HELMINTHIASIS IN BUFFALOES AS INFLUENCED BY AGE AND SEX

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ABSTRACT

Five hundred faecal samples from adult buffaloes and calves of either sex and different ages were collected randomly. Out of 500 samples examined, 9.2 and 5.4 percent were found infected with nematodes and trematodes, respectively. Mixed infection was observed in 0.6 percent while cestodes could not be detected. The highest percentage of infection was in one-month to one-year old age group (35.2 per cent) while the lowest infection rate was observed in 10 year old and above (2.5 per cent). The males were more susceptible to the helminthiasis as the infection was higher in males as compared to females i.e., 36.9 and 11.0 per cent, respectively.

Keywords: Helminthiasis, buffaloes, age, sex

INTRODUCTION

Parasitism is rife and affects all classes of livestock and wildlife throughout the world. Diseases caused by helminth parasites constitute a major obstacle to the development of profitable livestock industry in the world. These parasites not only affect the health of animals but also adversely affect their productivity, decrease resistance to other diseases and cause severe mortality leading to heavy economic losses (Payne, 1990; Irfan, 1984). Gastro-intestinal helminthiasis is caused by different species of helminthic parasites in the alimentary tract and account for major economic losses (Chaudhry et al., 1984).

Buffaloes are susceptible to a variety of parasitic diseases. According to field reports, over 275 thousand buffaloes are lost annually due to different diseases (Junejo and Qureshi, 1993).

In Pakistan, with relatively low hygienic standards, parasitism is responsible for huge economic losses to the livestock industry. Byerly (1977) has estimated that about 50 million cattle and buffaloes die annually due to different diseases world wide. Hertlich (1978) postulated that at least 5-10% of mortality and 10-20% of morbidity losses in ruminants were due to helminth infection. Irfan (1984) reported mortality rate of 24-63% in large animals caused by endo-parasites.

MATERIALS AND METHODS

A total of 500 faecal samples were collected randomly from adult buffaloes and calves of either sex and different ages. Faecal samples were examined by sedimentation method and stoll method.

Sedimentation method

The sedimentation method as described by Lynne and Lawrence (1979) was used for the identification of eggs. Approximately 1.0 g of faeces was taken into test tube containing 10-12 ml of normal saline. The faecal material was emulsified thoroughly in the saline by glass rod. The emulsion was filtered through the mesh sieve into the centrifuge tube and centrifuged at 2000 rpm for 2-3 minutes. The supernatant was discarded and the process was repeated twice. About 7 ml of 10% formalin solution was then added to the sediments and shaken vigorously. Ether (2-3 ml) was added to the test tube and shaken vigorously to get a homogeneous mixture. The mixture was centrifuged again at 2000 rpm for 5 minutes. The contents of the tube were separated into four layers i.e., sediment, formalin layer, debris plug and ether layer. The supernatant was discarded all at once until only the sediment was left. This was diluted with little formalin (2-3 drops) and mixed homogeneously. With a pasteur pipette, a few drops of sediment were removed to object glass and examined under low magnification power of microscope.

Counting of eggs

The samples found positive for helminth infection were subjected to stoll method (Thienpont et al., 1979; Chatterjee, 1987) for quantification of the eggs per gram
Five grams of faeces were weighed and mixed with 75 ml of N/10 NaOH solution in a graduated glass tube. The glass beads were added and the contents were shaken vigorously to get a homogeneous suspension. Using a graduated pipette, 0.15 ml of suspension was withdrawn to an object glass and entire preparation was covered with cover slip. The preparation was examined completely and systematically under low magnification. The average number of eggs found were multiplied by 100 to get the number of eggs per gram of the faeces. At least two preparations were examined.

**RESULTS AND DISCUSSION**

The results of present study revealed an overall prevalence of 15.2 per cent. The prevalence of nematodes and mixed infection was 9.2, 5.4 and 0.6 % respectively (Table 1).

<table>
<thead>
<tr>
<th>Table 1: prevalence of Helminthiases in buffaloes (n=500)</th>
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<tbody>
<tr>
<td>Helminths</td>
</tr>
<tr>
<td>Nematodes</td>
</tr>
<tr>
<td>(Toxocara vitulorum)</td>
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<tr>
<td>Oesophagostomum radiatum</td>
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<tr>
<td>Strongyloides papillosus</td>
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<tr>
<td>Ostertagia ostertagi</td>
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<tr>
<td>Trichura spp.</td>
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<tr>
<td>Trematodes</td>
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<tr>
<td>(Fasciola gigantica)</td>
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<tr>
<td>Fasciola hepatica</td>
</tr>
<tr>
<td>Paragamphistomum cervi</td>
</tr>
<tr>
<td>Cestodes</td>
</tr>
<tr>
<td>Nematodes &amp; Trematodes</td>
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<tr>
<td>Total</td>
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</tbody>
</table>

The overall prevalence of helminth infection (15.2%) observed in this study is very low as compared to that reported by Hussain (1985), Iqbal (1987) and Ishaq (1995). They reported a prevalence of 76.7, 46.6 and 56.99 per cent, respectively. The variation may be due to the climatic conditions, age of animals, immunity developed by old animals, and the number of samples examined. An other important factor which may have accounted for the lower prevalence of the helminthiases recorded in this study, may be the fact that the samples were obtained from cattle colony Hyderabad, where animals are kept for commercial purposes, therefore, reasonably well managed and regularly dewormed.

The egg count per gram (E.P.G) of faeces was used as a basis for the estimation of the intensity of a helminthiases (rate of infection). As depicted in (Table 2) 26.3 % of the samples, the E.P.G was 100-400 eggs per gram of faeces while 401-800, 801-1200, 1201-1600 and above 1601 was counted in 18.42, 13.16, 11.84 and 30.26 % samples, respectively. Soulsby (1982) suggested that the presence of 300-600 eggs per gram of nematodes and 100-200 eggs per gram of trematode in cattle indicate infection. In view of the above statement, all the animals detected as positive in the present study will be regarded as clinically infected. The age of animal is considered a major factor in the prevalence of helminth infection. During the present study, the highest infection rate (35.23%) was recorded in the one month-one year old age group (Table 3). The higher prevalence of helminthiases in young animals observed in this study agrees with similar findings reported by others in young animals (Barbosa and Corea, 1989; Sukhaphetsa, 1983; Baruah et al., 1981; Sahoo et al., 1991; Sahhid, 1993). The exact percentage, however, vary and ranged from 14-100 per cent.

The prevalence of helminth infection in the present study was higher in males than in females i.e., 36.9 and 11.00 per cent, respectively. This accords with Salim and Tawfic (1966) and Hussain (1985) who also observed higher incidence of infection in male calves. This may be due to negligence and improper care of male animals in commercial dairy farms.
REFERENCES


