

## STUDY ON HELMINTHES PARASITES OF PIG IN BARISAL AND PATUAKHALI DISTRICTS

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## ABSTRACT

The study was designed to determine the prevalence of helminthes parasites of pigs in Barisal and Patuakhali Districts from February to June 2012. A total of 30 fecal samples, 15 from semi intensive system and 15 from intensive system were collected and examined by direct smear, floatation technique and sedimentation methods where 100% animals were affected with helminthes parasites irrespective of age, sex, breed and management system. The overall prevalence was highest for *Ascaris* sp. illustrates 63.3% and followed by *Trichuris* sp., *Strongyloides* sp., *Oesophagostomum* sp., *Capillaria* sp., *Fasciola* sp. and *Schistosoma* sp. constitutes 56.6%, 40%, 36.3%, 23.3%, 23.3% and 10%, respectively. In intensive system, animals were more susceptible to *Ascaris* sp. constituting 66.7% and followed by *Trichuris* sp., *Strongyloides* sp., *Oesophagostomum* sp. and *Fasciola* sp. that makes up 53.3% , 46.7%, 46.7 % and 26.7%, respectively and, 60%, 60, 40%, 40% 33.3% and 33.3% for *Ascaris* sp., *Trichuris* sp., *Strongyloides* sp., *Oesophagostomum* sp., *Fasciola* sp. and *Capillaria* sp., respectively in semi intensive system. *Capillaria* sp. was absent in intensive system *Schistosoma* sp. was not found in semi intensive system. In this study, it was well mentioned that almost all pigs of the study area were affected with different types of parasites for what regular anthelmintic programs should be undertaken for better care and management of pig population in Bangladesh.

**Key words:** Fecal examination, helminthes parasites, management system, pig.

## INTRODUCTION

Pigs are omnivores and have been known to eat any kind of food, including dead insects, worms, tree bark, rotting carcasses, garbage, kitchen waste and even human excreta. There are some areas of Chittagonj Hill Tracts, Narayangonj, Mymensingh, Dinajpur, Barisal, Naogaon and Tangail where pigs are reared mainly by ethnic people in Bangladesh. Pig population in Bangladesh is estimated as 8 million. *Ascaris* sp., *Oesophagostomum* sp., *Metastrongylus* sp., *Stephanurus* sp. and *Strongyloides* sp. are important internal parasites of swine that causes heavy economic losses. A study in Bangladesh reveal that the prevalence of *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Trichuris suis* and *Fasciolopsis buski* were 33.3%, 16.67%, 16.67% and 16.67%, respectively (Shaikh and Huq, 1984). The public health significance of zoonotic parasite of pigs has had importance

from early days of civilization. The most important zoonotic parasites of pigs are *Trichinella spiralis*, *Taenia solium*, *Ascaris suum* and *Fasciolopsis buski*. Thirty-nine percent of children have been found infected with *F. buski* in Bangladesh and India. *Trichinella spiralis* cause severe muscular pains and swelling of man (Harper, 2004). Concurrent outbreaks of a respiratory and neurologic illness caused by Nipah virus occurred among pigs in the affected areas, and close contact with pigs, especially sick pigs, was the major risk factor for human infection (Morb, 1999). The present study was aimed to assess the status of manage mental condition of swine from parasitological view point.

## MATERIALS AND METHODS

Data of age, sex, and breed and management system of pig were collected from the owners

from February to June 2012 in Barisal and Patuakhali Districts.

A total of 30 fecal Samples, 15 from semi intensive and 15 from intensive system were collected aseptically. Each sample was collected separately in small vial containing 10% formalin and carried to the laboratory as early as possible.

The samples were examined for the helminthes eggs by using direct smear, floatation technique and sedimentation methods and eggs were identified according to their characteristic features under microscope.

### RESULTS AND DISCUSSION

Fecal examination reveals that 100% of animals of both management system were found to be infected with one or more species of parasites irrespective of age, sex, breed and management system where five species of nematode such as *Strongyloides* sp., *Ascaris* sp., *Trichuris* sp., *Capillaria* sp., *Oesophagostomum* sp. and two species of trematodes namely *Schistosoma* sp. and *Fasciola* sp. were identified. Among them, the highest prevalence was observed in case of

*Ascaris* sp. (63.3%) followed by *Trichuris* sp. (56.6%), *Strongyloides* sp. (40%), *Capillaria* sp. (23.3%), *Oesophagostomum* sp. (36.3%), *Fasciola* sp. (23.3%) and *Schistosoma* sp. (10%).

In intensive system, the observed parasites were *Ascaris* 66.7%, *Trichuris* 53.3%, *Strongyloides* 46.7%, *Oesophagostomum* 46.7%, *Fasciola* 26.7% and *Scistosoma* 13.3%. On the other hand, *Ascaris* 60%, *Trichuris* 60%, *Strongyloides* 40%, *Oesophagostomum* 40%, *Fasciola* 33.3% and *Capillaria* 33.3% were identified in semi intensive system. *Capillaria* sp. was totally absent in the samples collected from pigs reared in intensive system where as *Schistosoma* sp. could not be detected in semi intensive system. Findings in these studies has similarity with the findings of Getler (1971), Thomas and Peter (1975), Davidson and Taffa (1965). On the other hand, these findings were much higher than the findings of Duee *et al.* (1969). This disparity may be due to the variations among the research areas, their geo-climatic conditions, method of study, breeds of pig and variations in management system. Besides, in Bangladesh pigs are mainly reared by poor ethnic peoples who have no idea about the modern rearing system of pigs.

