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Incidence of gastro intestinal parasites in cattle of fringe villages of chakrashila wild life sanctuary in B.T.A.D. (Assam) in post monsoon period

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Abstract

Chakrashila Wildlife Sanctuary is a wildlife sanctuary falling under the two districts of Lower Assam under BTAD (Bodoland Territorial Area Districts) of Dhubri and Kokrajhar and covers approximately 45.568 kms². The humid climatic condition of Assam is very conducive for the growth and multiplication of parasites and cause clinical and subclinical parasitism. Subclinical infections are responsible for high morbidity and mortality in young animals and enormous production losses in adults. Different species of gastrointestinal parasites including zoonotic parasites of public health importance have been reported from cattle of this region. The monsoon season is the ideal time for the mass propagation of parasitic load in environment. The average overall prevalence rate occurrence of gastrointestinal parasites in cattle was found to be 64.45% in these villages wherein the main parasitic load was of *Fasciola gigantica*, *Toxocara vitulorum*, *Eimeria* sp., *Amphistome* sp., and *Buxtonella* sp. in both Choraikhola and Harinaguri villages wherein there was a gradual decrease in parasitic load from the month of October towards December-2018. Coccidiosis due to *Eimeria* sp. from Choraikhola and Harinaguri were found to be the predominating disease with an overall prevalence of (44.45%) and (62.23%) respectively, which is in accordance with the earlier findings of coccidiosis in buffalo calves in winter months in India.

Keywords: Gastro-intestinal parasites, subclinical infection, monsoon, parasitic load, Assam

1. Introduction

Livestock specially cattle form a major part of livelihood for the people of rural areas. They serve as capital and in cases of landless agricultural labourers it is the only capital resource they possess and they hold a special status in Indian culture. Livestock serve as an asset and in case of emergencies they serve as guarantee for availing loans from the local sources such as money lenders in the villages. India is number one milk producer in the world. Its total milk production was about 176.3 million tonnes of milk in the year 2017-18 (NDDB, 2019). The quick and sustainable profits that dairy industry provides is very essential for the livestock owners and it forms the back bone of their economy.

However, there are some constraints that hamper the utmost profitable rearing of livestock especially cattle and among them parasitism due to gastrointestinal helminths poses a major threat hindering the economy of the livestock owners. Gastrointestinal parasitic infections dominated by a variety of helminths causes significant economic losses attributable to reduced weight gain, retarded growth and impaired productive and reproductive efficiency (Lloyd and Soulsby, 1978; Sykes, 1994; Waller, 1999) [4, 9, 10]. The loss through reduced productivity is related to reduction of food intake, stunted growth, reduced work capacity, cost of treatment and control of helminthoses (Pedreira *et al.*, 2006; Odoi *et al.*, 2007; Chaudhary *et al.*, 2007) [7, 6, 1]. The present study was conducted to determine the incidence of gastrointestinal parasites post monsoon in two villages under Chakrasila sub division (BTAD) of Assam.

2. Materials and Methods**Geographical Area**

Two villages Choraikhola (90° 18'48" Long and 26 ° 23'44.5" Lat) and Harinaguri (90° 18'29" Long and 26 ° 22'14.9" Lat) under Chakrasila sub division (BTAD),

Assam were undertaken for the present study. These two villages fall under fringe area of Chakrasila Wild life sanctuary (BTAD). The plain areas lie alongside the tract of Chakrasilla hill. Annual rainfall in this area is between 200 to 400 cm with dry winter and hot summer.

3. Materials and Methods

The prevalence record of gastrointestinal parasites post monsoon season from the two villages were collected for a period of three months from October to December 2018. 3-5 grams of freshly voided faeces (avoiding soil contamination) were collected in sterile zip polythene bags randomly from 15

cattle from each village. The faecal samples were examined by standard floatation and sedimentation method. Qualitative faecal examination was done by standard sedimentation method (Soulsby, 1982).

4. Results

There was presence of mixed infections of gastrointestinal parasites in the cattle from the two villages Choraikhola and Harinaguri under Chakrasila. There was high incidence of gastro intestinal parasites in the month of October and which declined from November and the least was recorded in the month of December.

Table 1: Gastrointestinal Parasites recorded in Post-monsoon season from Choraikhola and Harinaguri villages under Chakrasila sub division (BTAD), Assam in Post-Monsoon season, October-2018 to December-2018.

