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## The Effectiveness of a New Drug for Deworming Nematodes of the Gastrointestinal Tract of Sheep.

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### ABSTRACT

This article presents the results of studying the effectiveness of the new antihelminthic drug at nematodes of the gastrointestinal tract of sheep. The high antihelminthic efficacy in haemonchosis, nematodiroses and ostertagiosis of animals.

**Keywords:** sheep nematodes, anthelmintics, efficiency

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## INTRODUCTION

It is known that a significant problem hampering the development of sheep farming in many countries, a high degree of nematode infestation of animals [1, 2].

For example, in India gastrointestinal endoparasites found in sheep from extensive to 62,9%, Serbia - up to 74,56%, where the predominant genera allocated *Haemonchus*, *Oesophagostomum*, *Trichostrongylus*, *Nematodirus Chabertia*, in the North Caucasus region of Russia - to 93,7 % with a predominance nematodiroses, bunostoinoses, haemonchosis and ostertagiosis [3, 4, 5].

The economic damage caused by parasitic diseases, including stunting animals, reduced productivity, increased sensitivity to the infested animal pathogens other infectious diseases [6].

The problem is complicated by the treatment of sheep nematosis advent of benzimidazole-resistant populations of worms. Thus, for nematode *Haemonchus contortus* the acquisition of resistance to benzimidazole  $\beta$ -tubulin gene mutation occurs with replacement of the peptide of the amino acid phenylalanine at position 200 by tyrosine. Installed genotypic frequency of nematode *Haemonchus contortus* stability in different climatic zones of India from 53 to 85% [7, 8, 15].

One of the promising areas of improvement in chemotherapy nematosis animals, is to develop new drugs with high bioavailability and a broad spectrum anthelmintic efficacy, using known substances [9, 10, 11, 12].

Rikobendazol - anthelmintic, in the form of a 10% solution tested in sheep nematodes. Rikobendazol is the main metabolite of albendazole - sulfoxide. The drug was administered once intramuscularly at doses of 3, 4 and 5 mg/kg active ingredient. After 17 days after administration of the drug in a minimal therapeutic animals completely free from nematodir, haemonchus, bunostom and ostertagia. When mulleriosis sheep rikobendazola efficiency was 85,82%, with protostrongylus - 84,7%, at trichocephalosis - 96,5%. The animals in the control group were found: *Nematodirus helvetianus* (126,7 $\pm$ 17,3 exemplar), *Haemonchus contortus* (83,4 $\pm$ 9,6 exemplar), *Bunostomum phlebotomum* (37,0 $\pm$ 4,6 exemplar), *Ostertagia circumcincta* (21,3 $\pm$ 4,7 exemplar) [13].

The aim of this research was to evaluate the anthelmintic efficacy of a new drug for nematodes of the gastrointestinal tract of sheep.

The drug is an injectable solution of albendazole sulfoxide (propylimidazole -n- carbamate amino sulfone) stabilized by (1- butylamino -1- methyl) ethylphosphonic acid [14].

## MATERIALS AND METHODS

In the experience picked up by the age of three sheep, the average live weight of 52,4 kg. Until use of the drug by laboratory studies of feces helminthooscopy of McMaster have identified 50 different kinds of spontaneous infested with nematodes of the gastrointestinal tract of sheep, of which formed two groups of animals, taking into account the principle of analogues (n = 25). Anthelmintics sheep experimental group were administered intramuscularly at a dose of 10 mg per kg body weight active ingredient. The control animals do not introduction the drug.

Given the efficiency based on the results helminthological opening rennet and intestines experimental and control animals.

In assessing the effectiveness of drugs is determined range of possible values of efficiency.

## RESULTS AND DISCUSSION

With the opening of the digestive tract of animals in the control group found the average 182,6  $\pm$  21,3 exemplar *Haemonchus contortus*, 97,2  $\pm$  11,4 exemplar *Nematodirus helvetianus* and 41,8  $\pm$  5,6 exemplar *Ostertagia circumcincta* (table).

Dissection of the digestive tract of experienced sheep were found in one animal 4 exemplar worms *Ostertagiacircumcincta*. When haemonchosis and nematodiroses extensional and intense deworming were efficiency in 100%.

**Table: Efficiency of new deworming with nematodes of the gastrointestinal tract of sheep (n = 25), %**

Worms	Experiment		Reference
	E E*	I E	II
Haemonchussp.	0	100	182,6±21,3
Nematodirus sp.	0	100	97,2±11,4
Ostertagia sp.	96	99,6	41,8±5,6

\*E E – extensional efficiency, I E – intense efficiency, II – intensity of invasion

### CONCLUSION

Thus, as a result of the tests, set high antihelminthic efficacy of the new drug on the basis of albendazole against nematodes gastrointestinal sheep – *Haemonchus*, *Nematodirus* and *Ostertagia*. We believe a promising study of the therapeutic efficacy of the drug developed against others helminth species.

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