

Control of Lepidopterous Larvae in Fall Cabbage - 2004: Promising new chemistry and labeled insecticides were evaluated for control of the cabbage insect complex. 'Greencup' field-grown cabbage transplants were planted on July 24 at Papen Farms, Inc., Dover, DE. Plots consisted of one 20-ft-long row on 3-ft centers. Each treatment was replicated four times and arranged in a RCB design. The evaluated materials are listed in the tables. All foliar materials were applied on July 30, Aug 6, 18, and 25, Sept 1 and 10. Applications were made with a CO₂ backpack sprayer with a one-row boom, having 3 hollow-cone nozzles per row (one over the top and one drop nozzle on each side) delivering 38 gpa at 40 psi. Surfaid NIS was included in all applications at a rate of 0.25% vol./vol. The number of lepidopterous larvae on each of 5 randomly selected plants per plot was recorded on a weekly basis from July 27 through September 14. The numbers of marketable heads were determined by examining feeding damage on the head and two wrapper leaves on September 23. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05). DBM populations were moderate. Although FAW populations were generally low, the feeding damage was concentrated in the tops of the head resulting in a lower % marketable head rating for the Assail, TD and Azadirect treatments. CL populations were low throughout the season and no differences were seen between the treatments and the untreated check. All treatments provided significantly better DBM control compared to the untreated check. All treatments provided a significantly higher percentage of marketable heads compared to the untreated check. No phytotoxicity was observed

Table 1 – Diamondback Moth (DBM) Counts

Treatment	Rate/A	% Marketable Heads	Mean Number DBM Larvae per 5 plants				
			Aug 11	Aug 16	Aug 23	Aug 30	Sep 6
Assail 70 WP	1.7 oz	73.99ab	1.50b	5.00bcd	1.25bc	1.00b	1.00b
TD 2472-01 30WSG	4 oz	59.44b	1.00b	6.75bc	3.00b	1.75b	0.00b
Proclaim 5SG	3.2 oz	95.56a	1.75b	3.75cd	0.50c	0.50b	0.25b
Proclaim 5 SG	4.8 oz	97.50a	0.00b	2.25cd	0.25c	0.00b	0.00b
Avaunt 30WG	3.5 oz	100.00a	1.25b	3.00cd	0.25c	0.00b	0.00b
Intrepid 2F	10 oz	51.60b	1.50b	9.00b	1.25bc	4.25b	3.50b
Spintor 2SC	4.5 oz	98.53a	1.00b	2.25cd	0.00c	0.25b	0.00b
Aza-direct	16 oz	70.90ab	2.00b	3.25cd	0.75bc	2.00b	2.25b
Azadirect	32 oz	76.36ab	1.00b	5.75bc	1.75bc	3.00b	2.75b
Novaluron 0.83EC	12 oz	98.53a	0.25b	1.00d	2.25bc	0.50b	0.00b
Novaluron 0.83EC	15 oz	100.00a	0.25b	0.75d	1.25bc	0.00b	0.00b
Untreated	-----	22.22c	7.75a	15.75a	6.50a	12.75a	15.00a

- All foliar sprays were applied with an NIS(Surfaid) at a rate of .25% V/V
- Means within a column followed by the same letter are not significantly different (Ryans's q-test, P=0.05).

Table 2 – Fall armyworm (FAW) counts

Treatment	Rate/A	Mean Number FAW larvae per 5 plants		
		Aug 30	Sept 6	Sept 14
Assail 70 WP	1.7 oz	2.50a	1.25a	1.00a
TD 2472-01 30WSG	4 oz	2.25ab	1.00a	0.50ab
Proclaim 5SG	3.2 oz	0.50abc	0.00a	0.00b
Proclaim 5 SG	4.8 oz	0.00c	0.00a	0.00b
Avaunt 30WG	3.5 oz	0.25bc	0.00a	0.00b
Intrepid 2F	10 oz	0.25bc	0.00a	0.00b
Spintor 2SC	4.5 oz	0.00c	0.00a	0.00b
Aza-direct	16 oz	1.00abc	0.50a	0.00b
Azadirect	32 oz	1.00abc	0.25a	0.00b
Novaluron 0.83EC	12 oz	0.50abc	0.00a	0.00b
Novaluron 0.83EC	15 oz	0.25bc	0.00a	0.00b
Untreated	-----	2.50a	1.25a	0.25ab

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

Insect Management in Melon with Chemigation - 2004: 'Gallicum' melon transplants were planted on May 25 at the University of Delaware Research and Education Center located near Georgetown, DE. Plots consisted of two 30 ft-long rows on 8 ft centers. Each treatment was replicated four times and arranged in a RCB design. Foliar treatments were applied as a broadcast spray on July 2 with a CO₂ pressurized hand-held sprayer delivering 21 gpa at 40 psi. Chemigation treatments were applied on 1-3 times depending on the treatment. Cucumber beetle, aphid and spider mite populations were evaluated on a weekly basis from June 2 through July 13. Beetle and aphid populations were assessed by looking at 5 plants per plot to determine the percent infested plants and the number of beetles and aphids per plant. On each evaluation date, 25 leaves were examined per plot to determine the number of spider mites per leaf. On July 27, all marketable fruit was collected from each plot. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Insect and mite populations were low. No significant differences were found between the treatments and the untreated check. No phytotoxicity was observed.

Table 1. Cucumber Beetles per 5 plants

Treatment	Rate/Acre	In-Furrow(IF) Chemigation(C) /Foliar(F) Treatment Dates	Cucumber Beetles per 5 plants					
			June 6		June 15		July 7	
			Live Beetles	Dead Beetles	Live Beetles	Dead Beetles	Live Beetles	Dead Beetles
Platinum 2SC	5 oz	May 28(C)	0.25a	0.00a	2.25a	0.50a	1.50a	0.00a
Platinum 2 SC	4 oz	May 28 (C)						
	4 oz	June 10(C)	0.00a	0.00a	1.00a	0.50a	2.75a	0.00a
Platinum 2 SC	5oz	July 2 (C)	0.00a	0.00a	0.50a	0.50a	3.25a	0.00a
Admire 2 SC	16 oz	May 28 (C)	0.25a	0.00a	3.50a	0.75a	2.25a	0.25a
Admire 2 SC	16 oz	July 2 (C)	0.00a	0.00a	4.75a	1.50a	6.00a	0.00a
Admire 2SC	8 oz	May 28 (C)						
	8 oz	June 10 (C)	0.25a	0.50a	2.50a	7.00a	5.00a	1.25a
VydateL	64 oz	May 28(C)						
	32 oz	June 10(C)						
	32 oz	June 24(C)	0.75a	0.00a	0.75a	3.25a	1.75a	0.00a
Warrior	3.84 oz	July 2(F)	0.00a	0.25a	3.75a	0.25a	0.50a	0.00a
Furadan 4F	3.8 oz/1000 ft	May 14 (IF)	0.50a	0.00a	0.50a	0.25a	2.50a	0.25a
TD 2472-01 30WSG	4 oz	July 2(F)	0.00a	0.00a	0.75a	0.00a	1.50a	0.00a
Untreated	-----	-----	0.75a	0.00a	2.25a	0.50a	1.75a	0.00a

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

Table 2. Percent Cucumber Beetle Infested Plants

Treatment	Rate/Acre	In-Furrow(IF) Chemigation(C) /Foliar(F) Treatment Dates	Total Number Melons per plot (July 27)	Percent Cucumber Beetle Infested Plants		
				June 6	June 15	July 7
Platinum 2SC	5 oz	May 28(C)	114.50a	5.00a	35.00a	25.00ab
Platinum 2 SC	4 oz 4 oz	May 28 (C) June 10(C)	120.50a	0.00a	10.00a	20.00ab
Platinum 2 SC	5oz	July 2 (C)	102.25a	0.00a	15.00a	20.00ab
Admire 2 SC	16 oz	May 28 (C)	106.50a	5.00a	40.00a	35.00ab
Admire 2 SC	16 oz	July 2 (C)	104.25a	0.00a	45.00a	65.00a
Admire 2SC	8 oz 8 oz	May 28 (C) June 10 (C)	108.00a	15.00a	55.00a	50.00ab
VydateL	64 oz 32 oz 32 oz	May 28(C) June 10(C) June 24(C)	102.25a	10.00a	30.00a	25.00ab
Warrior	3.84 oz	July 2(F)	100.00a	5.00a	30.00a	5.00b
Furadan 4F	3.8 oz/1000 ft	May 14 (IF)	123.75a	5.00a	10.00a	35.00ab
TD 2472-01 30WSG	4 oz	July 2(F)	110.75a	0.00a	10.00a	20.00ab
Untreated	-----	-----	99.25a	15.00a	40.00a	20.00ab

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

European Corn Borer Control in Bell Peppers: “Aristotle” bell peppers were transplanted on June 16 at the University of Delaware Research and Education center located near Georgetown, DE. One row plots 25 ft long on 8 ft centers were replicated 4 times in a RCB design. All foliar materials were applied on July 15, 23 and 30; Aug 6 and 16. Applications were made with a CO₂ backpack sprayer with a one-row boom, having 3 hollow-cone nozzles per row (one over the top and one drop nozzle on each side) delivering 38 gpa at 40 psi. All commercial size peppers were harvested on Aug 23 and evaluated for European corn borer (ECB) entrance holes and damage. Data were analyzed using ANOVA and means were separated by Ryan’s q-test (P=0.05).

