Annual Report

The surveillance programme for *infectious bovine rhinotracheitis* (IBR) and *infectious pustular vulvovaginitis* (IPV) in Norway 2016

Veterinærinstituttet
Norwegian Veterinary Institute

The surveillance programme for *infectious bovine rhinotracheitis* (IBR) and *infectious pustular vulvovaginitis* (IPV) in Norway 2016

Content

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Summary

All milk and blood samples tested in 2016 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 B disease in Norway and is notifiable to the Office International des Epizooties.

Norway has not experienced clinical outbreaks of infectious pustular vulvovaginitis since the early 1960s, when two outbreaks were diagnosed 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 seronegative. Later, BHV-1 infection has not been demonstrated in Norway.

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

The Norwegian Food Safety Authority was responsible for carrying out 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 performing the tests. 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 of cattle for IBR/IPV in 2016 included both dairy and beef herds. Bulk milk samples from the dairy herds were provided by the dairies, while beef cattle older than 24 months were sampled at 15 slaughterhouses, with a maximum of five animals per herd and day of sampling.

The target population of dairy herds consisted of all cattle herds delivering milk to dairies during the sampling period. In 2016, bulk milk samples from 1,179 randomly sampled dairy herds were tested. The target population of beef herds was all herds delivering cattle to slaughter in 2016. A total of 4,211 individual blood samples from 1,330 beef herds were analysed in pools. The sampled herds represented 20% of the Norwegian cattle herds. The number of herds in the surveillance programme for IBR/IPV in 2016 is given in Table 1.

All samples were tested for antibodies against bovine herpes virus 1 (BHV-1) using a commercial indirect enzyme-linked immunosorbent assay (ELISA; Boehringer Ingelheim Svanova, Uppsala, Sweden) at the

Norwegian Veterinary Institute in Sandnes. In case of any positive or dubious results, a serum neutralization test would be performed.

Table 1. Numbers of dairy herds and beef herds sampled within the frame of the Norwegian surveillance programme for IBR/IPV in 2016.

Herd category	Cattle herds (total no.[1])	Sampled herds (no.[2])	Sampled herds (%)
Dairy herds[3]	8 497	1 179	14
Beef herds[4]	4 276	1 330	31
Total	12 773	2 495	20

[1]Based on data from the Register of production subsidies as of 31 July 2016.
[2]Combined beef cattle and dairy farms could be sampled under both herd categories. Number of unique farms is given as total number of sampled herds.
[3]Cattle herds delivering milk to dairies.
[4]Sampling performed at slaughterhouses.

Results

All bulk milk samples and blood samples tested in 2016 were negative for antibodies against BHV 1.Table 2 shows the results of the testing during the period from 1993 to 2016.

Table 2. Numbers of samples and positive results of the surveillance programme for IBR/IPV in the Norwegian cattle population during the period 1993-2016.

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

[1]Sampling performed at slaughterhouses from 2011 to 2016.
[2]A small number of blood samples collected at slaughterhouses could originate from dairy herds.

Discussion

Up to 2008, a blocking ELISA (2), which had been evaluated in a retrospective analysis using a simulation model (3), was used for the surveillance programme for IBR/IPV. After participation in a proficiency testing scheme organized by the Veterinary Laboratories Agency Weybridge, New Haw, England, a commercial indirect ELISA replaced the previously used blocking ELISA. The new method was found better suited for testing bulk milk specifically.

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 a compulsory test 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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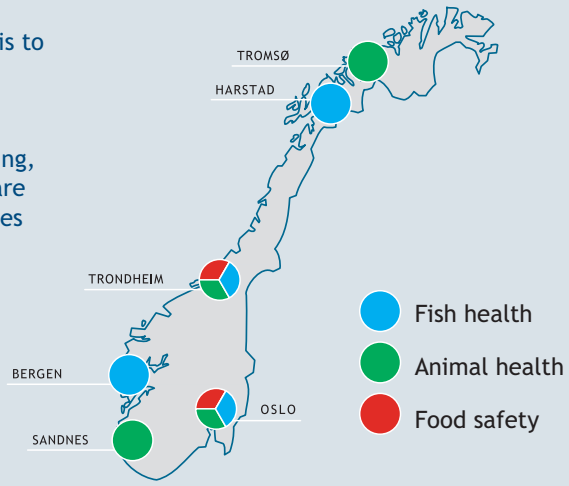

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