**Table 1.** Prevalence of helminthes in pigs observed by fecal sample examination at different management systems

Helminthes	No. of positive cases ( prevalence in percentage)	
	Semi intensive (N = 15)	Intensive (N = 15)
<i>Ascaris</i> sp.	9 (60%)	10 (66.7)
<i>Strongyloides</i> sp.	6 (40%)	7 (46.7%)
<i>Trichuris suis</i>	9 (60%)	8 (53.3%)
<i>Capillaria</i> sp.	5 (33.3%)	0
<i>Oesophagostomum</i> sp.	6 (40%)	7 (46.7%)
<i>Fasciola</i> sp.	5 (33.3%)	4 (26.7%)
<i>Schistosoma</i> sp.	0	2 (13.3%)

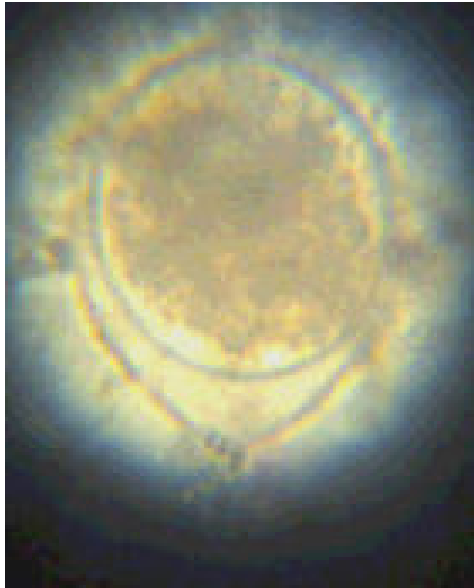


Figure – 01 (Ascaris suum)

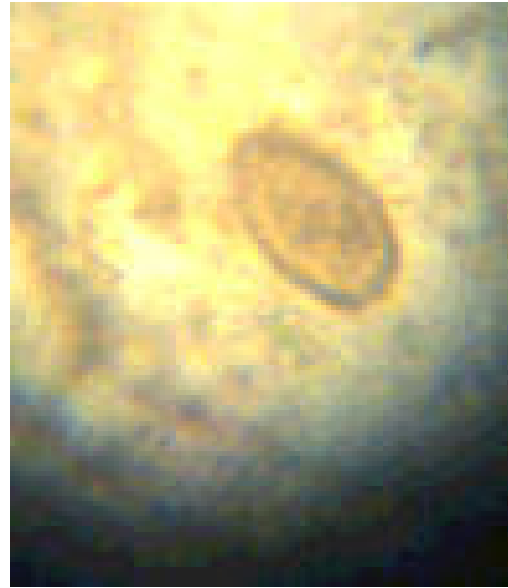


Figure- 02 ( Strongyloides sp.)



Figure -3 ( Capillaria sp.)

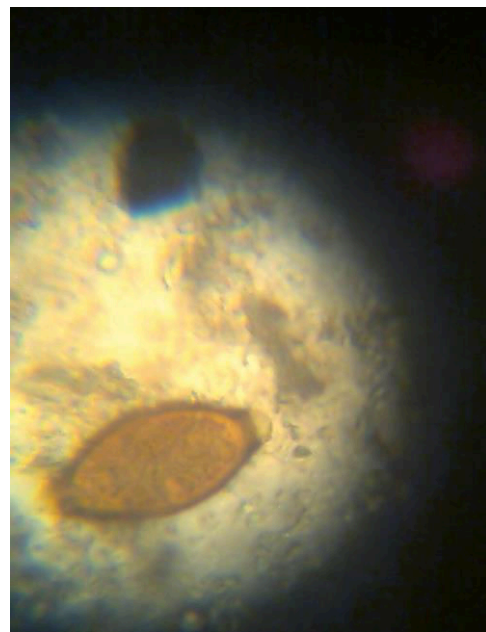


Figure-4 ( Trichuries sp. )

### CONCLUSION

Pig rearing is becoming increasingly important for food security but this study create evidence that pigs raised in the smallholder sector are susceptible to a wide range of parasitic and other medically important pig-associated zoonotic diseases which may spread from pigs to humans. So, further more specific study with proper laboratory methods has to be taken in response to parasitic load of pigs especially on the zoonotic parasites of the areas.

### REFERENCES

- Davidson JB and Taffa LF. 1965. Gastrointestinal Parasites in pigs. *Vet Res.* 77: 403.
- Duee JP, Cornette D and Moine G. 1969. Intestinal Parasitism in pigs in the Nord Department. *Recl. Med. Vet.* 145: 691-710.
- Getler K. 1971. Helminth fauna and age of pigs under intensive husbandry conditions. *Medycyna Wteryaryjna*, 27(11): 660-661.
- Harper A. 2004. Internal Parasite Control in Pigs *Livestock Update, Extension Animal Scientist, Swine, Tidewater AREC*, 20(2): 8-9.
- Morb Mortal MMWR. 1999. Centers for Disease Control and Prevention. Outbreak of Hendra-like virus—Malaysia and Singapore, 1998–1999. *Wkly Rep*; 48: 265–269.
- Thomas PC and Peter CT. 1975. Studies on the nematodes in pigs (*Sus scrofa domestica*). *Indian Vet . J.* 52(8): 668-669.
- Shaikh H and Huq MM. 1984. Zoonotic parasites of Bangladesh. 1<sup>st</sup> Edition: 86-89.