

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

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ABSTRACT: The insecticides Gaucho (imidacloprid) and Cruiser (thiamethoxam) used as seed treatments for control of thrips in seedling cotton were evaluated in comparison with 3 different 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 and gradually increased as the season progressed. All treatments significantly reduced plant damage in plots. Although there was a trend toward increased yield in treated plots as compared with the untreated check, there were no statistically significant differences in yield. Stand count on 6/17/02 indicated that the number of plants per foot in Gaucho treated plots was significantly less than in all other plots except those with Temik at the 5 lb AI/AC application rate. There was a slight trend for increased yield with increased rates of Temik.

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KEY WORDS: Thrips, cotton, insecticides, seed-treatment, in-furrow

MATERIALS AND METHODS: The insecticides (Gaucho and Cruiser) used as seed treatments for control of thrips in seedling cotton were evaluated in comparison with 3 different 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® plot applicators for seed and granule insecticides was used for planting. Sampling for thrips consisted of cutting 5 plants from 2 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 a filter paper for identification and counting by use of a dissection microscope. Thrips damage to plants was rated on a scale of 0-4 (0=none). Yield was estimated by mechanically harvesting the center 2 rows of each plot and converting the yield to pounds of seed cotton per acre.

RESULTS AND DISCUSSION: Results from the trial are presented in Tables 1 and 2. At the beginning of the season, numbers of immature and tobacco thrips were lower than normal, but as the season progressed numbers increased significantly. There were significantly more adult tobacco thrips in untreated than treated plots on all sample dates, and more immatures on untreated plots than in treated plots on all dates except 5/31/02. There were significant differences in numbers of immature and tobacco thrips on 6/6/02 and 6/13/02. Thrips damage ratings of plants

indicate much damage was done by the thrips on untreated plots, but the plots with treated seeds and in-furrow insecticide sustained little damage. There were no differences in yield between treatments, however there was a slight trend toward increased yield with increased rates of Temik. There were no differences between treatments in node to first square or stand count.

In this trial, adequate moisture after planting and good growing conditions allowed both seed treatments and in-furrow insecticides to function well. Tobacco thrips, *Frankliniella fusca*, were the dominant thrips species in the trial. Only a few specimens of western flower thrips (*F. occidentalis*) and eastern flower thrips (*F. tritici*) were collected on the last sample date. This may be accredited to the adequate rainfall and the presence of wild blooming plants that would attract the flower thrips.

Table 1. Mean insects per 5 plants.

Treatment	Rate	Tobacco	Eastern	Western	Immature
		Thrips	Flower	Flower	Thrips
		5/31/02	5/31/02	5/31/02	5/31/02
CHECK	----	7.3 a	0.0 a	0.0 a	0.0 a
CRUISER 5 FS	4.8 OZ A/CWT	0.0 b	0.0 a	0.0 a	0.0 a
GAUCHO 600 FS	4 OZ A/CWT	0.5 b	0.0 a	0.0 a	0.0 a
TEMIK 15 G	3 LB/A	0.3 b	0.0 a	0.0 a	0.0 a
TEMIK 15 G	3.5 LB/A	0.8 b	0.0 a	0.0 a	0.0 a
TEMIK 15 G	5 LB/A	1.0 b	0.0 a	0.0 a	0.0 a
LSD (P=.05)		2.88	0.00	0.00	0.00
Prob(F)		0.0006	1.0000	1.0000	1.0000
		6/6/02	6/6/02	6/6/02	6/6/02
CHECK	----	7.0 a	0.0 a	0.0 a	64.3 a
CRUISER 5 FS	4.8 OZ A/CWT	0.0 b	0.0 a	0.0 a	0.5 b
GAUCHO 600 FS	4 OZ A/CWT	0.3 b	0.0 a	0.0 a	0.5 b
TEMIK 15 G	3 LB/A	0.8 b	0.0 a	0.0 a	6.8 b
TEMIK 15 G	3.5 LB/A	0.3 b	0.0 a	0.0 a	1.8 b
TEMIK 15 G	5 LB/A	0.0 b	0.0 a	0.0 a	0.5 b
LSD (P=.05)		2.94	0.00	0.00	17.57
Prob(F)		0.0007	1.0000	1.0000	0.0001
		6/13/02	6/13/02	6/13/02	6/13/02
CHECK	----	10.0 a	0.3 a	0.5 a	28.3 a
CRUISER 5 FS	4.8 OZ A/CWT	2.3 bc	0.0 a	0.0 a	4.3 b
GAUCHO 600 FS	4 OZ A/CWT	4.3 b	0.0 a	0.5 a	0.5 b
TEMIK 15 G	3 LB/A	1.0 bc	0.0 a	0.0 a	1.8 b
TEMIK 15 G	3.5 LB/A	0.0 c	0.0 a	0.0 a	0.3 b
TEMIK 15 G	5 LB/A	0.5 c	0.0 a	0.0 a	0.0 b
LSD (P=.05)		3.27	0.31	0.78	9.62
Prob(F)		0.0001	0.4509	0.4509	0.0001

Means within a column and date not sharing a common letter differ significantly (P=0.05,LSD).

Table 2. Thrips damage rating, stand count Node to first square and yield.

Treatment	Rate	Thrips	Stand	Node To	Lb Seed
		Damage	Count	Node To	Cotton
		Rating (0-4)	(3 Ft)	First Square	/Ac
		6/6/02	6/17/02	6/27/02	10/3/02
CHECK	-----	4.0 a	12.4 a	6.4 a	2637 a
CRUISER 5 FS	4.8 OZ A/CWT	0.5 b	13.4 a	6.1 a	2873 a
GAUCHO 600 FS	4 OZ A/CWT	0.3 b	10.1 b	5.9 a	2972 a
TEMIK 15 G	3 LB/A	1.0 b	13.9 a	6.6 a	2890 a
TEMIK 15 G	3.5 LB/A	0.8 b	12.5 a	6.1 a	2959 a
TEMIK 15 G	5 LB/A	0.8 b	12.3 ab	6.2 a	2978 a
LSD (P=.05)		0.88	2.20	0.69	352
Treatment Prob(F)		0.0001	0.0388	0.3579	0.3469

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