Effect of Novaluron on the Tarnished Plant Bug

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Introduction

***Lygus lineolaris*, the tarnished plant bug, is one of the most abundant and economically damaging pests on cotton throughout the southeastern U.S. In this study, grain amaranth (*Amaranthus* spp.), which is related to pigweed, was grown in an open cage setting in Stoneville, MS. Grain amaranth is known to be an excellent host for plant bugs, and as it grows, tarnished plant bugs are attracted to the flowering buds on the plants. The objective of this study is to measure the susceptibility of immature plant bugs to novaluron, a new insecticide, before and after it is applied in a controlled field setting (i.e. a large field cage).**

Materials and Methods

In this cage study, we used aspirators, sweep nets, a cage, a cage cover, a hand boom sprayer, 1/8th acre of grain amaranth, and novaluron (insecticide). We planted 15 rows of grain amaranth in an uncovered 1/8th acre cage. We allowed the grain amaranth to grow and bloom, and began monitoring the numbers of plant bugs feeding on the blooms. Once there were enough plant bugs feeding on the amaranth blooms for the study, we placed the cage cover over the cage frame. After we caged the grain amaranth, we used sweep nets and aspirators to catch insects for testing in the laboratory. After taking these bugs back to the lab for research, we sprayed the caged area with Novaluron using a hand boom. We then allowed sufficient time for the insecticide to have its effect on the enclosed environment. Soon, we will capture more bugs from the sprayed amaranth in the cage to see if we can measure a decrease in tarnished plant bug susceptibility to Novaluron.

Discussion

The tarnished plant bug is among the most damaging of the true bugs and is known to transmit plant diseases. The bugs use their needle-like mouthparts to extract plant juices. Their feeding causes terminal growth to be yellowed or distorted thereby reducing plant growth and causing them to appear unthrifty. Leaves from damaged buds are sometimes ragged and discolored. Flowers from damaged buds sometimes fail to develop on one side or the whole bud aborts. Due to their feeding preference on buds, flowers, young developing fruit, or plant terminals, these bugs can cause economically important damage to crops at relatively low densities. Entomologists have strived to control plant bug populations; however, their susceptibility to many insecticides has decreased over the past years.

References:
Wilson, R.L. and D.L. Olsen. 1990. Tarnished Plant Bug, *Lygus lineolaris* (Palisot de Beauvois) (Hemiptera: Miridae) oviposition site preference on three growth stages of a grain amaranth, *Amaranthus cruentus* L. Journal of the Kansas Entomological Society 63(1): 88-91.
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Acknowledgements: Nathan Little and Katherine Parys