH Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

TITLE OF THE PROJECT OR CONTRACT	SCOPE	NAME(S) OF RELEVANT WOAH REFERENCE LABORATORIES
Molecular epidemiology of FMD outbreaks	Exchange with FMDV genome sequences according to the Memorandum of understanding of the WOAH/FAO FMD Network	FMD WRL (Pirbright, UK)

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOAH Member Countries
Specificity of the FMD diagnostic tests	Provider	11	Asia and Pacific Europe

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOAH?

No

29. Additional comments regarding your report:

No