World Organisation for Animal Health

Carrie Batten - - UNITED_KINGDOM

WOAH Reference Laboratory Reports Activities 2025

This report has been submitted: 20 janvier 2026 14:59

LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Bluetongue
***Address of laboratory:**	The Pirbright Institute, Ash Road, Woking, GU24 0NF
***Tel:**	+44-1483 23 24 41
***E-mail address:**	carrie.batten@pirbright.ac.uk
Website:	https://www.pirbright.ac.uk/
***Name (including Title) of Head of Laboratory (Responsible Official):**	Prof Bryan Charleston, Institute Director
***Name (including Title and Position) of WOAH Reference Expert:**	Dr Carrie Batten, Head of Non Vesicular Reference laboratories
***Which of the following defines your laboratory? Check all that apply:**	Research Institute

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
ELISA	Yes	6559	93
Direct diagnostic tests		Nationally	Internationally
Real time RT-PCR (Hofmann)	Yes	60349	6
Real time RT-PCR BTV-3 triplex	Yes	14705	123
Virus Isolation	Yes	6	3
SNTs	Yes	9	0

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
BTV-3 UKG strain	PCR	Provided	0	2ml	1	AUSTRALIA,
BTV-26 strain	PCR	Provided	0	2ml	1	AUSTRALIA,

BTV-1 field strain	PCR	Provided	0	1ml	1	TURKEY,
BTV-4 field strain	PCR	Provided	0	1ml	1	TURKEY,
BTV-8 reference strain	PCR	Provided	0	1ml	1	TURKEY,
BTV-9 reference strain	PCR	Provided	0	1ml	1	TURKEY,
BTV-16 reference strain	PCR	Provided	0	1ml	1	TURKEY,
BTV-3 reference strain	PCR	Provided	0	1ml	1	TURKEY,
Panel of BTV-3 ovine and bovine 21/24 and 28 dpi sera	ELISA	Provided	0	9 x 0.5ml	1	AUSTRALIA,

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?

No

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

Yes

Name of the WOAH Member Country receiving a technical consultancy	Purpose	How the advice was provided
PERU	selection and provision of testing for post import purposes	email
AUSTRALIA	supply of virus strains for research	email and virtual meetings
NORWAY	advice re testing semen for BTV	email
SLOVENIA	introductions to biosecurity experts	email
BRAZIL	potential scholarship linked to a visitor	email
ISRAEL	primer sequences	email
INDIA	availability of mAbs	email

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?

No

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

Yes

Research need : 1

Please type the Research need: There is the need to understand the risk related to the shedding of BTV in semen. In order to do this semen as a matrix for nucleic acid extraction needs to be validated and the sensitivity and specificity of the BTV pan real Carrie Batten - Bluetongue - UNITED_KINGDOM WOAH Reference Laboratory Reports Activities 2024 4 time RT-PCR assays needs to be determined. If BTV can be detected in semen with real time RT-PCR , consideration should be given to updating the WOAH code which currently promotes the testing of the "donor " animal to ensure germplasm is free from BTV. In truth we do

not know how frequently BTV is shed into semen, nor do we know to what titres. There is very little published. (Note: the same can be said for EHDV).

Relevance for WOAH Disease Control, Standard Setting, Facilitation of international collaboration,

Relevance for the Code or Manual Code, Manual,

Field Epidemiology and Surveillance, Diagnostics,

Animal Category Terrestrial,

Disease:

Bluetongue
Epizootic haemorrhagic disease

Kind of disease (Zoonosis, Transboundary diseases)

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer: CHAPTER 3 .1.3. BLUETONGUE (INFECTION WITH BLUETONGUE VIRUS), CHAPTER 3 .1.3. BLUETONGUE (INFECTION WITH BLUETONGUE VIRUS)

Notes:

Answer: This has been repeatedly discussed throughout 2024/25 in relation to the BTV-3 outbreak. Disease control measures regarding entire males and pregnant females need risk assessment based on evidence. Semen usually exported for trade is being destroyed when a donor tests positive by real-time RT-PCR, however we do not fully understand how often BTV is shed into semen as we do not test the semen directly. We have been able to access semen from infected bulls and are currently investigating the duration of shedding.

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:
We have released a number of BTV-3 sequences from 2023 - 2025 to public sequence databases

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:
UK BTV-3, BTV-12 and BTV-8 full genome sequences have been submitted to GenBank to enable more detailed epidemiological tracing using molecular methods

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

King, S., Nicholls, M., Scales, J. et al. The efficacy of vector-proof accommodation for the protection of livestock against Culicoides biting midges. Parasites Vectors 18, 108 (2025). https://doi.org/10.1186/s13071-025-06736-9

Kerry Newbrook, Emmanuel Obishakin, Laura A. Jones, Ryan Waters, Martin Ashby, Carrie Batten, Christopher Sanders. Clinical disease in British sheep infected with an emerging strain of bluetongue virus serotype 3. Vet record http://doi.org/10.1002/vetr.4910

b) International conferences:

4

AVTRW, Irish Branch Annual meeting, M. England: Keynote BTV talk. 3rd October, Dublin, Ireland.

Society Vector Ecology, October 25, Chania, Crete. L. Jones: Characterisation of clinical impact and transmission parameters of the emerging Culicoides-borne arboviruses, BTV-3 and EHDV-8', M. England a poster presentation.

