(E57)

PEPPER (HOT): Capsicum annuum L., 'Mitla Jalapeño'

Pepper weevil: Anthonomus eugenii Cano

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INSECTICIDAL CONTROL OF PEPPER WEEVIL ON JALAPEÑO PEPPER, 1999: Pepper weevil is a key pest of both pungent and mild peppers in parts of the southern U.S., Mexico and Central America. Control is difficult because all stages except the adult occur within the safety of the pepper fruit. For this trial, four beds, 32 inches wide and 240 ft long, were prepared on 6-ft centers by incorporating 800 lb/acre of 5-16-8 NPK fertilizer, fumigating with methyl bromide/chloropicrin (66/33) at a rate of 300 lb/acre and covering with black polyethylene film mulch. Greenhouse-raised pepper plants were transplanted on 3 Mar at 10 inch spacing in single rows and fertigated with an additional 175 N/acre through Netafim™ drip tape with 12 inch emitter spacing. Plants were sprayed with a combination of Maneb 80 WP at 1 lb/acre plus Kocide 101 at 3 lb/acre weekly for disease control. Each half bed was divided into three 40 ft long plots assigned to one of 3 treatments in a randomized block design with eight replications. The Vydate treatment was applied weekly for 7 wks beginning 8 Apr and the Actara treatment was applied only on 8 Apr and 30 Apr. Treatments were applied using a high clearance sprayer operating at 200 psi fitted with 1 ceramic "yellow" Albuz™ hollow cone nozzles overhead and 1 on the side of each row to deliver 33 GPA. Latron™ CS-7 was added as a tank mix adjuvant to all treatments at 0.8 % v/v. Eight adult weevils were found in the course of a pre-treatment count made 7 Apr from 40 randomly selected plants across the trial area. Fallen fruit was collected on 15, 22 and 29 Apr and 5, 7, 12, 19 and 26 May to monitor weevil pressure. All fruit 1.5 inch or more in length was harvested, counted and weighed from 48 plants/plot on 7 and 27 May. Incidence of weevil damage was confirmed by dissecting 20 randomly selected fruit from each plot.

On 5 May and all subsequent dates, significantly fewer fallen fruit were observed from treated plants than from untreated plants, with no differences between sprayed treatments. Number and weight of harvested fruit from treated plants was close to 5 times greater than from untreated plants, with no differences between sprayed treatments. Also, there were no differences between sprayed treatments in percentage fruit infested although only fruit from Vydate-treated plants was less infested than fruit harvested from untreated plants. Thus, 2 sprays with Actara at 0.085 lb (AI)/acre gave comparable control to 7 weekly sprays of Vydate 2L at 0.5 lb, the present grower standard.

TABLE 1.

		No. daily fruit dropped/plot[a]							
Treatment/formulation	Rate amt (AI)/ acre	22 Apr	29 Apr	5 May	7 May	12 May	19 May	26 May	Overall dates
Actara 25 WG	0.085 lb	0.00a	0.04b	1.57b	11.75b	3.86b	3.43b	9.64b	4.81b
Vydate 2 L	0.500 lb	0.00a	1.00b	2.65b	13.45b	12.70b	10.57b	8.91b	7.04b
Untreated check		0.01a	4.44a	7.65a	31.90a	30.86a	32.43a	28.41a	19.4a

Means followed by the same letter in a column are not significantly different (LSD, $P < 0.05$).
[a]48 plants per plot.

TABLE 2.

Treatment/formulation	Rate (AI)/acre	Fruit/48 plants/plot (2 harvests)		
		No.	Wt (lb)	Infected (%)[a]
Actara 25 WG	0.085 lb	515.5a	24.5a	14.4ab
Vydate 2 L	0.500 lb	528.6a	23.6a	11.7b
Untreated check		116.3b	4.7b	23.1a

Means followed by the same letter in a column are not significantly different (LSD, $P < 0.05$).
[a]Percent of 20 fruit per plot with weevil larva inside.