All treatments provided significantly better ECB control compared to the untreated check. No phytotoxicity was observed.

Treatments	Rate/Acre	% ECB damaged fruit
Orthene 97 (2 applications) switch to Spintor 2SC	1.33 lb 4.5 oz	13.11a
Proclaim 5 SG	4.8 oz	13.81a
Intrepid 2F	8 oz	3.27a
Avaunt 30WDG	3.5 oz	7.07a
Untreated	----	65.82b

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

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

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

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)

Wireworm Management in Potatoes, 2004: 'Superior' potatoes were planted on March 23 at the University of Delaware's Research and Education Center located near Georgetown, DE. Plots consisted of two 25-ft-long plots planted on 3- ft centers. Each treatment was replicated 4 times in a RCB design. Broadcast pre-plant applications were applied in 21 gallons of water per acre @ 40 psi and incorporated immediately before planting with a rototiller. Liquid in-furrow treatments were applied directly in-furrow over the seed piece with a one-nozzle hand-held sprayer delivering 5 gals per acre @ 40 psi. All Vydate treatments were applied as a broadcast spray over the rows using a hand-held sprayer delivering 21 gal/A @ 40 psi and incorporated with normal cultivation procedures. The granular Thimet treatment was applied in-furrow at planting with a hand-held shaker. In season, all the tubers from 10 ft of row were collected from each treatment on June 14, July 19 and Aug 9. All tubers were evaluated for the percentage of tubers damaged by wireworm and the number of wireworm entrance holes per tuber. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Wireworm pressure was low. No differences were seen between the treatments and the untreated check. No phytotoxicity was observed.

1. Wireworm Damaged Tubers

Treatment	Application Timing And Date	Rate/A	% WW Damaged Tubers		
			June 14	July 19	Aug 9
Vydate CLV	Emergence-dragoff(4/27)	2 qt - 50% band			
Vydate CLV	2 weeks later (5/12)	1 qt BC			
Vydate CLV	21 days later(5/26)	1 qt BC	1.92a	1.72a	11.51a
Asana XL	BC before planting	9.6 oz/A	0.00a	3.23a	0.96a
Capture 2EC	BC before planting	19.2 oz/A	0.67a	2.25a	3.89a
Regent 4SC	In-furrow	3.2 oz/A	2.98a	4.16a	1.49a
Admire	In-furrow	16 oz/A	0.00a	1.76a	4.77a
Platinum	In-furrow	6.5 oz	1.49a	4.51a	6.52a
Regent + Admire	In-furrow	3.2 + 16 oz	0.66a	2.07a	2.50a
Regent+ Platinum	In-furrow	3.2 + 6.5 oz	0.00a	2.70a	2.23a
Thimet	In-furrow	11.3 oz/1000ft	0.00a	3.54a	4.68a
Untreated	----	----	0.00a	4.83a	3.64a

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

2. Number Holes per Tuber

Treatment	Application Timing and Date	Mean Number Wireworm Holes per Tuber		
		June 14	July 19	Aug 9
Vydate CLV Vydate CLV Vydate CLV	At emergence-dragoff 2 weeks later 21 days later	0.02a	0.02a	0.14a
Asana XL	BC before planting	0.00a	0.03a	0.01a
Capture 2EC	BC before planting	0.01a	0.03a	0.03a
Regent 4SC	In-furrow	0.03a	0.05a	0.01a
Admire	In-furrow	0.00a	0.02a	0.07a
Platinum	In-furrow	0.01a	0.05a	0.08a
Regent + Admire	In-furrow	0.01a	0.02a	0.03a
Regent+ Platinum	In-furrow	0.00a	0.03a	0.02a
Thimet	In-furrow	0.00a	0.04a	0.05a
Untreated	----	0.00a	0.05a	0.04a

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

Insect Management In Snap Beans with Seed Treatments, 2004: 'Slenderette' snap beans were planted on May 5 (first planting) and June 2 (second planting) at the University of Delaware's Research and Education Center located near Georgetown, DE. Plots consisted of four 20 ft-long plots on 30-inch centers. Seed-applied treatments were applied commercially by Syngenta Seeds. In the first planting, a 2-4 inch band of meat and bone meal was placed over each row to increase seed corn maggot (SCM) oviposition at a rate of 320 grams per 20 ft of row. Dimethoate was applied on June 23 in the second study with a CO₂ pressurized backpack sprayer delivering 21 gpa @ 40 psi. Stand counts were evaluated on the first planting on May 13 and 17. The number of thrips and leafhoppers per 20 leaflets were counted on weekly basis in each planting from the first true-leaf stage through mature pods. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

In the first planting, seed corn maggot pressure was heavy. All the Cruiser treatments and the Lorsban treatment provided significantly better stand counts and seed corn maggot control compared to the untreated check and Poncho 600 on May 17. On May 14, the Cruiser and Lorsban treatments had a significantly lower percentage of SCM damaged plants. Thrips pressure was moderate and leafhopper pressure was low. The Cruiser and Poncho treatments provided significantly better thrips control compared to Lorsban through June 8. No phytotoxicity was observed.

In the second planting, thrips pressure was moderate and PLH pressure was low. Overall, the Cruiser provided the best thrips control through July 7 (bloom-pin pod stage). No phytotoxicity was observed.

(A) Planting # 1: May 5

I. Stand Count and Seed Corn Maggot Data

Treatments	Insecticide Rate	Stand Count – 20 ft of row		% SCM Damaged May 14	% SCM Infested May 14
		May 13	May 17		
Untreated	-----	46.75bc	0.25b	98.00a	98.00a
Maxium, Apron, Strep	-----	42.75c	1.00b	96.00a	95.00a
Maxium, Apron, Strep, Cruiser	30 g ai/100 kg seed	68.00a	50.25a	22.00c	6.00b
Max, Apron, Strep, Cruiser	50 g ai/100 kg seed	65.50a	64.25a	10.00c	2.00b
Max, Apron, Strep, Cruiser	75 g ai/100 kg seed	67.75a	67.75a	11.00c	3.00b
Max, Apron, Strep, Lorsban	62 g ai/100 kg seed	59.50a	61.00a	21.00c	9.00b
Maxium, Apron, Strep, Dimethoate	--- never applied	43.75c	0.75b	96.00a	94.00a
Captan, Allegiance, Strep Poncho 600	62.5 ga ai/HA	56.25ab	15.25b	74.00b	16.00b

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

II. Potato Leafhoppers per 10 leaflets

Treatment	Insecticide Rate	PLH per 20 leaflets		
		May 24	June 2	June 22
Cruiser	30 g ai/100 kg seed	0.00a	0.50a	33.50a
Cruiser	50 g ai/100 kg seed	0.00a	1.00a	42.50a
Cruiser	75 g ai/100 kg seed	0.00a	0.25a	26.50a
Lorsban	62 g ai/100 kg seed	0.00a	0.50a	46.50a
Poncho 600	62.5 ga ai/HA	0.00a	2.50a	28.25a

