

INCIDENCE OF GASTROINTESTINAL NEMATODOSIS IN SHEEP OF JAMMU

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ABSTRACT

The incidence of gastrointestinal nematodes in sheep of Jammu area of Jammu And Kashmir State was investigated for the year 2007-2008. A total of 257 animals from different study areas were screened for necroscopic examination in which 115 (44.74%) were found positive for various types of helminthic infections. Four types of nematodes viz., *Trichuris ovis*, *Haemonchus contortus*, *Dictyocaulus filariae* and *Chabertia ovina* were identified. Seasonal prevalence of infections indicated that the nematode infection was highest in spring and summer months followed by winter and autumn. Some other epidemiological parameters like sex wise and age wise were also revealed during the present study.

KEYWORDS: Gastrointestinal nematodes, Sheep, Jammu, Incidence (arrange alphabetically)

INTRODUCTION

Sheep suffers from many infectious diseases and heavy economic losses occur due to mortality as well as morbidity. Helminthes diseases alone are responsible for 5 percent mortality and 10 percent morbidity in sheep (Chakerborty and Lodh, 1994). These gastrointestinal nematodes have been recognized as a major factor limiting sheep production throughout the world. Jammu and Kashmir is primarily an agricultural state and sheep rearing is one of the major sources of economy to farming community and other nomads. Due to improper management and unhygienic conditions sheep suffers from various helminthic infections in which nematodosis is playing major role. A number of reports are available on gastrointestinal nematodes in sheep of Kashmir valley (Bali, 1976; Dhar *et al.*, 1982; Nasreen *et al.*, 2005; Fayaz *et al.* 2007; Bhat *et al.*, 2007; Kuchay *et al.*, 2011.) but scanty of work has been done in Jammu area of Jammu And Kashmir State. Therefore, present study was planned to study season wise comprehensive incidence picture of most prevalent nematodes in sheep of Jammu area, to enable the sheep breeders and veterinarians in planning the prophylactic measures well in advance.

Materials and Methods

The investigation was carried out for a period of one year 2007-08 in which different parts of study area were surveyed for collection of 197 gastrointestinal tracts together with lungs of slaughtered sheep for parasitological investigation. The gastrointestinal tracts were separated anatomically, then each organ was opened separately and its contents and mucosa were washed in water to remove all parasites. Lungs and trachea were processed for lungworms. The trachea and bronchi were opened, scrutinized for visible parasites and rinsed in running water over a sieve with 90 mm mesh size. The entire lungs were washed and then cut into about 10mm cubes and placed in plastic jar with normal saline for collection of microscopic parasites. The nematodes collected were processed and preserved (70% alcohol) and were identified as per Solusby (1982) and Yamaguti (1959).

RESULTS AND DISCUSSION

The present investigation revealed that sheep of Jammu are infected with gastrointestinal nematodosis. Four species of nematodes viz.; *Trichuris ovis*, *Dictyocaulus filariae*, *Haemonchus contortus* and *Chabertia ovina* were reported with prevalence of 12.45%, 5.5%, 23.73% and 3.50% respectively. Of the 257 sheep screened, 115 (58.37%) were found positive for various types of infections. The highest incidence was observed in spring and summer followed by autumn and winter as shown in table 1.

Table 1. Prevalence of nematode parasites on the basis of season

Season	No. Examined	No. Positive	Percentage
Spring	56	32	57.14%
Summer	72	41	56.94%
Autumn	62	23	37.09%
Winter	67	19	28.35%
Total	257	115	44.74%

Table 2. Prevalence on the basis of sex of the host

Sex	No. Examined	No. Positive	Percentage
Male	108	32	29.62%
Female	149	83	55.70%
Overall	257	115	44.74%

Table 3. Prevalence on the basis of age of the host

Age group	No. examined	No. positive	Percentage
Young	117	62	52.99%
Adult	140	53	37.85%
Total	257	115	44.74%

The prevalence of parasites in spring, summer, autumn and winter were respectively 57.14%, 56.94%, 37.09% and 28.35%. Similarly prevalence of parasites was higher in females (55.70% as compared to male (29.62%) as shown in table 2. During the present study it was observed that young ones are more susceptible to infection than adults as prevalence was 52.99% in case of young and 37.85% in case of adults as shown in table 3.

The study showed that the overall prevalence of nematode parasites in sheep of Jammu (44.74%) is in agreement with Dhar et al. 1982; Nasreen et al. 2005; Bhat et al. 2007; Kuchay et al. 2011; Yadav *et al.*, 2006 and Khajuria *et al.*, 2003 who have also reported almost same prevalence in the same study area with minor differences? The *Haemonchus contortus* was found to be most dominating parasite in terms of infection which is in agreement with the study of previous findings like Bhat et al. 2007; Sharma et al. 2007; Pandit *et al.*, 2003; Laha *et al.*, 2001; Fayaz et al., 2007.

The highest prevalence of parasites in spring and summer is in consent with many reports around the world (Nasreen *et al.*, 2005; Fayaz *et al.*, 2007; Kuchay *et al.*, 2011; Yadav *et al.*, 2006; Khajuria *et al.*, 2003; Makdooi *et al.*, 1995). The rainy season which starts in the spring and earlier in summer made the environmental conditions more favorable for the development and survival of parasitic stages and led to increased availability of infective larvae in the rainy and post rainy season. It is well documented that gastrointestinal parasitism in grazing animals is directly related to the availability of larvae on pasture and seasonal pasture contamination (Smeal *et al.*, 1980).

The study further revealed that sex of the animals showed an association with the prevalence of the parasites. It was observed that the females were more infected than the males. The influence of sex on the susceptibility of animals to infections could be attributed to genetic predisposition and differential susceptibility owing to hormonal control. The physiological peculiarities of the female animals, which usually constitute stress factors thus reducing their immunity to infections, and for being lactating mothers, females happen to be weak and malnourished, as a result of which they are more susceptible to the infections besides some other reasons (Blood and Radostits, 2000) Differences in susceptibility to infection between sexes have been observed by various workers (Gulland and Fox, 1992; Gorski *et al.*, 2004; Gauly *et al.*, 2006.)

The age-wise incidence of helminth parasites revealed that animals in lower age group are more to infection than the higher age groups which is in agreement with the other studies carried across the world (Patel *et al.*, 2001; Vlasoff *et al.* 2001; Dunn, 1978; Nganga *et al.*, 2004). The low level of parasitism reported in sheep is due to the development of significant immunity, which is initially low but increases with the intensity and duration of exposure of infection. Adult animals acquire immunity and expel the ingested parasites before they establish infection (Dunn, 1978; Shah-Fischer and Say, 1989).

CONCLUSION

Keeping in view the present findings, it can be concluded that there is urgent need for chemotherapeutic and prophylactic strategies for the helminthes control in this region of Jammu And Kashmir State

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