WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted: 5 avril 2023 17:28

**Laboratory Information**

| Name of disease (or topic) for which you are a designated WOAH Reference Laboratory: | Bluetongue |
| Address of laboratory: | No. 100 Old Soutpan Road (M35), Onderstepoort |
| Tel.: | (+2712) 529-9233/9117/9465 |
| E-mail address: | LubisiA@arc.agric.za |
| Website: | https://www.arc.agric.za |
| Name (including Title) of Head of Laboratory (Responsible Official): | Dr Misheck Mulumba |
| Name (including Title and Position) of WOAH Reference Expert: | Dr Baratang Alison Lubisi |
| Which of the following defines your laboratory? Check all that apply: | Governmental |

**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**

<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Indicated in WOAH 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></td>
<td></td>
<td>Internationally</td>
</tr>
<tr>
<td>Indirect diagnostic tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compettitive antibody ELISA</td>
<td>Yes</td>
<td>1267</td>
</tr>
<tr>
<td>Virus Neutralisation Test</td>
<td>Yes</td>
<td>96</td>
</tr>
<tr>
<td>Direct diagnostic tests</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WOAH Reference Laboratory Reports Activities 2022
2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?
   No
3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?
   No
4. Did your laboratory produce vaccines?
   Not applicable
5. Did your laboratory supply vaccines to WOAH Members?
   Not applicable

### 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 WOAH 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 WOAH Standards for the designated pathogen or disease?
   No

### TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAH Members?
    No
11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?
    No

### TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?
    Yes

<table>
<thead>
<tr>
<th>Title of the study</th>
<th>Duration</th>
<th>PURPOSE OF THE STUDY</th>
<th>PARTNERS (INSTITUTIONS)</th>
<th>WOAH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of a template for the validation data for addition of a test</td>
<td>1 month</td>
<td>To develop a template to populate diagnostic test validation data, for analysis and possible</td>
<td>The Commonwealth Scientific and Industrial Research Organisation (CSIRO); Pirbright Institute; Istituto</td>
<td>AUSTRALIA ITALY UNITED</td>
</tr>
</tbody>
</table>
TOR6: EPIZOOLOGICAL DATA

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

   IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

   The laboratory generated data for diagnostic, surveillance and export purposes that was shared with relevant stakeholders in South Africa in the form of test reports.

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:

   Results of a study on comparison of the efficiency of the Onderstepoort- and Centers for Disease Control’s ultraviolet light traps for the collection of livestock associated Culicoides species in South Africa was published.

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:

   1


   b) International conferences:

   0

   c) National conferences:

   0

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

   0
**TOR7: SCIENTIFIC AND TECHNICAL TRAINING**

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

No

**TOR8: QUALITY ASSURANCE**

18. Does your laboratory have a Quality Management System?

Yes

<table>
<thead>
<tr>
<th>Quality management system adopted</th>
<th>Certificate scan (PDF, JPG, PNG format)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO17025</td>
<td>V0001-06-2022 signed.pdf</td>
</tr>
</tbody>
</table>

19. Is your quality management system accredited?

Yes

<table>
<thead>
<tr>
<th>Test for which your laboratory is accredited</th>
<th>Accreditation body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibody Blocking ELISA</td>
<td>SANAS</td>
</tr>
</tbody>
</table>

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

Yes

The ARC-Onderstepoort Veterinary Research Institute has a Biosafety and Biosecurity Committee which manages Biorisk, and personnel attend annual various refresher courses and conferences on the subject matter. Dr. Lubisi attended the ABSA International 2nd Biosecurity Hybrid Symposium which was held between 01 and 08 May 2022 at the Renaissance Minneapolis Hotel, The Depot 225 Third Avenue South, Minneapolis, MN 55401 She also attended a professional development course on the 3rd of May 2022 titled: Biosecurity for uncertain situations: Challenges and solutions. The course used case studies and guided exercises to assess security risks and described challenges, lessons learned and opportunities for protecting biological materials, especially in situations where information, resources and support are scarce.

**TOR9: SCIENTIFIC MEETINGS**

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?