Sl. no	Village	G.P.S.	Gastrointestinal Parasites recorded	Month
1.	Choraikhola	90° 18'48'' Lon and 26° 23'44.5'' Lat	<i>Fasciola gigantica</i> , <i>Toxocara vitulorum</i> , <i>Eimeria</i> sp., <i>Amphistome</i> sp., and <i>Buxtonella</i> sp.	October
			<i>Fasciola gigantica</i> , <i>Eimeria</i> sp., <i>Amphistome</i> sp., and <i>Buxtonella</i> sp.	November
			<i>Fasciola gigantica</i> , and <i>Buxtonella</i> sp.	December
2.	Harinaguri	90° 18'29'' Lon and 26° 22'14.9'' Lat	<i>Fasciola gigantica</i> , <i>Toxocara vitulorum</i> and <i>Eimeria</i> sp.	October
			<i>Fasciola gigantica</i> , <i>Eimeria</i> sp., <i>Amphistome</i> sp., and <i>Buxtonella</i> sp.	November
			<i>Eimeria</i> sp., and <i>Buxtonella</i> sp.	December

Gastrointestinal parasites encountered in Choraikhola village were *Amphistome* sp., *Fasciola gigantica*, *Toxocara vitulorum*, *Eimeria* sp. and *Buxtonella* sp. The highest

prevalence (in percentage) was seen in *Eimeria* sp. (44.45) followed by *Buxtonella* sp. (35.55), *Fasciola gigantica* (31.11), and *Toxocara vitulorum* (13.34).

Table 2: Percent prevalence of gastrointestinal parasites in cattle of Choraikhola (B.T.A.D.) Assam.

Sl. No.	Months	Total Examined	Percent prevalence of Gastrointestinal Parasites				
			<i>Amphistome</i> sp.	<i>Fasciola gigantica</i>	<i>Toxocara vitulorum</i>	<i>Eimeria</i> sp.	<i>Buxtonella</i> sp.
1.	October	15 (93.33)	2 (33.34)	8 (53.34)	6 (40.00)	14 (93.34)	6 (40.00)
2.	November	15 (80.00)	2 (33.34)	4 (26.67)	0 (0.00)	6 (40.00)	8 (53.34)
3.	December	15 (26.67)	0 (0.00)	2 (13.34)	0 (0.00)	0 (0.00)	2 (13.34)
Total		45 (66.67)	4 (8.88)	14 (31.11)	6 (13.34)	20 (44.45)	16 (35.55)

