

PREVALENCE OF CAPRINE COCCIDIOSIS IN THIRUVALLUR DISTRICT OF TAMIL NADU

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ABSTRACT

Four hundred and fourteen goat faecal samples of different age group under two different managemental practices were screened for the presence of coccidial oocyst, out of which 114 were found to be positive for Eimerian parasites. Based on the morphometric study of oocyst, the predominant species identified was *E. arloingi* and it was concluded that the overall prevalence of caprine coccidiosis was found to be 27.53% in Thiruvallur district of Tamil Nadu.

Key Words: Coccidial Oocyst; *E. arloingi*

INTRODUCTION

Coccidia are generally regarded as ubiquitous parasites of small ruminants and are responsible for considerable morbidity and mortality among kids, thereby causing great losses to goat industry. In tropical countries like India, the climatic conditions are very conducive for sporulation and survival of coccidial oocysts throughout the year (Kumar and Hafeez, 1999). *Eimeria* infection is being carried by adult goats without showing any signs of disease and serve as a source of infection for the young stock. The kids get infected from the first week of their life and outbreak of the disease results in heavy mortality and morbidity up to the age of about 9 months. It also predisposes the animal to other microbial infections (Pandit and Mir, 1988). The present study was undertaken to record the prevalence of caprine coccidiosis in Thiruvallur district of Tamil Nadu.

MATERIALS AND METHODS

Goats maintained under two managemental conditions viz. organized and unorganized were included in this study. A total of 414 faecal samples were collected from organized and unorganized farms in Thiruvallur district of Tamil Nadu. The samples were collected directly from the rectum and stored in plastic containers and were kept at 4°C till examination. The oocysts were concentrated for examination by centrifugation with saturated sugar solution and were identified on the basis of morphological characters. The recovered oocysts were kept in two lots of 2.5% potassium dichromate solution. The material of one lot was kept in biological oxygen demand incubator at a temperature of 30±2°C for sporulation. The other lot was kept at 4°C. Both the lots were examined and morphological characters were studied before and after sporulation (Levine, 1985 and Soulsby, 1982).

RESULTS AND DISCUSSION

A total of 414 faecal samples were collected from suspected goats with the history of diarrhoea, debility, pale mucous membrane. On faecal examination by floatation method, it was observed that 114 were found to be positive for oocysts of coccidia with the overall prevalence rate of 27.53%. The unsporulated oocysts were appeared as small, oval with thin shell having round unsegmented yolk at the center. The unsporulated oocysts had shown a distinct micropyle cap on the dorsal end of the shell membrane. Based on the morphometric study of oocyst, it was identified as *Eimeria arloingi* is the predominant species occurring in the Thiruvallur district of Tamil Nadu. Khan *et al.*, (1997) observed higher predominance of *E. arloingi* in his study. Senthilvel *et al.*, (2004) reported that among five identified species *E. arloingi*

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was found to be the predominant species in kids. Kumar *et al.*, (2005) reported the occurrence of subclinical coccidiosis in 6-8 months old goats. Pandit (2006) observed the higher prevalence of infection during summer and is directly related to the presence of moisture and required temperature for the sporulation of oocysts. Singh and Swarnkar (2010) reported that the difference among the *Eimeria species* and their prevalence could be due to variation in climate/season, animal factors and managerial conditions.

In the presents study, percentage prevalence of infection in unorganized farms may be high due to open grazing, malnutrition, contamination of pasture and non-use of coccidiostats as reported by Kumar *et al.*, (2005). Further higher incidence in the field flocks could also be due to practice of farming community to allow aggregation of faecal pellets in corral and utilizing it as bedding material during cooler months. The warmth and moisture in such environment favors greater transmission and contamination of oocysts. On the contrary daily cleaning and periodical disinfection of corrals in farms does not provide suitable environment for higher transmission. Lower prevalence of coccidiosis in organized form may also be due to adaption of better corral hygiene than field flocks. In Tamil Nadu the temperature during monsoon was favorable with high humidity and rainfall which is conducive for easy dispersion and sporulation of oocyst.

The species identified predominantly from pooled samples was: *Eimeria arloingi*. The present findings are in agreement with the findings of Yadav *et al.*, (2007) who also reported *E. arloingi* as a major species involved in the outbreak of caprine coccidiosis. However involvement of *E. arloingi* in many outbreaks has also been documented from other parts on India (Pandit, 2006). The clinical signs noticed in the present study were foul smelling semisolid to watery diarrhea, anorexia, weakness, abdominal pain and soiled anal region which are in close conformity with that of Bhatia (2000) who observed typical sighs of coccidiosis in natural infection.

Conclusion

Based on the present study, it was concluded that the overall prevalence of caprine coccidiosis was found to be 27.53% in Thiruvallur district of Tamil Nadu. From this study, it is warranted that the regular screening of goat farms for the presence of coccidial oocyst and prophylactic measures is of prime important to prevent the major outbreaks of caprine coccidiosis.

REFERENCES

- Bhatia BB (2000).** Text book of Veterinary Protozoology. *Indian Council of Agricultural Research*, New Delhi 123.
- Khan FA, Singh D, Swarnkar CP, Sharma SR, Srivastava CP and Bhagwan PSK (1997).** Effect of management of occurrence of coccidiosis in lambs under semi arid conditions in India. *Indian Journal of Small Ruminants* **3** 41-44.
- Kumar BVD and Hafeez Md. (1999).** Prevalence of subclinical coccidiosis in lambs in and around Thirupathi, Andhra Pradesh. *Journal of Veterinary Parasitology* **13** 167-169.
- Kumar D, Jatkar PR, Raisinghani PM, Kayum A, Jairath A and Gahlot GC (2005).** Prevalence of subclinical gastrointestinal parasitism in sheep. *Journal of Veterinary Parasitology* **3** 139-142.
- Levine ND (1985).** Veterinary Protozoology. *Iowa State University Press*. Ames, Iowa 414.
- Pandit BA (2006).** Prevalence of caprine coccidiosis in Kashmir valley. *Indian Journal of Small Ruminants* **12** 223-226.
- Pandit BA and Mir AS (1988).** Prevalence of coccidial infection in Jammu and Kashmir. *Indian Veterinary Journal* **65** 669-672.
- Senthil vel K, Basith SA and Rajavelu G (2004).** Caprine coccidiosis in Chennai and Kancheepuram districts of Tamil Nadu. *Journal of Veterinary Parasitology* **18** 159-161.
- Singh D and Swarnkar CP (2010).** Epidemiology and management of gastrointestinal parasites of sheep in Rajasthan. *CSWRI manual* 1-145.

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Soulsby E.JL (1982). Helminths, Arthropods and Protozoa of Domesticated Animals. 8th edition English Language Book Society and Baillere Tindal, London.

Yadav A, Khajuria JK, Sharma RK, Samanta AK and Mandal GP (2007). Acute coccidiosis in kids and its treatment. *Journal of Veterinary Parasitology* **21** 71-72.