

**HOST PLANT AND TEMPORAL SEQUENCE OF INSECT PESTS
IN STRIP PLANTED PLOTS OF CORN, SOYBEAN AND COTTON**

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Abstract

The results of a preliminary study initiated in 2001 to evaluate influence of corn and soybean on pests of cotton, especially tarnished plant bug and stink bug, are reported. Other pests were also sampled and the data on incidence of bollworm and tobacco budworm increased in importance as the season progressed. Eight-row strips of corn (Pioneer 3223), cotton (NuCotn 33B), and soybean (Asgrow 4748S – maturity group 4, and Asgrow 5944 – maturity group 5) were planted in a pattern across 27 plots that placed cotton plots alternating between corn on both sides, corn on one side and soybean on the other, and soybean on both sides. The eight-row soybean plots were divided into two four-row plots, the east four rows of each plot were the maturity group 4 variety and the west four rows of each plot were the maturity group 5 variety. Sampling began rather late (late June) and missed some early influences on cotton insect pests of the adjacent corn and soybean plots. However, data from samples in July, August, and September showed that tarnished plant bug was associated primarily with cotton. Low numbers occurred in soybean through July to mid-August. Tarnished plant bug numbers dropped to near zero around mid-August in soybean, especially the maturity group 4 variety, while they increased in cotton. Soybean is a suitable host of tarnished plant bug and early-planted early-maturing soybean crops may serve as a transition host between wild host plants and cotton. Work with earlier planted soybean and earlier initiation of sampling will be needed in future studies. Green and brown stink bug species stayed in soybean during the July-September sampling period. There was a substantial change in the relative numbers in the two soybean varieties in late August and early September when approximately 4 times as many stink bugs were observed in group 5 soybean as in group 4 soybean. Stink bug numbers in cotton remained very low throughout July, August, and early September. These results may be a demonstration of a stink bug trap crop function of soybean. Soybean produced very high numbers of bollworm in July and early August relative to the transgenic Bt cotton. A few tobacco budworms were found in Group 5 soybean in early July. These data indicate that soybean probably produces a large population of unselected bollworm potentially susceptible to Bt endotoxins. The potential for soybean crops to contribute unselected and Bt endotoxin susceptible bollworm and tobacco budworm needs further investigation on a wider range of maturity groups and production environments.