



The surveillance programme for infectious bovine rhinotracheitis (IBR) and infectious pustular vulvovaginitis (IPV) in Norway 2021



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The surveillance programme for infectious bovine rhinotracheitis (IBR) and infectious pustular vulvovaginitis (IPV) in Norway 2021

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Summary

All samples tested in 2021 were negative for antibodies against bovine herpes virus (BHV-1).

Introduction

Infectious bovine rhinotracheitis and infectious pustular vulvovaginitis (IBR/IPV) is a disease 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. IBR/IPV is classified as a list 2 disease in Norway and is notifiable to the World Organisation for Animal Health (WOAH).

Norway has not experienced clinical outbreaks of infectious pustular vulvovaginitis since the early 1960s when there were two outbreaks of the disease in cattle. In 1993, animals in one single herd were found seropositive after primary testing of bulk milk samples. Clinical signs of IBR/IPV were not recorded and all animals on the farm were slaughtered. Attempts to isolate the virus from organ samples gave negative results. Contact herds and dairy herds in the same region were found serologically negative (1). Likewise, red deer that were shot in the neighbourhood during the hunting season the same year were found to be seronegative. Since then, no BHV-1 infections have been identified in Norway.

EFTA Surveillance Authority (ESA) has recognised Norway as free from IBR since 1994. Decisions concerning the additional guarantees related to IBR/IPV for bovines entering Norway, are described in ESA Decision 74/94/COL. Maintenance of the ESA Decisions acknowledging the IBR-free status of Norway requires annual reports of the surveillance of the disease.

The Norwegian Food Safety Authority was responsible for implementing the surveillance programme for IBR/IPV. The Norwegian Veterinary Institute was in charge of planning the programme, collecting the bulk milk samples from the dairies, and analysing the samples and interpreting the results. Blood samples from beef herds were collected by inspectors from the Norwegian Food Safety Authority at slaughterhouses.

Aim

The aim of the surveillance programme for IBR/IPV was to document freedom from the infection in Norway according to the demands in ESA Decision 74/94/COL with amendments, and to contribute to the maintenance of this favourable situation.

Materials and methods

The surveillance programme included both dairy and beef herds. The target population of dairy herds consisted of all cattle herds delivering milk to dairies during the sampling period. The target population of beef herds was all herds delivering cattle to slaughter in 2021.

Of the Norwegian dairy herds, 19.6% were randomly selected for sampling. From the beef cattle herds, individual blood samples from animals older than 24 months were collected at 18 slaughterhouses, with a maximum of five animals per herd and sampling day.

The dairies provided 1,406 bulk milk samples from 1,212 dairy herds. A total of 3,952 individual blood samples from 1,413 beef herds were received for analyses in pools (n =1,803). The sampled herds represented approximately 20.0% of the Norwegian cattle herds (Table 1).

Table 1: Numbers of dairy herds and beef herds sampled within the frame of the Norwegian surveillance programme for IBR/IPV in 2021.

Herd category	Cattle herds (total no. ¹)	Sampled herds (no. ²)	Sampled herds (%)
Dairy herds ³	6 905	1 212	17.6
Beef herds ⁴	5 927	1 413	23.8
Total	12 875	2 581	20.0

¹Based on data from the Register of production subsidies as of 1 March 2021.

²Combined beef cattle and dairy farms could be sampled under both herd categories. Number of unique farms is given as total number of sampled herds.

³Cattle herds delivering milk to dairies.

⁴Sampling performed at slaughterhouses.

Bulk milk samples were analysed using ID Screen IBR Milk Indirect (IDvet, Grabels, France). Samples with inconclusive and positive reactions were retested in duplicates. In case of positive or doubtful serological results, new blood samples/bulk milk samples from the suspected herd were collected and tested.

