

## Cotton Aphid Efficacy Study - 2000

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A small plot trial was conducted to evaluate the efficacy of selected insecticides against the cotton aphid, *Aphis gossypii*, on cotton.

Location: Hiler farm

Plot size: 4 rows (40 in centers) by 30 feet

Experimental Design: RCBD with 4 replications

(One plot received two treatments and was dropped from the analyses, thus, Asail at 0.05 had only 3 replications)

Application date: April 25, 2000

Application methodology:

CO<sub>2</sub> pressurized backpack sprayer  
30 PSI  
10 gallons per treated acre  
1 TX10 nozzle over-the-top per row  
**treated a 20 inch band**

Treatments:

Calypso 4SC at 1.5 fl oz/ac (0.0468 lb AI/ac)  
Leverage 2.7SE at 3.0 fl oz/ac (= 0.0375 lb of imidacloprid + 0.026 lb of cyfluthrin/ac)  
Provado 1.6F at 3.75 fl oz/ac (0.0468 lb AI/ac)  
Assail 70WP at 0.0375 lb AI/ac  
Assail 70WP at 0.05 lb AI/ac  
Furadan 4F at 0.25 lb AI/ac  
Thiodan 3EC at 0.75 lb AI/ac  
Actara 25WG at 3.0 oz/ac (0.0468 lb AI/ac)  
Centric 40WG at 1.9 oz/ac (0.0475 lb AI/ac)  
Fulfill 50 WG at 2.75 oz/ac (0.086 lb AI/ac)  
Non-treated check

**ALL insecticide applications included Silwet L-77 at 8 oz/100 gal.**

Aphid counts:

Aphid densities were monitored by random selection of 5 plants from the middle two rows of each plot and counting all aphids on the first leaf in the terminal and the third leaf from the terminal. Numbers were analyzed per terminal leaf, per third leaf and total (terminal+third leaf).

#### Data analyses:

Data were analyzed with the PROC GLM procedure of PC-SAS. Where significant differences were determined ( $P < 0.05$ ), means were separated with DMRT ( $P = 0.05$ ).

#### General results:

Aphid densities were moderate at the time of application, but 'crashed' in all treatments by 6 days after application. Aphid density reductions at 1 day after treatment were generally greatest with Furadan and most chloronicotinyl products (Assail, Actara, Provado, Centric, Calypso); although Centric and Calypso did not show as large of reductions on the third leaf. At 3 days after treatment, the greatest reductions in the terminal were seen with Assail, Actara and Centric, which also provided the greatest reductions in total aphids. On the third leaf, these treatments were not significantly different than Provado, Calypso, Furadan and Fulfill; although they showed numerical trends similar to the terminal.

Overall, although all products tested provided some aphid control, the chloronicotinyl products and Furadan generally performed slightly better or quicker than Fulfill, Thiodan and Leverage. Some minor differences did occur among the chloronicotinyl products. Finally, the lower rate of Provado applied with the Leverage treatment, as compared to Provado alone, was not significantly different than Provado, but consistently showed a trend for higher aphid densities.

Cotton Aphid Efficacy Test, Hiler Farm, 2000

Treatment	Aphids per terminal leaf			Aphids per third leaf from terminal			Total (terminal + third) aphids		
	1 DAT	3 DAT	6 DAT	1 DAT	3 DAT	6 DAT	1 DAT	3 DAT	6 DAT
Check	39.0 a	29.9 a	3.9 bc	24.5 a	18.4 a	4.1 a	63.5 a	48.2 a	8.0 ab
Leverage	26.8 b	13.5 b	6.7 a	18.0 ab	7.8 bc	1.8 b	44.7 bc	21.3 bc	8.4 a
Thiodan	25.0 bc	16.4 b	0.4 d	18.5 ab	12.3 b	0.7 b	43.4 bc	28.7 b	1.0 c
Fulfill	27.5 b	14.2 b	1.2 cd	20.4 ab	4.0 cd	0.2 b	47.9 ab	18.2 c	1.4 c
Calypso	21.0 bcd	13.5 b	4.3 ab	20.1 ab	2.5 cd	0.5 b	41.1 bcd	16.0 cd	4.7 bc
Provado	18.3 bcd	10.4 bc	2.7 bcd	9.0 cd	3.3 cd	0.7 b	27.2 cdef	13.7 cde	3.4 c
Assail037	15.4 bcd	5.2 cd	1.9 bcd	7.8 d	0.4 d	0.4 b	23.1 def	5.5 def	2.2 c
Assail05	10.9 d	2.7 d	2.3 bcd	4.1 d	0.3 d	0.1 b	15.0 f	3.0 f	2.4 c
Actara	11.0 d	3.8 cd	0.9 d	6.6 d	0.4 d	0.1 b	17.6 ef	4.2 ef	0.9 c
Centric	19.4 bcd	2.1 d	1.2 cd	15.3 bc	0.3 d	0.4 b	34.7 bcde	2.4 f	1.6 c
Furadan	12.3 cd	12.6 b	1.1 cd	3.7 d	2.9 cd	0.8 b	16.0 f	15.5 cd	1.9 c