Surveillance and control programmes for terrestrial and aquatic animals in Norway
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The surveillance and control programme for infectious bovine rhinotracheitis (IBR) and infectious pustular vulvovaginitis (IPV) in Norway

Johan Åkerstedt
Attila Tarpai
Tormod Mørk

Editor Ann-Charlotte Karlsson
Technical editor Hanne Mari Jordsmyr
Scientific editors Hege Hellberg and Ståle Sviland
National Veterinary Institute

Veterinærinstituttet
National Veterinary Institute

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Publisher
National Veterinary Institute
PO Box 750 Sentrum
N-0106 Oslo
Norway

Fax: + 47 23 21 60 01
Tel: + 47 23 21 60 00
E-mail: vipost@vetinst.no
Homepage: www.vetinst.no

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All milk and blood samples tested in 2009 were negative for antibodies against bovine herpes virus (BHV-1).

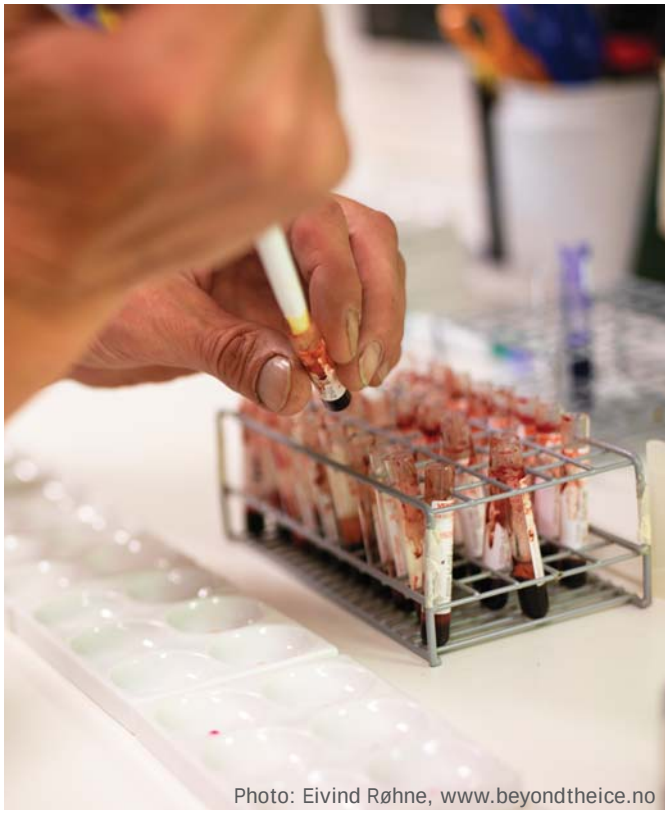

Photo: Eivind Røhne, www.beyondtheice.no

Introduction

In the early 1960s, two outbreaks of infectious pustular vulvovaginitis were diagnosed in cattle in Norway. Subsequently, no new cases of BHV-1 (infectious bovine rhinotracheitis/infectious pustular vulvovaginitis - IBR/IPV) were reported until 1993, when several animals in one single herd were found serologically positive after primary testing of bulk milk collected in 1992. However, clinical signs of IBR/IPV were never recorded on the farm. All animals on the farm were slaughtered. Attempts to isolate the virus from organ samples gave negative results. Sixteen contact herds and all dairy herds in the same region were serologically negative (1, 2). Likewise, 40 red deer that were shot in the neighbourhood during the hunting season the same year were serologically negative. After this incident, IBR/IPV virus 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 is responsible for carrying out the surveillance and control programme for IBR/IPV. The National Veterinary Institute is in charge of planning the programme, collecting the bulk milk samples from the dairies and performing the tests. Blood samples from beef herds are collected by inspectors from the Norwegian Food Safety Authority.

Aim

The aim of the surveillance and control programme for IBR/IPV is 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 2009 included both dairy and beef herds. Bulk milk samples from the dairy herds were provided by the dairies. From the beef herds, individual blood samples were collected on the farms from cattle older than 24 months.

The target population consisted of all cattle herds delivering milk to dairies during the sampling period. In 2009, bulk milk samples from 1,315 randomly sampled dairy herds were tested. The group of beef herds to be sampled was based on a register of all beef herds receiving governmental support according to recordings of July 2008. A total of 5048 individual blood samples from 435 beef herds were analysed in pools with a maximum of 10 samples in each. The sampled herds represented 11.0% of the Norwegian cattle herds (Table 1).

