

OIE Reference Laboratory Reports Activities

Activities in 2017

This report has been submitted : 2018-01-11 06:43:00

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	African horse sickness
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Name (including Title) of Head of Laboratory (Responsible Official):	Otto Koekemoer Research Team Manager: Vaccines and Diagnostics Development
Name (including Title and Position) of OIE Reference Expert:	Otto Koekemoer Research Team Manager: Vaccines and Diagnostics Development
Which of the following defines your laboratory? Check all that apply:	Research

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		Nationally	Internationally
i-ELISA	yes	962	803
VNT for serotyping	yes	24	0
Direct diagnostic tests		Nationally	Internationally
Virus isolation	yes	73	4
hemi-nestedRT-PCR	no, in-house	289	14

**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?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
AHSV reference strains	AHSV real-time PCR	provided	-	9x 1ml freeze-dried	1	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

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?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
NAMIBIA	April - July	2	-
MOZAMBIQUE	April	1	
ZIMBABWE	March - July	8	
BOTSWANA	September	1	
KENYA	August	1	
MALAWI	June	2	
SWAZILAND	July	1	
MAURITIUS	January - November	802	

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
Evaluation on the availability and efficacy of available African Horse sickness vaccines and vaccine candidates	2015 -17	Evaluation on the availability and efficacy of AHS vaccines and vaccine candidates; - Estimation of the impact of a new AHS DIVA vaccine on the equine sector - a rapid economic assessment.	ARC-OVR; Deltamune, RSA; CVI Wageningen; ANSES-Alfort; Pirbright; VISAVET	FRANCE SPAIN THE NETHERLANDS 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?

No

**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: 7

Bakhoun, M.T., Labuschagne, K., Huber, K., Fall, M., Mathiue, B., Venter, G., Gardè, L., Baldet, T., Bouyer, J., Fall, A.G., Gimonneau, G. & Garros, C. 2017. Phylogenetic relationships and molecular delimitation of *Culicoides* Latreille (Diptera: Ceratopogonidae) species in the Afrotropical region: interest for the subgenus *Avaritia*, *Systematic Entomology* (early view), DOI: 10.1111/syen.12279

Becker, E., Venter, G.J., Greyling, T., Molini, U. & van Hamburg, H. 2017. Evidence of African horse sickness virus infection of *Equus zebra hartmannae* in the south-western Khomas Region, Namibia. *Transboundary and Emerging Diseases*, 00, 1-3. doi 10.1111/tbed.12651.

Carpenter, S., Mellor, P.S., Fall, A.G., Garros, C. & Venter, G.J. 2017. African Horse Sickness Virus: History, transmission, and current status. *Annual Review of Entomology*, 62, 343-358. doi: 10.1146/annurev-ento-031616-035010

González, M.A., Alarcón-Elbal, P.M., Venter, G.J. & López, S. 2017. Flight and swarming behaviour of *Culicoides* species (Diptera: Ceratopogonidae) on a livestock farm in Northern Spain. *Veterinaria Italiana*, 53(2), 157-166. doi: 10.12834/VetIt.371.1663.4

Page, P., Ganswindt, A., Schoeman, J., Venter, G. & Guthrie, A. 2017. The effect of alphacypermethrin-treated mesh protection against African horse sickness virus vectors on jet stall microclimate, clinical variables and faecal glucocorticoid metabolites of horses. *BioMed Central Veterinary Research*, 13, 283. doi 10.1186/s12917-017-1198-x

Mathebula E.M., Faber F.E., Van Wyngaardt W., Van Schalkwyk A., Pretorius A., Fehrser J. 2017. B-cell epitopes of African horse sickness virus serotype 4 recognised by immune horse sera. *Onderstepoort J Vet Res*. Feb 24;84(1):e1-e12. doi:10.4102/ojvr.v84i1.1313.

