(E53)

PEPPER (JALAPEÑO): *Capsicum annuum* (L.), 'Ixtapa'

INSECTICIDAL CONTROL OF PEPPER WEEVIL ON JALAPEÑO PEPPER, 2005

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Pepper weevil: *Anthonomus eugenii* Cano

Pepper weevil is the major pest of all pepper varieties in the southern parts of the US, due in part to the inaccessibility of all but the adult stage to insecticide sprays. Best results have been achieved with rotations of products such as were evaluated in this experiment. Greenhouse-raised pepper plants were transplanted on 22 Mar at 10-inch spacing in single rows on two sets of three beds 250 ft in length and covered with polyethylene film mulch. Approximately 20% of the fertilizer was preplant soil incorporated and 80% applied through the drip tape. The center bed in each set of three was left untreated to serve as a source of weevils. Each treated-bed was divided into plots 42 ft long to which treatments were assigned in a RCB design with four replications. A high-clearance sprayer was used operating at 180 psi and 2.3 mph with the spray delivered through two vertical booms using yellow Albuz hollow cone nozzles that applied 10 gpa each. The first three applications were applied with two nozzles on each boom applying a total of 40 gpa, and then increased to three nozzles applying 60 gpa on subsequent applications as the plants grew taller (Table 1). As the number of gpa was increased to maintain spray coverage on the taller plants, the rate per acre was kept constant. Weekly insecticide sprays were initiated on 28 Apr, about one week after bloom started. Maintenance fungicides, Kocide 2000 at 2 lb/acre and Maneb 75DF at 1 or 2 lb/acre were applied weekly starting on 5 Apr. Pepper weevil damage was monitored by counting fallen fruit and harvesting mature fruit from plants located centrally in each plot. In most plots, 26-28 plants were sampled except in some plots where fewer plants were available; therefore, averages per plant are reported. Dropped fruit were collected by fixing a barrier of wood lathing onto the plastic and counted on 9, 17, 24, and 30 of May and 8 of Jun. Mature fruit 2.5 inches or more in length were harvested on 24 May and 8 Jun. After weighing the harvested fruit, the percent infested with weevils was estimated by opening 50 peppers per plot and the total weight adjusted accordingly. Data were subjected to ANOVA and means were separated using LSD ($P = 0.05$).

More fruit dropped from untreated plants than treated plants (Table 2). Fewest infested fruit dropped from plants treated with the Cryolite/Lorsban/Actara rotation, although not significantly fewer than from the Cryolite/Lorsban/Actara/Vydate rotation. The Proclaim and Actara/Vydate rotations were intermediate. Most marketable fruit was harvested from plants treated with the Cryolite/Lorsban/Actara/Vydate rotation, though not significantly different from the Cryolite/Lorsban/Actara rotation or the Actara/Vydate rotation. All of these produced more marketable fruit than plants treated with GF1587. Untreated plants produced virtually nothing. Thus, all treatments provided control of pepper weevil.

Table 1.

Treatment/ formulation	Rate lb(AI)/acre	Application dates					
		28 Apr	5 May	12 May	20 May	26 May	6 Jun
Cryolite 96W	7.68	X	X	X			
Lorsban 75 WG	0.975				X		
Actara 25WG	0.063					X	X
Cryolite 96W	11.52	X	X				
Lorsban 75 WG	0.975			X			
Actara 25WG	0.063				X		X
Vydate 2L	0.750					X	
GF-1587	0.094	X	X	X	X	X	X
Proclaim 5SG	0.010	X					
Proclaim 5SG	0.013		X	X	X	X	X
Actara 25WG	0.063		X	X			
Vydate 2L	0.750	X			X	X	X
Untreated check	--						

Table 2.

Treatment/ formulation	Rate lb(AI)/acre	Dropped fruit[a] (no./plant)	Marketable yield[b] (lbs/plant)
Cryolite 96W	7.68	12.9 d	0.88 ab
Lorsban 75WG	0.975		
Actara 25WG	0.063		
Cryolite 96W	11.52	17.2 cd	1.06 a
Lorsban 75WG	0.975		
Actara 25WG	0.063		
Vydate 2L	0.750		
GF-1587 L	0.094	36.4 b	0.41 c
Proclaim 5SG	0.010	23.7 c	0.75 b
Proclaim 5SG	0.013		
Actara 25WG	0.063	24.05 c	0.86 ab
Vydate 2L	0.750		
Untreated check	--	51.33 a	0.09 d

Means in columns followed by the same letter are not significantly different (LSD, $P > 0.05$).
[a]Total of five weekly counts.
[b]Total of two harvests.