



The surveillance programme for bluetongue in Norway 2020



REPORT 9/2021

The surveillance programme for bluetongue in Norway 2020

Authors

Thea Blystad Klem, Johan Åkerstedt and Siv Klevar.

Suggested citation

Klem, Blystad Thea, Åkerstedt, Johan, Klevar, Siv. The surveillance programme for bluetongue in Norway 2020. Surveillance program report. Veterinærinstituttet 2021. © Norwegian Veterinary Institute, copy permitted with citation

Quality controlled by

Merete Hofshagen, Director of Animal Health, Animal Welfare and Food Safety, Norwegian Veterinary Institute

Published

2021 on www.vetinst.no

ISSN 1890-3290 (electronic edition)

© Norwegian Veterinary Institute 2021

Commissioned by / In collaboration with

Norwegian Food Safety Authority



Colophon

Cover design: Reine Linjer

Cover photo: Colourbox

www.vetinst.no

Content

Summary	3
Introduction	3
Aim	3
Materials and methods	4
Results and discussion.....	4
References.....	5

Summary

All bulk milk samples tested in 2020 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 caused by serotype 8 (BTV 8) started in the Netherlands and rapidly spread among the ruminant population in European countries the following years. Therefore, a surveillance programme for BTV 8 based on bulk milk serology was conducted in Norway in 2008, and four cattle herds in the southern part of Norway were found 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. After that, the surveillance programme for BTV has been a less comprehensive programme based on bulk milk serology (2-4).

The Norwegian Food Safety Authority is responsible for implementing 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 486 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 2020 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 2020.

County	Number of dairy herds*	Number of dairy herds tested
Oslo	2	1
Viken	393	89
Innlandet	1 362	15
Vestfold og Telemark	138	40
Agder	280	103
Rogaland	1 094	238
Total	3 269	486

* Based on data from the Register of production subsidies as of 1 October 2020.

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

Results and discussion

Of 500 bulk milk samples submitted from 486 farms in 2020, 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.

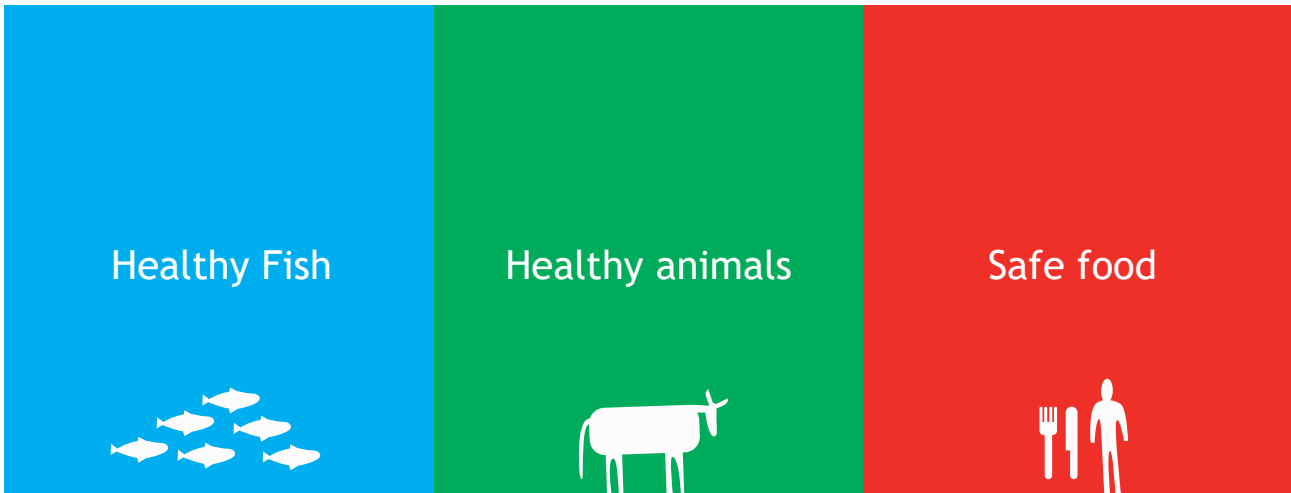
The most likely method of bluetongue introduction to Norway would be either by import of infected animals or by airborne transfer of infected *Culicoides* (7). Imports of ruminants from EU countries not free from bluetongue, and all imports from countries outside EU, will be tested for the disease. The number of imported animals from either of these areas are very low or zero most years and the last import of live ruminants was in 2018. 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.

References

1. Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 2.1.3 Bluetongue and epizootic haemorrhagic disease. Paris: Office International des Epizooties (OIE); Web version adopted May 2014 (http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/3.01.03_BLUETONGUE.pdf).
2. Hamnes IS, Hopp P, Høgåsen HR, Jor E, Mørk T, Sviland S, Tollersrud T. Blåtunge i Norge – status og risikovurdering per 5. mai 2009. Veterinærinstituttets rapportserie 06-2009. Oslo: Veterinærinstituttet; 2009.
3. Sviland S, Åkerstedt J, Håland KS, Klevar S, Mørk T. Overvåkingsprogrammet for blåtunge 2009 - En vurdering. Veterinærinstituttets rapportserie 02-2010. Oslo: Veterinærinstituttet; 2010.
4. Sviland S, Kjeang T. Bluetongue serotype 8 outbreak in Norway. Surveillance and monitoring of ruminants and vectors in the years 2007 to 2010. Norwegian Veterinary Institute`s Report series 6-2011. Oslo: Norwegian Veterinary Institute; 2011.
5. Shaw AE, et al. Development and initial evaluation of a real-time RT-PCR assay to detect bluetongue virus genome segment 1. *J Virol Methods*. 2007; 145(2):115-26.
6. Klem TB, Åkerstedt J, Klevar S. The surveillance programme for bluetongue in Norway 2020. Surveillance program report. Oslo: Norwegian Veterinary Institute 2021.
7. Burgin I, Murkin P, Gloster J. 2009. Meteorological analysis of the introduction of Bluetongue to Norway in summer/autumn 2008: Second report 11 May 2009.



*Scientifically ambitious, forward-looking
and collaborative- for one health!*



Veterinærinstituttet
Norwegian Veterinary Institute

Ås

Trondheim

Sandnes

Bergen

Harstad

Tromsø

postmottak@vetinst.no
www.vetinst.no