

The surveillance programme for caprine arthritis encephalitis (CAE) in Norway 2015



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The surveillance programme for caprine arthritis encephalitis (CAE) in Norway 2015

Tore Tollersrud, Annette H. Kampen, Siv Klevar, Attila Tarpai

No new positive flocks were identified in 2015. Two flocks being positive in 2014 were also positive in 2015.

Introduction

Caprine arthritis encephalitis is caused by a small ruminant lentivirus (SRLV) - Caprine Arthritis Encephalitis Virus (CAEV) which is closely related to the maedi-visna virus (MVV). SLVR infections in small ruminants are classified as list B diseases in Norway, and as listed diseases by the Office International des Epizooties.

Caprine arthritis and encephalitis (CAE) virus infection is manifested clinically as polyarthritis in adult goats and less commonly as progressive paresis (encephalomyelitis) in kids. Subclinical or clinical interstitial pneumonia, indurative mastitis, and chronic wasting have also been attributed to infection with this virus. Most CAE virus infections, however, are subclinical. Infection with CAEV decreases the lifetime productivity of dairy goats.

Sheep can get infected by CAEV and seroconvert if they are in close contact with infected goats or are fed CAEV infected milk. Clinical disease is not observed in sheep.

The Norwegian dairy organisation (TINE) and the Norwegian Goat Health Services have conducted an eradication programme, "Healthier goats" for three widespread infectious diseases in goats. The programme started in 2001 and initially focused on caprine arthritis encephalitis and caseous lymphadenitis, and from 2004 paratuberculosis was included. More than 600 goat herds have been included in the project which ended in 2014.

The surveillance programme for CAE was established in 2014.

Aim

The aims of the surveillance programme for CAE are to document the status for CAE virus infection in small ruminants in Norway and to identify infected flocks for disease control.

Materials and methods

The surveillance programme is based on serological examination of sheep and goats, and all animals (sheep and goats) above 1 year of age should be sampled. Herd criteria for submission of samples are: i) a clinical picture indicating CAE disease, ii) flocks with previous CAEV antibodies and iii) contact flocks to CAEV positive herds (follow-up).

The samples were examined for antibodies against CAE-virus with the ELISA IDEXX MVV/CAEV p28 Ab Verification Test (IDEXX Laboratories, Maine, USA) or ELISA or ID Verification® MVV / CAEV Indirect ELISA (ID.vet). Samples with inconclusive or positive ELISA results were retested in duplicate with the same ELISA and/or with another ELISA.

Results

In 2015, blood samples from 214 sheep and 95 goats from eight flocks were analysed. Five goats and two sheep from two flocks were positive (Table 1). Both positive flocks were follow-up flocks from 2014, hence no new flocks were concluded as positive for CAE in 2015.

In 2014, blood samples from 1106 sheep and 92 goats from 23 herds were analysed. Antibodies against CAEV were detected in samples from one goat and 11 sheep from four flocks.

Table 1. The results within the frame of the Norwegian surveillance programme for CAE 2014 - 2015.

| Year | Analysed no. of flocks | Analysed no. of sheep | Analysed no. of goats | No. of positive flocks | No. of positive sheep | No. of positive goats |
|------|------------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|
| 2014 | 23 | 1106 | 92 | 4 | 11 | 1 |
| 2015 | 8 | 214 | 95 | 2 | 2 | 5 |

Discussion

A serological investigation in 1996 showed that 86% of investigated sheep flocks were positive for CAEV (1). The virus was described in 1974 (2), and has probably been widespread in the goat population in Norway for decades.

CAE became a notifiable disease (B) in Norway in 2011. The disease in dairy goats was managed by the project “Heathier Goats” till 2014 (3), while The Norwegian Food Safety Authority is now responsible for the control and eradication of all SRLV infections.

The results from 2015 indicate that CAV is now a minor problem in Norwegian sheep and goat herds.

There are approximately 290 dairy goat herds and 700 other flock of goats in Norway. Since 2014 only milk from herds certified free from CAE can be delivered to dairies, and the whole dairy goat population is now free from CAE.

References

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The Norwegian Veterinary Institute (NVI) is a nationwide biomedical research institute and Norway's leading centre of expertise regarding biosafety in aquatic and terrestrial animals. The aim of the Institute is to become Norway's contingency centre of preparedness for One Health.

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 Institute has its main laboratory in Oslo, with regional laboratories in Sandnes, Bergen, Trondheim, Harstad and Tromsø, with about 330 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 two administrative levels, five regions in addition to the head office, and has some 1250 employees. The NFSA advises and reports to the Ministry of Agriculture and Food, the Ministry of Trade, Industry and Fisheries and the Ministry of Health and Care Services.

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