

# WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 31 janvier 2025 22:16

## LABORATORY INFORMATION

<b>*Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:</b>	Foot and mouth disease
<b>*Address of laboratory:</b>	The Pirbright Institute, Ash Road, Pirbright, Surrey, GU24 0NF, United Kingdom
<b>*Tel:</b>	+441483231021
<b>*E-mail address:</b>	donald.king@pirbright.ac.uk
<b>Website:</b>	<a href="https://www.pirbright.ac.uk/">https://www.pirbright.ac.uk/</a>
<b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>	Prof. Bryan Charleston
<b>*Name (including Title and Position) of WOAH Reference Expert:</b>	Dr Donald King
<b>*Which of the following defines your laboratory? Check all that apply:</b>	Governmental Academic institution

## 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	
		Nationally	Internationally
Indirect diagnostic tests			
ELISA- NSP	Yes	0	403
ELISA - SP	Yes	0	809
VNT	Yes	0	6025
Vaccine matching	Yes	0	119

**Donald King - - UNITED\_KINGDOM**

Direct diagnostic tests		Nationally	Internationally
Virus Isolation	Yes	0	270
Antigen -ELISA	Yes	0	116
real-time RT-PCR	Yes	0	562
VP1 sequencing	Yes	0	135
Phylogenetic analyses	Yes	0	164

## TOR2: REFERENCE MATERIAL

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

Yes

Type of reagent available	Related diagnostic testing	Produced/ imported	Quantity supplied nationwide (ml, mg)	Quantity supplied at international level (ml, mg)	Name of beneficiary WOA?H Member Countries
---------------------------	----------------------------	--------------------	---------------------------------------	---	--

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

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOA?H Member Countries	Country of recipients
FMDV antigens, FMDV antisera and serum controls	VNT, ELISA (antigen and serology)	Produced	14 ml	1080.5 ml	11	ARGENTINA, DENMARK, GERMANY, KOREA (REP. OF), MALAYSIA, POLAND, ROMANIA, THAILAND, UNITED KINGDOM, UNITED STATES OF AMERICA, VIETNAM,
FMDV-specific monoclonal antibodies	ELISA	Produce	0	1.5 ml	1	KOREA (REP. OF),
Cell lines for FMDV culture	Virus Isolation	Provide	0	99 ml	5	ARGENTINA, FRANCE, ISRAEL, KOREA (REP. OF), SOUTH AFRICA,
FMDV isolates	Vaccine matching	Produce	0	192	5	ARGENTINA, GERMANY, ISRAEL, KOREA (REP. OF), TURKEY,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAHH Members?

No

## 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 WOAHH Standards for the designated pathogen or disease?

No

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

No

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

No

## TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

Name of WOAHH 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
ALGERIA	2024-01-01	Virus isolation, Ag ELISA, Real-time RT-PCR, VP1 sequencing, Phylogenetic analysis, Vaccine matching	0	6
ETHIOPIA	2024-03-01	Virus isolation, Ag ELISA, Real-time RT-PCR, VP1 sequencing, Phylogenetic analysis, Vaccine matching	0	112
INDONESIA	2024-09-01	Virus isolation, Ag ELISA, Real-time RT-PCR, VP1 sequencing, Phylogenetic analysis, Vaccine matching	0	40
IRAN	2024-11-01	Phylogenetic analyses	0	1
KENYA	2024-01-01	Virus isolation, Ag ELISA, Real-time RT-PCR, VP1 sequencing, Phylogenetic analysis, Vaccine	0	20

### Donald King - - UNITED\_KINGDOM

		matching		
NEPAL	2024-07-01	Virus isolation, Ag ELISA, Real-time RT-PCR, VP1 sequencing, Phylogenetic analysis, Vaccine matching	0	50
PALESTINIAN AUTON. TERRITORIES	2024-11-01	Phylogenetic analyses	0	1
TUNISIA	2024-01-01	Virus isolation, Ag ELISA, Real-time RT-PCR, VP1 sequencing, Phylogenetic analysis, Vaccine matching	0	3
TURKEY	2024-09-01	Phylogenetic analyses	0	1
TURKEY	2024-12-01	Phylogenetic analyses	0	2
UGANDA	2024-03-01	Virus isolation, Ag ELISA, Real-time RT-PCR, VP1 sequencing, Phylogenetic analysis, Vaccine matching	0	50

