

Prevalence of gastrointestinal parasites in bovines in Bangalore district, Karnataka

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Received: 3 January 2014 / Accepted: 25 August 2014 / Published online: 5 September 2014
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Abstract The study was undertaken to know the current status of prevalence of gastrointestinal parasites of cattle and buffaloes in Bangalore, Karnataka. An overall prevalence of gastrointestinal parasites among cattle (75.2 %) and buffaloes (76.8 %) was determined by coprological examination. The gastrointestinal parasites detected in cattle and buffalo were Strongyle (39.8 and 29.1 %), followed by Amphistome (24.4 and 23.1 %), *Moniezia* spp. (5.3 and 5.9 %), *Fasciola* spp. (4.1 and 15.6 %), *Trichuris* spp. (1.4 and 2.9 %), *Buxtonella* spp. (36.6 and 37.3 %) and *Eimeria* spp. (26.7 and 29.8 %) respectively. The percentage prevalence of mixed helminth and protozoan infections was 20.2 and 26.1 % in cattle and buffaloes, respectively.

Keywords Prevalence · Bovines · Gastrointestinal · Faecal sample

Introduction

The parasitic infections are more commonly encountering problems in the traditional animal husbandry practices in

India. Helminthic infection is a major constraint of livestock causing great economic losses to dairy industry by way of retarded growth, impaired reproduction, lowered productivity and increased susceptibility of animals to other diseases. The diverse agro climatic conditions, animal husbandry practices and pasture management largely determine the incidence and severity of various parasitic diseases in a region. Epidemiological survey of parasitic diseases is an important tool in controlling losses due to parasites by adopting effective control measures.

The Epidemiology of gastrointestinal parasites (GI) of cattle and buffaloes has been reported by different authors from different parts of the country (Chowdhury and Tada 1994; Khatri et al. 1999; Pal et al. 2001; Sahoo et al. 2002; Agnihotri et al. 2004). The prevalence of GI parasites was reported by D' Souza et al. 1988, Jagannath et al. 1988, 1989, Muraleedharan 2005, Mamatha and D' Souza 2006. The present investigation adds more information to the already existing data on prevalence of gastrointestinal parasitism in cattle and buffalo of Bangalore.

Materials and methods

In the present study faecal samples of 336 cattle and 134 buffaloes from different destinations in Bangalore were collected to determine the prevalence of gastrointestinal parasitism. The representative fresh faecal samples were collected per rectum from individual animals in dry and clean, polythene bags and were brought to the laboratory after affixing a proper identification label. The faecal samples were processed by direct smear examination and sedimentation technique (Soulsby 1982) for detection of ova of helminth parasites and coccidian oocysts. The

Krishna Murthy C. M. is the part of M.V.Sc thesis submitted to KVAFSU, Bidar.

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prevalence of infection was studied and statistically analyzed by Chi square test as per Daniel (1987).

Results

The results of the present study are summarized in Table 1. Out of the 336 cattle faecal samples examined, 253 faecal samples were found positive for single helminthic infection and 68 samples were for mixed helminthic infection. Similarly out of 134 buffalo faecal samples examined, 103 samples were found positive for single and 35 samples were for mixed helminthic infection respectively.

The present study recorded an overall prevalence of GI parasites about 75.2 % in cattle and 76.8 % in buffaloes respectively, among which, the prevalence of nematodes (41.3 and 32.0 %) followed by trematodes (28.5 and 38.8 %) and cestodes (5.3 and 5.9 %) in cattle and buffaloes, respectively.

Among helminth parasites predominantly Strongyle (39.8 and 29.1 %), followed by Amphistome (24.4 and 23.1 %), *Moniezia* sp. (5.3 and 5.9 %), *Fasciola* sp. (4.1 and 15.6 %) and *Trichuris* sp. (1.4 and 2.9 %) were found in cattle and buffaloes respectively. Similarly protozoan parasites of *Eimeria* sp. (26.7 and 29.8 %) and *Buxtonella* sp. (36.6 and 37.3 %) were also recorded in cattle and buffalos, respectively as shown in Table 1.

Discussion

The present study showed a higher prevalence of GI parasites in cattle (75.2 %) than in buffaloes (76.8 %), results were in agreement with Samanta Arindam and Santra Prabir Kumar (2007) who reported 76.17 % in West Bengal in cattle and similar results reported by Gupta et al. (2012) who reported 73.0 % in buffaloes in Jabalpur, Madhya Pradesh. On contrary, Kaur and Kaur 2008 reported a relatively high prevalence of 82.35 % in cattle of Patiala, Punjab. However, D’ Souza et al. (1988) documented comparatively lower prevalence of 64.87 % in cattle and 69.54 % in buffaloes in 14 taluks of the Mysore and Mandya districts of Karnataka.

Compared to the present study in cattle a lower prevalence (55.17 %) was observed by Agnihotri et al. (2004) in Kangra district of Himachal Pradesh. Sahoo et al. (2002) reported 55.48 % prevalence in cattle in Orissa and Khatri et al. (1999) reported 50.0 % in Udaipur region. The discrepancy between above said reporters and current findings could be attributed to the differences in agro-climatic conditions of the study area which supports wide spread of availability of snail intermediate hosts and climatic

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Table 1 Prevalence of gastrointestinal parasites of bovines in Bangalore district

Animal species	No of samples examined	No of faecal samples positive for gastrointestinal helminth parasites				Total positive samples	Protozoan oocysts		Mixed infection
		Trematodes <i>Fasciola</i>	Amphistome	Cestodes <i>Moniezia</i>	Nematodes Strongyle		<i>Eimeria</i>	<i>Buxtonella</i>	
Cattle	336	14 (4.1) 96 (28.5 %)	82 (24.4)	18 (5.3)	134 (39.8) 139 (41.3 %)	253 (75.2)	90 (26.7)	123 (36.6)	68 (20.2) ^a
Buffalo	134	21 (15.6) 52 (38.8 %)	31 (23.1)	08 (5.9)	39 (29.1) 43 (32.0 %)	103 (76.8)	40 (29.8)	50 (37.3)	35 (26.1) ^b

Values in parentheses indicate percentage

Chi square value = 361.8

*** P ≤ 0.05 significant between cattle and buffalo

^a Strongyles and *Buxtonella*; Strongyle and *Fasciola*; Strongyle and *Eimeria*

^b Strongyles and *Buxtonella*; *Buxtonella* and *Fasciola*; Strongyle and Amphistome

onditions required for the development of free living stages of the nematodes.

A lowered prevalence in cattle compared to the present study of 30.01 and 36.25 % was reported by Jagannath et al. (1988), (1989) in Bangalore district, may be attributed due to large no of samples examined and obtained statistically reduced percentage during that period. Mural-eeharan (2005) reported a lowered prevalence rate of 18.22 % in cattle and 20.85 % in buffaloes in Karnataka, which could be due to draught conditions prevailed during that period in southern taluks of Central dry zone of Karnataka.

When compared to present study, Mamatha and D' Souza 2006 reported a fairly high prevalence of *Strongyles* 83.6 and 39.0 %, and *Moneizia* sp. 8.2 and 4.0 % in cattle and buffaloes respectively. Similarly lowered prevalence of *Amphistome* 3.4 and 7.0 %, *Eimeria* sp. 19.2 and 18.0 %, *Buxtonella* sp. 12.6 and 20.5 %, *Fasciola* sp. 2.4 and 1.5 % and *Trichuris* sp. 0.4 and 0.0 % in cattle and buffaloes respectively from Bangalore. The differences in prevalence might be due to climatic variations prevailing in Bangalore district throughout the calendar year.

Acknowledgments The facilities and funding by the ICAR, New Delhi through the Centre of Advanced Faculty Training for the study is gratefully acknowledged.

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