



INSECT PEST MANAGEMENT IN VIRGINIA COTTON, PEANUT, AND SOYBEAN 2016

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Bollworm feeding inside cotton boll

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Insect Rating Scales Used in Efficacy Trials and Abbreviations Used in this Publication

Thrips injury rating scale for cotton:

- 0 = no injury
- 1 = 10% injured leaves, no bud injury
- 2 = 25% injured leaves, no bud injury
- 3 = 75% injured leaves, 0-25% buds injured
- 4 = 90% injured leaves, >25% buds injured
- 5 = dead plants

Thrips injury rating scale for peanut:

- 0 = no injury
- 1 = 10% leaves injured
- 2 = 20% leaves injured
- 3 = 30% leaves injured
- 4 = 40% leaves injured
- 5 = $\geq 50\%$ leaves injured + $\leq 5\%$ terminal buds injured
- 6 = $\geq 50\%$ leaves injured + 25% terminal buds injured
- 7 = $\geq 50\%$ leaves injured + 50% terminal buds injured
- 8 = $\geq 50\%$ leaves injured + 75% terminal buds injured
- 9 = $\geq 50\%$ leaves injured + 90% terminal buds injured
- 10 = dead plants

Abbreviations used in this publication:

- 1st tl: first true leaf
- ai: active ingredient
- BC: broadcast
- BMSB: brown marmorated stink bug
- cotyl: cotyledon
- cwt: hundred-weight
- DAE: days after emergence
- DAT: days after treatment
- GC: ground-cracking
- IF: in-furrow
- INSE = insecticide
- PD = planting date
- SDTR = seed treatment
- Tidewater AREC: Tidewater Agricultural Research and Extension Center
- % v/v: percent volume to volume

Contents

Insect Rating Scales Used in Efficacy Trials and Abbreviations Used in this Publication	2
Climatological Summary of the 2016 Growing Season—Tidewater AREC, Suffolk, VA	5
Table 3. Soil types, nutrient analyses (ppm), and pH for tests conducted in 2016— Tidewater AREC, Suffolk, VA.	7

Cotton Insect Pest Management Tests and Demonstrations

Test: CT16-THP-VSCSC-1—Evaluation of foliar-applied insecticides for thrips management in Virginia cotton	9
Test: CT16-THP-VSCSC-2—Evaluation of at-planting insecticides, with and without Aeris, for thrips management in Virginia cotton	11
Test: CT16-THP-BAYER-A—Evaluation of insecticidal seed treatments in cotton	14
Test: CT16-THP-BAYER-B—Evaluation of seed and in-furrow treatments, including Velum Total, for thrips management in cotton	17
Test: CT16-THP-BAYER-C—Evaluation of insecticidal seed and liquid in-furrow treatments in cotton	19
Test: CT16-THP-REGIONAL-1—Regional cotton variety test	22
Test: CT16-THP-REGIONAL-2—Regional cotton at-plant test	26
Test: CT16-THP-SYNGENTA-100A4—Evaluation of foliar pesticides, including Minecto Pro, in cotton	29
Test: CT16-THP-SYNGENTA-102A3—Efficacy of insecticides, including A20703C seed treatment with foliar Minecto Pro or acephate oversprays, against thrips in cotton	35
Test: CT16-THP-SYNGENTA-100A3—Efficacy of insecticides, including A20703C seed treatment, against thrips in cotton	42
Test: CT16-THP-PBUG-VCB-1—Evaluation of tarnished plant bug management programs in Virginia cotton	49
Test: CT16-THP-PBUG-VCB-2—Evaluation of tarnished plant bug management programs in Virginia cotton	57
Test: CT16-THP-PBUG-DOW-1—Efficacy of insecticides, including Transform, against tarnished plant bug in Virginia cotton	65
Test: CT16-BW-1—Evaluation of bollworm-resistant cotton varieties	75

Peanut Insect Pest Management Tests and Demonstrations

Test: PT16-THP-VPB-1—Evaluation of foliar-applied insecticides for thrips management in peanut	78
Test: PT16-THP-VPB-2—Evaluation of at-planting insecticides for thrips management in peanut	81
Test: PT16-THP-BAYER-1—Evaluation of at-planting, in-furrow pesticides for thrips management in peanut	85
Test: PT16-THP-AMVAC-1—Influence of Thimet on peanut	87
Test: PT16-SCR-LEP-1—Evaluation of insecticides for managing rootworm and foliar- feeding leps in peanut	91
Test: PT16-SCR-LEP-2—Evaluation of insecticides for managing rootworm and foliar- feeding leps in peanut	93

Test: PT16-THP-NEM-NPB 1—Efficacy and yield benefits of insecticide, nematicide, and fungicide chemistries and pre-mixes for pest management in peanut (Test 1)	95
Test: PT16-THP-NEM-NPB 2—Efficacy and yield benefits of insecticide, nematicide, and fungicide chemistries and pre-mixes for pest management in peanut (Test 2)	106
Test: PT16-THP-NEM-NPB 3—Efficacy and yield benefits of insecticide, nematicide, and fungicide chemistries and pre-mixes for pest management in peanut (Test 3)	117
Test: PT16-LEP-DOW-1—Efficacy of selected insecticides, including Intrepid Edge, against lep pests in peanut	128
Test: PT16-LEP-VALENT-1—Evaluation of selected insecticides for insect pest management in peanut.....	130
Test: PT16-LEP-VALENT-2—Evaluation of selected insecticides for lep pest management in peanut.....	132
 Soybean Insect Pest Management Tests and Demonstrations	
Test: SB16-THP-DUPONT-1—Evaluation of seed treatments for early-season insect management in soybean	135
Test: SB16-THP-VALENT-1—Efficacy of soybean seed treatments against early-season insect pests in soybean.....	139
 Table 99. Average nightly number of corn earworm moths captured in eastern Virginia black light traps, 2016 season.....	
	141
Table 100. Average nightly number of brown marmorated stink bugs (BMSB) captured in eastern Virginia black light traps, 2016 season.....	
	142

Climatological Summary of the 2016 Growing Season—Tidewater AREC, Suffolk, VA
Weather data in Tables 1 and 2 are from Dr. Hillary Mehl's [Peanut Cotton InfoNet](#) station located at the Virginia Tech Tidewater AREC Research Farm, 1045 Hare Road, Suffolk, VA.

