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**ACTION OF RUMIVERM AGAINST GASTRO-
INTESTINAL NEMATODES OF SHEEP
IN THE SUDAN**

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Introduction

Rumiverm* is an anthelmintic containing 750mg./Kg. thiabendazole as an active ingredient. It was claimed to be effective against adult and larval stages of many genera of gastro-intestinal nematodes of ruminants, (Pamphlet, United Pharmaceutical Industry, Polfa).

The purpose of the present trial was to investigate the action of Rumiverm against gastro-intestinal nematodes of naturally infected sheep under Sudan conditions.

Materials & Methods

Eighteen naturally parasitized sheep, 9-12 months old and weighing 20-30 Kg., were selected for the experiment. The condition of the animals was generally poor.

Selected animals were divided into three groups A, B & C, on six each (Table 1). Faecal samples obtained were examined and egg counts per gram of faeces were recorded using Stoll's dilution technique for three successive days prior to the experiment and four days post treatment.

Group A. received 75mg./Kg, body weight, while group B. received 100mg./Kg. of the drug in a suspension form using a drench bottle. Group C, however, remained as untreated control.

Fresh faecal samples obtained before treatment were cultured at 27 c° for seven days and the recovered larvae were used for genus identification. Faecal collections passed by the treated animals during the four days post-treatment were examined for parasitic worms that might have passed due to treatment. The clinical signs and body temperature were recorded daily throughout the trial.

The efficacy of the drug was calculated as follows:-
Average egg count for the control group- Average egg count for the treated group

Results

Faecal examination showed the presence of ova belonging to the following Parasites: Trychostrongyle spp, *Trichiuris ovis*, *Schistosoma bovis*, *Monizia* spp. & *Oeso-Phagostomum* spp. Coccidial oocysts were also seen.

The larvae obtained from faecal culture were those of *Haemonchus* spp., *Oesophagostomun* spp. & *Strongyloides* spp. *Trichuris* ova and Coccidial oocysts were observed throughout the trial. Animals infected with Coccidiosis showed a slight diarrhoea.

A considerable reduction of egg counts is noticed in group A, and B, 24 hours post-treatment. The average percentage reduction was 59.4% in group A & 46% in group B. This rate increased by the third day to 98.7% & 99.% for group A & B respectively. By the fourth day no ova were seen in the faeces of all treated animals.

three adult *Oesophagostomum* spp. were recovered from faeces of sheep No. 107 of group A in the 2nd day post-treatment. Sheep No. 113 of group A & sheep No. 105 of group B, showed no reduction in egg counts during the 24 hours post-treatment.

No reduction in average egg count was observed in the control group during the trial.

Discussion

From the above results the drug seems to have exerted a substantial effect on egg production starting on the first day post-treatment & reaching its maximum by the fourth day. No side effects were observed during the trial except for some animals that showed slight diarrhoea which might be due to the presence of coccidial infection.

The remarkable reduction in egg production during 24 hrs. period using a dose of 75 mg/kg body weight is consistent with the result of Armour (1975) who showed that a dose range of 55 mg-75 mg to be 100% effective against adult stages of *Ostertagia* spp.

Both doses exerted no effect on *Trichuris ovis*, *Schistosoma bovis*, *Eimeria* spp. & *Moniezia* spp. This finding agrees with that of Connan, (1976), who showed that thiabendazole at a dose rate of 100 mg/kg body weight had no effect on *Trichuris ovis*.

Despite the fact that evaluation of the efficacy of the drug was based on reduction in egg production, yet the presence of three adult *Oesophagostomum*

* Rumiverm is white power highly soluble in water, it contains 750 mg./Kg. Thiabendazole as an active ingredient. It is manufactured by Polfa Pharmaceutical Industry in Poland.

spp. in the faeces of one sheep may to some extent reflect the cidal effect of the drug. Further studies on the effect of the drug on adult & developing stages of different species of gastro-intestinal nematodes of sheep have to be carried out.

The high efficacy (100%) of Rumiverm in the present trial was in agreement with the results of Connan (1967), who administered 3 gms per sheep & found a remarkable reduction in egg production.

As a conclusion, the authors highly recommend the use of Rumiverm as an anthelmintic in sheep because of its high efficacy on the reduction of egg production of nematodes. Reduction of egg production will help in reducing pasture contamination and in turn decreases the infection rate of sheep with gastro-intestinal nematodes.

Summary

Rumiverm, (POLFA), was found to be highly

effective in reducing egg counts of some gastro intestinal nematodes, when administered to twelve naturally parasitized sudanese sheep as a single dose of 75 mg & 100mg/kg body weight. The dose of 75 mg gave a convenient result within the first day following treatment. However, after four days the efficacy of the drug was 100% using both doses.