The number of herds in the surveillance and control programme for IBR/IPV in 2009 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; Svanova Biotech AB, Uppsala, Sweden) at the National Veterinary Institute in Sandnes. In case of any positive or dubious results, a serum neutralization test would be preformed.

Results

All bulk milk samples and blood samples tested in 2008 were negative for antibodies against BHV-1. Table 2 shows the results of the testing during the period from 1993 to 2009.

Discussion

Until 2008, a non-commercial blocking ELISA (2, 3) was used for the antibody testing, and the surveillance and control programme for IBR/IPV has been evaluated in a retrospective analysis using a simulation model (4). As a result of participating in a proficiency testing scheme at VLA, England, it was found that the indirect ELISA was better suited for testing bulk milk specifically, and the previous test was replaced with the commercial indirect ELISA from 2008.

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 1992/93 strongly indicate that the Norwegian cattle population is free from IBR/IPV-infection (2, 4, 5).

References

1. Tharaldsen J, Krogsrud J, Ødegaard Ø. Påvist besetningsinfeksjon med bovint herpesvirus 1 (BHV-1) [Herd infection with bovine herpes virus (BHV-1) detected, No]. Nor Vet Tidsskr 1993; 105: 363-4.

2. Nyberg O, Jarp J, Tharaldsen J. The surveillance and control programme for infectious bovine rhinotracheitis (IBR)/infectious pustular vulvovaginitis (IPV) in Norway. In: Fredriksen B, Mørk T (editors). Surveillance and control programmes for terrestrial and aquatic animals in Norway. Annual report 2001. Oslo: National Veterinary Institute; 2002. p. 67-73.

3. Nylin B, Strøger U, Rønsholt L. A retrospective evaluation of a bovine herpes virus-1 (BHV-1) antibody ELISA on bulk-tank milk samples for classification of the BHV-1 status of Danish dairy herds. Prev Vet Med 2000; 47: 91-105.

4. Paisley LG, Tharaldsen J, Jarp J. A retrospective analysis of the infectious rhinotracheitis (bovine herpes virus-1) surveillance program using Monte Carlo simulation models. Prev Vet Med 2001; 50: 109-25.

5. Grøneng G, Tharaldsen J, Åkerstedt J, Norström M. The surveillance and control programme for infectious bovine rhinotracheitis (IBR) and infectious pustular vulvovaginitis (IPV) in Norway. In: Brun E, Jordsmyr HM, Hellberg H, Sviland S, (editors). Surveillance and control programmes for terrestrial and aquatic animals in Norway. Annual report 2008. Oslo: National Veterinary Institute; 2009.

Photo: Johan Åkerstedt

Table 1. Numbers of dairy herds and beef herds within the frame of the Norwegian surveillance and control programme for IBR/IPV in 2009.

Herd category	Total no. of cattle herds*	No. of herds tested	% tested of the total no. of herds
Dairy herds	11,800	1,315	11.1
Beef herds	4,100	435	10.6
Total	**15,900**	**1,750**	**11.0**

* Based on data from the Register of production subsidies as of 31 July 2009.

Table 2. Samples in the surveillance and control programme for IBR/IPV in the Norwegian bovine population during the period 1993-2009.

	Dairy herds	Beef herds		
Year	No. of bulk milk samples tested	No. of beef herds sampled	No. of individuals tested	No. of positive samples
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	1,319	435	5,048	0

The National Veterinary Institute (NVI) is a nation-wide research institute in the fields of animal health, fish health, and food safety. The primary mission of the NVI is to give research-based independent advisory support to ministries and governing authorities. Preparedness, diagnostics, surveillance, reference functions, risk assessments, and advisory and educational functions are the most important areas of operation.

The National Veterinary Institute has its main laboratory in Oslo, with regional laboratories in Sandnes, Bergen, Trondheim, Harstad og Tromsø, with about 360 employees in total.

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The Norwegian Food Safety Authority (NFSA) is a governmental body whose aim is to ensure through regulations and controls that food and drinking water are as safe and healthy as possible for consumers and to promote plant, fish and animal health and ethical farming of fish and animals. We encourage environmentally friendly production and we also regulate and control cosmetics, veterinary medicines and animal health personnel. The NFSA drafts and provides information on legislation, performs risk-based inspections, monitors food safety, plant, fish and animal health, draws up contingency plans and provides updates on developments in our field of competence.

The NFSA comprises three administrative levels, and has some 1300 employees.

The NFSA advises and reports to the Ministry of Agriculture and Food, the Ministry of Fisheries and Coastal Affaires and the Ministry of Health and Care Services.

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