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## SOYBEAN STEM BORERS AT HOME IN NEBRASKA

The soybean stem borer, *Dectes texanus texanus*, is a native long horned beetle. The stem borer feeds on a wide range of host including sunflowers, cocklebur, ragweed, soybeans and a wide range of other weeds. In recent years it has adapted well to focusing on soybeans. Starting in Central Kansas the soybean stem borer has been expanding its area to the North and the East. Today the soybean stem borer can be found in all of Jefferson and Saline Counties, Eastern Thayer and Fillmore Counties, and the Western half of Gage and Lancaster Counties.

The adult long horned beetle lays her eggs on the petiole of soybean leaves in late June to early August. The eggs hatch and feed in the petiole by tunneling down into the main stem. The leaf generally dies as a result of this feeding, which is an alert to the grower of the stem borer presence. The loss of these leaves has zero or almost zero yield affect. The other good news is that the larvae are cannibalistic so there will never be more than one per stem.

The borer feeding at the base of the main stem, where the larvae over-winter, weakens the stem by its girdling feeding inside the stem. Again the good news is that this feeding action results in very minor yield loss. I can hear the farmers reading this say hold on, "There is something you are not mentioning." That would be correct. The potential harvest loss from major wind storms on mature soybean fields with stems weakened by stem borer feeding is where the big concern lies.

What can be done to reduce the threat posed by the soybean stem borer? Cultural control ideas include involve killing alternate hosts and promoting alternate hosts. Control of in-field populations of wild sunflower, cocklebur, ragweed and other weeds helps the soybean yield and reduces alternate hosts for the borer. Kansas State University research has shown some promise in using commercial sunflowers as a trap crop in strips of adjacent to soybean fields. This might work well for someone interested in promoting dove hunting and widely spaced sunflower rows in a field is very attractive to doves in the fall.

Early maturing soybean varieties seem to be more prone to harvest losses. If you are using some early season varieties to schedule harvest, plant wheat, do conservation work or plant cover crops, then don't delay harvest time when the soybeans are mature. Cover crops may be a benefit as they would accelerate the decay of soybean stems and leave the larvae homeless. The cover crop would do this while protecting the soil and soil moisture when tillage options would expose the soil to losses. Kansas State research has not found any form of variety resistance for the soybean stem borer.

Chemical treatments have been ineffective for two reasons. The activity of the egg laying adult beetle occurs over a month and a half period of time. The peak activity is anywhere in a three week period depending on weather conditions. No single insecticide application is likely to be better than marginally helpful. In addition insecticide treatments not based on clearly researched economic thresholds, can do more harm than good. They kill predator insects and increase the likelihood of damage or treatment requirements for soybean aphid, bean leaf beetle, spider mites, stinkbugs, grasshoppers, webworms, wooly bears, and other damaging insects.

There might be some hope of finding a systemic insecticide treatment with acceptable tolerances to use in soybeans. Research has yet to discover possible options in the work done so far.

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