

PREVALENCE OF NEMATODE PARASITES OF LIVESTOCK
IN SOME NORTH-EAST STATES OF INDIA

ARUN K. YADAV, VEENA TANDON* AND B. ROY

Department of Zoology, School of Life Sciences,
North-Eastern Hill University, Shillong- 793 014 (Meghalaya).

Abstract: The prevalence of nematode parasites in livestock animals of Mizoram, Nagaland, Tripura and Assam has been investigated. A total of 15 nematode species were recorded from cattle, pigs and goats of these states. The overall prevalence of infection was comparatively high in Mizoram for all these hosts. The most prevalent species in cattle, pigs and goats of the region were *Setaria cervi*, *Ascaris suum* and *Haemonchus contortus*, respectively. The zoonotic significance of *A. suum* in the region is highlighted.

INTRODUCTION

The nature of nematode infections in different groups of livestock has been studied by several workers from many regions of the country (Endrejat, 1964; Bali, 1976; Varma et al., 1977; Dhar et al., 1982; Sarma and Gogoi, 1986). However, the literature survey reveals that except for Assam, no major work so far has been done in this direction in other north-eastern states of India. The region as a whole represents a humid to super-humid climate while the rains are excessive, temperature remains moderate throughout the region. Climate, season and rainfall in particular, play an important role in the development of gastro-intestinal nematodes (Mc Culloch et al., 1984). Keeping this in view a study was undertaken of the prevalence of nematodes of livestock animals under existing climatic conditions in four north-eastern states of India, namely, Mizoram, Nagaland, Tripura and Assam.

Materials and Methods : The survey performed between April, 1986 to March, 1988 covered cattle, pigs and goats slaughtered at various abattoirs in and around Aizawl, Kohima, Agartala and Guwahati, the capital towns of Mizoram Nagaland, Tripura and

Assam, respectively. The animals slaughtered at these places are brought from adjoining places as well, and thus represent the population of the respective states.

The postmortem recovery of worms was made from various body organs of the slaughtered animals using standard laboratory techniques. The worms were preserved in 70% ethanol, cleared in glycerin-alcohol and identified following Baylis (1936, 1939) and CIH Keys to the Nematode Parasites of vertebrates No. 1-10 (1974-1983).

Results : The prevalence of infection with different species of nematodes in livestock of the various states is summarized in Table 1. It was note worthy that the species composition in various hosts in these states does not differ very much.

Of the individual host types, cattle were found to harbour four nematode species. *Bunostomum* sp. and *Setaria cervi* were relatively commonly occurring parasites, followed by *Mecistocirrus digitatus* and *Oesophagostomum radiatum* which occurred at a low profile.

The pigs of these states were found to be infected by six nematode species. *Asuum* was the most common species encountered in the region. However, *Oesophagostomum dentatum* and *Bourgelatia diducta* also represented the nematode spectrum quite significantly.

In the case of goats, the survey recorded the presence of six species in the region. *Haemoachus contortus* was the predominant species with its minimum prevalence from Nagaland and maximum from Mizoram. Following this species was *O. columbianum* the maximum prevalence of which was recorded in Tripura.

Discussion : The survey recorded a total of 15 nematode species representing 11 genera under 3 families in various hosts. With the exception of three, i. e., *S. cervi* in cattle and goats, and *G. connorfillii* and *B. diducta* in pigs, all the species recorded in the present study have been reported as of common occurrence in the livestock from

other regions of the country (Bali, 1976; Borkakoty et al., 1984; Yadav and Tandon, 1988, in press), though with a different prevalence rate.

The overall prevalence of infection in cattle ranged between 27.9% (in Assam) to 50.0% (in Mizoram). Four species of nematodes were recorded, with *S. cervi* as the most common species in the region, confirming Endrejat's (1964) report of *Setaria* sp. as the most common nematode in cattle of Assam. *Bundostomum* sp. was another dominant component of the spectrum. However, earlier a very low prevalence (3.5%) of the same was recorded in cattle of Kamrup district of Assam by Borkakoty et al. (1984). This difference may be related to the technique followed for prevalence estimation; the latter authors' findings were based on coprological examinations.

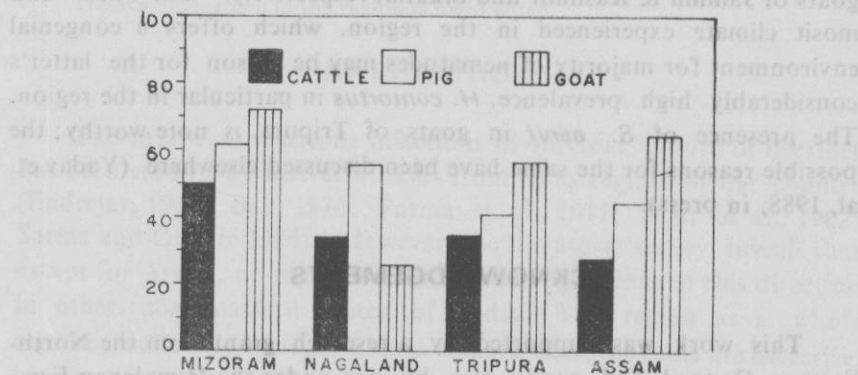


Fig. 1. Overall prevalence rate of nematodes of livestock of some north-east states of India.

In pigs examined in this survey, the overall infection rate of nematodes varied from 40.6% in Tripura to 61.9% in Mizoram. This agrees quite closely with the earlier record of Sarma and Gogoi (1986), who reported 56.3% rate of nematode infection in local pigs of Assam. However, Thomas and Peter (1975) and Yadav and Tandon (1988, in press) recorded a quite high prevalence of nematodes in pigs of Madhya Pradesh (99.6%) and Meghalaya (68.3%), respectively. These workers also found *A. suum* to be the most predominant species

in the spectrum. The relatively high prevalence of *A. suum* in pigs of the areas under study bears a great epidemiological importance from the public health point of view. A relatively intimate association of human population with pigs, coupled with poor hygiene as revealed in the areas under present study, could pose an *Ascaris* associated health problem in the region.

In goats the rate of infection ranged between 25.0% in Nagaland to 72.2% in Mizoram. This is significantly less than that observed for goats in Meghalaya by Yadav and Tandon (unpublished data). *H. contortus* was the most common species recorded in the region followed by *O. columbianum* and *B. trigonocephalum*. This supports the earlier findings of Bali and Singh (1977) and Katiyar et al. (1981) in respect of the dominant components of the nematode spectrum in goats of Jammu & Kashmir and Sikkim, respectively. The warm and moist climate experienced in the region, which offers a congenial environment for majority of nematodes may be reason for the latter's considerably high prevalence, *H. contortus* in particular in the region. The presence of *S. oervi* in goats of Tripura is noteworthy; the possible reasons for the same have been discussed elsewhere (Yadav et al, 1988, in press).

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