

WOAH Collaborative Centre Reports Activities 2024

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CENTRE INFORMATION

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TOR 1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOAHC

Category	Title of activity	Scope
		2024 was the year of vectorial diseases in

<p>Disease control (true)</p>	<p>Vectorial diseases in France in 2024 : BTV and EHD</p>	<p>France and in Europe with BTV 3, BTV 8 and EHD. After its first appearance in France in September 2023, the EHD virus reappeared in June 2024 and continued to spread over part of the country. During the summer 2024, the new serotype 3 of the BTV virus spread in Northern Europe and appeared on French territory from Belgium. It spread rapidly across the country towards the West, Centre and South, while the new variant of serotype 8 was also spreading across a large part of the country. These 3 viruses therefore represented a major risk for livestock farms in general and for Semen Collection Centres in particular. LNCR worked closely with all the vets at the semen production centres to carry out monthly health checks on bulls using PCR or ELISA serology for BTV and EHD. LNCR was involved in many meetings with experts from Anses Ref Laboratory and representative of French Department of Agriculture and European organizations about controls of breeders in Semen Collection Centres (bulls, rams or bucks). LNCR was included in a Research working group managed by EHD WOAHA Ref Lab for PCR analyses on semen for BTV or EHD.</p>
<p>Epidemiology, surveillance, risk assessment, (true)</p>	<p>Monitoring surveillance of infectious diseases in the French Semen Collection centres for Ruminants and Swine</p>	<p>Year after year LNCR improve regular controls of health status for breeding stocks in French and Belgian Semen Collection Centres according to the Animal Health Law and his Commission delegated regulation 2020/686. This monitoring also includes other diseases with an impact on reproduction, whether listed or not, in order to manage any risk of transmission by semen or embryos and to allow trade of germinal products. Epidemiological surveillance for vectorial diseases : BTV and EHD viruses were under LCNCR scope during most part of 2024. PCR for genotyping the new serotype 3 were implemented in the lab. The serological status of bulls with regard to Schmallenberg virus is also monitored on a regular basis, enabling the</p>

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		<p>circulation of this virus in France to be tracked. This disease is not regulated, but can have an impact for trade of semen from seropositive bulls to some countries in the World.</p>
<p>Training, capacity building (true)</p>	<p>Training program for the Laboratory Teams throughout 2023.</p>	<p>In 2024 manager of LNCR attended the International Symposium in One Health in St Brieuc and the AETE Congress in Brescia. The microbiology manager attended the International Leptospirosis Conference in Brussels. 3 persons from LNCR were trained at Pasteur Institute in the Leptospirosis Reference unit for production of serovars of Leptospira for MAT analyses. 2 persons from the Molecular Biology unit followed a training on PRRS virus sequencing in Lyon.</p>
<p>Zoonoses (true)</p>	<p>Management of zoonotic diseases diagnostic on breeding stocks.</p>	<p>Diagnostic of Brucellosis, Leptospirosis, Q Fever, Tuberculosis (by Gamma Interferon ELISA), are the the main analyses for zoonosis performed in LNCR. Serological analyses are performed routinely for Brucellosis and Leptospirosis. The laboratory has regular exchanges with sanitary authorities and Reference lab in case of "positive" analyses (most of time it is false positive for example with Brucella and cross reactions for serological analyses with Yersinia)</p>
		<p>Vectorial diseases diagnostic : EHD Diagnostic : After emergence of EHD in Europe, LNCR received a temporary approval by the French Ministry of Agriculture to perform official PCR analysis to detect EHD Virus. At the end of 2024, after validation by the National BTV Ref lab of ANSES Maisons-Alfort, this initial agreement became definitive. The LNCR perform also serological analyses for the control of seronegative bulls according to European regulation. After emergence of BTV 3, LNCR implemented PCR for genotyping this new serotype. During all the year, PCR on semen for detection of EHD and BTV virus for both 3 and 8 serotypes were validated and</p>

<p>Diagnosis, biotechnology and laboratory (true)</p>	<p>Vectorial diseases diagnostic. Validation of antibiotics combination in semen extenders. Proficiency tests.</p>	<p>implemented. Many samples were analysed. And detection of virus in semen of some infected animals was confirmed. LNCR followed this animals during many weeks in order to detect evolution of positivity. PCR on sexed semen was also validated as this is a challenging matrix for PCR. For EHD serological diagnosis, LNCR has developed and validated a sero-neutralization method in relationship with the EU Ref Lab for EHD (ANSES lab of Maisons-Alfort) Analyses to detect EHD virus in embryo collect media by PCR were also implemented. Validation of antibiotics combination in semen extenders : LNCR perform very specific studies to validate the efficiency of antibiotics combination in porcine semen extenders against Leptospira by comparison with European reference combination (PSLS). Proficiency tests at national or International level : LNCR was involved in many proficiency tests with ANSES Reference Laboratories in France and Laboratories from other countries (Sciensano, GD Animal Health, VetQas Apha Scientific, International Leptospirosis Society...)</p>
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TOR 3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main focus area for which you were designated

