

# Winter cattle lice

## Part 2: control of lice in cattle



Bryony Sands, John Bruce, Emily Mackay, Jeffrey Sanders

### Cattle lice

Lice are a the most problematic parasites of cattle in the winter months, and can cause significant production losses in both beef and dairy cattle. There are four species of lice affecting cattle in Vermont, one species of chewing louse (*Bovicola bovis*) and three species of sucking lice (longnosed cattle louse *Linognathus vituli*, little blue cattle louse *Solenopotes capillatus*, and shortnosed cattle louse *Haematopinus eurysternus*). For more information on the biology and identification of these lice, see the Winter cattle lice factsheet Part 1: biology and life cycle of cattle lice.

### Control of cattle lice

Once the presence of lice have been confirmed by visual inspection, treatment should be implemented. Good nutrition and sanitation are helpful to improve the resilience of cattle to lice, however young stock and old or immune-compromised cattle are still susceptible to heavy infestations. Lice populations can increase rapidly during winter housing when animals are in close contact.

### Chemical control

There are many veterinary insecticides which can be effective against lice. The most popular application method is pour-on which is applied directly along the midline (top of the back) of the animal, and is effective against all four louse species. Injectable formulations are not effective against the chewing louse, which do not feed directly on the blood of the animal so may not be exposed to the insecticide. It is important to

### NORTHWEST CROPS & SOILS PROGRAM



note that broad spectrum treatments such as macrocyclic lactones or avermectins (ivermectin, doramectin, eprinomectin, moxidectin) will also kill internal parasites such as worms, and are not necessary unless a worming treatment is also needed. It is better to use an insecticide that targets lice, such as a synthetic pyrethroid (permethrin, deltamethrin, cypermethrin), or insect growth regulator (diflubenzuron). For organic producers, pyrethrin (the natural botanical form of synthetic pyrethroid) is thought to be the most effective treatment option. None of these chemical control methods are effective in killing lice eggs, so treatment **must** be repeated after 2 weeks to ensure that new lice hatching from these eggs are killed. Many producers choose to apply a preventative treatment in the fall, however lice numbers usually build up again and require a second treatment in winter regardless. It is important to apply the correct dosage based on the weight of the animals and observe the meat and milk withdrawal periods of individual treatments.



Photo: Philo Ridge Farm

## Problems with chemical control

Treatment for lice can be challenging, and repeated application throughout the winter can result in reduced treatment efficacy due to lice populations developing resistance. Treatment failures after application of common veterinary pesticides such as synthetic pyrethroids have been reported worldwide. In order to preserve the efficacy of veterinary treatments for when they are needed, it is important to seek alternative methods of control. Treatment must only be applied to animals when the presence of lice has been confirmed visually (scratching can occur for several other reasons). Furthermore, veterinary pesticides are excreted in livestock dung unmetabolized where they can remain insecticidal for months. This has been shown to have negative environmental outcomes such as lethal and sublethal impacts on terrestrial and aquatic invertebrates. Finally, for organic producers, chemical treatment options are limited.

## Alternative treatment strategies

Using an **integrated parasite management (IPM)** approach is optimal for minimizing the need for chemical treatments and achieving good lice management. The first step is prevention, including maintaining good cattle health and nutrition, and barn sanitation. Keeping animals outside as much as possible is beneficial because lice cannot survive when exposed to direct sunlight which heats up the skin and coat. Housing calves in individual hutches rather than shared pens can significantly reduce the risk. While preventative measures will help suppress numbers, there is no way to avoid winter cattle lice completely.

**Targeted selective treatment (TST)** is an excellent way to minimize the use of veterinary pesticides and to ensure animals are only treated when absolutely

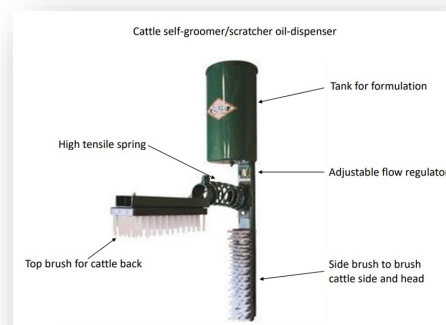
necessary. Not all cattle will show clinical manifestations of lice and it is therefore not necessary to treat the whole herd. Often young stock are the most heavily infested. Visual inspection by parting the animals hair and confirming the presence of lice and eggs is essential to identify specific animals which should be treated.



## Non-chemical treatments

Oily substances coat lice and block their spiracles, suffocating them. For this reason it has been recommended to apply oily substances to cattle to treat lice. A thin application of light oil such as vegetable oil or mineral oil can be effective. Essential oils exhibit insecticidal properties and unlike chemical treatments they will also destroy lice eggs. Care must be taken to choose safe, food-grade oils such as tea-tree or lavender, and to dilute them to around 5% in another inert oil such as mineral oil. These oil mixtures may be applied directly or placed in the tank of a cattle self-groomer dispenser. It is unlikely that calves will be able to reach the self-groomer so young stock may require direct application. Finally, diatomaceous earth is abra-

sive to the exoskeleton of lice causing them to die, however the dust can cause respiratory and skin irritation.



June 2023

Published by the University of Vermont Extension Northwest Crops and Soils Program. Learn more about the program at: [www.uvm.edu/extension/cropsoil](http://www.uvm.edu/extension/cropsoil).

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number ONE22-429. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture. Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. University of Vermont Extension, Burlington, Vermont. University of Vermont Extension, and U.S. Department of Agriculture, cooperating, offer education and employment to everyone without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or familial status. Any reference to commercial products, trade names, or brand names is for information only, and no endorsement or approval is intended.