OIE Reference Laboratory Reports Activities

Activities in 2014

This report has been submitted : 2015-01-15 19:02:10

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Foot and mouth disease
Address of laboratory:	Vesicular Disease Reference Laboratory Livestock Viral Diseases Research Programme Ash Road, Pirbright Woking, Surrey, GU24 0NF UNITED KINGDOM
Tel.:	+44-1483 23.11.31
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E-mail address:	donald.king@pirbright.ac.uk
Website:	http://www.pirbright.ac.uk/
Name (including Title) of Head of Laboratory (Responsible Official):	Professor John Fazakerley Director, The Pirbright Institute
Name (including Title and Position) of OIE Reference Expert:	Dr Donald King
Which of the following defines your laboratory? Check all that apply:	Governmental Academic

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

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 OIE Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
VNT	Yes	0	2171
ELISA - structural protein antibody	Yes	0	1173
ELISA - non-structural protein antibody	Yes	0	221
Vaccine matching	Yes	0	249
Direct diagnostic tests		Nationally	Internationally
Virus Isolation	Yes	0	599
Ag-ELISA	Yes	0	459
real-time RT-PCR	Yes	0	1230
VP1 sequencing	Yes	0	399
Complete genome sequencing	No	0	10

ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards.
To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.

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

Yes

NOTE: Currently, there are 22 laboratories that produce Standard Reference Reagents officially recognised by the OIE for 19 diseases/pathogens. Please click the following link to the list of OIE-approved International Standard Sera:

http://www.oie.int/en/our-scientific-expertise/veterinary-products/reference-reagents/. If the reagent is not listed on this page, it is NOT considered OIE-approved. The next two questions allow you to indicate non-OIE-approved diagnostic reagents.

OIE-approved SRR producing laboratory – Select your lab from list:

Disease	Test	Available from
Foot and mouth disease	Enzyme-linked immunosorbent assay (antigen and antibody detection); Virus neutralisation	Dr Donald King Institute for Animal Health, Pirbright Laboratory, Ash Road, Pirbright, Woking, Surrey GU24 0NF, United Kingdom Tel: (44-1483) 23.24.41 Fax: (44-1483) 23.24.48 donald.king@pirbright.ac.uk

Type of reagent available	Related diagnostic test	Produced/ Supply imported	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	Name of recipient OIE Member Countries
Validation panel	ELISA for NSP specific antibodies	Produced	◉<10mL ○10-100mL ○100-500mL ○>500mL	◉<10mL ○10-100mL ○100-500mL ○>500mL	UNITED STATES OF AMERICA
Reference Sera	SP-ELISA kits for FMDV	Produced	◉<10mL ○10-100mL ○100-500mL ○>500mL	◉<10mL ○10-100mL ○100-500mL ○>500mL	AUSTRALIA RUSSIA SPAIN

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Kits	LPBE Kit for SP antibodies	produced	0	83 kits	15 countries	☒Africa ☒Americas ☒Asia and Pacific ☐Europe ☒Middle East
Virus strains	for vaccines and assay validation	produced	214.2 ml	79.2 ml	5 countries	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☒Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
AFGHANISTAN	February		21
ALGERIA	September		3
BAHRAIN	November		3
CAMBODIA	June		3
CAMEROON	May		46
EGYPT	April and November	10	59
ETHIOPIA	February and November		76
CHINA (PEOPLE'S REP. OF)	Feb, Mar, May, Dec		15
IRAN	February		31
ISRAEL	January		6
KOREA (REP. OF)	July and December		20
LAOS	June		6
MALAYSIA	June		51
MONGOLIA	March		6
NEPAL	February		50
NIGERIA	May		42
PAKISTAN	May		31
SAUDI ARABIA	February and March		4
SRI LANKA	July		40
TANZANIA	January		28
THAILAND	June		21
TRINIDAD AND TOBAGO	May		6
TUNISIA	September		2
TURKEY	March		33
UNITED ARAB EMIRATES	February		2
VIETNAM	October		32

