# PARASITOLOGICAL STATUS OF OVINES IN THE MUNICIPALITIES OF VOTUPORANGA AND VALENTIM GENTIL, SP

## STATUS PARASITOLÓGICO DE OVINOS NOS MUNICÍPIOS DE VOTUPORANGA E DE VALENTIM GENTIL, SP

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**SUMMARY**

Given the importance of worms in sheep, this study aimed to assess the parasitological status of sheep breeding farms in the municipalities of Votuporanga and Valentim Gentil, northwest region of São Paulo State. During technical visits to seventeen sheep farms located in these two municipalities, interviews and stool collection samples (EPG and fecal culture) were performed. The results show that 100% of the producers choose themselves the anthelmintic drug used or follow commercial indication, 41% and 35% of these farmers perform the anthelmintic treatment every two and three months, respectively. There are also reports of monthly treatment and the use of the FAMACHA technique. A large variety of drugs is being used to treat worms, but the most common are albendazole and levamizole. EPG values ranged from negative to 10,450, while averages varied between properties. The results of fecal culture identified *Haemonchus* as the main nematode in all analyzed samples, followed by *Trichostrongylus*. This study will be the basis to the development of helminth control strategies that should be recommended and implemented in sheep flocks of the municipalities studied.

**KEY-WORDS:** Parasitological status. Sheep. Helminths.

**RESUMO**

Dada a importância da verminose em ovinos, o presente trabalho teve por objetivo avaliar o status parasitológico da ovinocultura desenvolvida por produtores dos municípios de Votuporanga e de Valentim Gentil, região noroeste do Estado de São Paulo. Foram empregadas visitas técnicas, entrevistas e colheita de fezes (OPG e coprocultura) de animais em dezessete propriedades produtoras de ovinos nos municípios. Os resultados demonstraram que 100% dos produtores elegem o medicamento anti-helmíntico utilizado ou seguem indicação comercial, sendo que 41% dos ovinocultores realizam tratamento anti-helmíntico a cada dois meses e 35% a cada três meses. Há relatos, ainda, de tratamento mensal e de adoção da técnica FAMACHA. Grande variedade de princípios medicamentosos é utilizada, sendo o albendazole e o levamizole os mais empregados. Os animais apresentaram valores de OPG que variaram de negativo a 10450, sendo que as médias variaram entre as propriedades. Os resultados das coproculturas realizadas identificaram o *Haemonchus* como principal nematódeo em todas as amostras avaliadas, seguido do *Trichostrongylus*. Este estudo deverá fundamentar as estratégias de controle das helmitoses a serem recomendadas e aplicadas em rebanhos ovinos dos municípios estudados.

**PALAVRAS-CHAVE:** Status parasitológico. Ovinos. Helmintos.

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## INTRODUCTION

The production of lamb meat has become an attractive activity for farmers, given the growing consumer market and the significant increase of estimated consumption, in addition to the high value of the product (SORIO, 2012). According to IBGE data (BRASIL, 2012), São Paulo state has 2.7% of the national herd and occupies the 10th position in the rank of number of animals, while São José do Rio Preto region has the largest sheep herd (19.2%) in the state.

According to the Census Survey of Unidades de Produção Agropecuário of São Paulo (LUPA 07/2008) from the Coordenadoria de Assistência Técnica Integral - CATI (SÃO PAULO, 2011), the sheep herd of Votuporanga consisted of 22,790 animals in 2008 and 31 Unidades de Produção Agropecuária (UPA), while in Valentim Gentil the herd had 358 animals and 19 UPAs.

The success of the whole production chain is based on adopting techniques linked to genetics, management, nutrition and health, together with careful feasibility analysis. Gastrointestinal helminthiasis, especially those caused by nematodes, are the major health issue that hinders production. The losses are mainly due to young animal mortality, low weight gain, reduced feed conversion.

Gastrointestinal parasitism symptoms vary with the degree of infection. In general, animals with intense parasitism show signs of weakness, severe weight loss, anemia, depending on the species of helminth parasite. The main clinical manifestation of infection by *Haemonchus* is anemia, which can progress to bone marrow aplasia and eventually, animal death. In chronic or less severe cases, the symptoms of this disease are not so evident. These animals may have intermittent diarrhea, reduced weight gain, poor reproductive performance and decreased production. Although the less apparent clinical manifestations of the disease do not cause death, they are responsible for significant economic losses (SÁ & OTTO, 2011).

Helminthiasis has been controlled almost exclusively by the often inappropriate anthelmintic use, regardless of animal category, epidemiological data, accurate identification of the parasite genus involved in the process, as well as anthelmintic effectiveness. According to Kate (1965), the biotic potential of ruminant helminthiasis, when studied and known in a particular region, makes it possible to establish the best treatment and control.

The present study aimed to evaluate the parasitological status of sheep farms in the municipalities of Votuporanga and Valentim Gentil, SP.