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

Yes

Name of the WOA Member Country receiving a technical consultancy	Purpose	How the advice was provided
BAHRAIN	Review of vaccine performance	via teleconference
IRAN	Request for information about the changing risks for Iran	via email
COLOMBIA	Testing procedures for FMD vaccines	via teleconference
ISRAEL	Request for information about the changing risks for Israel	via email
JORDAN	Advice regarding FMD vaccines	via teleconference and email
IRAQ JORDAN LEBANON SYRIA	Quadripartite meeting between Iraq, Jordan, Lebanon and the Syrian Arab Republic to discuss FMD control	teleconference

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOA 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

**Donald King - - UNITED\_KINGDOM**

Evaluation of FMD vaccine quality	5 years	To develop tools and a pipeline to assess FMD vaccine quality	ICAR	INDIA
Studies to understand FMD epidemiology	1	Support for serology and sequencing	Bhutan Veterinary Authority	BHUTAN
FMD in Nigeria	2	Understand the role of small ruminants in the epidemiology of FMD in Nigeria	NVRI	NIGERIA
WOAH Twinning project	3	Development of diagnostic capacity for Kenya	Embakasi	KENYA
WOAH Twinning project	2	Development of diagnostic capacity for Jordan	CVL	JORDAN
APHA Project	2	Building diagnostic capacity in Zambia	CVRI	ZAMBIA

13. In exercising your activities, have you identified any regulatory research needs\* relevant for WOA?H?

Yes

**Research need : 1**

**Please type the Research need:** FMDV Reference antigens

**Relevance for WOA?H** Standard Setting,

**Relevance for the Code or Manual** Manual,

**Field** Diagnostics, Vaccines,

**Animal Category** Terrestrial,

**Disease:**

**Kind of disease (Zoonosis, Transboundary diseases)** Transboundary diseases,

**If any, please specify relevance for Codes or Manual, chapter and title**

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

**Answer:**

**Notes:**

**Answer:** Together with laboratories on the WOA?H/FAO Lab Network for FMD, we are currently involved in projects to establish reference antigens that could be used to assess the regional relevance of FMD vaccine responses. We anticipate that these FMD viruses could be widely used by testing laboratories and their use would help to harmonize the tests that are used to assess the performance of FMD vaccines. If there is agreement, this information could be included into the FMD Chapter

## TOR6: EPIZOOLOGICAL DATA

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

Donald King - - UNITED\_KINGDOM

Yes

If the answer is yes, please provide details of the data collected:

Host species, sampling date, location

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:

All reports for laboratory testing performed at Pirbright are sent to WOA - see: <https://www.wrlfmd.org/country-reports>

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:

