

PREVALENCE OF ECTOPARASITES INFESTING SHEEPS OF GARHWAL REGION

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ABSTRACT

An attempt was made to estimate the prevalence of ectoparasites on sheeps of Garhwal, India. Extensive survey work was performed during August 1999 to July 2000. Sheep of Garhwal was found to be infested by three species of lice (i.e. *Linognathus ovillus*, *L. pedalis*, *Bovicola ovis*), two species of ticks (i.e. *Boophilus microplus*, *Hyalomma brevipunctata*) and one species of sheep ked (*Melophagus ovinus*). The prevalence of sheep face louse, *L. ovillus* was highest (64.2%) followed by sheep foot louse, *L. pedalis* (63.1%) and sheep biting louse, *B. ovis* (52.5%). The prevalence of sheep ked and ticks were found 38.3, 35% respectively. The effect of host sex, coat colour, and host age and host health on prevalence rate were also discussed. The intensity of infestation of these ectoparasites was recorded by the coding system. The heavy and very heavy infestation was recorded during the winter months.

Key words: Phthiraptera, Sheep lice, Prevalence, ectoparasite

INTRODUCTION

Arthropod ectoparasites are one of the problems for wool growers in the world. They reduce the quality and quantity of fleece and hide (Kettle & Lukies, 1982a & b, Kettle, 1984). McLeod (1995) estimated that \$ AU169 million per annum is the cost of louse infestation in Queensland sheep flocks and most of the cost spent over pesticidal control measures. The pesticide also causes consequences of environmental pollution.

Few workers like Williams (1986), Wooten-Saadi *et al.* (1987), Rawat *et al.* (1991) and Kumar *et al.* (1994a & b) have provided valuable information on the incidence and intensity of Phthiraptera infesting other domestic mammals such as pigs, buffaloes, cattles, and goats. In Australia, Murray (1960a, b, 1962), Morcombe *et al.* (1994) and Ward & Armstrong (1999) have record the incidence rate of lice on sheep flocks.

A thorough study of literature reveals that studies on the prevalence of Phthirapteran

on Indian sheep escaped the attention of workers. Present studies have made records of three species of lice (*Linognathus ovillus*, *L. pedalis*, *Bovicola ovis*), ticks (*Boophilus microplus*, *Hyalomma brevipunctata*) and sheep keds (*Melophagous ovinus*).

MATERIALS AND METHODS

Extensive survey work was performed in 15 localities of Garhwal (covering most of the area) during August 2001 to July 2002. In each sheep flocks, 5-10 sheep were randomly selected for examination. As many as 360 sheep were examined. Most of the examined sheeps were of 'Rampur bushire' and cross breed of marino. Each sheep was critically examined by hair parting method (Lewis *et al.* 1967). Ectoparasites were sampled by brushing cum searching, dusting and combing and also by shaving the hair/wool from heavily infested parts of host body. The ectoparasites of each host were preserved in 70% alcohol in separate vial for for identification. Each vial was recorded the information regarding host number, host sex, host health, coat colour, and host age etc. The intensity of infestation was recorded by placing the infested host under five categories- VL (very light infestation), L (light infestation), M (moderate infestation), H (heavy infestation) and VH (very heavy infestation). Finally the data were analysed in the laboratory.

Abbreviation used: BO-*Bovicola ovis*, LO-*Linognathus ovillus*, LP-*Linognathus pedalis*, K-Sheep ked, T-Ticks, F-Flea.

RESULTS

360 sheep were examined during August 1999 to July 2000 for the records of prevalence and intensity of phthirapteran as well as other ectoparasitic insects. As many as 64.17% sheep were infested with *L ovillus* followed by *L pedalis* (63.61%) and *B. ovis* (52.5%). The sheep ked (*M ovinus*) and ticks were found infested on 38.33% and 35% sheep respectively (Table-1, Fig.1). Fleas were recorded accidentally.

Out of 360 sheep, 341 (94.72%) were found infested by the ectoparasites. Only 5.28% were recorded uninfested or negative host. Infested hosts were divided into three categories: mono-, bi- and multi-infestation. Minimum number of sheeps (13.61%) carried mono-infestation (BO-1.94%, LO-4.72%, LP-3.61%, K-1.67%, T-1.67%). Bi-infestation was quite common carried by 31.11% sheep (BO+LO-5.83%, BO+LP-3.89%, BO+K-1.39%, BO+T-0.83%, LO+LP-7.22%, LO+K-3.06%, LO+T-1.67%, LP+K-4.17%,

ectoparasites. Host age does not seem to influence the prevalence rate in all cases except keds. Keds has showed higher prevalence rate on young sheep.

Studies on intensity of infestation revealed that maximum numbers of moderate, heavy and very heavy infestation have been recorded during winter months (Table-1, Fig. 3). On the other hand most of sheep examined during rainy months carried very light or light infestation. Lastly, it has been concluded that in Australia, McLeod (1995) estimated \$169 million per annum loss caused by the lice problem while the incidence rate of *B. ovis* has recorded nearly 40%. The Indian sheep has showed higher prevalence rate comparatively. Australian wool growers have fair knowledge about the economic harmfulness of ectoparasites and they often eradicate them properly. But Indian shepherd do not have knowledge about economic harmfulness of ectoparasites and eradication measures. It has enable us the loss caused by five parasites will be much more. Hence, more study and effective control measure will be needed on Indian sheep.

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