

Section VII.
Forage & Seed Insects

COLORADO POTATO BEETLE CONTROL WITH ADMIRE (IMIDACLOPRID), 1995

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Experimental plots were established on the UI Research and Extension Center, Kimberly, ID. Potatoes were planted 28 Apr in Portneuf silt loam soil. Four placement methods, and one untreated check plot were replicated four times in a randomized complete block design. Individual treatment plots were 4 rows (36 inch row spacing) wide by 25 ft long with 5 ft alleyways separating the plots. All four placement application methods of the emulsifiable concentrate 240 FS were tested at a single rate of 0.25 lb AI per acre. The first placement (Shank at marking) was applied at the time of row marking (24 Apr), five days prior to planting, shanking the liquid approximately three inches deep on either side of the anticipated seed piece location. The second method was an in-furrow spray application over the seed piece (In-furrow AP) on 28 Apr. The third method was a six-inch banded spray over the closed row at planting and prior to bedding (Band AP). The fourth application method was a shank application on 4 May approximately three inches on either side of and two to three inches below the seed piece (Shank PP). Due to weather constraints, the Shank PP treatment was made on 4 May. 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 using whole plant inspections of the center five hills of the center two plot rows. Counts of green peach aphids were made on 12, 19 and 27 Jul, 4 and 9 Aug by non-destructively examining 10 leaves from each plot. Plots were harvested (25 row ft) on 27 Sep for yield and grade. Data were analyzed using ANOVA and Student-Newman-Keuls multiple means comparison.

All four placement methods provided season-long control of all stages of Colorado potato beetle and control of green peach aphid through 4 Aug. Defoliation occurred early in the season due to unusually large Colorado potato beetle populations. Complete defoliation of the untreated check occurred by 1 Aug. Yields were lower than normal due to an early season frost that delayed plant growth for more than two wk. As a result there were few large grade #1 potatoes and an unusually high ratio of culls (less than 4 oz tubers). Another factor in the yield quantity and grade separation is the management of the field for optimizing Colorado potato beetle populations and not specifically for optimizing potato production. As such, these results may not be representative of commercial yields.

Treatment	Rate lb AI/acre	Placement method	Green Peach Aphids/10 leaves					
			7/5	7/12	7/19	7/27	8/4	8/9
Untreated Check	----	----	---	3.3 a	2.0 a	4.3 b	2.0 a	0.0
Admire 240 FS	0.25	Shank AM	---	0.5 a	0.3 a	0.5 a	1.3 a	0.0
Admire 240 FS	0.25	In Furrow AP	---	0.3 a	0.0 a	0.8 a	0.5 a	0.0
Admire 240 FS	0.25	Band AP	---	0.0 a	0.0 a	0.0 a	0.5 a	0.0
Admire 240 FS	0.25	Shank AP	---	0.0 a	0.3 a	0.0 a	0.0 a	0.0

Treatment	Rate lb AI/acre	Placement method	% Defoliation			
			7/5	7/12	7/19	7/27
Untreated Check	----	----	0.0	47.5 b	67.5 b	66.3 b
Admire 240 FS	0.25	Shank AM	0.0	0.0 a	0.0 a	0.0 a
Admire 240 FS	0.25	In Furrow AP	0.0	0.0 a	0.0 a	0.0 a
Admire 240 FS	0.25	Band AP	0.0	0.0 a	0.0 a	0.0 a
Admire 240 FS	0.25	Shank AP	0.0	0.0 a	0.0 a	0.0 a

Treatment	Rate lb AI/acre	Placement method	Small Larvae			
			7/5	7/12	7/19	7/27
Untreated Check	----	----	43.8 b	455.3 b	156.0 b	116.8 b
Admire 240 FS	0.25	Shank AM	6.3 a	0.5 a	19.8 a	1.5 a
Admire 240 FS	0.25	In Furrow AP	1.5 a	10.3 a	9.5 a	0.3 a
Admire 240 FS	0.25	Band AP	0.8 a	9.5 a	0.0 a	1.5 a
Admire 240 FS	0.25	Shank AP	0.0 a	0.0 a	0.0 a	0.0 a

AM = At Marking; AP = At Planting.

Means within a column with the same letter are not significantly different ($P = 0.05$, Student-Newman-Keuls).

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