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Domestic animals ectoparasite Fauna of district Karak, KP, Pakistan

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Abstract

The present study was conducted to find out the ectoparasite infesting domestic animals i.e goat, cow, sheep and buffalo in district Karak, Khyber Pakhtunkhwa province of Pakistan during the period from January 2018 to March 2018.In present work total 120 animals were studied out of which 45 were infected with different parasites. During present study 13 species of ectoparasite were identified, out of which 9 were ticks such as *Haemaphysalis bispinosa, Boophilus microplus, Rhipicephalus sanguineus, Rhipicephalus annulatus* and *Hyalomma marginatum, Hylomma aegyptium and Dermacenter adenernsoni, Hyalomma anatolicum, Hyalomma Ixodes excavatum* and 4 were lice such as *Damalinia caprae* and *Linognathus stenopsis Linognathus pedalis and Damalinia ovis*.From the current result it can be concluded that ectoparasite infesting domestic animals because they not only the cause of diseases in animals but also adverse effect on their growth and productivity.

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Introduction

Ectoparasite are those that live outside the body of other animal or organism and also feed on it. Ectoparasite completely depend upon host for nourishment, maturation and also for development (Smyth,1962) Ectoparasite are called semi-independent organism because they live on the surface of their host but they are also capable to live free for a short time or to move from one host to another. Their substrate is live and motile.

They get oxygen from outside the host (Simpson and Beck, 1965). Ectoparasite cause mechanical injury, allergy, irritation, morbidity and mortality (Niyonzema and Kiltz, 1986) throughout the world ecto parasitism is a serious hazard for animals as well as humans being.

The parasites sting could be a great nuisance, which leads to large amount of blood loss(Walker, 1996;Natala,1997). They are extremely pathogenic and may even cause death of organism depending on host's immunological condition, nutritional status and intensity of parasitism (Scott *et al*, 2001).

Some ectoparasite also act as transmitting agent of viruses, bacteria, protozoa, cestodes and nematodes, including vectors of zoonotic diseases in humans (Arends *et al*, 1990; Uilenberg, 1995; Raoult and Roux,1997; Parola *et al*, 2003, 2005; Rehbein *et al*, 2003; Petney *et al*, 2007). Ticks, lice and mites are common ectoparasite of animals (Nooruddin and Mondal, 1996). Ticks are distributed worldwide, but chiefly found in tropical and subtropical regions (Soulsby, 1982). Ticks decrease milk production in ruminants (Sajid, 2007) and also spread harmful disease like babesiosis, theileriosis, and anaplasmosis (Lawrence *et al*., 1983; Norval *et al*., 1984).

About 80% of livestock population in tropical and subtropical part of world including India, Pakistan and Bangladesh are influence by ticks and ticks borne disease (TTBDS) because the climate of these countries are suitable for growth and development of ticks (Ghosh *et al*., 2007).

In Pakistan ectoparasitic infection like ticks badly affect livestock population which is the important part of agricultural of Pakistan (Sajid *et al*., 2008). Ticks play important role in economic loss of a country as they transmit harmful protozoal, rickettsial, bacterial and viral diseases to animals (Agbede , 1981 ; Du plessis *et al*.,1994).Lice and mites produce dermatitis, which is characterized byalopecia and necrotic foci.

There is also acute pruritus which leads to biting and vigorous scratching of affected parts (Lapage , 1968; Yeruham *et al*., 1985; Taylor *et al*., 2007).

In small ruminants skin diseases which are caused by lice, sheep keds, ticks and mange mites causing serious economic loss to farmers and tanning industries because skin disease leads to mortality, decreased production and reproduction, downgrading and rejection of skins (Bayou, 1998).

The aim of the research work was to find out the domestic animals ectoparasite Fauna of district Karak, KP, Pakistan

Material and methods

The present study was conducted to find out the ectoparasite of goat and sheep of District Karak from January 2018 to March 2018.During present study the ectoparasite such as ticks andlice were collected with the help of brush or comb and by hand from attachment site.

Collection

The collected parasites were preserved in bottles containing 70% alcohol. For the identification of ectoparasite the samples were examined under low power and then high power magnification of microscope.

Identification

Identification of ectoparasite was accomplished with the help of morphological characteristics of each parasite as described by Walker *et al.* (2003) and Wall and Shearer (1997).

Table 1. Identification of tick species in domestic animals collected from district Karak, KP, Pakistan.

S.No	Animal species	Identified tick Species	No.of observed animals	No. of animals infected by tick
1	Goat	*H. bispinosa* *B. microplus* *R. sanguineus*	45	9
2	Sheep	*H. marginatum* *R. annulatus*	30	8
3	Cow	*H. aegyptium* *D. adenernsoni*	25	9
4	Buffalo	*H. anatolicum* *H. Ixodes excavatum*	20	7

Results

In the current obtained results the identified species of tick and lice were shown in Table 1&2.

Discussion

During the present work 120 animals' i.e. goats, cows, sheep and buffalo were studied of which 45 animals were infested by different ectoparasites such as ticks and lice. Out of these 55 infected animals 33 animals (goats, sheep, cow and buffalo) were infested by different tick species while 12animals (goat and sheep) were infected by lice species. During the present study 9 species of ticks were identified which are *Haemaphysalis bispinosa, Boophilus microplus, Rhipicephalus sanguineus, Rhipicephalus annulatus, Hyalomma marginatum, Hylomma aegyptium, Dermacenter adenernsoni, Hyalomma anatolicum, and Hyalomma Ixodes excavatum*. Khan *et al.* (1993) identified seven species of ticks, including *R. sanguineus, Boophilus (Rhipicephalus) microplus, Boophilus (R.) annulatus, H. a. anatolicum, H. aegyptium* and *Dermacentor (D.) marginatus* from Faisalabad District (Pakistan).According to LEMOS *et al.* (1985) ticks attack on both kinds of animal, i.e. those with their bodies fully cover by wool and those without wool.

Table 2. Identification of lice species in domestic animals collected from district Karak, KP, Pakistan.

S. No	Animal species	Identified lice species	No.of observed animal	No. Of animal infected by lice
1	Goat	*D. caprae* *L. stenopsis*	45	6
2	Sheep	*L. pedalis* *D. ovis*	30	6

The numbers of ticks on the both kinds of animals are does not quite differ, suggesting that presences or absence of wool does not influence infestation. According to Sajid *et al.* (2007) as compared to other body parts the ears of the animals are more suitable for ticks to live and feed on host animal blood. Rasul and Akhtar (1975) identified Hyalomma, *Boophilus, Rephicephalus* and *Haemaphysalis* genera infesting domestic animals. Kausar (1965) identified ticks Species R. sanguineus while Khan (1967) and Iqbal (1971) identified Hyalomma in goats and sheep in Lyallpur district. During present study 4 species of lice were identified which are *Damalinacaprae* and *Linognathus stenopsis, Linognathus pedalis and Damalinia ovis*. Nasir(1995) recoverd *Damalinia ovis* (10.5%) and *Linognathus pedalis* (1%) from sheep in Lahore, and record highest incidence during spring and autumn season and lowest in summer. Pugh (2002) reported high lice infestation in animals that suffer from malnutrition and intestinal parasitism.

Conclusion

The present study signifies the need of control measure to be undertaken for ectoparasite infesting

domestic animals because they not only cause diseases in animals but also badly effect their growth and productivity.

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