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RESEARCH ARTICLE

PREVALENCE OF COCCIDIOSIS IN LAMBS OF NORTH KASHMIR

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ABSTRACT

The present study was carried out from September 2011 to August 2012 to detect the prevalence of coccidian infection in lambs of age 1-6 months in different seasons in North Kashmir. A total of 180 samples (84 male and 96 female) were examined for the infection. During the study, it was found that a total of (53.33%) samples were infected with coccidian oocysts. The maximum prevalence was found during summer season (72.9%), followed by autumn (54.5%), (45.6%) in spring and (38%) in winter. Out of 96 examined female samples, (60.4%) were found to be positive and out of 84 male samples (45.2%) were found positive for the infection.

INTRODUCTION

Gastrointestinal parasite infection is a worldwide problem for both small and large-scale farmers. Infection by gastrointestinal parasites in sheep can result in severe losses. Economic losses are caused by gastrointestinal parasites in a variety of ways. They cause losses through lowered fertility, reduced work capacity, involuntary culling, a reduction in food intake and lower weight gains, treatment costs and mortality in heavily parasitized Animals (Hansen and Perry, 1994). Coccidiosis is one of the most important gastrointestinal protozoan parasitic disease of the world and one of the most economically important infections threatening the sheep industry. Coccidiosis occurs in all breeds and age groups of sheep. All ages of sheep are susceptible to *Eimeria* infection but lambs are most severely affected by clinical coccidiosis (Alzieu and Mage, 1999). It can be a serious clinical problem of lamb rearing, particularly in pre-weaned and recently weaned lambs (Alzieu *et al.,* 1999), causing diarrhoea (Barriatua *et al*., 1994). High stock rates increase the contamination with Oocysts, consequently increasing the risk of an infection and outbreak of clinical coccidiosis (Abebe *et al*., 2008). The most common clinical manifestation include in-appetence, weakness, loss of weight, diarrhea, depression and anemia (Solusby, 1982). A number of workers have studied the prevalence of coccidiosis in sheep in different regions of the world viz., Hidalgo *et al*. (1988), Maingi and Munyua (1994). Callaghan (1989), Khajuria and Kapoor (2003), Lalan Kumar *et al*. (2005), Anish Yadav *et al*.(2006), Habib Ali *et al*. (2007), D. Singh and Swarnkar (2010). The present study was undertaken to study the prevalence of coccidiosis in lambs of north Kashmir as there is paucity of information regarding the same disease.

MATERIAL AND METHODS

Fresh faecal samples of 180 lambs (84 male, 96 female) of ages 1 to 6 months were collected from local farmers rearing sheep in different parts of North Kashmir throughout one year. The samples were collected in plastic containers containing 4% formalin and brought to parasitological lab. Both sedimentation method (Charles and Josphine, 1970) and floating technique (Charles and Josphine, 1970; Soulsby, 1982) were used to detect the presence of Oocysts. Suspension of each faecal sample was strained through muslin cloth and examined under light microscope.

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RESULTS AND DISCUSSION

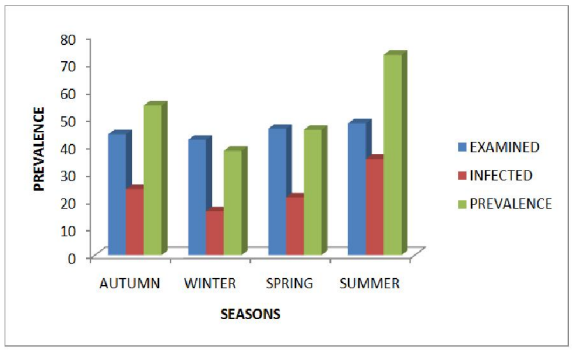
Faecal samples collected from 180 lambs in north Kashmir showed that 96 samples were positive for the presence of coccidian Oocysts, an infestation percentage of 53.33%. The current study showed 35 infected samples out of 48 examined during summer season, a percentage prevalence of 72.9%, 23 infected samples out of 44 in autumn with a percentage prevalece of 54.5%, 16 infected samples out of 42 in winter with a percentage prevalence of 38% and 21 infected samples out of 46 in spring showing a percentage prevalence of 45.6%, Table 1 and Graph 1.1 (seasonal prevalence). During the study it was observed that the prevalence of coccidiosis differed with respect to sex. The number of infected male lambs were 38 out of 84 with a percentage prevalence of 45.2% and number infected female samples were 58 out of 96 with a percentage prevalence of 60.4%, Table 2 and Graph 2.2 (gender prevalence).

Table 1. Showing percentage prevalence of coccidiosis in different seasons

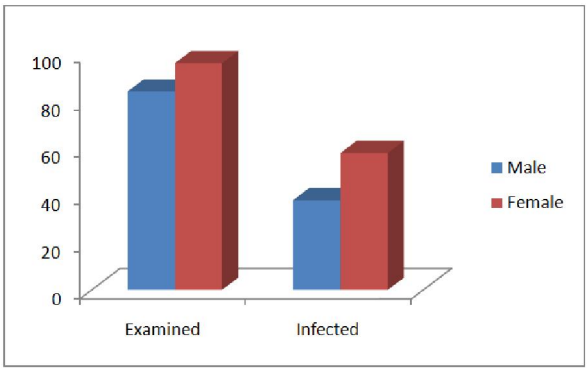
Season	Samples oberved	Positive samples	% Prevalence
Autumn	44	24	54.5%
Winter	42	16	38.0%
Spring	46	21	45.6%
Summer	48	35	72.9%
Total	180	96	53.33%

Table 2. Showing percentage prevalence of coccidiosis in different sexes

Gender	Samples observed	Positive samples	prevalence	P-value
Male	84	38	45.2%	0.059
Female	96	58	60.4%	
Total	180	96	53.33%	



Graph 1.1. Showing %age prevalence of coccidiosis in different seasons



Graph 2.2. Showing percent prevalence of coccidiosis in different sexes

The results of the study show that coccidiosis is prevalent through out the year but the rate of prevalence varies with the season. Prevalence rate was found maximum in summer, followed which the disease showed a decreased trend reaching a minimum during winter and by spring it begins to show an increasing trend again. The results are in commensuration with Khan *et al.* (2010) who recorded a maximum prevalence of coccidia in post rainy season reaching maximum in the month of August and September. A similar observation was recorded by Taylor and Coop (2007), Yakhchali and Golami (2008). The high prevalence in summer season could be attributed to increase in temperature with subsequent high humidity which are conducive for sporulation of oocysts for easy dispersion and transmission. In winter the temperature decreases subsequently and thus sheep are confined to houses in small flocks and feeding habit changes to drier grass and trough feeding thereby reducing chances of sporulation and transmission. In the present study the female sex was recorded to have higher prevalence than their male counter parts. The result is supported by Yakhchali and Golami (2008), Khan *et al.* (2010) and Yakhchali and Zarei (2008) who reported that gender significantly influences the prevalence of coccidia in sheep. The higher infection rate in females could be attributed due to greater variation in their physiological status viz., pregnancy and lactation, lowering the immune status of the females and them vulnerable for infection. This suggests that both males and females have equal opportunities to acquire the coccidian infection in similar circumstances but physiological change and associated stress in females may result in more infection in female (Ahmed *et al.*, 1992., Rajkhowa and Hazarika, 2001).

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