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Gastrointestinal parasites of sheep, municipality of Lajes, Rio Grande do Norte, Brazil

Parasitos do trato gastrintestinal de ovinos, município de Lajes, Rio Grande do Norte, Brasil

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Abstract

This study investigated the gastrointestinal parasitism by helminths and protozoa in sheep (*Ovis aries*) Santa Inês breed, municipality of Lajes, Rio Grande do Norte. Monthly, from April 2005 to August 2007, stool samples were collected from two tracer lambs in the first day of the experiment and performed a necropsy of these animals in 44th day. A total of 64 lambs were sampled, but only 62 lambs were slaughtered. The fecal samples were examined by sedimentation in water. The contents of the abomasum, small intestine and large intestine were examined for the recovery of helminths. The parasitological examination revealed eggs of the following groups of helminths: Strongyloidea, *Strongyloides* sp., *Trichuris* sp., and *Moniezia* sp. Also were found oocysts of *Eimeria* spp., cysts of *Entamoeba ovis* and *Giardia duodenalis*. The helminths identified from examining the contents were: *Haemonchus contortus*, *Cooperia pectinata*, *Cooperia punctata*, *Trichostrongylus colubriformis*, *Moniezia expansa*, *Oesophagostomum* sp., *Skrjabinema ovis* and *Trichuris* sp.

Keywords: Sheep production, *Haemonchus contortus*, *Trichostrongylus* spp., *Giardia duodenalis*, tracer lambs.

Resumo

O presente estudo investigou o parasitismo gastrintestinal por helmintos e protozoários em ovinos (*Ovis aries*) da raça Santa Inês, no município de Lajes, Rio Grande do Norte. Mensalmente, entre abril de 2005 e agosto de 2007, foram coletadas amostras fecais de dois cordeiros traçadores no primeiro dia do experimento e realizada a necropsia desses animais no 44^o dia. O total de cordeiros amostrados foi 64, mas apenas 62 foram necropsiados. As amostras fecais foram examinadas pela técnica de sedimentação espontânea em água. Os conteúdos do abomaso, intestino delgado e intestino grosso dos cordeiros necropsiados foram examinados para a recuperação dos helmintos. Os exames parasitológicos evidenciaram ovos dos seguintes grupos de helmintos: Strongyloidea, *Strongyloides* sp., *Trichuris* sp., e *Moniezia* sp. Também foram encontrados oocistos de *Eimeria* spp., cistos de *Entamoeba ovis* e de *Giardia duodenalis*. Os helmintos identificados a partir do exame dos conteúdos foram: *Haemonchus contortus*, *Cooperia pectinata*, *Cooperia punctata*, *Trichostrongylus colubriformis*, *Moniezia expansa*, *Oesophagostomum* sp., *Skrjabinema ovis* e *Trichuris* sp.

Palavras-chave: Ovinocultura, *Haemonchus contortus*, *Trichostrongylus* spp., *Giardia duodenalis*, ovinos traçadores.

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In Northeastern Brazil, the sheep production has been practiced using local breeds like Morada Nova and Santa Inês. In this region, it's a basic and generalized activity, having a great socio-economic importance because it has been responsible for about 40% of all animal protein consumed by country population (ALVES, 2005).

In State of Rio Grande do Norte sheep production has been increased, due to breeding herd. Also has been given more attention to animal sanity and production units management, in search of food alternatives to the herd (IDEMA, 2002).

Despite of social and economic importance of sheep production to region and to this State, in particular, some basic challenges must be faced aiming to improve this activity. It includes the systematic searching of knowledges about issues related to epidemiology of parasitic diseases that affect livestock (CHARLES, 1989; SILVA et al., 1998, 2003). Since gastrointestinal parasite infections are implicated as a cause of significant losses in the production of small ruminants (PINHEIRO et al., 2002; VIEIRA, 2005). Considering that, the objective of this study was evaluate gastrointestinal parasitism by helminths and protozoa in sheep (*O. aries*) Santa Inês breed, in municipality of Lajes.

