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Prevalence of gastrointestinal parasites among ruminants in north-central belt of Tamil Nadu: A coprological survey

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Abstract

A cross-sectional investigation was carried out to assess the occurrence of gastrointestinal parasites in ruminants from Salem and Kallakurichi districts of Tamil Nadu using faecal sample analysis. A total of 112 faecal samples, including 48 from cattle, 44 from goats, and 20 from sheep, were examined during July 2024 to January 2026 at Department of Veterinary Parasitology, Veterinary College and Research Institute, Salem. Examination revealed the presence of *Strongyle* spp., *Toxocara vitulorum*, *Trichuris ovis*, *Moniezia* spp., *Amphistomes*, and *Eimeria* spp. Among these, *Strongyle* spp. exhibited the highest prevalence (27%), followed by *Amphistomes* (9%), *Trichuris ovis* (8%), *Eimeria* spp. (8%), *Moniezia* spp. (7%), and *Toxocara vitulorum* (4%). Variation in infection rates was observed across different animal species. These findings emphasize the importance of routine surveillance and targeted deworming strategies.

Keywords: Gastrointestinal parasites, prevalence, cattle, goats, sheep, coprological survey

Introduction

Gastrointestinal parasitic infections remain a significant challenge in livestock production systems globally, contributing to considerable economic losses through reduced weight gain, lower milk yield, and increased mortality (Radostits *et al.*, 2007; Thrusfield, 2018) ^[7, 12]. Ruminants such as cattle, goats, and sheep are particularly vulnerable to these infections, especially when reared under extensive or semi-intensive management conditions (Soulsby, 1982; Urquhart *et al.*, 1996) ^[10, 13].

Recent studies have confirmed the widespread occurrence of gastrointestinal parasites across different geographical regions, reinforcing their continued importance in veterinary health management (Rufino *et al.*, 2024; Karimou *et al.*, 2025) ^[9, 31]. Understanding the epidemiology and distribution of these parasites is essential for designing effective control strategies and improving livestock productivity (Zajac & Conboy, 2012; Banwo *et al.*, 2025) ^[15, 1].

Materials and Methods

A total of 112 faecal samples, including 48 from cattle, 44 from goats, and 20 from sheep, were examined during July 2024 to January 2026 at Department of Veterinary Parasitology, Veterinary College and Research Institute, Salem. Samples were examined using standard parasitological techniques such as flotation and sedimentation methods to identify eggs and oocysts of gastrointestinal parasites (Zajac & Conboy, 2012) ^[15]. The parasites were identified based on their morphological characteristics as described in standard veterinary parasitology manuals (Soulsby, 1982; Taylor *et al.*, 2016) ^[10, 11].

Results

Overall Prevalence

Out of 112 samples examined, 27% were found to be positive for *Strongyle* spp., 4% for *Toxocara vitulorum*, 8% for *Trichuris ovis*, 7% for *Moniezia* spp., 9% for *Amphistome* spp., and 8% for *Eimeria* spp (Fig 1).

These findings are consistent with previous reports indicating *Strongyle* spp. as the most prevalent gastrointestinal parasites in ruminants (Karthik, 2021; Ninditya *et al.*, 2024) ^[4, 5].

Species-wise Prevalence

Cattle (n = 48)

Out of the 48 samples examined, 14 cases (29.17%) were positive for *Strongyle* spp., 5 cases (10.42%) for *Toxocara vitulorum*, 5 cases (10.42%) for *Moniezia* spp., 4 cases (8.33%) for *Amphistome* spp., and 5 cases (10.42%) for *Eimeria* spp.

The occurrence of *Toxocara vitulorum* in cattle corroborates earlier findings that indicate its host specificity in bovines (Soulsby, 1982; Taylor *et al.*, 2016) ^[10, 11].

Goat (n = 44)

Among the 44 samples examined, 11 cases (27.50%) were positive for *Strongyle* spp., 6 cases (15.00%) for *Trichuris ovis*, 2 cases (5.00%) for *Moniezia* spp., 4 cases (10.00%) for *Amphistome* spp., and 3 cases (7.50%) for *Eimeria* spp.

Higher prevalence of *Trichuris ovis* in goats aligns with reports suggesting that browsing behavior influences parasite exposure (Pfukenyi *et al.*, 2007; Banwo *et al.*, 2025) ^[6, 1].

Sheep (n = 20)

Among the 20 samples examined, 4 cases (22.22%) were positive for *Strongyle* spp., 2 cases (11.11%) for *Trichuris ovis*, 1 case (5.56%) for *Moniezia* spp., 2 cases (11.11%) for *Amphistome* spp., and 1 case (5.56%) for *Eimeria* spp.

The observed parasitic distribution in sheep is comparable with earlier and recent epidemiological studies (Rinaldi *et al.*, 2007; Rufino-Moya *et al.*, 2024) ^[8, 9]. The species-wise parasite prevalence is depicted in Fig. 2.