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

II. Thrips per 10 leaflets and Yield

Treatment	Yield Tons/A	Thrips per 20 leaflets			
		May 24	June 2	June 8	June 22
Cruiser	30 g ai/100 kg seed	0.00b	2.00b	10.25bc	19.75a
Cruiser	50 g ai/100 kg seed	0.00b	2.00b	10.25bc	6.50a
Cruiser	75 g ai/100 kg seed	0.00b	2.25b	3.00c	22.00a
Lorsban	62 g ai/100 kg seed	32.0a	108.00a	50.75a	21.50a
Poncho 600	62.5 ga ai/HA	5.50b	12.00b	24.50b	27.00a

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

(B) Planting Date #2: June 2

Table 1 – Thrips

Treatment	Rate	Thrips per 20 leaflets					
		June 21	June 29	July 7 (Bloom-Pin Pods)	July 14	July 20 (Mature Beans)	July 26
Untreated	-----	18.75a	42.50a	47.50b	43.75a	46.75ab	21.50a
Maxium, Apron, Strep, Dimethoate	16 oz/acre June 23	17.25a	13.50bc	29.25bc	31.25a	80.00ab	19.25a
Maxium, Apron, Strep, Cruiser	30 g ai/100 kg seed	2.25b	6.75c	6.00c	40.00a	42.75ab	25.00a
Max, Apron, Strep, Cruiser	50 g ai/100 kg seed	1.00b	5.75c	6.25c	26.25a	16.75b	18.50a
Max, Apron, Strep, Cruiser	75 g ai/100 kg seed	0.75b	3.25c	4.25c	24.75a	23.25b	18.00a
Max, Apron, Strep, Lorsban	62 g ai/100 kg seed	19.75a	36.50ab	63.5ab	52.75a	55.75ab	18.00a
Maxium, Apron, Strep	-----	15.25a	27.75abc	45.25b	46.00a	43.50ab	21.75a
Captan, Allegiance, Strep Poncho 600	62.5 ga ai/HA	20.00a	39.75ab	82.75a	37.00a	92.50a	29.50a

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

Table II – Potato Leafhopper Nymphs

Treatment	Rate	PLH Nymphs per 20 leaflets					
		June 21	June 29	July 7 (Bloom-Pin Pod)	July 14	July 20 (Mature Beans)	July 26
Untreated	-----	1.00a	5.75a	3.25a	3.25a	18.00a	18.50ab
Maxium, Apron, Strep, Dimethoate	16 oz/acre June 23	1.75a	0.00b	0.75a	3.00a	64.50a	22.75ab
Maxium, Apron, Strep, Cruiser	30 g ai/100 kg seed	0.50a	0.00b	1.50a	3.50a	13.25a	27.50a
Max, Apron, Strep, Cruiser	50 g ai/100 kg seed	0.00a	0.25b	0.50a	2.25a	36.00a	20.50ab
Max, Apron, Strep, Cruiser	75 g ai/100 kg seed	1.00a	0.00b	0.00a	0.50a	3.25a	10.75b
Max, Apron, Strep, Lorsban	62 g ai/100 kg seed	1.50a	1.75ab	3.25a	5.50a	13.50a	17.25ab
Maxium, Apron, Strep	-----	0.25a	1.75ab	3.25a	4.00a	17.00a	21.25ab
Captan, Allegiance, Strep Poncho 600	62.5 ga ai/HA	1.75a	2.00ab	2.75a	6.00a	31.75a	17.75ab

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

Table III. Potato Leafhopper Adults

Treatment	Rate	PLH/10 Sweeps			
		June 29	July 7 (Bloom-Pin Pods)	July 14	July 20 (Mature Beans)
Untreated	-----	1.25ab	6.25ab	3.00a	7.50a
Maxium, Apron, Strep, Dimethoate	16 oz/acre June 23	0.75ab	4.75ab	4.00a	7.25a
Maxium, Apron, Strep, Cruiser	30 g ai/100 kg seed	0.50ab	2.50b	2.25a	9.75a
Max, Apron, Strep, Cruiser	50 g ai/100 kg seed	1.25ab	3.75ab	5.00a	8.75a
Max, Apron, Strep, Cruiser	75 g ai/100 kg seed	0.00b	3.00ab	4.00a	5.25a
Max, Apron, Strep, Lorsban	62 g ai/100 kg seed	1.75ab	4.50ab	3.25a	7.50a
Maxium, Apron, Strep	-----	1.75ab	2.50b	5.00a	11.00a
Captan, Allegiance, Strep Poncho 600	62.5 ga ai/HA	2.50a	7.00a	5.25a	12.25a

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

Aphid Management in Fall Spinach, 2004: 'Seven-R' spinach was planted on Aug 26 at the University of Delaware Research and Education Center located near Georgetown, DE. Two row plots twenty ft long on 30-inch centers were replicated 4 times and arranged in a RCB design. All treatments were broadcast applied on Sept 23. Treatments were applied with a CO₂ pressurized backpack sprayer delivering 18.5 gpa @ 40 psi. The number of aphids on each of 10 randomly selected plants per plot was recorded on Sept 22, Sept 27; Oct 6 and 12. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Aphid pressure was low - moderate. All treatments provided significantly better aphid control compared to the untreated check on Sept 27 and Oct 6. No phytotoxicity was observed.

Treatment	Rate/A	Green Peach Aphids per 10 plants			
		Sept 22 Pre-Count	Sept 27 4 DAT	Oct 6 13 DAT	Oct 12 19 DAT
Assail 70WP	1.2 oz	23.50a	0.50b	9.00b	1.00a
TD 2472-01 30WSG	2.75 oz	22.00ab	0.00b	4.50b	1.25a
F1785 50DF	2.1 oz	13.00ab	0.25b	1.75b	2.00a
F1785 50DF	1.7 oz	13.50ab	0.75b	2.25b	1.75a
Provado 1.6F	3.75 oz	18.75ab	0.00b	2.50b	1.50a
Actara 25WG	2 oz	14.25ab	0.50b	1.75b	1.00a
Fulfill 50WG	2.8 oz	18.50ab	1.75b	3.75b	1.50a
Lannate LV	1.5 pt	9.50b	4.75b	3.75b	2.00a
Untreated	-----	14.25ab	30.25a	20.25a	1.75a

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

Insect Management in Fall Spinach- 2004: ' Seven-R' spinach was planted on Aug 26 at the University of Delaware Research and Education Center located near Georgetown, DE. Two row plots twenty ft long on 30-inch centers were replicated 4 times and arranged in a RCB design. All treatments were broadcast applied on Sept 16, 23 and Oct 13. Treatments were applied with a CO₂ pressurized backpack sprayer delivering 18.5 gpa @ 40 psi. The number of webworm and beet armyworm larvae on each of 10 randomly selected plants per plot was recorded on Sept 13, 22, and 27; Oct 6, 12 and . Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Webworm pressure was low and beet armyworm pressure was low-moderate. All treatments provided significantly better beet armyworm control compared to the untreated check except Assail on Sept 27. No phytotoxicity was observed.

Table 1. Garden Webworm Counts

Treatment	Rate/A	Number Webworms/10 Plants			
		Sept 13 Pre-Trt	Sept 22 6 DAT Trt #1	Sept 27 4 DAT Trt#2	Oct 6 13 DAT Trt#2
Assail 70WP	1.2 oz	1.25a	1.25ab	0.00a	0.25a
TD 2472-01 30WSG	2.75 oz	1.00a	0.50b	0.00a	0.50a
Spintor 2SC	4.5 oz	0.50a	0.25b	0.00a	0.00a
Mustang MAX 0.8EC	4 oz	0.00a	0.50b	0.00a	0.00a
Capture 2EC	2.56 oz	0.50a	0.50b	0.00a	0.00a
Avaunt 30WDG	2.4 oz	0.00a	0.00b	0.00a	0.00a
Avaunt 30WDG	3.5 oz	0.25a	0.50b	0.00a	0.00a
Avaunt 30WDG	6 oz	0.75a	1.00ab	0.00a	0.00a
Intrepid 2F	8 oz	0.50a	0.25b	0.00a	0.00a
Untreated	-----	1.25a	2.50a	0.00a	1.25a