Table 1. Daily maximum and minimum temperatures (°F) for the 2016 growing season.

Day of month	May		Jun		Jul		Aug		Sep		Oct		Nov	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	76	54	83	67	89	70	90	73	93	69	86	69	62	41
2	86	65	86	69	86	70	87	72	78	67	85	67	.	.
3	79	62	91	66	72	67	85	69	76	66	81	63	84	56
4	73	57	87	72	81	65	88	69	80	62	77	60	68	44
5	57	52	90	70	93	76	91	69	82	59	70	61	67	39
6	64	51	86	71	93	73	92	75	90	62	72	61	74	36
7	73	52	87	68	93	73	90	73	85	65	83	68	60	34
8	83	55	80	58	93	74	83	71	89	71	74	66	69	32
9	83	49	81	52	90	72	91	71	91	71	69	54	63	47
10	76	61	84	61	91	69	92	72	89	74	67	46	63	40
11	81	59	92	66	91	68	93	73	90	71	71	41	70	39
12	74	63	93	72	88	72	93	75	86	64	78	48	56	28
13	78	63	83	59	92	73	94	77	88	62	79	52	66	24
14	82	57	86	59	96	72	96	78	90	63	70	45	64	31
15	67	46	90	63	94	72	98	76	82	64	74	46	.	.
16	73	41	91	72	88	71	95	75	78	64	79	49	.	.
17	72	53	75	65	91	71	95	76	87	63	84	55	.	.
18	66	54	80	59	93	71	92	73	92	67	85	61	75	34
19	66	53	88	55	95	69	86	70	89	72	89	65	.	.
20	76	50	87	58	92	67	92	70	77	72	85	62	51	35
21	73	60	91	68	93	66	94	71	75	72
22	64	56	88	75	91	71	88	66	83	73	65	45	.	.
23	68	55	86	72	95	74	86	62	87	66	69	37	60	23
24	84	51	88	68	97	75	87	58	91	64	78	52	.	.
25	88	60	82	65	96	76	89	61	77	64	65	40	67	47
26	90	61	85	60	97	75	96	70	78	59	67	37	57	33
27	87	67	88	62	95	74	93	68	79	68	76	42	.	.
28	87	58	80	71	96	77	89	66	84	65	69	43	.	.
29	79	66	90	69	91	75	90	67	83	68	77	40	73	52
30	78	69	88	69	92	72	92	66	85	67	82	55	77	63
31	86	69			93	74	92	67			.	.		
Avg.	76	57	86	65	91	72	91	70	84	67	76	53	66	39

Table 2. Daily precipitation (inches) for the 2016 growing season—Tidewater AREC, Suffolk, VA.

Day of month	May	Jun	Jul	Aug	Sep	Oct	Nov
1	0.03	0.07	1.2	0.88	0.13	0	0
2	2.74	0	0	0.26	0.18	0.05	.
3	0.71	0.06	0.58	0	2.64	0	0
4	0.23	0.01	0.37	0	0	0	0.37
5	0.9	0.65	0	0.01	0	0.06	0
6	0.35	0.13	0	0	0	0.34	0
7	0.01	0.14	1.01	0	0.03	0.02	0
8	0	0	0.03	0.02	0.51	8.29	0
9	0	0	0	1.19	0	1.4	0.05
10	0.06	0	0	0	0	0	0
11	0.76	0	0.96	0	0.55	0	0
12	0	0.04	0	0	0	0	0
13	0.01	0	0.02	0	0	0	0
14	0.01	0	0	0	0	0	0.03
15	0	0	0.8	0	0	0	.
16	0	0.08	0.23	0	0	0	.
17	0.42	0.86	0.29	0	0	0	.
18	0.05	0	0	0	0	0	0
19	0	0	0.52	0	1.08	0	.
20	0	0	0	0	1.53	0	0
21	0.15	0	0	0.11	4.83	.	.
22	0.02	0	0	0	0.56	0	.
23	0.09	0.3	0	0	0	0	0
24	0	0.02	0	0	0	0	.
25	0	0	0	0	0	0	0
26	0	0	0.23	0	0	0	0.29
27	0	0	0.14	0	0	0	.
28	0	0.89	0.02	0	0.08	0	.
29	0.32	0.01	0	0	0.07	0	0.01
30	1.45	0.23	0.98	0	0.05	0	0.01
31	0		1.1	0		.	
Total	8.31	3.49	8.48	2.47	12.24	10.16	0.76

Table 3. Soil types, nutrient analyses (ppm), and pH for tests conducted in 2016—Tidewater AREC, Suffolk, VA.

Field #	Crop	Soil type(s)	P	K	Ca	Mg	Zn	Mn	pH
5	Cotton	Eunola, Dragston, Rains	65	74	430	44	0.8	2.6	5.5
13	Cotton	Emporia, Nansemond	70	96	533	37	0.5	1.9	5.4
15	Soybean	Emporia, Nansemond, Eunola	57	123	535	45	0.5	1.9	6.3
21	Peanut	Emporia, Eunola	61	148	529	66	0.4	2.6	6.7
29	Peanut	Emporia, Eunola, Uchee	43	55	499	58	0.5	1.7	6.5
35	Peanut	Nansemond, Dragston	70	93	365	35	0.4	1.9	6.0
36	Cotton	Uchee, Nansemond	78	46	398	25	0.3	1.4	5.9
46C	Peanut	Dragston, Nansemond	54	175	1319	115	0.7	3.0	6.1
63A	Cotton	Emporia, Nansemond	70	96	533	37	0.5	1.9	5.4
64B	Peanut	Emporia, Nansemond	48	123	790	66	0.4	1.6	6.2
66	Peanut	Nansemond, Emporia, Eunola	57	123	535	45	0.5	1.9	6.3
67	Cotton	Emporia, Nansemond	50	93	520	38	0.3	2.1	5.8

