OIE Reference Laboratory Reports Activities

Activities in 2018

This report has been submitted : 2019-01-09 12:13:34

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Peste des petits ruminants
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Name (including Title) of Head of Laboratory (Responsible Official):	Dr Nathalie Vachiery
Name (including Title and Position) of OIE Reference Expert:	Dr Geneviève Libeau
Which of the following defines your laboratory? Check all that apply:	Other: EPIC, Industrial and Commercial Public Establishment

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

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 OIE Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
C-ELISA	YES	38	3494
VNT	YES	0	19
Direct diagnostic tests		Nationally	Internationally
Real-time RT-PCR	YES	0	579
RT-PCR	YES	0	107
Capture ELISA	YES	0	37
Partial sequencing	YES	0	2
Full genome sequencing	YES	0	27
Metagenomic	NO	0	6

ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards.
To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by the OIE?

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Inactivated vaccine	Real-time RT-PCR	25 ml	0	25 ml	26	☐Africa ☐Americas ☒Asia and Pacific ☒Europe ☐Middle East
PPR positive goat serum.	ELISA	24 ml	0	24 ml	24	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East
Monoclonal antibody	Immunofluorescence	300 µl	300 µl	0	1	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East

4. Did your laboratory produce vaccines?

Yes

5. Did your laboratory supply vaccines to OIE Member Countries?

Yes

Vaccine name	Amount supplied nationally (ml, mg) (including for own use)	Amount supplied to other countries (ml, mg)	Name of recipient OIE Member Countries
Nigeria 75-1 PPR master seed	0	10 vials	IRAN

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

Yes

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
ID Rapid® PPR Antigen	ID Rapid® PPR Antigen is a field test able to give a result within 20 minutes frome eye swab. It detects all PPRV lineages with high specificity and sensitivity.

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
BULGARIA	06/18 to 09/18	712	316
LESOTHO	10/18 to 11/18	3192	0
BOTSWANA	04/2018	0	8
TURKEY	12/2018	0	10
IRAQ	02/2018	0	10
JORDAN	03/2018	0	10

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
BULGARIA	BTSF Workshop on "Peste des Petits Ruminants" scheduled from June 6th to 8th 2018 in Sofia, Bulgaria	Course delivered by 5 experts during 2 and half days to 20 participants from Bulgaria + 10 from Greece
BURUNDI	PPR bench training schedulded in the week of 16-20 July 2018 at the national veterinary laboratory, Bujumbura. Training organised in the frame of the Integrated Regional Agricultural Devlopment Project in the Great Lakes (PRDAIGL) - Burundi	Training mission of 6 laboratory people on PPRV diagnostic methods.
BULGARIA	EU Veterinary Emergency Team (EUVET) Mission Peste de Petits Ruminants (PPR) in Bulgaria July 16-20, 2018	Assistance on the refinement of the most suitable control and eradication measures for Peste des petits ruminants (PPR) under local conditions and on the suitable diagnostic methods in the National Reference Laboratory.
CAMEROON	Work plan for the investigation of 3 important diseases in Cameroon, including PPR, and evaluation of post-vaccination. Mission in the Framework of the PRODEL Project, 16 to 30 June 2018, Yaoundé, Cameroon	Proposal for peste des petits ruminants of a surveillance plan based on the risk specific to this disease
JORDAN	Evaluation of JOVAC laboratory facilities in the frame of the OIE twinning programme	4 days mission to visit JOVAC facilities, provision of a mission report with conclusions on step to be taken for JOVAC to become regional reference laboratory for PPR

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
Spread of PPRV and genome evolution in populations of domestic ruminants in Mali.	3 years	Molecular epidemiology of PPRV and surveillance of the disease	LCV, Bamako,	MALI
Pathway to Peste des Petits Ruminants Virus Elimination - methods for complex ecosystems	2 years	improve understanding of the host-pathogen ecosystem of livestock, wildlife and PPRV in the Greater Serengeti Ecosystem of Kenya and Tanzania to facilitate the design of effective and efficient surveillance and vaccination strategies for the elimination of PPRV.	RVC, Pirbright, Kenya Wildlife Service (KWS) and Tanzania Wildlife Research Institute (TAWIRI),Ngorongoro Conservation Area Authority (NCAA)	KENYA TANZANIA UNITED KINGDOM

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

13. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category)

a) Articles published in peer-reviewed journals: 4
1-First genetic characterization of Peste des Petits Ruminants from Niger: On the advancing front of the Asian virus lineage.Tounkara K, Bataille A, Adombi CM, Maikano I, Djibo G, Settypalli TBK, Loitsch A, Diallo A, Libeau G.Transbound Emerg Dis. 2018 Oct;65(5):1145-1151. doi: 10.1111/tbed.12901. Epub 2018 Jul 25.

2- Identification of Peste des Petits Ruminants Virus, Georgia, 2016.Donduashvili M, Goginashvili K, Toklikishvili N, Tigilauri T, Gelashvili L, Avaliani L, Khartskhia N, Loitsch A, Bataille A, Libeau G, Diallo A, Dundon WG. Emerg Infect Dis. 2018 Aug;24(8):1576-1578. doi: 10.3201/eid2408.170334.

