Name of disease (or topic) for which you are a designated OIE Reference Laboratory:  Foot and mouth disease

Address of laboratory: Agricultural Research Council-Onderstepoort Veterinary Institute-Transboundary Animal Diseases Programme Private Bag X05 Onderstepoort 0110 SOUTH AFRICA

Tel.: +27-12 529.95.29

Fax: +27-12 529.95.43

E-mail address: DwarkaR@arc.agric.za

Website: www.arc.agric.za

Name (including Title) of Head of Laboratory (Responsible Official): Livio Heath-Research Team Manager

Name (including Title and Position) of OIE Reference Expert: Rahana Dwarka-Senior Researcher

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

<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Indicated in OIE Manual (Yes/No)</th>
<th>Total number of test performed last year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nationally</td>
<td>Internationally</td>
</tr>
<tr>
<td>Indirect diagnostic tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid phase blocking ELISA</td>
<td>yes</td>
<td>42651</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5688</td>
</tr>
<tr>
<td>NSP ELISA</td>
<td>yes</td>
<td>2029</td>
</tr>
<tr>
<td></td>
<td></td>
<td>330</td>
</tr>
<tr>
<td>Direct diagnostic tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cell culture (pig kidney and IBRS cells)</td>
<td>yes</td>
<td>186</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41</td>
</tr>
<tr>
<td>polymerase chain reaction</td>
<td>yes</td>
<td>470</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>virus neutralisation test</td>
<td>yes</td>
<td>1792</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>molecular characterisation of virus</td>
<td>yes</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>typing ELISA</td>
<td>yes</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

**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?

   Yes
<table>
<thead>
<tr>
<th>Type of reagent available</th>
<th>Related diagnostic test</th>
<th>Produced/provide</th>
<th>Amount supplied nationally (ml, mg)</th>
<th>Amount supplied internationally (ml, mg)</th>
<th>No. of recipient OIE Member Countries</th>
<th>Region of recipients</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT1 and SAT2 rabbit antisera</td>
<td>Liquid phase blocking ELISA</td>
<td>produced and provided</td>
<td>0</td>
<td>20ml</td>
<td>1</td>
<td>Africa Americas</td>
</tr>
<tr>
<td>SAT1 and SAT2 guinea pig antisera</td>
<td>liquid phase blocking ELISA</td>
<td>produced and provided</td>
<td>0</td>
<td>20ml</td>
<td>1</td>
<td>Africa Americas</td>
</tr>
</tbody>
</table>

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
<table>
<thead>
<tr>
<th>Name of OIE Member Country seeking assistance</th>
<th>Date (month)</th>
<th>No. samples received for provision of diagnostic support</th>
<th>No. samples received for provision of confirmatory diagnoses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZIMBABWE</td>
<td>Jan-Dec 2014</td>
<td>30 sera</td>
<td>0</td>
</tr>
<tr>
<td>NAMIBIA</td>
<td>Jan-Nov 2014</td>
<td>2320 sera</td>
<td>40 clinical samples</td>
</tr>
<tr>
<td>SWAZILAND</td>
<td>Feb-Sept 2014</td>
<td>57 sera</td>
<td>5 clinical samples</td>
</tr>
<tr>
<td>MOZAMBIQUE</td>
<td>March-Aug 2014</td>
<td>259</td>
<td>43 clinical samples</td>
</tr>
<tr>
<td>BOTSWANA</td>
<td>July 2014</td>
<td>20 sera</td>
<td>0</td>
</tr>
</tbody>
</table>

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

Yes

<table>
<thead>
<tr>
<th>Name of the OIE Member Country receiving a technical consultancy</th>
<th>Purpose</th>
<th>How the advice was provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>UGANDA</td>
<td>Establishment of serological diagnostic testing methods for FMDV</td>
<td>Hands on technical training in Uganda to establish serological testing for FMDV using the liquid phase blocking ELISA</td>
</tr>
</tbody>
</table>

**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?

No

**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?

No

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

No

**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

b) International conferences: 13
M. Chitray, S. Maree, J. Theron & F. Maree. The introduction of positively charged residues at the five-fold axis of the FMD virus SAT-type capsid enhances infection of cultured cells. EuFMD 2014, Kavtat, Croatia.
Dr B. Blignaut entitled: “Emergence of antigenic variants of SAT2 FMD viruses at the wildlife/livestock interface in South Africa.” EuFMD 2014, Kavtat, Croatia.
Dr RM Dwarka attended the Third Global Conference of OIE Reference Centres, Incheon, Korea, 14-16 October 2014.
RM Dwarka attended the OIE FMD network meeting and represented pool 6 of the designated FMDV global virus pools designations, 26-27 November 2014, Brescia, Italy.

c) National conferences: 2
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: 1
d) Internships (>1 month): 0

<table>
<thead>
<tr>
<th>Type of technical training provided (a, b, c or d)</th>
<th>Country of origin of the expert(s) provided with training</th>
<th>No. participants from the corresponding country</th>
</tr>
</thead>
<tbody>
<tr>
<td>c</td>
<td>Uganda</td>
<td>5</td>
</tr>
</tbody>
</table>

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?
No

Explain Quality Management System in adoption process or currently in place

The diagnostic tests performed for FMD at the Transboundary Animal Diseases Programme are aligned to the ISO 17025 quality standard. The laboratory will apply for SANAS accreditation in early 2015.

16. Is your laboratory accredited by an international accreditation body?
No

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?

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?

No

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

<table>
<thead>
<tr>
<th>Purpose of the proficiency tests: ¹</th>
<th>Role of your Reference Laboratory (organiser/participant)</th>
<th>No. participants</th>
<th>Participating OIE Ref. Labs/organising OIE Ref. Lab.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validation of diagnostic protocol used for FMDV (LPBE, cell culture, PCR, VNT)</td>
<td>participant</td>
<td>All FMD reference lab located globally</td>
<td>OIE reference laboratory ARC-OVI-TADs programme (participant) FMD WRL at the Pirbright Institute (organizer)</td>
</tr>
</tbody>
</table>

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*

<table>
<thead>
<tr>
<th>Purpose for inter-laboratory test comparisons</th>
<th>No. participating laboratories</th>
<th>Region(s) of participating OIE Member Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation of the LPBE for the SAT serotypes of FMDV</td>
<td>2</td>
<td>□Africa □Americas □Asia and Pacific □Europe □Middle East</td>
</tr>
</tbody>
</table>

**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:

The ARC-OVI-TADs programme hosted a hands on training course on FMD for South African veterinarians and veterinary technologists.