

Performance of Insecticides on Brown Marmorated Stink Bug on Vegetables

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The highest labeled rates of vegetable insecticides were evaluated in 2011 and 2012 using green bean dip bioassays on brown marmorated stink bug nymphs and adults, as well as randomized complete block small plot field efficacy trials conducted on bell peppers at Kentland Research Farm near Blacksburg, VA. For the latter, 4 weekly applications were made using a backpack sprayer, and % stink bug injury to pepper fruit was assessed on 3 post-spray harvest dates in Aug. Insecticides were ranked based on their performance across all experiments.

Product (active ingredient)	Rate oz/Acre	% mortality in bean dip bioassays*		% control in pepper field tests**		Avg. % control from all four experiments
		Nymphs	Adults	2011	2012	
Scorpion 3.24 (dinotefuran)	7	76.7	90.0	85.4	67.0	79.8
Permethrin 3.2EC (permethrin)	8	97.5	98.8	60.6	58.4	78.8
Baythroid XL (β -Cyfluthrin)	2.8	92.5	88.2	52.8	67.8	75.3
Endigo ZC (λ -cyhalothrin + thiamethoxam)	4.5	75.0	98.7	49.2	78.3	75.3
Bifenture 2E (bifenthrin)	6.4	100.0	81.9	56.3	60.3	74.6
Belay (clothianidin)	4	75.0	67.5	66.7	78.3	71.9
Lannate LV (methomyl)	40	66.7	75.3	79.8	62.2	71.0
Leverage 360 (imidacloprid + β -Cyfluthrin)	2.8 ^a	97.3	74.5	49.9	60.2	70.5
Hero EC (ζ -cypermethrin)	10.3	91.7	50.0	72.8	66.6	70.3
Brigadier (imidacloprid + bifenthrin)	9.85	76.7	70.0	69.9	62.8	69.9
Venom 70 (dinotefuran)	4	100.0	80.0	46.0	52.8	69.7
MustangMAX (ζ -cypermethrin)	4	100.0	35.0	72.8	69.2	69.2
Acephate 97UP (acephate)	16	100.0	51.8	70.4	52.8	68.7
Trebon (etofenprox)	8	100.0	100.0	36.5	34.9	67.9
Vydate L (oxamyl)	32-48	85.0	47.0	79.7	47.1	64.7
Assail 30SG (acetamiprid)	4	90.0	32.8	70.4	NA	64.4
Warrior II (λ -cyhalothrin)	1.9-2.5	100.0	72.8	38.0	42.5	63.3
Danitol (fenpropathrin)	16	93.3	42.5	60.3	55.6	62.9
Actara 50WG (thiamethoxam)	5.5	66.7	81.0	60.3	42.5	62.6
Lambda-cy (λ -cyhalothrin)	3.84	86.0	32.3	62.0	NA	60.1
Asana XL (esfenvalerate)	9	35.0	27.5	76.4	NA	46.3
Beleaf 50SG (flonicamid)	2.8	28.5	17.5	27.2	71.8	36.3

* Mortality refers to the percentage of dead + moribund individuals after 72 hr of exposure in ≥ 3 bioassays.

** Based on % reduction in stink bug injury to pepper fruit from three harvests within 7 days of spraying.

^a Not the highest labeled rate for all vegetables.