2016



Cotton Insect Pest Management Tests and Demonstrations

Test: CT16-THP-VSCSC-1—Evaluation of foliar-applied insecticides for thrips management in Virginia cotton

Protocol: Virginia State Cotton Support Committee

Year: 2016

Crop: Cotton

Variety: FM 1944 GLB2 (Aeris-treated)

Location: Tidewater AREC, Field 5, Suffolk, VA

Field preparation: Rip-strip-till on April 25

Experimental design: Randomized complete block

Plot size: 4 rows x 35' long

Row spacing: 36"

Planting date: April 26

Harvest date: October 24

Treatment application:

Broadcast w/ backpack Nozzle type: 8002EVS Nozzle spacing: 18" PSI: 18 GPA: 14.3

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1500	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	Apr-27-2016	Prowl H2O	1	PT/A
6.	Apr-27-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Roundup WeatherMax	1	QT/A
8.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jul-13-2016	Boron	2	QT/A
10.	Jul-13-2016	Roundup WeatherMax	28	FL OZ/A
11.	Jul-13-2016	24-0-0-3	80	Units/A
12.	Jul-20-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
15.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
16.	Aug-08-2016	Select Max	23	FL OZ/A
17.	Aug-08-2016	Induce	0.25	% V/V
18.	Aug-16-2016	Prevathon	27	FL OZ/A
19.	Aug-16-2016	Showdown	28	FL OZ/A
20.	Aug-16-2016	Induce	0.25	% V/V
21.	Oct-5-2016	Finish	1	QT/A
22.	Oct-5-2016	Dropp	3	FL OZ/A

Table 4. Stand counts¹, thrips injury ratings², and yield³, CT16-THP-VSCSC-1. Tidewater AREC, Suffolk, VA, 2016. Treatments were broadcast at the 1st true leaf stage on May 19.

#	Material(s)	Rate(s)	Rate unit	Plants/35 row ft		Thrips injury rating			Lint lb/acre
				May 24	May 31	May 31	June 6	Jun 16	
1	Radiant SC	1.5	fl oz/a	84.6	88.4 ab	2.500 b	2.625 c	2.125 b	1,195
2	Radiant SC	3	fl oz/a	92.3	94.9 a	2.000 bc	2.188 d	0.875 de	1,269
3	Orthene 97	6	oz wt/a	82.8	81.8 b	1.688 c	1.500 e	1.563 c	1,277
4	Orthene 97	8	oz wt/a	89.9	89.0 ab	1.625 c	1.500 e	1.125 d	1,254
5	Exirel 10SE	13.5	fl oz/a	83.9	83.6 b	1.938 bc	3.000 b	0.750 de	1,147
6	Exirel 10SE	20.5	fl oz/a	82.5	82.6 b	1.625 c	2.000 d	0.500 e	1,210
7	Minecto Pro	8	fl oz/a	81.5	83.9 b	1.625 c	1.125 f	0.875 de	1,248
8	Minecto Pro	12	fl oz/a	84.0	81.9 b	1.500 c	0.875 g	0.563 e	1,275
9	Untreated			83.9	80.3 b	3.688 a	3.688 a	3.563 a	1,261
	LSD			NS	8.80	0.7383	0.2489	0.4060	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on counting all plants in rows 1 and 2 of each plot.

²Thrips injury based on a 0-5 scale, 0 = no injury and 5 = dead plants.

³Cotton was harvested on October 24. Yields are based on representative gin samples with a mean of 42.2% lint.

Table 5. Mean number of thrips per 5 plants, collected from Treatment 9, CT16-THP-VSCSC-1. Tidewater AREC, Suffolk, VA, 2016.

Date and plant growth stage	Immature thrips	Adult thrips
May 24 (1 st true leaf)	2.0	7.8
May 31 (2 nd true leaf)	5.3	2.5
Jun 6 (4 th true leaf)	16.0	1.0

Test: CT16-THP-VSCSC-2—Evaluation of at-planting insecticides, with and without Aeris, for thrips management in Virginia cotton

Protocol: Virginia State Cotton Support Committee

Year: 2016

Crop: Cotton

Variety: FM 1944 GLB2

Location: Tidewater AREC, Field 36, Suffolk, VA

Field preparation: Rip-strip-till on May 9

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 untreated border rows

Row spacing: 36"

Planting date: May 10

Harvest date: n/a

Treatment application:

Liquid in-furrow **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.75 **GPA:** 5

Granular in-furrow Tractor-mounted inverted polypropylene jars with calibrated lid holes

Broadcast w/ backpack **Nozzle type:** 8002EVS **Nozzle spacing:** 18" **PSI:** 18 **GPA:** 1

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1000	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	May-11-2016	Prowl H2O	1	PT/A
6.	May-11-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Roundup WeatherMax	1	QT/A
8.	Jun-03-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-13-2016	Boron	2	QT/A
11.	Jul-13-2016	24-0-0-3	80	Units/A
12.	Jul-20-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
15.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
16.	Aug-16-2016	Besiege	13	FL OZ/A
17.	Oct-5-2016	Finish	1	QT/A
18.	Oct-5-2016	Dropp	3	FL OZ/A

