

Section IV.
Potato Pests

MANAGEMENT OF POTATO APHID VECTORS USING PRE-PLANT INSECTICIDES

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The experiment was conducted at the University of Idaho, Kimberly Research and Extension Center. The experiment consisted of 7 pre-planting treatments (6 in furrow at planting and 1 seed treatment) and two untreated controls (Treatment 2 consisted of an untreated control clean of Colorado potato beetle) replicated four times in a randomized complete block design. Individual treatment plots were four rows (36 inch row spacing) wide by 25 ft long with 5 ft alleyways separating the plots (see Tables 1 for rates and application methods for each treatment). The experiment was planted on May 7 using hand-cut Russet Burbank potato seeds G2.

Green peach aphids (GPA) and potato aphids (PA) from naturally occurring populations were counted by non-destructively sampling five plants in the center two rows of each plot for a total of 20 plants per treatment. Aphid counts were taken at weekly intervals for nine weeks from June 24 – Aug 18.

The number of aphids is presented as average per plot (5 plants per plot). All plots were harvested on September 17, 2009 and yield and grade was evaluated in Aberdeen following the USDA standards for potatoes (USDA #1, USDA#2, discards, and total yield in pounds). Data

were analyzed using analysis of variance and the treatment means were separated using LSD ($\alpha = 0.05$). Statistical analyses were performed in Statistix using Proc GLM (version 9, Tallahassee, Florida). Results are presented in the tables below.

Table 1. Treatment list and rates

Treatment	Product	Formulation	Rate unit (IFAP= fl.oz./A ST=fl.oz./cwt)	Timing
1	Untreated Control			
2	Aphid untreated			
3	Temik 15G	GR	20 lb/A	IFAP
4	Admire Pro Systemic pro	SC	7	IFAP
5	Admire Pro Systemic pro	SC	8.7	IFAP
6	Admire Pro Systemic pro + Temik 15G	SC +GR	7 + 20 lb/A	IFAP
7	Belay	F	12.0	IFAP
8	Belay	F	0.6	ST
9	Platinum	F	8.0	IFAP

Table 2. Number of GPA and PA / 5 plants.

Treatment	6/24	6/30	7/7	7/13	7/23	7/28	8/4	8/11	8/18	BA	AA	Total
1 Untreated Control	0.0	0.0	1.25a	0.25a	0.5ab	0.25ab	0.25a	0b	0.0	6	4	10
2 Aphid untreated	0.0	0.0	0.25a	0.75a	1.25a	0.25ab	0.75a	0.75a	0.0	4	12	16
3 Temik 15G	0.0	0.0	0.25a	0.5a	0.5ab	0.25ab	0.75a	0b	0.0	3	6	9
4 Admire Pro	0.0	0.0	0.0	0.25a	0.5ab	0.5ab	0a	0b	0.0	1	4	5
5 Admire Pro	0.0	0.0	0.0	0a	0.25b	0.5	0a	0b	0.0	0	3	3
6 Admire Pro Temik 15G	0.0	0.0	0.0	0.5a	0.5ab	0b	0a	0b	0.0	2	2	4
7 Belay	0.0	0.0	0.0	0.75a	0.5ab	0.75a	0.5a	0.25ab	0.0	3	8	11
8 Belay	0.0	0.0	0.75a	1a	0.5ab	0b	0.25a	0.25ab	0.0	7	4	11
9 Platinum	0.0	0.0	0.0	0.5a	0.75ab	0.5ab	0.5a	0b	0.0	2	7	9

*Counts are presented as average number of green peach aphids per plot (5 plants per plot). Treatment means were separated using LSD. Treatment means with the same letters are not significantly different from each other ($\alpha = 0.05$). BA= Cumulative number of aphids before insecticide application. AA= Cumulative number of aphids after insecticide application.