

Insect Management in Potatoes - 2005: ' Superior' potatoes were planted at Shady Brook Farms located near Little Creek, DE on April 20. 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 5 gpa@ 40 psi.. All plots received a foliar application of Spintor at 6 oz/A on June 1 due to heavy and uneven CPB adult populations. All plots received a maintenance spray of Baythroid at 2 oz/A for leafhoppers on Jul 5 and 11. All foliar treatments were applied with a CO₂ pressurized ATV 4-wheeled sprayer delivering 38 gpa at 40 psi. All foliar sprays of BAS 320 were applied with Penetrator Plus at a rate of 0.5% v/v.

Data were taken weekly from May 26 through Jul 14 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. A visual defoliation ranking (1= 1-20%, 2 = 21-30%, 3= 31-50%, 4 = 51-80% and 5 = 81-100%) was completed on June 30 and July 14. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Colorado potato beetle pressure was extremely heavy. Potato leafhopper pressure was light. No European corn larval infestations were found in any plot. On July 7, all treatments provided significantly better CPB adult control compared to the untreated check. All treatments provided significantly better CPB large larvae control compared to the untreated check on June 24 and June 30. BAS320 provided the best small larvae control on June 24. All treatments provided a significantly lower percentage of defoliation compared to the untreated check. No differences were observed between treatments for PLH populations. No phytotoxicity was observed.

Table 1. Colorado Potato Beetle (CPB) Adult Counts

Treatment	Application Dates	Rate/A	Mean Number CPB Adults per 5 Plants						
			May 26	May 31	Jun 13	Jun 20	Jun 24	Jun 30	July 7
Admire 2F BAS320 w/PPlus Kryocide 96WP	April 20 Jun 8, 14, 21 Jul 11	16 oz 4.57 oz + 0.5%V/V 8 lb	1.50a	11.00a	5.00a	1.50a	1.25a	1.00a	1.75bc
Platinum Ridomil Gold BAS 320w/PPlus Kryocide 96WP	April 20 Jun 8,14,21 Jul 11	32 oz 4.57 oz + 0.5%V/V 8 lb	2.25a	7.50a	1.50a	1.25a	0.50a	0.75a	2.50bc
BAS 320 – w/P Plus Kryocide 96WP	Jun 8,14,21 Jul 11	4.57 oz + 0.5%V/V 8 lb	3.25a	5.75a	6.75a	1.25a	0.25a	1.75a	1.75bc
Novodor Spintor 2SC	Jun 8, 14,21 July 1	4 qts 5 oz	1.00a	6.50a	3.25a	3.00a	1.00a	0.00a	7.00bc
BAS320 w/PPlus Kryocide 96WP	Jun 8, 14,21 Jul 11	4.57 oz + 0.5%V/V 8 lb	1.75a	5.75a	4.25a	2.50a	0.75a	2.00a	1.00c
Trigard 75WSP Actara 25WDG Spintor 2SC	June 8 Jun 14 Jun 21, Jul 1	5.33 oz 1.5 oz 5 oz	2.00a	5.50a	2.50a	3.25a	2.00a	0.75a	1.50c
Actara 25WDG+ Warrior Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	1.62 oz + 2.4 oz 5 oz	1.50a	6.25a	15.25a	2.50a	2.25a	0.50a	2.50bc
A13623 Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	2.74 oz 5 oz	2.75a	6.25a	11.50a	6.25a	2.75a	1.50a	1.50c
Agrimek 0.15EC+ Warrior Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	8 oz + 1.92 oz 5 oz	0.25a	8.00a	4.00a	3.75a	1.00a	0.25a	11.00b
Platinum Ridomil Gold Spintor 2SC Kryocide 96WP	April 20 Jun 8,14,21 Jul 11	32 oz 5 oz 8 lb	0.75a	6.75a	10.50a	7.25a	2.00a	0.50a	3.00bc
Platinum Ridomil Gold AgriMek 0.15EC Spintor 2SC	April 20 Jun 8, 14 Jun 21	32 oz 8 oz 5 oz	0.00a	8.50a	14.00a	6.25a	1.75a	1.75a	1.25c
Trigard 75 WSP Agrimek 0.15EC+ Warrior Spintor 2SC Kryocide 96WP	Jun 8 Jun 14 Jun 21, July 1 Jul 11	5.33 oz 8 oz + 3.2 oz 5 oz 8 lb	1.75a	7.75a	4.00a	4.50a	1.00a	0.75a	7.00bc
Platinum Ridomil Gold	April 20	32 oz	0.75a	12.00a	11.25a	5.50a	0.25a	0.00a	2.25bc
Rimon 0.83EC+ Actara Rimon 0.83EC Spintor 2SC	Jun 8 Jun 14 Jun 21,Jul 1	9 oz + 3 oz 12 oz 5 oz	3.50a	10.75a	6.00a	2.75a	2.50a	1.00a	3.50bc
Rimon 0.83EC + Actara Spintor 2SC Kryocide 96WP	Jun 8, Jun 14 Jun 21 July 11	9 oz + 3 oz 5 oz 8 lb	1.00a	9.25a	13.50a	5.25a	2.25a	1.00a	2.50bc
Untreated	-----	-----	3.25a	9.25a	4.75a	6.00a	0.25a	1.75a	33.00a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05)

