Are You Seeing an Increase in Lodging in Your Soybeans?

If you think you are seeing an increase in lodging damage, you may be experiencing an increase in damage from the Dectes stem borer. Although it has been a pest in Delaware soybean fields since the 1980's, we have started to get reports of an increase in the number of acres damaged by this insect pest. The greatest losses often occur in early maturing full season soybeans, early planted fields, areas planted to continuous soybeans and weedy fields (cocklebur and ragweed are alternate hosts). A number of factors can contribute to the increase in this pest but we tend to see the greatest lodging losses during drought conditions.

Dectes Life History:

(1) Larvae overwinter in girdled stems in the field – ***so you can go look for them now (please see picture at the end of the article)***
(2) Adult beetles emerge in late June and are present in soybean fields and lay eggs until mid-August
(3) Eggs are laid by adult beetles in leaf petioles and stems
(4) Hatching larvae feed in the pith of stems or in the petioles for a few days before moving to the main stems
(5) Larvae tunnel up and down stems until September – then move to the base of plants
(6) Larvae girdle plants one-two inches above ground as plants mature

Chemical Controls: Currently there are no labeled insecticides to effectively control this insect pest.

Over the years, we have tested a number of foliar and at planting insecticides for the control of this pest with little success. Since the adult beetle lays eggs for approximately a six week period, it is very difficult to time a single foliar application that will provide residual control. There have also been mixed results with multiple applications of insecticides because timing is difficult and yield responses are extremely variable. ***Although Dectes stem borer is listed on the Hero label (labeled on soybeans in 2008), we have not tested this insecticide for Dectes management. In addition, the label states: "do not make applications less than 30 days apart." In recent years, we have tested an experimental, non-labeled seed treatment; however, at this point it appears that this active ingredient will never be labeled on soybean.***

Cultural Controls

Although cultural controls will not provide 100% control, research results from Delaware and other regions as well as grower reports have indicated that the use of a **combination** of the following cultural strategies can help to reduce lodging losses:
(1) **Early Harvest**: We do know that the greatest losses occur when infested fields are harvested late. You can examine stems before harvest to determine which fields need to be harvested first.
(2) **Crop rotation**: The adult beetles are not strong fliers so crop rotation can help. It may have limited value however in areas with high populations and significant soybean acreage. It would be most effective if applied area wide or for isolated fields.

(3) **Fall plowing:** Research from other areas of the country has indicated that plowing stubble 2-3 inches deep can result in up to 60-70% control (remember larvae overwinter in stems in the field) and light disking may help.
(4) **Weed control**: Since weeds are alternative hosts, the control of ragweed, cocklebur, and wild sunflower is important.
(5) **Row Spacing**: Although we can see lodging in narrow row soybeans, lodging losses can be lower in soybeans planted in 7 and 15 inch rows (except in drought stressed fields) compared to wider rows because lodged beans are held up to some degree by surrounding plants.
(6) **Variety Selection**: Although host plant resistance work was not consistent in Kansas, where a significant amount of Dectes stem borer research has been conducted, our experience indicates that lodging losses have been more of a problem in shorter season varieties (Group II, III and early Group IV's). Our work at Georgetown in the 1990's indicated that late Group IV SCN resistant varieties had less lodging damage. Growers also report that long season varieties (Group V's) have less lodging. In field sampling we have found larvae in the stems of most varieties however some are more prone to lodging – especially in drought situations.

Plans for 2009

During the 2009 season, we would like to work on 3 projects in an effort to identify an effective control strategy:
(1) A statewide survey to determine the extent of the infestations and the percentage of crop loss. This information will be used to help cooperating producers identify which fields should be harvested first.
(2) Implementation of multiple cultural control options to identify practical solutions.
(3) Timing of newly labeled pyrethroids that claim extended residual insect control – not Dectes control. **NOTE: Although Dectes stem borer is listed on the Hero label (2008), we have not had any experience with this insecticide for Dectes stem borer management.**

If you are interested in being a cooperator in anyone of these projects, please contact ***Joanne Whalen*** at 302-530-8948 (cell), 302-831-1303 (office) or by e-mail jwhalen@udel.edu. Thanks in advance for your help!

For more information about the dectes stem borer life cycle and damage, please visit the ***The Soybean Stem Borer*** at http://www.oznet.ksu.edu/library/entml2/MF2581.pdf courtesy of Phillip E. Sloderbeck, University of Kansas publication MF-2582.