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Short Communication

Point Prevalence of *Toxocara vitulorum* in Large Ruminants Slaughtered at Multan Abattoir

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ABSTRACT

The present study was conducted to determine the point prevalence of *Toxocara* (*T.*) *vitulorum* in buffalo and cattle slaughtered at Multan abattoir. Gastro-intestinal tracts of 94 buffaloes and 48 cattle were examined for *T. vitulorum*. Prevalence of *T. vitulorum* was 63.83 and 37.50% in buffaloes and cattle, respectively. Sex wise prevalence of *T. vitulorum* was recorded as 39.46% (30/76) in male and 72.72% (48/66) in female.

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INTRODUCTION

Helminthes parasites of cattle and buffalo include nematodes, cestodes and trematodes. They cause the animals to be unthrifty which may include the loss of weight, low birth weights and digestive disturbances. In addition to this the animals become susceptible to other health problems which can lead to death. Infections are widespread, but the majority of animals infected with parasites show a number of little obvious clinical signs what so ever, through out their productive life. Partly for this reason, infections with gastrointestinal and other helminthes parasites are not given importance by the farmers (Hasnain and Usmani, 2006).

Pakistan is located in the semi tropic zone: such type environment is conducive for many species of helminthes parasites. Gastrointestinal heminthiasis syndrome is always caused by a mixture of species of helminthes parasites in alimentary tract (Chaudhry *et al*., 1984). Among these species of the helminthes, *Toxocara vitulorum* parasite has special importance in cattle and buffalo (Yadav *et al*., 2008), which inhabiting the intestine of these animals and cause severe damage to the intestinal mucous membrane with similar effects. Young animals are more susceptible to infection (Singh *et al*., 2008).

According to the work done by different researchers, infestation of buffalo and cow calves with *T. vitulorum* has been recorded as 20-22% throughout the Punjab province (Chaudhri and Riaz, 1984; Shahid *et al*., 1993). Heavy infestation with this worm causes digestive disturbance, poor growth in young stock giving rise to major economic loses (Singh *et al*., 2008). Large numbers of these parasites block the lumen of intestine in calves and results in mortality. This parasite can transmit in calves via colostrums (Husnain and Usmani, 2006).

In Pakistan, little information is available about the infection rate and intensity of *T. vitulorum* in large ruminants. Hence, the present study was designed to determine the infection rate and point prevalence of *T. vitulorum* in slaughtered cattle and buffalo at Multan abattoir. This is one of the most common and economically significant problems of grazing animals.

MATERIALS AND METHODS

Gastro-intestinal tract of 142 large ruminants slaughtered at Multan abattoir were examined from 21 January 2007 to 20 February 2007 for the presence of adult *T. vitulorum.* Among these animals, cattle were 48 in number, comprising of 28 males and 20 females while buffaloes were 94 in number, comprising of 48 males and 46 females. The worms were collected with the help of forceps and put into normal saline, then, transferred into wide mouthed screw capped glass bottle that contains 10 percent formalin as preservative. The bottles were properly labeled with necessary information about animals (species, age, sex etc). The adult worms were identified based on the characteristics given by Soulsby

(1982). In order to see the magnitude of difference in the prevalence of *T. vitulorum* among cattle and buffalo, the data were analyzed statistically by using Chi-square test (Petrie and Watson, 1999).

RESULTS

The study revealed that 78 animals out of 142 were infected with *T. vitulorum* and overall prevalence was recorded was 54.93%. The small intestines of 48 cattle were examined, 18 were positive for parasite and prevalence of *T. vitulorum* infestation was 37.50% while 60 out of 94 buffaloes were positive for parasite and prevalence of *T. vitulorum* infestation was 63.83%.

Prevalence of *T. vitulorum* infestation in male animals was 39.46% (30/76) while in female was 72.72% (48/66) as shown in Table 1. Species wise prevalence of *T. vitulorum* infestation was 47.45% (23/48) and 80.43% (37/46) in male and female of buffaloes, respectively. While in cattle the prevalence was recorded 25% (7/28) in male animals and 55% (11/20) in female animals (Table 2).

Table 1: Sex wise prevalence of *Toxocara vitulorum*

Sex	No. of infected animals	No. of non-infected animals	Percentage of infected animal
Male	30	46	39.46
Female	48	18	72.72

$\chi^2 = 15.77787$, $P<0.01$

DISCUSSION

The results of present study revealed an overall infection rate of *T. vitulorum* in large ruminants as 54.93%. These results are resembled with the findings of Barbosa and Corea (1989) who studied the natural parasitism of *T. vitulorum* in buffaloes in Brazil and reported it's prevalence as 52.1%. Similarly, Bachal *et al*. (2002) reported the infection rate of *T. vitulorum* in large ruminants as 33% in Tandojam town and its surroundings.

In this survey, prevalence of *T. vitulorum* was higher in buffalo as compared to cow. There was a significant difference ($P<0.01$) in buffalo and cattle indicating that prevalence of *T. vitulorum* is species dependent (Urquhart *et al*., 1996; Liu *et al*., 2008). The rate of helminthes infection in large ruminants varies from one region of the world to another. The buffalo is the definitive host of *T. vitulorum;* therefore, prevalence of *T. vitulorum* is more in buffalo than that of cattle (Chaudhri and Riaz, 1984; Liu *et al*., 2008; Davila *et al*., 2010).

This study also predicts that female animals have more burden of *T. vitulorum* ($P<0.01$), this agrees with most of the researchers which have observed higher rates of nematode infection in female hosts compared with the males (Iqbal *et al*., 1993; Raza *et al.,* 2007; Islam *et al.,* 2008; Davila *et al*., 2010). Higher prevalence of nematode parasites in females compared with males might be due to lowered resistance of female animals on the part of their reproductive events and insufficient/unbalanced diet against higher needs.

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Table 2: Species wise prevalence of *Toxocara vitulorum* in buffalo and cattle

Animal species	Male			Female		
	No. of infected animals	No. of non-infected animals	Percentage of infected animals	No. of infected animals	No. of non-infected animals	Percentage of infected animals
Buffalo	23	25	47.92	37	9	80.43
Cattle	7	21	25	11	9	55

$\chi^2 = 8.897696$, ($P<0.01$).

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