11

1. Al-Rawahi, W.A., E.I. Elshafie, S. Baqir, A. Al-Ansari, J. Wadsworth, H.M. Hicks, N.J. Knowles, A. Di Nardo, D.P. King, S. Zientara, F. Al Salloom, A. Sangula, C. Bernelin-Cottet, L. Bakkali-Kassimi, and B. Al Riyami (2024). Detection of foot-and-mouth disease viruses from the A/AFRICA/G-I genotype in the Sultanate of Oman. *Preventive Veterinary Medicine*, 223: 8. DOI: 10.1016/j.prevetmed.2023.106113.
2. Banda, F., A.B. Ludi, G. Wilsden, C. Browning, H.L. Kangwa, L. Mooya, M. Ngoma, G.M. Muuka, C. Mundia, P. Fandamu, D.J. Paton, D.P. King, and M.L.Y. Quan (2023). The immunogenicity of a Foot-and-mouth disease virus serotype O vaccine in commercial and subsistence cattle herds in Zambia. *Vaccines*, 11(12): 8. DOI: 10.3390/vaccines11121818.
3. Clarke, J.D., H.M.E. Duyvesteyn, E. Perez-Martin, U. Latisenko, C. Porta, K.V. Humphreys, A.L. Hay, J.S. Ren, E.E. Fry, E. van den Born, B. Charleston, M. Bonnet-Di Placido, R.J. Owens, D.I. Stuart, and J.A. Hammond (2024). A broadly reactive ultralong bovine antibody that can determine the integrity of Foot-and-mouth disease virus capsids. *Journal of General Virology*, 105(10): 13. DOI: 10.1099/jgv.0.002032.
4. Di Nardo, A., D. Lim, S. Ryoo, H. Kang, V. Mioulet, J. Wadsworth, N.J. Knowles, J.M. Kim, D.P. King, and S.H. Cha (2024). Multiple incursions of Foot-and-mouth disease virus serotype O into the Republic of Korea between 2010 and 2019. *Infection Genetics and Evolution*, 124: 10. DOI: 10.1016/j.meegid.2024.105664.
5. Edwards, N., J. Reboud, X.X. Yan, X. Guo, J.M. Cooper, J. Wadsworth, R. Waters, V. Mioulet, D.P. King, and A.E. Shaw (2024). Detection of Foot-and-mouth disease virus RNA using a closed loop-mediated isothermal amplification system. *Frontiers in Microbiology*, 15: 9. DOI: 10.3389/fmicb.2024.1429288.
6. Eltahir, Y.M., H.Z.A. Ishag, K. Parekh, B.A. Wood, A. Ludi, D.P. King, O.K. Bensalah, R.A. Khan, A.A.M. Shah, K. Kayaf, and M.S. Mohamed (2024). Foot-and-mouth disease vaccine matching and post-vaccination assessment in Abu Dhabi, United Arab Emirates. *Veterinary Sciences*, 11(6): 12. DOI: 10.3390/vetsci11060272.
7. Eltahir, Y.M., H.Z.A. Ishag, J. Wadsworth, H.M. Hicks, N.J. Knowles, V. Mioulet, D.P. King, M.S. Mohamed, O.K. Bensalah, M.F. Yusof, E.F.M. Gasim, Z.M. Al Hammadi, A.A.M. Shah, Y.A. Abdelmagid, M.A.M. El Gahlan, M.F. Kassim, K. Kayaf, A. Zahran, and M.M. Al Nuaimat (2024). Molecular epidemiology of Foot-and-mouth disease viruses in the emirate of Abu Dhabi, United Arab Emirates. *Veterinary Sciences*, 11(1): 13. DOI: 10.3390/vetsci11010032.
8. Ludi, A.B., H. Baker, R. Sanki, R.M.F. De Jong, J. Maryan, M. Walker, D.P. King, S. Gubbins, G. Limon, and K. Officer (2024). Epidemiological investigation of foot-and-mouth disease outbreaks in a Vietnamese bear rescue centre. *Frontiers in Veterinary Science*, 11: 9. DOI: 10.3389/fvets.2024.1389029.
9. MacDonald, J.C., H. Gulbudak, B. Beechler, E.E. Gorsich, S. Gubbins, E. Pérez-Martin, and A.E. Jolles (2024). Within-host viral growth and immune response rates predict Foot-and-mouth disease virus transmission dynamics for African buffalo. *American Naturalist*, 204(2):

133-146. DOI: 10.1086/730703.

10. Noble, A., E. Moorhouse, A.L. Hay, B. Paudyal, W. Mwangi, D. Munir, M.B.D. Placido, E. Tchilian, J.A. Hammond, and S.P. Graham (2024). Development of bovine IgG3-specific assays using a novel recombinant single-domain binding reagent. *Veterinary Immunology and Immunopathology*, 278: 5. DOI: 10.1016/j.vetimm.2024.110852.
11. Ward, J.C., L. Lasecka-Dykes, S.J. Dobson, S. Gold, N.J. Kingston, M.R. Herod, D.P. King, T.J. Tuthill, D.J. Rowlands, and N.J. Stonehouse (2024). The dual role of a highly structured RNA (the S fragment) in the replication of Foot-and-mouth disease virus. *FASEB Journal*, 38(14): 15. DOI: 10.1096/fj.202400500R.

b) International conferences:

