European Corn Borer (ECB)

**1st generation**

Full-grown gray to creamy white larvae overwinter in stalks left in field. May lay eggs in tallest corn. Eggs hatch in 6 days during normal seasonal temperatures, and the first generation larvae begin feeding in plant whorl with approximately 20 days to maturity.

**Scouting Worksheet**

**For 1st generation ECB**

- Number of infested plants
- Number of larvae

**Scored Key**

- Entrance holes — frass and silk may be present.
- Shotholes as leaves emerge from the whorl
- Damaged plants per set

**Damage Key**

- New leaf mass on underside of leaf — egg stage shown is white stage (W).
- Newly laid egg mass on underside of leaf — egg stage shown is white stage (W).

**2nd generation**

- Straw-colored adult moths peak when 1700 degree days (base 50°F) have been reached. Newly hatched larva migrate to leaf sheaths and burrow into stalk. Damage also occurs when larvae feed on ear shank, corn kernels, and beneath ear husks.

**Scouting Worksheet**

**For 2nd generation ECB**

- Number of egg masses
- Egg mass stage

**Scored Key**

- Entrance holes may be present.
- Broken stalks and dropped ears

**Damage Key**

- Newly laid egg mass on underside of leaf — egg stage shown is white stage (W).
- Newly laid egg mass on underside of leaf — egg stage shown is white stage (W).

**European Corn Rootworm**

Creamy-white larva overwinters as eggs in soil. After hatching, the larva feeds on corn roots. After three weeks, larva pupate near the base of the plant. The adults emerge and feed on the silks with the Western adult feeding on leaves also. High soil moisture favors egg laying.

**Damage Key**

- Goosenecking in corn — damage can be done by larvae feeding on roots.
- Pruned corn silks — damage done by adult beetles.

**Scouting Worksheet**

**Silk clipping — current growing season:** Begin scouting when 70% of the plants are in the process of silking. Select 10 locations and examine 5 non-consecutive plants per location. Record number of beetles per plant (P). Record condition of the silk on each plant (fresh, brown, clipped to _ inches, not sliced)

**Silk Condition**

- Number of beetles /Silk condition

**Consider treatment (for adults):** Silks of several plants from each location are clipped to within one-half inch from the tip of husk prior to browning of silks.

**Root protection — following year:** Beginning in mid-August, scout 3 times at 7-10 day intervals thru mid-September. Select 10 locations and examine 5 non-consecutive plants per location. Record number of beetles per plant (P).

**Consider treatment (for following year):** Average of 0.75 or greater beetles per plant and corn is planted in same field the following year.
**IPM Quick Guide**

**Black Cutworm**

Grainy, rough-skinned larva feed at night, at or below ground surface. They are usually found in wet or low areas.

**Stalk Borer**

The purplish-brown larvae with off-white stripes bore or tunnel inside stems and are extremely active when disturbed. The adult moth lays eggs on grassy weeds, ragweed, pigweed, curvytop, and burdock.

**Armyworm**

Hairless, brownish-green larva feed on leaves at night (or during the day when cloudy) and are favored during cool, wet springs.

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**Introduction**

This guide covers five insect pests, the damage they do, how to scout your fields for them and how to quantify them so that you can make informed pest management decisions on your farm.

The goal of this guide is to give you a feel for what is involved in scouting for insect pests, an important part of integrated pest management (IPM). It is handy to know what IPM is, what degree days are and some corn anatomy, but that is about as technical as it gets (definitions of these terms are listed below). Some supplies that may be helpful are a shovel, small containers, large plastic bags, graph paper and a calculator.

This guide will enable you to determine if treatment is worth considering based on the information you collect. However, specific treatment recommendations are not addressed in this publication. An annually updated treatment guide, Pest Management in Wisconsin Field Crops (A3648), can be obtained from your Wisconsin county Extension office or from Cooperative Extension Publications, Rm. 170, 630 W. Mifflin St., Madison, WI 53703, phone (608) 262-3346.

Remember that proper identification of the insect pest is critical to effective treatment. If you are in doubt, contact your county Extension office or farmers' cooperative. They can provide you with local people who can help correctly identify your corn pest.

**Definitions**

Integrated pest management or IPM is a decision-making process that utilizes all available pest management strategies, including cultural, physical, biological and chemical control to prevent economically damaging pest outbreaks and to reduce risks to human health and the environment. One of the major components of an IPM program, if not its foundation, is crop scouting. The goal of crop scouting is to provide accurate and unbiased pest and crop development data.

Degree days (also known as “day-degrees” or generically as “heat units”) provide a means of predicting insect phenology (i.e., the timing of life history events) by combining time and temperature to measure insect development and activity. Degree days are available from your Extension office and farmers’ cooperatives.

Instar refers to the stage between molts. As insect larvae grow, they molt or shed their skin. Most insects have three to seven instars.

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**Damage Key**

**Black Cutworm**

3rd instar of larvae chews holes and often defoliates leaves.

**Stalk Borer**

Small irregular holes in leaves

**Armyworm**

4th instar of larvae cause irregular notching of leaf margins.

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**Scouting Worksheet**

Scout at corn emergence or when 1300-1400 (Base 50°F) degree days are reached.

Infestations will typically be found in the first 4-6 rows around the previous year. Monitor the potential for stalk borer larvae by noting locations of grassy weed hosts. Select 5 locations with infestation potential. Examine 50 consecutive plants per location (L). Record number of plants with small, irregular shaped holes. Make detailed maps if damage is localized.

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