

Insect Management in Potatoes - 2004: 'Superior' potatoes were planted at Shady Brook Farms located near Little Creek, DE on March 24. 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. Applications of foliar insecticides were broadcast applied when threshold levels of CPB were detected in each treatment on May 17, 25 and June 1. An extra foliar treatment was applied in the Admire/Guthion plot on June 8. The Spintor application on June 8 and the Avaunt +PBO application on June 15 were applied as maintenance sprays. All foliar treatments were applied with a CO₂ pressurized ATV 4-wheeled sprayer delivering 38 gpa at 40 psi. Data were taken weekly from May 11 through June 28 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 4 and 23. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Colorado potato beetle pressure was heavy. Potato leafhopper pressure was light. No European corn borer larval infestations were found in any plot. All treatments provided significantly better CPB large larvae control compared to the untreated check except Admire alone on May 28 and Admire alone and Admire/Guthion on June 14. All treatments provided significantly better CPB small larvae control except the Admire alone, Admire/Guthion and the Actara/Trigard 75 + Warrior treatments on June 4. All treatments provided a significantly lower percentage of defoliation compared to the untreated check except the Admire alone on June 23. No differences were observed between treatments for PLH populations. No phytotoxicity was observed.

1. Colorado Potato Beetle (CPB) Adult Counts

Treatment	Timing	Rate/A	Mean Number CPB Adults per 5 Plants				
			May 20	May 28	June 4	June 14	June 21
Admire 2F	IF at planting	16 oz	6.75a	4.00a	3.00a	6.50b	8.50b
Admire 2F Spintor 2SC Avaunt 30WDG+PBO	IF at planting May17,25,Jun1 June 15	16 oz 5 oz 4 oz+4 oz	4.25a	8.25a	5.75a	6.25b	4.00b
Admire Guthion 50WP Avaunt 30WDG+PBO	IF at planting May17, 25 June1,8 June 15	16 oz 1.00 lb 4 oz + 4 oz	4.00a	3.25a	7.25a	4.50b	5.25b
Platinum 2SC	IF at planting	6.5 oz	5.25a	7.50a	5.50a	2.75b	4.75b
Platinum 2SC Agri-Mek 0.15EC Spintor 2SC Avaunt 30WDG+PBO	IF at planting May17,25,Jun1 June 8 June 15	6.5 oz 8 oz 4 oz 4 oz + 4 oz	6.25a	5.50a	8.25a	4.75b	6.50b
Trigard 75WP Trigard 75 + Warrior Spintor 2SC	May 17 May 25, June 1 June 8	5.33 oz 5.33 + 3.2 oz 4 oz	4.00a	4.25a	3.50a	3.00b	6.50b
Actara 25WDG Trigard 75 +Warrior Spintor 2SC Avaunt 30WDG+PBO	May 17 May25, June 1 June 8 June 15	1.5 oz 2.66 + 3.2 oz 4 oz 4 oz + 4 oz	3.50a	6.00a	3.50a	2.00b	3.00b
Trigard 75WP Agri-Mek + Warrior Avaunt 30WDG+PBO	May 17 May 25,June 1 June 15	5.33 oz 8 oz + 3.2 oz 4 oz + 4 oz	3.75a	2.25a	1.50a	3.50b	5.75b
BAS 320 00I + Penetrator plus Avaunt 30WDG+PBO	May 17,25, June 1 June 15	4 oz + 0.5% V/V 4 oz + 4 oz	3.00a	4.75a	1.25a	2.00b	4.00b
Rimon 0.83EC Rimon 0.83EC Avaunt 30WDG+PBO	May 17 May 25 ,June 1 June 15	6 oz 9 oz + 1%V/V 4 oz + 4 oz	5.00a	4.00a	5.25a	2.25b	6.00b
Rimon 0.83EC	May 25, June 1	12 oz	5.50a	3.75a	3.00a	2.25b	2.50b
Untreated	----	----	5.75a	2.00a	3.00a	22.00a	17.00a

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

2. Colorado Potato Beetle Small Larvae(SL)

Treatment	Timing	Rate/A	Mean Number CPB SL per 5 Plants				
			May20	May 28	June 4	June 14	June 21
Admire 2F	IF at planting	16 oz	47.50bcd	52.5b	47.75a	22.75a	104.50a
Admire 2F Spintor 2SC Avaunt 30WDG+PBO	IF at planting May17,25,Jun1 June 15	16 oz 5 oz 4 oz+4 oz	15.00d	1.75c	13.25b	41.25a	111.00a
Admire Guthion 50WP Avaunt 30WDG+PBO	IF at planting May17, 25 June1,8 June 15	16 oz 1.00 lb 4 oz + 4 oz	29.25cd	26.0bc	21.5ab	26.75a	58.25a
Platinum 2SC	IF at planting	6.5 oz	16.75d	6.25c	7.50b	18.75a	67.5a
Platinum 2SC Agri-Mek 0.15EC Spintor 2SC Avaunt 30WDG+PBO	IF at planting May17,25,Jun1 June 8 June 15	6.5 oz 8 oz 4 oz 4 oz + 4 oz	13.50d	5.50c	11.25b	51.00a	80.00a
Trigard 75WP Trigard 75 + Warrior Spintor 2SC	May 17 May 25,Jun1 June 8	5.33 oz 5.33 + 3.2 oz 4 oz	37.50bcd	31.8bc	11.25b	10.25a	109.75a
Actara 25WDG Trigard 75 +Warrior Spintor 2SC Avaunt 30WDG+PBO	May 17 May25,Jun1 June 8 June 15	1.5 oz 2.66 + 3.2 oz 4 oz 4 oz + 4 oz	18.50cd	10.50c	18.25ab	18.25a	133.25a
Trigard 75WP Agri-Mek + Warrior Avaunt 30WDG+PBO	May 17 May 25,Jun1 June 15	5.33 oz 8 oz + 3.2 oz 4 oz + 4 oz	56.75bc	10.00c	12.75b	20.00a	98.25a
BAS 320 00I + Penetrator plus Avaunt 30WDG+PBO	May 17,25, June 1 June 15	4 oz + 0.5% V/V 4 oz + 4 oz	21.25cd	4.25c	1.50b	25.25a	99.25a
Rimon 0.83EC Rimon 0.83EC Avaunt 30WDG+PBO	May 17 May 25 ,June 1 June 15	6 oz 9 oz + 1%V/V 4 oz + 4 oz	68.00b	12.00c	6.00b	31.25a	117.00a
Rimon 0.83EC	May 25, June 1	12 oz	70.25b	8.25c	3.50b	11.25a	62.00a
Untreated	----	----	128.00a	83.00a	23.00ab	34.25a	178.00a