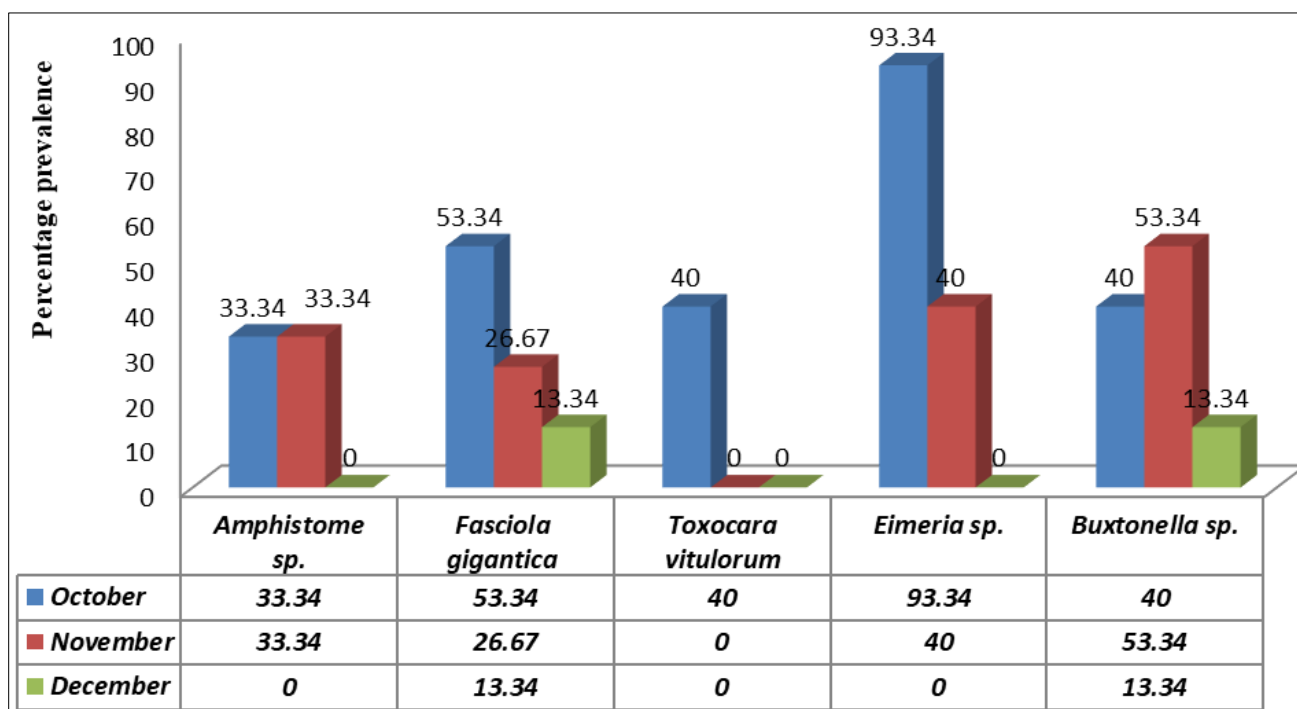


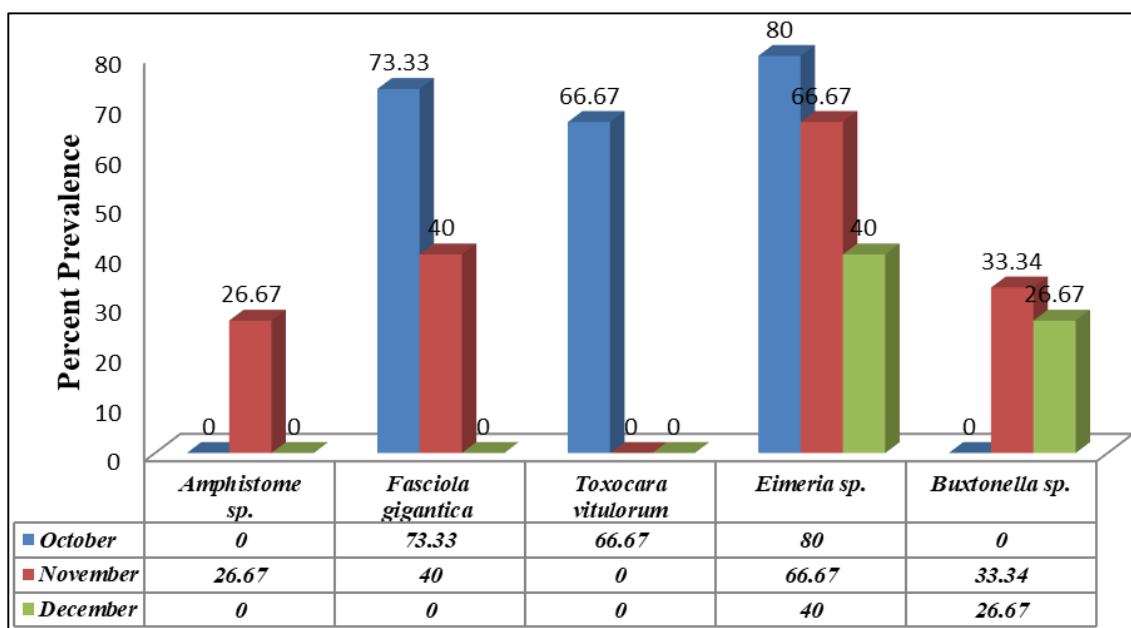
Fig 1: Percent prevalence of gastrointestinal parasites in cattle of Choraikhola (B.T.A.D.) Assam.

Gastrointestinal parasites encountered in Harinaguri village were *Amphistome* sp., *Fasciola gigantica*, *Toxocara vitulorum*, *Eimeria* sp. and *Buxtonella* sp. The highest prevalence (in percentage) was seen in *Eimeria* sp. (62.23)

followed by *Fasciola gigantica* (37.78), *Toxocara vitulorum* (22.23), *Buxtonella* sp. (20.00), and lowest in *Amphistome* sp. 4 (8.88).

Table 3: Percent prevalence of gastrointestinal parasites in cattle of Harinaguri (B.T.A.D.) Assam.

Sl. No.	Months	Total Examined	Percent prevalence of Gastrointestinal Parasites				
			<i>Amphistome sp.</i>	<i>Fasciola gigantica</i>	<i>Toxocara vitulorum</i>	<i>Eimeria sp.</i>	<i>Buxtonella sp.</i>
1.	October	15 (80.00)	0 (0.00)	11(73.33)	10 (66.67)	12 (80.00)	0 (0.00)
2.	November	15 (66.67)	4 (26.67)	6 (40.00)	0 (0.00)	10 (66.67)	5 (33.34)
3.	December	15 (40.00)	0 (0.00)	0 (0.00)	0 (0.00)	6 (40.00)	4 (26.67)
Total		45 (62.23)	4 (8.88)	17 (37.78)	10 (22.23)	28 (62.23)	9 (20.00)

**Fig 2:** Percent prevalence of gastrointestinal parasites in cattle of Harinaguri (B.T.A.D.) Assam

5. Discussion

The average overall prevalence of (64.45%) from two villages is in contrast to the finding of Das *et al.*, 2018 [2] who found the overall prevalence to be (12.50%). This difference might be attributed to the fact that Madhya Pradesh has relatively cool and dry winter which might have effect on the life cycle of various gastro intestinal parasites. Coccidiosis due to *Eimeria sp.* from Choraikhola and Harinaguri were found to be the predominating disease with an overall prevalence of (44.45%) and (62.23%) respectively, this is in accordance with the findings of Kphara and Singh, 1986 [3] who also recorded highest incidence of coccidiosis in buffalo calves in winter months from India.

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