SHORT COMMUNICATION

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, Hyalomma egypatum and Dermacentor adelphersoni, 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 (Niizonymza and Kiltz, 1986) throughout the world ectoparasitism 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, thileriosis, 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 by alopecia 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 and lice 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.

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

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, Dermacentor 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.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Animal species</th>
<th>Identified lice species</th>
<th>No.of observed animal</th>
<th>No. Of animal infected by lice</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Goat</td>
<td>D. caprae</td>
<td>45</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L. stenopsis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Sheep</td>
<td>L. pedalis</td>
<td>30</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. ovis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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, Rhipicephalus 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 affect their growth and productivity.

References


