

POSTER PRESENTATION

Open Access

# Haemonchosis in a sheep flock in North Finland

Saana-Maaria Manninen\*, Antti Oksanen

From Parasite infections of domestic animals in the Nordic countries – emerging threats and challenges. The 22nd Symposium of the Nordic Committee for Veterinary Scientific Cooperation (NKVet) Helsinki, Finland. 7-9 September 2008

## Background

In May 2008 two sheep from a farm in Ylikiihinki (65°N 26°E) were autopsied at Finnish Food Safety Authority Evira in Oulu and diagnosed with a *Haemonchus contortus* infection. *Haemonchus contortus* has a few years ago been reported on the island of Hailuoto just outside Oulu, where it led to a lethal infection. Although this to sheep highly pathogenic nematode has been detected in Finland already in 1933 by Agnes Sjöberg [1], it has apparently never been reported so far up north in Finland. In Sweden *H. contortus* has almost reached the Arctic Circle [2]. It does not survive the Nordic winter on pasture, but with almost 100 % arrested development in the early fourth larval stage it is capable of surviving the Nordic winter within its host [3].

The farm the infected sheep originated from is a small sheep farm with also a few goats and other domestic animals such as horses, turkeys and rabbits. They had bought their first sheep in November 2006, part of the ewes being pregnant at time of purchase and lambed in January. The sheep are of Finnish race, Texel-Oxford, Kainuu grey and cross-breeds. In the winter the sheep are housed in an approximately 150 m<sup>2</sup> barn with thick straw bedding and access to a corral sized about 500 m<sup>2</sup>. Grazing grounds from May until snowfall (in October) consists of approximately 4 ha of pasture and 1 ha of mixed forest. According to the owner the totally about 35 sheep and 4 goats mainly used the pasture grass as their nutrition, but were also given hay in round bales, when the feeding area became very contaminated with faeces. The drinking water was accessible in the nearby river Kiiminkijoki. The animals were treated with fenbendazole in the autumn of 2007.

In the spring of 2008 many of the sheep (age 1+) became weak and developed an oedema under the jaw.

Two of these animals (one died and one shot) were autopsied and the rest of the ones with symptoms were killed and buried. The autopsy findings included oedema under the jaw, paleness due to anemia and abomasitis caused by a severe parasite infection.

## Materials, methods and results

Contents of the abomasum were rinsed into 2L of water and a 200 mL sample was collected, the adult worms collected, counted and identified. In one of the sheep 300 abomasal nematodes were found, where of 90 % were identified as *Haemonchus contortus*, the rest being *Teladorsagia circumcincta*. In the faecal flotation using a modified McMaster method an egg count (epg) of 5880 was counted and eggs identified as Trichostrongylidae spp. The other animal had a more severe infection, and approximately 1600 adult worms were found in the abomasum, also with 90 % *H. contortus* and 10 % *T. circumcincta*. The results of the faecal egg count for this individual were following: Trichostrongylidae spp. 36 000 EPG, *Strongyloides* sp. 400 epg and *Eimeria* sp. 2040 oocysts per gram faeces.

## Discussion

The results indicate that *Haemonchus contortus* is becoming a potential threat to sheep in North Finland and the distribution of the nematode should be monitored. The parasite is hereby proven to cause very severe disease in the North Ostrobothnian sheep production. Considering the effects of the climate change, that can be very affirmative for *H. contortus* life cycle, and the increasing amount of sheep in North Finland [4], the occurrence of this parasite in these latitudes should not be left without attention. Moreover, it may be transmitted to other species such as reindeer [5]. In case of an infection with *H. contortus*, the flock could be recommended treatment with a macrocyclic lactone antoparasitics, as eradication of the parasite on an

Finnish Food Safety Authority (FINPAR), Evira Fish and Wildlife Research Unit, Oulu, Finland

individual farm possible with correct administration of anthelmintics in the winterperiod when the animals are housed [6].

Published: 13 October 2010

#### References

1. Sjöberg-Klaavu A: Om nematoder i matsältningsorganen hos får i Finland. [About nematodes in the gastrointestinal tract in sheep in Finland]. 4. *Nordiska veterinärmötet, section IX* Helsingfors, Tilgmanns tryckeri, (In Swedish).
2. Lindqvist Å, Ljungström B-L, Nilsson O, Waller PJ: The dynamics, prevalence and impact of nematode infections in organically raised sheep in Sweden. *Acta vet. scand* 2001, **42**:377-389.
3. Waller PJ, Rudby-Martin L, Ljungström BL, Rydzik A: The epidemiology of abomasal nematodes of sheep in Sweden, with particular reference to over-winter survival strategies. *Veterinary Parasitology* 2004, **122**:207-220.
4. TE-keskus: **Statistics**. 2008, Available online: <http://www.te-keskus.fi/Public/download>. [Accessed 20. July 2008].
5. Hrabok JT, Oksanen A, Nieminen M, Rydzik A, Ugglä A, Waller PJ: Reindeer as hosts for nematode parasites in sheep and cattle. *Veterinary Parasitology* 2006, **136**:297-306.
6. Waller PJ, Rydzik A, Ljungström BL, Törnquist M: Towards the eradication of *Haemonchus contortus* from sheep flocks in Sweden. *Veterinary Parasitology* 2006, **136**:367-372.

doi:10.1186/1751-0147-52-S1-S19

Cite this article as: Manninen and Oksanen: Haemonchosis in a sheep flock in North Finland. *Acta Veterinaria Scandinavica* 2010 **52**(Suppl 1):S19.

Submit your next manuscript to BioMed Central  
and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at  
[www.biomedcentral.com/submit](http://www.biomedcentral.com/submit)

