World Organisation for Animal Health

Debbie Eagles - - AUSTRALIA

WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Bluetongue
***Address of laboratory:**	5 Portarlington Road East Geelong Victoria 3219 Australia
***Tel:**	+61 3 5337 5000
***E-mail address:**	Debbie.eagles@csiro.au
Website:	https://www.csiro.au/en/about/facilities-collections/acdp
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr Debbie Eagles, Director, CSIRO Australian Centre for Disease Preparedness
***Name (including Title and Position) of WOAH Reference Expert:**	Dr Debbie Eagles, Director, CSIRO Australian Centre for Disease Preparedness
***Which of the following defines your laboratory? Check all that apply:**	Governmental 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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
cELISA	Yes	211	121
sELISA	No	38	0
Serum Neutralisation Test	Yes	254	0
Direct diagnostic tests		Nationally	Internationally
Real-time PCR	Yes	208	0
Isolation	Yes	21	4
Whole genome sequencing	Yes	132	4

TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOAH Member Countries	Country of recipients

Network quality controls	PCR	Producer and provider	5ml	0	1	AUSTRALIA,
Network quality controls	ELISA	Producer and provider	4ml	0	1	AUSTRALIA,
Monoclonal Antibody	ELISA	Producer and provider	0	0.2ml	1	CANADA,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

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 WOAH Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAH Members?

Yes

Name of WOAH Member Country seeking assistance	Date	Which diagnostic test used	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
SOLOMON (ISLANDS)	2025-12-01	cELISA	48	0
SOLOMON (ISLANDS)	2025-03-01	cELISA	37	0
VANUATU	2025-07-01	cELISA	36	0
TIMOR-LESTE	2025-08-01	Virus isolation, Next Generation Sequencing	4	0

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?

No

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH 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
Complete mitochondrial genomes of Culicoides brevitarsis and Culicoides imicola biting midge vectors of Bluetongue Virus.	2 years	To elucidate the whole genomes of key BTV vector species.	Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise (IZSAM)	ITALY

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

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:
Diagnostic testing and epidemiological data from national sentinel herd surveillance (as conducted under the National Arbovirus Monitoring Program). Diagnostic Testing includes serology, virus isolation and typing, sequencing and bioinformatics.

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 on sentinel herd surveillance are shared with members of Australia's National Arbovirus Monitoring Program; collated into an Annual Report (See 16d).

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:

2

Ahmed KA, Karawita A, Klein MJ, Mincarelli LF, Secondini B, Satta G, Ancora M, Foxi C, Di Domenico M, Quaglia M, Goffredo M, Lorusso A, Cammà C, Court L, Rane RV, Walsh TK, Paradkar PN, Eagles D, Pandey G, Hardy CM. Complete mitochondrial genomes of Culicoides brevitarsis and Culicoides imicola biting midge vectors of Bluetongue Virus. Mitochondrial DNA B Resour. 2025 Jan 3;10(1):67-71. doi: 10.1080/23802359.2024.2447750. PMID: 39776561; PMCID: PMC11703489.

Sharpe SR, Madhav M, Klein MJ, Blasdell KR, Paradkar PN, Lynch SE, Eagles D, López-Denman AJ, Ahmed KA. Characterisation of the virome of Culicoides brevitarsis Kieffer (Diptera: Ceratopogonidae), a vector of bluetongue virus in Australia. J Gen Virol. 2025 Feb;106(2):002076. doi: 10.1099/jgv.0.002076. PMID: 39976626; PMCID: PMC11842880.

b) International conferences:

0

c) National conferences:

1

de Vries, E.M "Bluetongue virus in Australia; its dynamics, geography and what we still don't know", lightning talk, MicroSeq 2026, 3/09/2026

d) Other (Provide website address or link to appropriate information):

1

National Animal Health Monitoring Program Annual Report, available at https://animalhealthaustralia.com.au/

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?

