



Prevalence of gastrointestinal helminths, lungworms and liver fluke in sheep and goats in Norway

Atle V. Meling Domke^{a,*}, Christophe Chartier^b, Bjørn Gjerde^c, Nils Leine^d, Synnøve Vatn^e, Snorre Stuen^a

^a Norwegian School of Veterinary Science, Sandnes, Norway

^b LUNAM Université, ONIRIS, Nantes-Atlantic College of Veterinary Medicine, Food Science and Engineering, UMR 1300 BIOEPAR, Nantes F-44307, France

^c Norwegian School of Veterinary Science, Oslo, Norway

^d Norwegian Goat Health Service, Oslo, Norway

^e Animalia, Norwegian Sheep Health Service, Oslo, Norway

ARTICLE INFO

Article history:

Received 20 March 2012

Received in revised form

29 November 2012

Accepted 11 December 2012

Keywords:

Gastrointestinal helminths

Lungworms

Liver flukes

Sheep

Goat

Norway

ABSTRACT

The present study describes the occurrence of various gastrointestinal helminths, lungworms and liver flukes in Norwegian sheep and goats as assessed from faecal samples and post mortem examinations performed between 2007 and 2010. Faecal samples for gastrointestinal nematode egg counts were collected from 77 sheep flocks and 30 dairy goat flocks from three geographical regions in Norway. Additionally, thirty-two lambs and 16 adult goats were euthanized for necropsy examination and for identification of adult gastrointestinal nematodes and tapeworms, lungworms and liver flukes. The survey showed that there was a higher mean excretion of trichostrongyle eggs in sheep than in goats at the individual level (392 EPG vs. 154 EPG, $p < 0.001$). For both host species, the mean prevalence and intensity of excreted trichostrongyle eggs were significantly higher in the southern coastal region compared with the inland and northern regions ($p < 0.001$). Third stage larvae of *Trichostrongylus/Teladorsagia*, *Haemonchus* and *Nematodirus* type were the most prevalent ones in the coprocultures from sheep, whereas larvae of *Trichostrongylus/Teladorsagia* and *Nematodirus* type dominated in goats. The most prevalent gastrointestinal nematode species found at necropsy was *Teladorsagia circumcincta* (75.0 and 81.2% respectively in sheep and goats), while the largest mean worm burdens were recorded for *Haemonchus contortus* in sheep (724 ± 623) and *T. circumcincta* in goats (377 ± 529). Other gastrointestinal nematode species were present at low prevalence or in low numbers.

Fasciola hepatica was only found in necropsied sheep from the coastal region with a prevalence of 18.8%. The lungworm *Mullerius capillaris* was found from all regions in necropsied goats (31.2%) and from coastal area in sheep (3.1%). The present study indicates that *H. contortus* and *Nematodirus battus* have a wider geographical distribution to the north than expected, and describes to our knowledge the northernmost occurrence of *H. contortus* in the Nordic countries.

© 2013 Elsevier B.V. All rights reserved.

1. Introduction

In Norway, small ruminant farming is a sustainable production system adapted to local ecological and economic constraints (Austrheim et al., 2008). The main regions for small ruminant farming are the coastal and inland regions

* Corresponding author. Tel.: +47 51603510; fax: +47 51603509.
E-mail address: Atle.Domke@nvh.no (A.V.M. Domke).

