

EFFECT OF GOAT BODY LOUSE, *DAMALINIA CAPRAE* (GURLT.) ON THE HOST BODY WEIGHT

AMRITA PANDEY, J.K. AWASTHI AND A.K. PALIWAL*

DEPARTMENT OF ZOOLOGY, N.D. COLLEGE, SHIKOHABAD, INDIA.
DEPTT. OF ZOOLOGY, GANJDUNDWARA (PG) COLLEGE, GANJDUNDWARA,
KANSHIRAM NAGAR, INDIA*.
(e-mail : dr_akpaliwal@yahoo.com)

The present study is on effect of lice population on body weight of goat reports that weight of host influences by lice population. The hosts infested by small number of lice, lost minimum weight and highly infested hosts lost high amount of weight. Further, growth of lice population also increase in the months March-May and August-October. Further it was presumed that this ectoparasite eats skin scurfs, wool, hair fibres and effected the growth of the host.

Key words : Goat, ectoparasite, wool, hair fibres, skin scurfs

INTRODUCTION

Damalinia caprae (Gurlt.) is a common biting lice which is permanent ectoparasite on the skin of goat. The lice feeds on skin scurf, own egg shells, dried serum and hair fibres of the host and affected their growth. Infestation of *D. caprae* is more commonly occurs among poorly nourished goats. The goats which are suffering from heavily infestations of lice decline their body weight gradually.

Little attention has been given to effect of population of lice on body weight of host. Murray (1962) studied the ecology of lice on sheep the establishment and maintenance of population of *Linognathus pedalis* and *L. ovis*. Little (1963) studied the effect of cattle tick infestation on the growth rate of cattle. Kettle & Pierce (1974) made some observation on effect of sheep body louse on host weight gain and fleece value. Wilkinson (1982) made some observations on the growth of population of lice on sheep with their effects. Dubey & Dutta (1992) studied on the bionomics of sheep body louse including influence of population of lice on the weight of the host. Singh & Paliwal (2010) observed the effect of population of *Trichodectes canis* (DeGeer) on the body weight of host.

MATERIALS AND METHODS

The lice were collected from the heavily infested host by employing a water suction pump through the collecting bottle and also a towel was held firmly on the fleece of heavily infested hosts for 40-50 minutes. The lice migrated on the towel from where they were removed, counted and kept in the laboratory conditions with their natural foods obtained from their hosts. The collected lice spread on the hosts in varying number in suitable months August-October 2010. These months are suitable for the rapid growth of lice population on host. Population of lice on the body weight of goats were collected out of which three batches were selected and each batch with two goats. In batch A, 100 lice are spread on both goats, in batch B 300 lices and 600 lices spread on batch C that find the result upto twelve weeks at three intervals.

RESULTS AND DISCUSSION

The present study reports that weight of goat was influenced by the population of *D. caprae*. The goat infested by small number of lice *i.e.* 100 lice spread on two goats then one goat loss 2.2 kg weight and another goat loss 3.1 kg weight after 12 weeks. these variation is due to contact transfer of ectoparasite. The moderately infested goat *i.e.* 300 lice spread on two goat, weight loss about 3.0 kg after 12 weeks. The heavily infested goat when 600 lice spread on two experimental goat, loss about 5.0 kg weight. The results effect of population of *D. caprae* on the weight of goat shown (Fig. 1; Table I).