No

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

Yes

<table>
<thead>
<tr>
<th>Title of event</th>
<th>Date (mm/yy)</th>
<th>Location</th>
<th>Role (speaker, presenting poster, short communications)</th>
<th>Title of the work presented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting to discuss which validated diagnostic method to choose for Development of a template for the validation</td>
<td>2022-06-28</td>
<td>On-line</td>
<td>Participant</td>
<td>There were no formal presentations. The</td>
</tr>
</tbody>
</table>
data for addition of a test to a future online list of tests validated to the OIE Standard meeting was interactive.

**TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES**

23. Did your laboratory exchange information with other WOAH Reference Laboratories designated for the same pathogen or disease?  
Yes  
24. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?  
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 WOAH REF. LABS/ ORGANISING WOAH REF. LAB.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not a proficiency test. We shared data that was generated in the validation of the Hofmann et al., 2008 real time RT-PCR test for Bluetongue.</td>
<td>Participant</td>
<td>4</td>
<td>Pirbright Institute, Surrey (UK), IZS, Terramo (Italy) and CSIRO, Geelong (Australia)</td>
</tr>
</tbody>
</table>

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen?  
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 WOAH REF. LABS/ ORGANISING WOAH REF. LAB.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To discuss Quality Assurance matters related to Bluetongue diagnostic tests</td>
<td>Participant</td>
<td>+10</td>
<td>EU Reference Laboratory for African horse sickness and Bluetongue, Algete, Spain</td>
</tr>
</tbody>
</table>

26. Did your laboratory collaborate with other WOAH Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?  
No

**TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING**

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen?  
No

**TOR12: EXPERT CONSULTANTS**

28. Did your laboratory place expert consultants at the disposal of WOAH?  
No

29. Additional comments regarding your report:
1. Development of a BTV competition ELISA

An inhibition assay to detect antibodies against bluetongue virus (BTV) in sera was developed previously. The test is based on a domain of BTV-VP7 expressed in bacteria and a recombinant single chain antibody (scFv F10) that reacts in a serogroup-specific manner to VP7. Sheep sera from BTV infected animals inhibit the binding of scFv F10 to VP7. The inhibition format was changed to competition format, reducing the number of steps in the test. In 2022, pre-coated plates were tested and shown to be stable for up to nine months thus far. Both Stabilcoat and Superblock can be used for preparation of the plates. Further validation of the test is underway.

2. Networking

2.1 Dr. Lubisi attended the 11th Regional Steering Committee (RSC) of the GF-TADs for Africa which was held on 22 and 23 June 2022 in Nairobi Kenya, and on-line. She used the opportunity to inform attendees about the services offered by her institution and encouraged them to send samples for diagnostic and other purposes. In addition, she invited countries for collaboration on research, especially that focused on diagnostic test development and validation, and further indicated that her WOAH Reference Laboratories were keen on entering into WOAH twinning project arrangements.

2.2 Dr. Lubisi attended the 2nd Consultative Meeting: World Organisation for Animal Health (WOAH) SADC Reference Centers, which was held on-line on 26 July 2022. She presented a talk on activities of the WOAH Reference Laboratories for African Horse Sickness, Bluetongue and RVF held at ARC-OVR. She highlighted the challenges her institution faced with receiving samples for the diagnosis of Bluetongue (BT), and requests for training or collaboration on the disease. The concern was raised as a plea to the WOAH Southern African sub-region to raise awareness in the sub-region about the services offered at the ARC-OVR WOAH Reference Laboratories.

2.3 The ARC-OVR is part of South Africa’s National Biosecurity Hub which was launched by The Department of Science and Innovation (DSI) at the University of Pretoria’s (UP’s) Future Africa campus on 11 October 2022. The Hub is aimed at supporting the prevention and reduction of crop and animal disease in the country. Dr. Lubisi attended the event which was graced by South Africa’s Minister of Agriculture, Land Reform and Rural Development, and attended by various national and international role players in the animal and plant health spaces. She was part of the ARC’s exhibition team and showcased the services offered by the ARC-OVR, including its WOAH Reference Laboratories.

The event was preceded by the shooting of a video at the ARC-OVR campus on 28 September 2022, the aim of which was to showcase the National Biosecurity Hub, and highlight its role players and what its purpose was. Dr. Lubisi was interviewed and she explained the role played by the ARC-OVR in the animal health industry in the country and region, including its WOAH Reference Laboratories.