Table 6. Stand counts¹ and thrips injury ratings², CT16-THP-VSCSC-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Plants/35 row ft	Thrips injury rating		
					May 24	Jun 1	Jun 6	Jun 17
1	Velum Total	15.7	fl oz/a	Liquid IF	77.9	1.375 d	1.750 b	0.750 cd
2	Aeris				74.8	0.750 h	1.375 cd	0.500 d
	Velum Total	15.7	fl oz/a	Liquid IF				
3	Velum Total	18	fl oz/a	Liquid IF	73.8	1.000 fg	1.500 c	0.545 cd
4	Aeris				80.3	0.750 h	1.250 d	0.500 d
	Velum Total	18	fl oz/a	Liquid IF				
5	Admire Pro	7.4	fl oz/a	Liquid IF	81.9	1.250 de	0.750 f	0.813 cd
6	Aeris				82.8	0.813 gh	0.438 gh	0.500 d
	Admire Pro	7.4	fl oz/a	Liquid IF				
7	Admire Pro	9.2	fl oz/a	Liquid IF	84.3	0.750 h	0.500 g	0.563 cd
8	Aeris				79.0	0.500 i	0.313 h	1.000 c
	Admire Pro	9.2	fl oz/a	Liquid IF				
9	Orthene 97	16	oz wt/a	Liquid IF	77.4	1.438 d	1.688 b	3.313 b
10	Aeris				66.6	1.750 c	1.750 b	0.874 cd
	Orthene 97	8	oz wt/a	Liquid IF				
11	Aeris				79.5	2.000 b	1.688 b	0.688 cd
	Orthene 97	8	oz wt/a	BC @ 1 st tl*				
12	AgLogic Aldicarb 15G	5	lb/a	Granular IF	75.6	1.125 ef	1.000 e	0.813 cd
13	Untreated				86.8	3.750 a	3.938 a	3.813 a
	LSD				NS	0.1999	0.1416	0.4642

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

*Broadcast at 1st true leaf spray was applied on June 2.

¹Based on counting all plants in rows 1 and 2 of each plot.

Table 7. Mean number of thrips per 5 plants in insecticide-untreated cotton¹, CT16-T VSCSC-2. Tidewater AREC, Suffolk, VA, 2016.

Date and plant growth stage	Immature thrips	Adult thrips
Jun 1 (1 st true leaf)	16.5	4.8
Jun 6	9.8	1.3
Jun 13	28.5	2.0

¹Collected from Treatment 13.

Test: CT16-THP-BAYER-A—Evaluation of insecticidal seed treatments in cotton

Protocol: SP16USANGA

Year: 2016

Crop: Cotton

Variety: ST 4946 GLB2

Location: Tidewater AREC, Field 5, Suffolk, VA

Field preparation: Rip-strip-till on April 25

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 base-only FM 1944 GLB2 border rows

Row spacing: 36"

Planting date: April 26

Harvest date: October 24

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1500	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	Apr-27-2016	Prowl H2O	1	PT/A
6.	Apr-27-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Roundup WeatherMax	1	QT/A
8.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jul-13-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-13-2016	Boron	2	QT/A
11.	Jul-13-2016	24-0-0-3	80	Units/A
12.	Jul-20-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
15.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
16.	Aug-08-2016	Select Max	23	FL OZ/A
17.	Aug-08-2016	Induce	0.25	% V/V
18.	Aug-16-2016	Prevathon	27	FL OZ/A
19.	Aug-16-2016	Showdown	28	FL OZ/A
20.	Aug-16-2016	Induce	0.25	% V/V
21.	Oct-5-2016	Finish	1	QT/A
22.	Oct-5-2016	Dropp	3	FL OZ/A

Table 8. Stand counts¹, thrips injury ratings², visual plant vigor ratings³, and yield⁴, CT16-THP-BAYER-A. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate(s)	Rate unit	Plants/35 row ft		Thrips injury rating			Vigor	Lint lb/acre
				May 19 (23 DAP)	May 31	May 31	Jun 6	Jun 16	Jun 3	
1	Base fungicide			85.5 c	76.1 c	4.688 a	4.688 a	4.625 a	6.0 a	1035
2	Base fungicide			87.5 bc	84.3 bc	3.750 c	2.938 d	3.438 d	5.0 b	1145
	Gaucha	0.375	mg ai/seed							
3	Base fungicide			96.9 ab	98.9 a	3.063 d	2.188 f	1.938 e	3.5 d	1278
	Aeris Seed Applied System	0.75	mg ai/seed							
4	Base fungicide			92.9 a-c	92.5 ab	4.125 b	3.750 c	3.813 c	4.3 c	1170
	Cruiser	0.375	mg ai/seed							
5	Base fungicide			99.5 a	101.3 a	3.125 d	2.438 e	1.750 e	3.0 e	1200
	Aeris Seed Applied System	0.75	mg ai/seed							
	Fluopyram	0.2	mg ai/seed							
6	Base fungicide			101.9 a	99.5 a	4.250 b	4.250 b	4.250 b	4.5 c	1274
	AB0305440	0.187	mg ai/seed							
	LSD			9.78	13.09	0.2604	0.1946	0.3245	0.50	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on counting all plants in rows 1 and 2 of each plot.

²Thrips injury based on a 0-5 scale, 0 = no injury and 5 = dead plants.

³Based on the following standardized vigor rating scale:

1 = Excellent (highly superior increase in vigor over the market standard)

2 = Very good (marked increase in vigor over the market standard)

3 = Good (slight increase in vigor over the market standard)

4 = Satisfactory (vigor equal to the market standard)

5 = Marginal unsatisfactory (slightly inferior vigor compared to the market standard)

6 = Unsatisfactory (unacceptably inferior to the market standard)

⁴Cotton was harvested on October 24. Yields are based on representative gin samples with a mean of 42.4% lint.

Table 9. Mean number of thrips per 5 plants, CT16-THP-Bayer-A. Tidewater AREC, Suffolk, VA, 2016.

