

(E17)

CANTALOUPE: *Cucumis melo* L. 'Anthena'

CONTROL OF WHITEFLY ON CANTALOUPE WITH NEONICOTINOID, 2003

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Whitefly: *Bemisia argentifolii* Bellows & Perring

Vigorous, commercially obtained greenhouse-grown seedlings treated in the greenhouse 7–10 days before shipment with 8 oz of Admire per 100 gallon of drench were planted 4 Mar. Plants were spaced at 18 inches on two sets of three beds and fertigated through Netafim drip tape with 12-inch emitter spacing during the growing season. The center bed in each set of three beds was left untreated to serve as a source of whiteflies. The four treated beds were divided into plots 48 ft long to which two treatments and untreated check were assigned in a CRB design with four replications. Treatments were applied as a soil drench in 100 ml of solution on 10 Mar. Ten weekly evaluations of whitefly adults were made beginning 18 Mar with an 18 × 13 inch swipe across the top of the vines with a 9 × 13-inch pie pan painted black and coated with a 9:1 mixture of vegetable oil and liquid detergent. A count was made for each swipe and four swipes were made per plot. Immature stages were monitored for the same 10-week period using mature leaves removed from the stem of the main vine. All whitefly stages were counted that appeared in a 2-cm² ring placed two times on each side of the leaf. Four leaves per plot were evaluated. Harvests were made 24 Apr and 6 May from the same 25 ft of row per plot.

Transplanting coincided with a large flight of whiteflies into the field resulting in a precount on 10 Mar of 15.9 adults per leaf from 36 randomly selected of 25.5 cm² mean area. Significantly fewer whiteflies of all stages were observed on treated plants compared to untreated plants over all dates, with no differences among treatments (Table 1). However, fewer adults were seen the last 3 weeks, 5, 12 and 19 May, on plants treated Admire compared to Platinum. The relationship of eggs was the same for all dates as the adults and the weekly data is not shown. Admire-treated plants had fewer small nymphs than the control each week, whereas this was true for plants treated with Platinum just the first 7 weeks. Only on 19 May did Admire-treated plants have significantly fewer small nymphs than plants treated with Platinum. Both treatments exhibited fewer large nymphs plus pupae than the control on all dates except the last week 19 May, 65 days after application of the drench. There was no difference between the two insecticide treatments except for the sixth week when fewest large nymphs + pupae were seen on plants treated with Platinum. The nymphal data was combined in the weekly table for brevity with 55 % of the nymphs observed in the small category. There was no effect of treatments on yield and marketable yield due to pickleworm damage. Thus, both products controlled whiteflies for as long as 65 days, with slightly more persistence seen with 0.25 lb (AI)/acre Admire than with 0.125 lb(AI)/acre of Platinum, presumably due the higher rate of the former. These results are similar to those we have observed repeatedly over the last 12 years and do not suggest any great loss of sensitivity to neonicotinoids by the local whitefly population.

Table 1.

Treatment/ formulation	Rate amt product/acre	Adults per pan beat and nymphs per 2 cm ² leaf area																			
		18 Mar		25 Mar		31 Mar		7 Apr		14 Apr		21 Apr		28 Apr		25 Apr		12 May		19 May	
		adult	nymph ^a	adult	nymph	adult	nymph	adult	nymph	adult	nymph	adult	nymph ^a	adult	nymph	adult	nymph	adult	nymph	adult	nymph
Admire 2F	16.0 oz	26.6b	23.3b	50.9b	2.5b	12.3b	3.3b	8.4b	11.5b	3.4b	6.9b	39.8b	12.0b	101.9b	7.9b	30.5c	23.0b	56.1c	23.9b	62.1b	13.8a
Platinum 2SC	8.0 oz	31.7b	18.1b	35.4b	2.2b	5.8b	5.7b	5.8b	5.5b	3.3b	6.6b	56.1b	6.1b	101.3b	6.5b	56.1b	25.5b	100.6b	31.5b	97.3a	11.6a
Untreated check		44.0a	38.4a	123.1a	61.6a	34.2a	74.9a	74.6a	58.4a	52.5a	56.8a	200.3a	49.3a	211.3a	58.1a	158.1a	57.1a	145.2a	47.7a	24.8c	16.7a

Means in a column followed by the same letter are not significantly different (LSD, $P > 0.05$).

^aTotal of small plus large.

Table 2.

Treatment/ formulation	Rate amt product/acre	Weekly mean from 10 evaluations				
		Adult	Egg	Small nymph	Large nymph	Total nymph
Admire 2F	16.0 oz	40.8b	6.4b	7.5b	4.0b	11.5b
Platinum 2SC	8.0 oz	51.3b	6.2b	8.0b	4.8b	12.8b
Untreated check		106.8a	11.8a	26.3a	25.6a	51.9a

Means in a column followed by the same letter are not significantly different (LSD, $P > 0.05$).