

INCIDENCE OF ASCARIASIS IN CALVES REARED UNDER RURAL CONDITION

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ABSTRACT

Faecal examination of 189 randomly selected rural calves in 12 villages of Rajoir upazila under Madaripur district of both sexes aged between < 3 months to 1 year old with or without the signs of gastroenteritis during three months periods from June to August 2003 revealed that 64.5 % calves were infected with *Toxocara vitulorum*. Significantly ($p < 0.01$) higher incidence of ascariasis was found in cross bred calves (64.28% – 75.67%) than in indigenous calves (46.66%). Age-wise analysis indicated that ascariasis was significantly ($p < 0.01$) prevalent in calves upto 3 months (81.35%) of age following by 3 to 6 months (70.58%) in comparison to > 6 to 12 months (41.93%) of age. Incidence of *T. vitulorum* infection was significantly ($p < 0.01$) higher in male calves (73.24%) than in female (57.92%). All the calves infected with ascariasis were diarrhoeic (100%), with pale mucous membrane (71.31%), rough body coat (74.59%) and emaciation (65.57%). Cachexia (19.67%) and erected hair (4.91%) were also recorded as clinical signs. Normal temperature was found in 95.08% calves while subnormal temperature recorded in 4.91% calves infected with *T. vitulorum*.

Key words: Incidence, ascariasis, calves

INTRODUCTION

Ascariasis is one of the most common parasitic diseases of calves caused by adult ascarid worms (*Toxocara vitulorum*). Intestinal infection by ascarids has been reported in different parts of Bangladesh (Dewan *et al.*, 1979; Chowdhury *et al.*, 1993; Samad, 2001; Samad *et al.*, 2004) and regarded as the major cause of calf mortality in Bangladesh. The economic loss from ascariasis is considerably high in Bangladesh (Hossain *et al.*, 1988). As ascariasis is one of the most common and serious gastrointestinal parasitic disease of calves and cause a great economic loss to the livestock farmer, the present study was undertaken to know the present status of ascarid infection in calves in Bangladesh.

MATERIALS AND METHODS

This study was conducted on 189 randomly selected rural calves of both sexes and different breeds aged between <3 months to 1 year old with or without the signs of gastroenteritis, in 12 villages of Rajoir upazila under Madaripur district, for three months period from June to August 2003 during internship placement. The villages were in low lying swampy areas.

Faecal sample of each of the selected calf was collected directly from the rectum in cellophane bags and transferred to the laboratory of Rajoir Veterinary Hospital for parasitological examination. Each of the collected faecal samples was examined immediately after collection by conventional direct smear method as described by Samad (2001). The ascarid eggs were identified on the basis of their characteristic morphological features (Soulsby, 1982). At least three slides were examined before declaring a case negative. Faecal samples were also examined grossly with naked eye for ascarid worms. The results of faecal sample examination were then recorded according to age, sex, and breed of the calves.

Data were analyzed statistically for significant difference of incidence in relation to breed, age and sex (Snedecor and Cochran, 1980).

RESULTS AND DISCUSSION

Incidence of ascariasis in rural calves is shown in Table 1. The overall 64.55 % rural calves (122 out of 189) were found to be affected with *Toxocara vitulorum* based on faecal sample examination. This overall incidence rate of *T. vitulorum* in calves was much higher than the report of Samad (2001) in other part of the country who reported 5.79 % calves had clinical *Toxocara vitulorum* infection.

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Table 1. Incidence of ascariasis in calves

Variable	Variable level	No. of calves examined	Positive	
			No.	%
Breed	Indigenous	45	21	46.66
	L × F	74	56	**75.67
	L × SL	70	45	**64.28
Age	Upto 3 months	59	48	**81.35
	> 3-6 months	68	48	**70.58
	> 6-12 months	62	26	41.93
Sex	Male	91	64	**73.24
	Female	98	58	57.92

L × F = Local × Friesian, L × SL = Local × Sahiwal.

Apart from the difference in the climatic condition and management practices, this higher incidence might be due to the variation in the population of study as Samad (2001) carried the study only on clinically sick calves which were brought for treatment at the Veterinary Clinic of Bangladesh Agricultural University, Mymensingh. However, the present finding is in agreement with the reports of Satija *et al.* (1973) and Swain *et al.* (1987) who recorded 60% and 67.65% incidence of ascariasis in buffalo calves in India. Incidence of ascariasis was found significantly ($p < 0.01$) higher in local × Friesian calves (75.67%) followed by 64.28% in local × Sahiwal calves than those of indigenous calves (46.66%). Higher incidence in cross bred calves might be due to their lower resistance to the exposure of parasitic infection than those of local calves.

Table 2. Clinical findings of *Toxocara vitulorum* infected calves

S / N	Clinical findings	Calves affected (n = 122)	
		No	%
1.	Body condition		
	Normal	18	14.75
	Emaciated	80	65.57
2.	Body coat		
	Cachectic	24	19.67
	Normal	25	20.49
3.	Defaecation		
	Erected hair	06	04.91
	Rough	91	74.59
4.	Mucous membrane		
	Diarrhoeic	122	100
	Normal	–	–
5.	Temperature		
	Constipated	–	–
	Normal	35	28.68
	Temperature		
	Anaemic	87	71.31
	Normal	116	95.08
	Temperature		
	Subnormal	06	4.91
	High	–	–

n = No. of calves.

Significantly ($p < 0.01$) peak incidence of ascariasis was recorded in calves upto 3 months (81.35%) of age followed by 3 to 6 months (70.58%) in comparison to > 6 to 12 months (41.93%) of age (Table 1). These findings support the earlier observations of Swain *et al.* (1987) and Samad (2001) who reported higher infection rate 84.37-93.75% and 55.41% respectively with *T. vitulorum* in calves aged between 1 to 3 months old, but contradict with the results of age groups of > 3 to 6 months and > 6 to 12 months old. Swain *et al.* (1987) recorded 15-31.25% incidence of ascariasis in buffalo calves aged between 3 to 5 months old and no infection in calves above 5 months of age. Samad (2001) recorded lower incidence of ascariasis in calves aged between > 3 to 7 months (04.05 – 27.03%) and no clinical case in calves more than 7 months of age. The decrease in the incidence rate with the increase of age might be due to the natural expulsion of the adult worms from the intestine with increased resistance and immunity. Male calves (73.24%) were affected more ($p < 0.01$) with ascariasis than the females (57.92%). This finding is in conformity with that of Chowdhury *et al.*, (1993) who recorded higher (4.2%) incidence in male calves than the females (1.6%).

All the calves infected with ascariasis were diarrhoeic (100%) with pale mucous membrane (71.31%), rough body coat (74.59%) and emaciation (65.57%). Cachexia (19.67%) and erected hair (4.91%) were also recorded as clinical signs. Normal temperature was found in 95.08% calves while subnormal temperature recorded in 4.91% calves infected with ascariasis (Table 2). The clinical signs recorded in this study are the characteristic clinical signs of ascariasis which support the earlier reports of Dewan *et al.* (1979), Pandey and Mishra (1985), Sinha and Sahail (1967) and Satija *et al.* (1973).

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