World Organisation for Animal Health

Arnaud Bataille - - FRANCE

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Peste des petits ruminants
***Address of laboratory:**	CIRAD UMR ASTRE TA-A117/E, Campus International de Baillarguet
***Tel:**	+33 (0)4 67 61 65 28
***E-mail address:**	arnaud.bataille@cirad.fr
Website:	
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr Nathalie Vachiery
***Name (including Title and Position) of WOAH Reference Expert:**	Dr Arnaud Bataille
***Which of the following defines your laboratory? Check all that apply:**	EPIC (entreprise public à intérêts commerciaux)

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	96	641
Direct diagnostic tests		Nationally	Internationally
RT-PCR	Yes	0	96
RT-qPCR	Yes	96	104
Full genome sequencing	No	0	

			8
Partial genome sequencing	No	0	29

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
Cells (Vero, VDS, CHS)	Isolation, titration	provide	0	25ML	1	ROMANIA,
PPR positive goat serum	ELISA	produce/provide	0	2ml	3	AUSTRIA, DENMARK, POLAND,
Inactivated PPRV strain	PCR control	produce/provide	0	2ml	2	DENMARK, POLAND,
PT panel for serology	validation of method	produce/provide	0	8 x 500ul	2	AUSTRIA, DENMARK,
PT panel for PCR	validation of method	produce/provide	0	8 x 500ul	2	DENMARK, UKRAINE,
primers	PCR	provide	0	100ul	1	UKRAINE,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

Yes

Vaccine name	Amount supplied nationally (ml, mg)	Amount supplied nationally (ml, mg)	Name of recipient WOAH Members
PPRV vaccine strain Nigeria 75/1	0	10 vials of 2ml	MONGOLIA

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

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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	2024-01-31	ELISA	383	0
GREECE	2024-06-30	ELISA, RT-PCR, Rt-qPCR, sequencing	0	22
ROMANIA	2024-07-31	ELISA, RT-PCR, Rt-qPCR, sequencing	0	38
BULGARIA	2024-11-30	ELISA, RT-PCR, Rt-qPCR, sequencing	0	70
SENEGAL	2024-07-31	ELISA	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
ROMANIA	evaluation of epidemiological and control measure situation during PPR emergence	EUvet mission, support of ref lab
GREECE	evaluation of epidemiological and control measure situation during PPR emergence	EUvet mission, support of ref lab
BULGARIA	evaluation of epidemiological and control measure situation during PPR emergence	EUvet mission, support of ref lab
SENEGAL	Support in responding to critics for accreditation of lab	email exchange, technical advises, provision of material of reference, assay on their reference material
ZIMBABWE	interpretation of serological results	remote exchanges
INDIA	Vaccine production	remote exchanges
INDONESIA	Vaccine production	remote exchanges
SAUDI ARABIA	Vaccine production	remote exchanges
BANGLADESH	info on training in diagnostic	remote exchanges
CHAD	info on training in diagnostic	remote exchanges

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

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Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAH Member Countries involved other than your country
Livestock Disease Surveillance Knowledge Intregration (LIDISKI)	5 years	Improving surveillance and control of PPR	CIRAD, IZSVe, Ikore, NVRI	ITALY NIGERIA
Study of virulence of peste des petits ruminants virus in relation to variability of host response	1 year	Study of virulence of peste des petits ruminants virus in relation to variability of host response	WBVR	THE NETHERLANDS
SPIDVAC	4 years	development of innovative vaccines	FLI, LNERV, IDvet	GERMANY SENEGAL
RFOROA One health	1.5 years	diagnostic support	IRED, Smithsonian Institute	CHAD UNITED STATES OF AMERICA
Environmental surveillance of PPR at the livestock/wildlife interface	1 year	Development of a protocol to sample and detect PPRV in water samples	University of Zimbabwe	ZIMBABWE

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

Yes

Research need : 1

Please type the Research need: Study of survival of PPR virus in the environment (water, fomites)

Relevance for WOAH Disease Control,

Relevance for the Code or Manual Code,

Field Epidemiology and Surveillance, Diagnostics,

Animal Category Terrestrial,

Disease:

Kind of disease (Zoonosis, Transboundary diseases) 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:

Notes:

Answer:

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:
1) genetic diversity and evolution of PPRV; 2) origin and pathway of transmission of PPRV in Europe 3) quality of vaccines produced and distributed; 4) Variability in immune response to PPR; 5) Mutations potentially associated with increased virulence and transmission capacity 6) epidemiological and socio-economic data to improve surveillance and control of PPR in Nigeria; 7) Extended survival of PPR virus in water

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:
1) genetic diversity and evolution of PPRV; 2) origin and pathway of transmission of PPRV in Europe 3) quality of vaccines produced and distributed; 4) Variability in immune response to PPR; 5) Mutations potentially associated with increased virulence and transmission capacity 6) epidemiological and socio-economic data to improve surveillance and control of PPR in Nigeria; 7) Extended survival of PPR virus in water

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:

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Courcelle M, Salami H, Tounkara K, Lo MM, Ba A, Diop M, Niang M, Sidibe CAK, Sery A, Dakouo M, Kaba L, Sidime Y, Keyra M, Diallo AOS, El Mamy AB, El Arbi AS, Barry Y, Isselmou E, Habiboullah H, Doumbia B, Gueya MB, Awuni J, Odoom T, Ababio PT, TawiahYingar DNY, Coste C, Guendouz S, Kwiatek O, Libeau G, Bataille A (2024) Comparative evolutionary analyses of peste des petits ruminants virus genetic lineages. Virus Evolution. 10.