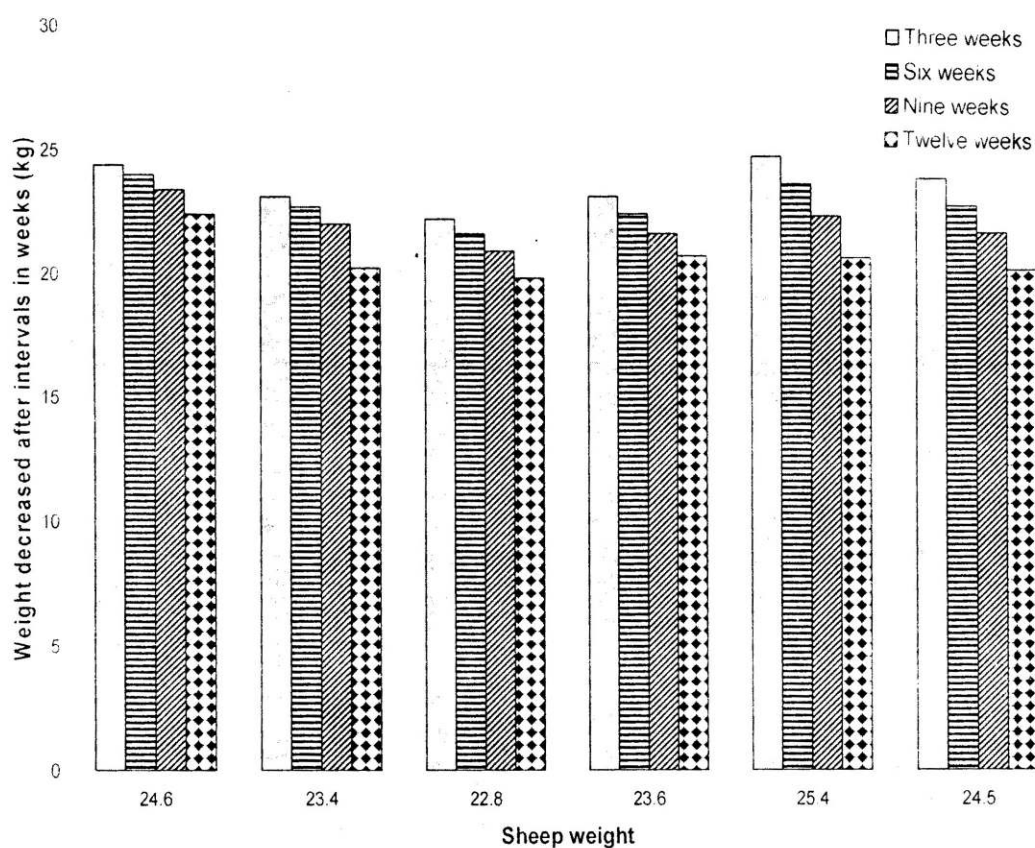


Fig. 1 : Effect of population of *Damalinia caprae* (Gurlt.) on the weight of goat in the months of August-October 2010.

The results of effect of population of *D. caprae* on the weight of goat shows that heavily infested goats loss high proportion of weight and the goats infested by small number of lice, loss weight in small proportion. Few results of weight loss varies due to direct contact transmission of lice because all experimental hosts kept in common place up to experimental study.

The present study reports on the effect of lice population on body weight of host. It was observed that goats infested by small number of lice which lost low weight, however, highly infested goats by *Damalinia caprae* (Gurlt.) were weakened due to high lice

Table 1 : Effect of population of *Damalinia caprae* (Gurlt.) on the weight of goat in the months August-October 2010.

Goat		Lice number	Weight decreased after intervals in weeks (kg)			
Number	Weight (kg)		Three weeks	Six weeks	Nine weeks	Twelve weeks
2	24.6	100	24.4	24.0	23.4	22.4
	23.4	100	23.1	22.7	22.0	20.2
2	22.8	300	22.2	21.6	20.9	19.8
	23.6	300	23.1	22.4	21.6	20.7
2	25.4	600	24.7	23.6	22.3	20.6
	24.5	600	23.8	22.7	21.6	20.1

population which also increased in the month of March-May and August-October. These findings are in accordance with the findings of Kettle & Pierce (1974) on *Damalinia ovis* (Linn.), Murray (1962) in sheep and Little (1963) in cattle ticks. Wilkinson (1982) reports that growth population of lice on sheep is maximum in the months of Feb-April and Aug-Oct. Dubey & Dutta (1992) also reported that growth population of *Damalinia ovis* (Linn.) decreased the weight of sheep. Singh & Paliwal (2010) also reported that population growth of *Trichodectes canis* on dog reached maximum in the month of August-October.

ACKNOWLEDGEMENT

The authors are thankful to Late Dr. R.K. Dubey, Deptt. of Zoology, C.G.P.G. College, Mainpuri for valuable suggestions and manifold help and to the Head, Department of Zoology and the Principal, N.D. College, Shikohabad for providing laboratory facilities during completing this manuscript.

REFERENCES

- DUBEY, R.K. & DUTTA, S. 1992. Studies on the bionomics of sheep body louse, *Damalinia ovis* (Linn.). *Bull of Pure App. Sci.* **11**(1-2) : 29-34.
- KETTLE, P.R. & PIERCE, D.M. 1974. Effect of sheep body louse, *Damalinia ovis* (Linn.) on host weight gain and fleece value. *N.Z.J. Exp. Agr.* **1** : 219-221.
- LITTLE, D.A. 1963. The effect of cattle tick infestation on the growth of cattle. *Aust. Vet. J.* **39** : 6-10.
- MURRAY, M.D. 1962. The ecology of lice on sheep with the establishment and maintenance of population of *L. ovillus*. *Aust. J. Zool.* **11** : 157-172.
- SINGH, N. & PALIWAL, A.K. 2010. Effect of population of *Trichodectes canis* (De-Geer) on the body weight of host. *Int. J. Mendel.* **27**(1-2) : 27-28.
- WILLKINSON, F.C., CHENET, D.E. & DETSON, B.R. 1982. Growth of population of lice on sheep and their effect on production and processing performance of wool. *Vet. Paras.* **9** : 243-252.