

WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 19 juin 2024 15:03

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Chronic Wasting Disease
Address of laboratory:	Postboks 64, 1431 Ås, Norway
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E-mail address:	sylvie.benestad@vetinst.no
Website:	www.vetinst.no
Name (including Title) of Head of Laboratory (Responsible Official):	Øyvind Fylling-Jensen
Name (including Title and Position) of WOA Reference Expert:	Dr Sylvie L. Benestad
Which of the following defines your laboratory? Check all that apply:	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			
PrP ELISA		14291	15
PrP WB		300	5
PrP IHC		200	0
Direct diagnostic tests			
		Nationally	Internationally

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 (nonWOA-approved) and/or other diagnostic reagents to WOA Members?

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA Members?

No

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 WOAHA 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 WOAHA Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

No

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	PURPOSE OF THE STUDY	PARTNERS (INSTITUTIONS)	WOAHA MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY
Tackling CWD in Europe	31-03-2021- End 2024	Study host/pathogen interactions relevant to disease transmission in wildlife, livestock and people	Roslin Institute Edinburgh	UNITED KINGDOM
Emerging CWD	01.11.2023-30.10.2029	CWD prions from Norwegian cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	INRAe Toulouse	FRANCE
Emerging CWD	01.11.2023-30.10.2029	CWD prions from Norwegian cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	NMBU Veterinærhøgskolen, Sandnes and HØGSKOLEN I INNLANDET EVENSTAD, Koppang	NORWAY
Emerging CWD	01.11.2023-30.10.2029	CWD prions from Norwegian cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	Istituto Superiore di Sanità, Rome	ITALY
Emerging CWD	01.11.2023-30.10.2029	CWD prions from Norwegian cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	Colorado State University, Fort Collins	UNITED STATES OF AMERICA
Emerging CWD	01.11.2023-30.10.2029	CWD prions from Norwegian cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	Instituto Nacional de Investigación y Tecnología Agraria INIA, Madrid	SPAIN
Emerging CWD	01.11.2023-30.10.2029	CWD prions from Norwegian cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	Fondazione IRCCS Istituto Neurologico Carla Besta, Milan	ITALY
Emerging CWD	01.11.2023-30.10.2029	CWD prions from Norwegian cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	University of Minnesota, Minneapolis	UNITED STATES OF AMERICA
Emerging CWD	01.11.2023-30.10.2029	CWD prions from Norwegian cervids: Assessing the pathogenesis, shedding, spillover and zoonotic potential	Canadian Food Inspection Agency (CFIA), Ottawa	CANADA
Tackling CWD in Europe	31-03-2021- End 2024	Study host/pathogen interactions relevant to disease	Instituto Nacional de Investigación y Tecnología	SPAIN

		transmission in wildlife, livestock and people	Agraria INIA, Madrid	
Tackling CWD in Europe	31-03-2021- End 2024	Study host/pathogen interactions relevant to disease transmission in wildlife, livestock and people	FLI Riems	GERMANY
Tackling CWD in Europe	31-03-2021- End 2024	Study host/pathogen interactions relevant to disease transmission in wildlife, livestock and people	INRAe Toulouse and Jouy en Josas	FRANCE
CWD strain characterization	Several years	Bioassay in bank voles	Istituto Superiore di Sanità, Rome	ITALY
CWD strain characterization	Several years	Bioassay in transgenic mice	Colorado State University, Fort Collins	UNITED STATES OF AMERICA
CWD strain characterization	Several years	Bioassay in transgenic mice	Alberta University	CANADA
CWD strain characterization	Several years	Bioassay in transgenic mice	UCL, London	UNITED KINGDOM
CWD strain characterization	Several years	Bioassay in transgenic mice	FLI, Riems	GERMANY

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

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:

14 2017 cervids in 2023 through the National surveillance program on CWD

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:

The Norwegian Veterinary Institute analyzed <http://apps.vetinst.no/skrantesykestatistikk/NO/#omrade>

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:

6

-Sun JL, Kim S, Crowell J, Webster BK, Raisley EK, Lowe DC, Bian J, Korpenfelt SL, Benestad SL, Telling GC. Novel Prion Strain as Cause of Chronic Wasting Disease in a Moose, Finland. *Emerg Infect Dis.* 2023 Feb;29(2):323-332.

-Mazza M, Tran L, Loprevite D, Cavarretta MC, Meloni D, Dell'Atti L, Våge J, Madslie K, Vuong TT, Bozzetta E, Benestad SL. Are rapid tests and confirmatory western blot used for cattle and small ruminants TSEs reliable tools for the diagnosis of Chronic Wasting Disease in Europe? *PLoS One.* 2023 Aug 30;18(8):e0286266.

-Sola D, Tran L, Våge J, Madslie K, Vuong TT, Korpenfelt SL, Ågren EO, Averhed G, Nöremark M, Sören K, Isaksson M, Acín C, Badiola JJ, Gavier-Widén D, Benestad SL. Heterogeneity of pathological prion protein accumulation in the brain of moose (*Alces alces*) from Norway, Sweden and Finland with chronic wasting disease. *Vet Res.* 2023 Sep 8;54(1):74.

-Harpaz E, Vuong TT, Tran L, Tranulis MA, Benestad SL, Ersdal C. Inter- and intra-species conversion efficacies of Norwegian prion isolates estimated by serial protein misfolding cyclic amplification. *Vet Res.* 2023 Sep 29;54(1):84.

-Thackray AM, McNulty EE, Nalls AV, Cardova A, Tran L, Telling G, Benestad SL, Gilch S, Mathiason CK, Bujdoso R. Genetic modulation of CWD prion propagation in cervid PrP Drosophila. *Biochem J.* 2023 Oct 11;480(19):1485-1501.

-Mysterud, A., Viljugrein, H., Hopp, P., Andersen, R., Bakka, H., Benestad, S., Madslie, K., Moldal, T., Rauset, G., Strand, O., Tran, L., Vikøren, T., Våge, J. & Rolandsen, C. 2023. Challenges and opportunities using hunters to monitor chronic wasting disease among wild reindeer in the digital era. *Ecological Solutions and Evidence.* 4(1).

b) International conferences:

9

-S, Benestad. *Chronic Wasting Disease in Europe: EU provisions and monitoring programme. Oral presentation BTSF course European Commission- 4 sessions in 2023*

-Benestad SL, Nonno R, Tran L, Våge J, Vuong TT, Pirisinu L, Telling G, Sola D, Korpenfelt SL, Nøremark M, Gavier-Widen D, *Heterogeneity of CWD in Moose in the Nordic countries. 20th Annual Meeting of the TSE EURL Roma, Italy, 2nd-3rd October 2023.*

-Benestad SL, Vuong TT, Tran L, Våge J, Madslie K, Telling GC, Pirisinu L, Nonno R, *How is Europe dealing with emerging CWD? 4th International CWD symposium Denver USA, 31st May 2023.*

-Nonno R and Benestad SL. *Chronic wasting disease in European cervids. 10th Iberian Prion Congress, Vila Real, Portugal, 19-20 of May 2022.*

-Våge J, Hopp P, Madslie K, Trapai A, Viljugrein H, Benestad SL. *Chronic wasting disease- an emergent health threat to European cervids. Workshop for WOAHA National Focal Points for wildlife in Europe (6th cycle), Warsaw, Poland, 27-29 June 2023.*

-Våge J. *Is Chronic Wasting Disease (CWD)*

an emergent threat to European cervids? Wildlife Disease Association, Webmin, 13 February 2023

c) National conferences:

0

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

2

Interview for the Le Monde Journal (France) Maladies à prions : la Norvège surveille ses cervidés. https://www.lemonde.fr/sciences/article/2023/11/27/maladies-a-prions-la-norvege-surveille-ses-cervides_6202612_1650684.html, 27 November 2023.

-Rolandsen, C., Våge, J., Hopp, P., Benestad, S., Viljugrein, H., Solberg, E., Andersen, R., Strand, O., Madslie, K., Tarpai, A., Veiberg, V., Heim, M., Holmstrøm, F. & Myserud, A. 2023. *Kartlegging og overvåking av skrantesjuka (chronic wasting disease - CWD) 2022. NINA rapport 2277. Norsk institutt for naturforskning (NINA) / Veterinærinstituttet.*

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)	
NS-EN ISO/IEC 17025 (2017)	Accreditation documents 2023	Accreditation documents Test 11- Norwegian Veterinary Institute 2023.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
PrP HerdChek ELISA (IDEXX)	Norwegian accreditation (NA)
PrP TeSeE Western Blot (Bio-Rad)	Norwegian accreditation (NA)
PrP TeSeE ELISA (Bio-Rad)	Norwegian accreditation (NA)

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

Yes

Work with TSE takes place in BSL3 laboratories in accordance with guidelines for work with infection risk group 3 agents, we have carried out risk assessments and implemented procedures to ensure biosafety for employees and the environment.

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 WOA?H?

No

TOR10: NETWORK WITH WOA?H REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOA?H Reference Laboratories designated for the same pathogen?

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOA?H Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOA?H REF. LABS/ ORGANISING WOA?H REF. LAB.
BSE Screening Rapid Test	Participant	23	1/0
Scrapie Screening rapid Test	Participant	26	1/0
BSE Confirmatory Immunoblot Test	Participant	26	1/0
Scrapie Confirmatory Innumoblot Test	Participant	25	1/0

26. Did your laboratory collaborate with other WOA?H 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 WOA?H REFERENCE LABORATORIES
Emerging CWD	Pathogenesis of reindeer CWD	Canadian Food Inspection Agency (CFIA)
Comparison between North American and European CWD	Characterization of CWD strains	Canadian Food Inspection Agency (CFIA)

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA?H Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the Test	WOA?H Member Countries
BSE Screening Rapid Test	Participant	23	ELISA	ITALY,
Scrapie Screening Rapid Test	Participant	26	ELISA	ITALY,
BSE Confirmatory Immunoblot Test	Participant	26	WB	ITALY,
Scrapie Confirmatory Immunoblot Test	Participant	25	WB	ITALY,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No