

(E88)

SQUASH (ZUCCHINI): *Cucurbita pepo* L., 'Revenue'

APPLICATION TIMING OF TWO INSECTICIDES FOR CONTROL OF PICKLEWORM ON ZUCCHINI SQUASH, 2001

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Pickleworm (PW): *Diaphania nitidalis* (Stoll)

Aggressive spray programs often required for adequate control of pickleworm in south Florida could interfere with cross pollination by bees that generally occurs in the morning. The purpose of this trial was to evaluate control and yield effects of a broad spectrum and a selective insecticide applied in the morning and in the afternoon. Zucchini squash was direct seeded on 16 Apr at 18-inch spacing into four beds 240 ft long on 12-ft centers covered with a white polyethylene mulch prepared by fumigating with 300 lb/acre of 67/33% methyl bromide/chloropicrin. The four rows were divided into five plots 48 ft long to make four replicates on each bed to which treatments were assigned in an RCB design. Plants were irrigated by drip and fertigated with 8-0-8 NPK to provide 120 lb N and K/acre for the growing season. Plants were sprayed weekly for disease control with Maneb 75 DF at 1.5 lb/acre. After the appearance of female blooms a precount made on 15 May showed that 50% (N = 20) of the female flowers were infested with PW. Treatments were applied using a high-clearance hydraulic sprayer operating at 200 psi and equipped with four yellow hollow cone Albus ceramic nozzles/row, two on each side in drop booms, for a delivery rate of 44 gpa. The two treatments were applied either in early morning when the female blossoms were open or in late afternoon after the blooms had closed on 15, 24, and 29 May and 2 Jun. Harvests of fruit 6 inches or longer were made on 23, 25, and 29 May and 1, 4, and 8 Jun from the same 24 centrally located plants in each plot, recording the number and weight of marketable fruit from each. Unmarketable fruit due to PW damage and unpollinated blooms were also counted and weighed. Significant differences in number and weight of marketable fruit, and number and weight of fruit damaged by pickle worm were observed between the untreated control and all other treatments, with no significant differences among insecticide treatments. These results indicated that all insecticidal treatments were effective in controlling PW. The numbers of unpollinated fruit were not different among insecticide treatments, although weight of unpollinated fruit indicates there might be some benefit to the beekeeper from using Avaunt 30 WG in preference to Asana XL for control of PW.

TABLE 1.

Treatment/ formulation	Rate lb /acre	Application time	Unmarketable fruit ^a					
			Marketable fruit ^a		Pickleworm		Unpollenated	
			No.	Wt (lb)	No.	Wt	No.	Wt
Avaunt 30 WG	0.065	AM	124.8 a	79.8 a	46.2 a	10.8 a	51.6 a	10.2 ab
Asana XL 0.66EC	0.030	AM	123.0 a	86.4 a	43.2 a	11.4 a	54.6 a	10.8 ab
Avaunt 30 WG	0.065	PM	115.8 a	84.0 a	58.2 a	18.0 a	46.8 a	6.6 bc
Asana XL 0.66EC	0.030	PM	136.2 a	86.4 a	45.6 a	13.8 a	56.4 a	12.6 a
Untreated check			26.4 b	12.0 b	125.4 b	35.4 b	9.6 b	4.2 c

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

^a Totals for all dates from 24 plants per plot.