EVALUATION OF INSECTICIDES FOR CONTROL OF APHIDS IN COTTON

Texas Agricultural Experiment Station, Nueces County, 2001

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SUMMARY: Furadan, Bidrin at 2 rates, Calypso, Assail at 2 rates, and Centric at 2 rates were applied to cotton to determine their effectiveness in controlling cotton aphids. All insecticide treatments significantly reduced aphid numbers compared to the untreated check 3 DAT. By 6 DAT the aphid population had declined to zero in all plots, mostly due to attack by a parasitic fungus. As expected, no differences were found in lint yields.

OBJECTIVE: The field study was conducted to compare insecticides and to evaluate product rates for effectiveness in controlling cotton aphids.

MATERIALS/METHODS: DPL 20B was planted Mar 23, 2001 on the Texas Agricultural Experiment Station, Meaney Annex in Nueces County. Fertilizer applied was 95-32-0, and Treflan 4 HFP (1 qt/acre) was incorporated for weed control on Dec 11, 2000. Treatments were arranged in a randomized complete block design with 3 replications in 4-row by 40 ft plots with individual rows spaced on 38-inch centers. The entire study was oversprayed with Baythroid 2E (3.2 oz/acre) on May 22 to enhance development of an aphid population. Individual insecticide treatments were applied to the 4-row plots on May 29 with a self-propelled Lee Company Spider Sprayer Trac equipped with two, 4X hollow cone nozzles/row in a total volume of 8 gpa at 40 psi at a speed of 2.75 mph. Baythroid was applied after plots were inspected on Jun 4 in an attempt to create conditions for aphid increase.

Treatments were assessed by (1) examining 5 key leaves (normally the second leaf from the terminal) for aphids from the center 2 rows of each plot on May 29 (pretreatment count), Jun 1 (3 DAT) and Jun 4 (6 DAT), (2) harvesting by hand 13.75 ft row from 1 of the 2 center rows in each plot on Jul 23, and (3) counting the number of plants from the harvested area to determine plant stand. Seed cotton was processed on a 10-saw Eagle laboratory machine.

RESULTS/DISCUSSION: All insecticide treatments significantly reduced aphid numbers compared with pretreatment counts and the untreated cotton 3 DAT (Table 1). By 6 DAT, no live aphids remained in plots primarily due to a parasitic fungus. Although Baythroid was applied in an attempt to again increase aphid number, the attempt was not successful. Additionally, dry conditions resulted in premature crop cutout. As expected lint yields revealed no differences due to treatment. The aphid infestation was of short duration.

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Table 1. Comparison of insecticides for control of aphids in cotton, Texas Agricultural Experiment Station, Nueces County, TX, 2001.

Treatment (rate)	Number aphids/leaf			Yield (lb lint/acre)
	pretreat.	3 DAT	6 DAT	
Furadan 4F (8.0 oz/acre)	51.3 a	0.00 b	0.0	663 a
Bidrin 8E (4.0 oz/acre)	44.3 a	1.00 b	0.0	721 a
Bidrin 8E (8.0 oz/acre)	45.3 a	2.67 b	0.0	699 a
Calypso 4SC (1.5 oz/acre)	54.7 a	1.00 b	0.0	715 a
Assail 70WP (0.87 oz/acre)	43.0 a	0.00 b	0.0	686 a
Assail 70WP (1.14 oz/acre)	41.7 a	0.00 b	0.0	754 a
Centric 40WG (2.0 oz/acre)	49.3 a	0.33 b	0.0	730 a
Centric 40WG (2.5 oz/acre)	51.0 a	0.67 b	0.0	729 a
Untreated	50.3 a	23.33 a	0.0	686 a
LSD (P = 0.05)	NS	2.804		NS
P > F	.9686	.0001		.8051

Means in a column followed by the same letter are not significantly different by ANOVA.
[a] DAT = days after treatment