

# WOAH Reference Laboratory Reports Activities 2025

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## LABORATORY INFORMATION

<b>*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:</b>	Bovine spongiform encephalopathy
<b>*Address of laboratory:</b>	Via Bologna 148
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<b>*E-mail address:</b>	cristina.casalone@izsplv.it
<b>Website:</b>	www.izsplv.it
<b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>	Dr Cristina Casalone
<b>*Name (including Title and Position) of WOA Reference Expert:</b>	Dr Cristina Casalone
<b>*Which of the following defines your laboratory? Check all that apply:</b>	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 WOA Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
None	No	0	0
Direct diagnostic tests			
HerdChek BSE/Scrapie Ag, EIA	Yes	5940	2416
Immunohistochemistry for pathological prion protein (IHC)	Yes	2	0
Histology	Yes	2	0
BSE Confirmatory IB (WBSE)	Yes	10	0

## TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA Members?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOA Member Countries	Country of recipients
Sections of positive samples on paraffin slide	IHC and histology	provided	0	30 sections for each	2	ESTONIA, POLAND,

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Sections of negative samples on paraffin slide	IHC and histology	provided	0	30 sections	1	POLAND,
Frozen nervous tissue C-BSE	Rapid Test	provided	0	5 gr	1	LITHUANIA,
Frozen homogenate nervous tissue negative BSE	Rapid Test	produced for italian labs	850 ml	0	11	ITALY,
Sections of positive samples on paraffin slide	IHC and histology	provided	0	set of slides for proficiency test	1	LITHUANIA,

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAHA Members?

## TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
RT-QuIC	Description: Development of standardised protocol for the in vitro amplification of BSE strains. Publications: 1)"Detection and discrimination of classical and atypical L-type bovine spongiform encephalopathy by real-time quaking-induced conversion". Christina D Orrú, Alessandra Favole, Cristiano Corona, Maria Mazza, Matteo Manca, Bradley R Groveman, Andrew G Hughson, Pier Luigi Acutis, Maria Caramelli, Gianluigi Zanusso, Cristina Casalone, Byron Caughey. J Clin Microbiol. 2015 Apr;53(4):1115-20. doi: 10.1128/JCM.02906-14. Epub 2015 Jan 21. 2)"RT-QuIC detection of pathological prion protein in subclinical goats following experimental oral transmission of L-type BSE". Alessandra Favole, Maria Mazza, Antonio D'Angelo, Guerino Lombardi, Claudia Palmitessa, Luana Dell'Atti, Giulia Cagnotti, Elena Berrone, Marina Gallo, Tiziana Avanzato, Erika Messana, Loretta Masoero, Pier Luigi Acutis, Daniela Meloni, Franco Cardone, Maria Caramelli, Cristina Casalone, Cristiano Corona. BMC Res Notes. 2021 Dec 7;14(1):442. doi: 10.1186/s13104-021-05859-3.

7. Did your laboratory validate diagnostic methods according to WOAHA Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

9. Did your laboratory validate vaccines according to WOAHA Standards for the designated pathogen or disease?

## TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAHA Members?

Yes

Name of WOAHA 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
LATVIA	2025-02-11	IHC and histology	0	1

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAHA Member?

Yes

Name of the WOAHA Member Country receiving a technical consultancy	Purpose	How the advice was provided
CROATIA	Support for writing a scientific paper	Exchange of information via e-mail
	Technical support on the	Continuous exchange of technical

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SWITZERLAND	immunohistochemistry diagnosis of BSE	information via e-mail and sending of new slides
LATVIA	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
LITHUANIA	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
CZECH REPUBLIC	Technical support on the immunohistochemistry diagnosis of BSE	Continuous exchange of technical information via e-mail and sending of new slides
IRELAND	Technical support on the biosafety equipment	Communications by e-mail

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAHP 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
The OIE Virtual Biobank: a Web-based catalogue of biological resources	Expected duration: 2-4 years	To create an online catalog of biological resources	IIZZSS	ITALY

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

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:

Yes, the collection and storage of surveillance data is currently underway. Our national database contains active and passive surveillance data from 2001 to the present. Over the last decade, the data refers to an average of approximately 50,000 animals tested post mortem each year in the categories of fall stock or emergency slaughter. The last confirmed case dates back to 2011.

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:

Each year, a national report on BSE surveillance is provided to the Health Ministry. Additionally, annual surveillance data are shared with EFSA. Summary data are accessible through the annual EU Summary Report on TSEs (e.g., the most recent report can be found at <https://efsa.onlinelibrary.wiley.com/doi/full/10.2903/j.efsa.2025.9732>) and through a freely accessible EFSA dashboard (<https://www.efsa.europa.eu/en/microstrategy/tse>).