Date and plant growth stage	Immature thrips	Adult thrips					Total adult thrips
		Tobacco <i>(Frankliniella fusca)</i>	Western <i>(Frankliniella occidentalis)</i>	Eastern <i>(Frankliniella tritici)</i>	Onion (<i>Thrips tabaci</i>)	Soybean <i>(Neohydatothrips variabilis)</i>	
May 24 (1 st true leaf) ¹	21.7	5.0	0.7	0.0	0.3	0.0	6.0
May 31 (2 nd true leaf) ²	12.3	0.5	0.0	0.0	0.0	0.0	0.5
Jun 6 (4 th true leaf) ²	10.0	0.8	0.0	0.0	0.0	0.0	0.8

¹Collected from Treatment 1.

²Collected from Treatment 1's guard rows 3 and 4 (base-only FM 1944 GLB2).

Test: CT16-THP-BAYER-B—Evaluation of seed and in-furrow treatments, including Velum Total, for thrips management in cotton

Protocol: IP16USASKB

Year: 2016

Crop: Cotton

Variety: ST 4747 GLB2

Location: Tidewater AREC, Field 5, Suffolk, VA

Field preparation: Rip-strip-till on April 25

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 base-only ST 4747 GLB2 border rows

Row spacing: 36"

Planting date: April 27

Harvest date: October 24

Treatment application:

Liquid in-furrow

Nozzle type: microtubing **Nozzle spacing:** 36" **PSI:** 40.75 **GPA:** 5

Granular in-furrow

Tractor-mounted inverted polypropylene jars with calibrated lid holes

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1500	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	Apr-27-2016	Prowl H2O	1	PT/A
6.	Apr-27-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Roundup WeatherMax	1	QT/A
8.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jul-13-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-13-2016	Boron	2	QT/A
11.	Jul-13-2016	24-0-0-3	80	Units/A
12.	Jul-20-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
15.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
16.	Aug-08-2016	Select Max	23	FL OZ/A
17.	Aug-08-2016	Induce	0.25	% V/V
18.	Aug-16-2016	Prevathon	27	FL OZ/A
19.	Aug-16-2016	Showdown	28	FL OZ/A
20.	Aug-16-2016	Induce	0.25	% V/V
21.	Oct-5-2016	Finish	1	QT/A
22.	Oct-5-2016	Dropp	3	FL OZ/A

Table 10. Stand counts¹, thrips injury ratings², nodes above cracked boll (NACB)³, and yield⁴, CT16-THP-BAYER-B. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate(s)	Rate unit	Plants/35 row ft		Thrips injury rating			NACB	Lint lb/acre
				May 19 (22 DAP)	Jun 1	May 31	Jun 6	Jun 16	Sep 27	
1	Base			58.9	56.9	4.375 a	4.688 a	4.125 a	6.6	1181 c
2	Base			80.6	81.8	2.375 c	2.250 d	2.438 b	5.9	1383 ab
	Aeris Seed Applied System	0.75	mg ai/seed							
3	Base			90.9	89.1	1.875 de	2.750 c	2.063 c	5.9	1488 ab
	Aeris Seed Applied System	0.75	mg ai/seed							
	Fluopyram	0.2	mg ai/seed							
4	Base			76.4	72.6	2.063 cd	0.813 f	0.625 e	5.7	1501 a
	Admire Pro	9	fl oz/a							
5	Base			77.0	78.1	1.625 d-f	0.500 g	0.375 e	5.3	1435 ab
	Aeris Seed Applied System	0.75	mg ai/seed							
	Admire Pro	9	fl oz/a							
6	Base			71.6	71.1	2.375 c	2.375 d	1.250 d	5.5	1446 ab
	Velum Total	14	fl oz/a							
7	Base			77.1	79.6	1.250 f	1.438 e	0.563 e	6.1	1456 ab
	Aeris Seed Applied System	0.75	mg ai/seed							
	Velum Total	14	fl oz/a							
8	Base			72.4	68.9	1.451 ef	1.591 e	0.625 e	6.2	1372 b
	Velum Total	18	fl oz/a							
9	Base			76.1	78.0	3.500 b	3.000 b	1.438 d	5.8	1505 a
	AgLogic Aldicarb	5	lb/a							
	LSD			NS	NS	0.4382	0.1756	0.2989	NS	127.8

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on counting all plants in rows 1 and 2 of each plot.

²Thrips injury based on a 0-5 scale, 0 = no injury and 5 = dead plants.

³Nodes above cracked boll estimates are based on the number of nodes from the highest first position cracked boll to the uppermost node containing a

Test: CT16-THP-BAYER-C—Evaluation of insecticidal seed and liquid in-furrow treatments in cotton

Protocol: SP16USANGC

Year: 2016

Crop: Cotton

Variety: ST 4946 GLB2

Location: Tidewater AREC, Field 5, Suffolk, VA

Field preparation: Rip-strip-till on April 25

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 base-only FM 1944 GLB2 border rows

Row spacing: 36"

Planting date: April 26

Harvest date: October 24

Treatment application:

Liquid in-furrow **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.75 **GPA:** 5

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1500	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	Apr-27-2016	Prowl H2O	1	PT/A
6.	Apr-27-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Roundup WeatherMax	1	QT/A
8.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jul-13-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-13-2016	Boron	2	QT/A
11.	Jul-13-2016	24-0-0-3	80	Units/A
12.	Jul-20-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
15.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
16.	Aug-08-2016	Select Max	23	FL OZ/A
17.	Aug-08-2016	Induce	0.25	% V/V
18.	Aug-16-2016	Prevathon	27	FL OZ/A
19.	Aug-16-2016	Showdown	28	FL OZ/A
20.	Aug-16-2016	Induce	0.25	% V/V
21.	Oct-5-2016	Finish	1	QT/A
22.	Oct-5-2016	Dropp	3	FL OZ/A