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
MONGOLIA	Evaluation of vaccines for use in the field	Recieved samples from a field vaccine trial for laboratory analyses of serum samples: data was interpreted and a report was provided
UNITED ARAB EMIRATES	Vaccine selection	Attended meeting in Dubai to dicuss FMDV vaccines

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)
Development of serotype-specific molecular assays tailored for FMD virus strains that are circulating in East and Southern Africa	1 year	Development of of new real-time RT-PCR assays for the East African Region	Tanzanian Veterinary Laboratories Agency; Sokoine University of Agriculture, Tanzania; Makerere University, Uganda and the Danish Technical University
Rapid Field Diagnostics and Screening in Veterinary Medicine (Rapidia-Field)	3 years	Development of new diagnostic tools for livestock diseases	FLI, Germany; INTA, Spain; ANSES, France, UCM, Spain, CODA-CERVA, Belgium; SVA, Sweden and commercial partners
Towards the strategic control of endemic foot-and-mouth disease in Africa: new techniques for a neglected problem	4 Years	Develop tools to better understand the endemic cycle of FMDV infection in sub-Saharan Africa	University of Glasgow, UK; Tanzanian Veterinary Laboratories Agency; Tanzania Wildlife Research Institute
Molecular epidemiology of epizootic diseases using next generation sequencing technology	3 Years	Apply new technologies for molecular epidemiology	CODA-CERVA (Belgium), FLI (Germany), SLU (Sweden), IZSVe (Italy) and University of Glasgow (UK)

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

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

a) Articles published in peer-reviewed journals: 13

Upadhyaya S., Ayelet G., Paul G., King D. P., Paton D. J. and Mahapatra M. (2014) Genetic basis of antigenic variation in foot-and-mouth disease serotype viruses from the Middle East. Vaccine 32: 631-638.

Ludi A. B., Horton D. L., Li Y., Mahapatra M., King D. P., Knowles N. J., Russell C. A., Paton D. J., Wood J. L. N., Smith D. J. and Hammond J. M. (2014) Antigenic variation of foot-and-mouth disease virus serotype A. Journal of General Virology 95: 384-392.

Asfor A., Upadhyaya S., Knowles N. J., King D. P., Paton D. J and Mahapatra M. (2014) Novel antibody binding determinants on the capsid surface of serotype O foot-and-mouth disease virus. Journal of General Virology 95: 1104-1116.

Valdazo-González B., Knowles N. J. and King D. P. (2014) Genome sequences of foot-and-mouth disease virus O/ME-SA/Ind-2001 lineage from outbreaks in Libya, Saudi Arabia and Bhutan during 2013. Genome Announcements 2 (2): e00242-14.

Sallu R. S., Kasanga C. J., Mathias M., Yongolo M., Mpelumbe-Ngeleja C., Mulumba M., Ranga E., Wambura P., Rweyemamu M., Knowles N. J. and King D. P. (2014) Molecular survey for foot-and-mouth disease virus in livestock in Tanzania, 2008-2013. Onderstepoort Journal of Veterinary Research. 81 (2): E1-6.

Waters R. A., Fowler V. L., Armson B., Nelson N., Gloster J., Paton D. J. and King D. P. (2014) Preliminary validation of direct detection of foot-and-mouth disease virus within clinical samples using reverse transcription loop-mediated isothermal amplification coupled with a simple lateral flow device for detection. PLoS ONE 9 (8): e105630.

Reid S. M., Mioulet V., Knowles N. J., Shirazi N., Belsham G. J. and King D. P. (2014) Development of tailored real-time RT-PCR assays for the detection and differentiation of serotype O, A, Asia-1 foot-and-mouth disease virus lineages circulating in the Middle East. Journal of Virological Methods 207: 146-153.

