Veterinærinstituttet
Norwegian Veterinary Institute

Annual Report

The surveillance programme for bluetongue in Norway 2019

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The surveillance programme for bluetongue in Norway 2019

Content

Authors
Thea Blystad Klem, Johan Åkerstedt and Siv Klevar.

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Summary

All bulk milk samples tested in 2019 were negative for antibodies against bluetongue virus serotype 8.

Introduction

Bluetongue is a disease caused by Bluetongue virus (BTV) which comprises at least 26 serotypes (BTV 1-26). The virus is insect-borne and midges of genus *Culicoides* transmit BTV to susceptible ruminants, after being infected by feeding on viraemic animals. After replication in the insect's salivary glands, which depends upon ambient temperature, the virus can be transmitted to new vertebrate hosts. Therefore, infection has a seasonal occurrence (1).

In 2006 an outbreak of bluetongue serotype 8 (BTV 8) started in the Netherlands and rapidly spread among the ruminant population in the European countries the following years. A surveillance programme for BTV 8 based on bulk milk serology was conducted in 2008. Four cattle herds in the southern part of Norway were seropositive for BTV 8. After two years of comprehensive monitoring and surveillance of BTV 8 without any further discovery of infected herds, Norway regained free status for bluetongue. The surveillance programme for BTV could be reduced to a small programme based on bulk milk serology (2-4).

The Norwegian Food Safety Authority is responsible for carrying out the surveillance programme for bluetongue. The Norwegian Veterinary Institute is in charge of designing the programme, collecting the bulk milk samples from the dairies and performing the tests.

Aim

The aim of the surveillance programme for bluetongue is to document freedom from the infection in Norway according to the demands in Regulation (EC) No.1266/2007, Annex 1.1.2, and to contribute to the maintenance of this favourable situation.

Materials and methods

The target population of dairy herds consisted of all cattle herds delivering milk to dairies during the sampling period in November, after the end of the vector season. Bulk milk samples were collected from 544 dairy herds from counties in the southern part of Norway. The number of herds per county and the number of herds tested in the surveillance programme for bluetongue in 2019 is given in Table 1.

Table 1. Number of dairy herds in selected counties and numbers of dairy herds tested in the surveillance programme for bluetongue in Norway in 2019.

County	Number of dairy herds*	Number of dairy herds tested
Østfold	123	97
Oslo & Akershus	117	92
Hedmark	473	13
Buskerud	159	8
Vestfold	60	21
Telemark	80	15
Aust-Agder	82	51
Vest-Agder	205	111
Rogaland	1 141	136
Total	2 440	544

* Based on data from the Register of production subsidies as of 1 October 2019.

The samples were tested with an Indirect ELISA (ID Screen® Blue Tongue Milk) for detection of antibodies against BTV. Samples with inconclusive or seropositive ELISA results were retested in duplicate with the same ELISA. In case of positive bulk milk test, blood samples from all lactating dairy cows in the herd would be examined for antibodies with the ID Screen® Bluetongue Competition ELISA. In case of seropositive animals, all animals in the herd would be examined for BTV with real time RT-PCR (5).

The samples were analysed at the Norwegian Veterinary Institute.

Results and discussion

Of 550 bulk milk samples submitted from 544 farms in 2019, none tested positive for BTV. The agent has not been detected in Norway since 2009 (6), i.e. the population of dairy cattle has no antibodies against BTV.

Cattle are efficient sentinel animals for bluetongue. Most dairy cattle have to be kept outdoors, at least eight weeks during the summer, making their exposure to midges not very different from the exposure of beef cattle to the vector. Because both dairy and beef cattle are kept outdoors in the same geographical areas, beef cattle are not included in the programme.

The most likely method of bluetongue introduction to Norway would be either by import of infected animals or by airborne transfer of infected *Culicoides* (7). Imports of ruminants from EU countries not free from bluetongue, and all imports from countries outside EU, are tested for the disease. The topography in Norway with hills and valleys makes it difficult for long distance transfer of *Culicoides* from one local area to another and there are relatively few ruminants per area compared to the rest of Europe, which makes it less likely for a widespread of the agent if BTV should be reintroduced.

The most important purpose of the surveillance programme is to reveal potential infections brought in with airborne midges during the vector season. The most probable entry of windborne infected midges is in the southern part of Norway from the beginning of May until the end of October. Infected midges may come from Sweden, Denmark or Scotland. Testing of bulk milk collected from the end of October and onwards will detect infection introduced during the vector season.

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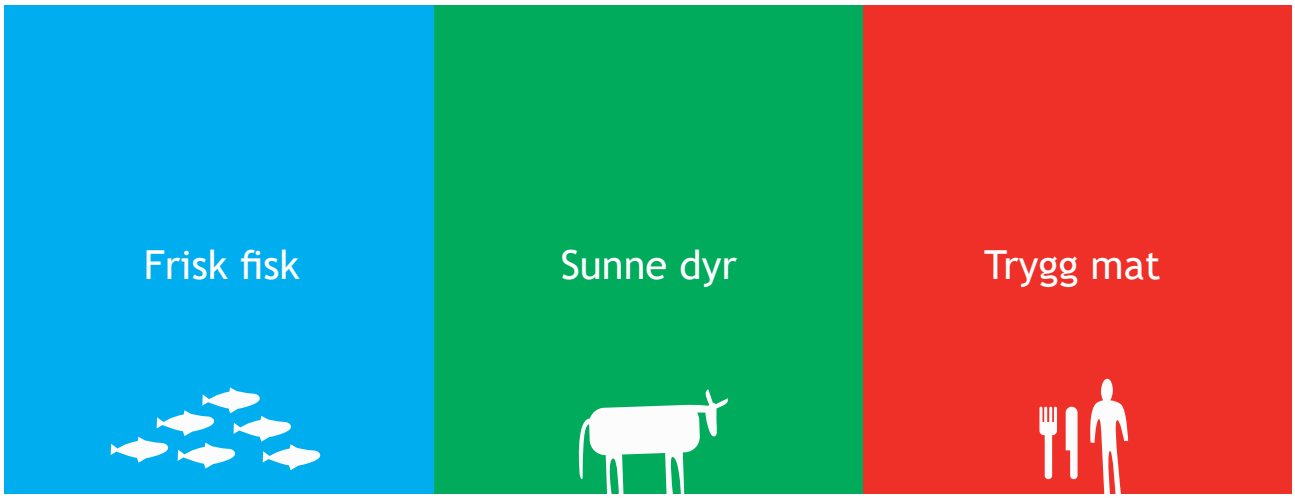

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Veterinærinstituttet
Norwegian Veterinary Institute

Oslo Trondheim Sandnes Bergen Harstad Tromsø

postmottak@vetinst.no
www.vetinst.no