Blood samples (pooled or individual samples) were analysed using ID Screen IBR Indirect (IDvet, Grabels, France). In case of positive or inconclusive reactions in pooled blood samples, individual samples were retested. Individual samples with inconclusive or positive results were retested in duplicates using the same method and/or IDEXX IBR individual Ab test (IDEXX Laboratories, Maine, USA). In case of positive or doubtful results, new blood samples from the suspected herd were collected and tested.

Results

When screening the 1,406 bulk milk samples from dairy herds, one sample had a positive reaction, while the rest were negative. The positive sample was retested and gave negative results. In conclusion, all 1,212 dairy herds were negative for antibodies against BHV-1.

Out of 1,803 pooled blood samples, results from seven were doubtful and seven were positive (0.4%), while the remaining samples were negative. After testing the individual blood samples contributing to the doubtful and positive pools, eight herds were concluded to be negative. From five of the remaining six herds with positive or doubtful serological results, five new samples from each herd were collected and tested. The sixth herd had been discontinued and its cattle had been sold to three other farms. Ten samples from animals sold to one of these three farms, as well as bulk milk samples from the other two farms, were tested. In addition, the initial sample was sent to the Animal & Plant Health Agency (APHA Weybridge, Surrey, United Kingdom) to be tested by the serum neutralization test (SNT). All follow-up samples were negative. Thus, all herds included in the program were concluded to be negative for antibodies against BHV-1.

Table 2 shows the results of the testing during the period from 1993 to 2021.

Table 2: Numbers of samples and positive results of the surveillance programme for IBR/IPV in the Norwegian cattle population during the period 1993-2021

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

¹Sampling performed in the herds prior to 2011.

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

Discussion

All beef cattle and dairy herds tested in the 2021 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 are subject to compulsory testing each year.

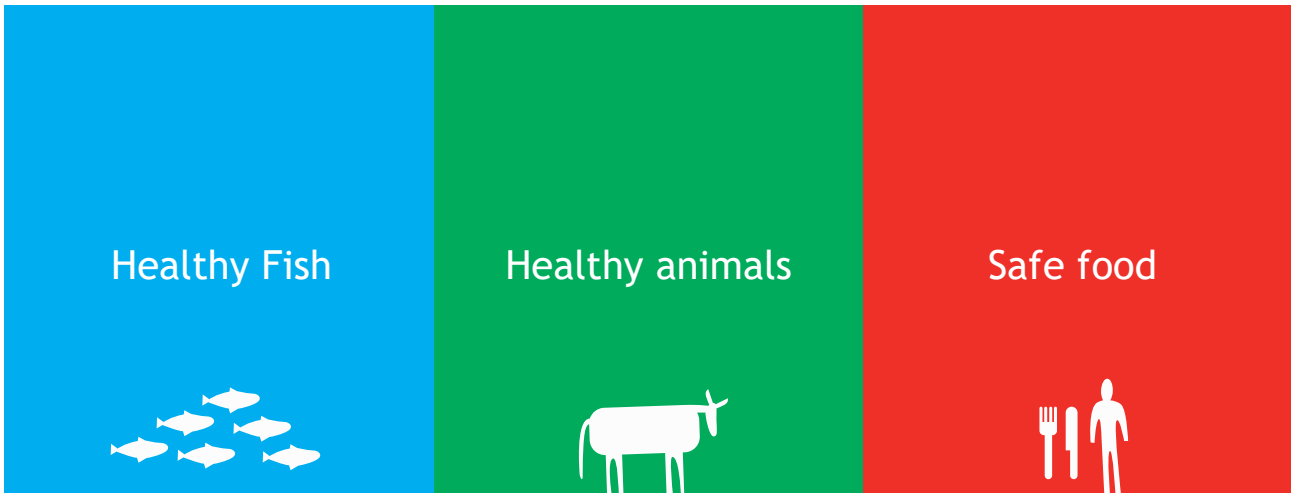
The results of the programme since 1993 strongly indicate that the Norwegian cattle population is free from IBR/IPV infection (4).

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