

OIE Reference Laboratory Reports Activities

Activities in 2020

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	African swine fever
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Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Trevor Drew Director
Name (including Title and Position) of OIE Reference Expert:	Dr. David Williams Group Leader - Emergency Disease Laboratory Diagnosis
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		Nationally	Internationally
cELISA	Yes	14	449
IFAT	Yes	53	91
Direct diagnostic tests		Nationally	Internationally
Real-time PCR	Yes	907	1323
Virus Isolation	Yes	0	11
Immunohistochemistry	Yes	1	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?

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
ASF PCR kits (primer and probe) 500 test kits per kit	Realtime PCR	Produced	0	1 kit	1 - Papua New Guinea	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
ASFV positive control	Realtime PCR	Produced	5ml	16.5ml	21 - Australia, Cambodia, Indonesia, Lao PDR, Myanmar, Malaysia, Philippines, Thailand, Viet Nam, Singapore, Bhutan, Nepal, Bangladesh, Pakistan, India, Sri Lanka, china, Chinese Taipei, Mongolia, New Caledonia, PNG	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Lateral flow device	Antigen rapid detection test	Provide	0	110 units	1 - Papua New Guinea	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" 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
PAPUA NEW GUINEA	March	14	0
PAPUA NEW GUINEA	May	164	0
PAPUA NEW GUINEA	June	396	0
PAPUA NEW GUINEA	September	154	0
PAPUA NEW GUINEA	December	170	0

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
PAPUA NEW GUINEA	Diagnostic testing, advice on sampling, laboratory and field diagnostics and establishing PCR capability	In loco and remote assistance (web/phone, email)
INDONESIA	Laboratory diagnostics - virus isolation	Remote assistance (email)

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
Comparative evaluation of PCR diagnostic tests for the detection of ASFV virus DNA in oral fluids and whole blood (US National Pork Board; NPB #19-209	1.5 years	Compare commercially available PCR kits for testing oral fluids and whole blood from experimentally infected pigs	Kansas State University, USA; CSIRO; National Centre for Foreign Animal Disease, CFIA, Canada	UNITED STATES OF AMERICA
ASF diagnostic capacity building (as part of 'A one health approach to establish surveillance strategies...for arboviruses in Papua New Guinea'; ACIAR LS/2018/213)	1 year	Provide advice, training and reagents for ASF molecular and serological testing; comparative evaluation of field tests	PNG National Animal Health & Quarantine Inspection Authority	PAPUA NEW GUINEA
'Comparative evaluation of pathogenetic mechanisms and immune response in wild boar and domestic pigs experimentally infected with currently circulating African swine fever virus genotype II isolate in Europe'; VetBioNet, grant agreement No. 731014)	6 months	Provide transcriptomics capability for project participants, to analyse host gene expression from samples generated from this study	National Veterinary Institute (SVA), Sweden, Animal and Plant Health Agency (APHA), Pirbright Institute, The Pirbright Institute, ANSES	SWEDEN
Whole genome sequencing of ASF viruses from Southeast Asia and the Pacific	1 year	Generate complete genome sequences to undertake improved molecular epidemiology analyses	National Directorate of Veterinary Services of the Ministry of Agriculture and Fisheries, Government of Timor-Leste, PNG National Animal Health & Quarantine Inspection Authority, Regional Animal Health Office No. 6, Vietnam	TIMOR-LESTE

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:

Epizootiological data was collected on the ASFV outbreak in Papua New Guinea from March 2020, including diagnostic testing for delimiting surveillance and molecular epidemiology of viruses detected. Genomic sequencing and analysis of ASFV from Timor-Leste and Vietnam was also performed.

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:

Williams DT. 'Animal Disease Diagnostics: African swine fever.' Detection, Diagnosis, and Reporting of Emergent Diseases Webinar Series organized by Black and Veatch for the US Defense Threat Reduction Agency (DTRA) with Biological Threat Reduction Program (BTRP) - Philippines, 16/12/2020. Webinar. Williams DT. 'ASF: still on the move and getting closer'. Recent Advances in Emergency Animal Disease Symposium, 6/10/2020. Webinar. <https://events.csiro.au/Events/2020/August/28/2020-RAEADS-6OCT>

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: 0

b) International conferences: 4

Williams DT. 'Laboratory diagnostics for African swine fever.' OIE RR Asia Pacific Workshop for the Pacific Region on Transboundary Animal Diseases, 26/3/2020. Webinar.

Drew T. 'ASF laboratory response learned from outbreaks.' Virtual Meeting of the Standing Group of Experts on African Swine Fever for Asia, 21/4/2020. Webinar. <https://rr-asia.oie.int/en/events/meeting-of-sge-on-asf-for-asia/>.

Williams DT and Drew T. 'Australian Centre for Disease Preparedness Update'. OIE RR Asia Pacific ASF epidemiological situation, progress on ASF prevention and control and current needs, 16/6/2020. Webinar.

Williams DT. 'Animal Disease Diagnostics: African swine fever.' Detection, Diagnosis, and Reporting of Emergent Diseases Webinar Series organized by Black and Veatch for the US Defense Threat Reduction Agency (DTRA) with Biological Threat Reduction Program (BTRP) - Philippines, 16/12/2020. Webinar.

c) National conferences: 2

Williams DT. 'ASF: still on the move and getting closer'. Recent Advances in Emergency Animal Disease Symposium, 6/10/2020. Webinar. <https://events.csiro.au/Events/2020/August/28/2020-RAEADS-6OCT>

Williams DT. 'Current Global ASF Pandemic'. ASF Webinars, Victorian Farmers Federation, 16/6/2020. Webinar. <https://australianpork.com.au/events/african-swine-fever-ready-webinars/>

(<https://www.youtube.com/watch?v=4koCdNLIYZI>)

d) Other:

(Provide website address or link to appropriate information) 3

FAO (2020). Addressing African swine fever: Laboratory protocols and algorithms.8 pp.

