OIE Reference Laboratory Reports Activities

Activities in 2015

This report has been submitted : 2016-01-15 17:53:06

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, The Pirbright Institute, Ash Road, Pirbright, Surrey, GU24 0NF, UNITED KINGDOM
Tel.:	+44-1483 231021
Fax:	+44-1483 232621
E-mail address:	donald.king@pirbright.ac.uk
Website:	http://www.pirbright.ac.uk/
Name (including Title) of Head of Laboratory (Responsible Official):	Dr Bryan Charleston, Director, The Pirbright Institute
Name (including Title and Position) of OIE Reference Expert:	Donald King
Which of the following defines your laboratory? Check all that apply:	Research

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	1641
ELISA - structural protein antibody	Yes	0	367
ELISA - non-structural protein antibody	Yes	0	16
Vaccine matching	Yes	0	178
Direct diagnostic tests		Nationally	Internationally
Virus Isolation	Yes	0	404
Ag-ELISA	Yes	0	404
real-time RT-PCR	Yes	0	808
VP1 sequencing	Yes	0	234
Complete genome sequencing	No	0	2

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	CHINESE TAIPEI MOROCCO POLAND SWITZERLAND
Reference Sera	SP-ELISA kits for FMDV	Produced	○<10mL ○10-100mL ◉100-500mL ○>500mL	○<10mL ◉10-100mL ○100-500mL ○>500mL	IRELAND ROMANIA UNITED STATES OF AMERICA

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	27 kits	9	☒Africa ☒Americas ☒Asia and Pacific ☒Europe ☒Middle East
Virus strains	for vaccine development and assay validation	produced	109.8 ml	90 ml	5	☐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
KOREA (REP. OF)	March	0	10
AFGHANISTAN	March	0	21
BAHRAIN	April	0	15
BOTSWANA	August	0	2
CAMBODIA	November	0	5
ETHIOPIA	May	0	10
CHINA (PEOPLE'S REP. OF)	January, May, October and December	0	12
IRAN	November	0	2
KAZAKHSTAN	July	0	5
LAOS	August and November	0	5
MAURITANIA	April	0	5
MONGOLIA	April	0	4
MOROCCO	November	0	3
MOZAMBIQUE	August	0	2
MYANMAR	November	0	5
NAMIBIA	August	0	6
NIGER	August	0	4
OMAN	May	0	4
PAKISTAN	February and July	0	42
SAUDI ARABIA	September and October	0	6
ZIMBABWE	August and September	0	22
CHINESE TAIPEI	May	0	6
TANZANIA	April	0	41
THAILAND	August	0	25
TURKEY	August	0	28

UGANDA	August	0	2
VIETNAM	August	0	4

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	Training and advice on serological methods	Training course held in Mongolia
KAZAKHSTAN	Training in FMD diagnostic methods	Training course held in Kazakhstan

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)
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
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)
Development of FMD ELISA tests	on-going	New ELISA tests for FMD diagnosis	IZSLER (Italy)
Improved tools for the surveillance and diagnosis of FMD	5 years	Understanding the epidemiology of FMD in endemic settings	SUA and TVLA (Tanzania)
OIE Twinning Project	3 years	Improved diagnostic capacity for Ethiopia	NAHDIC (Ethiopia)

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: 19

Knight-Jones, T.J.D., A.N. Bulut, S. Gubbins, K.D.C. Staerk, D.U. Pfeiffer, K.J. Sumption, and D.J. Paton (2015). Randomised field trial to evaluate serological response after foot-and-mouth disease vaccination in Turkey. Vaccine, 33(6): 805-811.

Mahapatra, M., S. Yuvaraj, M. Madhanmohan, S. Subramaniam, B. Pattnaik, D.J. Paton, V.A. Sriniyasan, and S. Parida (2015). Antigenic and genetic comparison of foot-and-mouth disease virus serotype O Indian vaccine strain, O/IND/R2/75 against currently circulating viruses. Vaccine, 33(5): 693-700.

Lyons, N.A., K.D.C. Stark, C. van Maanen, S.L. Thomas, E.C. Chepkwony, A.K. Sangula, T.D. Dulu, and P.E.M. Fine (2015). Epidemiological analysis of an outbreak of foot-and-mouth disease (serotype SAT2) on a large dairy farm in Kenya using regular vaccination. Acta Tropica, 143: 103-111.

