



Insect Management for Corn and Soybean

SUMMARY

Think about potential insect problems *before* planting corn or soybean on CRP land.

Many CRP acres will be returned to crop production during the next several years. These acres may harbor a variety of insect pests that can destroy corn or soybean. This publication discusses potential insect problems and suggests management options for corn and soybean production.

Insect Problems

Fields grown in a grass cover for 10 years may harbor large populations of wireworms or white grubs. Both of these pests feed on the roots of grasses. Wireworms and white grubs are not serious pests of soybean seedlings. However, when corn (a grass) is planted into a former grassy area, the possibility of stand reduction from these insects may be very high. Pastures in central and southern Iowa that have been converted to corn have suffered some level of stand reduction from these insects. Therefore, the potential for stand loss in corn on former CRP ground is a realistic possibility.

Other insect pests—such as cutworms, stalk borers, and stink bugs—can reduce corn stands. They are more likely to appear if the CRP ground contains a mix of broadleaf weeds such as giant ragweed, smartweed, and lambsquarters. Even if a soil insecticide is used at planting, these insects can kill seedling corn plants through the four- to six-leaf stage. Special scouting procedures for cutworms and stalk borers, based on growing degree days, are necessary for identifying the dates when these insects might appear. These scouting dates change annually, but the information is available from your county Iowa State University Extension office or the *Integrated Crop Management* newsletter.

The seedcorn maggot also can destroy both corn and soybean seedlings. The adult flies are attracted to fields that contain live, green plant material that was killed and incorporated into the soil immediately prior to planting. The flies lay their eggs in the soil and the maggots feed on the germinating seeds and seedlings. Any time CRP cover is killed in the spring and plowed or disked, the freshly decaying plant material can create a stand loss situation due to seedcorn maggots. CRP cover that is killed in the fall is not likely to have problems from this insect.

Sampling for Insects

Sampling the soil for wireworms and white grubs in CRP ground can be nearly impossible. Reliable sampling methods have not yet been developed. Random digging with a shovel may miss finding these pests and lead you to believe that no insects are present. Therefore, management decisions are best made by considering the type of crop to be planted and the field conditions (discussed below).

Management Options

Four options for reducing the potential for insect damage on former CRP ground are prioritized by insecticide use. The option that does not require an insecticide is listed first; the option that uses the most insecticide is listed last.

Option 1. Plant soybean but don't use a soil insecticide. Wireworms, white grubs, cutworms, stalk borers and stink bugs very rarely damage soybean because it is not a good host for them. Also, soybean is planted at high enough populations that if stand loss occurs from these pests, it seldom translates into yield loss.



LEOPOLD CENTER

This bulletin is part of a series to help CRP contract holders assess the land-use options available to them when the contracts expire. The series was funded in part by the Leopold Center for Sustainable Agriculture. Other bulletins in the series and additional information are available at county ISU Extension offices and from ISU Extension Distribution Center www.extension.iastate.edu/store.

Written by Marlin E. Rice, ISU Extension entomologist. Edited by Laura Sternweis, ISU Extension communication specialist.

Option 2. Plant soybean and use a seed treatment if the ground cover was killed and incorporated into the soil in the spring. A seed treatment, such as Agrox D-L Plus or Kernel Guard, will protect the germinating seeds and seedlings from seedcorn maggots which are attracted to the freshly decaying organic matter.

Option 3. Plant corn and use a seed treatment if the ground cover was killed and incorporated into the soil in the spring. A seed treatment will protect the germinating seeds and seedlings from seedcorn maggots. However, a seed treatment may not provide adequate protection from white grubs or wireworms; so Option 4, which uses more insecticide, would provide more protection against a greater variety of insects.

Option 4. Plant corn and use a soil insecticide at planting to protect against wireworms, white grubs, and seedcorn maggots. Some insecticides, such as Dyfonate, Force, and Lorsban, also will protect against moderate infestations of black cutworms. However, the corn still should be scouted for cutworm, stalk borer, and stink bug injury through the six-leaf stage.

Read and follow the label directions for exact rates and placement if you use an insecticide or seed treatment.