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3. Colorado Potato Beetle Large Larvae (LL)

Treatment	Timing	Rate/A	Mean Number CPB LL per 5 Plants			
			May 28	June 4	June 14	June 21
Admire 2F	IF at planting	16 oz	67.00a	44.25b	26.00a	16.00a
Admire 2F Spintor 2SC Avaunt 30WDG+PBO	IF at planting May17,25,Jun1 June 15	16 oz 5 oz 4 oz+4 oz	0.00c	1.00c	5.00bc	19.75a
Admire Guthion 50WP Avaunt 30WDG+PBO	IF at planting May17, 25 June1,8 June 15	16 oz 1.00 lb 4 oz + 4 oz	35.25b	32.5b	19.50ab	22.50a
Platinum 2SC	IF at planting	6.5 oz	2.50c	1.00c	6.00bc	11.00a
Platinum 2SC Agri-Mek 0.15EC Spintor 2SC Avaunt 30WDG+PBO	IF at planting May17,25,Jun1 June 8 June 15	6.5 oz 8 oz 4 oz 4 oz + 4 oz	0.50c	0.50c	1.00bc	7.25a
Trigard 75WP Trigard 75 WP+ Warrior Spintor 2SC	May 17 May 25,Jun1 June 8	5.33 oz 5.33 + 3.2 oz 4 oz	20.5bc	1.00c	1.00bc	5.25a
Actara 25WDG Trigard 75 WP +Warrior Spintor 2SC Avaunt 30WDG+PBO	May 17 May 25,Jun1 June 8 June 15	1.5 oz 2.66 + 3.2 oz 4 oz 4 oz + 4 oz	2.00c	2.25c	2.50bc	7.25a
Trigard 75WP Agri-Mek + Warrior Avaunt 30WDG+PBO	May 17 May 25,Jun1 June 15	5.33 oz 8 oz + 3.2 oz 4 oz + 4 oz	1.25c	9.25c	5.00bc	20.75a
BAS 320 00l + Penetrator plus Avaunt 30WDG+PBO	May 17,25, June 1 June 15	4 oz + 0.5% V/V 4 oz + 4 oz	2.00c	0.00c	2.25bc	7.25a
Rimon 0.83EC Rimon 0.83EC Avaunt 30WDG+PBO	May 17 May 25 ,June 1 June 15	6 oz 9 oz + 1%V/V 4 oz + 4 oz	3.50c	0.25c	1.25bc	6.50a
Rimon 0.83EC	May 25, June 1	12 oz	3.00c	0.25c	0.50c	3.75a
Untreated	----	----	68.75a	67.5a	11.50abc	27.5a

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

4. Potato Leafhopper(PLH) European Corn Borer, and Defoliation Rating

Treatment	Timing	Mean # PLH/5 sweeps		Defoliation Rating	
		May 28	June 4	June 4	June 23
Admire 2F	IF at planting	0.00a	0.75a	2.75b	4.00a
Admire 2F Spintor 2SC Avaunt 30WDG+PBO	IF at planting May17,25,Jun1 June 15	0.50a	0.75a	1.00d	1.00b
Admire Guthion 50WP Avaunt 30WDG+PBO	IF at planting May17, 25 June1,8 June 15	0.00a	0.25a	1.75c	1.00b
Platinum 2SC	IF at planting	0.75a	1.00a	1.00d	1.00b
Platinum 2SC Agri-Mek 0.15EC Spintor 2SC Avaunt 30WDG+PBO	IF at planting May17,25,Jun1 June 8 June 15	0.00a	0.00a	1.00d	1.00b
Trigard 75WP Trigard 75 + Warrior Spintor 2SC	May 17 May 25,Jun1 June 8	0.25a	0.00a	1.00d	1.00b
Actara 25WDG Trigard 75 +Warrior Spintor 2SC Avaunt 30WDG+PBO	May 17 May 25,Jun1 June 8 June 15	0.75a	1.25a	1.00d	1.00b
Trigard 75WP Agri-Mek + Warrior Avaunt 30WDG+PBO	May 17 May 25,Jun1 June 15	0.00a	0.00a	1.00d	1.00b
BAS 320 00I + Penetrator plus Avaunt 30WDG+PBO	May 17,25, June 1 June 15	0.75a	0.00a	1.00d	1.00b
Rimon 0.83EC Rimon 0.83EC Avaunt 30WDG+PBO	May 17 May 25 ,June 1 June 15	0.75a	0.50a	1.00d	1.00b
Rimon 0.83EC	May 25, June 1	1.00a	0.25a	1.00d	1.00b
Untreated	----	1.50a	0.50a	3.75a	4.00a

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