



The surveillance programme for enzootic bovine leukosis (EBL) in Norway 2025

REPORT 28/2026

The surveillance programme for enzootic bovine leukosis (EBL) in Norway 2025

Authors

Siv Meling, Lise Marie Ånestad, Johan Åkerstedt, Jørgen Dalaker, and Siv Klevar

Suggested citation

Meling, Siv, Ånestad Lise M, Åkerstedt, Johan, Dalaker, Jørgen, Klevar, Siv. The surveillance programme for enzootic bovine leukosis (EBL) in Norway 2025. Surveillance programme report. Veterinærinstituttet 2026. © Norwegian Veterinary Institute, copy permitted with citation

Quality controlled by

Merete Hofshagen, Surveillance Programme Coordinator, Norwegian Veterinary Institute

Commissioned by

Norwegian Food Safety Authority



Published

2026 on www.vetinst.no
ISSN 1890-3290 (electronic edition)
© Norwegian Veterinary Institute 2026

Colophon

Cover photo: Colourbox
www.vetinst.no

Content

Summary.....	3
Introduction	3
Aim.....	3
Materials and methods.....	3
Herds and sampling	3
Laboratory analyses.....	4
Results.....	4
Discussion	6
Acknowledgments	6
References	6

Summary

All bulk milk and blood samples tested in 2025 were negative for antibodies against bovine leukemia virus (BLV).

Introduction

Enzootic bovine leukosis (EBL) is caused by bovine leukemia virus (BLV), a member of the family *Retroviridae*. Most infections are subclinical; however, approximately one third of infected cattle older than three years develop persistent lymphocytosis. A smaller proportion of animals develop lymphosarcomas affecting various internal organs. In Norway, EBL is classified as a List 2 disease and is also listed by the World Organisation for Animal Health (WOAH). Within the European Union (EU), EBL is categorised under disease categories C, D, and E.

In Norway, enzootic bovine leukosis had not been reported until antibodies against BLV were detected in eight dairy herds through the surveillance programme in 1995 (1). No additional positive herds have been identified since 1997 (2), with the exception of a single positive bulk milk sample from one herd in 2002, along with one positive blood sample from a cow in the same herd. Following extensive follow-up investigations, these results were concluded to represent false-positive reactions (3). Norway was granted official free status from EBL by the EFTA Surveillance Authority in 2007 (5).

The Norwegian Food Safety Authority (NFSA) is responsible for implementing the surveillance programme for EBL. The Norwegian Veterinary Institute is responsible for planning the programme, collecting the bulk milk samples from the dairies, performing the analyses, and reporting the results. Blood samples from beef herds are collected at slaughterhouses by NFSA inspectors.

Aim

The aim of the surveillance programme for EBL is to document freedom from the infection in Norway in accordance with the requirements laid down in Regulation (EU) 2020/689, and to contribute to the maintenance of this favourable situation.

Materials and methods

Herds and sampling

The surveillance programme included both dairy and beef herds. The target population of dairy herds comprised all Norwegian cattle herds delivering milk to dairies during the sampling period. The target population of beef herds comprise all Norwegian herds delivering cattle to slaughter in 2025.

A total of 25.5% of dairy herds were randomly selected for sampling. For beef herds, individual blood samples were collected from animals older than 24 months at 17 slaughterhouses, with a maximum of five animals per herd per sampling day. However, five herds were sampled with between six and ten samples on a single sampling day.

In total, 1,320 bulk milk samples from 1,201 dairy herds were provided by the dairies. Additionally, 4,228 individual blood samples were collected from 1,363 beef herds. The blood samples were analysed in pools comprising one to five animals, resulting in 1,712 pooled samples. Overall, the sampled herds represented approximately 21.7% of all Norwegian cattle herds (Table 1).

Table 1. Numbers of dairy herds and beef herds sampled in the Norwegian surveillance programme for EBL in 2025.

Herd category	Cattle herds (total no. ¹)	Sampled herds (no. ²)	Sampled herds (%)
Dairy herds ³	6 095	1 201	19.7
Beef herds ⁴	5 731	1 363	23.8
Total	11 826	2 564	21.7

¹Based on data from the Register of production subsidies as of 1 March 2025.

²Combined beef and dairy farms could be sampled under both herd categories. The number of unique farms is given in the total number of sampled herds.

³Cattle herds delivering milk to dairies.

⁴Sampling performed at slaughterhouses.

Laboratory analyses

Bulk milk samples were analysed using a commercially available indirect enzyme-linked immunosorbent assay (ELISA), IDEXX Leukosis Milk Screening Ab test (IDEXX Laboratories, Maine, USA), in accordance with the manufacturer's instructions. Samples yielding positive or inconclusive results were retested in duplicate using the same method, and/or an alternative indirect ELISA, SVANOVIR® BLV gp51-Ab Confirmation (Indical Bioscience GmbH, Leipzig, Germany). In cases of positive or doubtful serological findings, follow-up sampling was conducted, including collection and analysis of new bulk milk or individual blood samples from the suspected herd.

Blood samples (pooled and individual) were analysed using a competitive ELISA, ID Screen® BLV Competition (IDvet, Grabels, France). In the event of positive or inconclusive results in pooled samples, individual samples comprising the pool were retested. Individual samples yielding positive or inconclusive results were retested in duplicate using the same method and/or the SVANOVIR® BLV gp51-Ab Confirmation kit. If results remained positive or doubtful after retesting, additional blood samples were collected from the suspected herd and analysed.

