

INTENSITY OF SETARIAL WORM INFECTION AMONG BOVINES IN AND AROUND BANGALORE

S.T. Bino Sundar¹ and R. Ravindran²

Tamilnadu Veterinary and Animal Sciences University,
Veterinary University Training and Research Centre, Semmandalam, Cuddalore-607 001

Key words: *Setaria digitata*, *S. cervi*, *S. labiatopapillosa*

Among parasitic diseases, filariasis in man and livestock constitutes a major health problem in tropical countries. The debilitating effects and economic losses caused by these infections severely affect man and animal power resources in developing countries. Animal filariasis and particularly haematofilariosis has not received attention by researchers. The larval stages of filarid nematodes are known to cause microfilariosis in bovines.

The intensity of Setarial worm infection has been studied by Mohan (1975), Chauhan and Pande (1980), Bhopale et al. (1982) and Patnaik (1989). Thirumurthy et al. (1995) and Siddiqui et al. (1996) have reported the occurrence of adult Setarial worms in bovines. Mohanty et al. (2000) performed a slaughter house study in cattle and made a detailed observation on the intensity of infection. The experiment was designed to study the intensity

Five hundred cattle and Two hundred buffaloes were screened during the period of study. Male animals screened in the study were from Karnataka Meat and Poultry Marketing Corporation Limited slaughter house, Bangalore and female animals screened were from postmortem studies conducted at Department of Pathology, Veterinary College, Bangalore.

To find out the intensity of adult *Setaria*, the slaughtered animals were thoroughly screened

during evisceration and dressing. The entire peritoneal cavity was examined for *Setaria* worms. Animals subjected to postmortem were also screened in a similar manner. The worms were collected in plastic containers in normal saline. The worms were preserved in normal saline. The number of worms present in each animal was counted sex-wise. The species of worms was identified by mounting the cephalic and caudal ends of male and female worms in Rubin's mountant (composition: Polyvinyl alcohol stock solution 56 ml (15 g of polyvinyl alcohol powder in 100 ml of distilled water, 22 ml lactic acid and 22 ml phenol crystals). Descriptions given by Shoho (1958), Willard and Walker (1969), Sonin (1977) and Anderson (1992) were used as references to identify the various species of Setarial worms.

The intensity of worm infection was determined based on the number of female and male worms recovered from each animal. 187 out of 500 cattle and 11 out of 200 buffaloes were found to be positive for worms (Table 1).

Worms were found freely in the peritoneal cavity or found attached to the intestines, mesentery, peritoneal wall, lungs, liver, heart, urinary bladder, uterus and fascia. Some worms were found embedded in patches of inflammatory tissue attached to the visceral walls of the pelvic peritoneum.

Three species of *Setaria* viz., *S. digitata*, *S. cervi* and *S. labiatopapillosa* were observed in the present study.

Out of 187 cattle which were positive for

1. Assistant Professor,
2. Associate Professor and Head

worms, 106 (56.8%) had *S. digitata*, 45 (24.13%) had *S. cervi* and 36 (18.96%) had *S. labiatopapillosa*. Mixed infection with all the three species of *Setaria* was found in 30 cattle (16.04%). Among buffaloes, out of the eleven positive animals, four (36.5%) had *S. digitata* and remaining seven (63.5%) had *S. cervi* (Table 2).

Of the 187 infected cattle, 154 (82.35%) had a low infection (1-25 female worms and 0-6 male worms), 16 (8.55%) had a moderate infection (25-60 female worms and 6-10 male worms) and 17 animals (9.09%) had a heavy infection (60-130 female worms and 10-20 male worms). The details are given in Table 3.

The most heavily infected animal had 129 female and 19 male worms. Among the 154 animals which had a low infection, 60 (28.96%) had both male and female worms and remaining 94 (61.03%) had female worms only. But all the animals which had a moderate and high infection harbored both male and female worms.

Mohan (1975) observed that 77.77 per cent of cattle and 54.54 per cent of buffaloes slaughtered at Rajahmundry, Andhra Pradesh had *S. digitata* worms in the peritoneal cavity, whereas *S. cervi* was not found. In the present study also *S. digitata* was present in 56.8 per cent of infected cattle and 63.36% of infected buffaloes.

Chauhan and Pande (1980) noted *S. labiatopapillosa* worms in 3.59 per cent of slaughtered buffalo calves at Mathura, Uttar Pradesh and Bhopale et al. (1982) recovered the same species of *Setaria* in 9.09 per cent of buffaloes at Jabalpur, Madhya Pradesh.

Patnaik (1989) reported an incidence of *S. digitata* in 66 per cent of indigenous cattle, 50 per cent of exotic cattle and 0.9 per cent of buffaloes in Orissa. *S. labiatopapillosa* infections were observed in 19.3 per cent of local cattle, 12.5 per cent of exotic cattle and 82.35 per cent of buffaloes in the same study.

Thirumurthy et al. (1995) reported the occurrence of an adult *S. digitata* worm in the urine of a six year old bullock in Thrissur, Kerala.

A survey undertaken by Siddiqui et al. (1996) in various parts of Pantnagar, Uttar Pradesh showed that 38.27 per cent of buffaloes had adult worm infection. Mohanty et al. (2000) reported that about 82.5 per cent of cattle screened had *S. digitata* in the peritoneal cavity. Among the animals that had worms, 21.42 per cent had only female worms and 78.52 per cent had both female and male worms. Occurrence of *Setaria* in cattle and buffaloes in India shows extensive variation between hilly and forest regions of Uttar Pradesh and coastal areas in Andhra Pradesh, compared to plains. The highest occurrence of *Setaria* so far reported is from Tarai regions of Kumaon hills and Pant nagar. Uttar Pradesh. The variations in the occurrence of worms including the variation of species of *Setaria* in Bangalore could be attributable to the difference in seasonal pattern and climatic condition in this region. The absence of *S. labiatopapillosa* in buffaloes in this study also could be attributable to the differences in season, climate and vector availability.

Table 1
Prevalence of *Setaria* infection in cattle and buffaloes

S.No.	Animal	Total Number of animals screened	Number of animals positive for <i>Setaria</i> worms
1.	Cattle	500	187
2.	Buffaloes	200	11

Table 2
Species wise occurrence of *Setaria* in cattle and buffaloes

S.No.	Animal	<i>S.digitata</i> (%)	<i>S.cervi</i> (%)	<i>S.labiatopapillosa</i> (%)	Mixed Infection (%)
1.	Cattle	56.8	24.13	18.96	16.04
2.	Buffaloes	36.5	63.5	-	-

Table 3
Intensity of *Setaria* infection in cattle

S.No.	Intensity of Infection	Percentage of Animals	Number of Female worms	Number of Male worms
1.	Low infection	82.35	1-25	0-6
2.	Moderate Infection	8.55	25-60	6-10
3.	Heavy Infection	9.09	60-130	10-20

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