WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 28 juin 2024 10:03

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Newcastle Disease
Address of laboratory:	Animal and Plant Health Agency, Weybridge, Addlestone, Surrey KT15 3NB, United Kingdom
Tel.:	02082069680
E-mail address:	Ian.Brown@apha.gov.uk
Website:	https://www.gov.uk/government/organisations/animal-and-plant-health-agency
Name (including Title) of Head of Laboratory (Responsible Official):	Mr David Holdsworth, Chief Executive
Name (including Title and Position) of WOAH Reference Expert:	Professor Ian Brown, Director of Woah/FAO International Reference Laboratory for Avian Influenza, Newcastle Disease and Swine Influenza
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
HI		447	0
Direct diagnostic tests		Nationally	Internationally
Real-time RT-PCR L gene		10798	14
Real-time PCR RT-PCR for pathotyping		0	0
NDV genetic analysis by Sanger sequencing		19	0
Next Generation Sequencing		31	8
ICPI		0	0
Egg Innoculation/HA		429	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
Antisera	HI	Provide	22.5ml	12.5ml	4	ALBANIA, LITHUANIA, SWEDEN, UNITED KINGDOM,
Antigen	HI	Provide	120ml	189ml	6	ALBANIA, ITALY, LITHUANIA, SWEDEN, UNITED KINGDOM, VIETNAM,

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?

No

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
CHAD	2023-08-08	Real-time RT-PCR L gene	12	0
NEPAL	2023-08-24	Real-time RT-PCR L gene and Next Generation Sequencing	0	5

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
AZERBAIJAN	PT Scheme Participant	NA
BANGLADESH	PT Scheme Participant	NA
BOTSWANA	PT Scheme Participant	NA
CAMBODIA	PT Scheme Participant	NA
CHAD	Diagnostic Testing	Email
COTE D'IVOIRE	Offer of Assistance	Email
CROATIA	PT Scheme Participant	NA
EGYPT	PT Scheme Participant	NA
ETHIOPIA	PT Scheme Participant	NA
GEORGIA	PT Scheme Participant	NA
GERMANY	PT Scheme Participant	NA
GHANA	PT Scheme Participant	NA
ISRAEL	PT Scheme Participant	NA
ITALY	PT Scheme Participant	NA

KAZAKHSTAN	PT Scheme Participant	NA
KAZAKHSTAN	WOAH Twinning	Email
LIBERIA	Offer of Assistance	Email & Online Meeting
MALI	Offer of Assistance	Email
NEPAL	Diagnostic Training	Email
UNITED KINGDOM	PT Scheme Participant	NA
NIGERIA	Offer of Assistance, Research	Email
NIGERIA	PT Scheme Participant	NA
SENEGAL	Offer of Assistance	Email
SIERRA LEONE	Offer of Assistance	Email & In-person meeting
SOUTH AFRICA	PT Scheme Participant	NA
SPAIN	PT Scheme Participant	NA
SRI LANKA	Offer of Assistance	Email
TAJIKISTAN	Offer of Assistance, Molecular Training	Email, In-person meetings, Workshop
TURKEY	PT Scheme Participant	NA

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
UK Ministry of Defence (MOD) Biothreat reduction programme (BTRP)	2022-2026	Establishing a West African network for laboratory capability in avian influenza and Newcastle disease virus: Developing capability and capacity to define disease burden.	APHA, various laboratories across West Africa	GHANA GUINEA LIBERIA MALI SIERRA LEONE
Development of a Central Asian hub for AI and NDV	2020-2024	Organization of a workshop and technical support to Tajikistan – evaluating the current burden of avian influenza and Newcastle disease virus across Central Asia.	Ministry of Defence	TAJIKISTAN

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:
Collection and characterisation of a range of AMPV samples including meta data internationally (e.g., Nepal) to provide an epidemiological picture and analysis of viral diversity in key, underreported regions.

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:
An analysis of the epidemiological data, collected internationally, was disseminated through peer-reviewed publications, detailing the evolution of APMV and epidemiological picture of with relation to the global situation.

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:

4

1. Smith, Tanja, Martha M. O'Kennedy, Craig S. Ross, Nicola S. Lewis, and Celia Abolnik. "The Production of Newcastle Disease Virus-Like Particles in Nicotiana Benthamiana as Potential Vaccines." Original Research, Frontiers in Plant Science 14 (2023). https://dx.doi.org/10.3389/fpls.2023.1130910.

