

OIE Reference Laboratory Reports Activities

Activities in 2019

This report has been submitted : 2020-01-22 12:33:26

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Bluetongue
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Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Misheck Mulumba
Name (including Title and Position) of OIE Reference Expert:	Dr. Baratang Alison Lubisi
Which of the following defines your laboratory? Check all that apply:	Governmental

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

Diagnostic Test	Indicated in OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
ELISA	Yes	527	0
VNT	Yes	656	0
Direct diagnostic tests			
Virus isolation	Yes	45	0
qRT-PCR	Yes	1209	0

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

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Mosquito and Culicoides survey in Madagascar	6 weeks	Collection of culicoides midges in Madagascar	CIRAD	FRANCE

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

If the answer is yes, please provide details of the data collected:

1. Diagnostic and pre-export test data which act as mini surveillance data, informing authorities of disease presence and distribution.
2. Culicoides midges' activities and the pathogens they are infected with.

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

Yes

If the answer is yes, please provide details of the data collected:

1. Diagnostic and pre-export test data which act as mini surveillance data, informing authorities of disease presence and distribution.
2. Culicoides midges' activities and the pathogens they are infected with.

**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

1. Bakhom, M.T., Sarr, M., Fall, A.G., Huber, K., Fall, M., Sembène, M., Seck, M.T., Labuschagne, K., Gardès, L., Ciss, M., Gimonneau, G., Bouyer, J., Baldet, T. & Garros, C. 2018. DNA barcoding and molecular identification of field-collected *Culicoides* larvae in the Niayes area of Senegal. *Parasites and Vectors*, 11:615. <https://doi.org/10.1186/s13071-018-3176-y>

2. Claire Garros, C., Labuschagne, K., Dommergues, L., Ben, M., Balenghien, T., Muñoz, F., Bakhom, M.T., Cardinale, E. Guis, H. 2019. *Culicoides* Latreille in the sun: faunistic inventory of *Culicoides* species (Diptera: Ceratopogonidae) in Mayotte (Comoros Archipelago, Indian Ocean). *Parasites and Vectors* 12:135 <https://doi.org/10.1186/s13071-019-3379-x>

3. Venter, G.J., Boikanyo, S.N.B., & de Beer, C.J. 2019. The influence of temperature and humidity on the flight activity of *Culicoides imicola* both under laboratory and field conditions. *Parasites and Vectors* 12:4. doi: 10.1186/s13071-018-3272-z

b) International conferences: 1

Venter, G., 2019. Vector Control: What do we need to know? European Biosafety Association's annual conference, Bucharest, Romania, 2-5 April 2019

c) National conferences: 3

Labuschagne, K., 2019. Mosquito and *Culicoides* survey in Madagascar. 10TH Veterinary & Paraveterinary congress, Emperors Palace, OR Tambo International Airport - Gauteng, South Africa, 16 - 18 July 2019

Labuschagne, K., Junker, K., & Bakkes, D.K. 2019. The importance of the national collections at the ARC - Onderstepoort Veterinary Research Institute, South Africa. 10TH Veterinary & Paraveterinary congress, Emperors Palace, OR Tambo International Airport - Gauteng, South Africa, 16 - 18 July 2019

Venter, G., 2019. "Vector control - What you need to know". AHSAI INDABA, Kyalami, Gauteng, South Africa, 21 July 2019

d) Other:

(Provide website address or link to appropriate information) 0

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: 1
 c) Hands-on training courses: 1
 d) Internships (>1 month): 0

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
b (Seminar on animal health risk assessment and vector-borne diseases in Romania)	Various	20
c (Training on the collection, surveillance and identification of Culicoides species at the University of Pretoria, South Africa)	Various	Approximately 20

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?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO17025	SANAS Accreditation 2017-2022 pdf.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA	SANAS

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?

Yes

Purpose of the proficiency tests: ¹	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
PCR Test Harmonisation	Participant	Several	European Reference Laboratory for African horse sickness and Bluetongue, Algete, Spain

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?

No

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

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:

Development of Diagnostic Tests:

Dr. Jeanni Fehrsen developed an inhibition assay for the detection of antibodies against bluetongue virus (BTV) in sera and plasma. The test is based on a domain of BTV-VP7 expressed in bacteria and an scFv (F10) that reacts in a serogroup-specific manner to VP7. Sheep sera from BTV infected animals inhibits the binding. Further evaluation with a larger panel of sera, including negative sheep sera to validate the preliminary results still needs to be done, before the test is validated on a larger scale.

Student Training:

Degrees Completed:

1. Steyn, J. 2019. Culicoides midges (Diptera: Ceratopogonidae) as potential vectors for neurological arboviruses and the prevalence of infection at the wildlife/human interface. PhD in Medical Virology at University of Pretoria. Supervisor: Prof. M. Venter, Co-supervisor: Dr A. Conan and Dr G. Venter

2. Sebitsang, S.S. 2019. Assessing the influence of population density on the efficiency of the Onderstepoort and miniature CDC light traps for the collection of livestock-associated Culicoides species. BSc honours, University of the Free State, Supervisors: V.R. Swart, C.J. De Beer & G.J. Venter.

In Progress:

1. MSc UNISA (Ayanda Mtyapi) The influence of climate on Culicoides and other stock associated blood feeding arthropods in the Eastern Cape Province (Grahamstown). Study leader" K. Labuschagne

2. MVSc Equine Research Centre, Faculty of Veterinary Science, University of Pretoria (Lisa Penzhorn) Culicoides collection and host preferences. Study leader: G.J. Venter.

Review of Scientific Articles:

Manuscripts on Culicoides vectors are regularly evaluated for a number of international journals, e.g. Veterinaria Italiana, Medical and Veterinary Entomology, Acta Tropica etc.

Field surveys of Culicoides:

Performed on a regular basis.