<http://www.fao.org/documents/card/en/c/CB1430EN/> (Williams DT, principle author)

African Swine Fever Preparedness Course for Asia and the Pacific, 21/5 to 21/6/2020.

<https://eufmdlearning.works/course/index.php?categoryid=39> (Williams DT, course tutor)

Williams DT. 'Quality control, biosafety and biosecurity in the veterinary diagnostic laboratory.' OIE Regional virtual training on swine disease laboratory diagnosis, 4/11/2020. Webinar.

<https://rr-asia.oie.int/en/events/oie-regional-virtual-training-on-swine-disease-laboratory-diagnosis/>

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: 1
- b) Seminars: 2
- c) Hands-on training courses: 0
- 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
A	Papua New Guinea	10
B	Bangladesh	9
B	Bhutan	16
B	Cook Islands	3
B	China	57
B	Chinese Taipei	2
B	Fiji	3
B	Federated States of Micronesia	3
B	Indonesia	37
B	India	40
B	Japan	21
B	Cambodia	15
B	Rep. Korea	12
B	Lao People's Democratic Rep	29
B	Myanmar	34
B	Mongolia	37
B	Malaysia	41
B	New Caledonia	3
B	Nepal	11
B	New Zealand	1
B	French Polynesia	8
B	Philippines	39
B	Palau	3
B	Singapore	10
B	Thailand	28
B	Timor Leste	5

B	Vietnam	58
B	Vanuatu	3
B	Samoa	3

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)
ISO 17025 & 17043	ISO 17043 and 17025 Certificates.pdf
ISO 9001	ISO9001 Certification Expiry 30-11-2022.pdf
ISO 14001	ISO14001 Certification Expiry 30-11-2022.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Testing for sterility and freedom from contamination of biological materials intended for veterinary use - Innocuity (ASFV isolation QA/13-04-101)	NATA (ILAC affiliated)
Examination of biopsy material (Histopathology; Immunohistochemistry; Macroscopic examination; Microscopic examination; QA/13-04-096 and QA/13-04-068)	NATA (ILAC affiliated)
Necropsy services (Microscopic examination; Anatomical pathology; QA/13-04-035)	NATA (ILAC affiliated)
Microbiology - Serology of infection - Microbial antibody and/or antigen detection and/or quantitation (Indirect fluorescent antibody test QA/13-04-154)	NATA (ILAC affiliated)
Detection and identification of viruses (ASFV isolation QA/13-04-106)	NATA (ILAC affiliated)
Accreditation No: 13546 (scope last change 2020)	NATA (ILAC affiliated)

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?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
OIE Regional virtual training on swine disease laboratory diagnosis	11/20	Online	Speaker	Quality control, biosafety and biosecurity in the veterinary diagnostic laboratory
OIE RR Asia Pacific ASF epidemiological situation, progress on ASF prevention and control and current needs.	6/20	Online	Speaker	Australian Centre for Disease Preparedness Update
Virtual Meeting of the Standing Group of Experts on African Swine Fever for Asia	4/20	Online	Speaker	ASF laboratory response learned from outbreaks
OIE RR Asia Pacific Workshop for the Pacific Region on Transboundary Animal Diseases	3/20	Online	Speaker	Laboratory diagnostics for African swine fever

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?

No

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
Harmonising existing test methods for PCR detection of ASFV DNA through the Asia Pacific Regional Proficiency Testing: Swine Diseases PCR panel	30	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Detection of ASF by Australian & New Zealand laboratories as part of the Laboratories Emergency Animal Disease Diagnosis and Response (LEADDR) Network	13	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input 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?

Yes

Kind of consultancy	Location	Subject (facultative)
Participation in the OIE Regional virtual training on swine disease laboratory diagnosis	Online	Quality control, biosafety and biosecurity in the veterinary diagnostic laboratory
Participation in the OIE RR Asia Pacific meeting on the ASF epidemiological situation, progress on ASF prevention and control and current needs	Online	Australian Centre for Disease Preparedness Update
Participation in the Virtual Meeting of the Standing Group of Experts on African Swine Fever for Asia	Online	ASF laboratory response learned from outbreaks
Participation in the OIE RR Asia Pacific Workshop for the Pacific Region on Transboundary Animal Diseases	Online	Laboratory diagnostics for African swine fever
Participation in the OIE GF-TADs laboratory network meeting in the Pacific	Online	African swine fever laboratory diagnostics and support for the Pacific from the ACDP

25. Additional comments regarding your report:

Due to COVID-19, ACDP has worked on limited operational capacity since March 2020 (for example, adopting roster arrangements for staff site access, reduced site access to ensure physical distancing, no domestic or international travel and visitors unable to attend site for most of the year). This has significantly limited ACDP's capacity to carry out planned research and conduct training and has limited some types of diagnostic submissions to the laboratory.

Question 10 -

Comparative evaluation of PCR diagnostic tests for the detection of ASFV virus DNA in oral fluids and whole blood (US National Pork Board; NPB #19-209 - also includes Canada

'Comparative evaluation of pathogenetic mechanisms and immune response in wild boar and domestic pigs experimentally infected with currently circulating African swine fever virus genotype II isolate in Europe'; VetBioNet, grant agreement No. 731014) - also includes United Kingdom and France

Whole genome sequencing of ASF viruses from Southeast Asia and the Pacific - also includes Papua New Guinea and Vietnam