2. Ross, Craig S., Paul Skinner, David Sutton, Jo Mayers, Alex Nunez, Sharon M. Brookes, Ashley C. Banyard, and Ian H. Brown. "Game Birds Can Act as Intermediaries of Virulent Genotype Vii Avian Orthoavulavirus-1 between Wild Birds and Domestic Poultry." Viruses 15, no. 2 (2023): 536. https://www.mdpi.com/1999-4915/15/2/536.

3. Reid, S. M., Skinner, P., Sutton, D., Ross, C. S., Drewek, K., Weremczuk, N., Banyard, A. C., Mahmood, S., Mansfield, K. L., Mayers, J., Thomas, S. S., Brookes, S. M., & Brown, I. H. (2023). Understanding the disease and economic impact of avirulent avian paramyxovirus type 1 (APMV-1) infection in Great Britain. Epidemiology and infection, 151, e163. https://doi.org/10.1017/S0950268823001255

4. Mahmood, S., Skinner, P., Warren, C. J., Mayers, J., James, J., Núñez, A., Lean, F. Z. X., Brookes, S. M., Brown, I. H., Banyard, A. C., & Ross, C. S. (2023). In vivo challenge studies on vaccinated chickens indicate a virus genotype mismatched vaccine still offers significant protection against NDV. Vaccine, S0264-410X(23)01483-4. Advance online publication. https://doi.org/10.1016/j.vaccine.2023.12.037

b) International conferences:

0

c) National conferences:

2

1. Dr Craig S Ross "Game birds can act as intermediatory vectors for potential incursion of virulent Avian Paramyxovirus-1 in a domestic poultry setting", GARAD Conference, 23.05.2023
2. Ms Sahar Mahmood "Driving changes in notifiable avian disease response: Validation of a rapid passage method for avian paramyxovirus type 1 (APMV-1) diagnostic evaluation", GARAD Conference, 24.05.2023

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

5

1. Prof Ian Brown: Meeting the challenges of notifiable poultry diseases.
2. Prof Ashley C. Banyard: "Attempting to control viral pathogens- Successes, failures and the challenges ahead", RVC Lecture, 08,12,2023
3. Prof Ashley C. Banyard: "Working with Notifiable Avian Disease in high Containment", CDC VISIT CEIRR 09.08.2023
4. Prof Ashley C. Banyard: "Introduction to APHA Virology: CDC CEIRR mission", CDC VISIT CEIRR, 09.08.2023
5. Prof Ashley C. Banyard: "Establishing West African AI and ND Network (WAfFluNNet)", Dstl International Biosecurity Programme, 24.03.2023

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: 16

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	TAJIKISTAN	4
C	BANGLADESH	12

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	ISO17025 Certificate.pdf	ISO17025 Certificate.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Haemagglutination inhibition test	UKAS
L-gene real-time PCR	UKAS
Newcastle disease virus nucleotide sequencing (Sanger)	UKAS
ICPI	UKAS
Virus isolation in tissue culture for APMV-1	UKAS
Virus isolation in SPF eggs (via allantoic cavity)	UKAS
Antibody typing of ND isolates	UKAS
Next Generation Sequencing	UKAS

20. 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 2018, Chapter 3.3.14) 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?

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. 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?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.
Proficiency Test Exercise- Conventional and Molecular Panels	Organiser	24	Istituto Zooprofilattico Sperimentale delle Venezie, Italy Friedrich Loeffler Institute, Germany
EURL Proficiency test	Participant	40	Istituto Zooprofilattico Sperimentale delle Venezie, Italy
OFFLU Proficiency test program	Participant	10	CSIRO Australian Centre for Disease Preparedness

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?

Yes

Purpose for inter-laboratory	Role of your reference	No. participating		

test comparisons1	laboratory (organizer/participant)	laboratories	Name of the Test	WOAH Member Countries
Proficiency Test Exercise-Conventional and Molecular Panels	Organiser	24	RT-PCR and HAIT	BOTSWANA, CAMBODIA, CROATIA, GEORGIA, GERMANY, GHANA, ISRAEL, ITALY, NIGERIA, SOUTH AFRICA, SPAIN, TAJIKISTAN, TURKEY, UNITED KINGDOM,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No