

EFFICACY OF DELTAMETHRIN AGAINST LICE INFESTATION IN BUFFALO CALVES

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ABSTRACT

During the present survey, 20 buffalo calves were examined for lice infestation at a private buffalo farm, situated in Lathuwadi, Namakkal, Tamil Nadu, India. One hundred percent of the buffalo calves were infested with *Haematopinus* spp. Clinical signs included alopecia, pruritis, small crusts and scabs. Lesions were confined to the neck, shoulders and rump. Skin scrapings were examined and eggs, larva, nymphs and adult mites were recovered. The relationship between sex and age of animal was also determined; it was 94.1% in females for *Haematopinus* spp., while in males it was 80 percent. It was significantly ($P < 0.05$) higher in age group of more than six months as compared to 14.2% in lesser than six months old.

Keywords: buffalo calves, age and sex, lice, prevalence, deltamethrin

INTRODUCTION

Ectoparasitic infestations cause nuisance and ill health in all livestock in addition to production loss. Besides this, they transmit many protozoan parasites. The incidence of ectoparasitic infestation in domestic animals has been reported by several workers. However, reports of louse

infestation in buffalo calves appears to be scanty. The present paper reports the incidence of louse infestation and efficacy of deltamethrin (Butox) against lice in buffalo calves maintained under a stall fed system of management at Lathuwadi village near Namakkal, Tamil Nadu.

MATERIALS AND METHODS

Twenty stall fed buffalo calves less than one year old at Lathuwadi, Namakkal, Tamil Nadu with loss of hair, thickened and rough skin, irritation, itching, emaciation formed the material for the present study. Clinical manifestations included alopecia, pruritis, and small crusts, and in addition, scab formation in one animal. General clinical examination revealed no apparent changes in body temperature or pulse rates, but all were dull and weak. Lesions were seen all over the body, particularly confined to shoulders and rump. The animals were restless and continuously rubbing their bodies against walls and bars. Examination of calves revealed the presence of various stages of ecto parasites viz., nit, nymph and adult lice on the scapular region, back, groin and axilla. Lice were collected in 70 percent ethyl alcohol and brought to the Department of Veterinary Parasitology, Veterinary College and Research Institute, Namakkal, for identification by standard

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techniques (Soulsby, 1982). Ten of the infested animals were sprayed with deltamethrin (Butox) at the rate of 2 ml / liter of water with the help of sprayer all over the body and then the remaining ten kept as untreated control group followed by chlorphenaramine maleate. Simultaneously animals were supplemented with oral liver tonic and mineral mixture daily for one week. The efficacy of drug was assessed on the basis of the presence of lice at different intervals after 0, 4, 7 and 10 days of post application.

RESULTS AND DISCUSSION

All (20) the buffalo calves were infested with various stages of lice. Infested calves manifested dullness, alopecia, anorexia, lacrimation, scratching of the body and tail against sharp object, and mild itching. The visible mucous membranes were pale and anaemic. On physical examination, various stages of lice, viz., nit, nymph and adult were found attached mainly on the areas of neck, shoulder, back region and switch of the tail.

On microscopical examination, based on the standard morphological features only one genus of louse was observed from the buffalo calves and was identified as *Haematopinus tuberculatus* (Soulsby, 1982). The infested animals were treated with deltamethrin-2% (Butox) as a spray. The calves treated with deltamethrin revealed that all the lice including developing stages died within 2 h after application. The insecticide / acaricide did not show any adverse reaction in any of the treated calves and was found safe for handlers.

On post treatment examination, animals were free from louse infestation after 24 h post treatment. Animals showed relief from the symptom of itching. The second application of the treatment

was given to control reinfestation with lice on the treated animals. Reinfestation might have occurred due to the emergence of developing nymphal stages from some of the nits sticking to the hairs and possible body contact with other infested animals in the host.

Louse infestation in buffalo calves was also recorded and reported by Chaudhury and Kumar (1961) and Sanjay and Prasad (2004) reported 33.22% overall prevalence of lice in India. Rawat *et al.* (1992) reported that out of 373 buffaloes, 60.58% were found infested with *H. tuberculatus*. The high prevalence rate of *Haematopinus* spp. recorded during the present survey may be due to lower resistance of the hosts to this parasite. Sanjay and Prasad (2004) reported that cattle and buffaloes up to 1 year of age were found to have a higher degree of ectoparasite infestation than the animals aged over 2 years which corroborated the present findings.

Many of the synthetic pyrethroids have been used for the treatment of ecto parasites in livestock and have been proved to be safe and efficient. In the present study, all the buffalo calves treated with deltamethrin spray were found to be free of ecto parasites up to 4 weeks post treatment. However, the residual effect was seen in some animals up to six weeks treated with deltamethrin. The prolonged effect of deltamethrin observed in the present study corroborated with observations reported by Singh *et al.* (1993).

It is generally observed that younger animals are more susceptible to ectoparasitic infestation as compared to adults. According to the results of the present study, some louse species were more prevalent in younger animals than older animals. This may be explained on the basis that when the animals are younger, their resistance is low and as resistance increases with the age of the

animals and then infestation decreases as the age of the animal increases. Finally, the owner was advised to separate infested and treated buffaloes from uninfested for 9 days (Radostits *et al.*, 2000) to prevent spreading of infection. Complete recovery with normal feeding habits were observed in all the infested animal after repeated treatment at a 7 day interval as this is necessary to kill the nymphal stage lice that have hatched from the eggs in the meantime. No lice could be detected macroscopically on the treated animals on the 14th day. In the present study, it was observed that deltamethrin application was quite effective for the management of lice infestation in buffalo calves.

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