CONTROL OF TARNISHED PLANT BUG WITH TANKMIX AND PREMIX INSECTICIDES

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Abstract

The past four years tarnished plant bug, *Lygus lineolarus*, populations have been extremely high and increasingly difficult to control with the majority of currently labeled insecticides. Along with decreasing spray intervals, using tankmixes and premixes of insecticides consistently enhances control of this pest. Trials conducted in the 2009 – 2012 growing seasons were compiled to assess the amount of control insecticide mixes provide compared to single products. Data shows that substantial control increases can be obtained when insecticides are mixed. Tankmixes and premixes containing bifenthrin and novaluron proved to be some of the most effective combinations. Of all single products Transform provided the best control. Results will be discussed.

Introduction

Tarnished plant bug, *Lygus lineolaris*, is one of the most important pests of cotton in Arkansas. From 2003 to 2009 it caused more yield loss than any other pest averaging a loss of over 50,000 bales in Arkansas (Williams, 2009). Plant bug populations in the past several years have been extremely high and currently labeled insecticides are not providing the level of control needed to reduce plant bug numbers below economic threshold with one application (Lorenz, 2010). To make matters worse resistance to multiple insecticides has been found across the Midsouth (Snodgrass, 1996; Snodgrass et al., 2009). Use of insecticide premixes and tankmixes have been shown as an effective way to increase control (Thrash et al. 2012). Bifenthrin (Brigade, Fanfare, Discipline) and novaluron (Diamond, Mayhem) are two insecticides commonly used in tankmixes and will be the focus of this poster. Tankmixes with the new insecticide Transform were evaluated and are also presented in this poster. The Got Plant Bugs? trial was our response to reports of problems controlling Lygus at high densities. Some of the most efficacious insecticides and mixes were applied to evaluate their effectiveness. A total of 33 trials from the 2009 - 2012 growing seasons were used to evaluate the control of insecticide mixes compared to single products.

Materials and Methods

Trials were conducted during the 2009 - 2012 growing season. Treatments were applied with a Mud Master fitted TXVS-6 hollow cone nozzles. Spray volume was 10 GPA at 40 psi. Plot sizes were 12.5 ft. (4 rows) by 50 ft. Insect numbers determined by using a 2.5 ft. drop cloth and taking 2 samples per plot for a total of 10 row feet per plot. Data were processed using Agriculture Research Manager Version 8, AOV, and Duncan's New Multiple Range Test (P=0.10) to separate means. Data was compared between tests by converting each treatments season total plant bug numbers to their respective untreated checks season total to provide a percent control. The number of data sets used for each individual treatments average is designated by n = #.

Results and Discussion

Insecticide mixes usually increased TPB control when compared to individual compounds. All treatments showed an increase in efficacy when single products were mixed with bifenthrin (Fig. 1). An average efficacy increase of 14% was observed when selected insecticides were combined with bifenthrin . All selected insecticides showed an increase in efficacy when novaluron (6 oz/a) was mixed with single products except Transform(Fig 2). Tankmixes containing novaluron (6 oz/a) showed an average increase of 15% when compared to single products. When selected insecticides were mixed with Transform control was increased an average of only 2% (Fig. 3), which was not substantial enough to warrant the extra cost. Transform (2.5 oz/a) provided the best control in the trial Got Plant Bugs? though no insecticide or mix provided significantly better control than any other (Fig. 4). Mixes that included

Diamond regularly provided the best control of all treatments. Transform provided exceptional control when compared to all other single products. The results of these studies show insecticide mixes are an effective way to increase control of tarnished plant bug with existing products.

