

(E45)**PEPPER:** *Capsicum annuum* L., 'Tormenta'**INSECTICIDAL CONTROL OF PEPPER WEEVIL ON JALAPENO PEPPER, 2011****Philip A. Stansly**

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Pepper weevil: *Anthonomus eugenii* Cano

Pepper weevil is a serious pest of pepper in the southern parts of the US, destroying fruit through adult feeding, oviposition but especially larval feeding. Insecticidal control is difficult because all life stages but the adult are contained within the fruit. Greenhouse-raised pepper seedlings were transplanted on 28 Mar at the Southwest Florida Research and Education Center in Immokalee FL. Transplants were set 12 inches apart in four single row raised beds on 6 ft centers 400 ft in length, and covered with whiteface polyethylene film mulch. An RCB design was used with 4 replicates and 7 treatments (Table 1), each plot containing 12 plants with a 24 foot space left open between plots as a buffer. Granular 10-3-10 NPK fertilizer was mixed in the bed before planting at a rate of 50 lbs/N per acre, with the remaining 75% N requirement applied as liquid 7-0-7 delivered through drip irrigation over the growing season. Maintenance sprays included Kocide (1.0 lbs/acre) and Maneb (1.5 qt/acre) applied weekly as a tank mix to control foliar disease, in particular bacterial spot. Oberon 2SC (spiromesifen, 8.5 oz/acre) was applied on 9 Jun to control broadmite. All applications were made with a high clearance sprayer operating at 180 psi at 2.3 mph with spray delivered through two vertical booms equipped with yellow Albuz® hollow cone nozzles (Table 1). Fallen fruit was held on the bed for counting by a strip of wood lathing secured to each edge. All fruit 2.0 inches or more in length were harvested and all fallen fruit collected on 19, 25 May and 1, 8, 15, 22 Jun. Visibly damaged harvested fruit were separated and counted. Twenty five of the remaining fruit from each plot were then cut longitudinally and inspected for pepper weevil larvae/pupae and feeding damage. The number of weevil-damaged fruit was estimated by multiplying the proportion of damaged fruit in this sub-sample by the total number of fruit without visible damage. Total culls was then estimated as the sum of fallen, visibly damaged and internally damaged fruit. The percentage of culls to total fruit from the six collection dates was assessed using ANOVA with mean separation by LSD upon a significant F ($P > 0.05$ LSD). Weevil pressure was extremely high in spite of twice-a-week sprays throughout the trial. All treatments significantly increased the percentage of marketable fruit when compared with the untreated control. Most marketable fruit was seen with the Vydate/Actara rotation although not significantly more than with rotations substituting Belay or Leverage for Actara or with the addition of Requiem. In contrast, even the 5 oz/ac rate of Scorpion did not provide the same level of control as Actara. No phytotoxic effects were observed. This research was supported by industry gift(s) of pesticide and/or research funding.

Table 1.

Treatment/ Formulation	Rate (Product/acre)	4 May (40)	9 May (40)	12 May (40)	18 May (40)	23 May (40)	27 May (60)	2 Jun (60)	6 Jun (60)	9 Jun (60)	13 Jun (60)	16 Jun (60)	20 Jun (60)
Untreated check													
Vydate 2L LV	4 pts	x		x		x		x		x		x	
Actara 25 WG	3.67 oz		x		x		x		x		x		x
Vydate 2L	4 pts	x		x		x		x		x		x	
Actara 25 WG	3.67 oz		x		x		x		x		x		x
Requiem 25 EC	4 pts	x	x	x	x	x	x	x	x	x	x	x	x
Vydate 2L	4 pts	x		x		x		x		x		x	
Belay 2.13 SC	6.0 oz		x		x		x		x		x		x
Vydate 2L	4 pts	x		x		x		x		x		x	
Scorpion 35 SL	3.0 oz		x		x		x		x		x		x
Vydate 2L	4 pts	x		x		x		x		x		x	
Scorpion 35 SL	5.0 oz		x		x		x		x		x		x
Vydate 2L	4 pts	x		x		x		x		x		x	
Leverage 360	4.1 oz		x		x		x		x		x		x
Induce	0.25%		x		x		x		x		x		x

Table 2.

Treatment/ Formulation	Rate (Product/acre)	Marketable fruit per plant (%)
Untreated check		10.7d
Vydate 2 L	4 pts	26.8a
Actara 25 WG	3.67 oz	
Vydate 2 L	4 pts	24.7abc
Actara 25 WG	3.67 oz	
Requiem 25 EC	4 pts	
Vydate 2 L	4 pts	25.4ab
Belay 2.13 SC	6.0 oz	
Vydate -2 L	4 pts	18.1c
Scorpion 35 SL	3.0 oz	
Vydate 2 L	4 pts	19.4bc
Scorpion 35 SL	5.0 oz	
Vydate - 2 L	4 pts	21.2abc
Leverage 360	4.1 oz	
Induce	0.25	

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