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Prevalence of gastrointestinal parasite infestation in ruminants in Ahmednagar, district

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Abstract
The present study conducted on "Prevalence of gastrointestinal parasite infestation in ruminants in Ahmednagar, District", where carried out for the period from Nov-2018 to Nov-2021. Fecal examination was done using flotation technique method. Although total 809 samples examined including 794 from cattle and 15 from goats, Out of 809 fecal sample examined 363 samples are positive for helminth infection of gastrointestinal parasite were *Trichostrongylus* spp. (39.4%), *Taxocara* spp. (18.2%), *Haemonchus* spp. (12.1%), *Strongyle* spp. (11.0%), *Oesophagostomum* spp. (4.4%), *Bunostomum* spp. (1.4%), *Dictyocaulus* spp. (1.1%), *Trichuris* spp. (1.1%), and *Nematodirus* spp. (0.8%) respectively. The season wise prevalence of helminth parasitic infestation, in summer season (54.60%) the highly prevalence of helminth parasitic infestation in cattles followed by mansoon season (51.85%) and less in winter season (28.95%). Prevalence of helminth parasites in goat is *Coccidia* spp. and *Trichostrongylus* spp. were 46.66% and 6.6% respectively.

Keywords: Prevalence endoparasite season, Ahmednagar, Maharashtra

1. Introduction
Gastrointestinal parasitism is a disease caused by parasites living in the digestive tract of ruminants, causing malnutrition, anemia, diarrhea, and poor growth, as well as economic losses for herds. GI parasites in cattle cause the predominant disease in India. The infection is caused by nematode parasites that live in the body of the animals. Investigations dealing with loss of livestock productivity, morbidity and mortality in ruminants due to helminth infections are receiving considerable attention in recent years at global level (Malathi *et al*., 2021) [21]. Endoparasites can infect ruminants, especially nematodes from grass feed that contains larvae and eggs of parasitic worms. Among the most common nematode worms are the Strongylidae genera (*Haemonchus* sp., *Ostertagia* sp., *Cooperia* sp., *Nematodirus* sp., *Bunostomum* sp., *Strongyloides* sp., and *Oesophagostomum* sp.), *Capillaria* sp., and *Ascarids* sp.
GI parasitism in cattle and sheep is caused by helminths and protozoa. *Eimeria* spp., a protozoa of the phylum Apicomplexa, belonging to the family Eimeriidae, parasitize poultry, ruminants, equines, and rabbits, causing bovine and ovine coccidiosis. The parasite Helminthes causes parasitic gastroenteritis in cattle and sheep. Furthermore, these infections increase susceptibility to bacterial and viral diseases, as well as losses from carcass and organ condemnation, as well as medicine and veterinary treatment costs.
The present investigation is undertaken to study the prevalence of GI helminth infections in cattle and goats in Ahmednagar, district, Maharashtra, India.

2. Materials and Methods
Geographical Area and Sample Collection: The study was conducted from Nov 2018 – Nov 2021 covering different location in Ahmednagar, District. Total 809 faecal samples collected for examination and identification were from cow 794 and from goat 15 Fecal sample from per rectum with a gloved hand into well-labelled sterile polythene bags and transported in ice packs to the Animal Disease Investigation Laboratory, Kopargaon.

2.1 Examination of Fecal sample: The collected faeces samples were analysed using the test tube flotation technique. The following procedures were used to examine the faeces samples: In the floatation method, each fecal sample was suspended in a solution of high specific gravity, which make parasite eggs to float and get concentrated at the surface.

Eggs were identified on the basis of their morphological features.

3. Result

In the study area of the Ahmednagar district, a total of 809, 794 from cattle's and 15 from goats were investigated. The overall proportion of infective larvae eggs revealed that common gastro-intestinal parasites were present. *Trichostrongylus* spp. (39.4%), *Toxocara* spp. (18.2%), *Haemonchus* spp. (12.1%), *Strongyle* spp. (11.0%), *Oesophagostomum* spp. (4.4%), *Bunostomum* spp. (1.4%), *Dictyocaulus* spp. (1.1%), *Trichuris* spp. (1.1%), and *Nematodirus* spp. (0.8%)

The season wise prevalence of helminth parasitic infestation, in summer season (54.60%) the highly prevalence of helminth parasitic infestation in cattles followed by monsoon season (51.85%) and less in winter season (28.95%) table 2 and fig1 shown the season wise prevalence of helminth parasitic.

In present study 15 samples collected from goats were 8 goats are helminth parasitic infestation. Were prevalence of helminth parasites in goat is *Coccidia* spp. and *Trichostrongylus* spp. were 46.66% and 6.6% respectively.

4. Discussion

Total in 809 examined animal the *Trichostrongylus* spp parasite, showing the higher prevalence in Ahmednagar, district that is 39.4% than other parasite.

