

Livestock & Poultry

Department of Entomology

CONTROL OF SHEEP PESTS

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SHEEP KEDS AND SHEEP LICE

Sheep Keds

The sheep ked (*Melophagus ovinus*), often called the sheep "tick", is a common pest of sheep. It looks somewhat like a tick but is actually a wingless fly, grayish-brown in color and 1/4 inch long. Its entire life cycle is spent on the host, except when accidentally dislodged; and it will readily crawl from one animal to another.

Sheep keds live 6-8 months, during which time the female produces about 15 young at the rate of approximately one a week. Breeding is continuous, although slower in winter; and there are several generations each year. Unlike most insects, the female gives birth to fullgrown maggots, one at a time, which are attached to wool strands about the neck, inside the thighs and along the belly. Within a few hours after birth, the larval skin turns brown and forms a hard puparium. Fully developed keds emerge from the pupal cases in 2-5 weeks.

Adult keds crawl over the sheep's skin and feed by thrusting their piercing-sucking mouthparts into the flesh and sucking blood and lymph. This results in considerable irritation which causes the animal to rub, bite and scratch at the wool, reducing the amount and quality of the fleece. In heavy infestations, an anemic condition results, which weakens the animal and makes it more susceptible to other diseases.

Feeding punctures made by the ked cause a condition in the skin known as "cockle". Hide buyers will downgrade sheep skins with cockle because it weakens the skin.

Sheep Lice

In America, several species of lice—one biting and four sucking—infest sheep. However, only the sheep biting louse (*Bovicola ovis*) is commonly found in Indiana. It is a small louse, 1.8mm in length, and light-brown to reddish in color. These lice are usually found on the skin itself but may crawl rapidly over wool fibers when disturbed. Their preferred location on the sheep is along the back and upper sides; but in heavy infestations, they may be found anywhere on the body.

The female louse lives for 20-30 days, during which time she will lay one egg every 1-2 days and attach them to the wool

fibers near the skin surface. Louse populations are heaviest during the winter and early spring and lightest during summer. Lice are transmitted by direct contact of sheep. Lambs become readily infested from their mothers. Old sheep and those in poor condition tend to bear heavy infestations.

Sheep biting lice feed on the skin scurf. They cause intense irritation which the sheep try to relieve by biting and pulling the wool and by rubbing against posts and other objects. The fleece of heavily infested sheep becomes ragged, torn and reduced in value.

Ked and Louse Control

Several insecticides effectively control infestations of sheep keds and lice as sprays, pour-on's, or dusts (see Table). As a general rule, treat sheep in the spring after they have been sheared when the weather is warm and these pests are fairly well exposed. However, if animals are heavily infested during the fall or winter months, consider treating at that time rather than allowing the keds and lice to continue increasing, irritating and causing losses. If you spray during fall or winter, select a warm, sunny day, treat the animals in the morning, and keep them outside until they are dry.

Dipping gives excellent control and is recommended where facilities are available. Check labels of products as sprays for proper dip directions. If controlling by spraying, high pressures are desirable, but good results can be obtained by using geartype sprayers operated at pressure capacity. Adding a household detergent at a rate of 1 pound per 100 gallons of spray solution aids in penetrating the wool. To spray, confine about a dozen sheep in a small pen, hold the nozzle a few inches from the wool, and spray the animals until they are thoroughly wet.

A simple way to treat a few sheep for keds or lice is to hand dust them. Catch each animal, place it on its side, sift dust into the wool from the neck down the side to the breech and on the belly, then rub the wool lightly by hand to work the dust down to the skin. Treat the opposite side the same. One treatment in spring or fall is usually sufficient to control infestations of sheep keds.

SHEEP NOSE BOT FLY

The female of the sheep nose bot fly (*Oestrus ovis*) deposits living larvae (maggots) in the nostrils of sheep during the spring and summer. At the time the flies are depositing the larvae, sheep will bunch together and keep their noses down to the ground in an effort to avoid the “strikes”.

The larvae migrate to the head sinuses where they feed on internal secretions. After development, through the winter they migrate back down the nasal passages, dropping to the ground where they pupate and become adults.

Migration of the larvae irritates the nasal membranes, often causing sneezing, labored breathing and blood fleck in the nasal discharge. Infested sheep shake their heads, stamp their feet, hold their noses to the ground, and even bang their heads against feed bunks, fences or the ground. The presence of maggots in the head may cause blind staggers; and severely infested, older or weak sheep may actually die as a result of the bots.

Control

Ivomec 0.80% Sheep Drench (ivermectin), administered orally, is the only registered treatment available for the sheep nose bot. Dose rate is 3 ml/26 lb. of body weight. There is an 11 day preslaughter interval. See label for complete information.

