

**EXPERIENCES WITH SEVERE EARLY SEASON SPIDER MITE POPULATIONS IN MISSISSIPPI****Angus Catchot****Mississippi State University****Starkville, MS****G. M. Lorenz****Univ. of Arkansas CES****Little Rock, AR****John Long****Mississippi State University****Mississippi State, MS****Abstract**

In 2005, Mississippi experienced a severe spider mite outbreak early in the growing season. Mite problems originated in the south delta region of the state in early June and spread throughout most of the delta and parts of the hills by early July. It is estimated that 278,000 acres were treated for spider mites in Mississippi in 2005. In spider mite efficacy test, the true "miticides" provided the best efficacy on early season spider mite populations.

**Introduction**

In 2005, spider mites were a severe problem early in the season, which is atypical for spider mite outbreaks in Mississippi. Spider mites have typically been a late season pest in Mississippi. Every year some acres are treated for spider mite infestations across the state but generally populations are highest around cutout. The first problems originated in the south delta region of the state on cotton fields that averaged 1 – 2 nodes in growth. In isolated incidences cotyledon stage cotton was infested and required replanting. Weather conditions were conducive to spider mite outbreaks and lack of rain contributed to the rapid spread across the delta region. The demand for miticide chemistries exceeded supply numerous times during the growing season leaving growers without treatment options for spider mites. Mississippi was able to obtain a 90-day 24C label for the use of Abamectin to treat spider mites since many growers had used the maximum ai/acre allowed by the label of existing chemistries or could not purchase them due to such high demand. During mid-July much of the state started receiving isolated rain showers that helped reduce populations and by the end of July most problem fields were under control.

**Methods**

Two spider mite efficacy trials were conducted on grower farms in MS. One trial was located in the delta region of the state and one trial was located in the hill region of the state. In both trials, plot size was four 38" rows by 50' in length. Both test were sprayed with a backpack sprayer calibrated to 10GPA, 60 p.s.i, 3.4 mph, and using TX6 hollow cone nozzles. Cotton in the delta trial was treated at the 10-node state and cotton in the hills trial was treated at the 8-node stage. In both test, 5 leaves were randomly collected at each sample date 3 nodes down from the terminal and total numbers of spider mites were counted with a 10X hand lens within a 1 sq. inch frame.

**Results and Discussion**

Results from the delta location indicate that Kelthane was significantly better than any other treatment at 4 DAT (Table 1). At 7 DAT Oberon at 6 and 8 oz/A, Zeal, and Kelthane were all statistically equivalent. All treatments broke between 7 and 10 days after application with no treatments providing acceptable control. At the hills location, only Oberon at both rates was significantly better than the check 4 DAT (Table 2). At 7 and 11 DAT all the miticides and Denim were providing significantly better control than the check. Under extreme spider mite pressure in the delta no treatment provided residual control for longer than 7 days. In the hills the miticides all performed well out to 11 days when the test was terminated. None of the quick knockdown products provided acceptable control in either the hills or the delta under very high early season pressure where numerous eggs were present in the field. Results in the delta further indicate that rescue treatments often require multiple applications since no products provided control longer than 7 days.

**Table 1.** 2005 Delta Spider Mite Efficacy Trial. Average Number of Spider Mites/5 square inches.

<b>Treatment</b>	<b>Rate</b>	<b>4 DAT</b>	<b>7 DAT</b>	<b>10 DAT</b>
Untreated	NA	83.0 a	147.0 a	186.7 a
Oberon 4 EC	4 oz	57.3 ab	58.7 bc	104.0 cd
Oberon 4 EC	6 oz	44.0 b	31.0 cd	126.3 bc
Oberon 4 EC	8 oz	42.3 b	41.3 cd	128.0 bc
*Discipline 2 EC	3.8 oz	81.3 a	77.0 b	156.3 b
Denim 0.16 EC	8 oz	70.3 ab	63.0 bc	142.3 b
Zeal	0.66 oz	43.7 b	35.7 cd	97.0 cd
Kelthane 4 EC	32 oz	10.7 c	18.3 d	81.3 d

(P= 0.10, Student-Newman-Keuls) \*treated again 4 DAT 1.

**Table 2.** 2005 Hills Spider Mite Efficacy Trial. Average Number of Spider Mites/5 square inches.

<b>Treatment</b>	<b>Rate</b>	<b>4 DAT</b>	<b>7 DAT</b>	<b>10 DAT</b>
Untreated	NA	102.0 a	96.7 a	74.7 a
Oberon 4 EC	4 oz	10.0 b	2.3 b	3.0 b
Oberon 4 EC	6 oz	13.0 b	2.3 b	9.3 b
Comite II 6 EC	24 oz	34.7 ab	3.7 b	29.3 b
Discipline 2 EC	6.4 oz	65.3 ab	107.3 a	77.0 a
Denim 0.16 EC	8 oz	73.7 ab	19.7 b	16.0 b
Zeal	1.0 oz	44.7 ab	2.7 b	1.7 b
Kelthane 4 EC	32 oz	37.0 ab	1.0 b	1.0 b
Dimethoate 4 EC	16 oz	109.7 a	106.0 a	64.3 a

(P= 0.10, Student-Newman-Keuls)