13

1. Mielke S. R., Remmenga M., McLaws M. and King D. P. Is FMDV Serotype C Extinct: What can the data tell us? Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
2. Jones R., King D. P. and Busin V. Retrospective analysis of submissions to the WRLFMD: What can these data tell us about the role of small ruminants in disease epidemiology? Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
3. Di Nardo A., Shaw A. E., Gondard M., Wadsworth J., Girault G., Parekh K., Ludi A., Mioulet V., Bernelin-Cottet C., Hicks H. M., Polo N., Bulut A., Parlak U., Gizaw D., Ababneh M., Al Ameer M., Abdulrasool L. M. S., Al Saloom F. S., AlRawahi W. A., Knowles N. J., Bakkali-Kassimi L. and King D. P. East African origin of SAT2 XIV FMDV outbreaks in Western Asia, 2022-2023. Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
4. Di Nardo A., Tennakoon C., Yang L., Tervoort-McLeod S., McLaws M., VanMaanen C., Knowles N. J., Rosso F., Muellner U., Sammin D., Muellner P. and King D. P. openFMD: a digital platform to support Global Epidemiological Intelligence of FMD. Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
5. Berryman S., Asfor A., Yasmin A., Grant C., Ludi A., Perez E., Benham E., Howe N., Burman A., Brocchi E., Grazioli S., King D. P., and Tuthill T. FMD vaccine quality: a universal test for antigen based on detection of VP4. Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
6. Ludi A. B., Wilsden G., Grazioli S., Pituco E. M., Heath L., Eble P., Dekker A., Browning C., Parekh K., Metwally S., van Maanen C., Paton D. J., Knowles N., Di Nardo A. and King D. P. Regionally relevant reference FMD viruses for post vaccination studies. Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
7. Parekh K., Browning C., Wilsden G., Mioulet V., Wood B., McCarron A., Bull H., Baguisi J., Chantler V., Pituco E. M., Sanchez-Vazquez M. J., King D. P. and Ludi A. Vaccine matching analysis for South America O and A viruses. Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
8. Mioulet V., Wood B., Baguisi J., Bull H., McCarron A., Chantler V., Wadsworth J., Hicks H., Knowles N. J. and King D. P. Diagnostic testing challenges – Trying to keep up with FMDV. Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
9. Browning C., King D. P. and Ludi A. Are all cell lines equivalent when it comes to vesicular virus neutralisation tests? Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
10. Wiseman D. J., Burman A., Wilsden G., Smith P. R., Cresser L., Waters R., Stevenson L., Bentley S., Wood B., Mioulet V., Ludi A. B. and King D. P. Production of anti-FMD polyclonal antibodies in rabbits and guinea pigs. Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October 2024.
11. Baguisi J., Mioulet V., Bull H., Wood B., McCarron A., Chantler V., King D. P., Foglia E. A., Grazioli S., Benthall A., Mitchell K. and Wakeham A. Lateral flow devices for the detection of FMDV and approaches for field preparation. Open Session of the Standing Technical and Research Committee of the European Commission for the control of Foot-and-Mouth Disease, Alcalá de Henares. Spain, October

## Donald King - - UNITED\_KINGDOM

2024.

12. González L. M., Muwonge A., Porphyre T., Amanyire W., Okwasiimire R., Kanka C., Orton R., Boden L., Muhanguzi D., King D. P., Shaw A. and Bronsvoort M. Centrality-based monitoring system for optimized foot-and-mouth disease detection: a pilot study using non-invasive samples in Ugandan livestock markets. 17th International Symposium on Veterinary Epidemiology and Economics, Sydney, Australia, November 2024.

13. Di Nardo A., Muellner U., Tennakoon C., Yang L., McLaws M., van Maanen C., Rosso F., Knowles N., Tervoort-McLeod S., Muellner P. and King D. P. Openfmd: a novel data sharing and decision-support platform to enhance global epidemiological intelligence of foot-and-mouth disease. 17th International Symposium on Veterinary Epidemiology and Economics, Sydney, Australia, November 2024.

c) National conferences:

3

1. Yassin A., Grazioli S., Brocchi E., Horton D., Ludi A., King D. P. and Asfor A. Characterisation of a neutralisation (D9-like) epitope within the G-H loop foot-and-mouth disease virus serotypes O, A and SAT1. Annual Conference of the Microbiology Society, Edinburgh, April 2024.

2. Lasecka-Dykes L., Mioulet V., Wadsworth J., Hick H. M., Knowles N. J. and King D. P. Detection of insertions and deletions (indels) in high-throughput sequencing data of foot-and-mouth disease virus isolates circulating in the field. Annual Conference of the Microbiology Society, Edinburgh, April 2024.

3. Edwards N., Polo N., Wadsworth J., Chakravarti S., Mioulet V., Taylor E., King D. P., Horton D. L., Lasecka-Dykes L. and Shaw A. Forecasting the next panzootic foot-and-mouth disease virus lineage: informing virus fitness from in vitro studies and genomic data. Annual Conference of the Microbiology Society, Edinburgh, April 2024.

