

# Prevalence of Intestinal Helminth Parasites on Goats in Salley, Panauti Municipality, Nepal

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**Abstract:-** This current study was carried out in order to find out the prevalence of intestinal helminthes parasites in goats Salley, Panauti. The samples were collected in the month of August 2017 to January 2018. Total 170 samples were collected and examined microscopically by sedimentation technique for helminth parasites. Among collected samples 12.36% were found to positive with helminth parasites. Overall prevalence revealed trematoda (*Fasciola* sp), Cestoda (*Taenia* sp) and nematode (*strongylus* sp). Among them infection of *Fasciola* sp was found highest 2.94%. Sexwise prevalence revealed 14.81% of male samples were positive and 10.34% of female samples were positive for helminth parasites. Age wise Prevalence showed highest prevalence among the sample collected from goats of age group more than six month that is 14.06% and least prevalence was among the samples of goats from age group of three to six month that is 9.25% which is found statistically insignificant ( $\chi^2 = 0.582$  P<0.05, d. f. = 2). Seasonal prevalence showed 12% in summer and 11.428% in winter. The prevalence was found higher (13.07%) in the stool samples of goats collected from not aware farmers.

**Keywords:-** Age, Intestinal helminth, Prevalence, Sedimentation.

## I. INTRODUCTION

Carpa hircus (Goats) are most essential component of the mixed farming systems of Nepal and are found in all parts of country. Goat is herbivorous animal, and is an important domestic animal which is widely distributed in all over the world. It belongs to bovine family and subfamily caprinae. Goats are being rare mainly for meat and sometimes milk too. In present goat farming system in Nepalese people are more attracted towards it in hilly, Terai as well as in mountain regions. Mostly people in hilly area farmers have little surplus agricultural products from goat farming to sell and so depend upon the sale of livestock and their products as a source of income. However due to the unsuitable climatic condition for crops farming also more people are engaged in goat farming. Mainly poor farmers of the hills, who cannot invest large sum of money in cattle and buffaloes, prefer sheep and goat husbandry which has no social, cultural and religious taboos, or caste restrictions [1]. Both endoparasites and ectoparasite are common problems of livestock like sheep and goats.

Those organisms living within their hosts body is called endoparasite. They live in the gut, body cavity, liver, lungs gall bladder and blood or within the internal cavities, tissues or cell of the host. Since, they totally depend upon their host. Endo-parasitism is also referred to as infection. *Fasciola* sp,

*Ascaris* sp, *Trichuris* sp, are examples of typical endoparasites. Different helminth parasite of different class such as termatoda, cestoda and nematoda with different genera is infecting sheep and goats in different seasons. *Fasciola* sp, *Trichostrongylus* sp, *Schistosoma* sp etc are most common helminthes which are responsible for the loss of goats and sheep farming. The different types of cestodes that are found in gut are acquired by eating contaminated food and water which are found to be largely affecting the ruminants. This group comprises of the genera *Moniezia* which is cosmopolitan in distribution and *Taenia* sp, which is commonly found in the rumen of the domestic and wild carnivorous. They have reported from Asia and Africa [2]. Trematode which is also known as fluke lives in the bile duct or small intestine and may also affect the lungs. The eggs are passed with the feces of the host.

## II. MATERIALS AND METHODS

**Study area** - Panauti Municipality-4 Salley was the study area which was carried out from August 2017 to January 2018. The area of Panauti ward no. four Salley is 5.94sq km and the total population is 5147 as per the CBS, National Census 2011[3], [4]. More than 82% people of this rural municipality are engaged in agricultural sector. Many people are engaged in farming, rearing cattle like cows, buffaloes and goats. As a result, animal husbandry and agriculture has been the important source of livelihood of People. Goat farming is also a major animal husbandry that peoples are involving for livelihood and money purpose.

**Fecal sample collection**- Fresh fecal samples were collected just after defecation. Each sample was taken in small plastic containers with lid which are labeled with date, sex and age (based on questionnaire. About 10ml of 1% formalin was added into container with sample. All containers with stool samples were kept in refrigerator at 4°C for later examinations.

**Sample examination**- Microscopic examinations of fecal samples were done by sedimentation technique. Samples were centrifuged with zinc sulphate solution. A pipette was used to keep sediment materials in the glass slide. A drop of methylene blue was added in the slide then was examined under a microscope at 4X and 10X.

**Questionnaire survey**- Different structured questionnaire were prepared and asked among the farmers of study area. The questionnaires were focused to find out the knowledge attitude and practices (KAP) in relation to the parasitic infections of farmers.

