Section VII
Foliage and Seed Insects

COLORADO POTATO BEETLE CONTROL WITH FOLIAR SPRAYS, 2001

R. L. Stoltz and N. A. Matteson
University of Idaho, Twin Falls R & E Center
P. O. Box 1827, Twin Falls, ID 83303-1827
208/736-3600
bstoltz@uidaho.edu,nmatteson@uidaho.edu

Experimental plots were established on the UI Research and Extension Center, Kimberly, Idaho. Potatoes were planted on 26 Apr and irrigated by solid set sprinkler. The soil type was Portneuf silt loam. Nine treatments and one untreated check plot were replicated four times in a RCB design. Individual treatment plots were 4 rows (36 inch row spacing) wide by 25 ft long with 5 ft alleyways separating the plots. Treatment sprays were broadcast applied using a CO_2 pressurized backpack sprayer (30 psi) and delivering 20 gal finished S per acre (four, 10X hollow cone nozzles). On a weekly basis egg masses, small larvae (1-2 instar), large larvae (3-4 instar) and adult beetles were counted, and percent defoliation estimates were made from whole plant inspections of the center 5 hills of the middle 2 plot rows. On 29 Jun a pre-count of all Colorado potato beetle (CPB) life stages was taken and all treatment applications were made 29 Jun. Data were analyzed using ANOVA and Studentized-Tukey's multiple means comparison.

All treatments reduced larval populations significantly when compared to the untreated check. Adult and egg mass numbers were small and variable and were not affected by the foliar sprays. There were no differences between the treatments. At the end of the sampling period, the untreated controls had received 65% defoliation while all treatments remained below 5%.

Treatment/ formulation	Rate g AI/ha	Application method	No. CPB large larvae/10 plants			
			29 Jun	2 Jul	9 Jul	16 Jul
Untreated Check	---	---	25.50 a	79.00 b	158.25 b	159.00 b
Actara 25% WDG	26.0	S	40.25 a	1.75 a	3.00 a	27.50 a
Actara 25% WDG	53.0	S	37.75 a	0.75 a	0.00 a	14.00 a
Provado 1.6F	53.0	S	40.00 a	0.00 a	0.00 a	4.50 a
Thiacloprid 480SC	56.0	S	39.50 a	0.00 a	0.00 a	9.00 a
Warrior 1EC	22.4	S	36.75 a	0.50 a	1.50 a	1.50 a
Warrior 1EC	28.0	S	36.00 a	0.50 a	0.50 a	3.00 a
Warrior 1EC	33.6	S	41.25 a	0.50 a	0.00 a	0.00 a
Asana XL 0.66E	33.6	S	40.50 a	7.50 a	24.75 a	29.25 a
Baythroid 2E	33.6	S	33.25 a	2.50 a	5.75 a	10.00 a

Means within a column with the same letter are not significantly different (P = 0.05; Studentized-Tukey's).
S = Broadcast spray.

Treatment/ formulation	Rate g AI/ha	Application method	No. CPB small larvae/10 plants			
			29 Jun	2 Jul	9 Jul	16 Jul
Untreated Check	---	---	42.25 a	206.80 b	136.0 b	32.75 b
Actara 25% WDG	26.0	S	56.00 a	3.50 a	12.75 a	1.25 a
Actara 25% WDG	53.0	S	58.50 a	7.25 a	8.50 a	3.75 a
Provado 1.6F	53.0	S	44.25 a	0.75 a	0.50 a	3.25 a
Thiacloprid 480SC	56.0	S	41.75 a	0.00 a	0.00 a	4.50 a
Warrior 1EC	22.4	S	73.00 a	0.25 a	0.50 a	3.25 a
Warrior 1EC	28.0	S	40.75 a	0.75 a	0.00 a	0.00 a
Warrior 1EC	33.6	S	42.25 a	0.25 a	0.00 a	0.00 a
Asana XL 0.66E	33.6	S	100.00 a	6.00 a	16.00 a	8.75 a
Baythroid 2E	33.6	S	75.00 a	0.75 a	2.50 a	6.25 a

Means within a column with the same letter are not significantly different (P = 0.05; Studentized-Tukey's).
S = Broadcast spray.

Treatment/ formulation	Rate g AI/ha	Application method	% Defoliation		
			2 Jul	9 Jul	16 Jul
Untreated Check	---	---	5.25 b	51.25 b	65.00 b
Actara 25% WDG	26.0	S	1.50 a	0.25 a	2.25 a
Actara 25% WDG	53.0	S	1.75 a	0.25 a	1.75 a
Provado 1.6F	53.0	S	1.00 a	0.25 a	1.25 a
Thiacloprid 480SC	56.0	S	1.50 a	0.50 a	1.00 a
Warrior 1EC	22.4	S	1.50 a	0.25 a	0.25 a
Warrior 1EC	28.0	S	1.75 a	0.25 a	4.25 a
Warrior 1EC	33.6	S	1.25 a	0.50 a	0.50 a
Asana XL 0.66E	33.6	S	1.50 a	2.00 a	4.50 a
Baythroid 2E	33.6	S	2.00 a	1.00 a	0.25 a

Means within a column with the same letter are not significantly different (P = 0.05; Studentized-Tukey's).
S = Broadcast spray.