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## Incidence of endoparasites in cattle of Cuddalore district, Tamil Nadu

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### Abstract

A study was carried out to determine the incidence and prevalence of major gastrointestinal parasites of cattle in and around three villages in Cuddalore district of Tamilnadu. Coprological samples from 100 cattle were screened. The findings revealed Strongyle (37.25%), Amphistome (29.7%), Coccidia (17.8%), Toxacara (8.55%), Moneizia (5.33%) and Trichuris (1.37%). The overall infection percentage was high in post-rainy season (74.42%), in animals less than 1 year of age (48%) and in females (53.62%) than males (46.38%).

**Keywords:** cattle, endoparasites, gastrointestinal parasitism, infection percentage

### Introduction

Cattle and other species of livestock contribute significantly to the economic development of a nation in various ways. They are a source of food, particularly providing protein component for human diets in addition to serving as a mode of income, employment and transport. Their skin and hide are used in leather industry; excreta used as organic fertilizer in agriculture and they also provide draft power in agricultural operations like ploughing.

In India, especially in rural areas, farmers and agriculturists are dependent on cattle for their livelihood. But parasitic infections especially the endoparasites pose a great threat to the health of cattle. The economic losses caused by gastrointestinal parasites are multifarious: lowered fertility, reduced work capacity, reduction in food efficiency and lower weight gain, lower milk production, increased treatment cost and mortality in heavily parasitized animals (Fikru *et al.* 2006)<sup>[1]</sup>. They also increase the susceptibility of cattle to other parasitic and bacterial infections due to compromised immune system.

Hence a study on the screening of endoparasites in dairy cattle on the basis of faecal examination was carried out to gain insight on the present status of incidence and prevalence of gastrointestinal parasites in chosen rural areas in Cuddalore district, Tamilnadu. Understanding the incidence and prevalence of endoparasites will complement appropriate therapeutic intervention as well as increase the awareness in farmers to adopt improved management systems for preventing parasitic infections and thereby reducing morbidity and mortality losses in cattle due to gastrointestinal parasitism.

### Materials and Methods

#### Study population

The present research work was carried out in cattle rural areas of Adoor agaram, Kalkunam and Kannadi in Cuddalore district of Tamilnadu. 100 cattle reared under open grazing system were included for the study.

#### Collection and processing of samples

Fresh faecal sample of approximately 15 gms was collected from the rectum of cattle with the history and clinical manifestation of diarrhoea, pot belly appearance, submandibular edema, ruffled hair coat, stunted growth etc using gloved fingers. Animal particulars like Breed, Sex, Age, Clinical signs were recorded. Collected faecal samples were examined grossly for colour, consistency and presence of worm segments if any. The samples were further processed and examined by direct faecal smear examination, floatation and sedimentation techniques for qualitative investigation of parasitic eggs and oocysts.

Blood was collected from the jugular vein in EDTA vacutainers for haematological analysis and in clot activator tubes for serum biochemical analysis. Hematological parameters such as

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Hemoglobin (Hb), Packed Cell Volume (PCV), Total Erythrocyte Count (TEC), White Blood Cell count (WBC count), and Platelet count (PLT count) were analyzed using auto haematology analyzer (Mindray – BC-2800 Vet, China). Serum Biochemistry was performed in automated biochemical analyser (A-15 Biosystem Random Access Analyzer, Biosystems, Barcelona, Spain).

## Results and Discussion

### Incidence and Prevalence of Endoparasites

Out of the 100 samples screened, 43(43%) were found positive for endoparasites in cattle population of three villages of Cuddalore district in Tamilnadu. The various endoparasites detected on coprological analysis were Strongyle (37.25%), Amphistome (29.7%), Coccidia (17.8%), Toxacara (8.55%), Moneizia (5.33%) and Trichuris (1.37%). These findings were in concordance with the findings of Bilal *et al.* (2009) [5] and Islam *et al.* (2014) [4] who also reported higher prevalence of nematodes followed by mixed infection and cestodes in their study.

Seasonwise analysis revealed that the overall infection percentage was high in post rainy season (74.42%) compared to summer season (25.58%) which indicates the influence of season on the occurrence of endoparasitic infections. These findings correlated with the findings of Sreedhar *et al.* (2009) [5]. Enyeniki *et al.* (1975) [6] claimed that optical conditions such as hot and humid climate are really helpful in the development of gastrointestinal parasites.

Agewise analysis revealed that the overall infection percentage was higher in animals less than 1 year of age (48.0%) followed by 1-2 years (34.7%) and >3 years of age (17.3%). The findings were in agreement with Bilal *et al.* (2009) [7] who reported higher prevalence of 69.05% in calves between 1-6 months of age whereas Bejsovec (1991) [8] reported the incidence of internal parasites in cow calves of 6-12 months of age as 18.9%. Patel *et al.* (2015) [9] reported age of the host as one of the important factor having serious impact on the prevalence of gastrointestinal helminthes in buffaloes. High occurrence of endoparasitic infections in young cattle than in adult cattle could be attributed to the well-developed immune system in mature adult animals compared to the calves.

Sex wise infection percentage was higher in females (53.63%) than males (46.38%). Islam *et al.* (2014) [4a] also reported higher rate of parasitic infection in females than males. However Musthaq *et al.* (2011) [10] reported higher endoparasitic infection percentage of *Haemonchus contortus* in males than females.

### Haematological changes

Anaemic changes were found in 16 out of 27 cases represented by decreased hemoglobin and PCV. This was in agreement with the findings of Singh *et al.* (2014) [11].

### Serum Biochemical changes

No significant variation from normal values was observed in the biochemical parameters estimated *viz.* Total protein, glucose, BUN and Creatinine. This was in agreement with the findings of Singh *et al.* (2014) [11a].

### Conclusion

The present study revealed that nematode infection was highly prevalent in cattle under study followed by trematodes, coccidian oocysts and cestodes. The incidence was more in

rainy season, in animals less than 1 year age group and in female cattle. The findings give a strong message to take effective measures to prevent and control endoparasitic infections in cattle by adopting superior management systems, control of intermediated hosts, regular deworming, periodic screening of coprological samples to rule out endoparasitic infection and rationale anthelmintic treatment.

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