**III. RESULT**

*Prevalence of helminth parasites-* Among 170 fecal samples of goats examined, 12.36% were found to be infected with helminth parasite that is in (fig. 1).

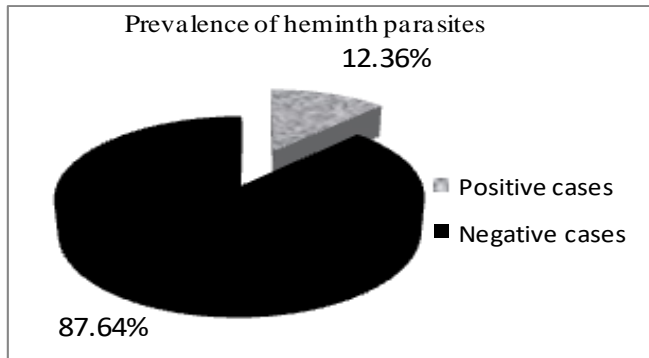


Fig 1:- Prevalence of helminth parasites

*Prevalence of specific helminth parasites-* Among the helminth parasite *Fasciola* sp was found highest i.e. 2.94% and *Dictyocaulus* was least i. e. 1.18% (Table 1).

S.N.	Class	Genera of helminth	Positive	
			Number	Percentage
1	Trematoda	<i>Fasciola</i> sp	5	2.94%
2	Cestoda	<i>Taenia</i> sp	4	2.65%
3	Nematoda	<i>Trichuris</i> sp	5	2.94%
		<i>Dictyocaulus</i> sp	2	1.18%
		<i>Strongylus</i> sp	4	2.65%
	Total		20	12.36%

Table 1. Prevalence of specific helminth parasites.

*Seasonal prevalence of helminth parasites-* Out of 100 samples of summer, 12% samples were positive and that of 70 of winter samples 11.43% samples were found positive helminth parasites in different seasons are as in (Fig 2).

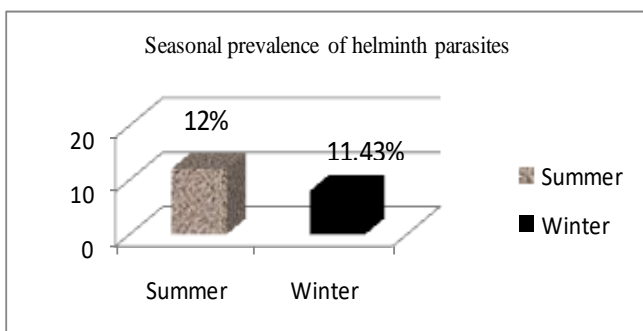


Fig 2:- Seasonal Prevalence of helminth parasites

*Age wise prevalence of helminth parasites-* As shown in figure three the prevalence of helminthes parasites was maximum in the goats of age group more than six months (14.06%) and minimum in the goats of age group three month to six month (9.26%).Which is statistically insignificant ( $\chi^2 = 0.582$   $P < 0.05$ , d. f. = 2).

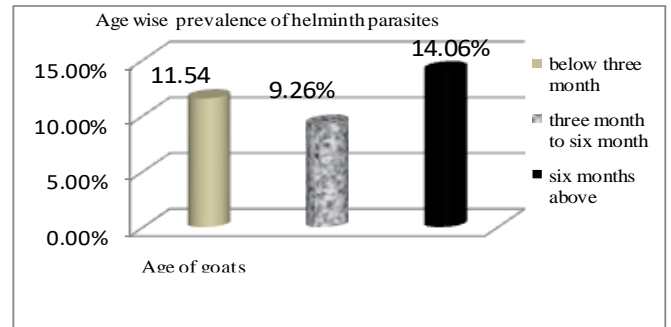


Fig 3:- Age wise Prevalence of helminth parasites

*Sex- wise Prevalence of helminth parasite-* Out of 54 samples of male goats eight (14.81%) were found positive and out of 116 female samples of female goats 12 (10.34%) found positive for intestinal helminth parasites (Table 2).

SN	Sex	Total	Positive no.	Positive %
1	Male	54	8	14.81%
2	Female	116	12	10.34%

Table 2. Sex wise Prevalence of helminth parasites

*Prevalence of helminth parasites regarding to awareness-* The prevalence was found higher (13.07%) in the samples of goats collected form not aware farmers (Fig. 4).

