

## Prevalence of Ectoparasites of Ruminants in Tehsil Nikayal, District Kotli, Azad Jammu and Kashmir

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### Abstract

This study was conducted to determine seasonal prevalence of ectoparasites of ruminants in Tehsil Nikayal, District Kotli, Azad Jammu and Kashmir. Surveys were carried out from July 2015 to December 2015. A total of 200 animals were selected randomly observed for prevalence of ectoparasites. Ectoparasites were collected from parts including inside the ears, on tail, undersides the neck and belly sides and stored in 70% ethyl alcohol. The highest prevalence of ectoparasites was 7.5% during the month of July followed by 6% during August, 6% September, 4.5% October, 1.5% November and 0.5% during December. The results showed that ectoparasites were more prevalent during summer months than winter months. It is concluded that integrated control measures with sustainable veterinary services should be planned to reduce ectoparasite numbers and impact on the productivity and health status of ruminants.

**Keywords:** Ectoparasitic infestation, livestock, prevalence, Azad Jammu and Kashmir.

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## INTRODUCTION

Ectoparasitic infestation is a foremost intimidation to cost-effective livestock creation. Livestock (the backbone of Pakistan's agricultural economy) is at danger of failure in creation owing to parasitism. Among domestic ruminants, sheep (Ovisaries) is birthplace for the meat, wool, skin and manure production of farm-yard for the indigenous population of Pakistan (Kebede and Teshome, 2012). Small ruminants are imperative modules of Kashmir farming system. However, involvement of sheep and goats to food and production of milk, rural and transport salary are extremely lower than estimated potential due to insignificant ruminant's creation in AJK (constrained by compound effects of diseases, poor feeding and management). Losses due to diseases are one cause of low milk production and farm income (Soulsby, 1982).

The livestock population is 20266314 in Azad Kashmir that include goats 1026204, cattle 459225, buffaloes 457395, donkeys 71303, horses 7557, mules 3802 and camels 828. The total number of goat population in the world

is over 767.90 million of which 109.8 million are distributed in India, Pakistan and Bangladesh (Kabir *et al.*, 2011). The foremost ectoparasites parasitizing ruminants include flies (Diptera) fleas (Siphonaptera), lice (phtiraptera) and bugs (Hemiptera) (Soulsby, 1982). Different causes of skin diseases are accountable for considerable economic losses. The ticks and ticks borne diseases are inflicting worldwide annual loss up to 700 million US Dollars (Khan *et al.*, 2006; Biswas, 2003).

Ectoparasites are responsible for harmful effects to faunas via loss or drain of blood, anxiety, impatience and lack of immunity (Gray *et al.*, 2009). Louse affects host directly by causing irritation, alopecia, damaged skin, and change in behavior that causes self-wounding and indirectly inflict weight loss (Wall and Shearer, 1997). A sufficient amount of published data is available on the prevalence of parasites of ruminants (Irshad *et al.*, 2010; Ali *et al.*, 2012; Iqbal *et al.*, 2014). In ruminants, the frequency of ectoparasites infestation is considerably greater in emergent countries (Minjauw and McLeod, 2003). There are various reports of production loss in domestic animals due to

parasites (Iqbal *et al.*, 2013; Iqbal *et al.*, 2014; Muhammad *et al.*, 2015).

The studies have indicated that the occurrence and spread of skin diseases correlate with host factors, poor management, climatic factors, feed scarcity and inadequate veterinary services. Skin problems caused by ectoparasites are the major pre-slaughter defects that reduce skin qualities and result in rejections (Tefera and Abebe, 2007; Asfaw, 2002). The predominant causes of downgrading and rejections of skin of sheep and goat were said to be “Ekek” (an Amharic word meaning itch). In Pakistan, Piroplasmosis and Theileriosis are common livestock diseases, which are transmitted by the ticks (Abdussalam, 1959). The purpose of our study was to check the prevalence of ectoparasites in ruminants of Tehsil, Nakyal, District Kotli, AJK.

## MATERIALS AND METHODS

### Study Area

The study was conducted in District Kotli Tehsil, Nakyal, Azad Kashmir. Surveys were carried out from July 2015 to December 2015. District Kotli is one of ten districts of Azad Kashmir. Total area of kotli is 1,862Km<sup>2</sup>. Total population of Kotli is nearly 640,000 according to the census 1998. It lies in between longitude 73.9167Dc; latitude 33.5167Dc. The average elevation of Kotli is 3000 meters. June is the hottest month in kotli with its average temperature at 35°C. The coldest month is January with temperature at 9°C.



**Fig. 1. Site Map of Study Area**

### Data Collection

Data was collected during the study period from July, 2015 to December 2015. For collection of ectoparasites, all body parts of animal were selected. The ectoparasites were picked with the help of forceps without injuring their mouthparts and stored in 70% ethyl alcohol. Ectoparasites were collected from parts including inside the ears, on tail, undersides the neck and belly sides. The data obtained was analyzed statistically and presented as percentage.

## RESULTS

There were 200 animals observed for prevalence of ectoparasites. The highest prevalence of ectoparasites was 7.5% during the month of July followed by 6% during August, 6% September, 4.5% October, 1.5% November and 0.5% during December (Table 1).

**Table 1. Prevalence of ectoparasites during different months**

Host	Animal observed	Prevalence (%age)					
		July	August	September	October	November	December
Goat	126	7.14%	4.76%	4.76%	4.76%	2.38%	0.79%
Buffalo	72	8.33%	8.33%	8.33%	4.16%	0%	0%
Sheep	2	0%	0%	0%	0%	0%	0%
Total	200	7.5%	6%	6%	4.5%	1.5%	0.5%

## DISCUSSION

The highest month wise prevalence was during the rainy season of July to September and lowest prevalence recorded in the month of November and December, respectively. These results are in accordance a previous study on prevalence of ectoparasites conducted in Muzaffarabad District, Azad Jammu and Kashmir (Sayyad *et al.*, 2016). Heavy infested ruminants were weak, showed hair loss, scar marks and nodulations. The yield of milk was reported to be low by farmers. It was observed that tick infestation and density varied with management practice and use of different control measures and variation in the degree of infestation from one animal to another. Age and sex were not found associated risk factors which are not

associated with the previous study (Springell, 1974). Some of the infections are principally associated with environmental factors includes topography, altitude, climate, temperature, humidity and rainfall. Season of the particular area (Haines and Patz, 2004) includes, topography, altitude (Jouda *et al.*, 2004), Climate temperature, humidity, rainfall. Seasons play a key role in ectoparasites propagation and distribution. Mixed grazing and mixed housing provides maximum opportunity for ectoparasites to infest large population at a time. Soft skin of young animals facilitates ectoparasites and prolongs duration of attachment.

Control of ectoparasites needs assimilated ectoparasite administration arrangements that associate hygienic presentation of ectoparasiticides, decrease of propagation

locations, ecological weed and foliage control (Radostits et al., 2007). Infected cattle due to ectoparasites become immunocompromised, therefore prone to numerous diseases (viral and bacterial), which might more depreciate the physiological sketch, most important to enormous dynamic disaster. Due to this reason, preventive therapy is necessary for the farming community to diminish attack ratio of ectoparasites (Rhabari et al., 2009).

## CONCLUSION

It is concluded that integrated control measures with sustainable veterinary services should be planned to reduce ectoparasite numbers and impact on the productivity and health status of ruminants. A better understanding of distribution and abundance of ectoparasite infestation on cattle in the study area is required to implement necessary measures for their control and prevention.

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## CONFLICT OF INTEREST

There is no conflict of interest.

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