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EC1567 You can Control Corn Rootworms

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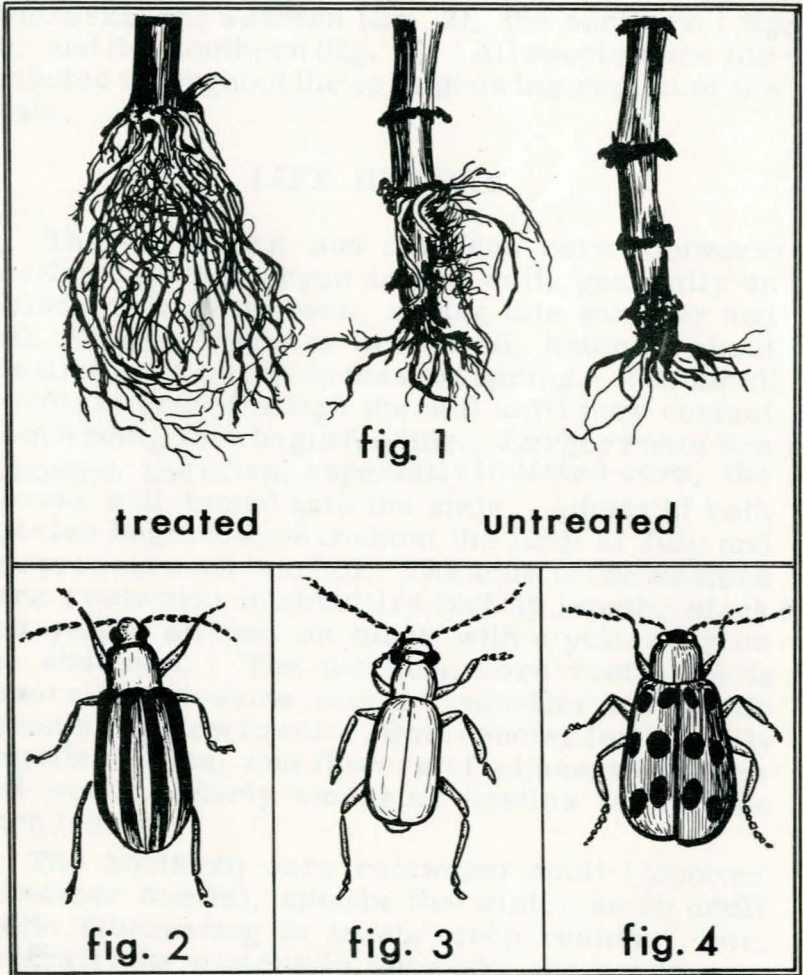
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YOU CAN CONTROL CORN ROOTWORMS



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UNIVERSITY OF NEBRASKA COLLEGE OF AGRICULTURE
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YOU CAN CONTROL CORN ROOTWORMS

By

Harold J. Ball and Robert E. Roselle

Three species of corn rootworms occur in Nebraska, the western (fig. 2), the northern (fig. 3), and the southern (fig. 4). All species are distributed throughout the corn growing region of the state.

LIFE HISTORY

The western and northern corn rootworm beetles lay their eggs in the soil, generally in fields which are in corn, during late summer and fall. Eggs overwinter in the soil, hatching about the time corn comes up the next spring. The small worms migrate through the soil until they contact a corn root, then begin feeding. Larger roots are tunneled, and often, especially in listed corn, the worms will tunnel into the stalk. Adults of both species begin to appear about the first of July and are present until late fall. The adult of the western corn rootworm is about 1/4 inch in length, black and yellow striped or black with a yellow tip on the abdomen. The northern corn rootworm is generally the same size or smaller and solid greenish-yellow in color. Both species feed readily on pollen, silks, and flowers of adjacent legumes and weeds. Early-emerging beetles feed on the corn leaves.

The southern corn rootworm adult ((spotted cucumber beetle), spends the winter as an adult beetle hibernating in trash, crop residue, etc. Generally the winters in Nebraska are not favorable for overwintering adults, so they migrate into the corn growing regions from farther south in the spring about the time corn is coming up. Eggs are laid in the soil in the spring after the corn is up. Damage to the corn is identical to that of the western and northern species.

When adults are present in large numbers the silks may be subject to continued damage by feeding. When this happens pollination may be prevented, resulting in ears with fewer kernels. Corn silks continue growing until pollination occurs, so they would have to be chewed off for periods of one to two weeks during the time pollen is produced.

CONTROL

Two methods of controlling corn rootworms are recommended, crop rotation and the soil application of insecticides.

Crop rotation is effective against the western and northern corn rootworms because the eggs are in the ground during the winter. Planting small grains or legumes in corn ground will starve the larvae after hatching, as they feed only on corn roots.

Southern Corn rootworms are not controlled with crop rotations as they lay eggs in corn ground after the corn is up. Clean cultivation may help prevent infestation. The southern corn rootworm is not as important in Nebraska as the other two. Soil insecticides will control the southern species.

SOIL APPLICATION OF INSECTICIDES

Four insecticides are recommended as soil treatments. The insecticides and amounts to use are as follows:

	<u>Broadcast</u>	<u>Row or Band</u>
Aldrin	1 pound	1/2 pound
BHC (gamma)	1/2-1 pound	1/2 pound
Chlordane	2 pounds	1 pound
Heptachlor	3/4 pound	1/2 pound

Broadcast treatments: Broadcast treatment is probably the most effective method of application. The chemical is applied by boom type sprayer or airplane after the soil has been plowed then disked or harrowed into the soil immediately. The emulsion concentrates are easier to apply in water than are wettable powders.

Row or band treatments: Row or band treatments are applied with a sprayer nozzle attached behind the planting shoe and in front of the covering disk of the planter. The spray should be a fan type and adjusted to apply a spray about 18 inches in width.

Fertilizer -insecticide combinations: Combinations applied in the spring at the usual times for fertilizer application have given good control. Careful mixing is required so that the correct amount of insecticide is applied per acre. These applications are probably not as dependable as broadcast treatments.

Adult beetle control: When infestations are severe, and continued silk damage will apparently occur until after pollen production stops, aerial application of 1 1/2 pounds actual DDT per acre is recommended. Applications after pollination has been completed will be of little value in preventing further kernel loss during a particular season. However, insecticidal treatments directed at the adults will do much toward reducing the numbers of eggs deposited in the fall. If the field is not to be planted to corn the following year, treatment of the adults is questionable.

IMPORTANT INFORMATION:

1. Do not use less than recommended amounts of insecticides.

2. Do not apply on windy days, as much of the chemical will be lost.
3. Disk or harrow the chemical into the soil as soon as possible.
4. Do not use BHC in ground that will be planted to root crops during at least the next two years.
5. Applications at recommended rates will not destroy soil organisms.
6. Applications with weed killers are not recommended.
7. **WARNING:** Insecticides are poisons and should be used with the greatest care to avoid injury to those who handle them. Avoid excessive contact with the materials. If clothes are contaminated change them immediately. Wash all exposed parts of the body. Do not smoke while mixing and applying insecticides. Avoid spray drift, working upwind from the boom. If sickness, dizziness, headaches or other abnormal conditions occur stop operations immediately. If conditions continue, see a physician at once - take the insecticide label with you.