## MATERIAL AND METHODS

Seventeen farms were visited in the region, of which 8 and 9 in the municipalities of Votuporanga and Valentim Gentil, SP, respectively, where we collected technical information and stool samples of sheep (young male and female, breeding males and parous females).

The interviews and questionnaires were conducted in a semi-structured way, that is, it was allowed to the interviewee to report on topics during the interview. The data recorded in the standard questionnaire were then transferred to an appropriate spreadsheet for the analysis of the parasitological status.

The stool samples were collected directly from the rectum of about 10% of the animals in each category, or from all animals if the herd was small. The number of nematode eggs per gram of feces (EPG) was determined for each stool sample using the modified technique of Gordon & Whitlock (1939). Stool culture was performed for all positive samples and the resulting larvae identified according to Keith (1953).

## RESULTS AND DISCUSSION

The interviews showed that 94% of the farmers in both municipalities dewormed their animals, 41% every two months and 35% every three months (Figure 1a). However, there are reports of monthly treatment. Also three producers adopt the FAMACHA® method (MOLENTO, 2004) to evaluate and treat the animals. Silva Netto (2008) attributes the emergence of drug-resistant helminths to the various active principles of drugs available on the market and how they are used by the farmers, as well as the frequency interval, bi-weekly or monthly.

Although the producers are aware of the problems caused by helminthiasis regarding mortality rates, they treat the animals according to their own guidance or by commercial recommendation (Figure 1b). A large variety of anthelmintic products are used, but according to the reports the most used are albendazole (28%) and levamizole (14%) (Figure 1c). According to Lima (2010), the benzimidazoles and pro-benzimidazoles are the most used anthelmintic to treat gastrointestinal parasites.

The animals had EPG values ranging from negative to 10,450, and the means varied between farms. Breeding male sheep had the highest EPG (mean = 2,744) compared to young sheep (mean EPG = 1,565) and parous female sheep (EPG = 1,121) (Table 1). In general, animals were more susceptible to nematode parasites until puberty, and the degree of infection varied according to management and the intensity of pasture contamination. Also during the peripartum period the sheep become more susceptible to infection by gastrointestinal nematodes, which increases the number of eggs shed in feces and, consequently, increases contamination (AMARANTE, 2004).

The results of fecal cultures identified *Haemonchus* (70.44%) as the main nematode present in the evaluated samples, followed by *Trichostrongylus* (18.25%), as can be seen in Figure 2.

According to Rowe (1988) *Haemonchus contortus* is the most economically important parasite

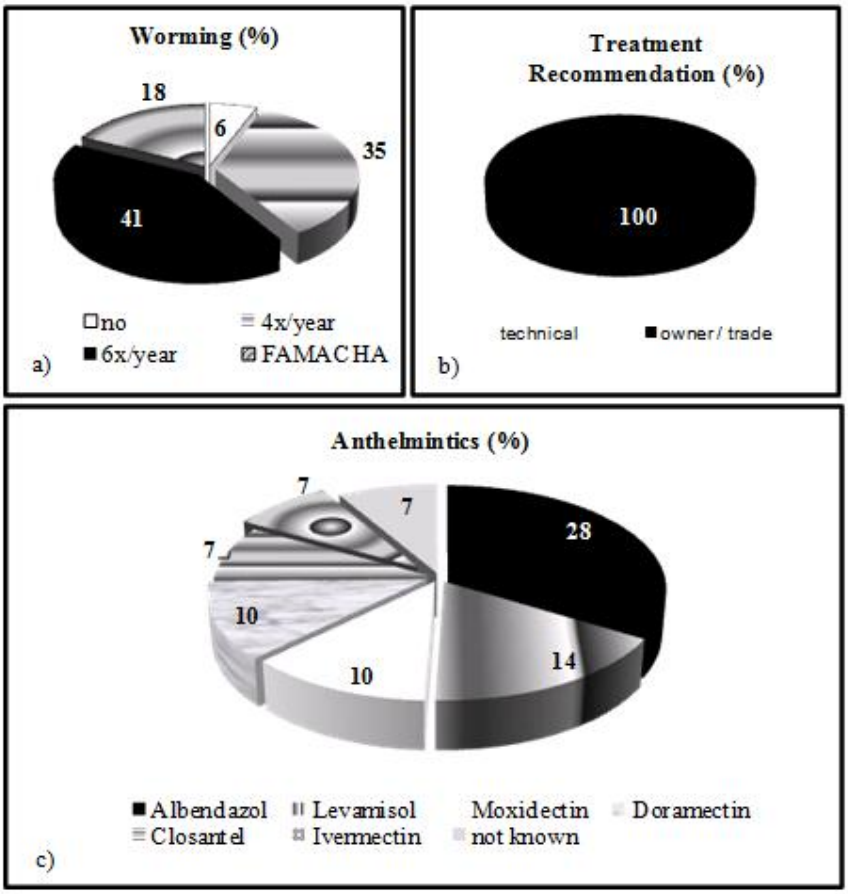


**Figure 01 –** Anti-parasite management ( (a) worming schedule; (b) treatment recommendation; (c) anthelmintic used in the treatment) used by the sheep farms in the municipalities of Votuporanga and Valentim Gentil, SP.

