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## EC1528 Questions and Answers on Cattle Grubs

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January  
1944

Nebraska  
COOPERATIVE EXTENSION WORK  
IN AGRICULTURE AND HOME ECONOMICS  
U. of N. Agr. College & U. S. Dept. of Agr. Cooperating  
W. H. Brokaw, Director, Lincoln

Extension  
Circular  
1528

QUESTIONS & ANSWERS ON CATTLE GRUBS

Life History

1. What causes grubs in the backs of cattle?  
Ans. The grubs are the larvae of two species of flies that lay their eggs on the legs of cattle. These eggs hatch, the tiny grubs enter the skin, slowly migrate through the tissues to the gullet, and then to the backs of the animals. About eight months is required for this journey during which time the grubs grow in size.
2. Do those large black flies cause cattle grubs?  
Ans. Those are horse-flies that suck blood from animals. Their grubs, or maggots, develop in water and not in animals.
3. What is the difference between cattle grubs, ox-warbles and bots?  
Ans. Cattle grubs and ox-warbles are two names for the same thing. "Bots" is the name given to the grubs, or larvae, of another species found attached to the stomach lining of a horse or mule.
4. Is there more than one species found in cattle?  
Ans. Yes, two species--the common cattle grub whose adult is known as the "heel-fly" and the northern cattle grub whose adult is known as the "bomb-fly".
5. Where and how do the heel-flies lay their eggs on cattle?  
Ans. Usually on the lower legs, or heels, when the animals are quiet. This gives them an opportunity of laying more than one egg on a single hair. Seldom does the animal realize that the eggs are being laid.
6. Where and how do the bomb-flies lay their eggs?  
Ans. With a buzzing noise, they make a series of darts, seldom laying more than a single egg on a hair. This causes the animal to become excited and runwildly
7. How far do the adult flies travel from the place where they emerge?  
Ans. The heel-flies probably do not travel much over a mile while the bomb-flies will often follow cattle for some distance.
8. Are both species found in Nebraska?  
Ans. Yes. The common cattle grub is most numerous in the eastern and southern part of the state while the northern cattle grub is found more frequently in the western part of the state. Cattle that are shipped in from Texas are infested with common cattle grubs while Wyoming or Montana cattle probably have the northern cattle species.
9. At what time of the year are the adult flies most prevalent?  
Ans. The heel-flies are found from April to about the first of July while the bomb-flies are present from June to mid-August.
10. Do the flies attack animals when they are in the shade?  
Ans. The bomb-fly generally frequents sunny places where it attacks the animals, while the heel-fly frequently stays in the shade, lays its eggs slyly often several on one hair, and is seldom noticed.
11. When do the grubs first appear in the backs of native cattle?  
Ans. Probably in late December but the lumps along the back are small at first and treatment should not be applied before about January. By this time the grubs have cut holes through the hide for air. It is through these openings that the spray or dust must enter to kill the grubs.

12. Why are some cattle grubby in November and December?

Ans. These are probably cattle that have been shipped in from the South. The flies are active much earlier in the South so the grubs too are farther advanced.

13. How long do the grubs remain in the cattle's backs after they first make holes in the skin?

Ans. The common cattle grubs remain in the back about two months, an average of about 58 days, while the northern cattle grubs average about 73 days.

14. What is the latest date that grubs may be found in the animal's backs?

Ans. Most of the southern cattle, in feed-lots, will have dropped their grubs by late February while most of the common cattle grubs in native stock are gone by early March, a few being found during the remainder of the month. The northern cattle grubs are numerous through March and into April, a few being present until May.

### Injury

1. Do the heel-flies bite the animals; if not, why are cattle frightened?

Ans. The flies are incapable of taking food so do not bite. Since the heel-flies are stealthy in their egg-laying it probably is the darting and buzzing of the bomb-flies that frightens the animals.

2. What is the total amount of damage caused by cattle grubs to the farmers of Nebraska?

Ans. It has been estimated that the loss to hides alone is well over half a million dollars. This is based upon three million cattle in the state, one-third of which are grubby, at an average loss of fifty cents a hide. The loss in beef, milk, feed and injury to the animals when being chased by the flies is equally as great, making this a million dollar pest.

3. Who really pays for this loss?

Ans. The packer passes it on to the producer through a reduced price for cattle and to the consumer through higher priced meat.

4. What are some of the losses attributed to cattle grubs?

Ans. The adult flies chase the animals, causing a decrease in milk production and a reduction in gains, as well as a waste of feed. The migrations of the larvae, or grubs, through the skin and body probably cause uneasiness and discomfort. This affects milk production or the quality of beef, as well as devalues the hide.

5. What per cent of Nebraska's cattle are grubby?

Ans. A survey conducted during the winter of 1942-1943 revealed that 95 per cent of Nebraska cattle are infested and 65 per cent are grubby.

6. What is considered to be the loss of a grubby hide?

Ans. The financial loss is about one cent a pound on a green hide but the economic loss in processed leather production is far greater.

7. Do grub holes spoil the hide for leather?

Ans. If too many grub holes are present it cannot be tanned and is useful only for glue-stock. If the hide is tanned, its value depends upon the surface area that can be used.

8. What part of the hide is most seriously affected by grubs? How does the leather here compare with that in other parts of the hide?

Ans. Most of the grubs appear in that area about 8 to 10 inches on either side of the backbone between the shoulders and the hips. This is the very best leather for such heavy duty purposes as shoe soles, belting, etc.

