This report has been submitted: 2017-01-24 14:51:46

<table>
<thead>
<tr>
<th>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</th>
<th>Rift Valley fever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address of laboratory:</td>
<td>Agricultural Research Council Onderstepoort Veterinary Research Private Bag X05 Onderstepoort 0110 SOUTH AFRICA</td>
</tr>
<tr>
<td>Tel.:</td>
<td>+27-12 529 91 17</td>
</tr>
<tr>
<td>Fax:</td>
<td>+27-12 529 94 18</td>
</tr>
<tr>
<td>E-mail address:</td>
<td><a href="mailto:lubisia@arc.agric.za">lubisia@arc.agric.za</a></td>
</tr>
<tr>
<td>Website:</td>
<td><a href="http://www.arc.agric.za">http://www.arc.agric.za</a></td>
</tr>
<tr>
<td>Name (including Title) of Head of Laboratory (Responsible Official):</td>
<td>Dr. Otto Koekemoer Research Team Manager</td>
</tr>
<tr>
<td>Name (including Title and Position) of OIE Reference Expert:</td>
<td>Dr. Baratang Alison Lubisi Head of Virology</td>
</tr>
<tr>
<td>Which of the following defines your laboratory? Check all that apply:</td>
<td>Governmental Research</td>
</tr>
</tbody>
</table>
**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></td>
<td>Nationally</td>
</tr>
<tr>
<td>Indirect diagnostic tests</td>
<td></td>
<td>Internationally</td>
</tr>
<tr>
<td>ELISA</td>
<td>Yes</td>
<td>1705</td>
</tr>
<tr>
<td>Direct diagnostic tests</td>
<td></td>
<td>132</td>
</tr>
<tr>
<td>PCR</td>
<td>Yes</td>
<td>0</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?

No

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?
   No

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
Development of a LSD-RVF-PPR vaccine construct.  

Purpose of the study: Development of a recombinant vaccine that will protect susceptible ruminants against LSD, Rift valley fever and peste des petits ruminant. The vaccine will also protect against sheeppox and goatpox.

Partners (Institutions): University of Alberta; VIDO; NCFAD

OIE Member Countries involved other than your country: CANADA

A comparative genome analysis of Rift Valley Fever virus isolates from foci of the disease outbreak in South Africa in 2008-2010

Duration: 2 years

Purpose of the study: Genome analysis of RVFV from 2008 - 2010 outbreaks in South Africa

Partners (Institutions): UPFVS; ILRI; Dept. of Agriculture, Land Reform, and Rural Development - N. Cape, and University of Liverpool

OIE Member Countries involved other than your country: KENYA 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

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: 1


b) International conferences: 1


c) National conferences: 0

d) Other: (Provide website address or link to appropriate information) 2

Other publications

1). Chaminuka, P. et al., Outcome Story in the ARC Impact Study Series No. 5, “The impact of Rift Valley Fever
and Lumpy Skin Disease on the South African livestock economy”. ARC Economics Analysis Unit.

2). A pamphlet and poster were developed for RVF information dissemination to developing farmers.

**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?

No

**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

<table>
<thead>
<tr>
<th>Quality management system adopted</th>
<th>Certificate scan (PDF, JPG, PNG format)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 17025</td>
<td>DAFF Approval 2014.pdf</td>
</tr>
<tr>
<td>ISO17025</td>
<td>SANAS Accreditation 2014.pdf</td>
</tr>
</tbody>
</table>

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

Yes

<table>
<thead>
<tr>
<th>Test for which your laboratory is accredited</th>
<th>Accreditation body</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVF IgG ELISA</td>
<td>SANAS</td>
</tr>
<tr>
<td>RVF IgM ELISA</td>
<td>SANAS</td>
</tr>
<tr>
<td>Real Time RT-PCR</td>
<td>SANAS</td>
</tr>
</tbody>
</table>

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?

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?

No

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

### Purpose for inter-laboratory test comparisons

<table>
<thead>
<tr>
<th>Purpose</th>
<th>No. participating laboratories</th>
<th>Region(s) of participating OIE Member Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR method harmonisation</td>
<td>3</td>
<td>Africa, Americas, Asia and Pacific, Europe, Middle East</td>
</tr>
<tr>
<td>ELISA method harmonisation</td>
<td>3</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:

**A). Research**

1. Three recombinant vaccine constructs against LSD, RVF, SPV, PPR and GTP (rLSD-RVF-PPR) have been generated and characterised in the laboratory. The constructs were evaluated for efficacy against sheeppox, goatpox and PPR challenge in sheep and goats, and are protective.

2. LSD-RVF recombinant vaccine constructs were generated and are currently being screened for homogeneity. Trials to test their efficacy in protecting against LSD and RVF are planned for early 2017, in cattle.

3. A project inspired by the quest for RVFV inter-epidemic vertebrate hosts in Africa was initiated. The project focuses on pigs, and it is funded by the Gauteng Department of Agriculture and Rural Development (GDARD).

   For the challenge experiments, pregnant sows, suckling and weaner piglets and growers (large white) were infected with 2 virus strains belonging to different RVFV genotypes and observed for 2 - 60 days. Interesting clinical observations in the pregnant sows and pathological signs in the piglets were observed. Laboratory testing of the samples collected in the trials is in progress. The University of Pretoria is a partner in the project.

4. A spin-off project from the one mentioned above focuses on the optimisation and validation of an in-house Indirect ELISA for use in porcine sera and plasma. The University of South Africa is a partner in the project.

5. Socio-economic studies were initiated to gauge farmer responsiveness to LSD and RVF vaccines. Enumerators were trained (12 trainees) and Knowledge-Attitudes-Perceptions-Practices (KAPP) data was collected in 5 provinces (willingness-to-pay [WTP] surveys are planned for February 2017 in South Africa) (593 farmers were surveyed in the KAPP study).

**B. Training**

1. Training sessions for farmers were conducted during farmers’ information days’ events in four different provinces in South Africa: Northern Cape (270 participants), Western Cape (90 participants), North West (390 participants) and Gauteng (70 participants), and seven presentations, covering important livestock diseases, vaccination and herd health management, were made to farmers. Close to 1800 copies of pamphlets on RVF (and LSD) were distributed to participating farmers and a number were left with the Extension officers in attendance for further distribution.
2). A training course was held from 24-28 October at the ARC-OVR for SA laboratories officials from different provinces on Veterinary diagnostic tests (35 officials were trained).