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CATTLE GRUB CONTROL

by ROBERT ROSELLE,
Extension Entomologist

DAMAGE CAUSED BY CATTLE GRUBS

Every year cattle grubs damage thousands of dollars worth of hides in Nebraska. They decrease the amount and quality of beef produced. They greatly reduce the milk supply, waste large amounts of feed, and reduce the vitality of infested animals.

LIFE HISTORY OF GRUBS

Two species of cattle grubs are present in Nebraska, the heel fly or common cattle grub (*Hypoderma lineatum*), and the bomb fly or northern cattle grub (*Hypoderma bovis*). The habits of the two kinds are similar. Eggs are laid on hairs of the lower parts of animals from April to June.

The grubs hatch, bore through the skin and migrate through the animal's body for about 8 months. Then they appear in the backs of the animals from December to May. Soon after appearing in the backs a breathing hole is formed through the skin. Four or five weeks later the grubs come out of the openings in the back and drop to the ground where they develop into flies.

Adult flies do not sting or bite, but for some unknown reason cattle fear them. When flies are present in the spring, cattle run frantically from them, especially from the northern species. Cattle will seek shade or water to escape cattle grub flies. When grubs burrow into the skin much irritation results to animals. They will kick, stamp, and lick the

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infested parts. Usually a serum oozes out, matting the hair and often producing a scab.

CATTLE GRUB CONTROL WITH INSECTICIDES

For many years rotenone was the only insecticide recommended for cattle grub control. It was effective only when applied to the backs of animals after breathing holes had been formed.

Two systemic insecticides recently have been approved for grub control. These are Co-ral and Trolene. Both circulate with body fluids killing grubs before they migrate to the backs of animals.

Co-ral is a systemic insecticide which kills grubs before they emerge in the backs of animals. It is available as a 25% wettable powder. Mix at the rate of 16 pounds to 100 gallons of water. This makes a 0.5% spray. Spray pressures of 250 pounds or more per square inch should be used. It is essential that the skin, not just the hair, becomes thoroughly wet. If lower pressures are used, hold the nozzle as close as possible to the skin to obtain maximum wetting. Only high pressure sprays are recommended when animals begin to develop a winter coat. All parts of the animal including the body, neck, and legs should be sprayed.

One gallon of the 0.5% spray mixture should be applied per animal. If the animal is in short coat, two applications of 2 quarts each can be used. If two applications are used, the first spray should be applied in July, and the second at least 60 days later. If a single application is used, the recommended time of application is from mid-July through September. Best results are obtained if the spray is applied soon after the heel fly season is past, usually after June in Nebraska. Co-ral will also control cattle lice and screw-worms.

Trolene is also a systemic insecticide. It is available in bolus (pill) form, containing 15 grams of active ingredient per bolus. One bolus should be given for each 300 pounds of body weight. Use one-half bolus for each 150 pounds of body weight. IT IS VERY IMPORTANT THAT OVERDOSES BE AVOIDED. Administer with a balling gun. Each bolus should be lubricated with white mineral oil, petroluem jelly, or an edible

household oil to ease swallowing. The balling gun should be inserted so that the bolus is released over the hump of the tongue. DO NOT FORCE THE BALLING GUN INTO THE GULLET.

Administer Trolene after the adult heel fly season is over. In Nebraska the best time is from mid-July through September. Trolene has not provided good control of cattle lice.

PRECAUTION FOR USE OF SYSTEMIC INSECTICIDES

1. Do not treat calves under 3 months old.

2. Do not treat lactating dairy animals at any time.

3. Do not treat sick animals.

4. Do not repeat Co-ral applications within 60 days.

5. Do not slaughter treated animals within 60 days of application.

6. Do not use Co-ral orally or as a dip.

7. Do not use in conjunction with other insecticides.

8. Animals treated with Trolene must have free access to water and feed before and after treatment.

9. Do not treat after October.

10. Do not treat animals undergoing a change in feed.

11. Do not treat immediately following shipping.

12. Do not treat at time of weaning.

13. Following treatment a weakness in the rear legs and a staggering walk may be seen occasionally. If bloating, grunting, increased salivation, or diarrhea are noted a veterinarian should be consulted.

14. FOLLOW LABEL DIRECTIONS AND WARNINGS. These materials can be fatal if swallowed, and are harmful if inhaled or absorbed through the skin. Do not get in eyes or on skin, do not breathe dusts or mists. If spilled on skin, wash immediately with soap and water. Wash contaminated clothing with soap and hot water before reuse. Do not contaminate food or feed. Keep out of reach of children. Atropine sulfate is antidotal for both Co-ral and Trolene.

Rotenone is the only chemical recommended for control of grubs on lactating dairy animals. It can

also be used to complete grub control following the use of systemics. It can be used as a dust, spray or wash.

Rotenone dusts are prepared by using 1 part of 5% rotenone to 2 parts of dusting sulfur. A duster can be made by punching holes in the lid of a quart jar. Ruffle the hair during the application and rub the dust well into the skin. One pound of dust will treat 8 to 15 head, depending on the thickness of the hair and the number of grubs.

Rotenone sprays can be prepared by mixing $7\frac{1}{2}$ pounds of 5% rotenone wettable powder to 100 gallons of water. Use sprayers with agitators if possible. Spray the entire back. If lice are present spray entire animal. Use 250 to 400 pounds pressure. The use of a "grub rake" instead of a gun-type nozzle is preferred. One hundred gallons will treat 125 to 200 head.

A rotenone wash can be prepared by mixing 1 pound of 5% rotenone wettable powder to 10 gallons of water. Use a pint to a quart per animal. Scrub the wash into the animals skin from shoulder to hip with a stiff-bristled brush.

Rotenone treatments should be started when the first grubs make holes through the skin of animals, then repeated every 30 days until grubs have stopped appearing in the back. Usually the first treatment is made in January then repeated two or three times at 30 day intervals.

COMMUNITY CONTROL PROGRAMS

Area cattle grub control programs are desirable. The use of new systemic insecticides may reduce cattle grubs for much longer periods of time than previously possible. Since 90% or higher control can be expected if treatments are properly made, and cattle grub adults seldom travel more than a mile or two, community efforts to treat all animals in a large area will likely reduce the grub population to low levels within 2 or 3 years.