## CONTROL OF TARNISHED PLANT BUG WITH SELECTED INSECTICIDES AND TANKMIX COMBINATIONS IN ARKANSAS, 2009 Kyle Colwell G. M. Lorenz III Heather Wilf Nichole Taillon Ben Von Kanel University of Arkansas Cooperative Extension Service Little Rock, AR

## **Introduction**

The tarnished plant bug has become the most important pest in Arkansas cotton. Before 1995 growers generally controlled plant bugs with insecticides targeting other pests, such as boll weevil and tobacco budworms. Since the eradication of the boll weevil and widespread adoption of Bt-cotton, insecticide applications targeting these pests have decreased resulting in increased plant bug populations. Although the tarnished plant bug is a pest throughout the growing season, most damage is associated from bloom stage through cutout (NAWF= 5). Foliar insecticide applications are the primary tool used for control of these pests. The purpose of this study was to compare new and standard foliar insecticide treatments for plant bug control.

### **Materials and Methods**

This Trial was located in Lee County, Arkansas 2009. Plot size was 12.5ft. by 50ft. Insecticide treatments were applied with a Mud Master Spray Tractor. The boom was fitted with TX6 hollow cone nozzles at 19in nozzle spacing. Spray volume was 10 gal/a, at 40 psi. Insect numbers were determined by using a 2.5 ft. drop cloth. Two drop cloth samples were taken per plot for a total of 10 row ft per plot on each sampling date. Data was processed using Agriculture Research Manager Version 8. Analysis of variance was conducted and Duncan's New Multiple Range Test (P=0.10) to separate means.

# **Figures and Tables**



Fig. 1 Efficacy of Selected Compounds for Control of TPB (7 DAT1)



Fig. 2 Efficacy of Selected Compounds for Control of TPB (3 and 6 DAT2)



Fig. 3 Efficacy of Selected Compounds for Control of TPB (3, 7, and 15 DAT3)



Fig. 4 Efficacy of Selected Compounds for Control of TPB (Harvest Data)

#### **Results and Discussion**

The first application failed to reduce tarnished plant bug (TPB) populations compared to the untreated check (UTC) (Fig. 1). All treatments provided statistically better control than the UTC for TPB three days after the second application (Fig. 2.). Diamond at 6 oz/a + Acephate at 0.75 lb/a provided more control than Carbine three days after second application. Six days after the second application Bidrin had fewer TPB than Diamond + Carbine, UTC, Diamond at 6 oz/a , and Diamond at 9 oz/a. After a third application all treatments provided statistically better control of TPB than Centric and the UTC at 3 days after third application (Fig. 3). At seven days after treatment all treatments had fewer TPB than Carbine and the UTC. All treatments had significantly few plant bugs than the UTC and Carbine fifteen days after the third application. Harvest data indicated all treatments significantly increased yields (Fig. 4.). Diamond + Acephate and Diamond + Bidrin had statistically higher yields than the UTC, Diamond at 6 oz/a, Centric, Bidrin, and Carbine. Insecticide combinations improved TPB control and increased yields compared to single insecticide applications.

### **Acknowledgements**

We would like to thank the Lon Mann CBES for their cooperation in this study. We also would like to acknowledge Cotton Inc., Arkansas Cotton State Support Committee, Mana Inc., Syngenta Crop Protection, Cheminova, and AmVac for their support.

## **References**

Catchot, A., F. Musser, D. Cook, C. Daves, G. Lorenz, S. Akin, G. Studebaker, K. Tindall, S. Stewart, R. Bagwell, R. Leonard, R. Jackson. 2008. Midsouth Multistate Evaluations of Treatment Thresholds for Tarnished Plant Bugs in Flowering Cotton. Agricultural Extension Service MSU. (Publication 2561)M.B.

Layton, J.L. Long, S.G. Flint, and L.M. Green. 2003. Control of Tarnished Plant Bugs in Mississippi Delta Cotton IN Proceedings. Beltwide Cotton Conferences.