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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• *Mazza M\*, Favole A\*, Campia V\*, Iulini B\*, Nonno R, Ligios C, Pintus D, Peletto S\*, Casalone C\*, Corona C\*, Bozzetta E\* and Acutis PL\* "Real-Time Quaking-Induced Conversion Assay Applied to the Italian Chronic Wasting Disease Monitoring Plan: Comparison of Classical and Innovative Diagnostic Methods" Pathogens 2025 doi.org/10.3390/pathogens14101053*

- Di Muro G, Tessarolo C, Cagnotti G, Favole A, Ferrini S, Ala U, Bellino C, Borriello G, Gallo M, Iamone G, Iulini B, Pezzolato M, Casalone C, Caramelli M, Capucci L, Cavadini P, Corona C, D'Angelo. Neurofilament light chain (Nf-L) in cerebrospinal fluid and serum as a potential biomarker in the differential diagnosis of neurological diseases in cattle. *A.Vet Res.* 2025 Jan 10;56(1):6. doi: 10.1186/s13567-024-01441-4.PMID: 39794836.

b) International conferences:

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- 13th Iberian Congress on Prion 22-23 maggio 2025
- 22nd Annual Meeting of the TSE EURL 12-13 Maggio 2025, Torino
- Prion 2025, 3-7 Novembre 2025 - Buzios, Rio De Janeiro - Brasile

c) National conferences:

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- Beyond formalin: GAF® as the new standard of safety and quality in tissue fixation – September 23, 2025, Rome
- Processed animal proteins in animal feed, June 10, 2025
- XXIV Conference of Istituti Zooprofilattici Sperimentali on Transmissible Spongiform Encephalopathies November 24-25, 2025, Turin, IZSPLV.

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

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Abstracts for international conferences:

- Iulini B\*, Frizziero S, Florio C\*, Gazzuola P\*, Pirisinu L, Chiappini B, Boniotti MB, Ru G\*, Bozzetta E\*, Mazza M\*, Casalone C\* "Biological Treasures: Biobanks in Service of Prion Science" Iberian Congress on PRION – 22-23 maggio 2025 Porto
- Vera Silva, Paula Tavares, Natalia Campbell, Fátima S. Silva, Neuza Bacalhau, Inês Carolino, Nuno Carolino, Renata Carvalho, Gabrielle Vaccari, Giuseppe Ru and Leonor Orge, "Preventing future TSE outbreaks: exploring pmp diversity for resistance in Portuguese Goats- setting up a project" Iberian Congress on PRION 22-23 maggio 2025 Porto
- Sonja Ernst, Svenja Mamerow, Michele di Bari, Lina Spieß, Charlotte Schröder, Martin H. Groschup, Giuseppe Ru, Christine Fast "Amplification of H- and L-type BSE in the natural host" Prion 2025 - November 3-7, 2025.
- M. Mazza, C.D. Orrù, A. Favole, L. Dell'Atti, C. Corona, C. Casalone, P.L. Acutis, E. Bozzetta. Application of Real-Time Quaking-Induced Conversion assay to investigate the presence of pathological prion protein in extra-neural tissues of cattle with natural Low BSE. *Prion* 2025, 3-7 November 2025, Buzios-Rio de Janeiro, Brazil

Abstracts for national conferences

- N.F. Fiscella, S. Frizziero, M. Mazza, E. Bozzetta, G. Ru, MG Perrotta, C. Testori, V. Carta, C.L. Florio, C. Casalone, B. Iulini. Lesioni neuropatologiche nei cervidi sottoposti alla sorveglianza della Chronic Wasting Disease in Italia. *SIDILV* 15-17 ottobre 2025, Palermo della ricerca sui prioni. *SIDILV* 15-17 ottobre 2025, Palermo
- Paola Gazzuola, Serena Frizziero, Alessio Ferrari, Virginia Mattioda, Laura Pirisinu, Barbara Chiappini, Maria Beatrice Boniotti, Giuseppe Ru, Elena Bozzetta, Maria Mazza, Cristina Casalone, Barbara Iulini. Biobanche al servizio della ricerca sui prioni. *SIDILV* 15-17 ottobre 2025, Palermo

International teaching

- 22st Meeting EURL TSE 12 e 13 May 2025- l'NH Hotel Genio, Turin:
- "EURL TSE Work programme 2024-2025: what done, what to do"
- "Rapid Tests EQA (RB & RS): results of the 2024 round and forthcoming 2025 round"
- "Confirmatory immunoblotting (WB & WS): results of the 2024 round and forthcoming 2025 round"
- "Rapid and confirmatory Tests: issues & news"
- "PrP Immunohistochemistry Technical 2024 EQA"
- "Histopathology interpretation 2024 EQA"

