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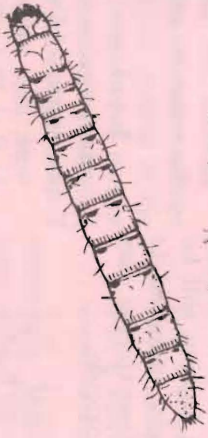
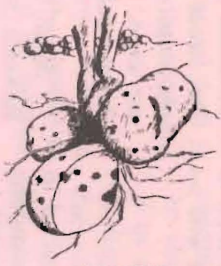
wireworm control





INJURY

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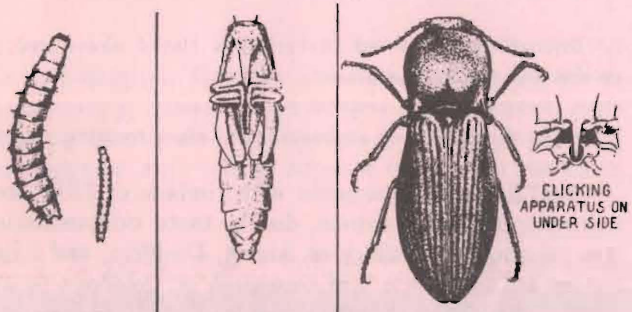
WIREWORM CONTROL

At least three species of wireworms in North Dakota are injurious to crops. Some appear in the early spring and attack the seed and young seedlings, others in the fall damage root crops such as potatoes and sugarbeets.

Wireworms prefer loose, light and well drained soils although they may also occur in the heavier clay soils during some seasons.

Description: The adult "click beetle" is dark in color and about 1/2 inch in length.



Larvae are yellow to red-brown in color and vary in size up to 3/4 inch in length. They remain and feed in the soil for several years, depending upon species and feeding conditions.

Crops Attacked: The pests prefer grass. However, they will attack small grains, corn, potatoes, sugarbeets and vegetables. Legumes are not likely to be injured.

Feeding Habits: Wireworms do most of their damage in the early spring when they are near the surface of the soil. During the summer months the larvae move deeper into the soil where it is cooler and moisture supplies are plentiful. During the winter they hibernate about 6 to 10 inches below the surface of the soil.

How Wireworms Damage Crops: The larvae feed upon the germinating seed or upon the young seedling. Damaged plants soon wilt and die, resulting in thin stands. In a heavy infestation bare spots may appear in the field and reseeding is necessary.

Potato "seed pieces" are seldom damaged to a point where poor stands result. However, the new tubers can be damaged severely. Wireworm infested tubers have tunnels in them which allow disease organisms to enter. Wireworm damaged tubers are usually of less market value.

How To Check For Wireworms: There is no easy way to determine the severity of infestation without taking soil samples. Infestations vary from year to year, depending upon the season. There also may be considerable variation within a field and between fields. Sometimes the past history of a field is a good indicator, especially if wireworms have been a problem in previous years.

The soil sampling technique for determining wireworm infestations involves taking approximately 20 well-spaced samples from each 40 acres of land. Each sample should be about 1 square foot of soil taken down to a depth of 3 to 4 inches. Spread each sample out on a piece of burlap or tarp and count the number of wireworms collected in the samples.

If you find:

0 to 5 wireworms in 20 samples, the field is safe for all crops, including potatoes.

5 to 8 wireworms in 20 samples, the field is safe for all crops, except potatoes.

9 to 15 wireworms in 20 samples, the field is safe for small grains only, not including corn.

20 or more wireworms in 20 samples, damage is likely to occur to all crops. Such fields should be treated with an insecticide, seeded to legumes or summerfallowed.

TYPES OF SEED TREATMENT

Dry or Dust Method: Insecticides may be applied to the seed in any type of treater that will give uniform coverage. In small lots of seed, hand treating will be satisfactory. However, it is extremely important to avoid undertreating or overdosing. Insecticides may also be applied in combination with a fungicide.

Liquid Seed Treater: Several liquid insecticide formulations are recommended for use in custom seed treaters. These treaters are designed to treat seed with insecticide, fungicide or both.

Before using an emulsifiable concentrate, check to be sure the insecticide has been formulated specifically for seed treatment. Most agricultural insecticidal formulations are not suitable and, if used, may cause serious injury to the seed.

Do not store treated grain in bins intended for grain going into commercial food or feed channels.

Drill Box Application: Growers who do not have custom treaters available may use the drill box method of treatment. Mix insecticide thoroughly with the seed prior to planting to insure thorough coverage and maximum control. Aldrin, Dieldrin, Heptachlor, and Lindane may be used at rates suggested for seed treatment.

Soil Treatment: This method is recommended primarily for potatoes and sugarbeets. The insecticide is applied to the soil as a dust, spray or granules, then worked into the soil to a depth of 4 to 6 inches immediately after application. Treatment should be in advance of seeding time.

SUGGESTED CONTROL METHODS

Cultural Control: This includes any cultivation or seeding practice which will discourage wireworm feeding in the field. Such practices as shallow tillage, shallow seeding, seeding with press drill and clean summerfallow are all helpful in reducing wireworm damage.

Chemical Control: Several insecticides are now approved for use as seed treatments for the control of wireworms. Insecticides applied to the seed just before planting time is an inexpensive means of preventing wireworm damage to growing crops. For maximum benefits, treat shortly before seeding as prolonged storage after treatment may reduce germination. If home treaters are used, be sure they are properly calibrated to apply the recommended dosages.

Small Grain: Seed treatment is primarily a protective measure and does not necessarily result in eliminating the wireworm menace from a field.

Sugarbeets: Diazinon granules at 2 and 3 pounds actual toxicant per acre are effective in controlling wireworms. Use a broadcast preplant application and work into upper 2 to 6 inches of soil. Use Diazinon 14 G at 15 to 22 lbs./A.

Several of the organophosphates such as Phorate and Disulfoton used for sugarbeet root maggot control appear to give satisfactory control of wireworms early in the season.

Potatoes: Chlordane 10% G at 20 to 30 lbs./acre can be used as a band application at planting time or after emergence (can be used alone or in combination with fertilizer).

RECOMMENDED INSECTICIDES FOR SEED TREATMENT

COMMERCIAL TREATMENT:	DRILL BOX TREATMENT:
Aldrin	Aldrin Heptachlor
Heptachlor	Dieldrin Lindane
Heptachlor + Mercury	Lindane + Mercury

Dosage rates for the insecticides listed above are given on the insecticide container.

Read the label and understand it before treating your seed.

NOTE: Soil treatments with lindane or BHC are not recommended for potatoes, due to taste contamination of new tubers. Heptachlor or Aldrin, Dieldrin, and Lindane cannot be used as a soil treatment on potatoes or sugarbeets due to residue problems.

PRECAUTIONS:

- **Use recommended dosages.**
- **Treat only sound grain.**

Remember that seed treated with an insecticide or fungicide must not be sold on the market, except as seed, nor should it be fed to livestock.

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