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Content

Summary

All bulk milk and blood samples tested in 2024 were negative for antibodies against bovine herpes virus (BHV-1).

Introduction

Infectious bovine rhinotracheitis and infectious pustular vulvovaginitis (IBR/IPV) are diseases caused by bovine herpesvirus 1 (BHV-1). The virus affects the upper respiratory tract of cattle, causing purulent nasal discharge, hyperaemia of the muzzle, and conjunctivitis. Signs of general illness are fever, depression, reduced appetite, abortions, and reduced milk yield. The virus may also infect the genital tract and cause pustular vulvovaginitis and balanoposthitis. In Norway, IBR/IPV is classified as a List 2 disease and is also listed by the World Organisation for Animal Health (WOAH). Within the EU, IBR/IPV is categorised under disease categories C, D, and E.

Norway has not experienced any clinical outbreaks of infectious pustular vulvovaginitis since the early 1960s, when two outbreaks occurred in cattle. In 1993, seropositive animals were detected in one single herd following primary screening of bulk milk samples. No clinical signs of IBR/IPV were observed, and all animals on the farm were subsequently slaughtered. Attempts to isolate the virus from organ samples gave negative results. Contact herds and dairy herds in the same region were found to be serologically negative (1). Red deer shot in the area during the same year's hunting season were also found to be seronegative. Since then, no cases of BHV-1 infection have been identified in Norway.

The EFTA Surveillance Authority (ESA) has recognised Norway as free from IBR since 1994. Additional guarantees related to IBR/IPV for cattle entering Norway are outlined in ESA Decision 032/21/COL. To maintain the ESA's recognition of Norway's IBR-free status, annual reports on disease surveillance are required.

The Norwegian Food Safety Authority (NFSA) is responsible for implementing the surveillance programme for IBR/IPV. 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 IBR/IPV was to document freedom from the infection in Norway according to the demands 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 were all Norwegian cattle herds delivering milk to dairies during the sampling period. The target population of beef herds were all Norwegian herds delivering cattle to slaughter in 2024.

Of the dairy herds, 24.9% were randomly selected for sampling. From the beef herds, individual blood samples from animals older than 24 months were collected at 16 slaughterhouses, with a maximum of five animals per herd per sampling day.

The dairies provided 1,747 bulk milk samples from 1,525 dairy herds for analysis. A total of 4,213 individual blood samples from 1,372 beef herds were collected. The blood samples were analysed in pools of 1-5 animals (n= 1,725). The sampled herds represented approximately 24.3% of all Norwegian cattle herds (Table 1).

Table 1. Numbers of dairy herds and beef herds sampled in the Norwegian surveillance programme for IBR/IPV in 2024.

Herd category	Cattle herds (total no.[1])	Sampled herds (no.[2])	Sampled herds (%)
Dairy herds[3]	6 226	1 525	24.5
Beef herds[4]	5 708	1 372	24.0
Total	11 934	2 897	24.3

[1]Based on data from the Register of production subsidies as of 1 March 2024.
[2]Combined beef- and dairy farms could be sampled under both herd categories. The number of unique farms is given as a total number of sampled herds.
[3]Cattle herds delivering milk to dairies.
[4]Sampling performed at slaughterhouses.

Laboratory analyses

Bulk milk samples were analysed using a commercial indirect enzyme-linked immunosorbent assay (ELISA), ID Screen® IBR Milk Indirect (IDvet, Grabels, France), following the manufacturer's instructions. Samples with positive or inconclusive reactions were retested in duplicate using the same method. In cases of positive or doubtful serological results, new bulk milk or individual blood samples from the suspected herd were collected and tested.

Blood samples (pooled or individual samples) were analysed using a commercial indirect ELISA, either SVANOVIR® IBR-Ab Confirmation (Indical Bioscience GmbH, Leipzig, Germany) or ID Screen® IBR Mixte Indirect (IDvet, Grables, France). The SVANOVIR® kit was used until mid-May 2024, when it was replaced by the ID Screen® kit due to the planned discontinuation of its production within 2024. In cases of positive or inconclusive reactions in pooled blood samples, individual samples were retested. Individual samples with positive or inconclusive results were retested in duplicate using the same method. If results remained positive or doubtful upon retesting, new blood samples from the suspected herd were collected and tested.

Results

Among the 1,747 bulk milk samples from dairy herds screened for BHV-1 antibodies, 1,723 tested negative, while three samples (0.2%) showed positive reactions. Upon retesting, two of the initially seropositive samples tested negative, while one remained positive. The positive bulk milk sample was followed up by re-sampling the corresponding herd, and the new bulk milk sample tested negative.

Of 1,725 pooled blood samples from beef herds, 1,723 were seronegative, while two pools (0.1%) tested positive. The individual blood samples contributing to the two positive pools were retested in duplicate with negative results.

In conclusion, all 1,525 dairy herds and 1,372 beef herds in the surveillance program for IBR/IPV were negative for antibodies against BHV-1 in 2024. Table 2 shows the results of the surveillance program from 1993 to 2024.

Table 2. Numbers of samples and positive results of the surveillance programme for IBR/IPV in the Norwegian cattle population during the period 1993-2024

Year	Dairy herds	Beef herds		No. of positive samples
	No. of herds sampled	No. of herds sampled[1]	No. of individuals tested[2]	
1993	26 642	0	0	1
1994	24 832	1 430	5 954	0
1995	25 131	1 532	9 354	0
1996	2 863	303	1 523	0
1997	2 654	2 214	16 741	0
1998	2 816	2 191	17 095	0
1999	2 930	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	0
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	5 048	0
2010	1 265	507	4 020	0
2011	1 226	1 278	4 758	0
2012	1 189	1 178	4 308	0
2013	1 042	1 167	4 079	0
2014	1 489	935	4 132	0
2015	1 176	1 205	3 698	0
2016	1 179	1 330	4 211	0
2017	1 107	1 448	4 282	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	1 525	1 372	4 213	0

[1]Sampling performed in the herds prior to 2011.

[2]A small number of blood samples collected at slaughterhouses could originate from dairy herds.

Discussion

All beef cattle and dairy herds tested in the 2024 surveillance programme were concluded to be negative for antibodies against IBR/IPV.

In addition to the surveillance programme, all breeding bull candidates are serologically tested before entering the breeding centres, and all breeding bulls undergo compulsory annual testing.

The results of the programme since 1993 strongly indicate that the Norwegian cattle population is free from IBR/IPV infection (2).

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