This study occurred from April 2005 to August 2007, in which two male lambs Santa Inês breed were sampled in the first day and necropsied in the 44th day of experiment. A total of 64 lambs were sampled, but only 62 were necropsied. The animals were reared extensively, feeding on native vegetation and they were from four to eight months old at the beginning of experiment.

The feces were collected directly from the rectum using silicone collector. The samples were placed in universal collector

and transported to laboratory in collers, contending ice cubes. Examination of samples was done using the technique of spontaneous sedimentation in water (LUTZ, 1919).

The content of abomasum, small intestine and large intestine of necropsied lambs was removed and fixed at 60 °C. The helminths were separated, counted and identified after clarification in lactophenol (ANDERSON; VERSTER, 1971; EYSKER; KOOYMAN, 1993).

A total de 49 fecal samples had one or more species of parasites, corresponding to 76.56% of the samples. The most frequent parasitic was *Eimeria* spp., present in 36 samples (56.25%), followed by Strongyloidea, found in 19 samples (29.69%), and *Giardia duodenalis*, the third most frequent parasitic, occurred in 12 samples (18.75%), as shown in Table 1.

The technique used did not allow the identification of *Eimeria* species. But considering the frequency of that parasitism observed in this present study, we suggest that this parasite should be an important factor for the sheep production in the region. Once that economic losses due to eimeriosis are related to growth rates reduction and animal weight gain, even as susceptibility to another diseases (FITZGERALD, 1980; VIEIRA, 2005).

The giardiosis could be related to self-limiting diarrhea acute staff and also may adverse impact in development and animals of economic interest weight gain (ALOISIO et al., 2006; OLSON et al., 1995).

A total de 15,233 specimens of nematodes were recovered, including adult and immature forms. The number of nematode per animal ranged from 1 to 5,588. Fourteen animals were nematodes free.

The specie *H. contortus* was the most abundant, representing 82.57% of total nematodes. This specie also was the most prevalent, reaching 82.26% of animals (Table 2). The pathogenesis importancy of this specie is related to hematofagism (FOX, 1997). The second most abundant specie was *T. colubriformis*, representing 15.09% of helminths total and was found in 20.97% of animals. Other helminth species occurred in smaller proportions (Table 2).

Based on these results, we concluded that lambs had a variety of parasites, including those of renowned veterinary importance such as *Eimeria* spp., *G. duodenalis* e *H. contortus*. Thereby, indicating that the parasites of the gastrointestinal tract constitute a factor to be considered in regard to sheep production in this region of the country.

Table 1. Parasites identified in 64 fecal samples of lambs Santa Inês collected between April 2005 and August 2007, in municipality of Lajes, State of Rio Grande do Norte.

Parasite	Number of positive samples	Relative frequency (%)
<i>Eimeria</i> spp.	36	56.25
Strongyloidea	19	29.69
<i>Giardia duodenalis</i>	12	18.75
<i>Entamoeba ovis</i>	11	17.19
<i>Moniezia</i> sp.	7	10.94
<i>Trichuris</i> sp.	4	6.25
<i>Strongyloides</i> sp.	1	1.56

Table 2. Number of gastrointestinal nematodes recovered of lambs Santa Inês necropsied between April 2005 and August 2007, in municipality of Lajes, State of Rio Grande do Norte.

Parasite	Number of nematodes	Relative frequency (%)	Infected animals	Relative frequency (%)
<i>Haemonchus contortus</i>	12,580	82.57	51	82.25
<i>Trichuris</i> sp.**	85	0.56	17	27.42
<i>Trichostrongylus colubriformis</i>	2,298	15.09	13	20.97
<i>Cooperia punctata</i>	35	0.23	7	11.29
<i>Trichostrongylus</i> sp.**	25	0.16	7	11.29
<i>Oesophagostomum</i> sp.*	42	0.27	5	8.06
<i>Cooperia pectinata</i>	161	1.06	4	6.45
<i>Cooperia</i> sp.**	6	0.04	4	6.45
<i>Skrjabinema ovis</i>	1	0.006	1	1.61

*Immature forms. **Parasitism by females only.

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