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

Table 1. Beet Armyworm Counts

Treatment	Rate/A	Number Beet Armyworm/10 Plants				
		Sept 13 Pre-Trt	Sept 22 6 DAT Trt #1	Sept 27 4 DAT Trt #2	Oct 6 13 DAT Trt#2	Oct 21 8 DAT #3
Assail 70WP	1.2 oz	0.50a	0.50a	2.75ab	2.25a	2.00b
TD 2472-01 30WSG	2.75 oz	0.50a	0.50a	1.00bc	5.50a	0.75b
Spintor 2SC	4.5 oz	0.50a	0.50a	0.25bc	0.25a	0.00b
Mustang MAX 0.8EC	4 oz	1.00a	0.00a	0.50bc	1.00a	0.00b
Capture 2EC	2.56 oz	0.75a	0.25a	0.25bc	0.75a	0.00b
Avaunt 30WDG	2.4 oz	0.50a	0.00a	0.25bc	0.50a	0.50b
Avaunt 30WDG	3.5 oz	1.25a	0.00a	0.00c	0.50a	0.00b
Avaunt 30WDG	6 oz	1.00a	0.25a	0.25bc	0.25a	0.00b
Intrepid 2F	8 oz	1.75a	0.50a	0.00c	0.75a	0.00b
Untreated	-----	1.75a	2.25a	4.25a	3.75a	4.25a

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

Insect Management in Late Planted Sweet Corn - 2004: 'Silverado' sweet corn was planted on July 12 at the University of Delaware Research and Education Center located near Georgetown, DE. Plots consisted of two rows, 25 ft-long plots planted on 30-inch centers. Each treatment was replicated 4 times and arranged in a RCB design. All treatments listed in the table were applied on a 2-4 day schedule (Aug 27, 30; Sept 1, 3, 6, 10, 14, 16). Applications of foliar insecticides were applied with a CO₂ pressurized back sprayer using 4 nozzles per row delivering 41 gpa at 40 psi. At harvest (Sep 21), all ears from each plot were husked and evaluated for damage as percent clean ears (fresh market) and percent clean plus tip damaged ears (only within 1.0 inches from the tip- processing ears). The total number of larvae of each species was also counted. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Fall armyworm and corn earworm pressure was moderately high. Corn borer pressure was low-moderate. All treatments provided a significantly higher percentage of processing ears compared to the untreated check except the low rate of BAS 320. All treatments provided a higher percentage of fresh market ears compared to the untreated check except the BAS 320 and the low rate of Baythroid. The pyrethroids (Warrior, Proaxis, Capture, Mustang and Baythroid) provided the best CEW control. The BAS 320 product provided the best FAW control. Warrior provided the highest percentage of clean ears. No phytotoxicity was observed.

Treatment	Rate/A	% Clean Ears (Fresh Market)	% Clean + Tip Damaged Ears (Processing Ears)	% Damaged Ears		
				CEW	FAW	ECB
Warrior	3.84 oz	56.25a	65.00a	0.00d	43.13b	0.00b
ProAxis(Gf-317)	3.84 oz	35.63b	46.88ab	0.63d	63.75ab	0.00b
Capture 2EC	2.56 oz	29.38bc	40.00b	0.63d	69.38a	0.63b
Mustang MAX	4 oz	38.75b	45.00ab	0.63d	60.63ab	0.00b
Baythroid	2 oz	16.25cd	29.38b	2.50d	82.50a	0.00b
Baythroid	2.8 oz	26.88bc	39.38b	1.88d	70.00a	0.00b
Asana XL plus Lannate LV	9.6 oz + 1 pt	33.75bc	48.13ab	25.63c	42.50b	0.63b
BAS 320 02 + Penetrator Plus	25.3 oz 0.5% V/V	17.50cd	34.38b	74.38b	7.50c	0.63b
BAS 320 02 + Penetrator Plus	21.0 oz 0.5% V/V	1.25d	10.00c	93.75a	7.50c	0.63b
Untreated	----	0.00d	0.00c	83.75ab	74.38a	36.88a

Means in the same columns followed by the same letter are not significantly different (Ryan's q-test; P=0.05).

Flea Beetle and Stewart's Wilt Management in Sweet Corn Using Seed Treatments - 2004

Investigators: Joanne Whalen, Marty Spellman (Entomology); Jim Hawk and Tecele Weldekidan, (Plant and Soil Science)

Sweet corn plots were established at the University of Delaware's Research Farm in Newark, DE. Two sweet corn varieties with high levels of Stewart's Wilt Susceptibility (Jubilee and Lumina) were planted on April 30. Plots consisted of two-17.5 ft-long rows on 30-inch centers. Each treatment was replicated four times and arranged in a RCB design. Seed treatments were applied commercially by Gustafson Inc. Stand counts and plants with flea beetle damage per 35 ft were recorded for four weeks after plant emergence. A vigor rating was done on the same date as the final stand count. Stewart's wilt was rated as percent infected plants and a final rating at harvest maturity. Data were analyzed using ANOVA and means were separated by Ryan's q-test ($P=0.05$).

Flea beetle and Stewart's Wilt pressure was moderate. All treatments provided better flea beetle control compared to the untreated check for each variety. On May 13, all treatments in both varieties had higher stand counts compared to the untreated check. On June 10 and June 17, all treatments showed a significantly lower percentage of Stewart's wilt infected plants compared to the untreated check within each variety. No phytotoxicity was observed.

Table 1 – Flea Beetle Data

Variety	Treatment	Rate	% Flea Beetle Damaged Plants	
			May 14	May 21
Jubilee	Captan 400, Thiram Allegiance	195.2 ml, 162.7 ml 48.8 ml/100 kg seed	0.00b	0.00b
Jubilee	Captan 400, Thiram Allegiance Poncho	195.2 ml, 162.7 ml 48.8 ml/100 kg seed 0.25 mg ai/seed	0.53b	0.00b
Jubilee	Captan 400, Thiram, Allegiance, L1243, Poncho	195.2 ml; 162.7 ml, 48.8 ml, 273.3 ml/100 kg 0.25 mg ai/seed	0.53b	0.00b
Jubilee	Captan 400, Thiram Allegiance, L1226-A1, Poncho	195.2 ml, 162.7 ml, 48.8 ml, 62.5 ml/100 kg 0.25 mg ai/seed	1.14b	0.00b
Jubilee	Captan 400, Thiram Allegiance, LO288 Poncho	195.2 ml, 162.7 ml, 48.8 ml, 6.24 g/100 kg 0.25 mg ai/seed	0.00b	0.00b
Jubilee	Captan 400, Thiram Allegiance Dividend Extreme Poncho	195.2 ml, 162.7 ml/100 32.5 ml/100 kg seed 130.1 ml/100 kg seed 0.25 mg ai/seed	0.00b	0.00b
Jubilee	L1403, Allegiance, Poncho	212 ml, 35.8 ml/100 kg 0.25 mg ai/seed	0.57b	0.00b
Jubilee	L1403, Allegiance L128-A1, Poncho	212 ml, 35.8 ml 3.3 ml/100 kg seed 0.25 mg ai/seed	0.00b	0.00b
Jubilee	Maxim, Apron XL Dividend Extreme Cruiser 5FS	5.2 ml, 12.36 ml, 130.1 ml/ 100 kg seed 0.125 mg ai/seed	0.51b	0.00b
Jubilee	Untreated	-----	14.31a	26.93a
Lumina	Captan 400, Thiram Allegiance	195.2 ml, 162.7 ml 48.8 ml/100 kg seed	0.00b	0.00b
Lumina	Captan 400, Thiram Allegiance Poncho	195.2 ml, 162.7 ml 48.8 ml/100 kg seed 0.25 mg ai/seed	0.53b	0.00b
Lumina	Captan 400, Thiram, Allegiance, L1243, Poncho	195.2 ml; 162.7 ml, 48.8 ml, 273.3 ml/100 kg 0.25 mg ai/seed	0.48b	0.56b
Lumina	Captan 400, Thiram Allegiance L1226-A1, Poncho	195.2 ml, 162.7 ml, 48.8 ml, 62.5 ml/100 kg 0.25 mg ai/seed	0.00b	0.74b
Lumina	Captan 400, Thiram Allegiance, LO288 Poncho	195.2 ml, 162.7 ml, 48.8 ml, 6.24 g/100 kg 0.25 mg ai/seed	0.00b	0.00b
Lumina	Captan 400, Thiram Allegiance Dividend Extreme Poncho	195.2 ml, 162.7 ml/100 32.5 ml/100 kg seed 130.1 ml/100 kg seed 0.25 mg ai/seed	0.00b	0.00b
Lumina	L1403 Allegiance, Poncho	212 ml, 35.8 ml/100 kg 0.25 mg ai/seed	0.00b	0.00b
Lumina	L1403, Allegiance L128-A1, Poncho	212 ml, 35.8 ml 3.3 ml/100 kg seed 0.25 mg ai/seed	0.00b	0.00b
Lumina	Maxim, Apron XL Dividend Extreme Cruiser 5FS	5.2 ml, 12.36 ml, 130.1 ml/ 100 kg seed 0.125 mg ai/seed	0.00b	0.00b
Lumina	Untreated	-----	17.63a	26.39a

