

## WOAH Reference Laboratory annual reports (RINDERPEST)

### Activities in 2023

Name (including Title) of Head of Laboratory (Responsible Official):

Dr. Muzafar Makhdoomi, Associate Director, Foreign Animal Disease Diagnostic Laboratory (FADDL), National Veterinary Services Laboratories (NVSL) – USDA, APHIS

Name (including Title and Position) of WOAH Reference Expert:

Dr. Wei Jia, Supervisory Veterinary Medical Officer, Head of Reagents and Vaccine Services Section, FADDL, NVSL - USDA, APHIS

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### A: Maintaining Scientific and Technical Skills

1. Did your laboratory perform relevant diagnostic tests for purposes such as disease diagnosis, screening of animals for export, surveillance, etc. (not for quality control, proficiency testing or staff training)
  - a. For the specified disease?
  - b. For closely related diseases or pathogens?

Disease	Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of tests performed last year	
			Nationally	Internationally

Rinderpest (RP)	Rinderpest virus (RPV) freedom tests [Real-time RT-PCR (rRT-PCR)] on biological materials to be transferred to NBAF	Yes	161	
	RPV diagnostic tests (rRT-PCR)	Yes	1	
Peste des petits ruminants (PPR)	PPRV safety tests (rRT-PCR)	Yes	41	

2. Did your laboratory produce, supply, or import standard reference reagents officially recognised by WOAHP for the specified disease or for closely related diseases?

Type of Reagent Available	Related diagnostic test	Produced/Supplied/Imported	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	Name of recipient WOAHP Members
Non-pathogenic proficiency test (PT) panel and controls	RPV rRT-PCR	Stocks produced in the past are still available.	0	0	
Non-pathogenic proficiency test (PT) panel and controls	PPRV rRT-PCR	Stocks produced in 2022 are still available.	0	0	

3. Did your laboratory supply, exchange or receive standard reference reagents or other diagnostic reagents for the specified disease

Type of reagent	Related diagnostic test	Supplied by your lab, exchanged or received	Amount	Name of recipient or supplier Member
See Item 2				

4. Did your laboratory provide expert advice in technical consultancies on the request of a WOAHP Member for the specified disease or for closely related diseases?

Name of the WOA Member receiving the technical consultancy	Purpose	How the advice was provided
No request received		

5. What method of dissemination of information is most often used by your laboratory? (please provide information on activities for other diseases relevant to maintaining capability for specified disease) [a: Articles published in peer-reviewed journals; b: International conferences; c: National conferences; d: Other]

Articles published in peer-reviewed journals and attending Rinderpest Holding Facility (RHF) Network meetings.

We developed a chemical inactivation method of peste des petits ruminants virus (PPRV used as a surrogate virus of RPV) and a quality control test method of chemical inactivated PPRV. The work was published in Microbiology Spectrum in 2023:

**Amaresh Das, Zaheer Ahmed, Lizhe Xu, Wei Jia** (2023). Assessment and verification of chemical inactivation of peste des petits ruminants virus by virus isolation following virus capture using Nanotrap magnetic virus particles. Microbiology Spectrum, September/October 2023 Volume 11 Issue 5. 0.1128/spectrum.00689-23. <https://doi.org/10.1128/spectrum.00689-23>

6. Did your laboratory provide scientific and technical training to laboratory personnel from other WOA Members?

Yes

No

7. Did your laboratory implement activities to ensure ongoing capability for the designated disease or closely related disease in the event of loss of the key staff including the WOA Reference Expert?

Activity	Description
Trained, maintained, and/or increased personnel that are proficiency tested in running the RPV and PPRV rRT-PCR	A total of 9 FADDL personnel is proficient in RPV and/or PPRV rRT-PCR

## B: Laboratory Systems

8. Does your laboratory have a Quality Management System certified according to an International Standard? If YES indicate the name of the quality management system adopted or currently in place. Also attach a scanned certificate of the system.

Yes, FADDL uses the National Veterinary Services Laboratories (NVSL) Quality Management System (QMS). The system adopted ISO/IEC 17025:2017 for Diagnostic Testing (the certificates attached).

9. Is your laboratory accredited by an international accreditation body? If 'yes' indicate test for which your laboratory is accredited and name of the accreditation body.

Yes, FADDL is accredited by the American Association for Laboratory Accreditation (A2LA), which is an assay-based accreditation. The following assays are accredited by the A2LA:

- a. Agar Gel Immunodiffusion (AGID)
- b. Avidin Biotin Complex (ABC) Assay
- c. Complement Fixation Test
- d. DNA and RNA Extraction
- e. Enzyme Linked Immunosorbent Assay (ELISA)
- f. Immunoperoxidase (IP)
- g. Real-time PCR
- h. Virus Isolation (VI)
- i. Virus Neutralization (VN)

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

Yes

No

11. Does your laboratory have a biosecurity system in place to ensure security for the pathogen and materials that may contain the infectious pathogen?

Yes

No

### C: Capability to Respond to a Suspected Case

12. In the past year, did your laboratory perform diagnostic tests for the specified pathogen and the disease in order to confirm ongoing capability?

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of tests performed last year
Refer the answer to Question A., 1.		