Fig. 1Tarnished plant bug control with mixes of bifenthrin

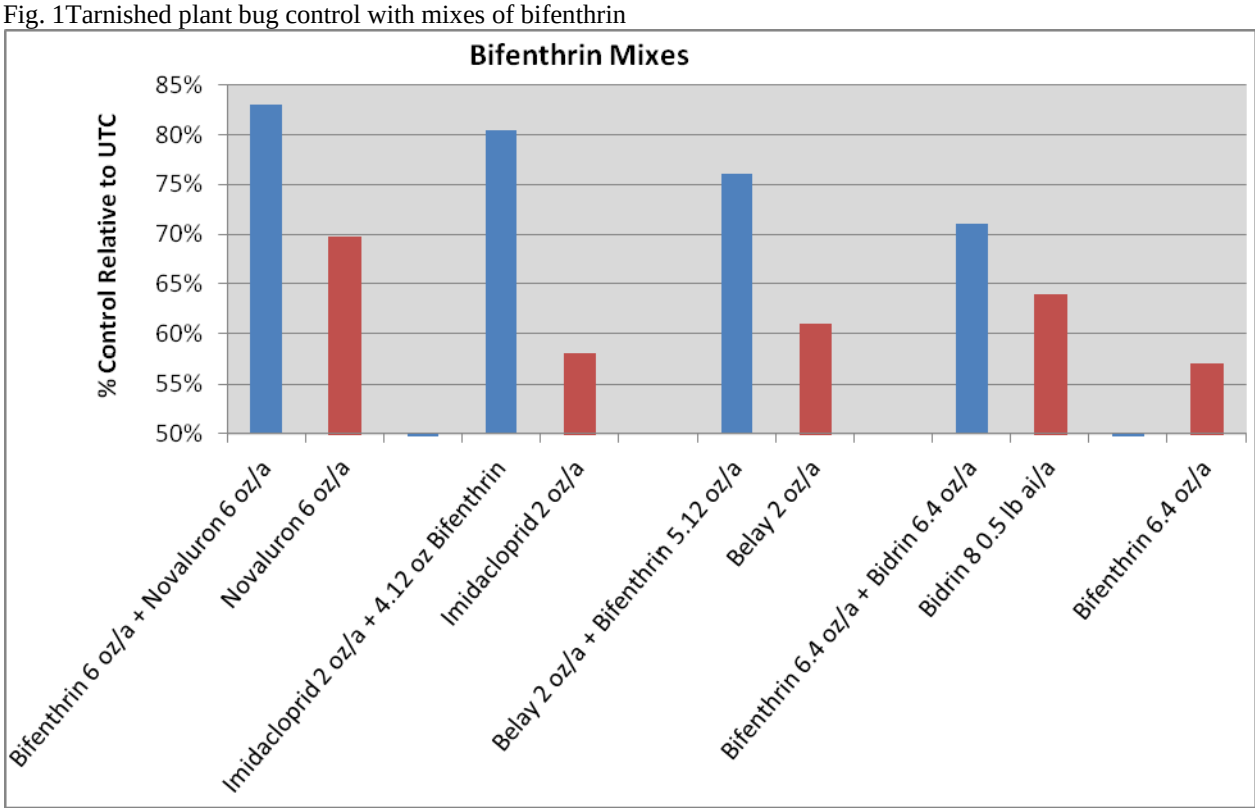


Fig. 2 Tarnished plant bug control with mixes of novaluron

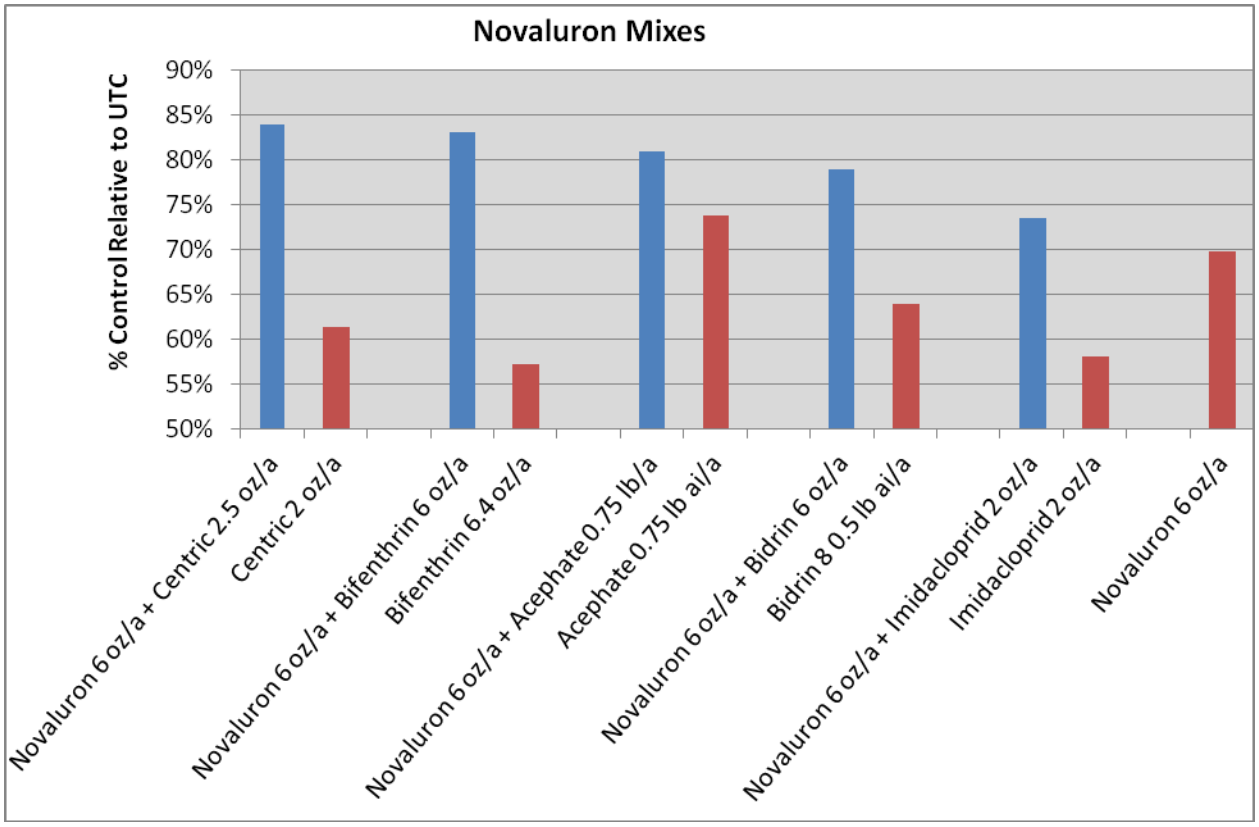


Fig. 3Tarnished plant bug control with mixes of Transform