No toxic effects were observed during the trial thereafter. *Trichuris ovis*, *Schistosoma bovis*, *Moniebia* spp. & *Eimeria* spp. were not affected by the drug.

References

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 Connan, R. M. (1976). Research in Veterinary Science, Vol. 20, No1, 13-15.
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Table I

Animal Grouping

| group A given 75mg per Kg bodyweight | | group B given 100mg per Kg bodyweight | | group C untreated control. | |
|--------------------------------------|------------------------------|---------------------------------------|------------------------------|----------------------------|-------------------------------|
| sheep No | Egg count. average of 5 days | sheep No. | Egg count, average of 3 days | sheep No. | Egg count, average of 3 days. |
| 101 | 1834 | 102 | 1800 | 103 | 2000 |
| 104 | 2000 | 105 | 2000 | 106 | 2167 |
| 107 | 3737 | 108 | 4234 | 109 | 5667 |
| 110 | 1334 | 111 | 1400 | 112 | 1100 |
| 113 | 2367 | 114 | 1034 | 115 | 2600 |
| 116 | 1334 | 117 | 0467 | 118 | 0667 |

Table II

Group A six sheep given an oral dose of Rumiverm at 75mg per Kg bodyweight.

| Egg count per gram of faeces | | | | | | | | | |
|-------------------------------------|--|-----------------------|-------|-----------|--------|-----------|-------|-----------|-------|
| sheep No. | average egg count of 3 days before treatment | 24Hrs after treatment | | 48Hrs. | | 72Hrs. | | 96Hrs. | |
| | | Egg count | % Red | Egg count | % Red. | Egg count | % Red | Egg count | % Red |
| 101 | 1834 | 400 | 76.5 | 100 | 95.2 | 00 | 100 | 00 | 100 |
| 104 | 2000 | 900 | 50.0 | 100 | 95.0 | 00 | 100 | 00 | 100 |
| 107 | 3737 | 700 | 87.0 | 300 | 96.1 | 00 | 100 | 00 | 100 |
| 110 | 1334 | 300 | 75.0 | 200 | 80.0 | 00 | 100 | 00 | 100 |
| 113 | 2367 | 2200 | -- | 500 | 68.8 | 100 | 92.3 | 00 | 100 |
| 116 | 1334 | 700 | 12.5 | 400 | 42.6 | 00 | 100 | 00 | 100 |
| Total group average & % age Reduct. | 2101 | 867 | 59.4 | 267 | 79.6 | 17 | 98.7 | 00 | 100 |

Table III

Group B six sheep given an oral dose of Rumiverm at 100mg per Kg bodyweight.

Egg count per gram of faeces

| sheep No. | average egg count of 3 days before treatment | 24Hrs. after treat | | 48Hrs. | | 72Hrs. | | 96Hrs. | |
|------------------------------------|--|--------------------|-------|---------|-------|----------|-------|----------|-------|
| | | Egg Cou. | %Red. | Egg cou | %Red. | Egg Cou. | %Red. | Egg Cou. | %Red. |
| 102 | 1800 | 900 | 55.0 | 200 | 90.5 | 00 | 100 | 00 | 100 |
| 105 | 2000 | 2700 | -- | 1000 | 50.0 | 100 | 93.3 | 00 | 100 |
| 108 | 4234 | 2000 | 63.6 | 400 | 94.7 | 00 | 100 | 00 | 100 |
| 111 | 1400 | 300 | 75.0 | 100 | 90.0 | 00 | 100 | 00 | 100 |
| 114 | 1034 | 800 | 57.9 | 200 | 87.5 | 00 | 100 | 00 | 100 |
| 117 | 0467 | 200 | 75.0 | 100 | 85.7 | 00 | 100 | 00 | 00 |
| Total group average & % age Reduc. | 1823 | 1150 | 46.1 | 334 | 85.7 | 17 | 99.2 | 00 | 100 |

Action of Rumiverm Against Nematodes

Table IV.

Group C six sheep untreated control.

| Egg count per gram of faeces | | | | | |
|------------------------------|--------------------------------|-------------|-------------|-------------|-------------|
| sheep No. | Average of 3 days before trail | 24hrs. | 48hrs. | 72hrs. | 96hrs. |
| 103 | 2000 | 1700 | 2100 | 3400 | 1900 |
| 106 | 2167 | 1800 | 2000 | 1500 | 2000 |
| 109 | 5667 | 5400 | 7600 | 5400 | 3800 |
| 112 | 1100 | 1200 | 1000 | 1100 | 1400 |
| 115 | 2600 | 1900 | 1600 | 1300 | 1700 |
| 118 | 0667 | 800 | 700 | 300 | 1100 |
| Total group average | 2367 | 2134 | 2334 | 2000 | 1984 |