WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 11 juin 2024 11:48

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Infectious Bovine Rhinotracheitis
Address of laboratory:	Animal and Plant Health Agency, Woodham lane, Addlestone, Surrey, KT15 3NB, United Kingdom
Tel.:	+442080269394
E-mail address:	akbar.dastjerdi@apha.gov.uk
Website:	apha.gov.uk
Name (including Title) of Head of Laboratory (Responsible Official):	David Holdsworth, CEO
Name (including Title and Position) of WOAH Reference Expert:	Dr. Akbar DASTJERDI; Mammalian Virus Investigation Unit, Head.
Which of the following defines your laboratory? Check all that apply:	Governmental

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
Indirect ELISA		1334	64
Competitive gB ELISA		9912	64
Competitive gE ELISA		1236	64
SNT		201	0
Milk ELISA		85	0
Direct diagnostic tests		Nationally	Internationally
PCR		438	0
Next Generation Sequencing		1	10

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?

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

No

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?

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
TRIplex BoHV-1/BRSV/BPIV-3 PCR For the investigation of bovine respiratory disease complex.	Following internal validation of this assay, we continued field validation of the assay investigating bovine respiratory disease submissions in the UK. In total, 438 respiratory disease submissions were investigated in 2023 from which 13.2% of the samples were positive for BoHV-1 DNA. These were further confirmed with whole genome sequencing. We have also shared our protocol with National Dairy Development Board R&D Laboratory, India as part of the ongoing WOAH IBR twinning project between the two institutes.

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

No

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

No

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
INDIA	2023-06-11	Indirect ELISA Competitive gB ELISA and gE ELISA	0	64
INDIA	2023-06-30	Next Generation Sequencing (NGS)	0	10

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
INDIA	To update IBR diagnostic assays of the National Dairy Development Board (NDDB) R&D Laboratory, India in line with ISO17025 guidelines as part of an ongoing WOAH IBR twinning project between the two institutes.	Reviewed the IBR diagnostic test SOPs and provided advice for their updates. The updates were also discussed at monthly online meetings (12 meetings in total).

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
		Create an international collaborative network of laboratory experts and epidemiologists to: - Exchange expertise and experience on test evaluation - Facilitate future sample exchange between partner institutes - Move towards		

Methodological advancements on interlaboratory IBR diagnostic test evaluation.	15 months. The study was concluded at the end of 2023.	a harmonization of diagnostic tools and analytical strategies for test evaluation across Europe - Apply Bayesian latent class models (BLCM) to estimate and compare the accuracy of diagnostic tests (Se and Sp) currently used in France, Sweden, the UK, and the Netherlands to detect the presence of IBR. - Create an open-source software tool for inter-laboratory diagnostic test evaluation using BLCM.	SVA, WBVR, ANSES, UCPH	FRANCE SWEDEN THE NETHERLANDS UNITED KINGDOM

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:
APHA collects and stores all data from submissions received for IBR diagnosis for prevalence studies and international trade purposes.

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

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:

b) International conferences:

c) National conferences:

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

IBR diagnostic data collected at APHA are for international trade purposes only as the disease is endemic in the UK.

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 : 12

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
B	INDIA	6

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	PDF	ISO17025 Certificate.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
SNT, gB ELISA, Indirect ELISA, gE ELISA	United Kingdom Accreditation Service (UKAS)

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

Yes

APHA maintains a complete and functioning laboratory biological risk management system, which ensures that the laboratory is in compliance with applicable local, national (UK Health and Safety Executive), regional, and international standards and requirements for biosafety and laboratory biosecurity.

TOR9: SCIENTIFIC MEETINGS

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

Yes

NATIONAL/ INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	WOAH IBR Twinning project	National Dairy Development Board (NDDB) R&D Laboratory	2023-06-01	On-line, monthly meeting in 2023, 12 meetings in total.	6

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. Do you network (collaborate or share information) with other 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?

No

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
WOAH IBR reference sera	Discussion to generate WOAH IBR reference sera as previous batch of the sera is in short supply.	WOAH IBR reference laboratory at FLI, Germany

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?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the Test	WOAH Member Countries
To assess performance of IBR milk ELISA of participating laboratories.	Organiser	18	IBR Milk ELISA	DENMARK, IRELAND, PORTUGAL, SWITZERLAND, UNITED KINGDOM,
To assess performance of IBR serology (ELISAs and SNT) assays of participating laboratories.	Organiser	38	ELISAs and SNT	AUSTRIA, BELGIUM, BOTSWANA, CZECH REPUBLIC, DENMARK, FRANCE, GREECE, INDIA, IRELAND, ITALY, JAPAN, MOROCCO, NEW ZEALAND, PORTUGAL, SLOVENIA, SOUTH AFRICA, SPAIN, SWITZERLAND, UNITED KINGDOM,
To assess performance of IBR/PI3/BRSV serology (ELISA and SNT) assays of participating laboratories	Organiser	11	ELISAs and SNT	CZECH REPUBLIC, IRELAND, MEXICO, PORTUGAL, SPAIN, THE NETHERLANDS, UNITED KINGDOM,

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Technical review	England	Update of the IBR chapter for the WOAH Terrestrial Manual

29. Additional comments regarding your report:

Yes

Question 2:

WOAH IBR reference sera are only held by ANSES, France, but these are in short supply. We are collaborating with another WOAH IBR reference laboratory at FLI, Germany to produce fresh batches of WOAH IBR reference sera.

Question 3:

In this reporting year there was no request for provision of IBR diagnostic reagents although we provide a national reference BoHV-1 antibody positive serum and a BoHV-1 isolate.

Question 12:

A total of 500 serum samples were analysed as part of this study. Samples were from surveillance activities in France, UK, Sweden, and the Netherlands and were already available at ANSES, APHA, SVA and WBVR. Each selected sample was aliquoted in four parts: one for each laboratory. In this way, the same set of samples was analysed by all the laboratories for each population. At APHA we used IBR gB ELISA and gE ELISA to analyse these 500 samples. The sensitivity of all non-DIVA tests was very high, while the sensitivity of the DIVA tests (IDEXX gE_APHA and IDEXX gE_WBVR) was slightly lower, as the target antigen (glycoprotein E) is less immunogenic. The specificity of all tests was fairly high.

Question 25:

APHA participates in IBR ring trial which is organised by WOAH IBR reference laboratory at FLI, Germany. Last IBR ring trial was conducted in 2019 and we have just completed the 2024 ring trial.