

Short Communication**EPIDEMIOLOGY OF GASTROINTESTINAL NEMATODIOSIS IN SWAMP BUFFALOES
(*Bubalus bubalis*) OF ASSAM**

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Received 12-1-2013 Accepted 25-6-2013

Buffaloes play a major role in the agricultural economy of India. The hot and humid climatic condition of Assam is very congenial for propagation and perpetuation of nematode parasites. Assam has a huge buffalo population, its productivity is low due to many reasons; one of them being gastrointestinal nematodiosis. For better management of these insidious parasitic problems, there is a need to understand the epidemiology of this type of parasite. The present study was envisaged to study the gastrointestinal (G.I.) nematodiosis based on faecal culture and faecal egg count.

MATERIALS AND METHODS

Studies on the prevalence of gastrointestinal nematode parasites in adult buffaloes were conducted for a period of one year starting from the month of March 2004 to February 2005 at the Livestock Research Station (L.R.S.), Mandira, Hekera, Assam Agricultural University. A total of 1080 faecal samples were examined during the study period. The entire period of study was divided into four seasons, i.e. pre-monsoon, monsoon, post-monsoon and the winter. Faecal samples from the animals under observation were collected repeatedly in every month from the same animals throughout the year and were examined by conventional salt floatation method as described by Soulsby (1982) to find out the presence of parasitic eggs. The EPG was determined by Stoll's method (HMSO, 1979) and larvae recorded after coproculture was identified by using the key of HMSO (1979). Representative samples from all the corresponding positive cases were subjected to coproculture for recovery of infective third stage strongyle larvae following the method described by Roberts and O'Sullivan (1949).

RESULTS AND DISCUSSION

A total of 1080 faecal samples from swamp buffaloes were examined during the study period. The overall prevalence was found 58.05 per cent. Month-wise highest prevalence (76.67%) could be recorded in August and October and lowest (40.00%) in March. The highest prevalence of various parasite species was *Oesophagostomum* sp. (43.33%), *Trichostrongylus* sp. (33.33%), *Haemonchus* sps. (26.67%), *Cooperia* sp. (26.67%), *Strongyloides* sps. (10.00%) and *Bunostomum* sp. (6.67%). There was variation in prevalence pattern amongst different nematodes in different age groups of the host. Sex-wise prevalence of nematodes were apparently more in females (81.82%) than the males (75.00%), which might be due to sampling variation. Month-wise highest prevalence could be recorded for *Oesophagostomum* sp. (43.33%) in the month of August followed by *Trichostrongylus* sp. (33.33%) in July and September, *Haemonchus* sp. (26.67%) in August, *Cooperia* sp. (26.67%) in February, *Strongyloides* sp. (10.00%) in August and November and *Bunostomum* sp. (6.67%) in April. Month-wise overall EPG of different gastrointestinal nematode parasites recorded were *Oesophagostomum* sp. (7600) in August followed by *Trichostrongylus* sp. (5400) in July, *Cooperia* sp. (4000) in August, *Haemonchus* sp. (3900) in August, *Strongyloides* sp. (400) in August and *Bunostomum* sp. (300) in August and November. Season-wise prevalence of gastrointestinal nematodes were found highest during the monsoon (67.50%), followed by post-monsoon (63.33%),

winter (53.33%) and pre-monsoon (46.67%). Statistically, the age groups and the sex of animal had no effect on the mean EPG of the animal. However, season was found to have highly significant ($P<0.01$) effect on the mean EPG values. The interaction effect between the season and the EPG in experimental groups were found to be highly significant ($P<0.01$). Analysis of correlation and regression showed that EPG values were dependent on the temperature and relative humidity. Rainfall did not influence EPG as such. Similarly, prevalence was significantly correlated with relative humidity ($P<0.05$) and that regression of prevalence on relative humidity was also significant ($P<0.05$). In the present findings, it was apparent that the study area was highly endemic for gastrointestinal nematodiosis for adult buffaloes. There is constant infection in the population which approximately ranged from 40-75% throughout the year. Higher prevalence of gastrointestinal nematodiosis in buffaloes has also been recorded by Jithendran and Bhat (1990), Maske *et al.* (1990), and Bharkad *et al.* (1999). Gastrointestinal nematodiosis generally flares up during the rainy season which was previously documented by Mathur *et al.* (1994 and 1996) and recently by Bhattacharyya and Ahmed (2005). High humidity and favourable ambient temperature appeared to have affected the growth of larvae positively during the pre-monsoon and monsoon season, which was reflected in the higher prevalence of parasitic infection during monsoon season in the present study.

ACKNOWLEDGEMENT

The authors are grateful to the Dean, Faculty of Veterinary Science, A.A.U., Khanapara, Guwahati-22; Director of Research (Vety.), Assam Agricultural University, Khanapara, Guwahati-22 and Chief Scientist, Livestock Research Station, Assam Agricultural University, Mandira, Hekera for providing necessary facilities and help to carry out the research work.

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