

CONTROL OF SPIDER MITES IN THE MIDSOUTH**Ben Von Kanel****Angus Catchot****Jeff Gore****Don Cook****Mississippi State University****Starkville, MS****Roger Leonard****Louisiana State University****Gus Lorenz****Glenn Studebaker****Scott Akin****University of Arkansas****Scott Stewart****University of Tennessee****Kelly Tindal****University of Missouri****Abstract**

The two spotted spider mite, *Tetranychus urticae* Koch, has increased in severity in the past decade across the Midsouth. This incidence has resulted in an increased effort to better understand the impact that spider mites can have on cotton and evaluate the most effective miticides for control. Efficacy of selected miticides was evaluated at several locations across the Midsouth. All miticides significantly reduced spider mite populations compared to the UTC. However, Dicofol, Comite II, and Oberon at 4 oz did not yield significantly higher to the UTC.

Introduction

The two spotted spider mite, *Tetranychus urticae* Koch, can be a severe pest of cotton in the Midsouth (Bessin 2004). Economic losses can be observed when spider mites attack cotton at any stage of development. With the onset of no-till/reduced till practices in the Midsouth, the incidence of spider mite infestations has continued to increase in the past decade. The high frequency of pyrethroid, carbamate, and organophosphate insecticides applied with the aim of controlling the tarnished plant bug, *Lygus lineolaris* Palisot de Beauvois, also have allowed spider mite severity to increase due to elimination of natural enemies. These complications have revealed the need to further study the impact spider mites are having in Midsouth cotton fields and standardize recommendations for their control.

Materials and Methods

Plots were arranged in a randomized complete block design (RCB) with four replications. Plot size was 4 rows x 35-40 ft. Miticide applications were made with a tractor-mounted sprayer calibrated to deliver 10 GPA with TX6-10 or suitable flat-fan spray tips. Table 1 gives the selected miticides and rates that were applied. Plant nodes, height, and node above white flower (NAWF) were recorded. Prior to each miticide application, individual plots were evaluated to estimate the percentage of spider mite injury in the top 3 nodes. Spider mite ratings were taken at 4, 8, and 12 days after treatment (DAT) by counting the number of mites on 10 in² of leaf area per plot. Second applications were made as needed and plots were taken to yield.

Table 1

Treatment	Rate (oz product/acre)
Brigade 2E	6.4
Dicofol 4E	48
Comite II	36
Portal 0.4E	16
Zeal 72WSP	1
Zephyr 0.15E	4
Oberon 4F	4
Zephyr 0.15	12
Oberon 4F	8
Untreated Check	-

Results and Discussion

Data for spider mite ratings were not balanced. Trials were performed over a two year period at several different locations. The timing of treatment ratings varied and there were different numbers of ratings at different times, therefore, ratings were grouped by DAT. All miticides significantly reduced the number of mites compared to the UTC but were not significantly different from each other at 3 to 5 and 7 to 9 DAT (Fig. 1). All miticides begin to lose residual activity at 10 to 14 DAT with Zeal being the only miticide significantly different from the UTC (Fig. 2). All miticides except for Zephyr, Dicofol, and Comite yielded significantly higher than the UTC (Fig. 3). This data corroborates the effectiveness of selected miticides for controlling spider mites in the Midsouth. Results of these experiments will be used to standardize miticides recommendations across the states in the midsouthern U.S.

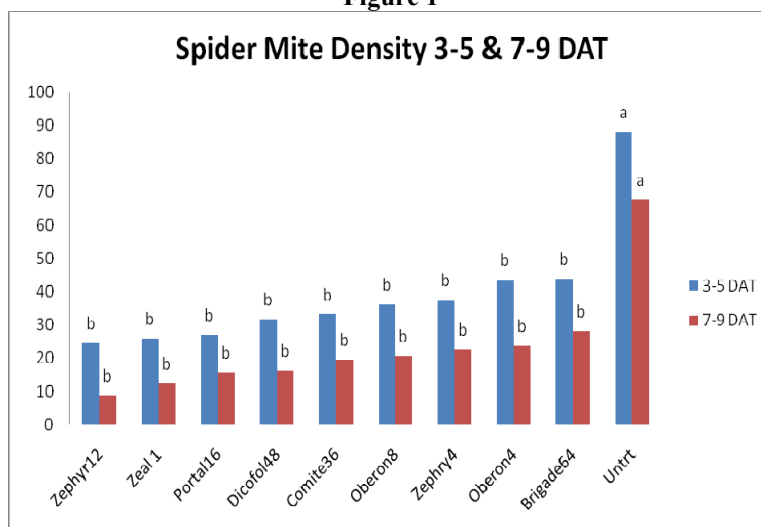
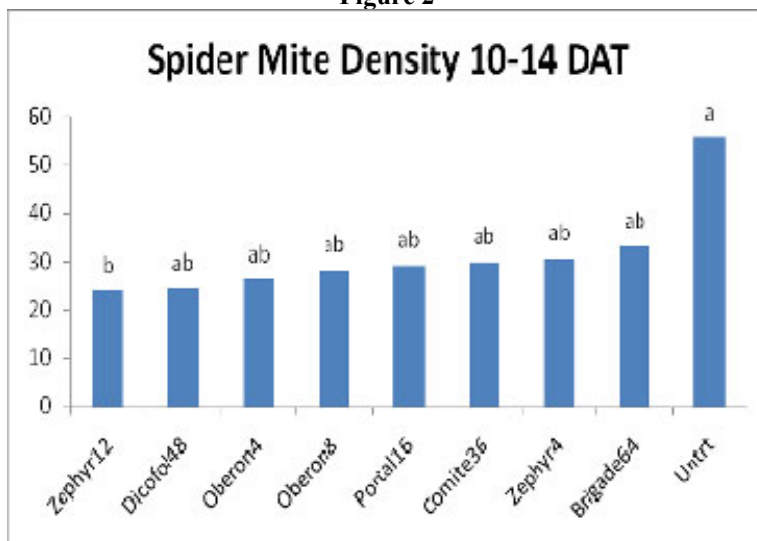
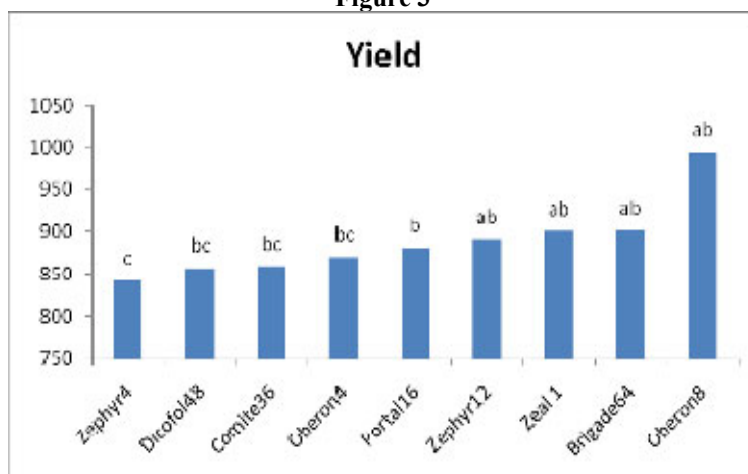
Figure 1

Figure 2**Figure 3****Acknowledgements**

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References

Bessin, R. 2004. Two-Spotted Spider Mite. University of Kentucky College of Agriculture. Experimental and Applied Entomology fact sheet.