Table 11. Stand counts¹, thrips injury ratings², visual plant vigor ratings³, and yield⁴, CT16-THP-BAYER-C. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate(s)	Rate unit	Plants/35 row ft		Thrips injury rating			Vigor	Lint lb/acre
				May 19 (23 DAP)	May 31	May 31	Jun 6	Jun 16	Jun 3	
1	Base fungicide			94.5	87.4 c	4.688 a	4.625 a	4.563 a	6.0 a	1151 c
2	Base fungicide			100.8	97.4 ab	3.875 b	3.125 b	3.688 b	5.0 b	1264 bc
	Gaucha	0.375	mg ai/seed							
3	Base fungicide			98.0	95.5 bc	3.750 b	3.125 b	1.938 c	4.5 bc	1343 ab
	Gaucha	0.375	mg ai/seed							
	Fluopyram	0.25	mg ai/seed							
4	Base fungicide			103.5	100.9 ab	3.125 c	2.313 c	1.625 d	4.0 cd	1397 ab
	Aeris Seed Applied System	0.75	mg ai/seed							
	Trilex Advanced	104.32	ml/item							
5	Base fungicide			105.6	104.8 a	2.938 c	2.313 c	1.188 e	3.5 de	1361 ab
	Aeris Seed Applied System	0.75	mg ai/seed							
	Trilex Advanced	104.32	ml/item							
	Fluopyram	0.2	mg ai/seed							
6	Base fungicide			101.1	100.0 ab	2.563 d	1.563 d	0.563 f	3.0 e	1430 a
	Aeris Seed Applied System	0.75	mg ai/seed							
	Trilex Advanced	104.32	ml/item							
	Fluopyram	0.2	mg ai/seed							
	Velum Total (liquid IF)	10	fl oz/a							
	LSD			NS	8.66	0.3196	0.3947	0.2966	0.98	157.3

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on counting all plants in rows 1 and 2 of each plot.

²Thrips injury based on a 0-5 scale, 0 = no injury and 5 = dead plants.

³Based on the following standardized vigor rating scale:

1 = Excellent (highly superior increase in vigor over the market standard)

2 = Very good (marked increase in vigor over the market standard)

3 = Good (slight increase in vigor over the market standard)

4 = Satisfactory (vigor equal to the market standard)

5 = Marginal unsatisfactory (slightly inferior vigor compared to the market standard)

Table 12. Mean number of thrips per 5 plants, CT16-THP-Bayer-C. Tidewater AREC, Suffolk, VA, 2016.

Date and plant growth stage	Immature thrips	Adult thrips					Total adult thrips
		Tobacco <i>(Frankliniella fusca)</i>	Western <i>(Frankliniella occidentalis)</i>	Eastern <i>(Frankliniella tritici)</i>	Onion <i>(Thrips tabaci)</i>	Soybean <i>(Neohydatothrips variabilis)</i>	
May 24 (1 st true leaf) ¹	24.8	7.8	1.5	0.3	0.3	0.0	9.8
May 31 (2 nd true leaf) ²	14.0	1.0	0.0	0.0	0.0	0.0	1.0
Jun 6 (4 th true leaf) ²	9.3	0.5	0.0	0.0	0.0	0.0	0.5

¹Collected from Treatment 1.

²Collected from Treatment 1's guard rows 3 and 4 (base-only FM 1944 GLB2).

Test: CT16-THP-REGIONAL-1—Regional cotton variety test

Protocol: Cotton Incorporated

Year: 2016

Crop: Cotton

Variety: see treatment list (all seed treated with fungicide only)

Location: Tidewater AREC, Field 63A, Suffolk, VA

Field preparation: Rip-strip-till on May 24

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 fungicide-only FM 1944 GLB2 border rows

Row spacing: 36"

Planting date: May 25

Harvest date: November 3

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-24-2016	2,4-D	1.5	PT/A
2.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
3.	Apr-22-2016	9-12-38	311	LB/A
4.	May-17-2016	Liberty	29	FL OZ/A
5.	May-20-2016	Roundup WeatherMax	1	QT/A
6.	May-26-2016	Prowl H2O	1	PT/A
7.	May-26-2016	Cotoran 4L	1	QT/A
8.	Jun-24-2016	Roundup WeatherMax	30	FL OZ/A
9.	Jul-13-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-13-2016	24-0-0-3	80	Units/A
11.	Jul-13-2016	Boron	2	QT/A
12.	Jul-20-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
15.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
16.	Aug-11-2016	Roundup WeatherMax	28	FL OZ/A
17.	Aug-16-2016	Prevathon	27	FL OZ/A
18.	Oct-17-2016	Finish	1	QT/A
19.	Oct-17-2016	Dropp	5	FL OZ/A
20.	Oct-17-2016	Folex	3	FL OZ/A

Table 13. Plant heights¹, number of nodes per plant¹, and stand counts², CT16-THP-REGIONAL-1. Tidewater AREC, Suffolk, VA, 2016.

#	Variety	Plant height (cm)				Nodes	Plants per 35 row ft
		Jun 6	Jun 13	Jun 20	Jul 6	Jul 6	Jun 9
1	PHY 312	3.03	4.03	10.08 ab	22.5	5.2	112.5 a
2	PHY 333	3.20	4.60	9.03 cd	23.8	5.7	118.3 a
3	PHY 444	3.43	3.98	9.30 b-d	23.4	6.4	116.8 a
4	PHY 499	3.53	5.38	10.23 a	23.3	5.5	117.3 a
5	DP 1646	3.15	4.73	9.63 a-c	23.7	5.7	111.5 a
6	DP 1410	3.33	4.38	9.30 b-d	20.7	5.1	116.3 a
7	DP 1538	3.18	4.80	9.93 ab	21.2	4.9	101.8 b
8	DP 1518	3.38	5.05	10.25 a	24.1	6.3	118.0 a
9	ST 4747	3.30	5.10	9.63 a-c	24.0	6.3	113.3 a
10	ST 4946	3.83	4.98	10.00 ab	24.4	5.8	113.0 a
11	ST 6182	2.88	5.35	8.55 d	21.8	5.6	99.5 b
12	FM 1900	3.05	5.20	9.38 bc	22.6	5.9	112.3 a
	LSD	NS	NS	0.816	NS	NS	7.97

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on sampling 5 plants per plot from ground to terminal.

