



European corn borer

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Female moths hang out in taller vegetation during the day for example, grassy edges of fields or wheat. In the evening, the females move into crops to lay several egg masses per night. Eggs on corn hatch in 3 to 7 days, and larvae move into the whorl to feed. When corn is short (V6 or smaller), larvae generally do not do well. First, deterrent chemicals (DIMBOA) in the plant affect larval behavior and survival. Also, there is not much of a whorl on short corn to provide larvae with protection. Many small larvae are likely washed off the plant, dry out, or are eaten by other insects. Once corn gets to the 8 to 12 leaf stage (16-22 inches), survival improves.

Small larvae live and feed on the outside of the plant, or in the whorl. The larger fourth and fifth stage larvae live inside the stem, disrupting the plant vascular system, reducing movement of water and nutrients, and creating entry points for stalk rot fungi. First generation damage early in the season has greater impact on yield than second generation damage later in the season. Thus, managing first generation corn borer and reducing early season damage has the most impact on yield.

ECB scouting: Check the whorls of 20 consecutive plants, and count the number of plants with damage. Do this in five different parts of the field, for a total of 100 plants. Corn borer feeding in the whorl causes a characteristic pattern of holes called shot-holing. Other signs of ECB feeding are holes in the midrib and white, powdery frass (insect excrement). After examining each group of 20 plants, choose a couple plants that are damaged, remove and unroll the whorl, and check for live larvae. A damaged plant may have no live larvae in the whorl. Larvae may have been eaten by a predator, or they may already have moved into the stalk where insecticide sprays cannot reach. If 50 percent or more of the plants are damaged, and a majority of the whorls contain live larvae, treatment is probably justified. Timely application is important; if you wait too long to spray, larvae move into the stalk, and are protected from insecticide.

There are many insecticide choices for fields over threshold with first generation larvae. The most important thing is to direct sprays or granules into the whorl, where small larvae are feeding. Do not assume that insecticide for ECB can be tank mixed with post herbicides. Check the herbicide label for crop height restrictions and recommended placement of sprays, and for potential interactions between herbicides and OP insecticides.

All of the insecticide registered for ECB control are Restricted Use except for Bt and Lorsban 15G. Accurate scouting and proper timing of insecticide application are critical factors for controlling corn borer, usually more critical than insecticide choice. Timing of Bt insecticides is particularly important, since these are biological products that must be directly consumed by small larvae, and have a limited residual on the plant.

What about Bt corn fields? These do not need to be scouted in the traditional sense, but it is still a recommended practice to walk through Bt fields to check for insect feeding. There could be other pest problems besides corn borer. And if you do see a significant amount of ECB feeding, this can alert you to a potential problem with the seed lot, or an error in recording the location of Bt fields.

A note about other crops colonized by first generation ECB. Wheat stems may be too thin to support the complete ECB life cycle, so larvae may bore into several stems during development. A damaged plant will have a conspicuous white head. Look for a hole in the stem, and white frass coming out of the hole. Cut the stem lengthwise to find the ECB tunnel. Wheat stems infested by ECB are weak, can bend or break off, and have reduced yield. ECBs will also infest and complete development in potato. Tunneled stems appear wilted, and an entry hole and frass are visible. Weakened stems can break off, and ECB wounds create entry points for pathogens.



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