

A study on the efficacy of a herbal dewormer in Vembur sheep flock

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Abstract

A study was conducted to compare the anthelmintic efficacy of a herbal dewormer with Fenbendazole in Vembur sheep flock. The herbal dewormer contained mixture of extracts from the herbs *Aloe vera*, *Vitex negundo*, *Azadirachta indica*, *Calotrophis gigantea* and *Clerodendrum inerme*. The extract was administered @ 25 ml/sheep and the Fenbendazole @ 5mg/kg Body weight orally. The results were analysed in terms of reduction in egg count before and after drug administration. The herbal dewormer in sheep was able to reduce egg per gram by 88.64 per cent. The herbal dewormer is free from drug resistance, side effects and made from locally available well known plants.

Keywords: antihelminthic, efficacy, drug resistance, fenbendazole, herbal dewormer, sheep.

INTRODUCTION

Sheep has carved a niche in the agricultural economy of our country by effective utilization of the uncultivable wastelands and unwanted shrubs and weeds from the fields. Due to the better adaptability of sheep to widely varying biological, socio-economic and environmental conditions, there are varying methods of sheep production. The sheep herders are facing disease problems which are mostly seasonal leading to severe economic loss. Even after much advances made in disease prevention aspects the farmers still believe in traditional and contemporary methods to cope up the disaster like situation. Such time tested indigenous knowledge systems have been practiced but not documented properly. Clinical and sub clinical helminth infections very often undermine health, production and reproductive performances in young and adult sheep. Endoparasites can be controlled through the use of anthelmintics. Improper use of anthelmintics resulted in emergence of resistant strains of nematodes. Apart from resistance, synthetic chemical compounds cause residues in food products thus indirectly affecting the health of human beings. To overcome this situation several phyto-therapeutic plant extracts in combination have been investigated for their anthelmintic properties in sheep.

MATERIALS AND METHODS

A total number of 150 sheep were selected randomly from Vembur sheep flocks in Thoothukudi district Tamilnadu, South India. From these animals, dung samples were collected per rectum and screened for parasite eggs by standard parasitological techniques. Those animals found positive for strongyle infection were included in the study. The selected animals with egg load were divided into three groups of fifty sheep in each group. Experimental groups are as follows:

Group I – Infected untreated control

Group II – Conventional deworming drug (Fenbendazole @ 5mg/kg body wt)

Group III- Herbal dewormer (25ml/ sheep)

Dung samples per rectum were collected prior to deworming (day 0) and subsequently on the days 3, 7, 10 and 14 post deworming. Dung samples were packed in polythene sealed covers with proper identification and brought to the lab. Egg per gram (EPG) count were made on the samples collected on different dates using McMaster technique. Eggs were counted under a microscope and EPG was arrived at for samples collected pre and post deworming for all the groups under study.

Preparation of Herbal Dewormer

Leaves of *Aloe vera*, *Vitex negundo*, *Azadirachta indica*, *Calotrophis gigantea*, *Clerodendrum inerme*, were taken @ 1 kg. and ground well. Little water is added and the extract is stored for 2 – 3 days. Then 50 ml. of the extract is taken and administered orally against all intestinal worms.

Results and discussion

Efficacy of chemical antihelmintic Fenbendazole and the herbal dewormer against gastro- intestinal nematodes in sheep were assessed and presented in table 1. Table 1 showed the reduction in mean EPG count of herbal dewormer @ 25 ml/animal at Vembur. Pre treatment EPG did not differ between groups. There was reduction in EPG on post treatment days. Percentage efficacy of faecal egg count reduction on 14 th day of treatment was 94.18 and 88.64 in Fenbendazole and herbal groups respectively. The results were comparable and it shows that the herbal dewormer can be administered @ 25 ml per sheep. Earlier workers have reported the anthelmintic properties of neem which is one of the ingredient in the herbal dewormer studied

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Table – 1 Mean EPG and Efficacy (%) of fenbedazole and herbal dewormer in Vembur sheep flock

Days	Control	Fenbendazole	Herbal dewormer
0 day	289.29 \pm 17.32 ^a	238.29 \pm 16.95 ^a	271.71 \pm 29.72 ^a
3 day	225.71 \pm 18.49 ^a	132.85 \pm 8.92 ^b	51.42 \pm 5.53 ^c
7 day	331.50 \pm 78.77 ^a	217.50 \pm 41.55 ^a	172.50 \pm 21.77 ^a
10 day	495.00 \pm 71.01 ^a	96.25 \pm 5.49 ^b	261.50 \pm 48.67 ^{a b}
14 day	507.14 \pm 92.11 ^a	13.85 \pm 4.07 ^b (94.18 %)	30.14 \pm 7.91 ^b (88.64 %)

Values with different superscript in rows differ significantly ($p \leq 0.01$)

(Arunachal *et al.* 2002; Hordogen *et al.*, 2003 and Radhakrishnan *et al.*, 2007). No earlier report on other herbs used in the present herbal deworming preparation is available for comparison. It may be concluded that the herbal dewormer has anthelmintic effect against strongyle group of parasite. The efficacy is comparable to that of fenbendazole.

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References

- Arunachal, P.K., K.Karunanithi and R. Narendrababu, 2002. Comparative study on anthelmintic efficacy of Neem products and Praziplus in Sheep. *Ind.J. Small Ruminants*, 8: 131-132.
- Hordegen, P.,H. Hertzberg, J. Heilmann, W. Langhans and V. Maurer, 2003. The anthelmintic efficacy of five plant products against gastro-intestinal trichostrongylids in artificially infected lambs. *Vet. Parasitol.*, 117: 51 – 60.
- Radhakrishnan. L, Gomathinayagam.S. and Balakrishnan.V. 2007. Evaluation of anthelmintic effect of Neem leaves on *Haemonchus contortus* in Goats. *Res.J.Parasitol.*2(1): 57 – 62.