

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-18 22:55:33

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	African swine fever
Address of laboratory:	CSIRO Australian Centre for Disease Preparedness 5 Portarlinton Road East Geelong Victoria 3219 AUSTRALIA
Tel.:	+61 3 5227 5000
Fax:	+61 3 5227 5555
E-mail address:	d.williams@csiro.au
Website:	www.csiro.au
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	889	176
IFAT	Yes	11	9
Direct diagnostic tests		Nationally	Internationally
Real-time PCR	Yes	1241	421
Virus isolation	Yes	2	2
Immunohistochemistry	Yes	0	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
Lateral flow device	Rapid antigen test	Provide	0	50 units	1 - 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
Polyclonal antiserum	IFAT, IHC	Produced	0	4ml	2 - Thailand, United Kingdom	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Virus isolates	PCR, virus isolation	Produced	0	5ml	1 - New Zealand	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
ASF network quality control	PCR	Produced	5ml	0	1-Australia	<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	January	55	0
PAPUA NEW GUINEA	February	42	0
PAPUA NEW GUINEA	April	66	0
PAPUA NEW GUINEA	June	48	0
PAPUA NEW GUINEA	July	32	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
AUSTRALIA	Advice on diagnostic testing and surveillance	Remote assistance (email and web calls)
AUSTRALIA	Advice on field diagnostic testing	Remote assistance (web call)
CHINA (PEOPLE'S REP. OF)	Advice on diagnostic testing and surveillance	Remote assistance (email)
VIETNAM	Advice on diagnostic testing; sequence analysis	Remote assistance (email)
SINGAPORE	Advice on sampling and diagnostic testing	Remote assistance (email)
Fiji	Advice on commercial diagnostic test kits; training and SOPs for rapid antigen test (through consultancy with PHAMA Plus and SPC)	Remote assistance (email and webinars)
MICRONESIA (FEDERATED STATES OF)	Training and SOPs for rapid antigen test (through consultancy with PHAMA Plus and SPC)	Remote assistance (email and webinars)
PAPUA NEW GUINEA	Diagnostic testing, advice on laboratory and field diagnostics and surveillance; training and SOP for PCR diagnostics and advice on establishing PCR capability; training and SOPs for rapid antigen test (including through consultancy with PHAMA Plus and SPC)	Remote assistance (email, web calls and webinars)
VANUATU	Training and SOPs for rapid antigen test (through consultancy with PHAMA Plus and SPC)	Remote assistance (email and webinars)
PHILIPPINES	Advice on diagnostic test validation (according to OIE recommendations) and proficiency testing providers	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)	2.5 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	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)	2.5 years	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)	12 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	FRANCE SWEDEN UNITED KINGDOM
Whole genome sequencing of ASF viruses from Southeast Asia and the Pacific	1 year	Generate and analyse 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	PAPUA NEW GUINEA TIMOR-LESTE
Transcriptome Profiling of Acutely Infected, Dead and Asymptomatic Infection of ASF virus in Pigs	1 year	Analysis of transcriptomics data	African Swine Fever Regional Laboratory, China (Lanzhou) and State Key Laboratory of Veterinary Etiological Biology and Key Laboratory of Veterinary Parasitology of Gansu Province, Lanzhou Veterinary Research Institute, Chinese Academy of Agricultural Sciences, Lanzhou, China	CHINA (PEOPLE'S REP. OF)

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 ongoing ASFV outbreak in Papua New Guinea, including diagnostic testing for delimiting surveillance and molecular epidemiology of viruses detected.

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:
Mileto P, da Conceição F, Stevens V, Cummins D, Certoma A, Neave MJ, Bendita da Costa Jong J, Williams DT. (2021). Complete Genome Sequence of African Swine Fever Virus Isolated from a Domestic Pig in Timor-Leste, 2019. <i>Microbiol Resour Announc.</i> 10(26):e0026321.

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: 2

1. Sun H, Niu Q, Yang J, Zhao Y, Tian Z, Fan J, Zhang Z, Wang Y, Geng S, Zhang Y, Guan G, Williams DT, Luo J, Yin H, Liu Z. (2021) Transcriptome Profiling Reveals Features of Immune Response and Metabolism of Acutely Infected, Dead and Asymptomatic Infection of African Swine Fever Virus in Pigs. *Front Immunol.* ;12:808545. doi: 10.3389/fimmu.2021.808545.

