

Evaluation of Avaunt for Sweet Potato Insect Control

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Methods: Plots were planted to the sweet potato variety Beauregard, on a Commerce silt loam soil on 17 Jun. Plot size was four rows (40 inch centers) by 20 feet. Treatments were replicated four times in a randomized complete block design. Treatments were applied on 22 Aug and 6 Sep with a tractor mounted boom and CO₂ charged spray system calibrated to deliver 10 gpa through Teejet 80015 flat fan nozzles (2/row). Treatment efficacy was determined by sampling a center row of each plots with a 15 in sweep net (10 sweeps) on 24 and 26 Aug, and 9 Sep. One center row of each plot was harvested on 12 Oct. The yield from each plot was partitioned into grades, # 1s, canners, and jumbos, and the weights for each grade were recorded. A random selection of #1's from each plot was examined for damage from soil insects on 27 Oct.

Comments: There were no significant differences among treatments for numbers of banded cucumber beetle. There were no significant differences among treatments for # 1's, canners, marketable yield, early season root damage, mid root season damage, late root season damage, or total root damage. Plots treated with Avaunt (0.065 and 0.11 lb AI/acre) or Pencap M + Capture had significantly fewer loopers compared to plots treated with Imidan or Assail or the non-treated plots. Plots treated with Avaunt (0.065 and 0.11 lb AI/acre) had significantly fewer Armyworms compared to plots treated with Imidan, Pencap M + Capture, or Assail or the non-treated plots.

Table 1. Efficacy against loopers, armyworms, and banded cucumber beetle.

Treatment/form.	Rate/acre lb/AI	Means Across Sample Dates, No./10 Sweeps		
		Loopers	Armyworms	Banded Cucumber Beetle
Avaunt 30WG	0.065	2.5b	1.3c	0.5
Avaunt 30WG	0.11	1.8b	1.5c	1.0
Imidan 2.5EC	0.93	14.5a	15.5ab	0.5
Assail 30SG	0.026	14.3a	21.5a	0.5
Pencap M 2FM + Capture 2EC	0.5 + 0.05	3.0b	21.3a	0.3
Non-Treated	-	11.5a	14.5b	1.8
<i>P>F</i>		<0.01	<0.01	0.09

Means within columns followed by a common letter are not significantly different (FPLSD, P=0.05).

Table 2. Impact on sweet potato yield.

Treatment/form.	Rate/acre lb/AI	# 1's bu/acre	Canners bu/acre	Marketable Yield bu/acre
Avaunt 30WG	0.11	74.3	125.3	199.6
Imidan 2.5EC	0.93	179.6	90.0	269.4
Assail 30SG	0.026	184.3	147.3	331.5
Pencap M 2FM + Capture 2EC	0.5 + 0.05	155.8	142.6	298.2
Non-Treated	-	100.8	99.8	200.5
<i>P>F</i>		0.38	0.58	0.35

Means within columns followed by a common letter are not significantly different (FPLSD, P=0.05).

Table 3. Impact on root injury from soil insects.

Treatment/form.	Rate/acre	Damage/10 Roots			Total
	lb/AI	Early Season	Mid Season	Late Season	
Avaunt 30WG	0.065	20.5	35.0	0.0	55.5
Avaunt 30WG	0.11	16.3	35.1	0.8	52.2
Imidan 2.5EC	0.93	31.0	35.4	0.8	67.1
Assail 30SG	0.026	20.0	47.1	0.8	67.8
Pencap M 2FM +	0.5 +	28.3	30.1	0.0	58.3
Capture 2EC	0.05				
Non-Treated	-	15.0	26.1	0.0	41.1
<i>P>F</i>		0.56	0.58	0.77	0.44

Means within columns followed by a common letter are not significantly different (FPLSD, P=0.05).