

Insect Management in Potatoes - 2003: ' Superior' potatoes were planted at the University of Delaware Research and Education Center located in Georgetown, DE on March 27. Plots consisted of two 25 ft-long rows on 3-ft centers. Each treatment was replicated four times and arranged in a RCB design. At-planting treatments were applied with a hand held one nozzle backpack sprayer delivering 9.5 gpa@ 40 psi. Applications of foliar insecticides were broadcast applied when threshold levels of CPB were detected in each treatment on May 28 in all treatments, on June 4 and June 12 for the Aza-direct plot and on June 12 for the Spintor plot. A CO₂ pressurized backpack sprayer using 3 nozzles per row (2 drop nozzles and one over the row) delivered 38 gpa at 40 psi. Data were taken weekly from plant emergence on April 25 through June 23 from both rows of each plot and included the following: the number of CPB adults, egg masses, small and large larvae/5 randomly selected stems in each plot, and the number of potato leafhopper adults and nymphs per 5 sweeps within each plot. An evaluation of the number of ECB damaged stems/ 10 randomly selected stems per plot and a visual defoliation ranking (1= 1-20%, 2 = 21-30%, 3= 31-50%, 4 = 51-80% and 5 = 81-100%) was completed on June 24. The center row of each plot was harvested on July 10 and all A- grade tubers were weighed. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Colorado potato beetle (CPB) and potato leafhopper (PLH) pressure was light to moderate. European corn pressure was moderate. All treatments provided significantly better CPB large larvae control compared to the untreated check. All treatments provided significantly better CPB small larvae control except Spintor and Aza-direct on June 10 and Aza-direct on June 16. All treatments provided a significantly lower percentage of defoliation compared to the untreated check. Actara, Spintor and Aza-direct provided better ECB control compared to the untreated check. No differences were observed between treatments for yield and PLH populations. No phytotoxicity was observed.

1. Colorado Potato Beetle (CPB) Adult Counts

Treatment	Rate/A	Mean Number CPB Adults per 5 Plants			
		May 27 Pre-trt	June 3	June 10	June 16
Admire 2F	16 oz	1.25a	0.25a	0.50a	1.00a
Platinum 2SC	6.5 oz	0.75a	0.00a	0.00a	0.25a
Provado 1.6F	3.75 oz	1.00a	1.00a	0.50a	0.50a
Leverage	3.75 oz	1.50a	0.00a	0.50a	0.00a
Actara 25WG	1.5 oz	0.50a	0.25a	0.25a	0.25a
Spintor	4 oz	1.00a	0.50a	0.50a	0.00a
Aza-direct	32 oz	1.00a	0.25a	0.00a	0.00a
Assail 70WP	1.7 oz	1.50a	0.00a	0.75a	1.25a
Untreated	----	2.75a	0.00a	0.50a	0.00a

Means within a column followed by the same letter are not significantly different (Ryans Q; P=0.05)

2. Colorado Potato Beetle Small Larvae (SL)

Treatment	Rate/A	Mean Number SL per 5 Plants				
		May 27 Pre-treatment	June 3	June 10	June 16	June 23
Admire 2F	16 oz	0.25a	0.00b	2.00b	0.25b	0.00a
Platinum 2SC	6.5 oz	0.00a	6.50ab	1.75b	0.00b	0.00a
Provado 1.6F	3.75 oz	40.75a	4.75b	3.50b	0.00b	0.00a
Leverage	3.75 oz	18.25a	2.50b	0.00b	0.00b	0.00a
Actara 25WG	1.5 oz	19.50a	7.50ab	3.50b	0.50b	0.00a
Spintor	4 oz	25.50a	12.75ab	18.00ab	0.50b	0.00a
Aza-direct	32 oz	16.25a	20.25ab	18.25ab	2.75ab	8.25a
Assail 70WP	1.7 oz	15.00a	3.25b	0.50b	0.25b	2.75a
Untreated	-----	26.00a	41.50a	32.00a	4.00a	0.25a

3. Colorado Potato Beetle Large Larvae (LL)

Treatment	Rate/A	Mean Number LL per 5 Plants				
		May 27 Pretrt	June 3	June 10	June 16	June 23
Admire 2F	16 oz	0.00a	0.00a	0.00b	0.00b	0.00a
Platinum 2SC	6.5 oz	0.00a	0.00a	0.00b	0.00b	0.00a
Provado 1.6F	3.75 oz	0.00a	0.00a	0.00b	3.75b	0.50a
Leverage	3.75 oz	0.00a	0.00a	0.00b	1.00b	0.50a
Actara 25WG	1.5 oz	0.25a	0.75a	0.25b	0.25b	0.00a
Spintor	4 oz	0.00a	0.25a	0.75b	0.75b	0.25a
Aza-direct	32 oz	0.25a	1.25a	1.75b	5.00b	2.50a
Assail 70WP	1.7 oz	0.00a	0.00a	0.00b	0.50b	0.00a
Untreated	-----	0.00a	1.75a	26.25a	14.75a	1.25a

Means within a column followed by the same letter are not significantly different (Ryans Q; P=0.05)

4. Potato Leafhopper (PLH) European corn borer, Defoliation Rating and Yield Data

Treatment	Yield CWT/A July 10	Mean # PLH/5 sweeps		Defoliation Rating June 24	% ECB Damaged Stems June 24
		June 3	June 10		
Admire 2F	180.51a	1.25a	1.25a	1.00bc	15.00a
Platinum 2SC	188.23a	2.50a	1.00a	1.00bc	8.75abc
Provado 1.6F	205.46a	0.75a	1.50a	1.00bc	8.75abc
Leverage	204.10a	0.75a	0.25a	0.50c	6.40abc
Actara 25WG	170.54a	2.00a	0.50a	0.75bc	5.00bc
Spintor	196.39a	2.50a	0.75a	1.00bc	3.75bc
Aza-direct	213.63a	1.50a	2.50a	1.50b	2.50c
Assail 70WP	199.57a	0.25a	1.00a	1.00bc	6.25abc
Untreated	203.65a	3.00a	1.25a	2.75a	12.50ab

Means within a column followed by the same letter are not significantly different (Ryans Q; P=0.05)