Bataille A, Baron MD (2024) Rinderpest and peste des petits ruminants: state of play in disease eradication efforts. Rev Sci Tech. Special Edition:43-52.

b) International conferences:

9

Bordier M, Bataille A, Manso-Silván L ... (2024). Appui dans la lutte contre la peste des petits ruminants et la péripneumonie contagieuse bovine au Sahel. Forum de haut-niveau sur le pastoralisme au Sahel et en Afrique de l'Ouest, 6 - 8 novembre 2024 (Nouakchott, Mauritanie).

Comparative evolutionary analyses of peste des petits ruminants virus genetic lineages, AITVM conference, Montpellier, Mai 2024

Strain-dependent differences in the capacity of peste des petits ruminants virus (PPRV) to infect immune cells, Epizone, Sweden, Sept 2024

Peste des petits ruminants emergence in Europe:

Insights from field and genetic investigations. Epizone, Sweden, Sept 2024

Peste des Petits Ruminants: State of affairs and recent events in South East Europe; Webinar on Peste des petits ruminants - Emergency preparedness and response; Sept 2024

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CIRAD support in the implementation of STOSAR ; Botswana, Feb 2024

Peste des petits ruminants emergence in Europe:
Insights from field and genetic investigations; workshop of the EURL-PPR network; France; Oct 2024
Survival and detection of PPR virus
in aquatic environment; workshop of the EURL-PPR network; France; Oct 2024

Peste des petits ruminants emergence in Europe:
Insights from field and genetic investigations; workshop of the WOAH ref lab network; online Dec 2024
Survival and detection of PPR virus
in aquatic environment; workshop of the WOAH ref lab network; online Dec 2024

c) National conferences:

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

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1.https://eurl-ppr.cirad.fr/
2- https://www.ppr-labs-oie-network.org/

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 : 18

c) Hands-on training courses: 4

d) Internships (>1 month) 2

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	NIGERIA	4
B	INDIA	2
B	TANZANIA	2
B	UNITED ARAB EMIRATES	5
B	RUSSIA	2
B	UNITED KINGDOM	1
B	SOUTH AFRICA	1

B	EGYPT	1
C	ALBANIA	2
C	GEORGIA	2
D	FRANCE	2

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
COFRAC	1-2207.pdf	1-2207.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
ELISA , PCR	COFRAC

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

Yes

See biosafety and biosecurity manager of CIRAD for details (Vincent Michaud -vincent.michaud@cirad.fr)

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	location	No. Participants
International	annual workshop of the WOAH network for PPR ref lab	CAHEC, Pirbright Institure, ICAR-NIVEDI	2024-12-04	online	30

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

Yes

Title of event	Date	location	Role (speaker, presenting poster, short communications)	Title of the work presented
seventh PPR Advisory Committee Meeting	2024-06-24	Rome, Italy	speaker	PPR Reference Laboratory Activities in support of PPR freedom

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
evaluation of performance following ISO17043	organizer/participant	26	ELISA, PCR	AUSTRIA, BOSNIA AND HERZEGOVINA, CHINA (PEOPLE'S REP. OF), GEORGIA, INDIA, ITALY, KAZAKHSTAN, KOREA (REP. OF), KOSOVO, LATVIA, LITHUANIA, MADAGASCAR, MAURITIUS, MOROCCO, NIGERIA, PAKISTAN, SAUDI ARABIA, SENEGAL, SERBIA, SEYCHELLES, SOUTH AFRICA, TURKEY, UNITED ARAB EMIRATES, UNITED KINGDOM,
Detection of PPR Virus (PPRV) antibodies by ELISA in camel serum	participant	7	ELISA	UNITED ARAB EMIRATES,
PPR Interlaboratory Comparison Test	participant	60	ELISA, PCR	AUSTRIA,

TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
laboratory diagnostic, disease expert	Rome	attendance to PPR Advisory Committee meeting

29. Additional comments regarding your report:

Yes

In reporting our participation to proficiency tests organised by other institutions, we are not always given access to detailed information on the list of participating countries and laboratories, due to confidentiality closes, following ISO17043 norm. So for the PT listed in this report for which CIRAD only participated, we only put the country of the lab organizing the PT