

KANSAS SOYBEAN COMMISSION FINAL REPORT 2002-2003
Biology and Management of the Soybean Stem Borer in Kansas

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JUSTIFICATION: The soybean stem borer can cause severe lodging problems to soybean in Kansas. Infestations have been reported from South Central Kansas since 1985, however problems are spreading into Southwest and North Central Kansas. Growers and consultants are reporting significant harvesting problems because of lodged plants.

OBJECTIVES:

1. Investigate the interaction between soybean stem borer development and girdling relative to planting date and/or variety maturity group.
2. Evaluate the effectiveness of insecticides in reducing tunneling, girdling and yield.
3. Produce a color brochure on the soybean stem borer to aid producer awareness about the pest, life history characteristics, crop damage, and management options.
4. Expand web pages associated with soybean insect and disease pests.

RESULTS:

Objective 1. Data were collected from two planting date experiments. In 4 plantings of DSS3770 (planted 15 April to 1 June), the late season stem infestation was similar. However, the number of girdled plants was much lower in the later plantings than in the earlier plantings. In an adjacent experiment with the same 4 planting dates of three soybean varieties, Turner, Macon, and KS4694 (maturity groups #2, #3, and #4 respectively), the late-season stem infestation was slightly (but not significantly) lower in the two later plantings than in the earlier plantings. Again, the number of girdled plants and the %-infested plants that were girdled were both much lower in the later plantings than in the earlier plantings. There were also large differences across the three soybean varieties, but it is not yet clear if these differences are related to varietal differences, maturity group or other factors. Data from these trials were included in a poster presented at the Soybean Expo. in Topeka. In addition, data were also collected on egg laying, larval development and a comparison of visual and sweep sampling for adults.

Objective 2. Data from the aerial application trial indicated a significant reduction in beetle numbers after sprays, but the number of infested plants was only reduced about 50% even with two applications. In reviewing the study we believe the treatments should have been applied a few days earlier. Data from this trial were presented at the Soybean Expo. in Topeka, at the North Central Branch meeting of the Entomological Society of America in Madison, Wisconsin and at the International IPM conference in Indianapolis, Indiana. Data from the seed treatment trial failed to show any response to the seed treatment Clothianidin.

Objective 3. Two publications were produced, one was a joint soybean stem borer / soybean aphid publication to alert producers to be on the lookout for these pests (<http://www.oznet.ksu.edu/library/entml1/SoybeanBrochure.pdf>) and the other was a more detailed publication on the soybean stem borer (<http://www.oznet.ksu.edu/library/entml2/MF2581.pdf>).

Objective 4. Provided information on the Soybean Stem Borer to [planthealth.info](http://www.planthealth.info), which they used to develop a web page on their site – <http://www.planthealth.info/stemborer/stemborer.htm> this page links back to our web site on the soybean stem borer <http://www.oznet.ksu.edu/entomology/extension.current.soybstbr.html>. Updated information on soybean stem borer distribution and links to our new publications were added to the soybean stem borer web page.

SIGNIFICANCE: Harvest losses from the soybean stem borer can be severe. Alerting producers to the importance of timely harvest, improving our knowledge on the life history and studying various management options will be very useful in helping producers reduce the losses associated with this pest.