

(F111)

COTTON: *Gossypium hirsutum* L., 'BXN 47'

Cotton aphid: *Aphis gossypii* Glover

Jack T. Reed, & C. S. Jackson

P.O. Box 9775

Mississippi State, MS 39762

Phone: (662) 325-2976

EVALUATION OF INSECTICIDES FOR CONTROL OF COTTON APHIDS, 1999: This trial is part of an annual insecticide evaluation program intended to evaluate foliarly applied insecticides for aphid control on cotton. In 1999, acetamiprid, pymethrozin (Fulfill), and thiamethoxam (Actara), three compounds approaching registration, were compared with commonly recommended materials. Statistical design was RCB with 4 replicates. Plots were planted 4 May with a seeding rate of 3 per ft. Plots were 50 ft long with 4 untreated buffer rows between plots and 12 ft planted alleys at the end of plots. Pesticide application date was 1 Jul. Application of insecticide was delayed because of rain and muddy soil conditions until a dense aphid population was established. The test was applied with a back pack spray system equipped with 2 TX4 hollow cone nozzles per row. The sprayer was calibrated to deliver 5 gpa at 4 mph and a pressure of 39 psi. The test was terminated following one application and beneficials were not recorded. The test was evaluated 5 DAT by counting the aphids on ten leaves at each of two canopy levels consisting of a leaf 4 nodes from the terminal bud, and a mainstem leaf one third down the plant. A second evaluation was attempted 8 DAT, but was aborted because a fungal epizootic had drastically reduced aphid populations in all plots.

All entries reduced aphid numbers below that in the untreated check. However, only acetamiprid and Actara reduced aphid numbers to a grower-acceptable level under the conditions of the trial. Results indicate that acetamiprid was exceptionally active in the lower canopy level, and that a rate-response occurred for mean aphids per 10 leaves with this material. These results may indicate that the optimum rate for acetamiprid is higher than 0.05 lb (AI)/acre. Addition of Kinetic to Provado or Fulfill did not improve efficacy of these compounds.

Treatment/ formulation	Rate lb (AI)/ acre or % v/v	No. aphids/10 leaves (5 DAT) ^a		
		Upper canopy	Lower canopy	Mean
Water		721.0a	3066.9a	4009.6a
Acetamiprid 70WP	0.025	105.2de	6.8g	112.0ef
Acetamiprid 70WP	0.038	56.9ef	6.8g	64.8fg
Acetamiprid 70WP	0.05	33.8f	3.3g	37.6g
Bidrin 8E	0.4	377.0ab	85.1def	466.1cd
Provado 1.6F	0.025	238.7bc	212.6cde	482.3cd
Provado 1.6F	0.047	196.8bcd	287.7bcd	534.8cd
Lannate LV	0.25	595.9a	841.3b	1571.1b
Lannate LV	0.45	275.9b	421.6bc	770.7bc
Actara 25WG	0.047	54.3ef	45.3f	106.0f
Fulfill 50WG	0.086	134.1cd	257.7bcd	411.3cd
Fulfill 502G	0.086	237.4bc	302.8bc	583.3c
+ Kinetic	0.125%			
Provado 1.6F	0.025	133.3cd	67.6ef	244.9de
+ Kinetic	0.125%			
Prob (F)		0.000	0.000	0.000

Means followed by same letter in a column do not significantly differ (P=0.05, LSD).

^aMeans are detransformed from the log transformation used for analysis.