²Based on counting all plants in row 1 of each plot.

Table 14. Biomass (dry weight in grams per 5 plants)¹, CT16-THP-REGIONAL-1. Tidewater AREC, Suffolk, VA, 2016.

#	Variety	Jun 6	Jun 20	Jul 6
1	PHY 312	0.63 a-c	2.68 ab	15.98 b-d
2	PHY 333	0.60 a-d	2.38 b-e	17.15 a-d
3	PHY 444	0.65 ab	2.45 b-e	18.45 ab
4	PHY 499	0.65 ab	2.60 a-c	18.80 ab
5	DP 1646	0.45 d	1.85 h	16.38 b-d
6	DP 1410	0.50 b-d	2.20 e-g	17.13 a-d
7	DP 1538	0.50 b-d	2.35 c-f	14.98 cd
8	DP 1518	0.48 cd	2.28 d-g	18.35 a-c
9	ST 4747	0.58 a-d	2.58 a-d	20.43 a
10	ST 4946	0.73 a	2.85 a	20.45 a
11	ST 6182	0.50 b-d	2.03 gh	14.73 d
12	FM 1900	0.60 a-d	2.05 f-h	16.93 b-d
	LSD	0.153	0.311	3.435

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on sampling 5 plants per plot from ground to terminal and drying at 60 C.

Table 15. Thrips injury ratings¹ and yield², CT16-THP-REGIONAL-1. Tidewater AREC, Suffolk, VA, 2016.

#	Variety	Thrips injury rating			Lint lb/acre
		Jun 7 (1 st true leaf)	Jun 14	Jun 20	
1	PHY 312	0.813	4.250 ab	4.500	1,347 ab
2	PHY 333	1.000	4.000 a-e	4.500	1,369 a
3	PHY 444	1.125	3.938 a-e	4.500	1,261 a-c
4	PHY 499	1.000	3.625 e	4.500	1,230 a-c
5	DP 1646	1.063	4.375 a	4.500	1,221 b-d
6	DP 1410	1.063	3.750 c-e	4.500	789 f
7	DP 1538	0.938	4.375 a	4.563	863 f
8	DP 1518	1.063	4.000 a-e	4.500	1,205 c-e
9	ST 4747	1.000	3.688 de	4.438	1,077 e
10	ST 4946	1.000	3.813 b-e	4.438	1,083 de
11	ST 6182	0.875	4.188 a-c	4.500	807 f
12	FM 1900	0.938	4.125 a-d	4.500	908 f
	LSD	NS	0.4497	NS	142.3

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Thrips injury based on a 0-5 scale, 0 = no injury and 5 = dead plants.

²Cotton was harvested on November 3. Yields are based on gin samples from each plot (range = 41-47% lint).

Table 16. Mean number of thrips per 5 plants, CT16-THP-REGIONAL-1. Tidewater AREC, Suffolk, VA, 2016.

#	Variety	Jun 6		Jun 13		Jun 20	
		Immature thrips	Adult thrips	Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	PHY 312	16.3	12.5	76.3	3.8 bc	28.3	3.0 a-c
2	PHY 333	10.5	8.0	99.0	2.5 c	34.8	4.0 a
3	PHY 444	14.0	7.3	119.8	5.5 bc	31.3	1.0 cd
4	PHY 499	17.3	11.5	82.5	3.8 bc	19.5	2.0 a-d
5	DP 1646	7.3	4.5	103.0	6.5 ab	22.8	4.0 a
6	DP 1410	11.0	10.8	115.3	2.5 c	14.0	0.8 d
7	DP 1538	9.3	7.8	67.0	5.3 bc	32.5	2.3 a-d
8	DP 1518	8.8	6.3	106.0	9.5 a	37.8	2.0 a-d
9	ST 4747	11.8	8.0	86.0	4.8 bc	24.8	1.5 b-d
10	ST 4946	12.5	9.8	123.5	5.0 bc	25.0	3.3 ab
11	ST 6182	7.3	8.0	71.3	4.8 bc	22.0	2.5 a-d
12	FM 1900	8.8	11.5	118.0	6.0 a-c	23.3	3.5 ab
	LSD	NS	NS	NS	3.74	NS	2.08

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: CT16-THP-REGIONAL-2—Regional cotton at-plant test**Protocol:** Cotton Incorporated**Year:** 2016**Crop:** Cotton**Variety:** PHY 339 WRF**Location:** Tidewater AREC, Field 63A, Suffolk, VA**Field preparation:** Rip-strip-till on May 24**Experimental design:** Randomized complete block**Plot size:** 2 rows x 35' long with 2 fungicide-only PHY 339 WRF border rows**Row spacing:** 36"**Planting date:** May 25**Harvest date:** November 3**Treatment application:****Liquid in-furrow****Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.5 **GPA:** 5**Granular in-furrow**

Tractor-mounted inverted polypropylene jars with calibrated lid holes

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-24-2016	2,4-D	1.5	PT/A
2.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
3.	Apr-22-2016	9-12-38	311	LB/A
4.	May-17-2016	Liberty	29	FL OZ/A
5.	May-20-2016	Roundup WeatherMax	1	QT/A
6.	May-26-2016	Prowl H2O	1	PT/A
7.	May-26-2016	Cotoran 4L	1	QT/A
8.	Jun-27-2016	Roundup WeatherMax	30	FL OZ/A
9.	Jul-13-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-13-2016	24-0-0-3	80	Units/A
11.	Jul-13-2016	Boron	2	QT/A
12.	Jul-20-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
15.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
16.	Aug-11-2016	Roundup WeatherMax	28	FL OZ/A
17.	Aug-16-2016	Prevathon	27	FL OZ/A
18.	Oct-17-2016	Finish	1	QT/A
19.	Oct-17-2016	Dropp	5	FL OZ/A
20.	Oct-17-2016	Folex	3	FL OZ/A