13. Did your laboratory produce vaccines for the specified disease or similar diseases?

Disease	Amount supplied nationally or internationally
No	

14. Did your laboratory organise or participate in inter-laboratory proficiency tests with any other laboratories for the specified disease or similar diseases?

Role of your laboratory (organiser or participant)	Disease	Test	Number of participating laboratories	Regions of participating WOAH Members
To standardize RPV RT-PCR method and apply the non-pathogenic RPV control and PT panel developed by FADDL in the FAO-WOAH Rinderpest Virus Holding Facilities (RHF), FAO/WOAH and FADDL initiated and managed the relevant PT project several years ago.	RP	RPV rRT-PCR	2	Asia and Africa

<p>The RHF in UK, Franch, Japan, and FADDL participated in the project and had passed the PT. Two remaining RHF, China Institute of Veterinary Drug Control (IVDC) and the Pan African Veterinary Vaccine Centre of the African Union (AU-PANVAC), expressed their interest in 2023 to participate in or resume their participation of the project. FADDL answered inquiries of the RHF in IVDC and AU-PANVAC, and waited for official documents from the RHF.</p>				

**D: Networks and Linkages**

15. Did your laboratory organise or participate in scientific meetings for the specified disease?

Title of event	Date	Location	Role (organiser, speaker, presenter)	Title of work presented
Rinderpest Virus Holding Facility Network meeting	Feb 1, 2023	Virtual	Speaker	Update of the RHF at FADDL
Rinderpest Virus Holding Facility Network meetings	Aug 2, 2023	Virtual	Speaker	Update of the RHF at FADDL

Rinderpest Virus Holding Facility Network in-person meetings	Dec 6-7, 2023	Paris, France	Speaker	The Rinderpest Holding Facility at FADDL
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16. Did your laboratory exchange information with other WOAHO Reference Laboratories designated for the same pathogen or disease?

Yes  No

17. Was your laboratory involved in maintaining a network with WOAHO Reference Laboratories designated for the same pathogen or disease?

Yes  No

18. Did your laboratory place expert consultants at the disposal of WOAHO?

Yes  No

19. Did your laboratory carry out activities to raise awareness and improve capability for this disease in other Members?

Description of activity	Date	Member countries
No		

### E: Biosafety

20. What level of biocontainment is used in your laboratory for (a) storage and (b) handling of potentially infectious material for the specified disease?

BSL-3 and BSL-3Ag

21. Does your laboratory maintain a structured risk assessment for work with potentially infectious material for the specified disease?

Yes

No

22. Was your laboratory's risk assessment for work with potentially infectious material reviewed in the past year?

Yes

No

23. Does your laboratory have an emergency response plan for biosafety incidents involving potentially infectious material for the specified disease?

Yes

No



## F: Research

24. Did your laboratory develop new diagnostic methods for the designated pathogen or disease, or a similar disease?

Disease	Diagnostic Method	Description
RP and PPR	Chemical inactivation method of peste des petits ruminants virus (PPRV used as a surrogate virus of RPV)	The method has been established and reported in Microbiology Spectrum: Amaresh Das, Zaheer Ahmed, Lizhe Xu, Wei Jia (2023). Assessment and verification of chemical inactivation of peste des petits ruminants virus by virus isolation following virus capture using Nanotrap magnetic virus particles. Microbiology Spectrum, September/October 2023 Volume 11 Issue 5. 0.1128/spectrum.00689-23. <a href="https://doi.org/10.1128/spectrum.00689-23">https://doi.org/10.1128/spectrum.00689-23</a>
RP and PPR	Quality control test method of chemical inactivated peste des petits ruminants virus (PPRV used as a surrogate virus of RPV)	The method has been established and reported in Microbiology Spectrum: Amaresh Das, Zaheer Ahmed, Lizhe Xu, Wei Jia (2023). Assessment and verification of chemical inactivation of peste des petits ruminants virus by virus isolation following virus capture using Nanotrap magnetic virus particles. Microbiology Spectrum, September/October 2023 Volume 11 Issue 5. 0.1128/spectrum.00689-23. <a href="https://doi.org/10.1128/spectrum.00689-23">https://doi.org/10.1128/spectrum.00689-23</a>

25. Did your laboratory participate in international scientific studies in collaboration with WOAHA Members other than your own?

Title of study	Duration	Purpose of study	Partners (Institutions)	WOAHA Members Involved other than your country
No collaborative RP study in 2023 but participated in international scientific studies on other diseases such as ASF, CSF, PPR, etc.				

26. Did your laboratory collaborate with other WOA Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest or a similar pathogen?

Title of Project or Contract	Scope	Name(s) of relevant WOA Reference Laboratories
No		

27. In exercising your activities, have you identified any regulatory research needs\* relevant for WOA? Please report them here: [MS teams form](#)

\*Regulatory research needs = a gap in knowledge that could help in setting/updating standard(s) in the Terrestrial and Aquatic Codes and Manuals

N/A

28. Additional comments regarding your report (if any):

1. We have conducted and completed Rinderpest virus sequencing and RVCM destruction project according to the WOA and FAO approved project proposal. Updated Rinderpest Virus Tracking System. Sequencing data analysis and gap filling studies are ongoing.
2. Dr. Robin Holland became FADDL Director in December 2023.