Di Nardo A., Knowles N. J., Wadsworth J., Haydon D. T. and King D. P. (2014) Phylodynamic reconstruction of O/CATHAY topotype foot-and-mouth disease virus epidemics in the Philippines. Veterinary Research 45: 90.

Fowler V. L., Bankowski B. M., Armson B., Di Nardo A., Valdazo-González B., Reid S. M., Barnett P. V., Wadsworth J., Ferris N. P., Mioulet V. and King D. P. (2014) Recovery of viral RNA and infectious foot-and-mouth disease virus from positive lateral-flow devices. PLoS ONE 9 (10): e109322.

Logan G., Freimanis G. L., King D. J., Valdazo-González B. Bachanek-Bankowska K., Sanderson N. D., Knowles N. J. King D. P. and Cottam E. M. (2014) A universal protocol to generate consensus level genome sequences for foot-and-mouth disease virus and other positive-sense polyadenylated RNA viruses using the Illumina MiSeq. BMC Genomics 15: 828.

Lefebvre D. J., De Vleeschauwer A. R., Goris N., Van Borm S., Chimirri A., Monforte A. M., Valdazo-González B., King D. P., Neyts J. and De Clercq K. (2014) A thiazepino[4,5-a]benzimidazole derivative hampers the RNA replication of Eurasian serotypes of foot-and-mouth disease virus. Biochemical and Biophysical Research Communications 455 (3-4): 378-381.

Kasanga C. J., Wadsworth J., Mpelumbe-Ngeleja C. A. R., Sallu R., Kivaria F., Wambura P. P., Yongolo M. G. S., Rweyemamu M. M., Knowles N. J. and King D. P. Molecular characterisation of foot-and-mouth disease viruses collected in Tanzania between 1967-2009. Transboundary and Emerging Diseases (IN PRESS).

Knowles N. J., Bachanek-Bankowska K., Wadsworth J., Mioulet V., Valdazo-González B., Eldaghayes I. M., Dayhum

A. S., Kammon A. M., Sharif M. A., Waight S., Shamia A. M., Tenzin S., Wernery U., Grazioli S., Brocchi E., Subramaniam S., Pattnaik B. and King D. P. Outbreaks of foot-and-mouth disease in Libya and Saudi Arabia during 2013 due to an exotic O/ME-SA/Ind-2001 lineage virus. Transboundary and Emerging Diseases (IN PRESS).

b) International conferences: 6
Logan G., King D. P., Haydon D. T. and Cottam E. M. Dissection of genetic diversity within virus populations: comparisions between the seven FMDV serotypes using a novel PCR-free NGS approach. 18th International Picornavirus meeting (EUROPIC), Blankenberge, Belgium, March 2014.

Kasanga C., Valdazo-Gonzalez B., Dwarka R., Wadsworth J., Knowles N., Wambura P., Rweyemamu M., Mulumba M., Deve J. and King D. P. Molecular epidemiology and evolution of foot-and-mouth disease virus in Southern and East Africa. 18th International Picornavirus meeting (EUROPIC), Blankenberge, Belgium, March 2014.

Burman A., Mioulet V., Shimmon G., Tuthill T., King D. P. and Jackson T. Development of an improved antigen-detection ELISA for the diagnosis of foot-and-mouth disease using recombinant integrin (alpha-v/beta-6) 18th International Picornavirus meeting (EUROPIC), Blankenberge, Belgium, March 2014.

Valdazo-Gonzalez B., Kim J., Soubeyrand S., Wadsworth J., Haydon D. T., Knowles N. J. and King D. P. Analysis of the genetic variability of RNA viruses within field outbreaks: foot-and-mouth disease virus in 2007 in the United Kingdom. 18th International Picornavirus meeting (EUROPIC), Blankenberge, Belgium, March 2014.

Invited talk: King D. P. New tools to detect and monitor the spread of viral diseases of livestock. 1st European Animal and Plant Symposium, Amsterdam, The Netherlands, February 2014.