2. Mileto P, da Conceição F, Stevens V, Cummins D, Certoma A, Neave MJ, Bendita da Costa Jong J, Williams DT. (2021). Complete Genome Sequence of African Swine Fever Virus Isolated from a Domestic Pig in Timor-Leste, 2019. *Microbiol Resour Announc.* 10(26):e0026321. doi: 10.1128/MRA.00263-21.

b) International conferences: 7

1. Williams DT. 'ASF Diagnostic and Research Support at the Australian Centre for Disease Preparedness and ASF Vaccine Update'. Virtual Meeting of the OIE Standing Group of Experts on African Swine Fever for Asia, 5th February, 2021.

2. Williams DT. And Drew T. 'Australian Centre for Disease Preparedness - Introduction as new reference centre for ASF and CSF'. The 3rd OIE Regional Meeting of OIE Reference Centres (RCs) in Asia and the Pacific, 24-25 February 2021.

3. FAO Regional Consultation Workshop on ASF Preparedness and Response, Virtual Workshop based in Bangkok, Thailand, 9-10 March 2021.

Williams DT. 'Preventing the spread and mitigating the impacts of African swine fever in Asia and the Pacific at the Australian Centre for Disease Preparedness' (poster);

Drew T. 'Implications of use of unauthorised ASF vaccines in the region' (presentation).

4. Williams DT. 'Feedback from the Global network of ASF laboratories & global pool of experts' and 'Introduction to ACDP ASF and CSF'. OIE-FAO GF-TADs Regional Laboratory Expert Meeting on ASF and other pig diseases in Asia and the Pacific, 24th June 2021.

5. Williams DT. 'Available laboratory and field diagnostic tools for ASF diagnosis'. OIE-FAO GF-TADs African swine fever (ASF) Coordination Virtual meeting: Session III ASF Diagnosis, 25th August 2021.

6. Williams DT. 'ACDP Update'. Virtual Meeting of the OIE Standing Group of Experts on African Swine Fever for Asia, 7th September 2021

7. Williams DT. 'Options for portable and field diagnostics' Virtual Meeting of the OIE Standing Group of Experts on African Swine Fever for Asia, 15th December 2021.

c) National conferences: 2

1. Williams DT. 'The African swine fever pandemic: on our doorstep'. Australasian Society for Microbiology Virology Special Interest Group, 17th August 2021. Webinar.

2. Williams DT. 'The African swine fever incursion in Papua New Guinea'. Australian Society for Veterinary Pathology Annual Scientific Conference, Emerging Disease, Infection and Immunity. 11th September 2021. Webinar.

d) Other:

(Provide website address or link to appropriate information) 2

1. Australian Centre for Disease Preparedness African swine fever website:
<https://www.csiro.au/en/research/animals/veterinary/African-swine-fever>

2. African Swine Fever Training on Surveillance and Ingenasa Antigen Rapid Test Kit. Organised by Pacific Horticultural & Agricultural Market Access Plus Program (PHAMA Plus) and the Pacific Community (SPC); webinar-based theoretical and practical training for thirteen Pacific island countries, 29th November to 17th December, 2021

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: 14

c) Hands-on training courses: 13

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, C (remotely)	Fiji	4
B, C (remotely)	Tonga	2
B (remotely)	Samoa	4
B, C (remotely)	Vanuatu	5
B, C (remotely)	Niue	1
B, C (remotely)	Kiribati	1
B, C (remotely)	Tuvalu	2
A, B, C (remotely)	Papua New Guinea	7
B, C (remotely)	Nauru	2
B, C (remotely)	Cook Islands	3
B, C (remotely)	Solomon Islands	4
B, C (remotely)	Palau	2
B, C (remotely)	Federated States of Micronesia	3
B, C (remotely)	Republic of the Marshall Islands	7

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 17024 & ISO 17043	NATA ISO 17025 & 17043 Certificates.pdf
ISO 9001	BSI ISO 9001 Certificate.pdf
ISO 14001	BSI ISO 14001 Certificate.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 2021)	