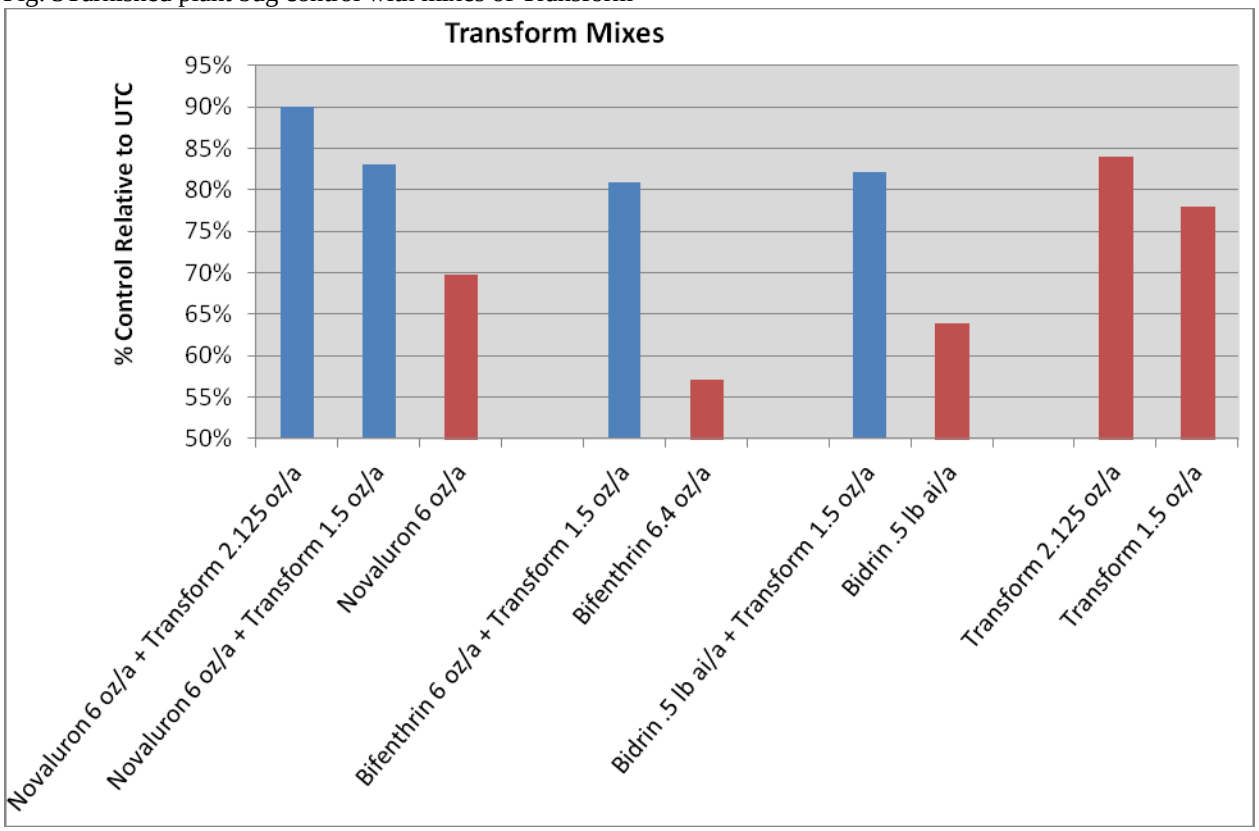
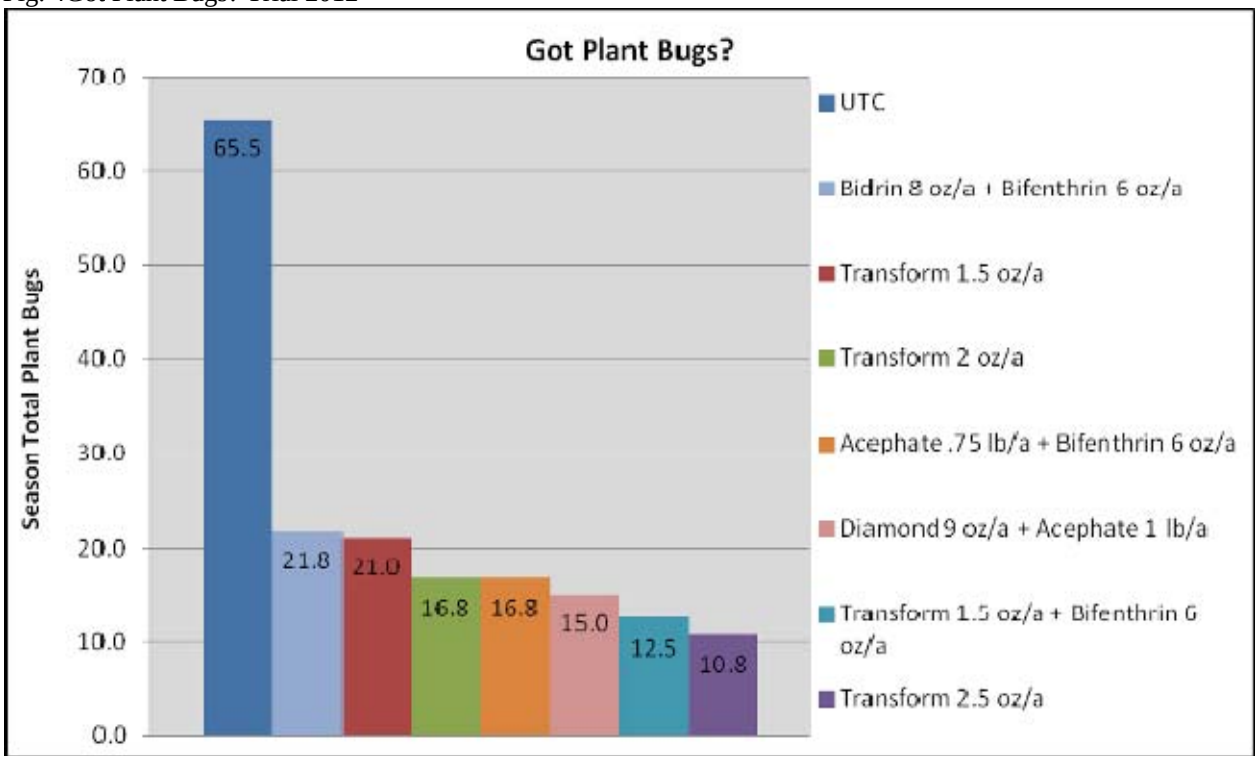


Fig. 4Got Plant Bugs? Trial 2012



Acknowledgements

We would like to thank Cotton Inc. and the Arkansas Cotton State Support Committee for funding this research. We would also like to thank Lon Mann Cotton Research Station for their help in plot maintenance and the growers of Arkansas for their support.

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