

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 4 mai 2023 12:10

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	African swine fever
Address of laboratory:	Transboundary Animal Diseases, Onderstepoort Veterinary Institute, Agricultural Research Council, South Africa
Tel.:	0826763835
E-mail address:	heathl@arc.agric.za
Website:	www.arc.agric.za
Name (including Title) of Head of Laboratory (Responsible Official):	Dr Livio Heath
Name (including Title and Position) of WOA Reference Expert:	Dr Livio Heath
Which of the following defines your laboratory? Check all that apply:	Research agency

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
ASF Serology	Yes	3 132	0
Direct diagnostic tests		Nationally	Internationally
ASF PCR	Yes	388	0
ASF Genotyping	Yes	128	0

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?

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
Sentinel® ASFV Antibody Rapid Test	Assisted the Pirbright Laboratory to validation a commercial ASF Antibody Rapid test.

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
Validation of lateral flow devices of the diagnosis of	3 Months	Validation of a diagnostic	The Pirbright Institute	UNITED KINGDOM

ASF		assay.		
Unraveling the Effect of Contact Networks & Socio-Economic Factors in the Emergence of Infectious Diseases at the Wild-Domestic Interface	4 Years	Comprehensively assess the pig contact networks, pig management and socioeconomic factors, tick involvement in ASFV transmission, ASF seroprevalence and viral diversity in the sylvatic and domestic cycles	University of California, Davis CIRAD University of Maputo University of Pretoria	UNITED STATES OF AMERICA
Interrelationship of warthogs, Ornithodoros ticks and African swine fever in South Africa	4 Years	Comprehensively assess the geographical expansion of the ASFV sylvatic cycle in South Africa	University of Pretoria, Kansas State University	UNITED STATES OF AMERICA
African swine fever virus (ASFV) genome sequencing	4 Years	To determine the complete genome sequences of ASFV circulating in Russia	Reference Laboratory for African Swine Fever Virus, FGBI "Federal Centre for Animal Health, Russia.	RUSSIA

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:

Epizootiological data were collected on the ASFV outbreak in South Africa in 2023. Activities included serological surveillance and phylogenetic characterisation of virus strains. Epizootiological data was also collected on the geographical expansion of the ASFV sylvatic cycle in South Africa.

Phylogenetic characterisation of virus strains circulating in Asia and Europe.

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:

Reports were submitted to the South African Department of Agriculture, Land Reform and Rural Development. The results of the studies were presented at scientific conferences and scientific publications.

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:

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Review of the Pig-Adapted African Swine Fever Viruses in and Outside Africa. Penrith ML, Van Heerden J, Heath L, Abworo EO, Bastos ADS. *Pathogens*. 2022 Oct 16;11(10):1190. doi: 10.3390/pathogens11101190.

Detection of African Swine Fever Virus in Ornithodoros Tick Species Associated with Indigenous and Extralimital Warthog Populations in South Africa. Craig AF, Schade-Weskott ML, Rametse T, Heath L, Kriel GJP, de Klerk-Lorist LM, van Schalkwyk L, Trujillo JD, Crafford JE, Richt JA, Swanepoel R. *Viruses*. 2022 Jul 26;14(8):1617. doi: 10.3390/v14081617.

Whole-genome sequencing of African swine fever virus from wild boars in the Kaliningrad region reveals unique and distinguishing genomic mutations. Mazloum A, van Schalkwyk A, Shotin A, Zinyakov N, Igolkin A, Chernishev R, Debeljak Z, Korennoy F, Sprygin AV. *Front Vet Sci*. 2023 Jan 5;9:1019808. doi: 10.3389/fvets.2022.1019808. eCollection 2022.

Genetic Characterization of the Central Variable Region in African Swine Fever Virus Isolates in the Russian Federation from 2013 to 2017. Mazloum A, Van Schalkwyk A, Chernyshev R, Shotin A, Korennoy FI, Igolkin A, Sprygin A. *Pathogens*. 2022 Aug 15;11(8):919. doi: 10.3390/pathogens11080919.

b) International conferences:

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Global African Swine Fever Research Alliance 2022 Scientific Meeting. Dominican Republic. 21-27 May 2022. Assessing the Ornithodoros vector and associated ASFV status of selected wildlife reserves in the ASF control zone of South Africa. C Boshoff, A Bastos, L Heath. 2022

Global African Swine Fever Research Alliance 2022 Scientific Meeting. Dominican Republic. 21-27 May 2022. Rope-Based oral fluid sampling of warthogs: Lessons learned from South Africa. D Kleynhans, A Bastos, L Heath. 2022.

Global African Swine Fever Research Alliance 2022 Scientific Meeting. Dominican Republic. 21-27 May 2022. Phylogenomics of genotype II African swine fever viruses from outbreaks in southern Africa (1993-2019). R Mthombeni, A Bastos, A Van Schalkwyk, J Van Heerden Juanita, L Heath. 2022.

USDA BSL-3 and Transboundary Animal Diseases. Training Programme. Kansa State University, USA. 13-17 June 2022. Managing endemic transboundary animal diseases in South Africa: African swine fever. L Heath. 2022.

Current and future Challenges in veterinary virus genomics, The Pirbright Institute, UK. 21-22 June 2022. OIE coordinated genomics based response to ASF incursions in South Africa. L Heath. 2022.

c) National conferences:

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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 WOA H 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)	
ISO 17025	SANAS	V0034-08-2019.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ASFV Serology	South African National Accreditation Sytem

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

Yes

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOA REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOA 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 REF. LABS/ ORGANISING WOA REF. LAB.
Validation of a diagnostic protocol	Participant	1	The Pirbright Institute. Universidad Complutense Madrid

25. Did you organise or participate in inter-laboratory proficiency tests with WOA 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 REF. LABS/ ORGANISING WOA REF. LAB.
Validation of a diagnostic protocol	Participant	Not Known	The Pirbright Institute. Universidad Complutense Madrid

26. Did your laboratory collaborate with other WOA Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

TITLE OF THE PROJECT OR CONTRACT	SCOPE	NAME(S) OF RELEVANT WOA REFERENCE LABORATORIES
Validation on lateral Flow Devices of the diagnosis of ASF	Validation on commercially available lateral Flow Devices of the diagnosis of ASF	The Pirbright Institute, UK
WOAH Reference Laboratory Network for African Swine fever	Coordination of activities of international, regional and national ASF reference laboratories	CSIRO Australian Centre for Disease Preparedness. Australia National Surveillance and Research Center for Exotic Animal Diseases, China. Universidad Complutense de Madrid (UCM), Spain. The Pirbright Institute, UK.

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOA Member Countries
Validation of a diagnostic protocol	Participant	2	Africa Europe

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No