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## Research Article

### TAPE WORM INFESTATION IN A SHEEP FLOCK AND CONTROL MEASURES - CASE STUDY

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#### ABSTRACT

The most important endoparasitic diseases seen in sheep are parasitic gastroenteritis (PGE) caused by a range of gastrointestinal nematodes, cestodes and protozoan. The aim of the paper is to diagnose, treat and implement the control measures of sheep tapeworm in a farm. Sheep are the definitive host of one species of tape worm i.e., *Moniezia expansa*. The tape worm of sheep (*Moniezia*) lives in the small intestines and is transmitted to the sheep by a small non parasitic mite which lives on pasture. This tape worm is considered to be non-pathogenic to adult sheep. But it causes lot of worry to the sheep owners through the obvious presents of expelled tape worm segments in sheep feces and causes mortality in lambs. Out of 80 lambs, twenty lambs died by showing symptoms like fever, restlessness, weight loss, diarrhea and anemia. Postmortem examination of carcasses revealed cysts in various internal organs. Treatment in the remaining lambs and sheep were carried out with Niclozole plus (Niclozamide + Albendazole) @ 5ml/10 kg body weight for lambs below three months of age and plain Niclozamide at dose rate of 1.0gram per 10kg body weight in pregnant adult ewes. Supportive therapy with B- complex oral solutions as well as iron tonics was administered to the infected lambs. Control measures were taken to prevent further infestation.

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#### INTRODUCTION

Tapeworms are mainly of importance as the intermediate larval stages in sheep. Adult tapeworms (*Moniezia expansa*) are common parasites of the intestines of sheep and are frequently identified because of the presence of segments in faeces. Their presence is usually of no consequence. Although generally regarded as of little pathogenic significance there are a number of reports, of heavy infestations causing unthriftiness, diarrhoea and even intestinal obstruction. However, *Moniezia* infections are so obvious; both in life, because of the presence of proglottids in the faeces, and at necropsy, that other causes of ill health may be overlooked (Urquhart *et al.*). Tapeworm infections are seen relatively frequently in grazing sheep and factors such as reduced use of benzimidazole anthelmintics (which are effective against *Moniezia expansa*) and increased macrolide anthelmintic usage (which is not effective) as a consequence of advice on resistance management may result in apparent increases in reports. Changes in pasture management and climate may also have an indirect effect by increasing populations and survivability of the intermediate host stages, which are oribatid pasture mites. Intermediate stages of *Taenia* species may harm the host – for example, *Multiceps* (*Taenia*)

*multiceps*, found in the brain, causes 'sturdy' or 'gid' in sheep. Others, such as *Echinococcus granulosus* (a hydatid), found in the lungs and liver, may be important in terms of public health. Risks of hydatidosis have increased as a result of farm dogs being wormed less, and a failure to prevent scavenging of sheep carcasses because of the changing economics of carcass disposal (Mike, 2009).

#### Case Study

Out of 80 lambs born in the farm of breed, age and sex, twenty lambs died by showing symptoms like fever, restlessness, weight loss, diarrhea, worms in feces and anemia (Fig 1, 2).



Fig.1 Diarrhoea in lamb

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Fig. 2 Gravid proglattid in feces

In some lambs signs varied according to the location of cysts like weakness, stunted growth, diarrhea, staggering gait, paralysis of hind limbs, emaciation and death. On postmortem examination of carcasses multiple cysts were revealed in various internal organs (Fig. 3).



Fig. 3 Cyst of *Moniezia expansa*



Fig. 4 Adult worm

Diagnosis was made based on clinical signs viz., presence of gravid proglattids in feces, examination of fecal sample by floatation technique to confirm the species of parasite and postmortem examination. Treatment was initiated in remaining flock with Niclosazole plus (Niclosamide + Albendazole) @ 5ml/10 kg body weight for lambs below three months of age (Fig 5) and plain Niclosamide tablets @ 1.0 gram per 10 kg body weight in pregnant adult ewes. Praziquantel @ 10mg per kg body weight used for deworming of adult sheep as well

as stray dogs present in the farm as sheep are the intermediate host for some tape worms whose adults live in dogs. Supportive therapy with B-complex oral solutions as well as iron tonics to the infected lambs was administered to increase the hemoglobin levels.



Fig. 5 Treating the remaining flock with Niclosazole plus®

## DISCUSSION

There have been noticeable changes in the epidemiology of many common sheep parasites over the past few years. It is not clear whether this reflects changes in sheep management and production and the sheep industry itself, the effects of climate change, the overuse of antiparasitics and selection for resistance (treatment practices and selection pressures), or, indeed, a function of all these factors. Paul, 2016 in his study reported that *Moniezia expansa* is the common intestinal cestode in sheep. Forage mites, mainly of the family Oribatidae act as intermediate hosts. The predilection site is adult worms in small intestine; cysticercoids in mites. These are long tapeworms which are unarmed possessing only suckers. Segments are broader than they are long and contain two sets of genital organs grossly visible along the lateral margin of each segment (Urquhart *et al.*). The eggs are irregularly triangular with a well defined pyriform apparatus. While a great variety of clinical signs including unthriftiness, diarrhoea, respiratory signs and even convulsions. *Moniezia* infection is generally symptomless. Infection is common in lambs during their first year of life and less common in older animals. A seasonal fluctuation in the incidence of *Moniezia* infection can apparently be related to active periods of the forage mite vectors. Segments are shed in the feces only after 30 days of infection in quite long chains. These tape worms produces cysts in the brains, muscles of the infected sheep causing illness and condemnation of carcasses. Diagnosis is based largely on the presence of mature proglottids in the faeces and examination of faeces for eggs. Carcass examination of lamb or examination of ailing animal in the infected flock by slaughter for the presence of cysts in various organs helps in definitive diagnosis. Treatment for *Moniezia* infection in the present study was carried out with niclosamide, praziquantel and albendazole. Elliott, 1984 reported that Niclosamide was effective in removing tapeworm (*Moniezia expansa*) from unweaned lambs. Southworth *et al*, 1996 reported that praziquantel - levamisole combination showed complete recovery, where as albendazole doesn't show complete recovery. However, it is apparent that the implementation of parasitic control strategies needs to take

these and other issues into account and, where necessary, such programmes will require appropriate modifications. Control measures include effective control of tape worms mostly depends on effective administration of regular deworming against adult tape worms (Soulsby, 1982). Prompt and proper disposal of all carcasses of sheep and goats. Using of clean and safe pastures like silage and hay prepared in the farm. Hygienic measures like cleaning of sheds with phenol and drying up of sheds. Screening of animals before and after deworming programme to control resistant worms. All the stray dogs should not be allowed to stay in the farms or effective deworming of all the stray dogs with praziquantel / Niclozamide solutions should be followed. Avoiding of animals grazing in the same area for several successive months. Ploughing and reseeded, or avoiding the use of the same pastures for young animals in consecutive years, may also prove beneficial. Preventing of animal from drinking and standing water supplies such as small tanks, ponds. After deworming a new animal joining treated group should be isolated for 24-48 hours. Alternate grazing of animals on annual basis should be followed.

The susceptible young animals should be grazed a head followed by immune adults. Feeding of complete ration /balanced diet. The parasite has got public health importance, hence eating of raw meat by the humans should be avoided and contact with infected dogs / dog feces should be avoided by the children.

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