

FIELD EVALUATION OF A CRUFOMATE POUR-ON TO CONTROL THE BITING CATTLE LOUSE, BOVICOLA BOVIS L.

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ABSTRACT

A ready-to-use formulation of 32% Crufomate (Dow TF 302) was evaluated as a back line pour-on treatment to control the biting cattle louse, *Bovicola bovis*. One treatment of two dosage rates tested (15 ml/100 lb and 5 ml/100 lb) was effective in controlling the lice throughout the 28 day test period.

Introduction

The biting cattle louse (little red Louse), *Bovicola bovis* (Figure 1) is an important cattle pest in North Dakota which along with sucking lice can cause heavy economic losses to cattle producers.

1976 estimates of losses to cattle producers in North Dakota are placed at approximately \$487,000.00 (1). Moderate to heavy louse infestations cause obvious discomfort to animals and the skin becomes raw and red from scratching or rubbing to relieve the irritation. Infestations retard weight gains in beef cattle and lower milk production in dairy herds. Literature on the economic losses to animals heavily infested with the louse complex shows losses of 55-82

pounds/animal in 117 days (2), 40 pounds/animal in 100 days (3), and 0.57 pounds/head in 82 days (4). Thus, although data indicate variability in animal response there is general agreement that lice populations do affect animal performance. In addition the biting louse in particular causes a skin reaction with a

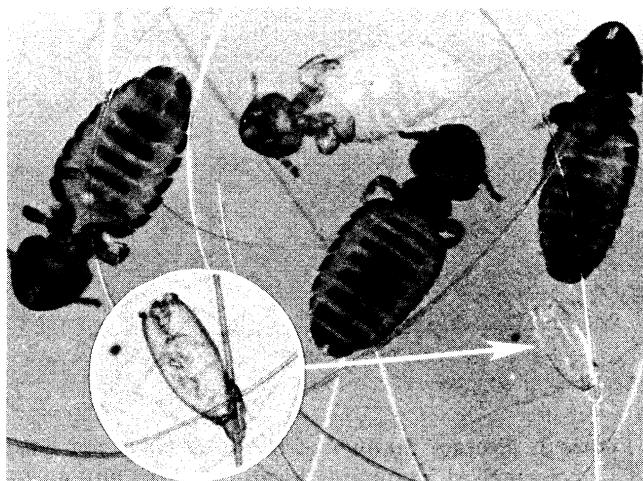


Figure 1. Adults, immature and egg of the biting cattle louse, *Bovicola Bovis* Linn. (approx. 30x life size).

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resultant loosening and falling out of the hair (5). The lice complex on cattle are cold weather pests which can be controlled using one of several organophosphate insecticides. This study evaluates a new crufomate (ruelene) formulation which was applied as a back line pour-on treatment.

Materials and Methods

A ready-to-use-formulation of crufomate (4-tert-butyl-2-chlorophenyl methyl N-methyl phosphoramidate) (32%) was applied as a pour-on along the back line to animals in a mixed herd (104 animals) with initial weights in the range of 300-600 pounds.

Eighty-five animals were treated at the rate of 15 ml/100 pounds of body weight. Of these, ten animals were marked with ear tags and observed at each post treatment check. A second group of 10 ear tagged animals was treated at the rate of 5ml/100 pounds of body weight and a third group of nine animals was left untreated. The three groups of animals were separated for the duration of the test. A pretreatment population survey was made immediately before treatments were applied. Tagged animals were checked by making three hair parts at each of five locations on the body. Numbers of lice per lineal inch (average for three observations) were recorded for the head, brisket,

neck, back and rump-tail area. Post treatment checks of the tagged animals were made at seven, fourteen and twenty-eight days after the insecticide application.

Results and Discussion

Figure 2(A-E) shows biting louse averages for treatments and control at each of the five areas of the body sampled. Figure 2F is a composite whole animal average for each inspection date and treatment rate. Numbers of lice were highest near the back line in all three groups of animals with concentrations 8-10 times the numbers at other locations checked. One treatment with crufomate at either rate tested reduced the louse population to a very low level by seven days post treatment. At 15 ml/100 pounds the lice were essentially eliminated within one week after applying crufomate. At the 5 ml/100 pound rate low levels of lice remained on five to ten animals checked at seven days (whole animal average less than one) and at 14 days a very few lice remained on two of 10 animals. At 28 days after treatment no lice could be found on any of the animals.

The animals showed no adverse effects due to the insecticide application immediately post treatment nor within the 28-day test period.

Control animals had high levels of lice throughout the 28-day period. The decline in the population levels on the controls (Figure 2, A-F) was due to a warming trend over the last two weeks of the test. *Bovicola bovis* is a cold weather pest which builds up rapidly in the winter and declines with the advent of warming conditions in the spring when the haircoat microclimate over most of the animals body becomes unsuitable for louse survival.

Summary

Crufomate (Dow TF 302) at 32% as a ready-to-use pour-on formulation was an effective biting louse control treatment at the treatment rates tested.

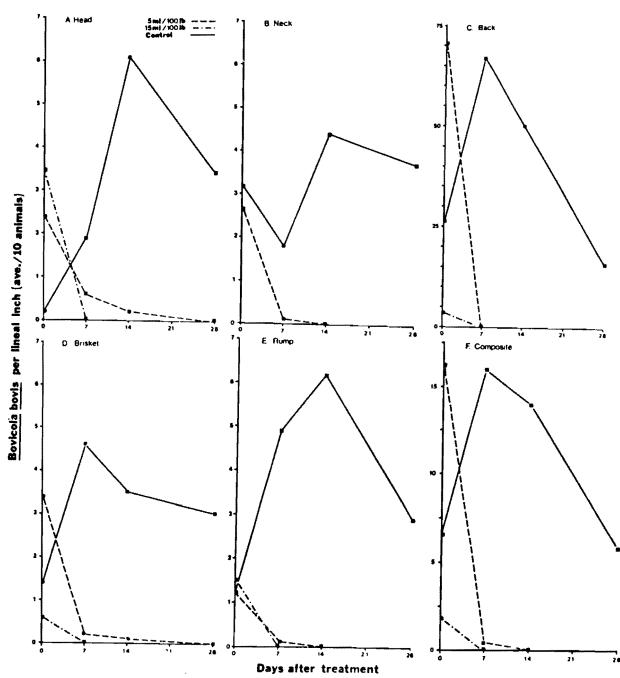


Figure 2. Average number of *Bovicola bovis* per lineal inch at 5 sampling locations (A-E) and on the whole animal (F) before and after treatment with crufomate (Dow TF 302) at the rates shown.

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