Proposal title	Scope/Content	Applicable Area
<p>Update of Brucella ovis culture and identification standard (French Reference)</p>	<p>This work is stil ongoing, managed by the National Ref LAB who has decided to update the French Standard NF U47-109.</p>	<p>Laboratory Expertise</p>
<p>Update of French standards on animal health analyses by seroneutralization</p>	<p>LNCR has worked and proposed updates concerning French standards of virus neutralization methods : NF U47-024 TGE and porcine Coronavirus, NF U47-010 Aujeszky's disease, NF U47-026 BVD virus, NF U47-025 CSF, NF U47-030 IBR</p>	<p>Laboratory Expertise</p>



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methods for serological diagnosis of animal diseases	virus. After many exchanges between the Working group of AFNOR, the updating has progressed during 2024 and new version will be published in the beginning of 2025.	
Update of French Standard for diagnosis of leptospira by MAT NF 47-009	LNCR is part of a working group for updating French Standard NF U47-009. Discussion began end of 2024 and is on progress.	Laboratory Expertise

3. In exercising your activities, have you identified any regulatory research needs* relevant for WOA?H?

Yes

Research need 1

Please type the Research need: It would be interesting that the BTV Virus or EHD virus genome detection by PCR on semen could become an official test for ruminants in case of infection by these two vectorial diseases. The PCR on blood stay positive during very long time after infection but not the semen. These tests of PCR in semen could allow safe use and safe trade for semen. The Eu Ref Labs for BTV and for EHD could work to validate the method, LNCR has already many data about the protocol and results of analyses on many animals and could help. These tests could be included in the WOA?H recommendations for management of breeders in Semen Collection Centres.

Relevance for WOA?H Disease Control, Facilitation of international collaboration,

Relevance for the Code or Manual Code, Manual,

Field Diagnostics,

Animal Category Terrestrial,

Disease:

Bluetongue

Epizootic haemorrhagic 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: Terrestrial Code : Chapter 4.7 - infection with Blue Tongue virus and infection with EHD virus /Terrestrial Manual :

Chapter 3.1.3 Blue Tongue/Chapter 3.1.7 Epizootic Haemorrhagic Disease

Notes:

Answer: Validation of an official method to detect BTV virus or EHD virus on semen par PCR. Inclusion of these tests in WOA?H recomandations for diagnostic of these diseases and health management of ruminants in Semen Collection Centres.

4. Did your Collaborating Centre maintain a network with other WOA?H Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of WOAHC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
ANSES National Reference Laboratory/ WOAH RL for EHD virus/ National RL for BTV	Maisons-Alfort - France	Europa	Stephan ZIENTARA who is the manager of the ANSES lab and of this RL is also the Chairman of the Technical and Scientific Committee of LNCR. We had regular discussion with him and his team about methods of diagnosis since appearance of EHD virus in France in 2023 and the new serotype 3 of BTV virus. LNCR is included in a Research working group about BTV and EHD managed by Stephan Zientara.
ANSES National Reference Laboratory for BVD, IBR and Leucose virus	Niort- France	Europa	Regular discussion about the kits of diagnosis. Confirmation of false-positive results for Leucose serological analyses. Participation to a proficiency test about seroneutralization methods for BVD virus.
ANSES National Reference Laboratory/WOAH/FAO Reference Laboratory for Brucellosis and Brucella ovis	Maisons-Alfort -France	Europa	Regular discussion about serological diagnostic on Brucella and false-positive results. Work in commun about updating French standard for culture and identification of Brucella ovis
National Reference Centre of Leptospirosis, Pasteur Institute	Paris-France	Europa	Training of a team of LNCR at this Centre about serovars production for MAT analyses. Working together in a working group for updating the French standard for diagnosis of leptospirosis by MAT
			Supply of virus-positive sera.

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ANSES National Reference Laboratory for Besnoitiose, Visna-Maedi and CAEV virus.	Maisons-Alfort - France	Europa	Collaboration with the Reference Laboratory and a kit supplier to validate a serological kit for VISNA - CAEV diagnosis.
Reproduction and Swine Health Department, New Bolton Centre	University of Pennsylvania USA	América	Mr Gary Althouse, Professor of Reproduction and Swine Health regularly validates the results of boars semen extenders controls carried out by LNCR
National Veterinary School of Toulouse, Cattle diseases service	Toulouse - France	Europa	Contacts and discussion with Professor François Schelcher about EHD and BTV virus detection in semen by PCR analyses. Work in commun in a Research working group managed by Stephan Zientara about vectorial diseases in France. Analyses on semen from infected bulls and rams collected on farms by the team of Professor Schelcher to detect (or not) the 2 viruses.
National Veterinary School of Toulouse, Reproduction service	Toulouse - Maisons-Alfort	Europa	Coordination between a vet student of Toulouse and Professor Nicole Hagen-Picard to analyses the results form 9 years of semen bacteriological analyses of bulls in Semen Collection Centres. This work was presented as a veterinarian thesis that has been defended in October 2024. This work highlighted the diversity of germs that can be identified in semen and the potential link between these germs and default in semen quality.
ANSES National Reference Laboratory			2 persons of the LR performed a biosecurity audit of LNCR in June to renew the official