Table 2 – Stand Counts

Variety	Treatment	Rate	Stand Counts per 35 ft of row			Vigor Rating May 25*
			May 13	May 17	May 25	
Jubilee	Captan 400, Thiram Allegiance	195.2 ml, 162.7 ml 48.8 ml/100 kg seed	31.50b	32.50cd	28.5cd	3.75de
Jubilee	Captan 400, Thiram Allegiance Poncho	195.2 ml, 162.7 ml 48.8 ml/100 kg seed 0.25 mg ai/seed	51.25a	51.25a	44.00abc	5.50abcde
Jubilee	Captan 400, Thiram, Allegiance, L1243, Poncho	195.2 ml; 162.7 ml, 48.8 ml, 273.3 ml/100 kg 0.25 mg ai/seed	48.50a	48.75a	42.50abc	6.5abcde
Jubilee	Captan 400, Thiram Allegiance, L1226-A1, Poncho	195.2 ml, 162.7 ml, 48.8 ml, 62.5 ml/100 kg 0.25 mg ai/seed	46.00a	45.25abc	38.00abcd	4.25cde
Jubilee	Captan 400, Thiram Allegiance, LO288 Poncho	195.2 ml, 162.7 ml, 48.8 ml, 6.24 g/100 kg 0.25 mg ai/seed	51.50a	51.75a	44.75abc	5.25bcde
Jubilee	Captan 400, Thiram Allegiance Dividend Extreme Poncho	195.2 ml, 162.7 ml/100 32.5 ml/100 kg seed 130.1 ml/100 kg seed 0.25 mg ai/seed	47.00a	48.25a	43.25abc	6.25abcde
Jubilee	L1403, Allegiance, Poncho	212 ml, 35.8 ml/100 kg 0.25 mg ai/seed	47.25a	49.00a	42.75abc	5.50abcde
Jubilee	L1403, Allegiance L128-A1, Poncho	212 ml, 35.8 ml 3.3 ml/100 kg seed 0.25 mg ai/seed	49.50a	48.50a	41.50abc	6.75abcde
Jubilee	Maxim, Apron XL Dividend Extreme Cruiser 5FS	5.2 ml, 12.36 ml, 130.1 ml/ 100 kg seed 0.125 mg ai/seed	49.50a	50.00a	44.25abc	6.50abcde
Jubilee	Untreated	-----	30.00b	34.25bcd	28.25cd	3.25e
Lumina	Captan 400, Thiram Allegiance	195.2 ml, 162.7 ml 48.8 ml/100 kg seed	33.00b	35.00bcd	30.50bcd	3.75de
Lumina	Captan 400, Thiram Allegiance Poncho	195.2 ml, 162.7 ml 48.8 ml/100 kg seed 0.25 mg ai/seed	47.75a	48.75a	47.00ab	8.25ab
Lumina	Captan 400, Thiram, Allegiance, L1243, Poncho	195.2 ml; 162.7 ml, 48.8 ml, 273.3 ml/100 kg 0.25 mg ai/seed	48.25a	50.00a	45.25abc	8.50ab
Lumina	Captan 400, Thiram Allegiance L1226-A1, Poncho	195.2 ml, 162.7 ml, 48.8 ml, 62.5 ml/100 kg 0.25 mg ai/seed	49.50a	50.00a	44.25abc	7.25abcd
Lumina	Captan 400, Thiram Allegiance, LO288 Poncho	195.2 ml, 162.7 ml, 48.8 ml, 6.24 g/100 kg 0.25 mg ai/seed	47.00a	46.75ab	42.75abc	7.50abc
Lumina	Captan 400, Thiram Allegiance Dividend Extreme Poncho	195.2 ml, 162.7 ml/100 32.5 ml/100 kg seed 130.1 ml/100 kg seed 0.25 mg ai/seed	52.50a	52.25a	48.00ab	8.25ab
Lumina	L1403 Allegiance, Poncho	212 ml, 35.8 ml/100 kg 0.25 mg ai/seed	48.25a	47.25ab	45.00abc	8.25ab
Lumina	L1403, Allegiance L128-A1, Poncho	212 ml, 35.8 ml 3.3 ml/100 kg seed 0.25 mg ai/seed	50.75a	51.50a	49.25a	9.00a
Lumina	Maxim, Apron XL Dividend Extreme Cruiser 5FS	5.2 ml, 12.36 ml, 130.1 ml/ 100 kg seed 0.125 mg ai/seed	43.75a	43.50abc	38.25abcd	5.75abcde
Lumina	Untreated	-----	27.75b	26.50d	22.50d	3.75de

Table 3 – Stewart’s Wilt Ratings

Variety	Treatment	MLB Rating Aug 2 **	% Stewart’s Wilt Infected Plants		
			June 3	June 10	June 17
Jubilee	Captan 400, Thiram Allegiance	6.25abc	0.00b	1.85c	3.64b
Jubilee	Captan 400, Thiram Allegiance Poncho	6.25abc	1.22b	1.22c	1.06b
Jubilee	Captan 400, Thiram, Allegiance, L1243, Poncho	7.00a	0.63b	1.30c	1.30b
Jubilee	Captan 400, Thiram Allegiance, L1226-A1, Poncho	6.75a	1.89b	1.89c	3.43b
Jubilee	Captan 400, Thiram Allegiance, LO288 Poncho	6.50ab	0.00b	0.52c	1.25b
Jubilee	Captan 400, Thiram Allegiance Dividend Extreme Poncho	6.75a	1.25b	1.25c	2.98b
Jubilee	L1403, Allegiance, Poncho	6.50ab	1.30b	1.94c	3.33b
Jubilee	L1403, Allegiance L128-A1, Poncho	6.25abc	0.00b	0.89c	0.89b
Jubilee	Maxim, Apron XL Dividend Extreme Cruiser 5FS	7.00a	0.48b	0.97c	2.01b
Jubilee	Untreated	5.25bcd	5.46ab	15.36ab	17.201a
Lumina	Captan 400, Thiram Allegiance	4.75d	1.46b	6.78bc	9.56ab
Lumina	Captan 400, Thiram Allegiance Poncho	5.00cd	0.52b	0.52c	0.54b
Lumina	Captan 400, Thiram, Allegiance, L1243, Poncho	5.25bcd	0.00b	0.54c	1.05b
Lumina	Captan 400, Thiram Allegiance L1226-A1, Poncho	4.75d	0.57b	1.05c	1.62b
Lumina	Captan 400, Thiram Allegiance, LO288 Poncho	5.00cd	0.89b	0.89c	1.34b
Lumina	Captan 400, Thiram Allegiance Dividend Extreme Poncho	5.25bcd	1.50b	3.489c	4.07b
Lumina	L1403 Allegiance, Poncho	5.25bcd	2.72ab	3.80c	2.35b
Lumina	L1403, Allegiance L128-A1, Poncho	5.00cd	0.00b	1.578c	1.58b
Lumina	Maxim, Apron XL Dividend Extreme Cruiser 5FS	5.75abcd	1.96b	2.76c	2.98b
Lumina	Untreated	5.25bcd	7.72a	17.60a	21.51a

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

* Vigor Rating – Scale 1-9 1= unacceptable, poor uniformity 9= exceptionally vigorous and uniform

** MLB= Mature leaf blight rating (1-9 scale)

1= no infection	5 = 21-30% leaf area infected	9 = 76-100% leaf area infected
2=trace amount of infection	6= 31-40% leaf area infected	
3= 0-10% leaf area infected	7= 41-50% leaf area infected	
4= 11-20% leaf area infected	8= 51-75% leaf area infected	

Acramite Two Spotted Spider Mite Management in Watermelons - 2004: 'Jamboree' watermelon transplants were planted on June 3 at the University of Delaware Research and Education Center located near Georgetown, DE. Plots consisted of two 35 ft-long rows on 8 ft centers. Each treatment was replicated four times and arranged in a RCB design. Treatments were applied as a broadcast spray on June 30. . All foliar treatments were broadcast applied with a CO₂ pressurized backpack sprayer delivering 21 gpa @ 40 psi. Mite populations were evaluated on a weekly basis from June 9 through July 27 by looking at 5 plants per plot to determine the percent infested plants and by collecting 20 leaves per plot and using a mite brushing machine to determine the number of mites per leaf. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Plots were inoculated with spider mite infested leaves 2 times in an effort to flair mites. Spider population pressure was moderate/heavy. All treatments provided significantly better spider mite control compared to the untreated check on July 13. No phytotoxicity was observed.

