

## Wireworms

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Entfact-120

Although economic wireworm damage to field crops is rare, when they are a problem they can be very destructive and difficult to control. They are usually found attacking crops planted on ground that has been in sod for several years, or the second year following sod. However, wireworm populations may be reduced by half after the second year following sod. Land that has been in continuous bluegrass sod is more likely to have high numbers of wireworms than fescue sod.

Crops attacked by wireworms have reduced plant populations, since they feed on the seeds prior to germination or just after germination. The plant stand may continue to deteriorate, because wireworms bore into underground portions of stem causing plants to wither and die. They continue to feed upon the small roots of many plants throughout the season.

Most wireworm larvae are hard, chestnut brown, smooth, varying from 1/2 to 1-1/2 inches in length when grown. Some species are soft, and white or yellowish in color.

Wireworms are especially destructive to corn, but all the small grains and nearly all cultivated and wild grasses are attacked. Among the crops damaged are soybeans, potatoes, root crops, cabbage, and beans. While soybeans and small grains are attacked by wireworms, because of seeding rates and ability to compensate for stand loss, serious losses are less common than with corn.



Figure 1. Wireworms get their name from their wire-like shape.

### Biology

There are many different species of wireworms that attack cultivated crops, but their biologies are similar. They overwinter as larval and adult stages in the ground. In the early spring the adults, called click beetles, become active. They are usually brown in color, streamlined beetles, with the body tapering toward the rear. The joint between the thorax and abdomen is loose and flexible, and, when beetles are placed on their backs, they click their abdomen against the ground to toss themselves several inches to flip over.

The females lay their eggs mainly around the roots of grasses. The adults live 10 to 12 months spending most of the time in the soil. While the egg stage lasts only a few days to a few weeks, they require 2 to 6 years in the soil feeding on the roots of grasses and other plants to complete larval development. It is the larval stage, the wireworm, that can cause serious damage. Wireworm larvae migrate upward and downward in the soil depending on soil moisture, so that it is often hard to find them in dry summer weather, even in severely infested fields. The larvae are commonly identified to species by differences in the ornamentation of the last segment of the abdomen. The larvae pupate in cells in the ground, in the late summer or fall. The adults remain in the soil until the following spring. All stages and nearly all sizes of larvae may be found in the soil at one time. Serious infestations are usually localized to a single field or portions of a field.

### Management

Wireworms are most often a problem in fields that have been in sod for many years, particularly bluegrass sod. These fields may have populations of wireworms that can cause damage to corn, soybeans and some vegetables. With wireworms, there is no effective rescue treatment once symptoms of damage is observed.

Evaluating new fields for the potential for wireworm and grub problems is very difficult. The type of sod will, in part, determine the types of soil insects present.

Where CRP land is returning to production, producers should consider planting soybeans or small grains, or using solar-bait stations to test for wireworms prior to planting corn. Two stations are recommended per acre. Bait stations, which are really solar traps, are made by

digging a hole 4 inches deep and about 9 inches wide. Place 1/2 cup of untreated corn-wheat mixture in the bottom of the hole. The hole is then filled with loose dirt. Do not pack the dirt. Cover the area with plastic. Gases produced by the breakdown of the corn-wheat mixture attract wireworms to the station.

Stations should be set at least 3 weeks before your planned planting date. The stations are checked in two weeks by digging up the bait and searching through the seeds for wireworms. Note any white grubs you find while establishing and checking wireworm bait stations. An average of one wireworm per bait station would suggest that a preventive wireworm treatment should be used.

Soil insecticides are recommended at planting for corn where the risk of wireworm damage is high. There are liquid and granular insecticides registered for wireworm control for many crops. Best results can be expected when the insecticide is placed directly in the seed furrow. For a list of wireworm insecticide treatments, see ENT-

16, *Insecticide Recommendations for Conventional and No-tillage Corn*, and ENT-15, *Insecticide Recommendations For Tobacco Fields And Beds*. Broadcast and incorporated liquid applications should provide even coverage of the field and good wireworm control. When using a broadcast incorporation, insecticides for wireworm control should be applied after soil temperatures are above 50oF. Follow label directions on incorporation. For tobacco, treat the field at least 10 days prior to setting tobacco to allow sufficient time for the insecticide to take effect before setting plants in the field. With granular insecticides, best results can be expected when the insecticide is placed directly in the seed furrow.

Certain species of wireworms are abundant only in poorly drained soils. The proper draining of such soils will prevent damage by these species.

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