

E57

PEPPER (JALAPEÑO): *Capsicum annuum* L., 'Tormenta'**INSECTICIDAL CONTROL OF PEPPER WEEVIL ON JALAPENO PEPPER, 2009****Philip A. Stansly**

University of Florida/ IFAS
Southwest Florida Res. and Ed. Center
2686 State Road 29 North
Immokalee, FL 34142-9515
Phone: (239) 658-3427
Fax: (239) 658-3469
Email: pstansly@ufl.edu

Barry C. Kostyk

Email: bkostyk@ufl.edu

Pepper weevil: *Anthonomus eugenii* Cano

Pepper weevil is a serious pest of pepper in the southern parts of the US which destroys fruit through larval feeding. Control is difficult because all life stages but the adult are contained within the fruit. On 15 Sep, greenhouse-raised pepper seedlings were transplanted 24 inches apart in six single rows, 240 ft in length and covered with whiteface polyethylene film mulch at the Southwest Florida Research and Education Center in Immokalee FL. A RCB design was used with 4 replicates and 12 treatments (Table 1). Each plot contained 10 plants with two plants left between plots as a buffer zone. Granular 12-3-12 NPK fertilizer was preplant soil incorporated to provide 25% of the total requirement with the remainder applied as liquid 8-0-8 delivered through drip irrigation over the growing season. Maintenance sprays included Kocide (1.0 lbs/acre) and Manex (1.5 qt/acre) as a tank mix applied weekly to control foliar disease in particular bacterial spot. Oberon (8.5 oz/acre) was applied on 6 Nov and Agri-mek (8.0 oz /acre) plus JMS Stylet Oil were applied on 9, 17, 24 Nov, 1 Dec to control broadmite. All applications were made with a high clearance sprayer operating at 180 psi at 2.3 mph with the spray delivered through two vertical booms using yellow Albuz® hollow cone nozzles. The gpa for each treatment application and date are reported in Table 1. Fallen fruit was held on the bed adjacent to plants by a strip of wood lathing secured to the top edges of the bed with wire stakes. Fruit 2.0 inches or more in length was removed and all fallen fruit collected from 6 plants per plot on 17, 24 Nov. and 1, 8, 15, 22 Dec. Visibly damaged fruit was removed from the harvested fruit and counted. Twenty five of the remaining fruit in each plot were then cut open longitudinally and inspected for presence of pepper weevil larvae/pupae and rated for damage. The number of weevil-damaged fruit was calculated by using the percentage of damaged fruit in this sub-sample and applying it to the total number of fruit without visible damage. The total number of damaged fruit was then estimated to be the number visibly damaged fruit plus the number of fruit with internal damage plus the number of fallen fruit. The sum of all fruit obtained from the six harvests was assessed using ANOVA with mean separation by LSD upon a significant F ($P > 0.05$ LSD).

Most marketable fruit was harvested from plants treated with 13.5 oz HGW86 + 6.4 oz Brigade, the grower standard (Actara (3 sprays) followed by 6 applications of Vydate), and the Vydate/Voliam Flexi rotation (Table 2), though not significantly different from the 20.5 or 27 oz rate of HGW86, or GF-2544. No significant difference from the untreated control was seen with the two lower rates of HGW86 alone or either tankmix of Provado and Intrepid. The grower standard and the two treatments of HGW86 tankmixed with either Brigade or Vydate resulted in the least fallen fruit, though not significantly different from all other treatments with the exception of the low rate of HGW86 or either tankmix of Provado and Intrepid which were also not different from the untreated control. No phytotoxicity was observed in any of the treatments.

Table 1.

Treatment/ formulation	Spray Order	Rate amt product/acre	Application date (gpa)								
			13 Nov (40)	19 Nov (60)	27 Nov (60)	30 Nov (40)	2 Dec (40)	7 Dec (40)	10 Dec (40)	14 Dec (40)	17 Dec (60)
Untreated											
Actara 25 WG	sequential	3.67 oz	x	x	x						
Vydate 3.77 C-LV		4 pt				x	x	x	x	x	x
HGW86 10 SE		10.1 oz	x	x	x	x	x	x	x	x	x
HGW86 10 SE		13.5 oz	x	x	x	x	x	x	x	x	x
HGW86 10 SE		20.5 oz	x	x	x	x	x	x	x	x	x
HGW86 10 SE		27 oz	x	x	x	x	x	x	x	x	x
HGW86 10 SE	tank mix	13.5 oz	x	x	x	x	x	x	x	x	x
Induce		0.50%	x	x	x	x	x	x	x	x	x
HGW86 10 SE	tank mix	13.5 oz	x	x	x	x	x	x	x	x	x
Brigade 2 EC		6.4 oz	x	x	x	x	x	x	x	x	x
Voliam Flexi	rotation	4.67 oz	x		x		x		x		
Vydate 3.77 C-LV		4 pt		x		x		x		x	x
GF-2544		24 oz	x	x	x	x	x	x	x	x	x
Intrepid 2F	tank mix	8 oz	x	x	x	x	x	x	x	x	x
Provado 1.6 F		5.32 oz	x	x	x	x	x	x	x	x	x
Intrepid 2F	tank mix	4 oz	x	x	x	x	x	x	x	x	x
Provado 1.6 F		2.66 oz	x	x	x	x	x	x	x	x	x

Table 2.

Treatment/ formulation	Spray Order	Rate amt product/acre	Yield from 6 harvests	
			Marketable Fruit (No.)	Damaged Fruit (No.)
Untreated		NA	244.4e	682.1a
Actara 25 WG	Sequential	3.67 oz	553.0a	416.8e
Vydate 3.77 C-LV		4 pt		
HGW86 10 SE		10.1 oz	294.3de	582.9ab
HGW86 10 SE		13.5 oz	379.8bcde	530.2bcde
HGW86 10 SE		20.5 oz	480.6ab	468.7bcde
HGW86 10 SE		27 oz	457.20abc	443.3cde
HGW86 10 SE	tank mix	13.5 oz	428.21abcd	423.5e
Induce		0.50%		
HGW86 10 SE	tank mix	13.5 oz	561.7a	413.8e
Brigade 2 EC		6.4 oz		
Voliam Flexi	rotation	4.67 oz	531.9a	520.1bcde
Vydate 3.77 C-LV		4 pt		
GF-2544		24 oz	458.9abc	431.6de
Intrepid 2 F	tank mix	8 oz	320.4cde	560.4abcd
Provado 1.6 F		5.32 oz		
Intrepid 2 F	tank mix	4 oz	378.5bcde	573.5abc
Provado 1.6 F		2.66 oz		

Numbers within a column followed by the same letter are not significantly different ($P > 0.05$ LSD).