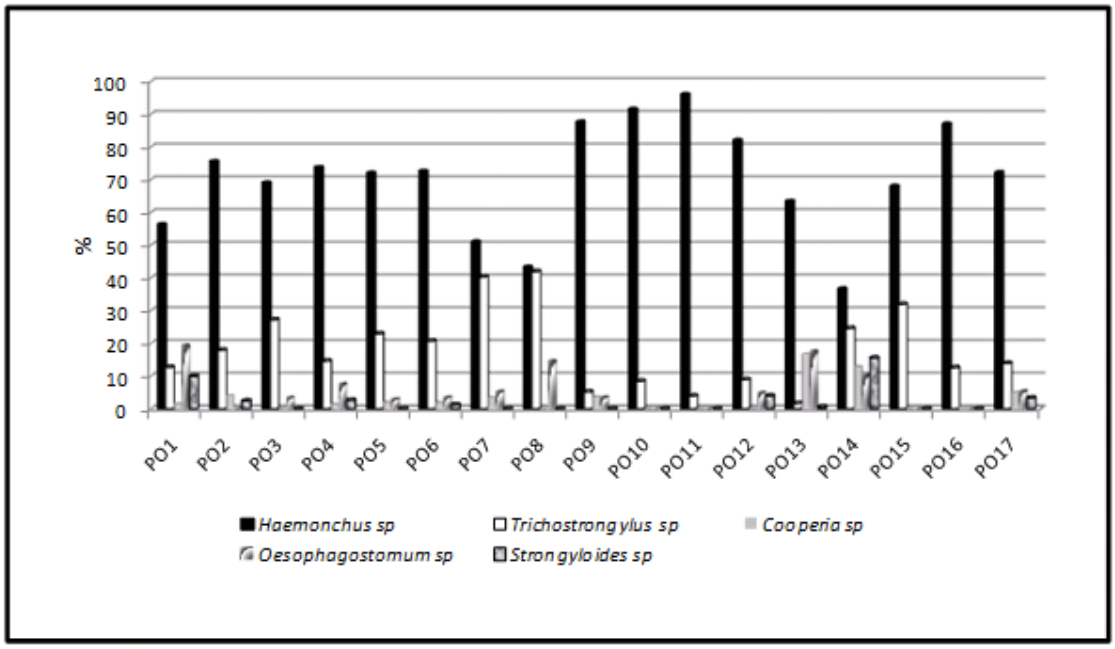


**Figure 02 –** Fecal culture results from sheep in the farms of Votuporanga and Valentim Gentil, SP.

**Table 01 –** Results of EPG (eggs per gram of feces) for different sheep categories from the sheep farms in the municipalities of Valentim Gentil and Votuporanga, SP.

| Farms | EPG /Animal categories | | | |
|---|---|---|---|---|
| | female | male | parous females | breeding males |
| PO1 | 325 | 1150 | 566 | 2750 |
| PO2 | - | 0 | 234 | 8757 |
| PO3 | 33 | 1000 | 1089 | 100 |
| PO4 | 1159 | 1158 | 4300 | 5850 |
| PO5 | 650 | 1150 | 1131 | 2750 |
| PO6 | 6800 | 3540 | 710 | 1000 |
| PO7 | 230 | 6550 | 2200 | 10450 |
| PO8 | 1057 | 6600 | 100 | 900 |
| PO9 | 1769 | 4988 | 270 | 2767 |
| PO10 | 0 | 0 | 1742 | 300 |
| PO11 | 175 | 1277 | 142 | 900 |
| PO12 | 1820 | - | 160 | - |
| PO13 | 667 | 959 | 8 | 0 |
| PO14 | 569 | 275 | 1019 | 175 |
| PO15 | 1031 | 1050 | 397 | 700 |
| PO16 | 3335 | 767 | 694 | 658 |
| PO17 | 0 | 0 | 4300 | 5850 |
| average | 1226 | 1904 | 1121 | 2744 |

in areas where sheep are reared all over the world. Amarante (2004) states that due to both high prevalence and high pathogenicity, *Haemonchus contortus* is the most important endoparasitic species in Brazil, followed by *Trichostrongylus colubriformis* in order of importance. The author also reports that most of the times the infections are mixed (caused by more than one parasite) and that it is common sheep parasitism by the species *Cooperia* spp., *Oesophagostomum* spp. and *Strongyloides papillosus*. The main consequences of these infections are economic losses due to reduced productivity, increased mortality rate, as well as labor and anthelmintic costs.

## CONCLUSION

The knowledge of the parasitological status, particularly regarding the strategies used by the producers to treat sheep and, also, the results of the local fecal tests, should substantiate helminth control strategy to be recommended and implemented in the sheep herds of these two municipalities.


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