INCIDENCE AND TREATMENT OF HAEMONCHOSIS AND IMMATURE AMPHISTOMOSIS IN NATIVE GOAT BREEDS

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ABSTRACT
Incidence of haemonchosis and immature amphistomosis in native goat breeds of Thiruvarur District, Tamil Nadu irrespective of age and sex is reported. Affected animals passed semisolid and/or diarrhoeic faeces with mucous and digested blood. All affected goats were anaemic. Immature amphistomes were observed on gross examination of faecal samples. Necropsy findings revealed pin point haemorrhages and adult Haemonchus spp. worms in the abomasums. Anthelmintics such as mebendazole, albendazole, fenbendazole and oxyclozanide were found to be ineffective in controlling haemonchosis indicating the development of resistance to these anthelmintics in the study area.

Keywords: Goats, Immature Amphistomosis, Haemonchosis, Anthelmintic Resistance

INTRODUCTION
Goat farming is one of the fastest growing animal husbandry enterprises in India. Parasitism is one of the major hindrances and losses due to parasitic diseases occur in the form of mortality, poor health, retarded growth and poor meat and milk production. Amphistomes and Haemonchus spp. are very common in goats and they badly affect the growth and production of goats by causing anaemia. Immature amphistomosis causes high morbidity and mortality. Resistance in Haemonchus contortus was first recorded in India by Varshney and Singh (1976). Benzimidazoles and levamisole have been regularly and widely used in India for controlling parasitic gastroenteritis for several years (Gill, 1996). At present goat rearing faces greater threat due to multiple anthelmintic resistances throughout the world (Mortensen et al., 2003) due to indiscriminate and frequent use of anthelmintics. This paper reports the incidence of combined infection of haemonchosis and amphistomosis associated with anthelmintic resistance in native goat breeds in Thiruvarur district, Tamilnadu.

MATERIALS AND METHODS
The study was carried out in native goats irrespective of age and sex brought to the Veterinary Clinician Centre, Tiruvarur, Tamilnadu from December 2011 to February 2012. A total of 240 goats were examined including clinically affected and 25 apparently healthy goats maintained in a farm with known deworming and management practices as control. A detailed history was taken and complete clinical examination was carried out. Dung samples were collected from all clinically affected and randomly from 25 apparently healthy goats. The collected dung samples were screened for the presence of gastrointestinal nematode eggs by qualitative faecal examination using standard centrifugal sedimentation and salt floatation technique. The presence of parasite eggs with related clinical signs in goats was considered as positive. Status of anaemia was graded using FAMACHA® chart for treatment purpose. Necropsy was also carried out in dead animals. Anthelmintics such as mebendazole, albendazole, fenbendazole and oxyclozanide had been continuously and extensively used for deworming ruminants in that area for several years.

RESULTS AND DISCUSSION
Results
Among 240 clinically affected goats examined, 54 goats (22.5 per cent) were found to be positive for amphistomosis and 87 goats (36.25 per cent) were found positive for haemonchosis irrespective of age and sex during the monsoon season. In infected animals, the dung was semisolid and/or diarrhoeic mixed
Anthelmintic resistance in gastrointestinal nematodes of sheep and goats has become a serious problem worldwide. This resistance has led to the development of alternative ways of worm management for reducing selection for worm resistance, and one of the most promising approaches is to treat only those animals unable to cope with worm challenge, thus favouring unselected worms originating from untreated animals. Only clinical bottle jaw condition was described following heavy rainfall.

**Incidence of immature amphistomosis in small ruminants**

Incidence of immature amphistomosis in small ruminants has been reported by Manna et al., (1994). Normally as a routine practice, grazing areas are shared by sheep, goats, and cattle and buffaloes, it is said that most of the outbreaks in sheep and goats are due to buffaloes which act as reservoir host (Dunn, 1969). The incidence of immature amphistomosis recorded in the present study during monsoon could be due to the reason that this season is most conducive to the breeding of snails viz; Indoplanorbis, Gyraulus and Lymnaea spp. Clinical signs observed in the present study like profuse foetid diarrhoea, sub-mandibular edema, anaemia, anorexia, weakness, dull and depression are in accordance with earlier reports of Panda and Misra (1980) and Saheb and Hafeez (1995).

Ram et al., (2007) studied comparative efficacy of different anthelmintics and concluded that albendazole and its combination with rafoxanide were ineffective in controlling gastrointestinal parasitism in Pashmina goats at Nainital, Uttaranchal. Singh and Yadav (1997) observed anthelmintic resistance by nematodes on two goat farms in Hisar. Mixed infection with amphistomes and Haemonchus spp. has also been observed by several authors. Anthelmintic resistance in *Haemonchus contortus* was reported by several authors (Meena and Satyavir, 2005; Schnydera et al., 2005). Occurrence of haemonchosis in goats was reported by Uppal et al., (1992), where as Yadav and Tandon (1989) observed the incidence in the sub tropical and humid zones of India and maximum prevalence was observed following heavy rainfall. Anthelmintic resistance in gastrointestinal nematodes of sheep and goats has become a serious problem warranting measures to delay the spread of anthelmintic resistant nematodes in sheep in India (Eswaran et al., 2009). The present study clearly indicated that haemonchosis alone or in concurrent infection with amphistomes in goats is a major problem in goat farming industry. It necessitates further investigation to formulate sustainable cost effective control strategies against gastrointestinal nematodes and trematode infection in small ruminants.

All affected goats showed anaemia of grade 4 in FAMACHA® chart. Increasing anthelmintic resistance has made it essential to develop alternative ways of worm management for reducing selection for worm resistance, and one of the most promising approaches is to treat only those animals unable to cope with worm challenge, thus favouring unselected worms originating from untreated animals. Only clinical evaluation of anaemia (FAMACHA® system) and the body condition score are regarded as being of practical value for treatment.

The main benefits of the system are the reduction in treatments, its use for discriminating between animals of varying ability to cope with infection (thus allowing genetic selection), and its lowering of selection pressure on *H. contortus* for anthelmintic resistance (Wyk and Bath, 2002).

**REFERENCES**


Research Article


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