



Controlling External Parasites on the Organic Farm

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Just what is a parasite? The simplest definition is that a parasite is something that lives at the expense of something else. We are not just talking about minor discomfort here either; studies have shown that even mild infestations of parasites could cost you 1 pound of milk production per head per day. This adds up too quickly to go untreated. Conventional dairy farmers typically take care of the entire parasite problem in one step by using a pour-on pesticide like ivermectin. Organic farmers have no such convenience and must counter common parasite infestations through a combination of prevention and control.

What are the most common external parasites?

Lice, mange, and with rotationally grazed herds near woodlands, ticks. Five species of lice affect cattle in the U.S. One species is a biting or chewing louse; the other four are sucking lice. There are two species of mange mites that most often affect cattle. *Chorioptes bovis* is a mange mite that infests cattle and is commonly known as “tailhead mange.” It is the most common type of mange found in the U.S. It is a problem primarily in winter in all types of cattle, but especially in dairy cattle which are housed in closed quarters.

Sarcoptes scabiei var. bovis is a burrowing mite that infests cattle and is frequently referred to as “neck and tail mange,” although it may be found on any part of the body.

Ticks are mostly a nuisance pest, but under certain conditions can reach numbers capable of affecting the animal. Ticks prefer the ears and neck areas of cattle: spots where it is difficult for the animal to remove them. Luckily, ticks have a complex life cycle and it is not possible for them to breed and reproduce on the animals or in buildings.

What is the effect of these external parasites? Lice bring about itching and skin irritations, causing animals to scratch, rub, and bite infested areas. Mange also causes skin irritation and itching, with more severe cases resulting in thickened skin, hair loss, and lesions. Ticks cause mostly minor irritation.

What is the economic impact?

Losses can occur from these parasites due to irritation, blood loss, depressed appetite, and decreased rate of gain. Mange can affect the mammary gland and interfere with milking. Lactating animals will lose production depending on the level of infestation.

Contributing factors for external parasites

- Intensive grazing in woodland areas (ticks)
- Close confinement
- Anything that puts cattle in frequent contact with other cattle
- Cold weather conditions

Clinical signs

- Rough haircoat
- Lack of appetite, poor rate of gain
- Depression, lethargy
- Constant rubbing against fences or equipment
- Off-feed

Control Options (Preventative)

Always separate new arrivals for at least 3 weeks. Check these animals over very closely for any signs of infestation and treat if necessary.

Separate animals that display early signs of infestation. Parasites prefer animals with lowered immune systems, an indication of stress or poor nutrition. Animals that repeatedly have problems with external parasites often have some other underlying problems, perhaps internal parasites.

Make sure your feeds are high quality and make sure to balance the minerals. Offering “free-choice” minerals will allow the cows to meet their own needs. Animals have the innate ability to fortify their diet with the necessary minerals. Animals in low-stress environments, with good feeds, are much less susceptible to parasites.

Reduce the stress level. Are there too many animals being held together in one area? Is there an opportunity to exercise and have access to the outdoors? If feeds are being offered in bunks, is there enough space for each animal to feed? The weakest animals (and thus the most stressed) are the most likely ones to develop parasite problems.

Control Options (Treatment)

There are few options available to the organic farmer for treatment of external parasites. Prevention is key. If a parasite problem is detected there are a few options:

Approved Treatment with no need for prior approval:

Liquid Enzymes

The newest and most promising treatment option. The liquid enzyme spray works by physically breaking down the exoskeleton of the insect/mite. Once the exoskeleton has been compromised the parasite dies quickly. Since it is not toxic in any way to the animal or to people, the liquid enzyme treatment is a very exciting new parasite treatment product.

Diatomaceous Earth and Garlic Powder

Diatomaceous earth is not chemically active but actually kills insects and mites by piercing their exoskeletons and causing them to “leak” and die. DE is not toxic and can even be eaten (it is also used for internal parasites). DE should not be breathed however. Take care when applying the powder. Wear a mask and avoid kicking up clouds of the dust. Apply the powder outside if possible. Do not purchase the DE that is sold for pool filtration. This DE is not the same thing as needed for parasite control. Buy from a reputable dealer of animal health products.

Garlic powder has an active ingredient called allicin. It can kill or repel parasites and also has excellent anti-microbial properties. Feeding a garlic tincture in conjunction with external treatment has shown promise, especially with mange mites.

Soap

Soap removes the waxy cuticle that protects insects and mites from drying out. Soaping animals will kill lice and mites, but repeat treatments will be necessary, especially with heavy infestations. Basic H or similar pure soap works well.

Organic plant oils (soy, canola etc.)

Insects and mites need oxygen just like any other animal. Oils kill them by clogging up the pores that deliver oxygen to their bodies. Apply a light coat of oil to the areas of infestation. Run oil along the neck and spine to cover some of most commonly infested areas. Do not overdo the oil, a thin even coat is all it takes. As with soap, repeat treatments may be necessary. **IMPORTANT NOTE: Never use kerosene, diesel, or other petroleum-based product to control lice or mites. The use of these products can result in suspension or outright decertification.** Mineral oil is the only petroleum-based oil that is allowed for topical use for the treatment of parasites under the National Organic Standards.

Restricted Use Products- You must get approval before use:

Neem Oil

An ancient insect control material from India. The neem tree is the source of this natural insecticide. The combination of neem and oil is effective against all external parasites.

Pyrethrin (Chrysanthemum Flower)

A true botanical insecticide, that kills insects and mites on contact. Pyrethrin in a powder form is a good control, but is best used only for heavy infestations, and make sure that the formulation you purchase does not contain piperinyl butoxide, a synergist that is prohibited.

Prohibited Methods:

Kerosene, diesel or any other petroleum-based product.

Any chemical insecticide, including, but not limited to ivermectin, permethrin, methoxychlor, and malathion.