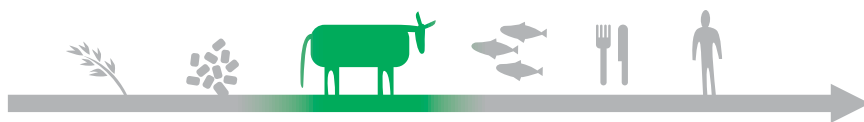


# The surveillance programme for footrot in Norway 2016



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## Summary

In 2016, approximately 120,000 sheep were inspected for footrot. A total of 186 animals originating from 83 different flocks were examined by PCR. Virulent strains of the bacterium *D. nodosus* were not detected in any sheep.

## Introduction

Ovine footrot is an infectious disease of sheep and is caused by the bacterium *Dichelobacter nodosus*. The severity of disease varies and is dependent on the breed of sheep, environmental factors and bacterial strain. *D. nodosus* strains are divided into so-called benign and virulent strains. In Norway, disease caused by virulent strains (severe footrot) is a notifiable disease (List B). The control of this disease is enforced by government legislation and restrictions on animal movement.

Since 1948, footrot had not been detected in Norway until the bacterium was detected in a single herd with lameness in 2008. Clinical footrot was detected in other flocks later the same year. All sheep flocks in the counties of Rogaland, Aust-Agder and Vest-Agder, more than 250,000 animals, were then included in the project “Turn the sheep” launched by the industry. *D. nodosus* was detected by PCR in more than 500 flocks, but at that time no laboratory methods were available in Norway to differentiate between benign and virulent strains.

In 2009, the project “Healthy feet” was launched as a collaborative project between the industry, the Norwegian Food Safety Authority and the Norwegian Veterinary Institute. The goal was to eradicate severe ovine footrot in Norway. The project terminated end 2014. In this project, more than 400,000 examinations of sheep originating from approximately 4,500 flocks were performed in the field, and approximately 190,000 animals were inspected at slaughterhouses (1).

A national surveillance programme for footrot in sheep was established in 2014 (based on methods already used in the “Healthy feet” project). In addition to the surveillance programme (2), footrot is also sometimes detected via clinical investigations. Any positive finding is followed up, and contacts are traced.

## Aim

The aim of the surveillance programme for ovine footrot is to detect flocks with virulent strains of *D. nodosus* in sheep.

## Materials and methods

The feet of approximately 120,000 sheep were inspected by specially trained staff at six slaughterhouses in Southern Norway. There were 144 inspection days at five slaughterhouses in areas where footrot had occurred, i.e. the Counties of Rogaland and Aust-Agder. In addition, six inspection days were used at one abattoir situated in the County of Buskerud.

Samples were collected from sheep feet showing clinical signs in agreement with footrot. Normally three samples were collected from the same flock to secure the diagnosis, normally by sampling two feet of the first animal with symptoms and one foot from another animal. In addition, two samples should be collected each inspection day if no sheep with clinical signs was found at the slaughterhouses situated outside the county of Rogaland.

Samples were analysed using a 16S rRNA real-time PCR for the detection of *D. nodosus*, and positive samples were further analysed using a duplex real-time PCR to differentiate between benign and virulent strains of *D. nodosus*.

## Results

A total of 253 different samples from 186 animals originating from 83 different flocks were examined by PCR. Virulent strains of *D. nodosus* were not detected in any sheep.

**Table 1.** Number of inspection days at abattoirs and number of samples examined with PCR and the corresponding result for the Norwegian surveillance programme for virulent footrot in sheep.

Year	N°. of inspection days at abattoirs	Estimated N°. of inspected carcasses	N°. examined by PCR		Positive	
			Animals	Samples	Animals	Flocks
2014	150	121 000	150	172	0	0
2015	150	92 500	221	310	6	3
2016	150	120 000	186	253	0	0

## Discussion

No detection of virulent strains of *D. nodosus* in the slaughterhouse-based surveillance in 2016 indicate that the occurrence of severe footrot is low, and that the probability of the disease being spread outside Rogaland and Aust-Agder is very low (3).

Two other flocks were diagnosed with severe footrot in 2016. Both were situated in areas in which there had been previous cases of footrot, and both reported lameness to their veterinarians. It is important to have continued awareness of footrot in a clinical setting as well as to continue the active surveillance in order to reach the goal of eradicating virulent footrot from Norway.

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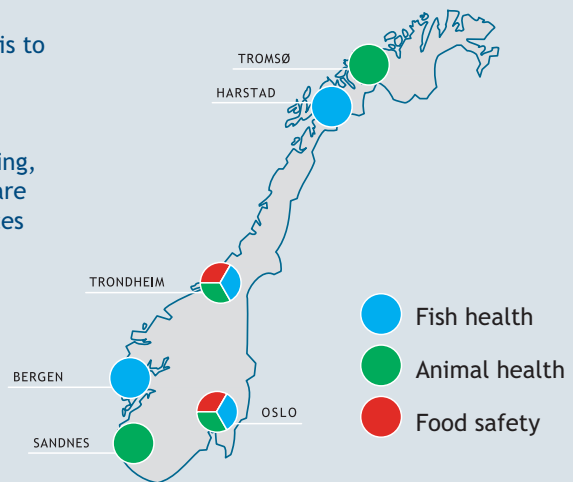
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