

OCCURRENCES OF GASTROINTESTINAL PARASITES IN GOATS (*Capra hircus*) UNDER DIFFERENT MANAGEMENT SYSTEMS IN KURUNEGALA DISTRICT

H.A.Y. Biyanka¹, B.P.A. Jayaweera² and G.A.S. Ginigaddara¹

¹*Department of Agricultural Systems, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka*

²*Department of Livestock & Avian Sciences, Faculty of Livestock Fisheries & Nutrition, Wayamba University of Sri Lanka, Makandura, Gonawila, Sri Lanka*

Goats are highly adaptable to a broad range of climatic and geographic conditions, hence possible to manage in every production system such as feral, transhumant, nomadic, extensive, intensive and total confinement systems³. Goats are an important source of food and income for small scale farmers in rural communities of Sri Lanka. Goat farming plays a significant role in the rural economy². Gastrointestinal (GI) nematode infections have been recognized as a major constrain to the development of goat industry in many developing countries of tropics. Further, it has also been noted that *Haemonchus contortus* is due to most pathogenic species responsible for a marked growth retardation and death of goats². There are very few records on the prevalence of GI parasites in goats of Kurunegala District. Therefore, this study was conducted with the objectives to evaluate the burden of GI parasites of goats under the prevailing goat farming systems in Kurunegala District and to identify the parasitic species responsible for GI parasitism in goats with special focus on the management system.

Samples were collected from goats in livestock farms in Galgamuwa, Rasnayakapura, Maho, Kobeigane, Nikaweratiya and Pannala Divisional Secretariat (DS) divisions in Kurunegala District. The study was carried out from 12th July to 9th October, 2012. A total of 50 fecal samples were collected and investigated from 50 goat farms, covering a total of 935 goats. If the number of goats available were less than ten (<10) in a farm all goats were taken into account and all individual fecal samples were taken. If the numbers exceeded ten (>10) in a farm, five individual fecal samples for every ten goats were taken. Five grams of fecal sample was collected directly from the rectum of each animal to a clean polythene bag. Samples were packed and tightened well to exclude the air from the polythene bag. These fecal samples were labeled and refrigerated at (4°C) till all the investigations were over. Feces for pooled samples of 5 to 10 animals were collected separately and thoroughly mixed in the laboratory. McMaster counting technique¹ was used to analyze the fecal egg counts. The data were statistically analyzed and average and percentage positivity of different GI parasites were calculated.

Only a 6% of the farmers reared animals (buffalo, goat, neat cattle, sheep, swine and mixed) as their major income source and 72% of farmers were involved mainly in paddy cultivation, while having goat farming as their additional income source. Sixty percent of the farmers had permanent goat housing systems and rest (40%) of the farmers had temporary goat housing systems. Floor of the goat houses; 52% of goat houses were made with slats, 46% of them used clay floors and 2% used cement floors. Fifty two percent of the goat houses had an elevated floor, while the rest were not elevated. Eighty two percent of the farmers used coconut cadjans, 12% of the farmers used GI sheets and 6% of them used other materials such as polythene as roofing materials. Cut and fed, tethering and free grazing systems were the feeding systems practiced by the farmers with percentages of 36%, 32%, and 2% respectively. Thirty percent of the farmers used cut and fed or free grazing or tethering or any combination of these three systems to feed their goats. According to the housing and feeding systems, two prominent goat

managing systems were identified; semi intensive and extensive systems (62% and 38% in order). The gastrointestinal parasitic burden was classified based on the number of eggs per gram of feces in the 50 farms and 935 animals. Low to moderate GI parasitic burden was identified in Kurunegala District irrespective of the rearing system (Table 01).

Table 01: Classification of GI parasitic burden in Kurunegala district

Classification of parasitic burden	Occurrence	
	Farm basis	Animal basis
low to moderate parasitic burden (0-1000 eggs)	62%	58%
high parasitic burden (>1000 eggs)	36%	42%

Six species of gastrointestinal parasites were identified in feces of goats. *Haemonchus contortus* was the most prominent GI parasite (62.77%) and *Moniezia benedeni* was the least prevalent parasitic species (2.55%) (Figure 01).