Discussion

The present study indicates that *Strongyle* spp. infections are the most prevalent across all three animal species. This may be attributed to favorable environmental conditions for larval development and poor pasture management practices (Urquhart *et al.*, 1996; Taylor *et al.*, 2016) ^[13, 11]. Similar dominance of *Strongyle* infections has been reported in

multiple recent studies across different regions (Karthik, 2021; Ninditya *et al.*, 2024) ^[4, 5].

Amphistome infections were also relatively common, particularly in goats and sheep, suggesting possible exposure to intermediate hosts such as snails in grazing areas (Soulsby, 1982; González *et al.*, 2025) ^[10, 2].

The presence of *Toxocara vitulorum* exclusively in cattle aligns with its known host specificity and lifecycle characteristics (Taylor *et al.*, 2016) ^[11]. *Trichuris ovis* infections were more prominent in goats and sheep, possibly due to differences in feeding behavior and grazing patterns (Pfukenyi *et al.*, 2007) ^[6].

Eimeria spp. infections observed in all species indicate the widespread nature of coccidiosis, particularly under conditions of overcrowding and poor hygiene (Zajac & Conboy, 2012; Ussenbayev *et al.*, 2025) ^[15, 14].

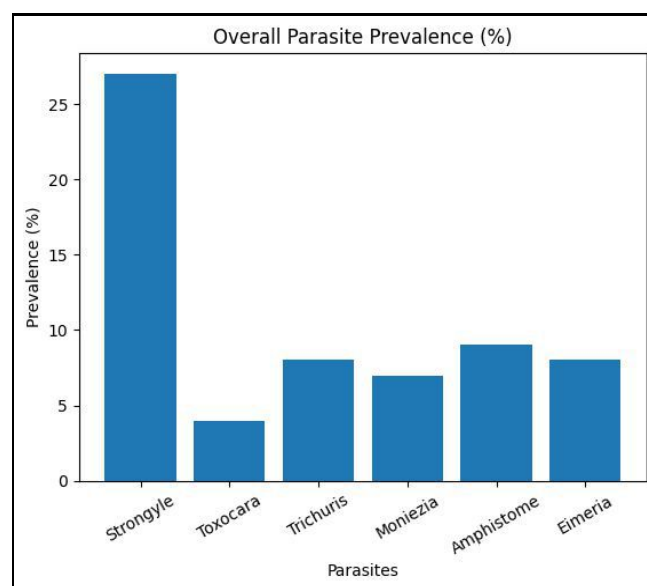


Fig 1: Overall Parasite Prevalence (%)

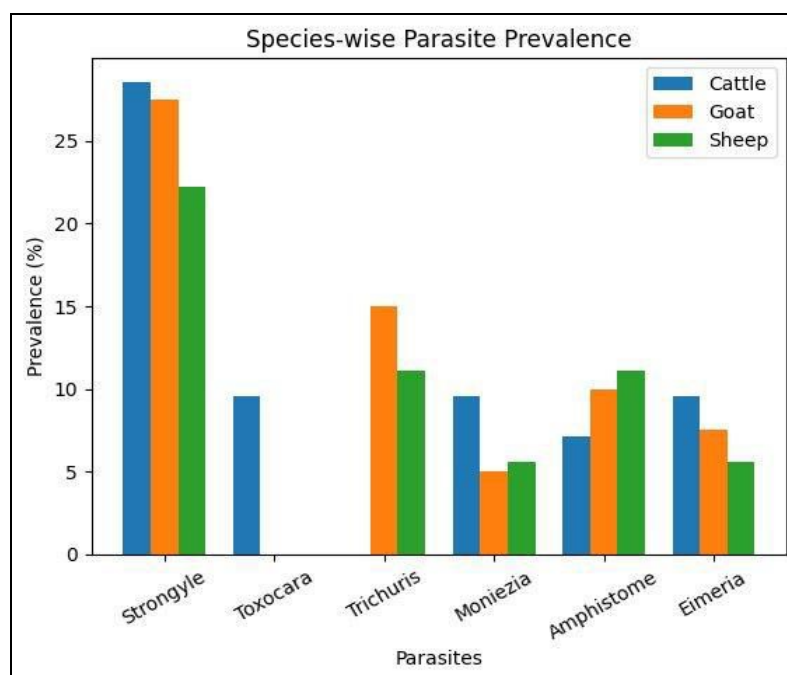


Fig 2: Species-wise Parasite Prevalence

Conclusion

The study highlights a significant prevalence of gastrointestinal parasites in livestock, with *Strongyle* spp. being the most dominant. The variation in parasite distribution among cattle, goats, and sheep emphasizes the need for species-specific parasite control programs. Regular deworming, improved pasture management, and better hygiene practices are recommended to reduce the parasitic burden (Thrusfield, 2018; Banwo *et al.*, 2025) [7, 1].

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