Table 1. Spider Mite Counts on Leaves

Treatment	Rate/A	Mean Number Spider Mites per Leaf			
		June 29 Pre-Trt	July 7 7 DAT	July 13 13 DAT	July 20 20 DAT
Acramite 50WS + Silwet	16 oz 3 oz/100 gal	4.70a	31.05a	1.05b	1.35a
Acramite 50WS +Silwet	12 oz 3 oz/100 gal	2.54a	33.68a	1.35b	1.73a
Untreated	-----	3.62a	33.05a	11.93a	10.58a

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

Two Spotted Spider Mite Management in Watermelons - 2004: 'Jamboree' watermelon transplants were planted on May 25 at the University of Delaware Research and Education Center located near Georgetown, DE. Plots consisted of two 35 ft-long rows on 8 ft centers. Each treatment was replicated four times and arranged in a RCB design. Treatments were applied as a broadcast spray on July 8 and 15. All foliar treatments were applied with a CO₂ pressurized ATV 4-wheeled sprayer delivering 22 gpa at 60 psi. Mite populations were evaluated on a weekly basis from June 2 through July 27 by looking at 5 plants per plot to determine the percent infested plants and by collecting 20 leaves per plot and using a mite brushing machine to determine the number of mites per leaf. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Plots were inoculated with spider mite infested leaves 2 times in an effort to flair mites. Spider population pressure was moderate. After the second application, all treatments provided significantly better spider mite control compared to the untreated check. No phytotoxicity was observed.

Table 1. Spider Mite Counts on Leaves

Treatment	Yield Total Pounds per plot	Rate/A	Mean Number Spider Mites per Leaf			
			July 6 Pre-Trt	Post-Treatment July 13 (5DAT) Mean # Mites/Leaf	Post-Treatment July 21(6DAT) Mean # Mites/Leaf	Post-Treatment July 27(12DAT) Mean # Mites/Leaf
Capture 2EC	285.25a	6.4 oz	5.85a	4.20b	0.83b	0.50b
Danitol 2.4EC	480.30a	16 oz	4.30a	4.35b	1.65b	0.40b
Zeal WDG	352.20a	1 oz	4.60a	5.80ab	0.38b	0.15b
Zeal WDG	362.40a	2 oz	4.50a	1.35b	0.38b	0.25b
Agri-Mek 0.15EC	278.35a	8 oz	5.50a	5.75ab	0.23b	0.20b
MK936 018EC-AB	342.85a	8 oz	4.90a	4.75b	0.90b	0.10b
MK936 018EC-AD	416.75a	8 oz	7.00a	6.95ab	0.30b	0.20b
Acramite 50WS + Silwet	381.45a	1 lb + 3 oz/100 gal	1.90a	4.15b	0.83b	0.25b
Acramite 50WS +Silwet	324.95a	0 .75 lb+ 3 oz/100 gal	6.80a	6.53ab	0.53b	0.30b
Untreated	382.93a	-----	4.40a	13.75a	3.75a	3.40a

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

Wireworm Management in Field Corn Using Seed Treatments and Soil Insecticides, 2004: J. Whalen and M. Spellman (Entomology) and B. Uniatowski (Plant Science)

'N70-D5' was planted on April 22 at Murray Brothers Farms located near Selbyville, DE and ByField Farms located near Felton, DE. Four-row 30 foot long plots on 30-inch centers were replicated 4 times in a RCB design. Seeds treatments were commercially applied by Gustafson and Syngenta Seeds. The liquid in-furrow treatments were applied in 5.5 gallons of water per acre. Stand counts and wireworm damaged plants were evaluated on a 7-10 day basis from May 5 through June 17. Yields were taken from the center two rows of each plot on September 3 in Selbyville and Sept 14 in Felton. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Wireworm pressure was low - moderate. On May 5, all treatments provided significantly better wireworm control compared to the untreated check except Agrox Premiere at the Selbyville location. No phytotoxicity was observed.

Location #1 – Murray Farms, Selbyville, DE

I. Insect Damage Data

Treatment	Rate	% Wireworm Damaged Plants		
		May 5	May11	May 18
Poncho 250	0.25 mg ai/seed	0.0b	0.00b	0.30a
Poncho 1250	1.25 mg ai/seed	0.0b	0.00b	0.00a
Cruiser 5F	0.125 mg ai/seed	0.0b	0.73ab	1.00a
Cruiser 5F	1.25mg ai/seed	0.0b	0.00b	0.00a
Cruiser 5 F + Warrior	0.125 mg ai/seed+ 3.84oz/A	0.0b	0.26b	0.51a
Warrior	3.84 oz/A	0.0b	0.99ab	1.78a
Mustang MAX	4 oz/A	0.0b	1.20ab	1.53a
Concur	1.5 oz/42 lbs	0.0b	3.90a	2.10a
Agrox Premiere	1.5 oz/42 lbs	1.0a	2.65ab	0.28a
Untreated	-----	1.4a	1.98ab	1.91a

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

II. Stand Count and Yield Data

Treatment	Yield BU/A	Plants per 60 ft of row		
		May 5	May 11	May 18
Poncho 250	164.14a	100.5a	102.3a	100.0a
Poncho 1250	162.07a	101.3a	100.5a	100.3a
Cruiser 5F	158.38a	103.0a	103.0a	102.3a
Cruiser 5F	162.82a	99.8a	103.0a	102.3a
Cruiser 5 F + Warrior	170.01a	99.8a	103.0a	101.8a
Warrior	163.34a	98.5a	100.8a	99.0a
Mustang MAX	155.48a	94.8a	96.0a	93.8a
Concur	161.10a	100.5a	102.3a	99.3a
Agrox Premiere	149.06a	101.8a	101.8a	99.0a
Untreated	149.44a	92.0a	95.0a	92.5a

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

Location #1 – ByField Farms, Felton, DE

I. Insect Damage Data

Treatment	Rate	% Wireworm Damaged Plants			
		May 4	May 10	May 17	May 24
Poncho 250	0.25 mg ai/seed	0.00a	0.72a	0.25a	0.00a
Poncho 1250	1.25 mg ai/seed	0.00a	0.48a	0.49a	0.26a
Cruiser 5F	0.125 mg ai/seed	0.00a	0.50a	0.50a	0.00a
Cruiser 5F	1.25mg ai/seed	0.00a	0.48a	0.00a	0.0a
Cruiser 5 F + Warrior	0.125 mg ai/seed+ 3.84oz/A	0.00a	0.48a	0.23a	0.00a
Warrior	3.84 oz/A	0.23a	1.92a	1.00a	0.76a
Mustang MAX	4 oz/A	0.00a	0.51a	0.26a	0.51a
Concur	1.5 oz/42 lbs	0.00a	0.75a	0.52a	0.76a
Agrox Premiere	1.5 oz/42 lbs	0.00a	0.45a	0.46a	0.49a
Untreated	-----	0.52a	2.58a	1.10a	0.29a

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

II. Stand Count and Yield Data

Treatment	Yield	Plants per 60 ft of row			
		May 4	May 10	May 17	May 24
Poncho 250	190.0a	103.0a	103.5a	102.8a	100.8a
Poncho 1250	190.4a	102.5a	103.8a	103.5a	102.0a
Cruiser 5F	188.1a	101.5a	102.5a	102.5a	100.0a
Cruiser 5F	179.8a	102.3a	103.5a	102.5a	101.3a
Cruiser 5 F + Warrior	181.9a	101.0a	102.8a	102.5a	98.8a
Warrior	185.2a	104.3a	104.3a	101.a	99.5a
Mustang MAX	179.8a	95.8a	98.0a	98.3a	96.0a
Concur	189.9a	101.0a	102.0a	102.0a	97.8a
Agrox Premiere	191.0a	105.8a	106.3a	107.0a	102.3a
Untreated	186.7a	101.0a	101.0a	98.3a	95.5a

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

White Grub Management in Field Corn Using Seed Treatments, 2004: J. Whalen and M. Spellman (Entomology) and B. Uniatowski (Plant and Soil Science)

'N70-D5' was planted on May 5 at Uniatowski Farms located near Middletown, DE. Four-row 1200 foot long plots on 30-inch centers were replicated 4 times in a RCB design. Seeds treatments were commercially applied by Gustafson and Syngenta Seeds. Stand counts and white grub damaged plants were evaluated on a 7 day basis from May 12 through May 27. Yields were taken from the center two rows of each plot on September 27. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

White grub pressure was moderate. All treatments provided significantly better grub control on May 20 compared to the untreated check. No phytotoxicity was observed.

