Sunflower Insect Management

**Stem Borers – Beetle Larvae**
One group of stem borers that attack sunflowers and utilize a variety of composite weed hosts, including wild sunflower, cocklebur, and ragweed as wild hosts are are longhorned beetles (beetles with long antennae). The most important pest of this group is the **Dectes Stem Borer, Dectes texanus**. Adult Dectes stem borers are bluish-gray and 3/8 to ½ inches long with antennae as long, or longer, than the body. A related species, **Ataxia hubbardi**, is usually less abundant in cultivated sunflowers in Kansas, but is often present with Dectes larvae and can predominate in early planted fields. Adults of this species are larger (½ to 2/3 inches long), more brownish in color, and emerge 10 to 14 days earlier than Dectes.

Both species produce only one generation per year with adults emerging over an extended period, usually beginning in June, and remaining active throughout the summer. Adults mate and feed on plants, leaving longitudinal feeding scars on stems and petioles. Females become reproductively active about a week after emergence, and require another week or so to mature eggs. Eggs of both species are normally laid in leaf petioles. In the case of **Ataxia**, eggs are inserted just below the surface of the epidermis, whereas D. texanus females place their eggs deep in the central pith.

Larvae bore down the central core of the stalk, feeding on the pith. The effect of larval feeding on yield is negligible in healthy plants, but reduces plant resistance to other insects such as stem weevils. Larvae of both species are pale, legless, cylindrical, and deeply segmented. Larvae of **Dectes** are more cream-colored and tapered towards the rear so that final segments are narrower. Larvae of **Ataxia** are more deeply segmented, translucent in color, and have a large, blunt terminal segment covered with bristles (not tapered). Stalks split in August may contain more than one larva of one or both species, but by season's end usually only one will survive.

As stalks dry down, mature larvae of **Dectes** descend to the base of the stem, begin to girdle the interior surface near the soil line, and then plug the tunnel with chewed fibers that resemble sawdust before retreating to the base of the plant to overwinter. Plants weakened by complete or partial girdling snap off easily when pressure is applied laterally to the stem. Infestations approaching 100 percent of plants may go completely unnoticed when fields are harvested early, but any delay in harvest can result in serious losses due to lodging. In contrast, larvae of **Ataxia** do not girdle stalks or seal themselves off in an overwintering chamber. Rather, they remain active within the stalk throughout winter, growing and feeding on the dead tissues. During cold periods they may be found deep in a hollowed out root, but on warm days can be found moving around in upper portions of the stalk.

Planting after June 1 seems to greatly reduce infestation by **Ataxia**, much like it also reduces attack by stem weevils, but **Dectes** can heavily infest even the latest planted sunflowers. Because **Dectes** larvae overwinter in the base of the stems, reduced
tillage probably increases the survival of this insect and the popularity of reduced tillage may explain why problems from stem borers appear to be increasing. Another factor is the increasing acreage planted to soybeans, because this insect also attacks this crop. Little is known of the dispersal capabilities of adults, but populations tend to build up in areas of intense sunflower and soybean production. Crop rotation may reduce damage from *Dectes* when the acreage of soybeans and sunflowers in an area is low, but once populations in an area become high, crop rotation using other non-host crops does not appear to be a reliable management tool. There is no varietal resistance to stem borers in sunflowers and chemical treatments are not recommended. Although adults are susceptible to many foliar materials, their extended activity period means that a single application will not provide control. Research indicates that larval boring has no direct impact on seed yield, so yield losses result only from plant lodging. Growers should check fields in late summer, splitting stalks to determine if *Dectes* stem borers are present, and harvest as soon as possible if infestation is extensive.


This publication was prepared to help producers manage insect populations with the best available methods proven practical under Kansas conditions. Pesticide label directions and restrictions are subject to change, and some may have changed since this publication was written. Kansas State University entomologists assume no responsibility for product performance, personal injury, property damage, or other types of loss resulting from the handling or use of the pesticides listed. Remember, it is illegal to use a pesticide in a manner that is inconsistent with the label. The user bears responsibility for correct use. Always read and follow label directions carefully.

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