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## G93-1142 Sheep Insect Management

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## Sheep Insect Management

Controlling insects that infest sheep is discussed here.

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*John B. Campbell, Extension Entomologist*

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Most of the insects that infest sheep also infest goats, but very few insecticides are approved for lactating goats. For listings of insecticides for control of insect pests of sheep see *EC 1550, Nebraska Management Guide for Arthropod Pests of Livestock and Horses*.

**Sheep Ked.** The sheep ked is a wingless fly that resembles a tick. Keds spend their entire life cycle on sheep, transferring between animals by contact.

The female deposits living young individually on wool strands. A red puparium (case) is formed around the ked. After about 21 days the fully developed ked emerges from the case and begins to feed on blood.

Sheep keds are detrimental only when the sheep are on a poor nutritional plane (poor range). Keds feed by piercing the skin and consuming blood. This causes a condition known as "cockle." Hide buyers downgrade sheep skins with "cockle" because it weakens the hide.

Sprays, dips and power or hand dusting with insecticides are all effective methods for controlling sheep ked. Shearing time is the most convenient and efficient time to treat.

Several sheep-producing states have adopted a sheep ked-free program which was initiated in Wyoming. All sheep in the program are treated for keds at shearing time. All replacement or breeding stock are treated prior to being placed in the flock. Sheep marketed from the participating states are certified as being ked-free.

**Sheep Lice.** The African sheep louse, sheepfoot louse and goat-sucking louse are all blood-sucking lice.

The sheep-biting louse feeds on skin. Distribution and abundance of these species is not well known. The lice cause sheep to rub and scratch, sometimes to the point of denuding areas of skin. Anemia, which may predispose respiratory or other diseases, is a common result of high populations of lice.

Low pressure insecticide sprays and dusts are adequate for sheep lice control. Adding detergent to the spray will increase its sticking ability.

**Sheep Scab.** Psoroptic scab (scabies), a highly contagious skin disease of sheep caused by microscopic mites, is included in the Federal Quarantine Act. Federal and state quarantines and treatment have reduced the incidence of this pest to only a few cases per year.

Uneven wool that looks picked and thin and scabbing surface wounds are signs of the mite. Positive diagnosis can be made only by scraping lesions and examining the scrapings microscopically for mites. Federal regulations require infected sheep to be dipped twice within a 10- to 14-day period with a special formulation of sulfur or toxaphene insecticide (restricted use label).

**Sheep Nose Bot Fly.** The female bot deposits living larvae (maggots) in the nostrils of sheep. The larvae migrate to the head sinuses and, after development, migrate back down the nasal passages, dropping to the ground where they complete development to the adult form. There are two or more generations per year in most of the United States. A recent packing house survey by Wyoming indicated that 90 percent of the sheep from Wyoming, Colorado, Nebraska and Idaho have sheep nose bot infestations during 11 months of the year.

The "strikes" of the fly while depositing the larvae in the nostril irritates sheep. They bunch and keep their noses down to the ground in an effort to avoid the "strikes." When the bots are migrating to and from the head sinuses, the nasal membranes are irritated and secondary infections can occur at the irritation sites.

Blood flecks in the nasal discharge and sheep banging their heads against feed bunks, fences or on the ground indicate the presence of nose bots. Severely infested older or weak sheep may die as a result of the bots.

Presently, there is only one product registered for control of the sheep nose bot. Ivomec (ivermectin) is registered as an 0.08 percent AI oral drench, administered at a rate of 3.0 ml/26 lb body weight. The treatment slaughter interval is 11 days. Treat after hard frost which kills the bot fly and assures no reinfestations.

**Flies.** Some species of blow flies (the black blow fly in particular) lay eggs in dirty wool, usually in the crotch area or on wounds. Upon hatching, the fly maggots spread over the animal and feed on the skin surface. Maggot-infested sheep become restless, stamp their feet, try to bite the irritated areas and may leave the flock to hide in secluded places. Care and medication of wounds, early shearing or clipping, and cleaning dirty areas before the spring blow fly season should be considered as part of the control program.

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

**Biting Gnats.** In Nebraska, there are several species of blood-feeding gnats (midges) in the genus *Culicoides* that feed on livestock. Of particular importance to sheep is *C. variipennis* because it

transmits bluetongue, a viral disease. This disease is particularly serious to sheep and white tail deer.

Infected sheep have inflammation, swelling and hemorrhaging of the mucous membranes of the mouth, nose and intestines. Inflammation and soreness of the feet also are associated with the disease. The tongue and membranes of the mouth may look red or dirty blue, hence the name. The mortality rate for infected sheep is about 50 percent. Secondary effects include abortions and deformed lambs.

In areas where bluetongue is endemic, some management practices will reduce the incidence of the disease:

1. Herd sheep into covered shelter at night and keep there until after sunrise, because the greatest number of gnats feed during the night.
2. Graze sheep away from aquatic areas--the breeding sites of the gnats.
3. Drain and clean runoff areas from feedlots. Gnats breed in standing water rich in organic matter.
4. Vaccinate sheep in areas with a history of the disease.

***Spinose Ear Tick.*** This tick is a parasite of several domestic animals, including sheep, with cattle as its primary host. It is found primarily in arid range areas in southwestern states. Its occurrence in Nebraska is usually on sheep or cattle shipped into the state. The adults do not feed and are found around corrals or loafing areas frequented by sheep. Eggs are deposited in these areas.

Young larvae crawl up on vegetation and wait for contact with a host animal. After contact and attachment they move to the ear, crawl to the inner folds of the outer ear, and begin to suck blood or lymph. The larval form changes to a nymphal form that also feeds on blood. When nymphal development is completed the tick drops to the ground and completes development to the adult form. The feeding area within an animal's ear may become infected (canker ear). The irritation causes animals to become dull and unthrifty, decreasing animal performance. Heavily infested older or young animals may die.

Early in the spring, sheep in small flocks that are encouraged to graze in shelter belts and other vegetative areas around the farmstead may become infested with a few wood or American dog ticks, but sheep are not preferred hosts so the tick usually will drop off before engorging.

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***D-24, Livestock***

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