I. Insect Damage Data

Treatment	Rate	% White Grub Damaged Plants	
		May 20	May 27
Cruiser 5F	0.125 mg ai/seed	0.26b	0.80a
Poncho 1250	1.25 mg ai/seed	1.19b	3.83a
Untreated	-----	15.51a	2.64a
Poncho 250	0.25 mg ai/seed	1.39b	1.45a
Kickstart	1.5 oz/42 lbs	2.07b	0.00a
Cruiser + Kickstart	0.125 mg ai/kernel	0.30b	0.29a

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

II. Stand Count and Yield Data

Treatment	Yield BU/A *	Plants per Acre	
		May 12	May 20
Cruiser 5F	184.22a	24,210a	23,938a
Poncho 1250	177.51ab	21,730a	22,313a
Untreated	187.04a	24,023a	22,563a
Poncho 250	160.22b	22,043a	22,000a
Kickstart	180.63ab	24,793a	23,750a
Cruiser + Kickstart	175.97ab	22,375a	21,063a

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

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

Slug Management in Field Corn, 2004: ‘N70-D5’ field corn was planted on May 12 at Baker Farms located near Middletown, DE.

Twelve-row 30 foot long plots on 30-inch centers were replicated 4 times in a RCB design. Treatments were applied with a rotary-spreader at planting (May12) and at the first sign of slug damage (May 20). Twenty plants per plots were evaluated on May 18 and May 24 for new slug damage on newly emerged leaves. On May 24, the degree of slug damage was rated on a 1-5 scale (1= no damage; 5= most damaged check). Data were analyzed using ANOVA and means were separated by Ryan’s q-test (P=0.05).

Slug pressure was low – moderate. On May 24, all treatments provided significantly better slug control compared to the untreated control. No phytotoxicity was observed.

Treatment	Timing of Application	Rate/A	% Slug Damaged Plants		Slug Rating May 24
			May 18	May 24	
Metarex	BC at planting-5/12	6.5 lb	0.50b	0.75c	1.50d
Deadline M-Ps	BC at planting- 5/12	10 lb	0.75b	1.50c	1.75d
Metarex	BC at first slug activity – May 20	6.5 lb	8.50a	2.00c	2.00cd
Metarex	BC at first slug activity – May 20	10 lb	7.50a	5.00bc	2.50bcd
Deadline M-Ps	BC at first slug activity- May 20	10 lb	6.00ab	5.50bc	2.75bc
Metarex	BC at planting -5/12 and BC first slug activity – May 20	3 lb 5 lb	0.75b	1.00c	1.50d
OrCal Product	BC at first slug activity – May 20	10 lb	8.50a	7.75b	3.00b
Untreated	-----	----	5.75ab	13.75a	4.25a

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

Evaluation of Seed Treatments for Soybean Insect Management - 2004:

Investigators: J. Whalen and , M. Spellman – Entomology and Wildlife Ecology; B. Uniatowski – Plant and Soil Science

An early planting of Round-Up Ready 'CL-48" soybeans was established at Baker Farms Inc. near Middletown, DE and at the University of Delaware Research and Education Center (REC) near Georgetown, DE. A late planting was also established at the REC. Four row plots 30 ft long plots on 30-inch center were replicated 4 times in a RCB design. The Cruiser seed treatment was commercially applied by Syngenta Seeds. Insect populations and stand counts were evaluated weekly for six weeks after plant emergence. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Bean leaf beetle and thrips populations were low-moderate. In general, the Cruiser treatment provided the best bean leaf beetle and thrips control at both locations. No phytotoxicity was observed.

I. University of Delaware, Research and Education Center, Georgetown, DE

Planting Date # 1: April 28

Harvest Date: October 12

Treatment	Rate	Yield - BU/A	Stand Count Plants per 60 ft row May 10	% Plants with BLB Damage * May 19	Thrips/20 leaflets			
					May 24	June 1	June 8	June 22
Cruiser	50 g ai/100 kg seed	66.45a	456.25 a	5.31b	0.00c	1.75b	5.25b	8.00a
Agrox Premiere	1.5 oz/42 lbs seed	66.71a	453.00a	22.01a	15.25b	91.00a	74.00a	18.00a
AGST0301	1.5 oz/42 lbs seed	65.51a	409.00b	12.85ab	19.00ab	77.00a	105.25a	13.75a
Untreated	-----	66.18a	391.75b	21.65a	21.75a	83.25a	74.25a	10.50a

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

Planting Date #2: July 6 Harvest Date:

Treatment	Rate	Yield - BU/A	Stand Count Plants per 40 ft row July 14	Thrips per 20 leaflets	
				July 20	July 26
Cruiser	50 g ai/100 kg seed	40.86a	383.25a	2.75b	2.50b
Agrox Premiere	1.5 oz/42 lbs seed	37.91a	361.00a	19.50a	22.50a
AGST0301	1.5 oz/42 lbs seed	35.00a	347.50a	5.00b	36.50a
Untreated	-----	40.22a	348.75a	15.75a	31.00a

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

II. Baker Farms Demonstration Site, Middletown, DE

Planting Date # 1: May 12

Harvest Date: October 18

Treatment	Rate	Yield - BU/A	Stand Count Plants per 40 ft row May 28	% BLB Damaged Plants		Thrips per 20 leaflets	
				May 28	June 10	May 28	June 10
Cruiser	50 g ai/100 kg seed	60.51a	208.50a	2.30b	9.68b	1.25b	6.25b
Agrox Premiere	1.5 oz/42 lbs seed	49.21a	203.25a	17.25a	38.47a	18.00a	65.75a
AGST0301	1.5 oz/42 lbs seed	55.13a	199.75a	16.55a	43.63a	19.00a	54.50a
Untreated	-----	54.18a	197.75a	24.81a	49.72a	19.50a	62.50a

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

Two-Spotted Spider Mite Management in Soybeans - 2004: Southern States 'RT-4495' were planted on May 24 at the University of Delaware, Research and Education Center located near Georgetown, DE. Four-row, 25 ft long plots on 30-inch centers were replicated 4 times in a RCB design. Materials were applied on June 30 and July 7 in study #1 and on July 7 in study #2. All foliar treatments were broadcast applied with a CO₂ pressurized backpack sprayer delivering 21 gpa @ 40 psi. Mite populations were evaluated on a weekly basis from June 12 through July 26 by collecting 10 leaflets per plot and using a mite brushing machine to determine the number of mites per leaflet. Data were analyzed using ANOVA and means were separated by Ryan's q-test (P=0.05).

Spider mite pressure was heavy. In study #1, all treatments provided significantly better spider mite control compared to the untreated check on July 12 and 20. In the second study, Acramite provided significantly better spider mite control compared to dimethoate and the untreated check on July 20. No phytotoxicity was observed.

Table 1. Soybean Spider Mite Study #1

Treatment	Rate	Yield BU/A	Spider Mites per 10 leaves			
			June 28 Pre-treatment	July 6 6 DAT	July 12 6 DAT	July 20 14 DAT
Acramite 4 SC + Silwet	32 oz + 4 oz/100 gal	57.36a	583.50a	384.00a	125.00c	0.00b
Acramite 4 SC + Silwet	24 oz + 4 oz/100 gal	58.64a	616.50a	381.00a	298.50c	27.00b
Acramite 4SC + Silwet	16 oz + 4 oz/100 gal	54.84a	866.00a	460.50a	189.00c	28.50b
Acramite 4SC + Silwet + Choice	16 oz + 4 oz/100 + 1 qt/100 gal	58.34a	1062.00a	1416.00a	168.00c	40.50b
Capture 2EC	5.12 oz	58.86a	604.50a	423.00a	181.50c	12.00b
Zeal WDG	2/3 oz	59.93a	496.50a	441.00a	183.00c	6.00b
ZealWDG	1 oz	54.22a	1042.50a	921.00a	79.25c	3.00b
Dimethoate 4 EC	16 oz	50.93a	1740.50a	750.00a	870.00b	79.50b
Lorsban 4EC	16 oz	49.25a	666.00a	840.00a	427.50c	57.00b
Untreated	-----	40.01a	700.50a	855.00a	1573.50a	180.00a

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

Table 2. Soybean Spider Mite Study #2

Treatment	Rate	Yield BU/A	Spider Mites per 10 leaves			
			July 6 Pre-Treatment	July 12 6 DAT	July 20 14 DAT	July 26 20 DAT
Acramite 4SC + Silwet	16 oz + 4 oz/100 gal	45.18a	1171.50a	760.50a	18.00c	6.00a
Acramite 4SC + Silwet	12 oz + 4 oz/100 gal	46.21a	2260.50a	863.00a	30.00c	4.00a
Acramite 4SC + Silwet	8 oz + 4 oz/100 gal	46.57a	1455.00a	772.50a	33.00c	0.00a
Dimethoate	16 oz	37.71ab	1587.00a	1324.00a	97.50b	2.00a
Untreated	-----	32.68b	1924.50a	2005.50a	253.50a	2.00a

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

Acramite Watermelon Spider Mite Demonstration – 2004

I. Location: Delmar, Delaware

Grower: Lee Williamson

Treatment Date: May 22; 9:30 AM

Rate: $\frac{3}{4}$ lb/A plus 1 qt/100 gallon of LI-100

Date	Evaluation Time	% Infested Plants	Mites/Leaf
May 21	Pre-treatment	52%	1.89
May 25	3 DAT	64%	3.42
May 27	5 DAT	3%	0.11
June 1	10 DAT	36%	0.36
June 9	19 DAT	32%	0.30
June 16	26 DAT	46%	2.00

II. Location: Laurel, DE

Grower: Ed Steen

Treatment Date: June 16, 2004

Post Evaluation Date: June 23 = 56% infested and 2 per leaf

Platinum – Insect Management in Watermelon Demonstration – 2004

Location: Laurel, DE

Grower: Mark Collins

Injection Date: May 10

Rate: 5 oz/acre

Sampling Scheme – 5 consecutive plants in 10 locations per block

I. Platinum Treated Block

Date	Aphids		Cucumber Beetles		Spider Mites	
	% Infested Plants	# per leaf	% Infested Plants	#/plant	% Infested Plants	# per leaf
May 10 – Pre-trt	18	0.04	0	0	0	0
May 17	4	0.008	2	0.02	4	0.02
May 24	4	0.01	0	0	0	0
June 1	0	0	0	0	22	1.14
June 9	14	0.08	8	0.14	16	0.11
June 16	0	0	4	0.04	14	0.42
June 23	0	0	0	0	32	1.50
June 29	0	0	0	0	34	1.24

II. Untreated Treated Block

Date	Aphids		Cucumber Beetles		Spider Mites	
	% Infested Plants	# per leaf	% Infested Plants	#/plant	% Infested Plants	# per leaf
May 10 Pre-trt	26	0.10	0	0	4	0.01
May 17	16	0.16	0	0	6	0.02
May 24	28	0.11	10	0.12	8	0.04
June 1	18	0.37	14	0.22	2	0.02
June 9	6	0.05	10	0.10	8	0.06
June 16	8	0.13	4	0.08	26	0.36
June 23	4	0.02	0	0	18	0.16
June 29	2	0.01	2	0.02	10	0.05

Vydate– Insect Management in Watermelon Demonstration – 2004

Location: Laurel, DE

Grower: Donald Steen

Injection Date: May 10

Rate: May 21 – 2 qt/A; June 4 – 1 qt/A; June 17 – 1 qt/A

Agri-Mek for Mites – 8 oz/a on June 28

Sampling Scheme – 5 consecutive plants in 10 locations per block

I. Vydate Treated Block

Date	Aphids		Cucumber Beetles		Spider Mites	
	% Infested Plants	# per leaf	% Infested Plants	#/plant	% Infested Plants	# per leaf
May 19 – Pre-trt	48	0.36	2	0.02	12	0.02
May 24	2	0.01	0	0	10	0.07
June 1	0	0	2	0.02	24	0.21
June 9	0	0	8	0.16	16	0.16
June 16	0	0	8	0.12	30	0.53
June 23	0	0	4	0.04	30	1.48
June 30	----	----	----	----	30	2.28

II. Untreated Treated Block

Date	Aphids		Cucumber Beetles		Spider Mites	
	% Infested Plants	# per leaf	% Infested Plants	#/plant	% Infested Plants	# per leaf
May 19 Pre-trt	56	0.46	0	0	0	0
May 24	36	0.39	0	0	10	0.12
June 1	10	0.12	2	0.02	18	0.23
June 9	12	0.29	12	0.14	10	0.08
June 16	14	0.61	0	0	36	0.68
June 23	30	0.86	1	0.02	40	3.32
June 30	---	---	---	---	35	3.35

Field Corn – Seed Treatment Demonstrations – 2004

I. Location #1 – Bridgeville, DE

Treatments: Poncho 250 versus Poncho 250 plus Warrior IF @ 3.84 oz/A

Planting Date: April 19

Date	Growth Stage	Plant Population/Acre	
		Poncho 250	Poncho 250 + Warrior
4/29	Spike-not all emerged	19,100	18,250
May 11	3-4 leaf	28,250	27,650
May 19	6-7 leaf	30,583	29,792

2. Location #2 – Wyoming, DE #1

Treatments: Poncho 1250 versus Regent

Planting Date: April 25

Date	Growth Stage	Plant Population/Acre	
		Poncho 1250	Regent
May 6	Spike	18,875	18,917
May 14	3-4 leaf	26,750	26,083

3. Location #3 – Wyoming, DE #2 (Home)

Treatments: Poncho 1250 versus Regent

Planting Date: April 25

Date	Growth Stage	Plant Population/Acre	
		Poncho 1250	Regent
May 6	Spike	22,313	22,125
May 18	5 leaf	27,125 *	25,875**
May 28	7 leaf	27,313	26,625

* - 0.96% grub damage

** - 1.06 % grub damage

4. Location #4 – Felton, DE

Treatments: Force plus Agrox Premiere, Force plus Concur, Agrox Premiere, Concur, Force, Untreated

Planting Date: April 28

Treatment	Plant Population/Acre		
	May 13 2-3 leaf	May 20 5-6 leaf	May 26 7-8 leaf
Force+Agrox	27,500	27,083	26,750
Force+Concur	26,250	26,500	27,167
Agrox Premiere	25,333	25,583	25,917
Concur	27,083	27,000	27,000
Force	27,667	27,455	27,333
Untreated	27,625	26,714	26,500

5. Location #5 – Sudlersville, MD North

Treatments: With Cruiser versus untreated

Planting Date: May 11

Date	Growth Stage	Plant Population/Acre	
		With Cruiser	Untreated
May 20	2-3 leaf	24,916	25,583
May 27	4-5 leaf	24,800	25,680

6. Location #6 – Sudlersville, MD South

Treatments – Kernel Guard plus Cruiser versus Kernel Guard Alone

Planting Date: May 5

Date	Growth Stage	Plant Population/Acre	
		Kernel Guard	Kernel Guard plus Cruiser
May 18	3-4 leaf	23,187	23,438
May 27	5-6 leaf	22,813	23,813

7. Location #7 – Middletown, DE

Treatments: Poncho 250 + Kernel Guard, Poncho Alone, Kernel Guard Alone, Untreated

Planting Date: May 11

Treatment	Plant Population/Acre	
	May 21- 3 leaf	May 28- 6 leaf
Poncho+Kernel Guard	23,833	23,313
Poncho Alone	24,750	23,750
Kernel Guard Alone	23,188	23,562
Untreated	25,500	22,500