Invited Talk: King D. P., Armson B., Mioulet V., Madi M. and Fowler V. Simple field tools for the diagnosis of livestock diseases: is this an achievable goal? 9th Conference of Rapid Methods Europe, Noordwijkerhout, The Netherlands, April 2014.

Keynote: King D. P., Logan G., Valdazo-González B., Freimanis G. L., Wright C. F., King D. J., Knowles N. J., Wadsworth J., Bachanek-Bankowska K., Di Nardo A., Orton R., Haydon D. T. The consensus and beyond: developing new tools to reconstruct transmission pathways of foot-and-mouth disease virus. 8th Annual Meeting of the EPIZONE project, Copenhagen, September 2014.

Invited Talk: King D. P., Logan G., Valdazo-González B., Freimanis G. L., Wright C. F., King D. J., Knowles N. J., Wadsworth J., Bachanek-Bankowska K., Di Nardo A., Orton R., Haydon D. T. The consensus and beyond: developing sequencing approaches for FMDV and other RNA viruses. Annual Meeting of the Korean Society of Veterinary Science, Jeju Island, Republic of Korea, October 2014.

Keynote: King D. P. Update on current global situation for FMD: new outbreaks and threats. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014

Casey M., Cleaveland S., Mshanga D., Tibona T., Auty H., Marsh T., Yoder J., Perry B., Kazwala R., Haydon D., King D. P., Parida S., Paton D., Reeve R. and Lembo T. Household level impacts of foot-and-mouth disease on traditional livestock keeping systems of Northern Tanzania. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Habiela M., Perez-Martin E., Winsor M., Seago J., Cortey M., Zhang F., King D. P., Charleston B., Wood J., and Juleff N. Follicular dendritic cells: a key player in the pathogenesis of foot-and-mouth disease virus? Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Lefebre D. J., De Vleeschauwer A. R., Goris N., Chimirri A., Monforte A. M., Van Borm S., Valdazo-Gonzalez B., King D. P. and De Clercq K. A Thiazepino[4,5-a]benzimidazole derivative inhibits the in-vitro replication of Eurasian serotypes of foot-and-mouth disease virus. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Ludi A. B., Li Y., Wilsden G., Mioulet V., Armson B., Adams K., Ryder T., Belgrave S., Hammond J. and King D. P. Results of the 2013 proficiency testing scheme. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October

2014.

Bachanek-Bankowska K., Wadsworth J., Mioulet V., Valdazo-González B., Eldaghayes I. M., Dayhum A. S., Kammon A. M., Sharif M. A., Grazioli S., Brocchi E., Subramaniam S., Pattnaik B., King D. P. and Knowles N. J. Outbreaks of foot-and-mouth disease in Libya and Saudi Arabia during 2013 due to an exotic O/ME-SA/Ind-2001 lineage. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Eldaghayes I., Dayhum A., Kammon A., Sharif M., Ferrari G., Sumption K., King D. P., Garzioli S. and Brocchi E. FMD in Libya and the control strategy. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Valdazo-Gonzalez B., Wadsworth J., Bachanek-Bankowska K., King D. P. and Knowles N. J. Molecular variability within the foot-and-mouth disease virus O/PanAsia-2 lineage. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Bachanek-Bankowska K., Knowles N. J., Kasanga C., Balinda S., Normann P., Belsham G. J. and King D. P. Development of tailored specific real-time RT-PCR assays for detection of FMDV serotypes A, O, SAT 1 and SAT 2 circulating in East Africa. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Armson B., Mioulet V., Doel C., Madi M., Bounpheng M., Lemire K., Das A., Holder D., McIntosh M., Parida S. and King D. P. Real-time RT-PCR for the rapid detection of FMDV in milk. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Howson E., Cleaveland S., Armson B., Mioulet V., King D. P., Kasanga C. J., Sallu R., Clark D., Millington S. and Fowler V. L. Realising the potential of simple isothermal molecular tools for field diagnosis of foot-and-mouth disease. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Fowler V. L., Caiusi C., Howson E. L. A., Mioulet V., Madi M. and King D. P. Development and evaluation of multiplex reverse transcription loop mediated isothermal amplification assays combined with lateral-flow visualisation for the discrimination of foot-and-mouth disease from other vesicular diseases. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Di Nardo A., Knowles N. J., Johnson P., Gubbins S., King D. P. and Haydon D. T. From sequence to prevalence: phylodynamics of foot-and-mouth disease virus. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