Wekesa, S.N., V.B. Muwanika, H.R. Siegismund, A.K. Sangula, A. Namatovu, M.T. Dhikusooka, K. Tjornehoj, S.N. Balinda, J. Wadsworth, N.J. Knowles, and G.J. Belsham (2015). Analysis of Recent Serotype O Foot-and-Mouth Disease Viruses from Livestock in Kenya: Evidence of Four Independently Evolving Lineages. Transboundary and Emerging Diseases, 62(3): 305-314.

Madi, M., V. Mioulet, D.P. King, G.P. Lomonossoff, and N.P. Montague (2015). Development of a non-infectious encapsidated positive control RNA for molecular assays to detect foot-and-mouth disease virus. Journal of Virological Methods, 220: 27-34.

Valdazo-Gonzalez, B., J.T. Kim, S. Soubeyrand, J. Wadsworth, N.J. Knowles, D.T. Haydon, and D.P. King (2015). The impact of within-herd genetic variation upon inferred transmission trees for foot-and-mouth disease virus. Infection Genetics and Evolution, 32: 440-448.

Bari, F.D., S. Parida, A.S. Asfor, D.T. Haydon, R. Reeve, D.J. Paton, and M. Mahapatra (2015). Prediction and characterization of novel epitopes of serotype A foot-and-mouth disease viruses circulating in East Africa using site-directed mutagenesis. The Journal of General Virology, 96(Pt 5): 1033-41.

Barnett, P.V., D.W. Geale, G. Clarke, J. Davis, and T.R. Kasari (2015). A Review of OIE Country Status Recovery Using Vaccinate-to-Live Versus Vaccinate-to-Die Foot-and-Mouth Disease Response Policies I: Benefits of Higher Potency Vaccines and Associated NSP DIVA Test Systems in Post-Outbreak Surveillance. Transboundary and Emerging Diseases, 62(4): 367-87.

Chamberlain, K., V.L. Fowler, P.V. Barnett, S. Gold, J. Wadsworth, N.J. Knowles, and T. Jackson (2015). Identification of a novel cell culture adaptation site on the capsid of foot-and-mouth disease virus. The Journal of General Virology, 96(9): 2684-92.

di Nardo, A., G. Libeau, B. Chardonnet, P. Chardonnet, R.A. Kock, K. Parekh, P. Hamblin, Y. Li, S. Parida, and K.J. Sumption (2015). Serological profile of foot-and-mouth disease in wildlife populations of West and Central Africa with special reference to Syncerus caffer subspecies. Veterinary Research, 46(77): (8 July 2015)-(8 July 2015).

Geale, D.W., P.V. Barnett, G.W. Clarke, J. Davis, and T.R. Kasari (2015). A Review of OIE Country Status Recovery Using Vaccinate-to-Live Versus Vaccinate-to-Die Foot-and-Mouth Disease Response Policies II: Waiting Periods

After Emergency Vaccination in FMDFree Countries. Transboundary and Emerging Diseases, 62(4): 388-406.

Kasanga, C.J., J. Wadsworth, C.A.R. Mpelumbe-Ngeleja, R. Sallu, F. Kivaria, P.N. Wambura, M.G.S. Yongolo, M.M. Rweyemamu, N.J. Knowles, and D.P. King (2015). Molecular Characterization of Foot-and-Mouth Disease Viruses Collected in Tanzania Between 1967 and 2009. Transboundary and Emerging Diseases, 62(5): e19-29.

Lyons, N.A., N. Alexander, K.D.C. Staerk, T.D. Dulu, K.J. Sumption, A.D. James, J. Rushton, and P.E.M. Fine (2015). Impact of foot-and-mouth disease on milk production on a large-scale dairy farm in Kenya. Preventive Veterinary Medicine, 120(2): 177-186.

Parthiban, A.B.R., M. Mahapatra, S. Gubbins, and S. Parida (2015). Virus Excretion from Foot-And-Mouth Disease Virus Carrier Cattle and Their Potential Role in Causing New Outbreaks. PloS one, 10(6): e0128815-e0128815.

Parthiban, A.R., M. Mahapatra, and S. Parida (2015). Complete Genome Sequences of Serotype O Foot-and-Mouth Disease Viruses Recovered from Experimental Persistently Infected Cattle. Genome Announcements, 3(4).

Giorgakoudi, K., S. Gubbins, J. Ward, N. Juleff, Z. Zhang, and D. Schley (2015). Using Mathematical Modelling to Explore Hypotheses about the Role of Bovine Epithelium Structure in Foot-And-Mouth Disease Virus-Induced Cell Lysis. PloS One, 10(10): e0138571-e0138571.

