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G78-409 Cattle Grub Control in Nebraska (Revised November 1989)

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Cattle Grub Control in Nebraska

The control of cattle grubs is discussed here, as are possible insecticide reactions, warnings and restrictions.

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Economics

Cattle grubs are the immature or larval stages of heel or warble flies. Losses from this insect begin with the fly stage in the insect's life history.

As flies seek animals on which to deposit eggs, cattle become frightened and run. The running animal has its tail in the air, bent over the back. This behavior is termed "gadding."

Cattle fail to graze normally during the warble fly season because of gadding. They seek shade or stand in water to avoid the flies.

The failure to graze normally results in decreased milk production and subnormal weight gains. Further losses occur when cattle, in their efforts to escape the flies, run through fences or into other objects.

Slaughter losses result when grubby areas must be trimmed from the carcass and from the decreased value of hides containing grub holes.

Cattle Grub Life History

There are two species of cattle grubs in Nebraska, the common cattle grub (*Hypoderma lineatum*), and the northern cattle grub (*Hypoderma bovis*). Habits of the two species are similar except that the northern grub's life cycle is a month or two behind the common grub.

Eggs are attached to lower hairs on an animal's body, especially the legs. Newly hatched grubs crawl down

the hairs and burrow into the skin. They slowly work their way through the animal's body until they reach the gullet (the common cattle grub) or the spinal canal (the northern cattle grub). The grubs then spend several months migrating to the back of the animal.

After migrating to the animal's back, the grubs cut breathing holes through the hide. At this time cysts or swellings, called warbles, are visible or can be detected by touch. Grubs remain in the animal's back about six weeks.

When full grown, the spiny grubs work their way out through the breathing holes, drop to the ground and pupate. In three to 10 weeks, the adult flies emerge from the pupal cases and are ready for mating and egg laying. The entire life cycle takes about a year, eight to 11 months of which are spent in the bodies of cattle.

Grub Control on Beef Cattle

Several systemic insecticides are currently registered for control of cattle grubs. Some can be applied as a spray, dip, pour-on, spot-on, or feed additive; others by only a couple of these methods, and one is labeled only as an injectable. In Nebraska, treatment in late August or at fall weaning time provides excellent control.

Some producers assume that treatment for cattle grubs also controls cattle lice. Systemic insecticides do reduce numbers of the blood-feeding lice considerably, but may not affect the chewing louse and may not prevent a build-up of blood-feeding lice later in the winter.

If sprays are used, treat only a few animals at a time. The animals should be held in a small corral and sprayed with high pressure equipment at a distance of six to eight feet. Spray the animal's entire body so the skin is wet. Failure to do this may result in poor control.

Spraying large numbers of animals from a distance (as done for control of lice and flies) will not provide adequate control. Avoid spraying the eyes of the animals since the high pressure spray at close range can cause eye injury.

Dips should be checked periodically to determine if the proper rate is still present. The manufacturer provides vat checking kits for this purpose.

Pour-ons and spot-ons should be applied along the back line of the cattle, with each dose covering as much surface as possible. Chewing lice are killed by contact with the insecticide, so treatment down the back line exposes more lice to the treatment.

Treating cattle grubs with feed additives is less commonly used because of the ease of treatment by other methods. However, the method is available either as a seven or 14-day treatment regime.

The injection method is for a broad spectrum parasiticide which controls both cattle grubs and internal parasites. At present, only one of these products is available. Two or three are being tested and may be marketed in the near future.

Grub Control on Dairy Cattle

Most dairy production is in northeast Nebraska, an area with few cattle grubs. If a dairy herd does become grub-infested, treat calves, replacement heifers, and dry cows. Note that there are waiting periods between treatment and freshening ranging from seven to 21 days, depending on the product. None of the systemic insecticides may be used on lactating dairy cattle.

Possible Insecticide Reactions

Two kinds of toxic reactions can occur in cattle following organic phosphate insecticide treatment. One reaction is organophosphate toxicity. This results from an overdose of the insecticide. True organophosphate toxicity is rarely seen if directions for treatment are followed.

There is a varying lapse of time between the time of treatment with organophosphates and the onset of toxic symptoms by the treated cattle. This is dependent on the insecticide, dose, and condition of the animal. Signs of organophosphate poisoning usually consist of diarrhea, abdominal pains, excessive salivation (usually stringy) and weakness of the hind legs, accompanied by a staggering gait.

The other type of reaction is a host-parasite reaction. This results from treating animals while the migrating larvae are either in the esophagus or spinal canal. It is a reaction to the dead or dying grubs within the body of the animal.

The signs indicating a host-parasite reaction differ, depending upon whether the northern cattle grub or common cattle grub is involved. Because the northern cattle grub may be located in the spinal canal, paralysis or weakening of the back legs may occur when this grub is involved. The common cattle grub usually migrates through the esophagus so bloat, difficult breathing, excessive salivation (usually foamy) and vomiting of partially chewed food are common signs of this type of reaction. It is important that a proper diagnosis be made regarding the type of reaction (organophosphate toxicity or host-parasite) that has occurred, because treatment for each type of reaction will be different.

Warnings and Restrictions

1. Before applying any livestock insecticide, read the label until it is completely understood. Then follow the directions on the label.
2. Note and obey treatment-slaughter interval for each insecticide to avoid illegal residues.
3. Note and follow treatment restrictions concerning application on young, sick, stressed, or treatment in conjunction with other medications for each insecticide.
4. Note and follow treatment cutoff periods. Nov. 1 to Feb. 1 for insecticide use on Nebraska cattle.
5. Be aware that these insecticides are poisonous. They can be fatal if swallowed, and harmful if inhaled or absorbed through the skin. Avoid skin contact. Do not contaminate food, feeds, or water. If spilled on skin, wash immediately with soap and water. If symptoms of poisoning develop, see a physician immediately.
6. Keep insecticides away from children and pets. Store in original container in locked storage area.
7. If, following treatment, animals show any sign of toxic reaction (weakness in the rear legs, a staggering walk, bloating, grunting, increased salivation, or diarrhea), immediately consult a veterinarian.

For a listing of specific insecticides recommended for control of cattle grubs in Nebraska, refer to *Nebraska Management Guide for Control of Arthropod Pests of Livestock and Horses* (EC 89-1550).

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