



ABATTOIR SURVEY OF *SCHISTOSOMA SPINDALE* INFECTION IN THRISSUR

Bindu Lakshmanan¹, Abdu Rauoof²,
Muhammed Fawaz² and
H. Subramanian³

Department of Veterinary Parasitology
College of Veterinary and Animal Sciences
Mannuthy- 680 651, Thrissur, Kerala

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Abstract

Mesenteric worm count technique was employed to study the prevalence of intestinal schistosomosis among cattle and buffaloes slaughtered in Thrissur. Of the forty eight mesentery samples processed, 45.4 per cent animals carried Schistosoma spindale infections with a significant proportion harbouring moderate infections. Long term chronic infections cause significant production loss to the herd. Prevalence of the disease was very high when compared to the existing reports based on faecal egg detection techniques. The study emphasises the need for developing alternate field level diagnostic tests for schistosomosis.

Keywords: *Schistosoma spindale*, mesenteric worm count, Thrissur.

Intestinal schistosomosis due to *Schistosoma spindale* is an economically important blood fluke infection widespread in India and other developing countries which is manifested as chronic diarrhoeic disease if large number of worm pairs inhabit the mesentery (Agarwal and Southgate, 2000).

A significant prevalence of *S. spindale* infection among cattle, goats and buffaloes has been reported based on slaughter house studies in South India (Sumanth *et al.*, 2004; Ravindran *et al.*, 2007). As per the annual report of Animal Husbandry Department (2003), about 3226 cattle and 109 buffaloes

in Kerala are affected with schistosomosis based on faecal sample examination and clinical signs. Such routine diagnostic methods have poor sensitivity and thus underestimate the actual prevalence which ultimately interferes with the control strategies. In order to accurately assess the status of *S. spindale* infection in Thrissur, a preliminary abattoir survey was conducted during 2008-09.

Materials and Methods

Mesenteric samples of 30 cattle and 18 buffaloes were collected during evisceration at local slaughter houses in Thrissur. The samples were identified separately, cut into small pieces and immersed in normal saline for 5 to 6 hours. The recovered worm pairs were identified, counted and intensity of infection was assessed as per Sumanth *et al.* (2004).

Results and Discussion

The recovered worms pairs were identified as *S. spindale* (Soulsby, 1982). The male worms were stout without tubercles and female worms carried 5 to 6 eggs at a time in their ootype (Fig.). Of the 48 mesentery samples processed, 45.8 per cent of animals harboured *S. spindale* infection. A considerable proportion of worm positive animals had moderate infections (45.4 %) of which majority were buffaloes (Table). None of the animals had high intensity of infection. De Bont and Vecruijsse (1998) had reported that symptoms, morbidity and mortality of

¹ Assistant Professor

² Veterinary Graduates

³ Dean

Table: Intensity of *S. spindale* infection

Intensity of infection	Worm pairs	No. of animals infected	
		Cattle	Buffaloes
Mild	1-20	8	4
Moderate	20-100	4	6
High	>100	0	0
Total		12 (25.0%)	10 (20.8%)

schistosomiasis are to some extent related to the intensity of infection.

Buffaloes and oxen are the principal natural hosts of *S. spindale*. Nevertheless, long term chronic schistosome infections cause significant loss to the herd in terms of animal growth, productivity and increased susceptibility to other parasitic and bacterial diseases (Mc Cawley *et al.*, 1984). Previous studies on *S. spindale* in domestic ruminants using mesenteric worm count technique reported an infection rate of 31.2 % in Sri Lanka (De Bont *et al.*, 1991), 37 % in Bangladesh (Islam, 1975) and 57.3 % in Wayanad, Kerala (Ravindran *et al.*, 2007). The results of this abattoir survey in Thrissur indicate that a significant proportion of animals are infected with *S. spindale*.



Fig. Female worm of *S. spindale* with eggs

Nevertheless, it should be remembered that the number of animals detected positive by faecal sample examination is very less since the tests frequently employed by a field veterinarian has poor sensitivity and eggs are often missed (De Bont *et al.*, 1991). Agarwal (1999) has also opined that *S. spindale* infections are not easily detected by faecal sample examination. In the light of the high infection rate noticed in Thrissur, it is imperative that alternate field level diagnostic tests may be standardised for specific and sensitive antemortem diagnosis of the disease among food animals.

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