Vermaak E., Maree F.F., Theron J. 2017. The *Culicoides sonorensis* inhibitor of apoptosis 1 protein protects mammalian cells from apoptosis induced by infection with African horse sickness virus and bluetongue virus. *Virus Res*. Mar 15;232:152-161. doi: 10.1016/j.virusres.03.004.

b) International conferences: 2

De Beer, C.J., Boikanyo, S.N.B. & Venter, G.J. 2017. Determination of the efficiency of light-emitting diode suction traps for the collection of *Culicoides imicola* (Diptera: Ceratopogonidae) in South Africa. In: *New Technology conquering old vector*, Book of Abstracts of the 7th International Congress for Vector Ecology (SOVE). (ed. by M.A. Miranda Chueca and B. Alten). 1-6 October 2017. Palma, Spain, p 192.

Venter, G.J., Boikanyo, S.N.B. & de Beer, C.J. 2017. Flight behavior of *Culicoides imicola* at controlled temperatures and humidity conditions. In: *New Technology conquering old vectors*, Book of Abstracts of the 7th International Congress for Vector Ecology (SOVE). (ed. by M.A. Miranda Chueca and B. Alten). 1-6 October 2017. Palma, Spain, p 135.

c) National conferences: 7

Grewar, J.D., Weyer, C.T., Venter, G., Van Helden, L.S., Burger, P., Russouw, E., Guthrie, A.J., Labuschagne, K., Bührmann, G., Parker, B. & Thompson, P.N. 2017. A field investigation of the African horse sickness outbreak in the controlled area of South Africa in 2016. 9th Veterinary, Paraveterinary & SAVEPM Congress, 24-27 July 2017, Birchwood Hotel & OR Tambo Conference Centre, Kempton Park, South Africa, p 344.

Labuschagne, K. 2017. The distribution of African horse sickness vectors in the protection and surveillance zones of the western Cape Province, South Africa. 9th Veterinary, Paraveterinary & SAVEPM congress, 24-27 July 2017,

Birchwood Hotel & OR Tambo Conference Centre.

Labuschagne, K. 2017. Evaluation of African horse sickness cases to Culicoides numbers and climatic variables. 9th Veterinary, Paraveterinary & SAVEPM congress, 24-27 July 2017, Birchwood Hotel & OR Tambo Conference Centre.

Labuschagne, K. 2017. Geometric morphometrics on the Culicoides imicola group in South Africa. Combined Congress of the Entomological and Zoological Societies of Southern Africa. 3-7 July 2017. CSIR, Pretoria, South Africa, p 356

Labuschagne, K., Scholtz, C.H. & Debeila, T. 2017. Three techniques confirming separate species status within the Culicoides brucei species group. 9TH Veterinary, Paraveterinary & SAVEPM congress, 24-27 July 2017, Birchwood Hotel & OR Tambo Conference Centre

Liebenberg, D., Piketh, S., Labuschagne, K., Venter, G. & Greyling, T. 2017. Culicoides species composition along an African horse sickness gradient in Namibia. In: Abstracts of the 2017 Combined Congress of the Entomological and Zoological Societies of Southern Africa. 3-7 July 2017. CSIR, Pretoria, South Africa, p 360.

Riddin, M.A., Venter, G.J. & Villet, M.H. 2017. Clinical expression of African horse sickness in South African horses. 9th Veterinary, Paraveterinary & SAVEPM Congress, 24-27 July 2017, Birchwood Hotel & OR Tambo Conference Centre, Kempton Park, South Africa, p 342.

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?

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

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	SANAS_V0001_ISO17025.pdf

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

Yes

Test for which your laboratory is accredited	Accreditation body
Indirect ELISA	SANAS
Hemi-nested RT-PCR	SANAS
Virus isolation	Dept of Agriculture Fisheries and Forestry

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?

Yes

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.
Validation of AHSV real-time RT-PCR test method	Distribution of test panel	5	LCV Algete, Spain OVI, South Africa

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?

Yes

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

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
Virus isolation	2	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Indirect ELISA	7	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
RT-PCR	4	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

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: