

Soybean Pest Management: Dectes Stem Borer

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The soybean or Dectes stem borer, *Dectes texanus texanus* LeConte, is a small, gray, long-horned beetle that attacks soybean and wild host plants. This is an occasional soybean pest in Missouri, and crop damage caused by this pest has been sporadic across parts of the state and growing seasons.

Description and life cycle

The Dectes stem borer overwinters as mature larvae within the stem of its host plants, and the adult beetles begin emerging sometime in late June or early July. The adult beetle is gray, about $\frac{3}{8}$ inch long and somewhat flattened, with long, slender antennae (Figure 1). Eggs are elongated, shiny, tapered on both ends and initially yellowish before darkening to an amber color just before the larvae hatch. Newly hatched larvae are creamy white but darken as they mature. Larvae have an “accordion-like” appearance with an orange-red head and reach about $\frac{1}{2}$ to $\frac{5}{8}$ inch in length when they are fully mature (Figure 2). The pupal stage (yellowish white before turning dark brown before the adult emerges) lasts 8 to 10 days, and then the adults start emerging. After mating, the female beetle chews a small hole in the leaf petiole or the stem and then typically lays a single egg inside.

Damage

After hatching, the larvae feed for several days on the outer stem before they bore into the main stem (Fig-

Facts at a Glance

- Only one generation of Dectes stem borer per year infests soybean fields in Missouri.
- Both the larval and adult stages feed on soybean plants as well as several important weed host plants; however, it is damage by the larvae that can cause crop losses.
- Larval stem damage can lead to reduced yields and increased lodging of weakened plants in the fall.

ure 3). Typically, the petiole wilts and falls off the plant, leaving behind a reddish scar around the entrance hole. As the larva tunnels within the main stem, it feeds on the pith tissue (Figure 4). This damage can reduce the plant’s ability to translocate water and soil nutrients to developing pods and seeds, and yield losses may occur in heavily infested fields.

In late summer, the larvae move to the base of the plant and girdle the interior of the stem approximately 2 inches above the soil surface (Figure 5). The larvae then plug the stem with their frass, creating a cell where they overwinter. This girdling stage can increase lodging during windy days or heavy rains as heavily damaged soybean plants mature.

Damage from this insect may coincide with increased no-till soybean plantings, which provide



Figure 1. Dectes stem borer adult. (Photo: Michael L. Boyd)

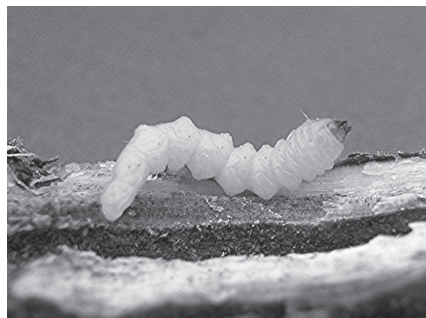


Figure 2. Dectes stem borer larva. (Photo: Scott Stewart, University of Tennessee)



Figure 3. Dectes stem borer entrance hole in soybean stem. (Photo: Michael L. Boyd)

Approximate timing for *Dectes* stem borer infestations in Missouri.

Larval stage	Adults emerge	Larval stage
January - June	late June - August	September - December

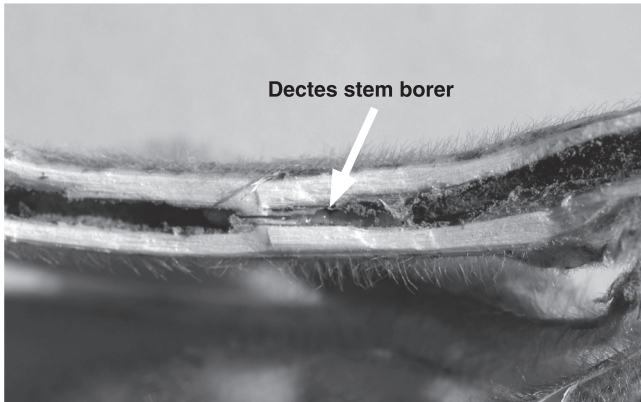


Figure 4. *Dectes* stem borer larva and inner stem damage. (Photo Michael L. Boyd)



Figure 5. *Dectes* stem borer girdling damage. (Photo: Scott Stewart, University of Tennessee)

undistributed overwintering sites for the larval stage. Since the *Dectes* stem borer also feeds on important weed hosts (e.g., cocklebur, giant ragweed), the presence of these weeds in and around soybean fields can further increase the risk of *Dectes* stem borer infestations.

Scouting procedures and techniques

Scouting procedures are difficult and limited for this insect in soybean fields. Beginning in late June or

early July through August, adult beetles begin emerging and may be collected in sweep net samples. Thereafter, look for lodged plants, which may indicate the presence of *Dectes* stem borer infestations. Cut open the stem and look for the presence of the larva and its feeding damage. Counts of larvae and lodged plants will provide a useful basis for determining the appropriate cultural practices later in the season.

Management

No insecticides are specifically labeled to control the *Dectes* stem borer, and insecticide applications are generally not recommended because it is extremely difficult to properly time applications. Emergence of the adult beetles is typically spread out over several weeks; therefore, multiple insecticide treatments would be needed to obtain effective control of these infestations.

Several cultural practices can be effectively employed to help reduce stand and yield losses from *Dectes* stem borer damage:

- Effective control of weed host plants (e.g., cocklebur, giant ragweed) within and around fields is necessary to reduce the number of preferred egg-laying sites for the female beetles.
- Harvest the crop as soon as it matures to help reduce losses associated with lodged plants.
- In university field studies conducted in Tennessee, fall tillage significantly increased overwintering mortality of *Dectes* stem borer larvae. Plant stubble should be buried at least 2 to 3 inches.
- Certain soybean varieties have shown reduced damage, but the nature of this resistance to the borer is unknown. Screening varieties with resistance to borer damage continues in university field trials.
- Avoid planting soybeans in fields adjacent to fields that were heavily infested the previous year.