

## European Corn Borer in Corn

European corn borer (*Ostrinia nubilalis*) is a common pest of corn. The impact of European corn borer (ECB) on corn yield is often underestimated due to lack of scouting, large changes in ECB populations from year to year, and the ability of corn to withstand some feeding injury.

### Life Cycle

First generation larvae damage is typically limited to leaf feeding and stalk tunneling. The second generation of ECB moths emerge from approximately mid-July to mid-August and deposit eggs until the end of August. Female moths prefer to lay eggs in fields that are tasseling and in the green silk growth stage. In general, the heaviest egg lay and infestations will occur in later maturing fields or hybrids. Young second generation larvae feed on leaves and pollen in the leaf axils. Later instar larvae continue feeding on the corn stalk tassel, ear shank, and cob. ECB larvae can enter through different locations on the ear and may not leave entrance holes.

### Identification

Larvae are usually pinkish in color, have a dark (almost black) head capsule, and five pairs of abdominal prolegs, including a pair of anal prolegs. Additionally, they have a dark gray mid-dorsal line across their body length (Figure 1). Full grown larvae are approximately 0.8" to 1.2" (20 to 30 mm) in length.



Figure 1. European corn borer larvae.

### Management

Scout for first generation corn borer by examining a series of 20 corn whorls from at least five locations

in each field<sup>1</sup>. Look for pinhole or shot-hole leaf damage. Record the total number of plants damaged. Pull up and unroll several whorls at each field locations and count the number of live worms present. Use these numbers with information from local universities to determine the economic threshold for treatment. For example, Ohio State University recommends a rescue treatment from first generation ECB when 75% or more of the stand is infested with larvae and they have not yet tunneled into the stalk<sup>1</sup>.

Scout for second generation ECB damage by examining corn fields for stalk tunneling, ear shank damage, and damage to the ear tips (Figure 2). Ear tip feeding can cause kernel loss; however, stalk and ear shank boring can cause the largest decreases in yield. Additionally, ear shank boring that results in dropped ears can contribute to volunteer corn issues in the next season's crop (Figure 3). When broken stalks are present, evaluate for the presence of frass and tunneling activity where the stalk broke to distinguish between lodging and greensnap. Determine if ear drop resulted from corn borer feeding or some other event. Thoroughly scout all corn fields because ECB populations vary among fields and the level of damage can



Figure 2. Second generation ECB stalk tunneling.

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vary by corn product. Economic thresholds vary, but consider treatment for second generation larvae if egg masses or early larvae are found on 50% or more of the plants<sup>1</sup>.

Harvest order should be determined based on stalk and ear shank tunneling, lodging, and dropped ears. Allowing an infested crop to remain in the field may result in higher yield losses due to lodging and ear drop.



Figure 3. Volunteer corn due to dropped ears in a soybean field.

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There are several foliar applied insecticides labeled for control of ECB in the non-Bt and/or refuge corn areas. Contact your local retail outlet or agronomist for recommendations.

Sources:

<sup>1</sup>R.B. Hammond et al. 2009. *European Corn Borer. Ohio State University Extension Fact Sheet. Publication no. FC-ENT-0015-09.*

Additional publications used in development of this article:

K.L. Steffey. 1999. *Handbook of Corn Insects. Entomological Society of America.*

B. Peairs. 2006. *Stalk borers in Colorado field corn. Colorado State University Coop. Ext. Pub. No. 5.537.*

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