(E55)

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

CONTROL OF PEPPER WEEVILS IN PEPPER WITH VARIOUS INSECTICIDES, 2004

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Pepper weevil: *Anthonomus eugenii* Cano

Pepper weevil is the key pest of all pepper varieties grown in south Florida as well as Texas, New Mexico and California. Insecticidal control is problematic because of the inaccessibility of all immature stages within the fruit. For this trial, greenhouse-raised pepper plants were transplanted on 31 Mar at 10-inch spacing in single rows on four sets of three beds 240 ft in length and covered with polyethylene film mulch. Water and fertilizer were provided through Netafim drip tape with 12-inch emitter spacing. The center bed in each set of three was left untreated to serve as the untreated control and a source of weevils. Each treated bed was divided into plots 30 ft long to which treatments were assigned in an RCB design with four replications. Applications were made using a high-clearance sprayer operating at 200 psi. Spray was delivered through two vertical booms, each fitted with two ceramic yellow Albuz hollow-cone nozzles for a total of 44 gpa until 25 May when one nozzle was added to each boom for an output of 66 gpa. Fallen fruit was collected weekly under 27 plants per plot by fixing wooden lathing to the beds to prevent fruit from rolling to the ground. All marketable fruit was harvested 8 Jun. Weight of marketable fruit was determined by dissecting a random sample of 50 harvested fruit per plot if available, to obtain a percentage infested with weevils and adjusting the marketable weight accordingly. Data were subjected to ANOVA and means were separated using LSD ($P \leq 0.05$).

Significant reduction of fallen peppers was observed for all treatments except 2 through 5 and 9, all treatments including Dimilin, Assail and Provado (Table 2). Fewest fallen fruit were observed from plants treated with 2% Ultrafine oil plus either Vydate or Actara, although differences with the remaining treatments were not significant. Fewest infested fruit were observed from plants treated with 2% PureSpray Green Oil plus either Vydate or Actara, although differences with the other treatments except for the control were not significant. Most marketable fruit were harvested from plants treated with 0.5% PureSpray Green Oil plus either Vydate or Actara, although differences were not significant compared to plants treated with Novaluron and Vydate, Assail 70WP + 0.5% oil and Vydate, Cryolite at 12 lb + Actara and Vydate, Calypso and Vydate, or any rate of oil mixed with Actara or Vydate. Thus, the addition of PureSpray Green Oil to the standard Actara/Vydate alternation seemed to provide additional control of pepper weevil, and it appeared that Novaluron could serve as an alternative to this standard alternation.

No.	Treatment/formulation	Rate amt product/acre	Application date(s)	Fallen pepper[a] 3 Jun	% infested fruit[b]	Marketable fruit (lb)[c]
1.	Novaluron 0.83EC	12 fl oz	28 Apr, 11, 25 May	16.3cd	1.5 bc	33.0 abc
	Vydate 2L	3 pt	4, 18 May, 1 Jun			
2.	Dimilin 25WP	6 oz	28 Apr, 11, 25 May	39.3abcd	10.5 b	24.1 d
	Vydate 2L	3 pt	4, 18 May, 1 Jun			
3.	TD-2472-01 30WDG	4 oz	11, 25 May	34.5abcd	8.0 bc	26.7 bcd
	Vydate 2L	3 pt	4, 18 May, 1 Jun			
4.	Assail 70WP	1.2 oz	11, 25 May	50.0ab	8.5 bc	28.7 abcd
	Vydate 2L	3pt	4, 18 May, 1 Jun			
5.	Assail 70WP	1.7 oz	11, 25 May	30.5abcd	8.5 bc	26.1 cd
	Vydate 2L	3 pt	4, 18 May, 1 Jun			
6.	Assail 70WP + PureSpray Green Oil	1.2 oz + 1.0 % v/v	11, 25 May	25.5bcd	2.0 bc	33.3 abc
	Vydate 2L	3 pt	4, 18 May, 1 Jun			
7.	Prokil Cryolite 96	8 lb	21, 28 Apr	13.8 cd	2.5 bc	34.0 ab
	Prokil Cryolite 96 + Vydate 2L	8 lb + 3 pt	4 May			
	Actara 25WG	4 oz	11, 25 May			
	Vydate 2L	3 pt	18 May, 1 Jun			
8.	Prokil Cryolite 96	12 lb	28 Apr	11.3 cd	5.5 bc	33.4 abc
	Prokil Cryolite 96 + Vydate 2L	12 lb + 3 pt	4 May			
	Actara 25WG	4 oz	11, 25 May			
	Vydate 2L	3 pt	18 May, 1 Jun			
9.	Provado 1.6F	7 oz	11, 25 May	45.5 abc	7.5 bc	24.7 d
	Vydate 2L	3 pt	4, 18 May, 1 Jun			
10.	Calypso 2EC	4.5 oz	11, 25 May	12.8 cd	6.0 bc	30.1 abcd
	Vydate 2L	3 pt	4, 18 May, 1 Jun			
11.	PureSpray Green Oil	0.25% v/v	14, 21, 28 Apr	13.0 cd	3.0 bc	30.0 abcd
	PureSpray Green Oil + Vydate 2L	0.25% v/v +3 pt	4, 18 May, 1 Jun			
	PureSpray Green Oil + Actara 25WG	0.25% v/v + 4 oz	11, 25 May			
12.	PureSpray Green Oil	0.5% v/v	14, 21, 28 Apr	13.8 cd	3.0 bc	34.5 a
	PureSpray Green Oil + Vydate 2L	0.5% v/v + 3 pt	4, 18 May, 1 Jun			
	PureSpray Green Oil +Actara 25WG	0.5 % v/v +4 oz	11, 25 May			
13.	PureSpray Green Oil	1.0% v/v	14, 21, 28 Apr	10.8 cd	2.0 bc	32.2 abc
	PureSpray Green Oil + Vydate 2L	1.0% v/v + 3 pt	4, 18 May, 1 Jun			
	PureSpray Green Oil + Actara	1.0% v/v + 4 oz	11, 25 May			
14.	PureSpray Green Oil	2.0% v/v	14, 21, 28 Apr	21.0 bcd	0.0 c	30.6 abcd
	PureSpray Green Oil + Vydate 2L	2.0% v/v + 3 pt	4, 18 May, 1 Jun			
	PureSpray Green Oil + Actara 25WG	2.0% v/v + 4 oz	11, 25 May			
15.	Sunspray Ultrafine Oil	2.0% v/v	14, 21, 28 Apr	7.5 d	1.0 c	32.9 abc
	Sunspray Ultrafine Oil + Vydate 2L	2.0% v/v + 3 pt	4, 18 May, 1 Jun			
	PureSpray Green Oil + Actara 25 WG	2.0% v/v + 4 oz	11, 25 May			
16.	Actara 25 WG	4 oz	11, 25 May	10.8 cd	7.0 bc	33.5 abc
	Vydate 2L	3 pt	4, 18 May, 1 Jun			
17.	Untreated check	--	--	57.3 a	26.5 a	15.9 e

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

[a]Fallen peppers from 27 plants per plot, also checked on 21 and 28 Jun with no significant difference between treatments.

[b]Percentage of harvested peppers infested with weevil larva.

[c]Mean of total weight of fruit harvested from 27 plants minus the infested fruit.