COMPARISON OF SEED TREATMENTS AND ALDICARB RATES FOR THRIPS CONTROL IN COTTON

Jack T. Reed, D. Bao, and C. S. Jackson

Department of Entomology & Plant Pathology; Mississippi State University; Mississippi State, 39762

ABSTRACT: Insecticides (Gaucho [imidacloprid] and Cruiser [thiamethoxam]) used as seed treatments for control of thrips in seedling cotton were evaluated in comparison to three rates of Temik (aldicarb) applied in-furrow. Tests were planted at the North Mississippi Research and Extension Center, Verona, MS. Insect pressure was light during the first week after planting and gradually increased as the season progressed. There were no differences in stand count or plant height (measured on 6/13/02), or yield between treatments, however there was a trend for increased yield with increased rates of Temik. By 6/13/02, Temik treated plots were the only treatments significantly controlling adult thrips numbers and although larval thrips were still being controlled by seed treatments on that date, numbers indicate that seed treatments were beginning to fail. Thrips damage ratings of plants on 6/6/02 indicated that all seed treatments reduced plant damage dramatically compared with the untreated check.

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KEY WORDS: Thrips, cotton, insecticides**,** seed-treatment

MATERIALS AND METHODS: Insecticides (Gaucho and Cruiser) used as seed treatments for control of thrips in seedling cotton were evaluated in comparison to three rates of Temik applied in-furrow. The experimental design was randomized complete block with 4 replicates. Cotton, variety FiberMax 989 B/RR, was planted at the North Mississippi Research and Extension Center on 5/17/02 at a seed rate of 4 per ft. Plots were four rows wide and 40 ft long arranged with a 10 ft buffer at the end of each plot. Row spacing was 38 in. A John Deere 7100 planter equipped with Almaco® applicators for seed and granular insecticides was used for planting. Sampling for thrips consisted of cutting five plants from two center rows of each plot and transferring them into a plastic bag for transport to the laboratory. The samples were then washed in a Clorox-detergent solution to remove thrips from the plants. Thrips and other arthropods were then transferred onto filter paper for identification and counting by use of a dissection microscope. Yield was estimated by mechanically harvesting the center two rows of each plot and converting the yield to pounds of seed cotton per acre. Thrips damage was rated on a scale of 0-4 (0=none) and plant height was measured on 6/13/02 by measuring from the cotyledonary node to the tip of the apical meristem.

RESULTS AND DISCUSSION: Results from the trial are presented on Tables 1 and 2. At the beginning of the season, the immature thrips were lower than normal, and as the season progressed numbers of thrips increased significantly. Thrips damage ratings of plants indicate much damage

was done by the thrips on untreated plots, but the plots with treated seeds sustained little damage. There were no differences in stand count or plant height (measured on 6/13/02), or yield between treatments, however there was a trend for increased yield with increased rates of Temik. By 6/13/02, Temik treated plots were the only treatments significantly controlling adult thrips numbers and although larval thrips were still being controlled by seed treatments on that date, numbers indicate that seed treatments were beginning to fail. Thrips damage ratings of plants on 6/6/02 indicated that all seed treatments reduced plant damage dramatically compared with the untreated check.

Table 1. Mean insect per five plants, Verona location.

Treatment	Rate	**Tobacco Thrips** 5/31/02	**Eastern Flower Thrips** 5/31/02	**Western Flower Thrips** 5/31/02	**Immature Thrips** 5/31/02
UNTREATED		6.5 a	0.0 a	0.0 a	0.3 a
TEMIK	3.5 LB/A	0.0 b	0.0 a	0.0 a	0.0 a
TEMIK	4.0 LB/A	0.3 b	0.0 a	0.0 a	0.0 a
TEMIK	5 LB/A	0.5 b	0.0 a	0.0 a	0.3 a
CRUISER	7.7 FL OZ/CWT	0.0 b	0.0 a	0.0 a	0.0 a
GAUCHO	8 FL OZ/CWT	1.5 b	0.0 a	0.0 a	0.3 a
LSD (P=.05)		1.74	0.00	0.00	0.52
Treatment Prob(F)		0.0001	1.0000	1.0000	0.6813

Treatment	Rate	6/6/02	6/6/02	6/6/02	6/6/02
UNTREATED		4.5 a	0.0 a	0.0 a	42.8 a
TEMIK	3.5 LB/A	0.0 b	0.0 a	0.0 a	2.3 b
TEMIK	4.0 LB/A	0.3 b	0.0 a	0.0 a	1.0 b
TEMIK	5 LB/A	0.0 b	0.0 a	0.0 a	0.0 b
CRUISER	7.7 FL OZ/CWT	0.3 b	0.0 a	0.0 a	1.5 b
GAUCHO	8 FL OZ/CWT	1.8 b	0.0 a	0.0 a	3.5 b
LSD (P=.05)		2.50	0.00	0.00	7.88
Treatment Prob(F)		0.0094	1.0000	1.0000	0.0001

Treatment	Rate	6/13/02	6/13/02	6/13/02	6/13/02
UNTREATED		11.8 a	0.3 a	0.5 a	39.8 a
TEMIK	3.5 LB/A	4.5 b	0.0 a	0.0 a	1.8 b
TEMIK	4.0 LB/A	4.0 b	0.0 a	0.0 a	0.5 b
TEMIK	5 LB/A	1.8 b	0.3 a	0.0 a	1.0 b
CRUISER	7.7 FL OZ/CWT	5.8 ab	0.0 a	0.0 a	2.5 b
GAUCHO	8 FL OZ/CWT	5.8 ab	0.3 a	0.5 a	4.8 b
LSD (P=.05)		6.17	0.52	0.50	9.19
Treatment Prob(F)		0.0628	0.6813	0.0866	0.0001

Means within a column and date following by same letter do not significantly differ (P=.05, LSD).

Table 2.

Treatment	Rate	Node To First Sq 5 Plants	Stand Count 3 Ft	Damage Rate 1-4(Highest)	Yield Lb Seed Cotton/Ac
		6/27/02	6/17/02	6/6/02	10/3/02
UNTREATED		6.2 a	14.5 ab	4.0 a	2636 a
TEMIK	3.5 LB/A	6.3 a	14.0 ab	0.8 bc	2593 a
TEMIK	4.0 LB/A	6.1 a	12.9 ab	0.8 bc	2648 a
TEMIK	5 LB/A	5.8 a	11.8 b	1.0 b	2806 a
CRUISER	7.7 FL OZ/CWT	5.9 a	13.1 ab	0.3 c	2737 a
GAUCHO	8 FL OZ/CWT	6.3 a	15.6 a	0.5 bc	2803 a
LSD (P=.05)		0.90	3.80	0.65	319
Treatment Prob(F)		0.8428	0.3738	0.0001	0.5998

Means within a column not sharing common letters differ significantly (P=.05, LSD).