Boerhinger Ingelheim BTV symposium, Ingelheim, Germany, 20 November 2025. S Gubbins talk: "United Kingdom: BTV serotypes in 2025" and K Newbrook poster: Longitudinal BTVPUR® 4-8 vaccine trial highlights appropriate BTV vaccination status in cattle under field conditions

ESVV 2025: 13th International Congress for Veterinary Virology (European Society for Veterinary Virology (ESVV) 2025), held in Portoroz, Slovenia (2nd to 5th September 2025, K Newbrook poster:Longitudinal BTVPUR® 4-8 vaccine trial highlights appropriate BTV vaccination status in cattle under field conditions

c) National conferences:

1
Large Animal Research Network (Moredun) September C Sanders 'Characterising the clinical impact and transmission of bluetongue virus (BTV) using a vector:virus:ruminant infection model'.

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

1
In person visit to The netherlands to share experiences on BTV, C Batten and S Gubbins on behalf of UK gov and livestock stakeholders.

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 : 0

b) Seminars : 0

c) Hands-on training courses: 0

d) Internships (>1 month) 1

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
D	UNITED STATES OF AMERICA	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO/IEC 17025	UKAS	UKAS 4025 16June2025.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Real time RT-PCR (Hofmann et al 2008)	UKAS
Real time RT-PCR (Maan et al 2015)	UKAS
Real time RT-PCR BTV-3 Triplex	UKAS
Real time RT-PCR EHDV (Maan et al 2016)	UKAS
C-ELISA BTV	UKAS
C-ELISA EHDV	UKAS
Virus isolation for BTV and EHDV	UKAS

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

Yes

All our management systems are built around UK legislation, some is based on WHO and WOAH, but not directly translatable as it's updated into UK law before it's applied. All facilities have their operational risk assessment and specific activity risk assessments where required. We have a process in place for reporting incidents relating to biorisk, including an investigation process and lessons learned. There is also an inspection and audit programme which monitors compliance with Biorisk related legislation including SAPO, COSHH (where it relates to human pathogens), and GM (contained use). We are inspected by the HSE as part of a proactive intervention plan, where parts of our biorisk management system are scrutinised and sampled to check compliance and we are also visited and inspected by the National Counter Terrorism Security Office (NaCTSO) to ensure any 'dual-use' materials are being held securely

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
Harmonisation of diagnostic	Participant	45	Organiser - LCV, Spain. Participant - IZS, Italy and OVI, South Africa.

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?

No

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
Harmonisation of diagnostic tests	Participant	45	ELISA and real-time RT-PCR	ALGERIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CROATIA, CYPRUS, CZECH REPUBLIC, DENMARK, ESTONIA, FINLAND, FRANCE, GERMANY, GREECE, HUNGARY, IRELAND, ITALY, KOSOVO, LATVIA, LITHUANIA, MALAYSIA, MALTA, MONTENEGRO, MOROCCO, NORTH MACEDONIA (REP. OF), NORWAY, POLAND, PORTUGAL, ROMANIA, SERBIA, SINGAPORE, SLOVAKIA, SLOVENIA, SOUTH AFRICA, SPAIN, SWEDEN, SWITZERLAND, THAILAND, THE NETHERLANDS, TUNISIA, TURKEY, UNITED ARAB EMIRATES, UNITED KINGDOM,

TOR12: EXPERT CONSULTANTS

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

Carrie Batten - - UNITED_KINGDOM

Yes

Kind of consultancy	Location	Subject (facultative)
Ad Hoc Group on revamping WOAH Register of Diagnostic Kits	Virtual	Dr Carrie Batten was appointed as chair of the AHG.

29. Additional comments regarding your report:

Yes

Most laboratories are now capable of performing their own BTV diagnostics, therefore samples are often not sent to the reference laboratory. Countries affected in Europe are obliged to use the EURL for diagnostic support and hence sample submissions to Pirbright, UK have not occurred.

As NRL we have provided extensive support to UK crown dependencies and Northern Ireland in terms of diagnostics and surveillance testing these are included in national test numbers. We have also provided access to post import testing.

We continue to take enquiries for reagents, which we supply as soon as all import permits etc are in place.

Internally we have reviewed our BTV serotyping real-time RT-PCR assays to ensure they detect all known circulating strains.

We have set up an orbivirus interest group (monthly calls) with the BTV WOAH reference laboratory in Australia, where we discuss common research interests into orbiviruses and cullicoides, this is attended by numerous group leaders from Pirbright , led by the reference labs.

For question 27 some countries had more than one laboratory participate.

The reference laboratory has considerable expertise in EHDV and has been running EHDV tests for the UK competent authority as a form of differential diagnosis of BTV in high risk areas, in addition to surveillance activities to support continued free status.

For reference, to support ISO/IEC 17025 accreditation of diagnostic tests for EHDV (a differential for BTV) we organised a ILCT. Panels of serum and EDTA blood, for ELISA and Real time RT-PCR respectively, were distributed to five labs in late 2025 (France: WOAH reference laboratory for EHDV, Canada,Italy, The Netherlands and Belgium), panels were shipped to an additional two labs in 2026 (Switzerland and Spain). Results have been returned from 5/7 labs and the report is currently being formulated.