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Gastrointestinal and pulmonary parasites in small ruminants in northeast Portugal – *What´s up doc?!* A case herd study –

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The breeding of small ruminants in northeast Portugal is largely based on a traditional production system, mainly on semi-extensive grazing and direct use of existing natural resources.

Gastrointestinal and pulmonary parasite infections are particularly important, as they can have impact on animal health and welfare, as well as on productivity, and therefore be responsible of economic losses including: delayed growth, weight loss, decreased fertility levels, and also rejections at slaughterhouse.

To act on the prophylaxis, one first should have a detailed knowledge of the parasite species involved, as well as their prevalence, in order to plan prevention and control strategies.

Samples were analysed to monitor the burden and prevalence of gastrointestinal and pulmonary parasites in two autochthonous sheep (Fig. 2) and goat (Fig. 3) breed herd, with similar farm management, and sharing the same graze field.

Coprological qualitative and quantitative analysis (flotation, natural sedimentation, Mini-Flotac (Fig. 1) and Baermann technique) were done in two moments, February and April of 2024, to fifteen animals in each flock.


Fig. 1 Mini-Flotac

The eggs/oocysts genera morphologically identified were: trichostrongyle-type, *Nematodirus* spp. (Fig. 4), *Moniezia* spp. (Fig. 5), *Trichuris* spp. (Fig. 6) and *Eimeria* spp. (Fig. 5). Trematode eggs were not identified.


Fig. 2 “Churra Galega Bragançana” flock

Fig. 3 “Serrana” flock

The mean egg per gram (EPG) values of trichostrongyle-type ranged from 25 to 67 among the sheep flock., and 62 to 90 among the goat flock.

The mean oocyst per gram (OPG) of *Eimeria* spp. varied greatly in the two flocks, ranging from 0.46 x 10^2 to 3.11 x 10^2 among the sheep flock, and 4.74 x 10^2 to 1.45 x 10^4 among the goat flock.

Fecal examination by the Baermann technique, revealed the overall prevalence of lungworm infection to be, in the goat herd, 21.4% to 33,3%, whereas the sheep samples were negative. The specie found were larvae from *Muellerius capillaris*.


Fig. 4 trichostrongyle-type, and *Nematodirus* spp.


Fig. 5 *Moniezia* spp. and *Eimeria* spp.

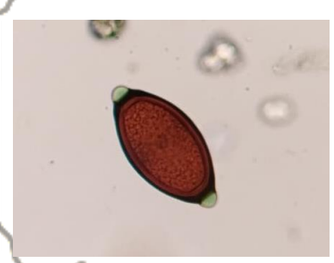
Fig. 6 *Trichuris* spp.


Fig. 7 *Muellerius capillaris*

- ✓ This work aims to continue to: determine the **gastrointestinal and pulmonary parasite profile of small ruminants along the year seasons**; identify **differences in parasite population in the two species**, and assess the **anthelmintic efficacy** and possible **resistances.**

- ✓ The development and implementation of innovative, refined and **sustainable approaches** to worm control, targeted at the appropriate **regional scale**, is a prerequisite for reducing the helminth infection burden in small ruminant livestock production, and therefore **increase the productivity and profitability**, and also contribute to the **preservation of natural resources**.

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