3-Ex-ante assessment of different vaccination-based control schedules against the peste des petits ruminants virus in sub-Saharan Africa. Hammami P, Lancelot R, Domenech J, Lesnoff M. PLoS One. 2018 Jan 19;13(1):e0190296. doi: 10.1371/journal.pone.0190296. eCollection 2018.

4- A dynamic model of transmission and elimination of peste des petits ruminants in Ethiopia.Fournié Guillaume, Waret-Szkuta Agnès, Camacho Anton, Yigezu Laike M., Pfeiffer D., Roger François. 2018. Proceedings of the National Academy of Sciences, 201711646, 6 p. https://doi.org/10.1073/pnas.1711646115

b) International conferences: 1
Widening the scope of PPR diagnostic: Adaptation and development to target atypical host species and field situations. Kwiatek O, Libeau G, Bataille A. Epizone, Vienna, August 2018.

c) National conferences: 0

d) Other:
(Provide website address or link to appropriate information) 4
1-Widening the scope of PPR diagnostic: Adaptation and development to target atypical host species and field situations. Geneviève Libeau & Arnaud Bataille. 2018. In: PPR Global Research and Expertise Network (PPR-GREN) Inaugural meeting. Vienna (Austrai), 17-19 April 2018.

2- Etude génomique de la stabilité du vaccin Nigeria 75-1 contre la peste des petits ruminants. Marie Boyer. 2018. Aix-Marseille: AMU, 57 p. Mémoire de master 2: Sciences et Technologie. Bioinformatique, Biochimie structurale et Génomique. Spécialité professionnelle Bioinformatique et Génomique. Aix-Marseille Université.

3- Etude génomique de l'atténuation de la souche vaccinale Nigeria 75-1 de la Peste des Petits Ruminants (PPR). Roger-Junior Eloiflin. 2018. Montpellier: UM2, 47 p. Mémoire de master 2:Interactions Microorganismes Hôtes et Environnements. Mention Biologie Agrosciences. Université de Montpellier.

4- Support of OIE reference laboratories for PPR to the PPR global eradication program Arnaud Bataille, Michael D. Baron, Fuxiao Liu, Carrie Batten, Zhiliang Wang, Geneviève Libeau. OIE Bulletin, Panorama.

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries
To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

Yes

a) Technical visits: 10
b) Seminars: 66
c) Hands-on training courses: 7
d) Internships (>1 month): 3

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
a	Jordan	10
b	EU and Non-EU countries, Georgia, Kazakhstan, Turkey, Ukrain	66
c	Burundi, Albania, Botswana	4, 2, 1
d	Côte d'Ivoire, France, Mali	3

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System certified according to an International Standard?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	attestation accr 2014-2019 rév. 10.pdf

16. Is your laboratory accredited by an international accreditation body?

Yes

Test for which your laboratory is accredited	Accreditation body
C-ELISA	COFRAC

17. 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, Chapter 1.1.4)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
PPR-GREN	05/2018	Vienna	Speaker	Widening the scope of PPR diagnostic: Adaptation and development to target atypical host species and field situations

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

20. Did your laboratory exchange information with other OIE Reference Laboratories designated for the same pathogen or disease?

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: [1]	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Serology and virology	organiser	1	The Pirbright Institute (TPI)

[1] *validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.*

22. Did your laboratory collaborate with other OIE 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 OIE Reference Laboratories
PPR freedom of countries	Diagnosis confirmation of difficult samples	The Pirbright Institute

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing see point 1.3

Purpose for inter-laboratory test comparisons[1]	No. participating laboratories	Region(s) of participating OIE Member Countries
Serology	36	☒Africa ☐Americas ☒Asia and Pacific ☒Europe ☒Middle East
Gene and antigen detection	27	☐Africa ☐Americas ☒Asia and Pacific ☒Europe ☒Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

Yes

Kind of consultancy	Location	Subject (facultative)
Attendance at the PPR Ad hoc meeting	OIE Headquarters, Paris	Several tasks including to advise the OIE for the endorsement of countries'PPR-free official status and also of their national official control programme with regard to PPR.
Update of the Terrestrial Manual	OIE Headquarters, Paris	PPR Chapter

25. Additional comments regarding your report:

At CIRAD, research is implemented for an integrated approach on PPR in order to gain better knowledge of its epidemiology and finally to improve the control of the disease in view of its eradication. As an example, CIRAD develops molecular diagnosis techniques for the detection of PPRV (Q-RT-PCR, rapid field tests detecting the 4 lineages), in different matrices including faeces, as well as NGS methods for the sequencing of the complete viral genome. These data allow to realize phylogenetic analysis of PPRV strains and to study their evolutionary dynamics. Surveys conducted involve non usual hosts of PPRV and also wildlife species sampled by non-invasive methods. The Nig75/1 vaccine was transferred to more than 10 different producers in Africa, Middle East and Asia. CIRAD provides the strain, the training for the production and the quality control assistance on the master batches produced locally and also determines the genetic stability of these batches using deep sequencing technology.