Kotecha, A., J. Seago, K. Scott, A. Burman, S. Loureiro, J. Ren, C. Porta, H.M. Ginn, T. Jackson, E. Perez-Martin, C.A. Siebert, G. Paul, J.T. Huiskonen, I.M. Jones, R.M. Esnouf, E.E. Fry, F.F. Maree, B. Charleston, and D.I. Stuart (2015). Structure-based energetics of protein interfaces guides foot-and-mouth disease virus vaccine design. Nature Structural & Molecular Biology, 22(10): 788-94.

Pedersen, C.-E.T., P. Frandsen, S.N. Wekesa, R. Heller, A.K. Sangula, J. Wadsworth, N.J. Knowles, V.B. Muwanika, and H.R. Siegismund (2015). Time Clustered Sampling Can Inflate the Inferred Substitution Rate in Foot-And-Mouth Disease Virus Analyses. PloS one, 10(12): e0143605-e0143605.

Zhang, Z., C. Doel, and J.B. Bashiruddin (2015). Interleukin-10 production at the early stage of infection with foot-and-mouth disease virus related to the likelihood of persistent infection in cattle. Veterinary Research, 46(1): 132-132.

b) International conferences: 12

Logan G., Kelly J. D., Lasecka L., Cottam E. M., King D. P., Tuthill T. J. and Haydon D. T. Adaptive evolution of foot-and-mouth disease virus: sub-consensus level genetic diversity influences viral phenotype. Society for General Microbiology Meeting, Birmingham, UK, April 2015.

Keynote: King D.P., Logan G., Freimanis G. L., Wright C. F., King D. J., Knowles N. J., Wadsworth J., Lasecka L., Bachanek-Bankowska K., Di Nardo A., Orton R. and Haydon D. T. Using sequence data to understand the epidemiology of foot-and-mouth disease. 7th International Symposium on Emerging and re-emerging Pig Diseases, Kyoto, Japan, June 2015.

King D. J., Freimanis G., Orton R., King D. P. and Haydon D. T. Development of a bioinformatics pipeline to identify and characterise minor variants in foot-and-mouth disease virus populations using data generated from the Illuminia MiSeq. 9th Annual Meeting of the EPIZONE project, Montpellier, France, September 2015.

Freimanis G., King D. J., Orton R. and King D. P. Development of a pipeline for the high-throughput sequencing of FMDV: an application to a large outbreak. 9th Annual Meeting of the EPIZONE project, Montpellier, France, September 2015.

ldaghayes I., Dayhum A., Kammon A., Sharif M., Ferrari G., Sumption K., King D. P., Grazioli S. and Brocchi, E. Control strategy of FMD in Libya and post-vaccination monitoring. GFRA, Hanoi, Vietnam, October 2015.

Dayhum A., Eldaghayes I., Kammon A., Sharif M., Ferrari G., Conchedda G., Cinardi, G., Sumption, K., King D. P., Grazioli S. and Brocchi E. FMD Serological Survey In Libya And The Circulating Viruses. GFRA, Hanoi, Vietnam, October 2015.

Sallu R. S., Kasanga C. J., Wambura P. N., Yongolo M. M., Rweyemamu M. M., Knowles N. and King D. P. Molecular characterisation of recently isolated foot-and-mouth disease viruses in Tanzania. GFRA, Hanoi, Vietnam, October 2015.

Lembo T., Casey M., Reeve R, Auty H., Bachanek-Bankowska K., Fowler V., Hamblin P., Haydon D., Kazwala R., Kibona T., King D. P., Ludi A., Lugelo A., Marsh T., Mioulet V., Mshanga D., Paton D., Parekh K., Parida S. and Cleaveland S. Insights into the epidemiology of FMD in East Africa provides opportunities for targeted control. GFRA, Hanoi, Vietnam, October 2015.

Keynote: King D. P. Global FMD Update: new approaches to monitor outbreaks and predict threats? GFRA, Hanoi, Vietnam, October 2015.

Casey-Bryars M., Reeve R., Auty H., Hamblin P., Haydon D. T., Kazwala R., Kibona T., King D. P., Ludi A., Lugelo A., Mioulet V., Mshanga D., Parida S., Parekh K., Paton D., Cleaveland S., and Lembo T. Can spatial and temporal patterns of serotype-specific foot-and-and-mouth disease outbreaks in Tanzania be predicted? 14th International Symposia on Veterinary Epidemiology and Economics, Yucatan, Mexico, November 2015.

