

SURVEY ON PREVALENCE OF NEMATODE PARASITES OF DOMESTIC RUMINANTS BY COPROLOGICAL EXAMINATION

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Nematodiasis is one of the common infections of domestic ruminants in the state of Kerala, revealed by the published reports on the prevalence of nematode infections in ruminants. Rajamohanam and Paily (1971) furnished the data on the incidence of strongyle infection in cattle and goat in Trichur district by faecal examination. Sathianesan and Peter (1971) studied the incidence of gastro-intestinal nematode infections in goats in Kerala by examining the entrails of slaughtered animals and by faecal examination and faecal culture in the farm-bred goats. Pillai (1980) reported the incidence of gastro-intestinal nematodiasis in autopsied, non-descript and crossbred calves. Nair (1994) studied the incidence of gastro-intestinal nematodiasis in dairy cows by faecal examination and faecal culture. The present study deals with contemporaneous prevalence of nematode parasites in cattle, buffalo and goats in Trichur District based on coproculture and coprological examinations.

Materials and methods

Coprological examination

Faecal samples for coprological examination were collected directly from rectum of animals brought to veterinary hospitals and slaughter houses at Trichur and Mannuthy. The samples were examined for the presence of eggs by the routine centrifugal-sedimentation technique.

Copro-culture

The copro culture was done by modified Veglia's method (Sathianesan and Peter, 1970).

Recovery of infective larvae from coproculture

Four days after culture, the culture bottle was kept horizontally over a table and small quantity of water was then introduced inside the bottle. The bottle was then rolled over the table gently, so that the water added washed all the sides of the bottle and all the larvae got collected in that water, care being taken to avoid the water touching the faecal pad. The water containing the larvae was then pipetted out into a cavity dish for identification.

Identification of infective larvae

A drop of suspected larval suspension was pipetted out from the cavity dish and transferred on to a slide. It was then gently heated to immobilise and gradually kill the larvae to facilitate examination and a coverslip was placed over it. The sides of the cover slip was then sealed with molten paraffin to avoid evaporation. The larvae were then examined under a light microscope and identified based on their morphological peculiarities and measurements of various parts of the body.

Results and discussion

Coprological examination : A total of 732 dung samples collected from cattle, buffaloes and goats were examined for nematode eggs and 352 dung samples (48.08%) were found

positive for one or more nematode infections. Animal-wise results are presented in Table 1. Percentage incidence was higher in goats. Strongyle infection was more prevalent and the incidence was highest (62.0%) in goats.

Table 1 Results of coprological examination for eggs

Species of animals examined	Total number		Type of positive infections				
	Examined	Positive	Strongle	Strongyloides	Trichuris	Ascarid	Mixed
Cattle	460	176 (38.26)	142 (30.86)	66 (14.34)	30 (6.52)	17 (3.69)	52 (11.3)
Buffalo	72	23 (31.94)	17 (23.60)	8 (10.95)	-	6 (8.53)	8 (11.1)
Goat	200	155 (77.50)	124 (62.00)	70 (35.00)	31 (15.50)	-	52 (26.00)

Value in brackets indicate percentage

Copro-culture examination : Faecal sample from animals which were found positive for nematode eggs on coprological examinations was studied by coproculture and the results are presented in Table 2. The incidence was highest for *H. contortus* in all animals and lowest for *Bunostomum spp.* in cattle and goats and for *T. colubriformis* in buffaloes.

The prevalence of nematodes in cattle in the present study was 38.26% as against 25% reported by Nair (1994). Among the nematodes, the incidence of strongyles was 30.86% which is close to the value reported by Rajamohanam and Paily (1971). The incidence of *Strongyloides spp.* and ascarids

was found to be more in calves in the present studies in agreement with the findings of Pillai (1980). *H. contortus* was found to be the commonest species (57.95%) of nematodes encountered in the present investigation also as observed by Pillai (1980) but Nair (1994) found *Trichostrongylus spp.* to be more common in dairy cows.

Prevalence of nematode infection in buffaloes was found to be 31.94% and *Haemonchus spp.*, *Oesophagostomum spp.*, *Trichostrongylus spp.*, *Toxocara spp.* and *Haemonchus spp.* were found to be common in adult buffaloes. In calves *Toxocara* and *Strongyloides spp.* were more common.

Table 2 Results of cop -culture for larvae

Species of animals examined	No. of faecal cultures	Species of infective larvae obtained									
		<i>Haemonchus contortus</i>	<i>Oesophagostomum radiatum</i>	<i>Oesophagostomum columbianum</i>	<i>Oesophagostomum sperum</i>	<i>Bunoatoma phlebotomum</i>	<i>B. trigonocephalum</i>	<i>Cooperia punctata</i>	<i>Trichostrongylus colubriformis</i>	<i>T. axei</i>	<i>Strongyloides papillosus</i>
Cattle	176	102 (57.95)	84 (47.19)	-	-	32 (18.18)	-	52 (29.5)	28 (15.9)	56 (31.8)	76 (43.19)
Buffalo	23	15 (65.20)	12 (52.17)	-	-	-	-	-	6 (26.08)	-	10 (43.47)
Goat	155	112 (72.25)	-	84 (54.19)	42 (27.09)	-	16 (10.32)	-	56 (36.12)	35 (22.58)	80 (51.61)

Values in bracket indicate percentage

According to Sathianesan and Peter (1971) the incidence of gastro intestinal nematode infection was 97.8% in indigenous goats and 89% in farm bred goats. In the present investigation also, it was found to be high in goats (77.5%) compared to that in cattle and buffaloes. The incidence of strongyle was also found to be higher (62.0%) in goats in agreement with the observations of Rajamohanam and Paily (1971). The incidence of *H. contortus* was found to be the highest (72.25%) in the present study as reported by Sathianesan and Peter (1971).

Summary

A survey on the prevalence of common nematode Parasites of domestic ruminants in Trichur district was carried out by faecal examination and faecal culture. The overall prevalence was highest (77.50%) in goats and it was highest (62.0%) for strongyle among all species of nematodes encountered. From coproculture, the prevalence of *Haemonchus contortus* was noticed to be highest in all animals.

Acknowledgement

The authors are thankful to the Dean, College of Veterinary and Animal Sciences, Mannuthy for the facilities provided and to the ICAR for financial assistance by way of Junior research fellowship awarded to the first author.

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