King D. J., Freimanis G., Orton R., Knowles N. J., Haydon D. T. and King D. P. Beyond the consensus: investigating intra-herd variability of foot-and-mouth disease virus using the Illumina MiSeq. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

Freimanis G., Logan G., King D. J., Valdazo-Gonzalez B., Bachanek-Bankowska K., Orton R., Sanderson N., Knowles N. J., Haydon D., Cottam E. and King D. P. A novel protocol to generate consensus level genome sequences for foot-and-mouth disease virus and its application to sequencing a large outbreak. Open Session of the Research Group of the Standing Technical Committee of the European Commission for the control of Foot-and-Mouth Disease, Cavtat, Croatia, October 2014.

c) National conferences: 0

d) Other:
(Provide website address or link to appropriate information) 1
Copies of laboratory reports and phylogenetic trees can be found on the following website: www.wrlfmd.org

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries
To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

a) Technical visits: 1
b) Seminars: 1
c) Hands-on training courses: 7
d) Internships (>1 month):

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	Nigeria	1
c	Argentina	1
c	Botswana	1
c	Ireland	1
c	Israel	1
c	New Zealand	1
c	Nigeria	1
c	South Africa	1
b	Tanzania	20

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System certified according to an International Standard?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO/IEC 17025: 2005	UKAS cert.pdf

16. Is your laboratory accredited by an international accreditation body?

Yes

Test for which your laboratory is accredited	Accreditation body
Processing field samples for diagnosis and growth of vesicular diseases	United Kingdom Accreditation Service (UKAS)
FMDV and SVDV antigen detection by ELISA	United Kingdom Accreditation Service (UKAS)
Svanova 1F10 lateral flow device for FMDV antigen detection	United Kingdom Accreditation Service (UKAS)
One step TaqMan® RT-PCR for diagnosis of FMDV and related vesicular diseases	United Kingdom Accreditation Service (UKAS)
Detection of antibodies against vesicular and related viruses by the virus neutralisation test (VNT)	United Kingdom Accreditation Service (UKAS)
Liquid Phase Blocking ELISA (LPBE) for detection of antibodies against Foot-and-Mouth disease virus (FMDV)	United Kingdom Accreditation Service (UKAS)
Detection of Antibodies against the Non Structural Protein of Foot-and-Mouth disease virus (FMDV) using Ceditest® FMDV-NS (PrioCHECK® FMDV –NS) kits	United Kingdom Accreditation Service (UKAS)
Detection of Antibodies against the Structural Protein of Foot-and-Mouth disease virus (FMDV) by solid-phase competition ELISA (SPCE)	United Kingdom Accreditation Service (UKAS)
Detection of Antibodies against Foot and Mouth disease virus (FMDV) using PrioCHECK® FMDV type O kits	United Kingdom Accreditation Service (UKAS)

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

Yes

(See Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2014, Chapter 1.1.3a)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

Yes

National/ International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	9th OIE/FAO FMD Laboratory Network Meeting	ISZLER, Italy	11/14	Brescia, Italy	34

