COMMUNICATION

Sheep internal parasites on Rab and Pag

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ABSTRACT

The purpose of our research was to determine which groups and species of internal parasites endanger the health of sheep on the islands of Rab and Pag. The research was carried out in 10 flocks on both islands taking the fresh dung out of 30% of the total number of sheep in each flock. It was ascertained that the gastrointestinal parasites and protozoa of Eimeria genus are present in most flocks on both islands. The presence of the fluke Dicrocoelium dendriticum was ascertained in considerably larger number of flocks on the island of Rab than on the island of Pag. On the other hand, the presence of parasites of Moniezia and Nematodirus genus was ascertained in larger number of flocks on the island of Pag. In two flocks on Rab parasites of Protostrongylus genus were ascertained while on the island of Pag they were not found in any flock.

Key words: Island, Sheep, Internal parasites

Introduction

According to the assessments of the Croatian livestock centre there is a population of over 100,000 sheep on the Adriatic islands. The sheep are being bred extensively in regions of rare vegetation typical for the Mediterranean. On pastures, the sheep are exposed to invasions of numerous parasites which affect the host pathogenically in various ways. In case of the balance between the carrier (sheep) and the parasite its pathogenic effect fails to take place. When the balance is disturbed diseases with clinical symptoms start to appear resulting in production dropping, and very often in the death of the animals. We assess the effect of parasites taking into consideration the influence of the environment, that is the way of breeding, climatic circumstances, age and number of animals in the flock. The islands of Rab and Pag are situated in the region of central Adriatic. On the island of Rab there is a population of 10,000 autochthonous sheep (the sheep of Rab) aiming at the production of lambs intended for slaughter. The average flock size is 20-40 head. On the island of Pag there is a population of 30,000 autochthonous sheep (the sheep of Pag) out of which 24,000 are being milked aiming at the production of the famous cheese of Pag, while the lambs are being slaughtered at the age of 28 days. The flock size is 40-100 (and more) sheep. The sheep are kept extensively during the whole year so they are permanently exposed to the invasions of numerous parasite species. The purpose of our research was to determine which groups and species of internal parasites endanger the health of sheep flocks on the islands of Rab and Pag.
The island of Rab are shown in table 1. It is evident from the table 1, that on the island of Rab gastrointestinal nematodes are present in most flocks. They are followed by protozoa of Eimeria genus and the fluke *Dicrocoelium dendriticum*, while parasites of *Protostrongylus*, *Nematodirus*, *Moniezia* and *Trichuris* genus were ascertained in considerably smaller number of flocks. The results of coprology tests of the samples from the island of Pag are shown in table 2.

It is evident from the table 1, that on the island of Rab gastrointestinal nematodes are present in most flocks. They are followed by protozoa of *Eimeria* genus and the fluke *Dicrocoelium dendriticum*, while parasites of *Protostrongylus*, *Nematodirus*, *Moniezia* and *Trichuris* genus were ascertained in considerably smaller number of flocks. The results of coprology tests of the samples from the island of Pag are shown in table 2.

### Material and methods

The research was carried out in March of 2005 in 10 sheep flocks on both islands including the population of 269 sheep on the island of Rab, and 813 sheep on Pag. The number of sheep in a flock was from 21 to 42 head on Rab, and from 34 to 210 head on Pag. The sheep had been treated with anthelmintics agents in October and at the beginning of November. Clinical examination ascertained the state of sheep's health, and upon that the fresh dung of randomly selected 30% of the total number of sheep was collected together within the flock. The dung of each flock was deposited in marked plastic bags and transported to the parasitological laboratory for a coprology test. The test was made using the flotation method with ZnSO₄ (Boch and Supperer, 1986).

### Results and conclusions

It was ascertained that all the sheep, in flocks included in the research, were clinically healthy. The results of coprology tests of the samples from the island of Rab are shown in table 1.

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It is evident that on the island of Pag gastrointestinal nematodes are present in most flocks. They are followed by protozoa of *Eimeria* genus, endoparasites of *Moniezia* and *Nematodirus* genus, while the fluke *D. dendriticum* and *Trichuris* sp. were ascertained in smaller number of flocks. Comparing the sheep internal parasites' population on both islands it is evident that gastrointestinal parasites and protozoa of *Eimeria* genus were ascertained in almost every flock.

Although *D. dendriticum* was ascertained in flocks on both islands it is noticeably more present in flocks on the island of Rab than on Pag. According to Džakula (1988) the invasions of *D. dendriticum*...
were ascertained in rocky regions and islands of Cres and Brač, and the disease rarely has its clinical manifest. Rajković-Janje et al. (2000) ascertained the presence of D. dendriticum in 64% of sheep flocks in the region of Slavonia, therefore we can conclude that D. dendriticum exists in flocks in different climates. It is ascertained by this research that more flocks invaded by parasites of Moniezia genus reside on the island of Pag than on Rab. According to Cankovic (1988) and Jensen and Swift (1982) infestation with Moniezia sp. doesn’t endanger so much the health of older sheep in comparison to lambs and younger sheep. However older sheep are polluting the pastures with eggs and therefore should be regularly treated with antiparasitics. In two flocks on the island of Rab parasites of Protostrongylus genus were also ascertained. On the island of Pag they do not exist. The presence of parasites of Nematodirus genus was ascertained in 6 flocks on Pag and in 2 on Rab. According to Jensen and Swift (1982) Nematodirus sp. doesn’t make excessive damage in the sheep properly kept and nourished. According to Ceranić and Đakula (1988) and Jensen and Swift (1982) most parasites whose presence we ascertained on Rab and Pag mostly endanger the health of lambs and younger sheep, while with the older ones they caused clinical signs only in certain circumstances like underfeeding. On basis of the results of our research we can conclude that the sheep on the islands of Rab and Pag are comparably exposed to various groups and species of internal parasites that can considerably endanger the health of lambs and younger sheep in comparison to the older ones. Furthermore, we can conclude that the health protection preventive measures for sheep flocks on the islands of Rab and Pag should be adjusted to the results of coprology tests in order to choose the most effective way of parasites’ prevention.

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