National teaching:

- Lecturer at the University of Sassari, Pathology in Transmissible Spongiform Encephalopathies, February 28, 2025
- Lecturer at the conference in Massicelle (SA) on Animal Health, April 23-26, "Monitoring TSEs in African Countries: a useful commitment for everyone."
- Lecturer at the University of Bari Aldo Moro as part of the seminars organized by the School of Specialization in "Infectious Diseases, Prophylaxis, and Veterinary Police," March 24, 2025
- Lecturer at the University of Sassari, Epidemiology of Transmissible Animal Encephalopathies, February 28, 2025
- "WOAH Standards for TSE Surveillance" at the Workshop on Processed Animal Proteins in Feed 2025 – online lecture June 10, 2025.
- "Alkaline hydrolysis in animal by-products: prospects and challenges for the circular economy" in the Processed Animal Proteins in Feed 2025 Workshop - online lecture June 10, 2025

CEA conference presentations:

- WOAHA guidelines for BSE surveillance
- TSE surveillance in Italy: what are the prospects?
- Taking stock of the risk of transmission of atypical BSE to humans
- Processed animal proteins and feed: everything you need to know
- Hides and protein hydrolysates: new prospects
- Alkaline hydrolysis of SOAs: scientific evidence for a sustainable transition
- Update on genetic scrapie selection in Italy
- New diagnostic principles for new TSE surveillance
- TSE surveillance in Italy: critical issues and updates

*Training courses and organized conferences*

- Meeting at the IZSPLV on September 16-17, 2025, between the staff of the Proteomics and TSE Diagnostics Department and experts from IDEXX to discuss: reviewing the production and purification phase of recombinant PrP substrates in order to assess the feasibility of producing stable batches according to a quality protocol. This meeting was based on a collaboration agreement signed between our Institute and IDEXX.
- XXIV Conference of Experimental Zooprophyllactic Institutes on Transmissible Spongiform Encephalopathies, 24-25 November 2025, Turin
- Training in Senegal at CasaBio - Centre de Formation, Ferme pédagogique et Ecolodge d'application. 2-9 April, 2025.

*Participation in the following Working Groups of the EFSA Biological Hazards Panel:*

- TSE working group for the production of the TSE EU Summary Report.
- Working group for a scientific opinion on the possible alignment of the BSE monitoring and surveillance requirements laid down in Regulation (EC) No 999/2001 with the revised Terrestrial Code Chapter 11.4. of the World Organisation for Animal Health (WOAH)

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAHA Members?

No

## TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO17025	pdf	Certificato di accreditamento revisionato il 23.01.25 -705252.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
HERDCHEK BSE/SCRAPIE ANTIGEN KIT TEST EIA IDEXX	ACCREDIA-ILAC MRA
BSE confirmatory immunoblot	ACCREDIA-ILAC MRA
Immunohistochemistry for pathological prion protein	ACCREDIA-ILAC MRA
Histology	ACCREDIA-ILAC MRA

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

Yes

Biosafety guidelines have been produced for personnel working within laboratories that handle prions

## TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAHA?

No

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

Yes

			Role (speaker, presenting poster,

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Title of event	Date	location	short communications)	Title of the work presented
EURL TSE Meeting	2025-05-11	Turin	Speakers	Feedback on the Proficiency Testing EQA round
EURL TSE Meeting	2025-05-12	Turin	Speakers	Feedback on the Proficiency Testing EQA round
Training course at CasaBio - Centre de Formation, Ferme pédagogique et Ecolodge d'application	2025-04-02	Senegal	Speakers	Nous ne devons PAS oublier les maladies à prions! Pourquoi?

## TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOAHP Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOAHP Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAHP Ref. Labs/ organising WOAHP Ref Lab
TSE Histopathology and immunohistochemistry interpretation EQA	Participant	38	NRLs
PrP immunohistochemistry technical EQA	Participant	19	NRLs
BSE Confirmatory Immunoblot	Participant	22	NRLs
BSE screening rapid tes	Participant	28	NRLs

26. Did your laboratory collaborate with other WOAHP 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 WOAHP Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons <sup>1</sup>	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAHP Member Countries
Harmonising existing test methods (IDEXX HerdCheck BSE-scrapie Antigen Kit EIA for Italian network laboratories)	Organizer	11	Rapid test	ITALY,

## TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

*Our WOAHP Centre for BSE collaborates with EURL TSE as part of the same Institution and also all staff, including myself, works for both centres. From 2019 we have been providing diagnostic advice to European Nrls. From some years we have been working closely with countries in North Africa and South Africa.*