9. How long does it take a grub hole to heal? Is the healed portion as strong as the rest of the leather?

Ans. The length of time required for healing the holes depends somewhat upon their size and the size depends upon the age of the grub when expelled. Experiments have shown that many of the larger holes have not healed in sixty days while less time is required for many of the smaller holes. These healed places are fairly strong but not as good as uninjured leather.

10. How many grub holes may a hide have before it is classed as "grubby"?

Ans. Five or more holes classifies the hide as "grubby".

11. Are cattle in all parts of Nebraska affected with grubs?

Ans. Yes. But figures taken from records of the packing houses, at Omaha, show that branded cattle are most heavily infested. These generally come from the South or from the range country in the western part of the state.

12. What damage do the grubs do to the beef carcass?

Ans. A grubby carcass has to be trimmed considerably which reduces its weight and saleability. The average loss is estimated from \$1.50 to \$10.00 per carcass

13. Do cattle grubs and the adult flies affect milk production?

Ans. A contented cow gives more milk. An animal that is chased by flies or worried by grubs cannot be contented, so both probably cause some milk loss.

### Control

1. How may cattle grubs be controlled?

Ans. (1) Squeezing them out by hand; (2) injecting benzol into the openings; (3) removing with forceps (4) use of a rotenone dust; and (5) washing or spraying the animals with a rotenone-wettable sulfur solution.

2. What method of control is recommended for the man with only a few milk cows?

Ans. Have a quart jar of rotenone dust handy and apply it when the lumps in the back are small, or squeeze them out by hand.

3. What is the best method of control where there are 25 or 50 feeder cattle and no chute?

Ans. If they can be crowded into one end of the feed lot or shed they can be sprayed.

4. Under what conditions should cattle be sprayed to control grubs?

Ans. Where there are a lot of nervous cattle that can be run through a chute or where they can be crowded into pens or sheds.

5. What material should be used to spray them?

Ans. The best material is the following: Derris or cube (rotenone content 5%) 5 pounds, wettable sulfur 10 pounds and water 100 gallons.

6. Would a hand garden-type sprayer or a small pressure sprayer work?

Ans. It might kill many of the grubs if the animal was saturated but its low pressure would waste material and take too much time.

7. How much pressure should be used in spraying cattle? Why?

Ans. It takes enough pressure to part the animal's hair and force the material down into the grub holes, which is not less than 350 pounds and preferably 450 pounds.

8. Will a farmer or feeder who treats his animals get effective control if his neighbors do not treat their animals?

Ans. Since most of the flies travel only a short distance, treatment of herds isolated a mile or more from other animals will be effective. If they are close to non-treated animals, a source of reinfestation will be present the following season.

9. Is it safe to spray animals during real cold weather?

Ans. During calm cold weather no bad results will come from this practice but if a blizzard follows harmful effects might result. Windbreaks, well-bedded sheds or a straw-stack to run to will help.

10. Will it pay a farmer to treat his animals this winter if they are going to be marketed within 90 days?

Ans. Yes. There would be fewer holes in the hides but most important is the fact that grubs which might develop into flies next season would be killed.

11. Since flies generally lay their eggs on the lower legs would wading-vats of water and some chemical help in destroying the eggs?

Ans. Many experiments along this line have been tried and with poor results.

12. Will dipping the animals during the winter kill the grubs in their backs?

Ans. In the first place the grub holes must be open and then the material must penetrate into the holes. Sixty to seventy per cent control is about the best we have heard of by dipping. Air or a plug of hardened secretions may keep out the dip. The dip must contact the skin of the grubs to kill them. Past experience has shown that a sixty percent control is not good enough.

### Control

13. How practical is it to try to kill grubs and lice at the same time?

Ans. This can well be done if treatment for lice can be delayed until the grubs are ready for treatment. Usually the animals should be dipped for lice six to eight weeks before the grubs appear. This combination treatment is fairly good in the South but is of doubtful value in Nebraska

14. Is more than one application of derris or cube necessary to kill the grubs?

Ans. The grubs do not all "ripen" at the same time, an interval of several weeks occurring between the early and late ones. Therefore, more than one application about 25 to 30 days apart is necessary if complete control is to be obtained.

15. When grubs are removed will they die if dropped on the ground?

Ans. That depends upon the age of the grub removed. If they are white they are immature and will probably not develop further but if they have become darker they are almost ready to fall out. The best policy is to crush all grubs removed from the animals.

16. Is it practical to squeeze the grubs out by hand?

Ans. This can very easily be done on dairy cows or where one has a few beef animals, but it is usually easier to dust them at frequent intervals.

17. Can some chemical be squirted into the grub holes to kill the grubs?

Ans. Avoid those that might prove irritating. Benzol has been found satisfactory if applied with an oil can with a small spout opening.

18. How many animals can be dusted per hour?

Ans. That depends on facilities for handling animals. With a good chute two people can treat at least 150 animals.

19. How many animals can be treated with a pound of dusting mixture?

Ans. From 15 to 20 animals, depending upon their size.

20. How many animals can be sprayed in an hour?

Ans. About 200 per hour if a power sprayer is used and the animals are properly handled.

21. How many animals can be treated with a gallon, or 50 gallons, of spray?

Ans. This depends somewhat upon the length of hair. Each animal may require one-half gallon. At this rate 50 gallons would treat 100 animals.

Prepared by Don B. Whelan and E. W. Janike.

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