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Prevalence of gastro intestinal parasites in ruminants and poultry in Telangana region of Andhra Pradesh

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Abstract The prevalence study was conducted on gastrointestinal parasites of cattle, buffalo, sheep, goat and poultry belongs to in and around Korutla, Karimangar district (Telangana region) of Andhra Pradesh. The prevalence of *Fasciola* sp., *Amphistome* sp., *Eimeria* sp. and *Toxocara vitulorum* in cattle and buffaloes were 5.3, 8.0, 10.0, 16.7 % respectively. The prevalence of *Moniezia* sp., *Trichuris* sp., *Amphistome* sp., *Strongyle* sp., *Eimeria* sp. in sheep and goat were 10.7, 8.0, 6.0, 9.3,4.7 % respectively. The prevalence of *Capillaria* sp. and *Eimeria* sp. in poultry was 7.0 and 6.0 % respectively. The overall prevalence of gastro intestinal parasites in cattle and buffaloes was 40.0 %, 38.7 % in sheep and goat and 13.0 % in poultry. Two species of *Eimeria* were identified in sheep viz. *Eimeria granulosa* and *Eimeria parva*.

Keywords Prevalence gastrointestinal parasites · Incidence of Helminth parasites · Helminth eggs

Introduction

Gastro intestinal parasites which include various helminthes and protozoan parasites affect the health of the farm animals including poultry. In heavy infections they drastically decrease the economic returns from the animals like reduced milk yield in cattle and buffaloes due to parasites which also interfere with the digestion by mal absorption of essential minerals like calcium and vitamins for the milk production in the mammary glands. The wool quality and yield is reduced in sheep due to deficiency in essential amino acids which is required for the growth of the wool and grease fleece. In Poultry the layers are affected and production of abnormal eggs and increasing the clutch size. Whereas in broilers there is poor weight gain due to decreased feed conversion ratio and mortality. To combat these parasitic problems it is important for the veterinarians to become aware about the commonly prevalent gastrointestinal parasites in their respective geographical locations. This will expedite the diagnosis and treatment process and prevent economic losses to the poor farmers who depend on the livestock for their livelihood. With the above initiative a prevalence study was planned on gastrointestinal parasites of cattle, buffalo, sheep, goat and poultry belonging to Korutla region, Karimnagar district, Andhra Pradesh (Location: 18°49′N, 78°43′E and elevation 286 m). Korutla has ample of livestock resources and farmers to rear cattle, buffaloes, sheep, goat and poultry for their livelihood. The aim of this present study was to know the prevalence of various gastrointestinal parasites by fecal examination.

Materials and methods

Sample collection

A total of 400 fecal samples were collected from cattle, buffalo, sheep, goat and poultry in and around Korutla region in sample containers and were brought to the Department of Veterinary Parasitology, College of Veterinary Science, Korutla. Further the samples were subjected

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and screened for parasitic ova to know the prevalence of gastro intestinal parasites.

Qualitative coproscopy

The fecal samples were subjected to simple qualitative techniques like direct smear examination, sedimentation technique and floatation analysis like willi's and Lane's method (MAFF 1984). All the samples processed by these methods were screened for the presence of parasitic eggs and oocysts and percentage prevalence was recorded.

Results and discussion

Qualitative coproscopy

The species were identified based on the morphological characters of their eggs as *Fasciola* species, *Amphistome* species, *Eimeria zurnii* (Cattle), *Moniezia expansa*, *Trichuris ovis*, *Strongyle* species, *Eimeria parva* and *Eimeria granulosa* (Sheep), *Capillaria plica* (Poultry), *Eimeria tenella* (Poultry). The results were tabulated in Table 1.

The percent prevalence of *Fasciola* sp., *Amphistome* sp., *Toxocara vitulorum* and *E. zurnii* in cattle and buffaloes were 5.3, 8.0, 16.7 and 10.0 respectively. The percent prevalence of *Amphistome* sp., *M. expansa*, *Trichuris ovis*, *Strongyle* sp., *Eimeria* sp. in sheep and goat were 6.0, 10.7, 8.0, 9.3 and 4.7 respectively. The percent prevalence of *C. plica* and *E. tenella* in poultry was 7.0 and 6.0 respectively. The overall prevalence of gastrointestinal parasites in cattle and buffaloes was 40.0, 38.7 % in sheep and goat and 13.0 % in poultry.

Table 1 The species wise prevalence of various parasitic eggs and oocysts

Sl.no	Species	No. faecal samples	Gastrointestinal parasites	No. positive	No. negative
1	Cattle & buffallo	150	Fasciola sp.	8	
			Amphistome sp.	12	
			Toxocara vitulorum	25	
			Eimeria zurnii	15	
			Total	60	90
2	Sheep & goat	150	Amphistome sp.	9	
			Trichuris sp.	12	
			Moneizia sp.	16	
			Strongyle sp.	14	
			Eimeria parva & E.granulosa.	7	
			Total	58	92
3	Poultry	100	*Capillaria plica.*	7	
			Eimeria tenella.	6	
			Total	13	87

The prevalence studies carried out were in correlation with similar gastrointestinal parasites reported elsewhere (Haque et al. 2011; Yadav et al. 2005; Muraleedharan 2005). Haque et al. (2011) reported the percentage prevalence as follows *Eimeria* sp. (13.42 %), *M. expansa* (5.57 %), *Amphistomes* (3.80 %), *Strongyloides papillosus* (1.01 %), *Trichuris* sp. (0.76 %) and *Fasciola* sp. (0.51 %). The prevalence of *Fasciola* sp., *Amphistome* sp. in the present was higher than the report of Haque et al. (2011) in the present study. The reason could be due to the agro climatic conditions in Korutla region with the presence of lush green pastures near water bodies and abundant intermediate hosts during the rainy season.

Yadav et al. (2005) reported that the prevalence of *Amphistomes* (26.56 %) were predominant followed by Strongyles (8.43 %) in bovines belonging to Jammu region. (Muraleedharan 2005), who reported the prevalence of gastrointestinal parasites among cattle (18.22 %), buffaloes (20.85 %), sheep (39.34 %) and goats (46.12 %) of southern taluks of central dry zone of Karnataka during drought period has been reported by authors. They reported *Strongyles*, *Toxocara*, *Fasciola*, *Amphistomes*, *Moniezia*, *Trichuris* and *Entamoeba* infections.

The prevalence studies were not in correlation with Wadhwa et al. (2011) exclusively identified only *strongyle* sp. infection in cattle. In case of sheep and goat the prevalence results were coherent with previous results (Pant et al. 2009; Pathak and Pal 2008). The *Eimeria* species identified in sheep viz. *E. granulosa* and *E. parva* were identical to the morphological characters of these species reported earlier (Levine 1985; Reginsson and Richter 1997). The prevalence studies were in correlation with the earlier studies elsewhere in India (More et al. 2011; Bandyopadhyay 2004).

The prevalence of *C. plica* was in correlation with previous reports (Yadav and Tandon 1991) in India and elsewhere (Permin et al. 2008; Rayyan et al. 2010; Mukaratirwa and Khumalo 2010) and the prevalence of Capillaria infection in poultry was not correlated to Puttalakshmamma et al. (2008) the nematodes viz. *Ascaridia galli*, *Heterakis gallinarum* and *Subuluria* sp. in chicken in and around Bangalore region.

The prevalence of *E. tenella* in poultry was in correlation with previous reports (Rao et al. 2012; Sairabanu et al. 2009; Puttalakshmamma et al. 2008). It is therefore obligatory for the veterinarians to educate the farmers about healthy farming practices through extension programmes. They should emphasize on the etiologies of commonly occurring gastrointestinal parasites and other infectious diseases and

play a responsible role by organizing deworming and vaccination programmes.

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