



Occurrence of Gastrointestinal Helminth Parasites of Indigenous Pigs in Phek District of Nagaland

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Abstract

An investigation was carried out to study the occurrence of gastrointestinal parasites in the local pigs of different villages in Phek district of Nagaland. The faecal sampling was done randomly from four villages of Phek district of Nagaland and a total of 80 animals were screened to find out presence of parasites in indigenous local pigs of this region. The recorded parasites were *Ascaris suum* (28.75%) followed by *Eimerian spp.* (16.25%), *Strongyloides ransomi* (10.00%), *Strongyles* (6.25%), *Trichuris suis* (6.25%), and *Capillaria spp.* (1.25%) respectively. Among the three age groups of pigs considered, there were significant differences ($p < 0.05$) between these groups as well as among different species of parasites. However, in comparison to sex, there was no significant difference in occurrence between male and female.

Key words: Local Indigenous Pigs, Gastrointestinal Helminths, Incidence

Introduction

Pigs play an important role in the socio economic life of tribal population particularly in the states of north eastern hilly region of India. The peculiar topography, rainfall, humidity and soil quality influences the epidemiology of gastrointestinal parasites. The climatic condition in this region is very much congenial for growth and propagation of parasites. Most of the animal reared under backyard condition suffers from reduced body weight and production.

The prevalence of gastrointestinal parasites in pigs from the north eastern region was reviewed by different authors (Rajkhowa *et al.*, 2003; Yadav and Tandon, 1989; Sarma and Gogoi, 1986). The present short communication deals with investigation of different gastrointestinal parasites harbored by indigenous local pigs from the Phek district of Nagaland.

Materials and Methods

A total of 80 numbers of Naga indigenous pigs, reared in village condition, were selected for the study to find out occurrence and incidence of gastrointestinal parasites from four different villages namely Porba village, Thipuzumi village, Upper Khomi village and Sakraba village under Pfutsero block of Phek





district, Nagaland. Geographically, the experimental area lies in the South-East of Nagaland, between 94° - 35' - 18" to 94° - 38' - 09" E (L) longitude and 25° - 37' - 37" to 25° - 39' - 47" N (LT) latitude and at an altitude range ranging from 2133 to 2900M above mean sea level (MSL). In the present investigation, animals were divided into three groups, based on age, i.e. Group I : < 3 months (n = 26) and Group II : 3 months upto 1.5 years of age (n = 29) and Group III: above 1.5 years of age (n=23). Fresh per rectal faecal samples were collected and examined microscopically as per the methods like direct faecal smear, sedimentation and saturated salt solution methods. The recovered eggs were identified under standard parasitological procedures described by Soulsby (1986). The experimental data was analysed as per standard statistical methods and analyses were done as per statistical methods as per Snedecor and Cochran (1989).

Results

The result of the present study revealed that out of total 80 animals examined irrespective of age and sex, the predominant parasites were *Ascaris suum* (28.75%) followed by Eimerian spp. (16.25%), *Strongyloides ransomi* (10.00%), Strongyles (6.25%), *Trichuris suis* (6.25%), and *Capillaria* spp.(1.25%) respectively (Table 1).

Table 1: Incidence of gastrointestinal parasites of Pigs in Phek district of Nagaland

Name of gastrointestinal parasites	Percentage of subclinical infection (%)
<i>Strongyloides ransomi</i>	10.0
<i>Ascaris suum</i>	28.75
Strongyle spp.	6.25
Trichuris spp.	6.25
Capillaria spp.	1.25
Eimeria spp.	16.25

Figure in parenthesis indicates percentage of infection

In group I, the incidence of the parasitic infestation was 73.07% (18). A high incidence of *S. ransomi* (23.07%) was observed. However, there was no record of *Capillaria* and Strongyle infection in this group. In the present observation, moderate infection of Eimeria (19.23%) and *Ascaris* (19.23%) were noted. In group II, the incidence of parasitic infestation was 68.97% out of 29 animals examined. Out of which, *A.suum* (34.48%) was highest followed by Eimeria spp. (20.68%) infestation. There was no record of strongyle infestation. Other nematodes recorded were *Trichuris* (6.80%), *Capillaria* (4.77%) and *S. ransomi* (4.77%). In case of group III, the maximum infestation of *A. suum* was recorded (34.80%) followed by Strongyle species (21.47%). There was no record of *Trichuris* and *Capillaria* spp. infestation.





The other species of parasite like *Eimeria* spp. (8.70%) and *S. ransomi* (4.35%) was recorded out of 23 animals examined (Table 2).

Table 2: Age wise prevalence of gastrointestinal parasites of Pigs in Phek district of Nagaland

Age groups	Percentage of incidence of gastrointestinal parasites					
	<i>Strongyloides ransomi</i>	<i>Ascaris suum</i>	Strongyle spp.	<i>Trichuris suis</i>	Capillaria spp.	<i>Eimeria</i> Spp.
Age group I	23.07	19.23	0.0	0.0	0.0	19.23
Age group II	4.77	34.48	0.0	6.80	4.77	20.68
Age group III	4.35	34.80	21.47	0.0	0.0	8.70

Figure in parenthesis indicates percentage of infection

Discussion

Among the three groups, there were significant ($p < 0.05$) difference between three groups as well as among different species of parasites also. However, in comparison to sex, there was no significant difference in occurrence between male and female. In the present investigation, higher prevalence of gastrointestinal parasites in pigs can be attributed to poor management. This may be due to the fact that majority of pigs are reared by tribal people under backyard condition without proper introduction of scientific management like housing, feeding and deworming practices. Moreover, underfed animals have every possibility to suffer from vitamin and mineral deficiency which is a predisposing factor for parasitic infection. Besides, untreated animals remain a potential source of infection for newborn as well as for other animals. The occurrence of *S. ransomi* can be attributed to prenatal transmission as well as colostral transmission from mothers. Most of the parasites encountered during the present study were in subclinical form which results in reduced body weight and poor performance. The high frequency of nematode parasites in the pigs of north eastern region is due to both unhygienic management practices and favourable environment for survival and development of pre infective stages of nematode larvae (Yadav and Tandon, 1989). The climatic condition of the NEH region has shown that the area is hot and humid followed by heavy rainfall which are much congenial for growth and propagation of helminth parasites which are in line with Rogers (1962). However, feeding habits of animals also influence the occurrence of nematode particularly of *A. suum* (Yadav and Tandon, 1989). Most of the rearing system is of backyard condition, where animals were reared with minimum input of scientific management. Besides, the prevalence of worm burden, spectrum of helminth species largely depends on the type of swine production systems (Nganga *et al.*, 2008). However, study of immune status of animal is very essential for executing future parasite control programme.





Conclusion

The occurrence of *A. suum*, Eimerian spp., *S. ransomi*, Strongyles, *T.suis* and Capillaria spp. were recorded in the local pigs of Phek district of Nagaland. Among the three age groups, incidence is more in younger animal than adult pigs. However, there was no significant difference in occurrence between male and female.

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