

(E46)

PEPPER (HOT): *Capsicum annuum* L., 'Serrano'

INSECTICIDAL CONTROL OF PEPPER WEEVIL ON SERRANO PEPPER, 2000

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Pepper weevil: *Anthonomus eugenii* Cano

Pepper weevil is a key pest of both pungent and mild peppers in the southern United States as well as Mexico, Central America, and the Caribbean. Control alternatives are needed because all stages but the adult are safe from insecticide inside the pepper fruit. This trial consisted of greenhouse-raised pepper plants transplanted on 6 Mar at 10-inch spacing in single rows on two sets of three plastic mulched beds that were 240 ft long and fertigated through Netafim drip tape with 12-inch emitter spacing. The center bed in each set of three was left untreated to serve as a source of inoculum. Each treated bed was divided into plots 48 ft long to which five treatments were assigned in an RCB design with four replications. The Vydate and Cryolite treatments were applied weekly for 9 wk beginning 19 Apr. The 3 oz/acre Actara treatment was applied four times on 19 Apr, 12, 24 May, and 8 Jun. The 4 oz/acre Actara treatment was applied three times on 19 Apr, 12 May, and 2 Jun. Treatments were applied with a high clearance sprayer operating at 200 psi with two vertical booms, each fitted with ceramic "yellow" Albuz hollow cone nozzles delivering 44 gpa with 2 nozzles per boom for the first spray 19 Apr. An additional nozzle was added to each boom for subsequent sprays giving an output of 66 gpa. Six adult weevils were found in the course of a pretreatment count made 19 Apr from 60 randomly selected plants across the trial area. Fallen fruit was collected from both sides of 12 plants per plot on 16 and 24 May and 2, 7, 14, and 19 Jun to monitor weevil pressure. On 20 Jun, all fruit 1 inch or more in length was harvested and weighed from the same 12 plants/plot monitored for dropped fruit. Average fruit weight was determined by weighing three samples of 100 peppers from each plot. Percent damage was determined by dissecting a sample of 100 peppers from each plot.

All treatments reduced the number of dropped fruit compared with the control over 6 weekly samples beginning 16 May. Fewer dropped fruit were observed from plants treated with Cryolite 96 or Actara at either rate compared with the grower standard Vydate on the last three or four sample dates, respectively. Total fruit weight was greatest from plants treated three times with 4 oz Actara or with Vydate, although not significantly different from the 3-oz rate sprayed four times. Percentage of infested fruit was higher for all treatments compared with control with no differences between sprayed treatments. Multiplying these two factors together we saw again no differences among sprayed treatments in weight of uninfested fruit. Mean fruit weight was greatest with the 3-oz treatment of Actara sprayed four times but not significantly so compared with Actara sprayed three times at 4 oz or nine applications of Cryolite.

Florida Agricultural Experiment Station Journal Series No. N-02000.

TABLE 1.

Treatment/ formulation	Rate amt form/ acre	No. fruit dropped/plot (12 plants)						Overall dates
		16 May	24 May	2 Jun	7 Jun	14 Jun	19 Jun	
Actara 25 WG	3 oz	0.05 a	0.73 b	3.62 b	7.82 c	9.04 c	8.90 c	5.03 c
Actara 25 WG	4 oz	0.03 a	0.54 b	5.31 b	21.42 b	7.27 c	11.50 c	7.68 c
Cryolite 96	10 lb	0.01 a	0.76 b	2.79 b	7.46 c	9.51 c	12.26 c	5.47 c
Vydate 2 L	2 qt	0.05 a	1.76 b	7.99 b	24.02 b	18.83 b	23.18 b	12.64 b
Untreated check		0.04 a	4.14 a	18.22 a	52.96 a	37.49 a	40.96 a	25.64 a

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

TABLE 2.

Treatment/ formulation	Rate amt form/acre	Fruit harvested from 12 plants per plot			
		Total fruit (lb)	Infested fruit (%) ^a	Uninfested fruit (lb)	Mean wt / 100 fruit
Actara 25 WG	3 oz	5.6 ab	7.5 b	14.7 a	0.87 a
Actara 25 WG	4 oz	16.2 a	9.3 b	14.4 a	0.83 ab
Cryolite 96	10 lb	11.9 b	12.0 b	11.1 a	0.82 abc
Vydate 2 L	2 qt	14.3 a	7.3 b	12.6 a	0.75 c
Untreated check	---	4.2 c	33.3 a	2.8 b	0.78 bc

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

^aPercent 100 fruit per plot with weevil larva inside.