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for Classical Swine Fever	Ploufragan - France	Europa	agreement for seroneutralization analyses for CSF.
EFFAB and REPVET	Brussels	Europa	Many meetings and discussions with persons from the REPVET group and EFFAB about management of BTV and EHD in European Semen Collections Centres. Main Point of Contact is Ana Granados.

TOR 4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAHO Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOAHO CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
GIS Cryobanque Nationale	France	Europe	LNCR is primary site for the French Biobank for domestic animal species. In 2024 the French Biobank and his primary site have obtained certification under ISO 9001 : 2015 for management of cryopreserved animal biological resources

TOR 6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAHO?

Yes

Name of expert	Kind of consultancy	Subject
Sofia POMBO and Laurence GUILBERT-JULIEN	Technical expertise to update of the WOAHO Manual of Diagnostic Tests and Vaccines for Terrestrial Animals Chapter on Trichomonosis. The working group included also Ala Tabor from	Update of Terrestrial Manual Chapter on trichomonosis

	Centre for Animal Science - Queensland Alliance for Agriculture & Food Innovation	
Laurence GUILBERT-JULIEN	The manager of LNCR was invited to chair an ad hoc Group to revise Chapter 4.6 and then Chapter 4.7 of Terrestrial Code.	The revised Chapter 4.6 was adopted at the 91st General Session in May 2024. Then, the ad hoc group worked in 2024 to initiate the revision for the Chapter 4.7, focussing first on general provisions and the recommendations for bovine. The chair had many meetings with the WOAH secretariate to prepare and coordinate the discussion between the members of the ad hoc group and collect their recommendations. She had the opportunity to meet the Code Commission about these first proposals in Septembre 2024.

TOR 7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

Yes

After initial exchanges in 2023, we had again numerous discussions with an Official Veterinarian from Department of Home Affairs and National Economy of Switzerland about the export of pig semen from France to Switzerland. The Swiss authorities's questions concerned Aujeszky and PRRS diagnosis, and in particular the protocols for confirming serological "false positives". Thanks to a rigorous sanitary control in the boars Semen Collection Centre and the LNCR's answers, the semen was finally exported to Switzerland.

In 2024, LNCR was included in many discussions with French authorities about management of EHD and BTV in Semen Collection Centres to change sanitary certificates for trade semen in other countries.

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAH, to personnel from WOAH Members?

Yes

a) Technical visit : 2

b) Seminars : 0

c) Hands-on training courses: 0

d) Internships (>1 month) : 4

Type of technical training provided (a, b, c or d)	Content	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
A	Visit of Biobank by a Chinese delegation.	China	11
A	Visit of a British delegation for an audit on surveillance, prevention and control of BTV and EHD in France for live animals and semen.	UK	11

D	Development of a culture method for leptospira serovars to perform MAT analyses - Work-study program of 12 months training for a student in Science for Lab analyses	France	1
D	Discovering a vet lab analyses with practical approach of BVD diagnosis. Student in Science for lab analyses and who wanted to become a vet. 1 month internship.	France	1
D	Internship about EHD, the disease, the diagnosis and the impact for breeders - Student in Science for Lab analyses - 7 weeks internship	France	1
D	Internship in the serological unit to practice ELISA analyses, RBT for Brucella...Student in Science and Biotechnology for lab analyses. 7 weeks internship	France	1

TOR 8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOA?H?

No

TOR 9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOA?H that may be useful to Members of WOA?H

a) Articles published in peer-reviewed journals:

0

b) International conferences:

0

c) National conferences:

0



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

0

11. What have you done in the past year to advance your area of focus, e.g. updated technology?

In 2024, LNCR was focused on vectorial diseases, their diagnosis and their impact on Semen Collection Centre. LNCR got an official agreement for PCR Analyses for EHD and extended the range analyses for BTV to BTV 3 genotyping by PCR. The LNCR worked to improve PCR detection in semen both for BTV virus and EHD and had many meetings at National and European level about regulation and management of sanitary controls in Semen Collection Centres. Safety of semen regarding risk of transmission for BTV or EHD virus was one of our major point of interest and research during all this year.

12. Additional comments regarding your report: