

Parasitosis in domestic animals and birds of Aizawl, Mizoram

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Abstract

An investigation on the prevalence of parasites and parasitic diseases in animals and birds was carried out from March 2001 to August 2002 in Aizawl town and its suburbs. In this north-eastern state of Mizoram, pigs are very common followed by cattle, dogs and goats. The overall helminthic infections in pigs, cattle and dogs accounted for 22.2%, 18.5% and 46.4%, respectively. *Ascaris suum* in pigs, *Oesophagostomum radiatum* in cattle and *Diphyllobotrium latum*, *Dirofilaria immitis* and *Toxocara canis* in dog were the predominant helminths encountered. Of the ectoparasites, ixodid ticks of the genus *Boophilus*, *Rhipicephalus* and *Haemaphysalis* were recorded from cattle, dogs and goats, respectively. *Demodex canis* was a very common in dogs. Abundant dipteran flies (*Tabanus*, *Haematopota*, *Musca*, *Calliphora*, *Lucilia*), fleas (*Ctenocephalides canis*, *Ctenocephalides felis*), lice (*Haematopinus suis*, *Lignognathus* spp. *Bovicola* spp. were also common. Coccidiosis in birds and *Balantidium coli* in pigs are prevalent. The prevalence of parasitosis vis-a-vis the geographical locations, climatic conditions in this hilly state along the source of animals are discussed.

Keywords : Parasitosis, Prevalence, North-eastern Indian state, Mizoram.

Introduction

Mizoram is a hilly state of North-east India with a tropical and subtropical climate which falls under sub-region II of Eastern Himalayan Zone II of India, according to agro-climate division. The average rainfall of the state is about 3500 mm per annum with a temperature ranging from 10°C to 21°C in winter and 20°C to 29°C in summer, unlike other states of India. Not much is known on prevalence of parasites and parasitic diseases of animals from this state. Earlier reports from north-east are mainly based on study carried out in Assam and Meghalaya (Endrejat, 1964; Miranpuri and Lahkar, 1979; Baruah and Gogoi, 1989; Deka *et al.*, 1985; Deka *et al.*, 1995; Borthakur and Das, 1998; Roy and Tandon, 1992). From the state of Mizoram, Zakhuma (1998) reported a case of "surra" in Champhai district on the border of Burma. Thereafter, no published data on parasites are available. The present communication reports the occurrence of endo and ecto parasites in different animals in this hilly region.

Materials and Methods

The present investigation was limited to Aizawl and adjoining villages from March 2001 to August 2002. The

study included the examination of carcasses in unorganized and private abattoirs at Durtlang, Selesih, Sihphir and Aizawl besides the necropsies conducted in the Parasitology Department of this Central Agricultural University. Carcass of 138 pigs, 102 cattle, 34 dogs and 57 birds were examined during the study. Faecal samples and skin scrapings were examined using routine parasitological methods (Soulsby, 1982). Arthropod specimens were identified according to Sen and Fletcher (1962).

Results

Examination of 351 faecal samples and 274 carcasses of animals revealed an overall parasitic infections of 25.64% and 21.89%, respectively. Amongst helminths, nematode infection accounted for higher prevalence in all species of animals examined followed by cestode infection (Table 1). No trematode ova could be recorded in any of the species during faecal examination but a low level of trematode infection in cattle (6.82%) was encountered in abattoir survey. Arthropods and protozoan infections were recorded at 16.38% and 22.4%, respectively.

In cattle, among the nematode infections (14.45%) recorded, *Nematodirus fillicolis*, *Haemonchus contortus*,

Table 1: Incidence of parasitic infections in animals and birds

Animal species	No. of faecal samples examined	No. of carcasses examined	No. of positive cases						
			Faecal examination	Carcass examination	Total	Types of helminths			Protozoa on faecal examination
						Nematodes	Cestodes	Trematodes	
Cattle	147	102	18 (12.24%)	28 (27.45%)	46 (18.5%)	36 (14.45%)	-	17 (6.82%)	40 (27.21%)
Pig	173	138	60 (34.68%)	14 (10.14%)	74 (23.79%)	60 (19.21%)	-	-	80 (46.24%)
Dog	31	34	12 (38.7%)	18 (52.0%)	30 (46.15%)	28 (30.76%)	19 (29.41%)	-	Nil
Total	351	274	90 (25.64%)	60 (21.89%)					
Birds	23	87	Nil	28 (32.18%)	28 (32.18%)	-	-	-	15 (65.21%)
Others	25	Nil	13	-	13 (52.0%)				

Trichostrongylus spp., *Oesophagostomum raditum* and *Toxocara vitulorum* were common. Larval cestodes, *Cysticercus tenuicollis* and hydatid cysts were also encountered. Of the ectoparasites, *Haematopinus tuberculatus*, *Linognathus vituli*, *Rhipicephalus sanguineus*, *Boophilus microplus* and *Sarcoptes scabiei* were common. Although, no haemoprotozoan infection from the study area was recovered but enteric coccidia viz., *Eimeria bovis* in cattle and *E. acervulina* in poultry were recorded.

The overall infection of pigs was 23.79%, of which nematode infection accounted for 19.21% and *Ascaris suum* was the predominant species among nematodes. Heavy burden of *Balantidium coli* infection was also recorded in pigs.

In dogs, nematode infections were higher (30.76%) than cestode infections (29.41%). Among the cestodes, *Diphylobotrium latum* and *Dipylidium caninum* were important and *Ancylostoma caninum*, *Toxocara canis* and *Dirofilaria immitis* were the common nematodes.

An overall prevalence of 36.84% helminthic infections in birds were recorded of which *Ascaridia galli*, *Raillietina tetragona* and *Raillietina echinobothridia* were the predominant species.

During the course of study, faecal examination of 1 horse, 14 cats and 10 goats in the vicinity showed the presence of strongyle infection. *Toxocara cati* was predominant in cat and *Haemonchus* and *Oesophagostomum* species in goats.

Discussion

The present findings differ from the previous reports of N.E. region. In cattle, prevalence of strongyle infection was low. The low prevalence of strongyle infection might

be due to the hilly rearing and management practices followed in this part of the country. Dairy cows in Mizoram are generally stall-fed on wooden floor in the slopes of hills and the green plants and leaves are fed to animals in bunch. Absence of contaminated pastures may be explained with low prevalence of strongyle infection. The frequent occurrence of *T. vitulorum* in calves might be due to prenatal transmission. Absence of snail intermediate hosts in this hilly area may be a key factor for low trematode infection in local cattle of Mizoram. However, at slaughter trematode infection (6.86%) viz., *Paramphistomum* sp. and *Fasciola* sp. were recorded, however, it does not reflect the true incidence from this area as the slaughtered animals examined are brought from adjoining states of Assam or Myanmar. Most of the research data generated on the occurrence of *Fasciola gigantica* infection is based on abattoir surveys and faecal examination of fluke eggs which are biased (Sanyal, 2001).

The common occurrence of dog flea (*C. canis*) is related to *D. caninum* infection but the frequency of *D. latum* infection in fact requires a thorough investigation.

Ascaris suum and *B. coli* were highly common in pigs. Rajkhowa (1996) reported that *A. suum* infection was highest (69.3%) in young pigs from Meghalaya. The ixodid ticks, *Boophilus* sp., *Rhipicephalus* sp., *Haemophysalis* sp. ticks have a linear relationship with microclimate, quantity of herbage, temperature, humidity, rainfall, etc. No haemoprotozoan infection could be recorded but it requires further study as arthropod vectors in this part of country.

It can be concluded from this preliminary study that parasitosis in animals in Aizawl district of Mizoram, assumes a low profile.

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