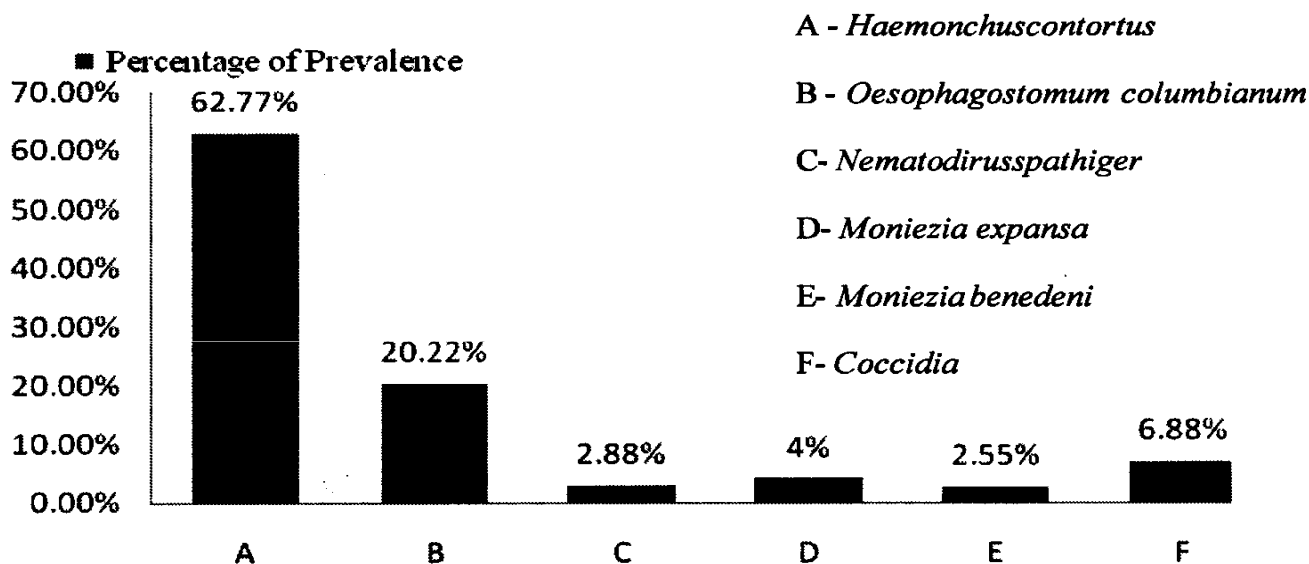


Figure 01: Prevalence of GI parasitic species in Kurunegala district

There was no significant difference ($P > 0.05$) of occurrence of GI parasites between two management systems, however a significant presence of *H. contortus* was observed in 424 goats (± 18) in semi intensive rearing system compared to 299 goats (± 10) in extensive systems. Main reason for the difference could be improper sanitary management of goats and the houses in the semi intensive system.

During the study, two prominent management systems; extensive and semi intensive system were identified in Kurunegala District. The prevalence of the gastrointestinal parasites was not significantly different between two rearing systems. *H. contortus* was the major gastrointestinal parasite identified in goats of two rearing systems in Kurunegala District.

REFERENCES

- Hansen, J. and Perry, B. (1994). The epidemiology, diagnosis and control of gastro-intestinal parasites of ruminants. Hand book published by the International Laboratory for Research on Animal Diseases, P.O. Box 30709, Nairobi, Kenya.
- Rajapakse, R. P. V. J., Faizal, A. C. M., Horadagoda N. U., Dharmawardana I.V.P., and Paranagama W.D., 2000. An abattoir study on the prevalence of gastrointestinal nematodes of goats in the dry zone of Sri Lanka. J. NatSci. Foundation Sri Lanka 28(4):265-275.
- Smith, M.C. and Sherman, D.M., (2007). Goat medicine, Black well publishing Professional, USA. 596pp