The prevalence of helminth parasite observation in cattle was *Trichostrongylus* spp. (39.4%), *Taxocara* spp. (18.2%), *Haemonchus* spp. (12.1%), *Strongyle* spp. (11.0%), *Oesophagostomum* spp. (4.4%), *Bunostomum* spp. (1.4%), *Dictyocaulus* spp. (1.1%), *Trichuris* spp. (1.1%), and *Nematodirus* spp. (0.8%).

The season wise prevalence of helminth parasitic infestation, in summer season (54.60%) the highly prevalence of helminth parasitic infestation in cattles followed by monsoon season (51.85%) and less in winter season (28.95%).

Prevalence of helminth parasites in goat is *Coccidia* spp. and *Trichostrongylus* spp. were 46.66% and 6.6% respectively.

5. Conclusion

During the current study, the prevalence of helminth parasite infection is reported by host, parasite, and season in order to better understand parasite dispersion and recruitment, as well as the factors that influence the intensity of infection. During the month of July, all domestic ruminants in dairy farms will be dewormed to prevent a sudden outbreak of infection. This could be one of the reasons for the low frequency of GI helminth infection during the rainy season in the current study; nevertheless, further extensive research is needed to fully assess the factors influencing infection prevalence during different seasons. This type of research could be quite useful in determining the techniques required for domestic ruminant health management.

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Table 1: Shown the prevalence of helminthic parasitic in different cattle development centre

CDC	*Trichostrongylus* spp.	*Taxocara* spp.	*Haemonchus* spp.	*Strongyle* spp.	*Coccidia* spp.	*Oesophagostomum* spp.	*Bunostomum* spp.	*Dictyocaulus* spp.	*Trichuris* spp.	*Nematodirus* spp.	*Haemonchus* & *Trichostrongylus* spp.	*Trichostrongylus* spp. & *Trichurus* spp.	*Oesophagostomum* spp. & *Taxocara* spp.	*Taxocara* spp & *Haemonchus* spp.
Aadgaon	6	2	3	-		1	-	-	-	-	-	-	-	-
Akole	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Godhegaon	-	-	-	4	-	-	-	-	-	-	-	-	-	-
Handewadi	3	7	5	6	-	-	-	1	-	1	-	-	-	-
Karanji	77	2	21	6	1	12	1	1	1	1	1	3	2	2
Kopargaon	-	-	-	-	1	-	2	-	-	-	-	-	-	-
Kumbhari	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Rawanda	7	11	1	4	-	-	-	2	-	-	1	-	-	1
Sonewadi	2	-	-	-	-	-	2		-	-	-	-	-	-
Vaijapur	4	-	1	-	-	-	-	-	-	-	-	-	-	-
Zapewadi	44	44	13	20	13	3	-	-	3	1	6	2	2	1
No. Infestation	143	66	44	40	17	16	5	4	4	3	8	5	4	4
% Infestation	39.4	18.2	12.1	11.0	4.7	4.4	1.4	1.1	1.1	0.8	2.2	1.4	1.1	1.1

Table 2: Season wise prevalence of helminthic parasitic infestation

Season	Number of Examined	Number of Infested	% of Infestation
Winter	304	88	28.95
Summer	478	261	54.60
Monsoon	27	14	51.85

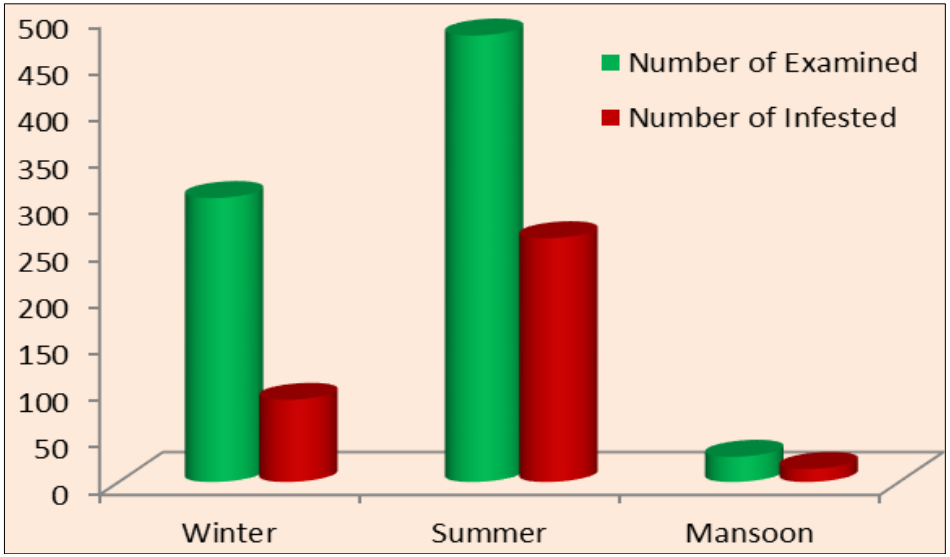

Fig 1: Season wise prevalence of helminth parasitic infestation

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