Table 2. Colorado Potato Beetle Small Larvae(SL)

Treatment	Application Dates	Rate/A	Mean Number SL per 5 Plants				
			Jun 13	Jun 20	Jun 24	Jun 30	July 7
Admire 2F BAS320 w/PPlus Kryocide 96WP	April 20 Jun 8, 14, 21 Jul 11	16 oz 4.57 oz + 0.5%V/V 8 lb	38.50a	39.75ab	0.75b	3.75a	42.00a
Platinum Ridomil Gold BAS 320w/PPlus Kryocide 96WP	April 20 Jun 8,14,21 Jul 11	32 oz 4.57 oz + 0.5%V/V 8 lb	69.25a	21.50b	4.00ab	12.25a	7.25a
BAS 320 – w/P Plus Kryocide 96WP	Jun 8,14,21 Jul 11	4.57 oz + 0.5%V/V 8 lb	41.50a	31.75ab	0.00b	2.25a	12.25a
Novodor Spintor 2SC	Jun 8, 14,21 July 1	4 qts 5 oz	69.75a	53.25ab	15.25ab	4.75a	2.00a
BAS320 w/PPlus Kryocide 96WP	Jun 8, 14,21 Jul 11	4.57 oz + 0.5%V/V 8 lb	68.00a	31.50ab	2.25ab	0.50a	19.75a
Trigard 75WSP Actara 25WDG Spintor 2SC	June 8 Jun 14 Jun 21, Jul 1	5.33 oz 1.5 oz 5 oz	83.75a	20.50b	4.25ab	12.75a	3.50a
Actara 25WDG+ Warrior Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	1.62 oz + 2.4 oz 5 oz	31.75a	58.75ab	10.75ab	5.25a	6.25a
A13623 Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	2.74 oz 5 oz	28.50a	78.75ab	6.75ab	10.50a	8.25a
Agrimek 0.15EC+ Warrior Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	8 oz + 1.92 oz 5 oz	70.25a	124.25a	3.50ab	13.25a	1.75a
Platinum Ridomil Gold Spintor 2SC Kryocide 96WP	April 20 Jun 8,14,21 Jul 11	32 oz 5 oz 8 lb	49.25a	57.75ab	16.00ab	4.25a	18.50a
Platinum Ridomil Gold AgriMek 0.15EC Spintor 2SC	April 20 Jun 8, 14 Jun 21	32 oz 8 oz 5 oz	37.75a	47.50ab	7.50ab	11.25a	9.25a
Trigard 75 WSP Agrimek 0.15EC+ Warrior Spintor 2SC Kryocide 96WP	Jun 8 Jun 14 Jun 21, July 1 Jul 11	5.33 oz 8 oz + 3.2 oz 5 oz 8 lb	57.25a	61.50ab	6.00ab	10.50a	19.25a
Platinum Ridomil Gold	April 20	32 oz	38.25a	44.50ab	15.25ab	18.00a	6.75a
Rimon 0.83EC+ Actara Rimon 0.83EC Spintor 2SC	Jun 8 Jun 14 Jun 21,Jul 1	9 oz + 3 oz 12 oz 5 oz	17.75a	84.50ab	7.75ab	26.00a	6.25a
Rimon 0.83EC + Actara Spintor 2SC Kryocide 96WP	Jun 8, Jun 14 Jun 21 July 11	9 oz + 3 oz 5 oz 8 lb	28.75a	43.75ab	4.00ab	9.00a	18.00a
Untreated	-----	-----	81.50a	102.00ab	34.25a	7.00a	8.00a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05)

Table 3. Colorado Potato Beetle Large Larvae (LL)

