

WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 1 juillet 2024 14:11

Laboratory Information

Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory:	Bluetongue
Address of laboratory:	No. 100 Old Soutpan Road, Onderstepoort, 0110, Gauteng Province, South Africa
Tel.:	+27-12 529 91 17
E-mail address:	LubisiA@arc.agric.za
Website:	https://www.arc.agric.za/
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Arshad Mather - Acting Senior Manager Research: Animal Health and Protection
Name (including Title and Position) of WOAHO Reference Expert:	Dr. Baratang Alison Lubisi - Research Team Manager: Diagnostic Services
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 WOAHO Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
Blocking ELISA		521	1
Direct diagnostic tests			
Real Time RT-PCR		589	0

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAHO Members?

Not applicable

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
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BT 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 inhibits the binding of scFv F10 to VP7. This ELISA works in the competition format which also reduces the number of steps. This year, pre-coated plates were tested and shown to be stable for up to 15 months thus far. Both Stabilcoat and Superblock can be used. Hundred BTV negative serum samples and 50 BTV positive serum samples were tested. The final statistical analysis still needs to be performed. Validation is in progress.

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?

Yes

NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
BOTSWANA	2023-05-02	ELISA	1	0

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

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
Sequence analyses of orbiviruses	Continuous	Analyses of the genome sequences of orbiviruses	1. College of Public Health, Medical and Veterinary Sciences, James Cook University, Townsville, QLD 4811, Australia; 2. University of Pretoria	AUSTRALIA

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

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:

Sera were tested to determine bluetongue seropositivity and seroprevalence in different susceptible species. Viruses were isolated from field samples and typed using serological methods. In addition, the genomes of circulating viruses were sequenced to determine genetic changes.

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:

Yes. Two scientific articles were published. An oral presentation was made at the combined bluetongue and African horse sickness workshop, Madrid, Spain, 7-8 November 2023.

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:

2

1. Van Schalkwyk A, Coetzee P, Ebersohn K, Von Teichman B, Venter E. 2023. Widespread Reassortment Contributes to Antigenic Shift in Bluetongue Viruses from South Africa. *Viruses*;15(7):1611. doi: 10.3390/v15071611.

2. Labuschagne, K., Meiswinkel, R., Liebenberg, D, Van Zyl, C., Van Schalkwyk, A. & Scholtz, C., 2023. 'Afrotropical *Culicoides* (Diptera: Ceratopogonidae): Description of *C. truuskae* sp. n. from the western deserts and xeric shrublands of southern Africa'; *Onderstepoort Journal of Veterinary Research* 90(1), a2072. <https://doi.org/10.4102/ojvr.v90i1.2072>

b) International conferences:

1

Van Schalkwyk, A., Coetzee, P., Ebersohn, K., Von Teichman, B. and Venter, E. 2023. Antigenic shift in bluetongue viruses from South Africa. Combined Bluetongue and African horse sickness workshop, Madrid, Spain 7-8 November 2023.

c) National conferences:

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

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAHP 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	Bluetongue ELISA	SANAS Certificate V0001 - December 2023.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Bluetongue ELISA	South African National Accreditation System (SANAS)

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

Yes

The laboratory adheres to good laboratory practices and has standard operating procedures (SOPs) and fit for purpose equipment and facilities to ensure biosecurity, biosafety, and biocontainment of pathogens.

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOA?H REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOA?H Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOA?H REF. LABS
Bluetongue	Participant	2	Pirbright (United Kingdom), Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale"

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

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOA?H REF. LABS/ ORGANISING WOA?H REF. LAB.
Quality assurance of bluetongue diagnostic tests.	Participant	51	Organiser: EU Reference Laboratory for African horse sickness and Bluetongue, Algete, Spain. Participating WOA?H Reference Laboratories: Pirbright (United Kingdom), and Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale"

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

No

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

The laboratory receives few samples for bluetongue diagnostic purposes nationally, and fewer internationally. A plea was made to the Southern African Development Community (SADC) through the WOA?H Sub-Regional Representation for Southern Africa, for veterinary officials to submit samples for diagnostic purposes. The request also extended to research organisations for collaboration on the disease.

The Tanzania Veterinary Laboratory Agency has expressed interest in a twinning project with the laboratory on diseases of small ruminants, including bluetongue. The project was supported by WOA?H and funding sought. It will commence in 2024 if all administrative processes are completed and funding is obtained.