Keynote: King D. P. Foot-and-mouth disease: new tools to improve the monitoring of outbreaks and prediction of threats. Annual Meeting of the Center of Excellence for Emerging and Zoonotic Animal Diseases (CEEZAD), Nebraska City, USA, November 2015

Howson E. L. A., King D. P., Cleaveland S., Lembo T., Rauh R., Nelson W. and Fowler V. L. Mobile rRT-PCR for rapid diagnosis of foot-and-mouth disease. North American PRRS symposium: emerging and foreign animal diseases, Chicago, USA, December 2015

c) National conferences: 2
Lasecka L., Wright C. F., Knowles N. J. Logan G., Tuthill T., Jackson T. and King D. P. Development of new strategies for the attenuation of foot-and-mouth disease virus informed by sequencing of field isolates. National Institutes of Bioscience (NIB) Conference, Edinburgh, June 2015.

Invited Talk: King D. P. Foot-and-mouth disease: strains, threats and vaccine selection, Korean Pork Producers Association, Daegu, South Korea, September 2015.

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: 2
b) Seminars: 0
c) Hands-on training courses: 1
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	Monglia	4
a	Kazakahstan	~20
c	Kazakhstan	1

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	Accreditation Certificate Copy.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
FMDV and SVDV antigen detection by ELISA	United Kingdom Accreditation Service
Svanova 1F10 lateral flow device for FMDV antigen detection	United Kingdom Accreditation Service
One step TaqMan® RT-PCR for diagnosis of FMDV and related vesicular diseases	United Kingdom Accreditation Service
Detection of antibodies against vesicular and related viruses by the virus neutralisation test (VNT)	United Kingdom Accreditation Service
Liquid Phase Blocking ELISA (LPBE) for detection of antibodies against Foot-and-Mouth disease virus (FMDV)	United Kingdom Accreditation Service
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
Detection of Antibodies against the Structural Protein of Foot-and-Mouth disease virus (FMDV) by solid-phase competition ELISA (SPCE)	United Kingdom Accreditation Service
Detection of Antibodies against Foot and Mouth disease virus	United Kingdom Accreditation Service

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	10th OIE/FAO FMD Laboratory Network Meeting	CODA-CERVA	11/15	Brussels, Belgium	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
21st Meeting of the OIE sub-commission for Southeast Asia and China	03/15	Manila, Philippines	Speaker	Foot-and-Mouth Disease: Global Update
OIE Symposium at the 17th International Symposium of the World Association of Veterinary Laboratory Diagnosticians	06/15	Saskatoon, Canada	Speaker	The challenges of linking genetic and epidemiological datasets to reconstruct transmission trees for livestock viral diseases
Global Conference on Biological Threat Reduction	07/15	Paris	Speaker	Preparing for the unexpected: the laboratory response to foot-and-mouth disease outbreaks in 2007 in the United Kingdom
13th Conference of the OIE Regional Commission for the Middle East	11/15	Beirut, Lebanon	Speaker	The use of non-structural protein tests to differentiate between vaccinated and infected animals

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): Assessment of vesicular virus diagnostic methods	Organiser	6	IZSLER (Italy); CODA- CERVA (Belgium); OVI (South Africa); BVI (Botswana); USDA-APHIS (USA); Pirbright Institute (UK).
Panel 2: non-infectious material for virus genome/antigen detection by RT-PCR and/or Ag-ELISA	Organiser	8	IZSLER (Italy); CODA- CERVA (Belgium); Pakchong (Thailand); OVI (South Africa); BVI (Botswana); USDA-APHIS (USA); Panaftosa (Brazil); Pirbright Institute (UK)
Panel 3: non-infectious material for FMD serology	Organiser	8	IZSLER (Italy); CODA- CERVA (Belgium); Pakchong (Thailand); OVI (South Africa); BVI (Botswana); USDA-APHIS (USA); 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?

No

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): Assessment of vesicular virus diagnostic methods	15	☒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	50	☒Africa ☒Americas ☒Asia and Pacific ☒Europe ☒Middle East
Panel 3: non-infectious material for FMD serology	53	☒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)
One day meeting (April 2015)	Paris	Review of vaccine recommendations for North Africa
Preparation of a summary technical paper	Beirut, Lebanon	Technical paper on the use non-structural protein assays
OIE AHG (October 2015)	Paris	Review of country dossiers
OIE AHG (December 2015)	Paris	Review of country dossiers

25. Additional comments regarding your report:

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