WOOL MAGGOTS AND OTHER FLIES

Certain species of blow flies lay eggs in dirty wool, usually in the crotch area or on wounds. Upon hatching, the “wool maggots” spread over the body and feed on the skin surface, causing severe irritation. Maggot-infested sheep become restless, stamp their feet, try to bite the irritated areas and may leave the flock to hide in secluded places. Badly infested sheep, if untreated, become weak and may die.

House flies, stable flies and face flies also bother sheep in the summer. These flies feed on shearing wounds or the thin, exposed skin, which delays wound healing. Sheep react to these flies as they do blow flies, often resulting in decreased animal performance.

Control

Efforts can be taken to avoid maggot and fly infestation of sheep. Keep animals as clean as possible. If the breech area becomes saturated with urine and feces during blow fly season, clip the wool from the crotch area and from the area above the tail down the back of the hind legs to the hocks. Prevent wounds by handling sheep gently and by providing safe chutes and corrals free of protruding objects.

Shearing early in the spring before fly season is a good practice. It removes soiled or fermenting wool, making sheep less attractive to flies, and permits shear cuts to heal before fly activity starts. Early lambing is also advisable for the protection of both ewes and lambs, since soiled wool of ewes from afterbirth and exposed umbilical cords of lambs may attract flies. When lambing occurs early, docking and castrating can be performed before fly season.

Insecticides are useful for prevention as well as control of maggot or fly infestations. When sheep have accidental wounds or when necessary operations are performed during the fly season, timely applications of coumaphos (Co-Ral) or permethrin (several formulations & trade names). See label for complete information.

In controlling flies in and around barns and lots, sanitation is the first and most important step. No insecticide can be effective for flies around barns as long as breeding sites exist. This is especially true in the case of the house fly and stable fly.

All manure, spilled feed, wet straw and decaying plant material should be removed weekly to break the breeding cycle of these flies, which is as short as 10 days from egg to adult fly. This can be done either by spreading manure and other waste material to dry or by placing it in pits or lagoons to become liquefied. If a liquid pit is used, do not allow accumulations of solid materials above the water line, either floating or sticking to the sides, since this would be conducive to fly production.

The enclosed table lists the insecticides recommended for fly control around barns. All except the products listed as “knockdown sprays” are considered residual sprays and should give control up to four weeks. Knockdown sprays should be applied when the first flies appear in the spring. Fly baits are most useful as a supplement to residual sprays. They alone cannot be expected to control fly populations. Commercial dry baits in granular form are readily available.

Larvicides can be applied directly on manure and other fly breeding sources; but their use should be reserved for treatment of fly breeding spots not eliminated by normal sanitation practices. Recommended larvicides are listed in the enclosed table.

Screens and fly traps are two methods of mechanical fly control that can also be employed. Where possible, screen doors and windows should be used to prevent entry of flies. Many kinds of fly traps are available, most employing a black light with an electrically charged grill to kill the insects or baited with a fly attractant material. Traps appear to be helpful in tight, enclosed areas where good sanitation practices are followed. However, in areas of heavy fly populations, traps are not effective in reducing fly numbers to satisfactory levels. Their best use is as a supplement to other fly control practices.

Table 1. Insecticides For Sheep and Sheep Premises	
Insecticides for Keds and Lice	
Insecticides	Formulations
Diazinon	Spray, Dust
Malathion	Spray Dust
Permethrin (Several Trade Names)	Spray, Pour-on
Fenualerate (Ectrin)	Spray
Cormaphos (Co-Ral)	Spray
Synergized pyrethrins	Spray
Insecticides for Fly Control in Sheep Premises	
Permethrin (Several Trade Names)	Residual Spray
Cyfluthrin (Tempo)	Residual Spray
Lambda-cyhalsthrin (Demand)	Residual Spray
Dimethoate (Cygon)	Residual Spray
Tetrachlorvonphos (Rabon)	Residual Spray
Tetrachlorvonphos and dichloros (Ravap)	Residual Spray
Synergized pyrethrins (Several formulations and trade names)	Knockdown Sprays
Methomyl (Several Trade Names)	Baits (Granular)
Lanicides for Treating Manure	
Dimethoate (Cygon)	
Tetrachlorninphos (Rabon)	
Tehachtornonphos and dichloros (Ranap)	

IMPORTANT: For all insecticides listed in the table, read and follow all label directions for proper mixing instructions, application rates, and precautions.

READ AND FOLLOW ALL LABEL INSTRUCTIONS. THIS INCLUDES DIRECTIONS FOR USE, PRECAUTIONARY STATEMENTS (HAZARDS TO HUMANS, DOMESTIC ANIMALS, AND ENDANGERED SPECIES), ENVIRONMENTAL HAZARDS, RATES OF APPLICATION, NUMBER OF APPLICATIONS, REENTRY INTERVALS, HARVEST RESTRICTIONS, STORAGE AND DISPOSAL, AND ANY SPECIFIC WARNINGS AND/OR PRECAUTIONS FOR SAFE HANDLING OF THE PESTICIDE.

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