

Southwestern Corn Borer

The southwestern corn borer (SWCB) is the most economically important *Diatraea* species in corn and can cause significant damage. Yield reduction of 20% or greater have occurred in whorl-stage corn attacked by large larval populations.

Life Cycle

Generally two generations of SWCB feed on corn, although a third generation may occur. The first generation feeds on leaves and creates a shot-hole effect or “dead heart” in very young plants. Second generation larvae are usually responsible for the greatest yield reductions. These larvae feed on developing ear tissue, bore into the shank and ear, and tunnel in the stalk below the ear zone (Figure 1). In the fall, larvae migrate to the base of the stalk and prepare overwintering tunnels in the stalk below the soil level. These larvae girdle the plants, resulting in severe stalk lodging.



Figure 1. SWCB larvae in the stalk below the ear.

Identification

In the summer, SWCB have a light reddish brown head with a white or cream-colored body and 10 dark spots on each segment in the middle of the body (Figure 2). Larvae grow to approximately 1/2 to 1 inch long. In the winter, larvae turn milky white with no distinguishable spots. SWCB moths are white with light tan scales. They are mainly active at night, but can be found during the day behind leaf sheath or under leaves. New eggs are white in color. Prior to hatching, eggs develop three parallel red lines.



Figure 2. Southwestern corn borer larvae during the summer months.

Management

Scout for first generation SWCB by looking for egg masses and larvae and check for shot-hole feeding injury to the leaves. Plants under 15 inches tall are particularly susceptible to dead heart injury. Economic infestations of first generation SWCB are uncommon. Depending on location and year, scout for second generation larvae from approximately mid-July through August. Most eggs should be found on the upper surface of leaves in the ear zone of plants. Infestation levels should be determined for individual corn fields. Early detection of SWCB infestations is critical because plant canopy can interfere with insecticidal control.

Early planted corn often escapes significant girdling damage and insecticides are not usually needed. Economic thresholds for first generation SWCB are not well established and vary depending on location. Most insecticide treatments are targeted against second generation larvae. Insecticides should be applied when 20 to 25% of corn plants are infested with eggs or newly hatched larvae.

Harvesting infested fields early can limit damage from girdling. Disking corn stalks early in the winter may reduce insect survival and can decrease infestations by first generation borers. For the past 10 years, products containing the YieldGard® Corn Borer trait have provided control of SWCB. The introduction of Genuity® corn traits can improve grain quality and increase yield potential by providing multiple modes of action for advanced above-ground insect protection. Genuity® VT Double PRO™ and Genuity® VT Triple PRO™ corn provides dual modes of action and Genuity® SmartStax™ corn provides triple modes of action against lepidopteran species such as SWCB.

Sources: ML Boyd & WC Bailey. *Southwestern Corn Borer Management in Missouri*. G7111. Univ. of MO Ext. www.extension.missouri.edu. 6/10/09; PE Sloderbeck et al. *Southwestern Corn Borer*. KS St. Univ. Ext. www.oznet.k-state.edu. 6/10/09; K.L. Steffey. 1999. *Handbook of Corn Insects*. Entomological Society of America.



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