

Evaluation of Assail 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 17 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 19 and 22 Aug, and 9 Sep. One center row of each plot was harvested on 12 Oct. The yield from each plot was partitioned into grades, # 1's, 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 loopers, armyworms, spotted cucumber beetles, or banded cucumber beetle. There were no significant differences among treatments for # 1's, canners, marketable yield, early season root damage, mid season root damage, late season root damage, or total root damage.

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

Treatment/form.	Rate/acre	Means Across Sample Dates, No./10 Sweeps			
	lb/AI	Loopers	Armyworms	Spotted Cucumber Beetle	Banded Cucumber Beetle
Assail 30SG	0.028	3.4	10.3	0.1	0.3
Assail 30SG	0.049	2.3	7.5	0.0	0.4
Assail 30SG	0.075	3.1	8.8	0.0	0.3
Imidan 2.5EC	1.0	3.1	8.9	0.1	0.5
Non-Treated	-	3.9	7.2	0.1	0.6
<i>P>F</i>		0.06	0.43	0.72	0.94

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	# 1's	Canners	Marketable Yield
	lb/AI	bu/acre	bu/acre	bu/acre
Assail 30SG	0.028	130.2	114.2	244.1
Assail 30SG	0.049	117.7	53.5	171.1
Assail 30SG	0.075	133.8	135.6	269.1
Imidan 2.5EC	1.0	185.5	124.3	309.5
Non-Treated	-	116.5	113.0	229.3
<i>P>F</i>		0.34	0.37	0.30

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			
	lb/AI	Early Season	Mid Season	Late Season	Total
Assail 30SG	0.028	23.2	33.2	0.2	56.7
Assail 30SG	0.049	16.2	22.7	0.0	38.9
Assail 30SG	0.075	23.4	34.0	0.0	57.4
Imidan 2.5EC	1.0	22.5	51.4	0.0	73.9
Non-Treated	-	10.5	31.4	0.0	41.9
<i>P>F</i>		0.50	0.35	0.51	0.21

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