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

4

<https://www.wrlfmd.org/>

<https://www.foot-and-mouth.org/>

<https://www.fmdbase.org/>

<https://www.openfmd.org/>

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 20

b) Seminars : 45

c) Hands-on training courses: 46

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	KOREA (REP. OF)	15
A	SAUDI ARABIA	5



**Donald King - - UNITED\_KINGDOM**

B	INDONESIA	45
C	KENYA	1
C	TURKEY	1
C	INDONESIA	1
C	SAUDI ARABIA	1
C	ARGENTINA	1
C	INDONESIA	20
C	INDONESIA	15
C	KENYA	6

## TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO/IEC 17025	.pdf	UKAS accreditation for Pirbright 2024.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Virus isolation	United Kingdom Accreditation Service
real-time RT-PCR	United Kingdom Accreditation Service
ag-ELISA	United Kingdom Accreditation Service
VNT	United Kingdom Accreditation Service
NSP ELISA	United Kingdom Accreditation Service
SP-ELISA	United Kingdom Accreditation Service
Disinfectant testing	United Kingdom Accreditation Service

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

Yes

All work with FMDV is undertaken in high containment facilities licensed by the UK HSE.

## 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	location	No. Participants
----------------------------	----------------	--------------	------	----------	------------------

**Donald King - - UNITED\_KINGDOM**

International	Annual Meeting of the WOA/FAO FMD Laboratory Network	FAO	2024-09-24	Rome	43
---------------	--	-----	------------	------	----

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

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
SEACFMD Commission	2024-09-01	Bangkok, Thailand	Speaker	Global overview of FMDV risks
SCAD Regional roadmap for FMD	2024-09-02	Tanzania	Speaker	Regional situation for FMD

## TOR10: NETWORK WITH WOA/ REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOA/ Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOA/ REF. LABS
FMD Reference Laboratory Network	Organiser	22	NCFAD, Canada, APHIS, USA, PANAFTOSA, Brazil, SENASA, Argentina, OVI, South Africa, BVI, Botswana, APQA, South Korea, LVRI, China, ARRIAH, Russia, ANSES, France, Sciensano, Belgium, IZSLER, Italy, Pirbright, UK

25. Did you organise or participate in inter-laboratory proficiency tests with WOA/ Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOA/ Ref. Labs/ organising WOA/ Ref Lab
Virology and Serology tests for FMD	Organizer	9	Sciensano, Belgium, BVI, Botswana, PANAFTOSA, Brazil, NCFAD, Canada, ANSES, France, IZSLER, Italy, OVI, South Africa, APQA, South Korea, USDA, USA
Virology and serology tests for vesicular diseases	Participant	30	ANSES, France

Donald King - - UNITED\_KINGDOM

26. Did your laboratory collaborate with other WOA 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 WOA Reference Laboratories
Molecular epidemiology of FMD in Asia	Development of genome sequencing technologies	APQA, South Korea
Development of immunoassays for vesicular diseases	Antigen and serological ELISAs and LFDs for FMD	IZSLER, Italy
SAT2/XIV in Western Asia	Phylogenetic analyses of SAT 2 viruses from Middle East countries	ANSES, France

## TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons <sup>1</sup>	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Virology and serology tests for FMDV	Organizer	34	Full suite of diagnostic tests for FMD	ALGERIA, ARMENIA, AUSTRALIA, AZERBAIJAN, BRAZIL, CHINESE TAIPEI, EGYPT, ETHIOPIA, HONG KONG, INDIA, INDONESIA, IRAN, IRAQ, ISRAEL, JORDAN, KENYA, MOROCCO, NAMIBIA, NEPAL, NEW ZEALAND, NIGERIA, PHILIPPINES, SENEGAL, SINGAPORE, THAILAND, UNITED ARAB EMIRATES, UNITED KINGDOM, ZAMBIA,

## TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
WOAH BSC	Paris	Commission meeting
Review of Manual Chapter for FMD	on-line	Update of the FMD Chapter
Rapporteur for FMD Ad Hoc Group Meeting.	Paris and follow up calls	Reviewed applications by WOA Member countries for endorsement of their official FMD status
		Contribution to various meetings of FMD

**Donald King - - UNITED\_KINGDOM**

Contribution to working group	on-line	serotype C taskforce.
-------------------------------	---------	-----------------------

29. Additional comments regarding your report:

No