Results

Of the 1,320 bulk milk samples from 1201 dairy herds, 1,319 tested negative, while one sample (0.1%) tested positive following retesting in accordance with the procedure described in the Methods section. This finding was followed up by the collection and analysis of a new bulk milk sample from the herd of origin, which yielded a negative result.

Of the 1,712 pooled blood samples from beef herds, 1,710 were seronegative, while two pools (0.1%) yielded doubtful results. Upon retesting in accordance with the protocol described in the Methods section, one individual sample remained doubtful. This sample was submitted to the Swedish Veterinary Agency (SVA) in Uppsala for further investigation using an alternative indirect ELISA, which yielded a negative result.

In conclusion, all 1,201 dairy herds and 1,363 beef herds included in the surveillance program for EBL were negative for antibodies against BLV in 2025. Table 2 shows the results of the surveillance programme from 1993 to 2025.

Table 2. Numbers of samples and positive results of antibody testing in the surveillance programme for EBL in the Norwegian cattle population during the period 1995-2025.

Year	Dairy herds	Beef herds		No. of positive samples
	No. of herds sampled	No. of herds sampled ¹	No. of individuals tested ²	
1995	25 131	1 532	9 354	8 (bulk milk)
1996	2 278	303	1 523	1 (bulk milk)
1997	26 903	2 214	16 741	0
1998	23 581	2 191	17 095	0
1999	19 933	2 382	18 274	0
2000	1 590	340	2 892	0
2001	2 564	434	3 453	0
2002	2 308	462	3 693	1 (bulk milk)
2003	1 845	449	3 901	0
2004	1 573	402	3 364	0
2005	1 919	484	4 766	0
2006	1 673	479	4 624	0
2007	1 575	412	4 241	0
2008	1 422	444	4 616	0
2009	1 315	435	5 038	0
2010	1 265	507	4 020	0
2011	1 226	1 278	4 758	0
2012	1 189	1 178	4 306	0
2013	1 042	1 167	4 079	0
2014	1 489	935	4 132	0
2015	1 176	1 206	3 704	0
2016	1 180	1 337	4 241	0
2017	1 107	1 448	4 285	0
2018	1 131	1 341	4 153	0
2019	1 071	1 328	4 124	0
2020	1 169	1 258	3 709	0
2021	1 212	1 413	3 952	0
2022	1 093	1 432	4 200	0
2023	1 337	1 393	4 219	0
2024	1 524	1 372	4 213	0
2025	1 201	1 363	4 228	0

Discussion

The EU requirement for granting EBL-free status stipulates that herd prevalence must not exceed 0.2 %, corresponding to a maximum of 23 herds out of the total number of 11,826 cattle herds.

No new cases of EBL have been reported in Norway since 1997, and continuous surveillance since that time has confirmed that the Norwegian cattle population remains free from the disease in accordance with official requirements (2, 3). Initially, all cattle herds were tested annually. Since 2000, surveillance has been based on annual testing of at least 10 % of both dairy and beef herds. Using scenario tree modelling, the probability that Norway was free from EBL by the end of 2014 was estimated at 99.0% (4). The results of the 2025 surveillance programme further support the conclusion that the Norwegian cattle population remains free from EBL.

In combination with a potential isolation period of six months and the testing protocol applied to imported animals, the EBL surveillance programme is considered an effective measure for the early detection of any introduction of infections.

Acknowledgments

The authors would like to thank the technical staff at the Norwegian Veterinary Institute for performing the analyses with excellence. Moreover, the authors would like to thank all personnel from the Norwegian Food Safety Authority for collection and submission of samples.

References

1. Tharaldsen J, Ødegaard Ø, Krogsrud J. Smittsom storfeleukose diagnostisert i Norge [Contagious bovine leukosis diagnosed in Norway, No]. *Nor Vet Tidsskr* 1996; 108: 550.
2. Ånestad Lise M, Åkerstedt, Johan, Dalaker, Jørgen, Klevar, Siv. The surveillance programme for enzootic bovine leukosis (EBL) in Norway 2024. Surveillance programme report. Norwegian Veterinary Institute 2025.
3. Nyberg O, Tharaldsen J, Heier BT. The surveillance and control programme for enzootic bovine leukosis (EBL) in Norway. In: Mørk T, Hellberg H (editors). *Surveillance and control programmes for terrestrial and aquatic animals in Norway. Annual report 2003*. Oslo: National Veterinary Institute; 2004. p. 57-62.
4. Jonsson ME, Kristoffersen AB, Åkerstedt J, Hopp P, Mørk T, Sjurseth SK, Norström M. Evaluation of the surveillance sensitivity of the official Enzootic bovine leukosis programme in Norway. Annual Meeting of the Society for Veterinary Epidemiology and Preventive Medicine, Elsinore, Denmark, 16-18 March 2016. Poster.
5. EFTA SURVEILLANCE AUTHORITY DECISION, Amended on 22 April 2021 by Decision No 33/21/COL

Health and well-being for animals and people



Norwegian
Veterinary Institute

Ås ▪ Sandnes ▪ Bergen ▪ Trondheim ▪ Harstad ▪ Tromsø

postmottak@vetinst.no

vetinst.no