

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 WOA 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 WOA 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

Diagnostic Test	Indicated in WOA Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Competitive antibody ELISA	Yes	1267	0
Virus Neutralisation Test	Yes	96	0
Direct diagnostic tests		Nationally	Internationally

Real Time RT-PCR	Yes	1418	0
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TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOA?H 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 WOA?H 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 WOA?H Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

No

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOA?H 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
Development of a template for the validation data for addition of a test	1 month	To develop a template to populate diagnostic test validation data, for analysis and possible	The Commonwealth Scientific and Industrial Research Organisation (CSIRO); Pirbright Institute; Istituto	AUSTRALIA ITALY UNITED

to a future online list of tests validated to the OIE standard		endorsement as an assay validated according to WOA standards	Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale (IZS)	KINGDOM
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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 Centres 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

Venter, G.J., Sebetsang, S.S., Swart, V.R., Boikanyo, S.N.B. & de Beer, C.J. (2022). Comparison of the efficiency of the Onderstepoort- and Centres for Disease Control ultraviolet light traps for the collection of livestock associated Culicoides species in South Africa. *Medical and Veterinary Entomology* 36, 113-126 <https://doi.org/10.1111/mve.12558>

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 WOAHA Members?

No

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025		V0001-06-2022 signed.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Antibody Blocking ELISA	SANAS

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 WOAHA?

No

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

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
Meeting to discuss which validated diagnostic method to choose for Development of a template for the validation	2022-06-28	On-line	Participant	There were no formal presentations. The

data for addition of a test to a future online list of tests validated to the OIE Standard			meeting was interactive.
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TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOAHP Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS/ ORGANISING WOAHP REF. LAB.
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.	Participant	4	Pirbright Institute, Surrey (UK), IZS, Terramo (Italy) and CSIRO, Geelong (Australia)

25. Did you organise or participate in inter-laboratory proficiency tests with WOAHP Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS/ ORGANISING WOAHP REF. LAB.
To discuss Quality Assurance matters related to Bluetongue diagnostic tests	Participant	+10	EU Reference Laboratory for African horse sickness and Bluetongue, Algete, Spain

26. Did your laboratory collaborate with other WOAHP 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 WOAHP Reference Laboratories for the same pathogen?

No

TOR12: EXPERT CONSULTANTS

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

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 WOAHA Reference Laboratories were keen on entering into WOAHA 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 WOAHA 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 WOAHA Southern African sub-region to raise awareness in the sub-region about the services offered at the ARC-OVR WOAHA 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 WOAHA 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 WOAHA Reference Laboratories.