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
Virtual Meeting of the OIE Standing Group of Experts on African Swine Fever for Asia	02/21	Online	Speaker	ASF Diagnostic and Research Support at the Australian Centre for Disease Preparedness and ASF Vaccine Update
3rd OIE Regional Meeting of OIE Reference Centres (RCs) in Asia and the Pacific	02/21	Online	Speaker	Australian Centre for Disease Preparedness - Introduction as new reference centre for ASF and CSF
FAO Regional Consultation Workshop on ASF Preparedness and Response, Virtual Workshop	03/21	Online	Speaker, poster	Preventing the spread and mitigating the impacts of African swine fever in Asia and the Pacific at the Australian Centre for Disease Preparedness' (D Williams, poster); Implications of use of unauthorised ASF vaccines in the region (T. Drew)
OIE ASF Reference Laboratory network	04/21	Online	Short communications	
OIE ASF Reference Laboratory network	05/21	Online	Short communications	
OIE-FAO GF-TADs Regional Laboratory Expert Meeting on ASF and other pig diseases in Asia and the Pacific	06/21	Online	Speaker	Feedback from the Global network of ASF laboratories & global pool of experts' and 'Introduction to ACDP ASF and CSF
OIE ASF Reference Laboratory network	06/21	Online	Short communications	
OIE-FAO GF-TADs African swine fever (ASF) Coordination Virtual meeting: Session III ASF Diagnosis	08/21	Online	Speaker	Available laboratory and field diagnostic tools for ASF diagnosis
OIE ASF Reference Laboratory network meeting (ASF risk assessment)	09/21	Online	Short communications	Review current situation and support for ASF outbreak in Dominican Republic and Haiti
Virtual Meeting of the OIE Standing Group of Experts on African Swine Fever for Asia	09/21	Online	Speaker	ACDP Update
OIE Pacific partners meeting	09/21	Online	Short communications	Coordination meeting for ASF and veterinary training in Pacific

OIE Laboratory capacity building experience from Asia Pacific to share with the Americas	09/21	Online	Speaker	Laboratory capacity building experience from Asia Pacific to share with the Americas - ACDP
OIE Pacific partners meeting	09/21	Online	Short communications	Online training plans
OIE ASF Reference Laboratory network meeting	11/21	Online	Short communications	On emergence of ASFV genotype I in China
OIE Pacific partners meeting	12/21	Online	Short communications	NA
Virtual Meeting of the OIE Standing Group of Experts on African Swine Fever for Asia	12/21	Online	Speaker	Options for portable and field diagnostics

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	29	<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	8	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
European Reference Laboratory for ASF Interlaboratory comparison testing XVIII; to evaluate the ASF diagnostic assays currently available in the National Reference Laboratories, including commercial kits	Not known	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" 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?

Yes

Kind of consultancy	Location	Subject (facultative)
ad hoc Group	Virtual/online	Led drafting of updated FAO ASF Laboratory Diagnosis manual, in collaboration with OIE Reference laboratory network
ad hoc Group	Virtual/online	Led drafting of 'An overview of African swine fever diagnostic tests for field application', in collaboration with OIE Reference laboratory network
OIE Standing Group of Experts on African Swine Fever for Asia	Virtual/online	ASF diagnosis, epidemiology and control
Provision of comments on OIE Standards	Virtual/online	Comments to Chapter 3.8.1 OIE Terrestrial Manual
OIE Pacific partners	Virtual/online	Coordination, advice on ASF training and capacity building initiatives in the Pacific
OIE ASF Reference Laboratory network	Virtual/online	Establishing regional sub-networks, technical documents on laboratory and field diagnosis, advice on laboratory capacity building experiences
GF-TADs African swine fever (ASF) Coordination Virtual meeting: Session III ASF Diagnosis	Virtual/online	Technical advice on laboratory and field diagnostic tools

25. Additional comments regarding your report:

Due to COVID-19, ACDP has continued to work with limited operational capacity throughout 2021 (for example, adopting roster arrangements for staff site access, reduced site access to ensure physical distancing, no 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.