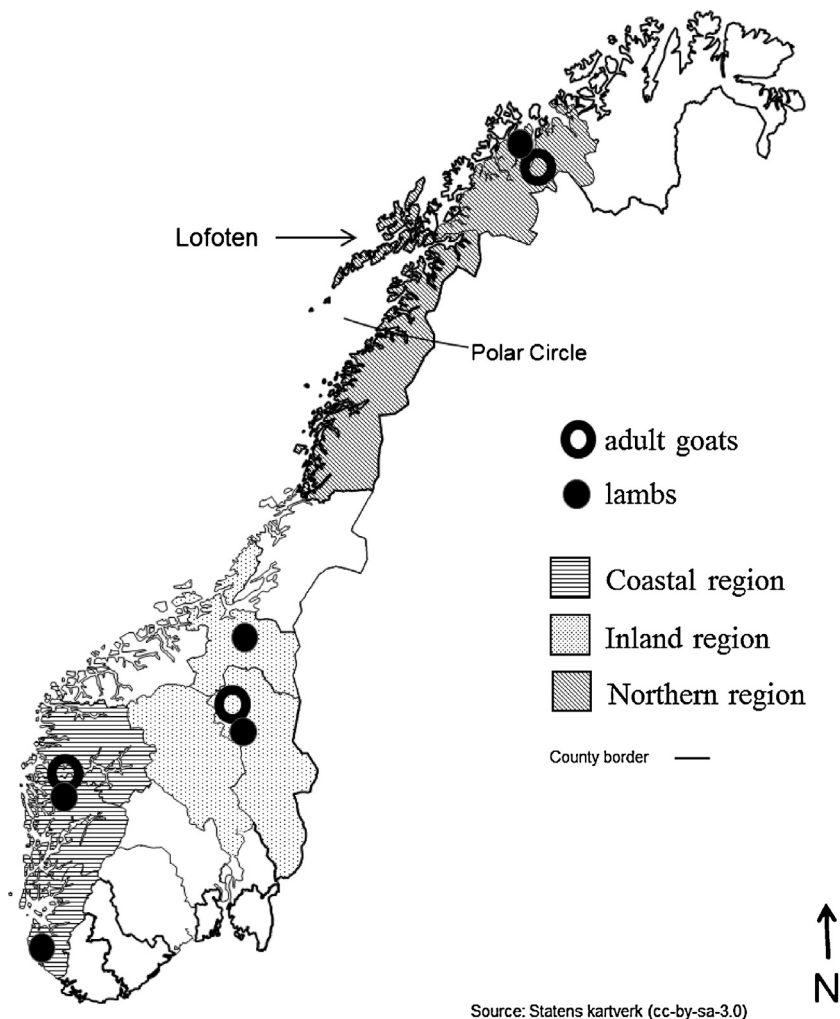


Fig. 1. Map of Norway showing the three sampling regions for FEC and FECRT, and the area and type of animals for the necropsy examination.

in southern Norway and Troms and Nordland counties in northern Norway (Fig. 1). These three regions include 26%, 40% and 14% of all sheep in Norway and 17%, 28% and 35% of all dairy goats, respectively (Statistics Norway, 2011). Due to climatic, geographical and farm management differences (Domke et al., 2011), a marked variation in the helminth population is to be expected. As an example, the Nordic climate may represent the northern distribution limit for parasites such as the red stomach worm, *Haemonchus contortus* (Waller et al., 2004).

Several species of nematodes may cause clinical or production problems in small ruminant flocks in Norway (Gjerde, 2011). For instance, *Nematodirus battus* has spread to many regions of Norway after being introduced to Rogaland County (coastal region) from the United Kingdom in the late 1950s (Helle, 1969). However, the precise geographical distribution of this parasite is still unknown. Other nematodes, such as *H. contortus*, normally survive the Nordic winter inside animals, and has a marked spring rise in egg production that may cause severe contamination of early pastures (Waller et al., 2004). In Sweden, *H. contortus* has been recorded as far north as the Polar

Circle (66.33°N, 42.5°E) (Lindqvist et al., 2001). This species appears to be largely confined to the coastal and lowland regions of southern Norway, but no extensive survey of its distribution has been carried out (Gjerde, personal information).

Information concerning the helminth fauna in small ruminant flocks in Norway dates more than 40 years back, and is limited to only a few flocks from a few geographical areas (Helle, 1971a, 1971b, 1971c; Køller, 1982; Naerland, 1948). The assessment of the geographical distribution of the main digestive helminths, in particular those having a potential impact on small ruminants productivity and welfare, is an essential first step in order to possibly adapt the control measures to the local epidemiology and to avoid unnecessary drug treatments that could increase the development and spread of anthelmintic resistance (Coles and Roush, 1992).

The aim of the present study was to describe the prevalence and distribution of helminth species in grazing sheep and goats in Norway through faecal egg counts, coprocultures and post mortem examinations.

Download English Version:

<https://daneshyari.com/en/article/5804070>

Download Persian Version:

<https://daneshyari.com/article/5804070>

[Daneshyari.com](https://daneshyari.com)