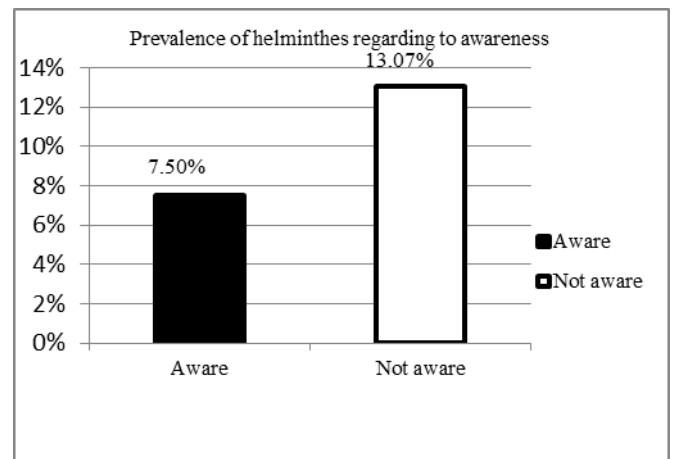


Fig 4:- Prevalence of helminthes regarding to awareness

**IV. DISCUSSION**

The present study was carried out to determine the prevalence of intestinal helminthes parasites of goats. The rate of prevalence of gastro intestinal parasites is influenced by the climatic conditions, habit and habitat of animals, sanitary condition and feeding. Present study revealed the overall prevalence of GI helminth parasites to be 12.36%. It is relatively lower than the report on seasonal prevalence on goats Tripathi and Subedi (2015) in Kapilvastu (67.92%) [5]. Opera, Nwaobasi and Okoli (2005) also reported higher prevalence in southeast Nigeria to be 90.1% [6]. The difference on prevalence in different study area might have resulted from differences in topography, climatic condition and management system that favor the survival of infective stage of the parasites and intermediate hosts. One genera of Trematode (*Fasciola* sp.), one genera of Cestode (*Taenia* sp.)

and three genera of Nematodes (*Strongylus* sp., *Trichuris* sp. and *Dictyocaulus* sp.) were observed during study period. The prevalence rate of *Fasciola* sp. and *Trichuris* sp. were found high (2.94%) in goats and the least prevalence were shown by *Dictyocaulus* sp. High prevalence of *Fasciola* sp. was reported from Surkhet among goats [1], followed by 58% from Chitwan district [7], 31.25% infection from Dhanusa district [8], 31.5 % from Kenya [9] and 8.8 % from Himanchal Pradesh, India [10]. A research work by Ijaz *et al.*, (2008) on goats of Lahore, Pakistan showed highest infection rate of nematodes (42.67%) followed by trematodes (16.67%) and cestodes (4%) [11]. But present study showed higher prevalence rate of nematodes (6.47%). The comparison of the prevalence study with the study carried out by Kushwaha (2000) showed vast difference [12]. *Strongylus* sp infection in the present study was recorded as 2.65%, whereas it was reported much greater i.e. 88% by Kushwaha. In the present study, the prevalence rate of *Dictyocaulus* sp (1.18%) and *Trichuris* sp (2.94%) was much lesser than the former one i.e. 2% and 7%.

There was higher occurrence of all GI helminths in female animals (14.81%) than male animals (10.34%). But sex is statistical insignificant on the prevalence of helminth parasites. In the present study, prevalence of helminthes was found nearly equal in summer season (12%) and in winter season was (11.43%). Bashir (2009) reported on 46% positive samples in winter and 90.3% samples positive in summer [13]. Out of 100 samples collected, 52 samples belonged to the small kids having the age of less than three months, 54 samples belonged to the medium sized goats having the age of three months to six months and 64 samples belonged to the goats having the age of more than six months. The highest rate of prevalence of helminth parasites was observed in the goats having the age of more than six months i.e. 14.06%. The least prevalence of helminth parasites was revealed in the goats of the age group three months to six months which was 9.26% and the rate of prevalence in the goats of less than three months age group was 11.54%. Regarding awareness of farmers on helminth parasites of cattle, 7.5% samples collected from goats of aware farmers were found positive for helminth parasites but higher prevalence was found among samples collected from goats reared by not aware farmers 13.07%, which was statistically significant.

## V. CONCLUSION AND RECOMMENDATIONS

Gastro-intestinal helminthes are important cattle health problems in the study area that cause decrease in the proactivity. Geographical location of the study area, age, sex, and lack of health awareness were considered as risk factors for helminth parasites. The problem of intestinal helminth parasites should not be underestimated as they reduce the growth, productivity, reproductive potential of animals. So, strategic treatment and awareness should be adopted as former livelihood relies on rearing cattle.

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