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**PEPPER (Jalapeño):** *Capsicum annuum* (L.) 'Ixtapa'

## **INSECTICIDAL CONTROL OF PEPPER ON JALAPEÑO PEPPER, 2005**

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Pepper weevil: *Anthonomus eugeni* (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 2 sets of 3 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 3 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 randomized complete block (RCB) design with 4 replications. A high clearance sprayer was used operating at 180 pounds per square inch and 2.3 miles per hour with the spray delivered through two vertical booms using yellow Albuz® hollow cone nozzles that applied 10 gallons per acre each. The first 3 applications were applied with 2 nozzles on each boom applying a total of 40 gallons per acre, and then increased to 3 nozzles applying 60 gallons per acre on subsequent applications as the plants grew taller. As the number of gallons per acre was increased to maintain spray coverage on the taller plants, the rate per acre was kept constant. Weekly insecticide sprays were initiated on 28 April, 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 April. 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, so 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 June. Mature fruit 2.5 inches or more in length were harvested on 24 May and 8 June. After weighing the harvested fruit, the percent infested with weevils was estimated by opening 50 peppers per plot and the total weight adjusted accordingly.

More fruit dropped from untreated plants than treated plants. Fewest infested fruit dropped from

plants treated with rotation 1, although not significantly fewer than from rotation 2. Treatments 4 and 5 were intermediate. Most marketable fruit was harvested from plants treated with rotation 2, though not significantly different from rotation 1 or rotation 5. All of these produced more marketable fruit than plants treated with GF1587 (treatment 3). Untreated plants produced virtually nothing. Thus, all treatments provided control of pepper weevil.

**Table 1**

Treatment	Product/formulation	Rate lbs(AI)/acre	Application Dates					
			28 Apr	5 May	12 May	20 May	26 May	6 June
Rotation -A	Cryolite 96W	7.68	x	x	x			
	Lorsban 75 WG	.975				x		
	Actara 25WG	.063					x	x
Rotation -B	Cryolite 96W	11.52	x	x				
	Lorsban 75 WG	.975			x			
	Actara 25WG	.063				x		x
	Vydate 2L	.750					x	
Treatment -C	GF-1587	.094	x	x	x	x	x	x
Treatment -D	Proclaim 5SG	.010	x					
		.013		x	x	x	x	x
Treatment -E	Actara 25WG	.063		x	x			

Treatment -F	Vydate 2L	.750	x	x	x	x
Treatment -G	Untreated					

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

**Table 2**

Treatment	Dropped fruit <sup>1</sup> (No./plant)	Marketable yield <sup>2</sup> (lbs/plant)
Rotation -A	12.9 d	0.88 ab
Rotation -B	17.2 cd	1.06 a
Treatment -C	36.4 b	0.41 c
Treatment -D	23.7 c	0.75 b
Treatment -E	24.05 c	0.86 ab
Treatment -F	51.33 a	0.09 d

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

<sup>1</sup> Total of 5 weekly counts

<sup>2</sup> Total of 2 harvests

**Part II: Materials Tested for Arthropod Management**

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Common name	Trade name/ Cultivar	Concentration/ Formulation	Chemical name/resistance	Manufacture/source
chlorpyrifos	Lorsban	57WG	O,O-diethyl O-(3,5,6-trichloro-2 pyridinyl) phosphorothioate	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268
emamectin benzoate	Proclaim	5SG	Avermectin B1, 4''-deoxy-4''-(methylamino)-,(4''R)-,benzoate (salt)	Syngenta Crop Protection P.O. Box 18300 Greensboro, NC 27419
oxamyl	Vydate L	2L	(Methyl N''N''-dimethyl-N-((methylcarbamoxy)oxy)-1-thioxamimidate)	DuPont Company Stine-Haskell Research Center Dupont Crop Protection Newark, DE 19711

sodium aluminofluride	Prokil Cryolite 96	96W	sodium fluoaluminate	Gowan Company P.O. Box 5569 Yuma, AZ 85366
thiamethoxam	Actara	25WG	4H-1,3,5-Oxadiazin-4-imine,3-((2-chloro-5-thiazolyl)methyl)tetrahydro-5-methyl-N-nitro-	Syngenta Crop Protection P.O. Box 18300 Greensboro, NC 27419
unknown	GF-1587	L	unknown	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268