OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-14 09:00:02

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Foot and mouth disease
Address of laboratory:	Agricultural Research Council Private Bag X05 Onderstepoort 0110 SOUTH AFRICA
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Name (including Title) of Head of Laboratory (Responsible Official):	Dr Livio Heath
Name (including Title and Position) of OIE Reference Expert:	Livio Heath
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
FMDV ELISA (SPCE)	Yes	90 016	411
FMDV NSP ELISA	Yes	5 234	709
FMDV VNT	Yes	1150	0
Direct diagnostic tests		Nationally	Internationally
FMDV PCR	Yes	422	10
FMDV Virus Isolation	Yes	4	0
Molecular Typing	y	4	0

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?

No

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

No

4. Did your laboratory produce vaccines?

Yes

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
ESWATINI	October - December	1074	0
CONGO (DEM. REP. OF THE)	February	3	0
SOUTH SUDAN (REP. OF)	March	10	0
THAILAND	June	1	0
INDIA	August	1	0
ZIMBABWE	November	41	0

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

No

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)	OIE Member Countries involved other than your country
Construction of foot-and mouth disease (FMD) virus-specific phage display libraries and epitope identification for improved FMD vaccines generation.	3 years	Development of novel diagnostics	Institute of Virology, National Institute of Agricultural Technology (INTA), Argentina. The Pirbright Institute, UK. University of Glasgow, UK.	UNITED KINGDOM

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

If the answer is yes, please provide details of the data collected:
Epizootiological data were collected on the FMDV outbreaks in South Africa. Activities included serological surveillance and phylogenetic characterisation of virus strains. Epizootiological data was also collected on the involvement of small ruminants on the maintenance and dissemination of FMDV in South Africa.

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

Yes

If the answer is yes, please provide details of the data collected:
Reports were submitted to the South African Department of Agriculture, Land Reform and Rural Development. The results of the studies were presented at scientific conferences and scientific publications.

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: 3
1. Efficacy of SAT2 Foot-and-Mouth Disease Vaccines Formulated with Montanide ISA 206B and Quil-A Saponin Adjuvants. 2021. N. Rathogwa, K. Scott, P. Opperman, J. Theron, F F. Maree. Vaccines 2021. 9, 996.

2. Improving foot-and-mouth disease control through the evaluation of goat movement patterns within the FMD protection zone of South Africa. 2021. D. Lazarus, P. Opperman, M. Sirdar, T. Wolf, I. van Wyk, O. Rikhotso, G. Fosgate. Small Ruminant Research. 201. 106448.

3. Evaluation of Potency and Duration of Immunity Elicited by a Multivalent FMD Vaccine for Use in South Africa. 2021. Peta FRM, Sirdar MM, van Bavel P, Mutowembwa PB, Visser N, Olowoyo J, Seheri M and Heath L. Front. Vet. Sci. 8:750223. doi: 10.3389/fvets.2021.750223

b) International conferences: 2
1. FMDV-specific phage-display libraries for epitope identification and the improved design of FMD vaccines. P. et al. IVVN vaccines for ruminants symposium". 26th April 2021.

2. An overview of recent FDM outbreaks in South Africa. L Heath eat al. Scientific Meeting of the Global Foot-and-Mouth Disease Research Alliance 1 - 3 November 2021 | Buenos Aires, Argentina

c) National conferences: 4
1. Development of a serological based vaccine matching technique for SAT 2 foot-and-mouth disease (FMD) viruses. T. Malesa eta al. University of Pretoria Post-graduate Conference. July 2021.

2. Construction of three foot-and-mouth disease virus peptide phage display libraries for the identification of epitopes. NPB Sekgobela et al. University of Pretoria Post-graduate Conference. July 2021.

3. Construction of three foot-and-mouth disease virus peptide phage display libraries for the identification of epitopes. NPB Sekgobela et al. 18th Annual SASVEPM Congress 2021. 25-27 August 2021, South Africa.

4. Spatial risk mapping of foot-and-mouth disease
occurrence and spread in South Africa (2007-2016). M Sirdar et al. 18th Annual SASVEPM Congress 2021. 25-27 August 2021, South Africa.

d) Other:
(Provide website address or link to appropriate information) 0

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: 0
b) Seminars: 0
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
Hands-on training: Laboratory techniques used for the diagnosis of ASF, FMD, and PPR	Malawi	4
Hands-on training:: Laboratory Biosecurity and Biosafety	South Africa	25

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?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	V0034-08-2019.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
FMDV ELISA (SPCE)	South African National Accreditation System
FMDV ELISA (LPBE)	South African National Accreditation System
FMDV NSP ELISA	South African National Accreditation System
FMDV VNT	South African National Accreditation System

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, Chapter 1.1.4)

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?

No

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

No

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.
Validation of a diagnostic protocol	Participating Laboratory	Not Known	The 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?

No

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

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?

No

25. Additional comments regarding your report: