

# OIE Reference Laboratory Reports Activities

## *Activities in 2020*

**This report has been submitted : 2021-01-04 14:05:58**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Chronic wasting disease
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<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Kristian Hoel, Head of Section
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Sylvie L. Benestad
<b>Which of the following defines your laboratory? Check all that apply:</b>	Governmental

**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	
		Nationally	Internationally
Indirect diagnostic tests		Nationally	Internationally
PrP ELISA	Yes	22600	55
PrP WB	Yes	200	15
PrP IHC	Yes	150	150
Direct diagnostic tests		Nationally	Internationally

**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?

No

4. Did your laboratory produce vaccines?

No

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

No

**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?

No

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

No

**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
BELGIUM	February	16	16
SWEDEN	September		16

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
BELGIUM	Interpretation of IHC	Mail
FINLAND	Sampling for further analysis of positive animals	Mail

**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
CWD strain characterization	Several years	Bioassay studies	ISS	ITALY
CWD strain characterization	Several years	Bioassay studies	Colorado University	UNITED STATES OF AMERICA
CWD strain characterization	Several years	Bioassay studies	INRA ENVT Toulouse	FRANCE
CWD strain characterization	Several years	Bioassay studies	SISSA Madrid	SPAIN
CWD strain characterization	Several years	Bioassay studies	CEA Jouy en Josas	FRANCE
CWD strain characterization	Several years	Bioassay studies	UCL London	UNITED KINGDOM
CWD strain characterization	Several years	Bioassay studies	CWRU Cleveland	UNITED STATES OF AMERICA
CWD strain characterization	Several years	Bioassay studies	ANSES Lyon	FRANCE
CWD strain characterization	Several years	Bioassay studies	Roslin Edinburgh	UNITED KINGDOM
CWD strain characterization	Several years	Bioassay studies	Alberta University	CANADA

***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

If the answer is yes, please provide details of the data collected:

The Norwegian Veterinary Institute performed the analyses for the National surveillance program on CWD with testing of 22 600 cervids in 2020.

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

Yes

If the answer is yes, please provide details of the data collected:
Our website- <a href="http://www.vetinst.no/skrantesjukestatistikk/">http://www.vetinst.no/skrantesjukestatistikk/</a> - includes an updated list over tested samples and results.

**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: 8

-Güere ME, Våge J, Tharaldsen H, Benestad SL, Vikøren T, Madslie K, Hopp P, Rolandsen CM, Røed KH, Tranulis MA. Chronic wasting disease associated with prion protein gene (PRNP) variation in Norwegian wild reindeer (*Rangifer tarandus*). *Prion*. 2020 Dec;14(1):1-10. doi: 10.1080/19336896.2019.1702446. PMID: 31852336; PMCID: PMC6959294.

-Espinosa JC, Marín-Moreno A, Aguilar-Calvo P, Benestad SL, Andreoletti O, Torres JM. Porcine Prion Protein as a Paradigm of Limited Susceptibility to Prion Strain Propagation. *J Infect Dis*. 2020 Jan 9;jiz646. doi: 10.1093/infdis/jiz646. Epub ahead of print. PMID: 31919511.

-Salvesen Ø, Espenes A, Reiten MR, Vuong TT, Malachin G, Tran L, Andréoletti O, Olsaker I, Benestad SL, Tranulis MA, Ersdal C. Goats naturally devoid of PrPC are resistant to scrapie. *Vet Res*. 2020 Jan 10;51(1):1. doi: 10.1186/s13567-019-0731-2. PMID: 31924264; PMCID: PMC6954626.

-Mysterud A, Rivrud IM, Gundersen V, Rolandsen CM, Viljugrein H. The unique spatial ecology of human hunters. *Nat Hum Behav* 4, 694-701 (2020, March 16). doi: 10.1038/s41562-020-0836-7.

-Scheffler K, Jalland CMO, Benestad SL, Moldal T, Ersdal C, Gunnes G, Suganthan R, Bjørås M, Tranulis MA. DNA glycosylase Neil2 contributes to genomic responses in the spleen during clinical prion disease. *Free Radic Biol Med*. 2020 May 20;152:348-354. doi: 10.1016/j.freeradbiomed.2020.03.030. Epub 2020 Apr 4. PMID: 32259578.

-Mysterud A, Hopp P, Alvseike KR, Benestad SL, Nilsen EB, Rolandsen CM, Strand O, Våge J, Viljugrein H. Hunting strategies to increase detection of chronic wasting disease in cervids. *Nat Commun*. 2020 Sep 1;11(1):4392. doi: 10.1038/s41467-020-18229-7. PMID: 32873810; PMCID: PMC7463264.

-Mysterud A, Benestad SL, Rolandsen CM, Våge J. Policy implications of an expanded chronic wasting disease universe. *Journal of Applied Ecology* n/a. DOI: <https://doi.org/10.1111/1365-2664.13783>.

-Nonno R, Di Bari MA, Pirisinu L, D'Agostino C, Vanni I, Chiappini B, Marcon S, Riccardi G, Tran L, Vikøren T, Våge J, Madslie K, Mitchell G, Telling GC, Benestad SL, Agrimi U. Studies in bank voles reveal strain differences between chronic wasting disease prions from Norway and North America. *Proc Natl Acad Sci U S A*. 2020 Dec 8;117(49):31417-31426. doi: 10.1073/pnas.2013237117. Epub 2020 Nov 23. PMID: 33229531; PMCID: PMC7733848.

b) International conferences: 2

-Benestad SL, Tran L, Vuong T, Madslie K, Viljugrein H, Hopp P, Kolbjørnsen Ø, Wisløff H, Moldal T, Pirisinu L, Bian J, Telling GC, Moda F, Bistaffa E, Nonno R, Vikøren T, Våge J. Prion diseases CWD, update. *Veterinærdagene* (Veterinarians days), Gardermoen, Norway 9th March 2020

-Benestad SL, Madslie K, Vikøren T, Das Neves C, Tran L, Vuong T, Moldal T, Pirisinu L, Vaccari G, Bian J, Moreno JA, Kim S, Spraker T, Andreoletti O, Telling GC, Nonno R, Våge J. CWD in Europe, One Health Workshop Series: Chronic Wasting Disease. 30th October 2020, Calvary University, online

c) National conferences: 1

Jørn Våge. Når hjernen blir som en svamp - Skrantesjuke (CWD) – en alvorlig helsetrussel for hjortedyra, (When the brain looks like a sponge, CWD a severe threat for the cervid Health), *Forskningsdagene* (Research days) 21th september 2020, Veterinærinstituttet, Oslo

d) Other:

(Provide website address or link to appropriate information) 4

-<https://www.hjortevilt.no/skrantesjuke/>

-<https://www.vetinst.no/sykdom-og-agens/chronic-wasting-disease>

Rolandsen CM, Våge J, Hopp P, Benestad SL, Viljugrein H, Solberg EJ, Ytrehus B, Andersen R, Strand O, Vikøren T, Madslien K, Tarpai A, Fremstad J, Veiberg V, Heim M, Holmstrøm F, Mysterud A (2020) Kartlegging og overvåking av skrantesjuka (Chronic Wasting Disease - CWD) 2016-2019, NINA Rapport 1818 / Veterinærinstituttet rapport 8, 2020. 44 s., NINA Rapport 1818 / Veterinærinstituttet rapport 8, 2020. 44 s.

-Våge J, Hopp P, Vikøren T, Madslien K, Tarpai A, Moldal T, Benestad SL (2020) The surveillance programme for Chronic Wasting Disease (CWD) in free ranging and captive cervids in Norway. ISSN 1894-5678, Norwegian Veterinary Institute and Norwegian Food Safety Authority.

**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?

No

**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?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO/IEC 17025:2017	Akkrediteringsdokument.pdf

16. Is your quality management system accredited?

Yes

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

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?

No

**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?

No

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
Comparison between North American and Norwegian CWD isolates	Characterization of CWD strains	Canadian Food Inspection Agency, Ottawa, Canada

**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?

No

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

**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?

No

25. Additional comments regarding your report: