Lice of Sheep and Goats

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Sheep and goats are commonly infested with lice, which usually go unnoticed until the infestation becomes extensive and harmful.

The heaviest infestations occur in winter when the animals are closely herded or confined to shelters. Goats usually suffer more than sheep.

Two kinds of lice attack sheep and goats—sucking lice and biting lice. Both may be present in a flock at the same time.
Sucking lice are more harmful because they live on blood and pierce the skin to obtain it. They are blue or dark gray and have pointed heads and sucking mouth parts. The heads are usually longer than broad.

Biting lice live on the surface of the skin and feed on scales, bits of hair, and other debris on the skin surface. They are yellow or reddish brown and have short, broad, rounded heads, which are usually broader than long.

Some of the sheep lice can be distinguished from others by noting the region of the body they inhabit. Foot lice, for instance, are found on the legs of sheep. To find them one should look in the coarse, dense hair above the hoofs near the dew claws. When foot lice are numerous on sheep, they may be on the upper region of the legs and even on the ventral surface of the thorax or abdomen. The African blue louse usually afflicts the sides of the body. The common body louse of sheep, *Linognathus ovisulus*, is found on several parts of the body.

Three species of sucking lice live on sheep: *Linognathus ovisulus*, the common body louse; *L. africanus*, the African blue louse; and the foot louse, *L. pedalis*.

On goats, the most common sucking louse is *L. stenopsis*. At times the African blue louse is found on goats, especially those on the western ranges. It closely resembles *L. stenopsis*.

Only one biting louse, *Bovicola ovis*, is commonly found on sheep.

At least four species of biting lice are found on goats. The most common is *B. caprae*.

Both biting and sucking lice are completely parasitic. They spend their entire life cycle on the infested animal. They can live for only a short time off the host.

Their eggs are firmly attached to the wool fibers or hair about 1 inch from the surface of the skin on animals in full fleece. The eggs are oval or barrel-shaped, attached at one end to a single wool fiber or hair, and firmly closed at the other end by a cap, called the operculum. They vary from straw color to a pale or dark brown. The eggs hatch in 1 to 3 weeks, depending on the weather.

Newly hatched lice, the nymphs, are similar to the adults except that they are slightly smaller. Several molts occur during the nymphal stage. Nymphs become adults in 2 to 3 weeks after hatching. As they become adults, mating takes place and eggs are laid, thereby completing the life cycle.

As the numbers of lice increase, they spread through the flock by direct contact between individual animals. Close herding, crowded corrals, and confinement to stables aid in spreading the lice.

Sucking lice pierce the skin to obtain blood for food. In doing so, they cause intense irritation.

Biting lice do not pierce the skin. They move about on the skin surface much more than the sucking lice and irritate the infested animals by their constant movements. They live on particles of hair, dried skin, dried serum, and other bits of skin debris.

Because sucking lice consume blood, they are considered more harmful than biting lice. The damage done by both biting and sucking lice is confined largely to that done the wool or mohair. The attempts made by the infested animals to relieve the irritation caused by lice results in injury to the fleece. The wool or mohair becomes soiled, matted, and broken by the rubbing, scratching, and biting done by the infested animals. The value and utility of both are reduced, and the loss sustained by the producer is considerable.

TREATING sheep and goats for lice is usually by dipping. If a dipping vat is available, it should be used, because it is the most certain method for eradicating lice, especially if the animals are in full fleece.

Louse-infested animals need not be held in the dip longer than necessary to wet the fleece and skin thoroughly.
About 1 minute is usually long enough. The animals usually get thoroughly wet if they are allowed to swim slowly through the length of the vat. Their heads should be submerged at least twice for an instant while swimming through the vat. It is not necessary to heat the dip, but the temperature should not be allowed to fall below 65° F.

All the animals in the flock should be dipped whether they show infestation or not. The dipping fluid in the vat should be 40 to 48 inches deep. The amount necessary to complete the work should be ascertained before it is prepared. Freshly shorn sheep and goats and short-wool lambs and kids carry out 1 to 2 quarts of dip. In the late fall, when they are in full fleece, each will carry out and retain in the fleece 1 gallon. The amount carried out and retained by the animals and the amount required to change the vat will be a fair estimate of the total amount of dip needed.

Lindane and BHC are recommended for treating sheep and Angora goats for sucking lice. Control has been obtained sometimes—but not always—with dips containing 0.025 to 0.03 percent of gamma isomer, the active insecticidal ingredient. Dips and sprays having a concentration of 0.05 to 0.06 percent are considered better. A single treatment with either BHC or lindane is enough.

Milk goats should be treated with methoxychlor in a 0.25-percent dip.

Flocks of sheep and goats may be treated satisfactorily in dips prepared from cube or derris powder containing approximately 5 percent rotenone. Rotenone is the active insecticidal ingredient in the powder, and the recommended concentration of rotenone in the dip is 0.006 percent. To make a dip containing this concentration, 1 pound of cube or derris powder is added to 100 gallons of water.

Sheep infested with foot lice need not be necessarily dipped. They can be waded through a water suspension prepared as though for a dip. Infestations of foot lice have been effectively treated in wading troughs with 0.5-percent suspensions of DDT.

**Sheep and Goat Lice** can be eradicated by dipping once in DDT, TDE, methoxychlor, toxaphene, or chlordane in concentrations of 0.25 percent.

Because it is hard to wet the animals completely with sprays, it is recommended that sprays be used in twice the concentration of dips—namely, 0.5 percent.

Dips prepared from emulsifiable concentrates should be used with great care. They are more hazardous than wettable powders and should be used only as directed by the manufacturer.

Only fresh formulations should be used, and all quantities of insecticide and water should be measured.

To control sheep and goat lice with sprays prepared from lindane or BHC, the gamma isomer should be the same as for dips; namely 0.06 percent. These lice pests can be eradicated only by destroying the motile lice, their eggs, and the nymphs that hatch after the treatment. Complete and thorough wetting is therefore required but is rarely achieved by spraying; consequently consistent eradication cannot be expected from spraying. If other insecticides, such as DDT, methoxychlor, toxaphene, or chlordane, are used for spraying sheep or goats, they should be used in concentrations of 0.5 percent.

The insecticidal chemicals referred to here will not dissolve in water, but are soluble in oils. Liquid concentrates for mixing with water are prepared by dissolving the chemical in a suitable petroleum solvent along with a wetting agent so that the oil will mix with water. This three-way mixture of insecticide, oil, and wetting agent is called an emulsifiable concentrate. Emulsifiable concentrates suitable for livestock use should mix readily with water to form milky-white emulsions that do not separate on standing.

An owner who prefers to use spray
should spray as soon as possible after shearing. All the animals should be treated, and attempts should be made to wet all parts of the body. Particular attention should be paid to the underline. If the animals are in full fleece, more spray is required than on newly shorn sheep.

The amount of spray required varies with the size of the animals, the length and density of the fleece, and the circumstances under which they are sprayed. The amount usually will run near a gallon for one animal.

When infested sheep or goats cannot be sprayed or dipped because of unfavorable weather, as is often the case in areas where the winters are severe, the animals can be dusted, either by hand, if the flocks are small, or treated with a dusting machine. These devices are usually set up in a runway leading from a corral. The insecticide most often used for dusting is cube powder containing approximately 5 percent of rotenone. The cube powder is formulated for treatment so that it contains 0.5 percent of rotenone.

Goats producing milk for consumption by people should not be treated with DDT, toxaphene, TDE, chlordane, benzene hexachloride, or lindane, because of possible contamination of the milk.

Methoxychlor or rotenone can be used to treat milk-producing animals.

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Sore Mouth in Sheep and Goats

C. L. Davis

SORE MOUTH, or contagious ec-thyma, is a highly contagious disease of sheep and goats.

It is common in lambs and kids but rare in animals more than a year old, although lesions have been seen on the udders of nursing ewes and goats. It is most prevalent among lambs being fattened for market but it may appear in range bands and farm flocks. Feeder lambs frequently develop the disease, usually within 7 to 10 days after arrival in the feed lots.

Sore mouth occurs in spring and summer wherever sheep are raised.

The lesions appear mostly on the lips and sometimes on the face and ears and near the eyes. Vesicles, pustules, ulcers, and scabs form. The lesions in severe cases may reach the mouth, where extensive ulceration of the cheeks, hard palate, and tongue may develop.

The disease in the ordinary outbreak runs a rather benign course, with few or no fatalities, unless complications set in. The greatest loss results from debilitation due to inability of the animals to eat for long periods and from stunting of growth at the age when normal gains should be greatest.

Uncomplicated cases heal spontaneously in about a month, usually without treatment. The scabs fall off within 3 or 4 weeks. Healing takes place without formation of scars. The dried scabs retain the virus, which is resistant to heat and cold and can survive in the soil from year to year. The disease may therefore recur an-