Treatment	Application Dates	Rate/A	Mean Number LL per 5 Plants				
			Jun 20	Jun 24	Jun 30	July 7	July 14
Admire 2F BAS320 w/PPlus Kryocide 96WP	April 20 Jun 8, 14, 21 Jul 11	16 oz 4.57 oz + 0.5%V/V 8 lb	0.50d	0.00b	0.50c	1.00b	2.75bcd
Platinum Ridomil Gold BAS 320w/PPlus Kryocide 96WP	April 20 Jun 8,14,21 Jul 11	32 oz 4.57 oz + 0.5%V/V 8 lb	0.50d	0.00b	0.25c	3.75b	3.50bcd
BAS 320 – w/P Plus Kryocide 96WP	Jun 8,14,21 Jul 11	4.57 oz + 0.5%V/V 8 lb	0.00d	0.00b	0.00c	7.00b	2.75bcd
Novodor Spintor 2SC	Jun 8, 14,21 July 1	4 qts 5 oz	10.50cd	15.25b	14.75bc	0.25b	4.25bcd
BAS320 w/PPlus Kryocide 96WP	Jun 8, 14,21 Jul 11	4.57 oz + 0.5%V/V 8 lb	0.00d	0.50b	1.25c	8.50b	3.50bcd
Trigard 75WSP Actara 25WDG Spintor 2SC	June 8 Jun 14 Jun 21, Jul 1	5.33 oz 1.5 oz 5 oz	4.75d	2.75b	4.25c	0.25b	4.50bcd
Actara 25WDG+ Warrior Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	1.62 oz + 2.4 oz 5 oz	2.00d	2.00b	7.25c	0.00b	14.00abc
A13623 Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	2.74 oz 5 oz	10.25cd	1.75b	4.00c	0.50b	4.50bcd
Agrimek 0.15EC+ Warrior Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	8 oz + 1.92 oz 5 oz	50.75ab	9.25b	12.50bc	0.25b	8.50abcd
Platinum Ridomil Gold Spintor 2SC Kryocide 96WP	April 20 Jun 8,14,21 Jul 11	32 oz 5 oz 8 lb	0.50d	0.00b	3.25c	2.25b	2.25cd
Platinum Ridomil Gold AgriMek 0.15EC Spintor 2SC	April 20 Jun 8, 14 Jun 21	32 oz 8 oz 5 oz	3.50d	0.75b	3.50c	0.25b	5.25bcd
Trigard 75 WSP Agrimek 0.15EC+ Warrior Spintor 2SC Kryocide 96WP	Jun 8 Jun 14 Jun 21, July 1 Jul 11	5.33 oz 8 oz + 3.2 oz 5 oz 8 lb	35.50bc	11.00b	6.50c	0.00b	0.50d
Platinum Ridomil Gold	April 20	32 oz	8.25d	14.75b	30.00b	22.00a	14.50ab
Rimon 0.83EC+ Actara Rimon 0.83EC Spintor 2SC	Jun 8 Jun 14 Jun 21,Jul 1	9 oz + 3 oz 12 oz 5 oz	11.25cd	0.50b	1.00c	0.25b	7.50abcd
Rimon 0.83EC + Actara Spintor 2SC Kryocide 96WP	Jun 8, Jun 14 Jun 21 July 11	9 oz + 3 oz 5 oz 8 lb	1.50d	2.00b	0.75c	9.75b	5.25bcd
Untreated	-----	-----	70.50a	43.25a	70.00a	9.50b	18.25a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05)

Table 4. Potato Leafhopper(PLH) and Defoliation Rating

Treatment	Timing	Mean # PLH/5 sweeps		Defoliation Rating	
		June 20	June 24	June 30	July 14
Admire 2F BAS320 w/PPlus Kryocide 96WP	April 20 Jun 8, 14, 21 Jul 11	0.75a	4.50a	1.00c	1.00c
Platinum Ridomil Gold BAS 320w/PPlus Kryocide 96WP	April 20 Jun 8,14,21 Jul 11	0.00a	3.00a	1.00c	1.00c
BAS 320 – w/P Plus Kryocide 96WP	Jun 8,14,21 Jul 11	0.00a	5.75a	1.00c	1.00c
Novodor Spintor 2SC	Jun 8, 14,21 July 1	0.00a	5.00a	1.75b	1.00c
BAS320 w/PPlus Kryocide 96WP	Jun 8, 14,21 Jul 11	0.00a	6.75a	1.00c	1.00c
Trigard 75WSP Actara 25WDG Spintor 2SC	June 8 Jun 14 Jun 21, Jul 1	0.00a	4.25a	1.00c	1.00c
Actara 25WDG+ Warrior Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	0.50a	2.25a	1.00c	1.00c
A13623 Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	0.25a	1.50a	1.00c	1.25c
Agrimek 0.15EC+ Warrior Spintor 2SC	Jun 8, 14 Jun 21, Jul 1	0.00a	4.00a	1.00c	1.00c
Platinum Ridomil Gold Spintor 2SC Kryocide 96WP	April 20 Jun 8,14,21 Jul 11	0.25a	3.50a	1.00c	1.00c
Platinum Ridomil Gold AgriMek 0.15EC Spintor 2SC	April 20 Jun 8, 14 Jun 21	1.00a	3.00a	1.00c	1.00c
Trigard 75 WSP Agrimek 0.15EC+ Warrior Spintor 2SC Kryocide 96WP	Jun 8 Jun 14 Jun 21, July 1 Jul 11	0.00a	5.50a	1.00c	1.00c
Platinum Ridomil Gold	April 20	1.50a	4.75a	2.00b	2.00b
Rimon 0.83EC+ Actara Rimon 0.83EC Spintor 2SC	Jun 8 Jun 14 Jun 21,Jul 1	0.25a	1.50a	1.00c	1.00c
Rimon 0.83EC + Actara Spintor 2SC Kryocide 96WP	Jun 8, Jun 14 Jun 21 July 11	0.00a	1.75a	1.00c	1.00c
Untreated	-----	0.75a	5.50a	4.25a	4.75a

Means within a column followed by the same letter are not significantly different (Ryan's q-test; P=0.05)