Abattoir countrywide survey of dairy goats' haemonchosis in Greece and associated risk factors

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Objectives

The objectives of the present study were:

(a) to determine the **prevalence of haemonchosis** in dairy goats, based on the post-mortem examination **in abattoirs** of Greek territory, and

(b) to link it with potential **host-related traits** such as the age and the sex and **farm-related traits** such as the altitude of the farm, the farming system, the co-existence of goats with sheep in the same flock, the season and the type of anthelmintic treatment used on the occurrence of haemonchosis.

Materials and Methods

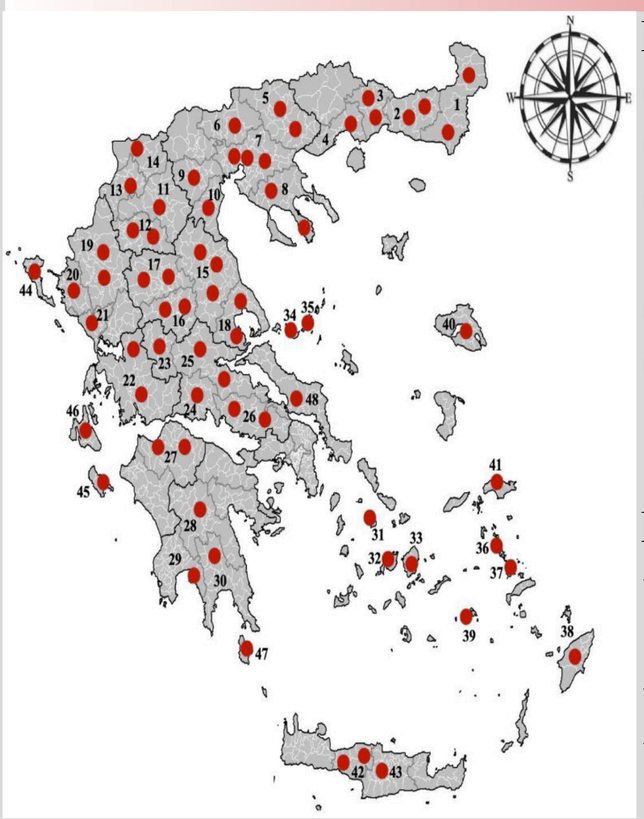

Fig. 1 Location of the abattoirs around Greece

Methodology of the present study

- A countrywide study was conducted between 2018-2020 (Fig. 1).
- **431 goats' abomasa** were examined for adult *Haemonchus* spp.
- A positive sample was defined by the presence of, at least, one adult nematode parasite on the mucosa of the abomasum.
- A **questionnaire** was used to obtain information (Fig. 2).
- A binary logistic regression model was used to assess the potential risk factors on the occurrence of haemonchosis.

Molecular identification of *Haemonchus* spp.

- *Haemonchus* helminths were collected (15 helminths/abomasum) and used for molecular species identification.
- For DNA extraction, **5595 adult *Haemonchus*** spp. were used.
- A fragment of 321 base pairs of the **internal transcribed spacer 2 sequence (ITS2)** of nuclear DNA was amplified.
- Working conditions were described by Arsenopoulos et al. 2024.

1. Abattoir Information	
Location of theabattoir	
Visit day	
Season	Spring Summer Autumn Winter
2. Animals Information	
Age	<2 months 2–15 months >15 months
Sex	Male Female
Species	Sheep Goat
3. Farm Information	
Management system	Semi-intensive Intensive
Altitude	<300 m a.s.l. >300 m a.s.l.
Co-existence of sheep and goats	Single-species farming Mixed-species farming
Anthelmintic treatment	Exclusively pro/benzimidazoles Exclusively macrocyclic lactones Combination of pro/benzimidazoles and macrocyclic lactones No anthelmintic treatment

a.s.l.: above sea level.

Fig. 2 Categorized data included in the questionnair

Results

Molecular identification of *Haemonchus* spp.

The molecular identification of the collected helminths revealed that only the species *Haemonchus contortus* was present.

Prevalence of *Haemonchus contortus* infection

The prevalence of *H. contortus* infection was 32%.

Risk factors of goats infected by *Haemonchus contortus*

A marked **reduction** of *H. contortus* infection in dairy goats was observed under the following conditions:

(1) animals treated with **macrocyclic lactones** or in combination with **pro/benzimidazoles**.

(2) farms operating during **spring and summer** months.

(3) farms located at **altitude over 300 m** above sea level.

(4) farms following the standards of the **intensive management system**.

Conclusions