Yes

a) Technical visit : 3

b) Seminars : 0

c) Hands-on training courses: 9

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
C	FIJI	3

C	VANUATU	3
C	PAPUA NEW GUINEA	7
C	LAOS	2
C	PHILIPPINES	6
C	MALAYSIA	4
C	INDONESIA	32
C	VIETNAM	1
C	TIMOR-LESTE	1
C	SINGAPORE	1
C	MYANMAR	1
C	BRUNEI	1
C	CAMBODIA	3
C	THAILAND	1
A	PAPUA NEW GUINEA	33

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO:9001	BSI ISO9001 FS 605099-001 NOV 2028.pdf	BSI ISO9001 FS 605099-001 NOV 2028.pdf
ISO:17025	NATA ISO 17025 APR 2024.pdf	NATA ISO 17025 APR 2024(2).pdf
ISO:17043	NATA ISO 17043 NOV 2022	NATA ISO 17043 NOV 2022(2).pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Genotyping; PCR - Quantitative (qPCR); Polymerase chain reaction (PCR), Serum neutralisation, ELISA, embryonated egg culture	NATA/ILAC

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

Yes

The laboratory has a dedicated Biorisk Management Group (18 Members) who provide specialist advice, monitor and improve Biosafety, Biosecurity and Biocontainment activities and perform annual testing and validation on Biocontainment systems. The team uses a biorisk management approach aligned with ISO 35001 to implement a system of managing biosafety and biosecurity across a wide array of biological hazards. The Biorisk Management Group develop and implement standard operating procedures and institutional policies that set the framework for the handling of biological materials across ACDP and provide ultimate assurance that the laboratory activities pose negligible danger to Australia’s agriculture or public health. Policies and procedures are contained in the annually reviewed ACDP Biorisk Manual consisting of various sections as follows. Section 1 Administration Section 2 PC2 Procedures and Policies Section 3 PC3 Procedures and Policies Section 4 PC4 Procedures and Policies Section 5 Large Animal Facility (LAF) Procedures and Policies Section 6 Personnel and Procedural Controls Section 7 Transport and Storage of Biological Material Section 8 Movement of Material, Equipment and Waste Section 9 Engineering Procedures and Polices Section 10 Microbiological Incident Response Procedures and Policies The ACDP biological risk management system has clear and unequivocal commitment by laboratory management, who ensure that roles, responsibilities, resources and authorities related to biological risk management are defined, documented, and communicated to those who manage, perform, and verify work associated with biological agents and toxins in the laboratory. The Biorisk Management Team are audited over 3 days every 6 months by an external security assessment team to provide an independent review of elements affecting ACDP’s microbiological and physical security operations and to advise CSIRO senior executive management of any areas of concern or risk. Biosafety and biosecurity operations are also audited frequently by Australia’s regulatory agencies, the Department of Agriculture, Fisheries and Forestry

(DAFF), the Office of the Gene Technology Regulator (OGTR) and the Security Sensitive Biological Agents Regulatory Scheme (SSBA).

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAH Ref. Labs/ organising WOAH Ref Lab
Validation of BTV cELISA, BTV sELISA, EHD cELISA, BTV Real-time PCR, EHDV BTV Real-time PCR	Participant	2	Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise (IZSAM

26. Did your laboratory collaborate with other WOAH 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 WOAH Reference Laboratories
Complete mitochondrial genomes of Culicoides brevitarsis and Culicoides imicola biting midge vectors of Bluetongue Virus.	To elucidate the whole genomes of key BTV vector species.	Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise (IZSAM)
BTV Whole genome characterisation	To review approaches to genomic classification of bluetongue viruses and propose new methodologies for characterisation of BTV isolates at the whole genome level	Pirbright Institute

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
Molecular PCR detection of BTV as part of the Laboratories Emergency Animal Disease Diagnosis and Response (LEADDR) Network	Organiser and participant	7	ELISA and PCR	AUSTRALIA,

TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)

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Review of chapters for Diagnostic Manual	Virtual	Range of diseases and specific technical chapters
Attendance at WOAH General Session	in person, Paris	General Session

29. Additional comments regarding your report:

No