ABATTOIR SURVEY OF SCHISTOSOMA SPINDALE INFECTION IN THRISSUR

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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 Vecruysse (1998) had reported that symptoms, morbidity and mortality of

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Schistosoma spindale infection in Thrissur...

Table: Intensity of S. spindale infection

<table>
<thead>
<tr>
<th>Intensity of infection</th>
<th>Worm pairs</th>
<th>No. of animals infected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cattle</td>
</tr>
<tr>
<td>Mild</td>
<td>1-20</td>
<td>8</td>
</tr>
<tr>
<td>Moderate</td>
<td>20-100</td>
<td>4</td>
</tr>
<tr>
<td>High</td>
<td>&gt;100</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>12 (25.0%)</td>
</tr>
</tbody>
</table>

Schistosomosis 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 (McCawley 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.

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) had 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 ante-mortem diagnosis of the disease among food animals.

References