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
20th Meeting of the OIE Sub-Commission for Foot and Mouth Disease Control in South-East Asia and China	03/14	Nay Pyi Taw, Myanmar	Speaker	Global Patterns of FMD: 2014
Inter-Regional Consultative Meeting on FMD & PPR Situation Progress	03/14	Amman, Jordan	Speaker	Global and Regional Patterns of FMD
5th Annual West Eurasia Roadmap Meeting	04/14	Astana, Kazakhstan	Speaker	Global and Regional Patterns of FMD
Joint SEACFMD Laboratory Network and Epidemiology Network Meeting	10/14	Ho Chi Minh, Vietnam	Speaker	[1] An Update on the Global FMD Situation and on Vaccine Strains [2] The OIE Manual and diagnostic tests for FMD
3rd Global Conference of OIE Reference Centres	10/14	Seoul, Republic of Korea	Speaker	Use of next-generation sequencing to investigate foot-and-mouth disease virus transmission

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

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

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: [1]	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Panel 1 - Live virus panel: Assesment of vesicular virus diagnostic diagnostic methods	Organiser	7	Participated: IZSLER (Italy); CODA-CERVA (Belgium); OVI (South Africa); BVI (Botswana); USDA-APHIS (USA); LVRI, (PR China); Pirbright Institute (UK).
Panel 2: non-infectious material for virus genome/antigen detection by RT-PCR and/or Ag-ELISA	Organiser	9	Participated: IZSLER (Italy); CODA-CERVA (Belgium); Pakchong (Thailand); OVI (South Africa); BVI (Botswana); USDA-APHIS (USA); LVRI, (PR China); Panaftosa (Brazil); Pirbright Institute (UK)
Panel 3: non-infectious material for FMD serology	Organiser	8	Participated: IZSLER (Italy); CODA-CERVA (Belgium); Pakchong (Thailand); OVI (South Africa); BVI (Botswana); USDA-APHIS (USA); LVRI, (PR China); Panaftosa (Brazil); Pirbright Institute (UK).

[1] *validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.*

22. Did your laboratory collaborate with other OIE 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 OIE Reference Laboratories
Development of next-generation ELISA tests for FMDV diagnosis	Validation and evaluation of new monoclonal-antibody based assays for antigen detection and serological diagnosis of FMD	Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna (IZSLER)
BBSRC/CIDLID project: Improving the quality of FMD vaccines by understanding the correlation of vaccine-induced protection with humoral and cellular immune responses	To develop improved tools for vaccination in Africa	Onderstepoort Veterinary Institute
Development of field protocols for FMD diagnosis in buffalo	Validation of field sampling and detection systems for FMD	Onderstepoort Veterinary Institute
Molecular epidemiology of FMDV outbreaks in East Asia	Sharing of full genome sequence data for field strains and associated analyses	Centre for Animal Health (FGI-ARRIAH)

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing see point 1.3

Purpose for inter-laboratory test comparisons[1]	No. participating laboratories	Region(s) of participating OIE Member Countries
Panel 1 - Live virus panel: Assesment of vesicular virus diagnostic diagnostic methods	16	☒Africa ☒Americas ☒Asia and Pacific ☒Europe ☒Middle East
Panel 2: non-infectious material from cattle or pigs for virus genome/antigen detection by RT-PCR and/or Ag-ELISA	52	☒Africa ☒Americas ☒Asia and Pacific ☒Europe ☒Middle East
Panel 3: non-infectious material for FMD serology	55	☒Africa ☒Americas ☒Asia and Pacific ☒Europe ☒Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

Yes

Kind of consultancy	Location	Subject (facultative)
Reviewer	UK	Review of OIE Chapter (Manual)
OIE meetings	Paris	Member of OIE ad hoc Group on FMD
OIE Meetings	Paris	Presentation at the OIE Scientific Commission
Preparation of OIE standards	Teleconferences	Guidance on FMD post-vaccination monitoring
Laboratory support	UK and Southeast Asia	Assisted in testing and analysing serum samples

25. Additional comments regarding your report:

NB: ToR4: Samples from PR China refer to specimens submitted from Hong Kong SAR