Table 17. Plant heights¹, number of nodes per plant¹, biomass (dry weight in grams per 5 plants)^{1,2}, and stand counts³, CT16-THP-REGIONAL-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Plant height (cm)				Nodes	Biomass (g)	Plants per 35 row ft
					Jun 6	Jun 13	Jun 20	Jul 6	Jul 6	Jul 6	Jun 9
1	Untreated				3.03 b	4.08	9.35	25.6 c	5.7	20.63	111.5 ab
2	Avicto Duo				3.60 a	5.18	9.60	26.0 c	6.3	19.58	105.0 bc
3	Aeris				3.63 a	6.28	9.93	27.0 bc	6.6	19.85	109.8 ab
4	Avicta Elite				3.10 b	4.50	9.30	27.5 a-c	6.1	22.53	101.3 c
5	Orthene 97	16	oz wt/a	Liquid in-furrow	2.95 b	5.58	9.50	29.1 a	7.4	25.60	114.0 a
6	AgLogic Aldicarb	5	lb/a	Granular in-furrow	3.63 a	5.58	10.15	28.1 ab	5.8	24.18	100.8 c
	LSD				0.476	NS	NS	1.97	NS	NS	7.77

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on sampling 5 plants per plot from ground to terminal.

²Plants were dried at 60°C for 40 hours.

³Based on counting all plants in row 1 of each plot.

Table 18. Thrips injury ratings¹ and yield², CT16-THP-REGIONAL-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate(s)	Rate unit	Application timing	Thrips injury rating			Lint lb/acre
					Jun 7 (2 nd true leaf)	Jun 14	Jun 20	
1	Untreated				3.000 a	4.500 a	4.750 a	1,122
2	Avicto Duo				0.750 c	3.125 b	3.438 b	1,194
3	Aeris				1.063 b	2.250 d	3.000 c	1,210
4	Avicta Elite				0.750 c	2.250 d	3.000 c	1,201
5	Orthene 97	16	oz wt/a	Liquid in-furrow	0.938 bc	2.688 c	2.438 d	1,172
6	AgLogic Aldicarb	5	lb/a	Granular in-furrow	1.125 b	1.375 e	1.625 e	1,168
	LSD				0.2025	0.2686	0.3299	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

Table 19. Mean number of thrips per 5 plants, CT16-THP-REGIONAL-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 6		Jun 13		Jun 20	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	Untreated				11.3 a	8.3	72.8 a	4.5 a	14.5 bc	3.8
2	Avicto Duo				2.0 b	5.0	33.5 b	4.0 ab	38.5 a	5.0
3	Aeris				3.0 b	4.8	41.0 b	3.8 a-c	16.8 b	3.8
4	Avicta Elite				1.8 b	2.5	29.5 b	4.3 a	19.5 b	2.5
5	Orthene 97	16	oz wt/a	Liquid in-furrow	2.5 b	3.3	22.0 bc	1.5 c	11.3 bc	3.0
6	AgLogic Aldicarb	5	lb/a	Granular in-furrow	1.0 b	3.5	5.5 c	1.8 bc	5.0 c	3.3
	LSD				3.90	NS	20.16	2.32	11.62	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: CT16-THP-SYNGENTA-100A4—Evaluation of foliar pesticides, including Min Pro, in cotton

Protocol: ICL100A4-2016US

Year: 2016

Crop: Cotton

Variety: PHY 499 WRF

Location: Tidewater AREC, Field 5, Suffolk, VA

Field preparation: Rip-strip-till on April 25

Experimental design: Randomized complete block

Plot size: 4 rows x 35' long

Row spacing: 36"

Planting date: April 27

Harvest date: October 24

Treatment application:

Broadcast w/ backpack Nozzle type: 8002EVS **Nozzle spacing:** 18" **PSI:** 18 **GPA:** 14.3

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1500	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	Apr-27-2016	Prowl H2O	1	PT/A
6.	Apr-27-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Roundup WeatherMax	1	QT/A
8.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jul-13-2016	24-0-0-3	80	Units/A
10.	Jul-13-2016	Boron	2	QT/A
11.	Jul-20-2016	Pentia	12	FL OZ/A
12.	Aug-05-2016	Pentia	16	FL OZ/A
13.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
14.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
15.	Aug-08-2016	Select Max	23	FL OZ/A
16.	Aug-08-2016	Induce	0.25	% V/V
17.	Aug-16-2016	Prevathon	27	FL OZ/A
18.	Aug-16-2016	Showdown	28	FL OZ/A
19.	Aug-16-2016	Induce	0.25	% V/V
20.	Oct-5-2016	Finish	1	QT/A
21.	Oct-5-2016	Dropp	3	FL OZ/A

Table 20. Stand counts¹, CT16-THP-Syngenta-100A4. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on May 19, with 7-10 days after treatment (DAT) applications on May 26.

#	Material(s)	Rate(s)	Rate unit	Application timing	Plants/35 row ft	
					May 24	May 31
1	Dynasty CST				69.8 cde	68.8 cd
2	Dynasty CST				68.4 cde	68.5 cd
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf		
	Induce	0.25	% v/v	1 st true leaf		
3	Dynasty CST				65.9 de	67.1 cd
	A21390 (Minecto Pro)	8	fl oz/a	1 st true leaf		
	Induce	0.25	% v/v	1 st true leaf		
4	Dynasty CST				57.8 e	57.1 d
	Orthene 97	6	oz wt/a	1 st true leaf		
5	Dynasty CST				87.9 ab	86.1 ab
	Radiant SC	2	fl oz/a	1 st true leaf		
	Induce	0.25	% v/v	1 st true leaf		
6	Avicta Duo Cot 202				86.8 ab	85.9 ab
	A21390 (Minecto Pro)	4	fl oz/a	1 st true leaf		
	Induce	0.25	% v/v	1 st true leaf		
	Orthene 97	6	oz wt/a	7-10 DAT		
7	Avicta Duo Cot 202				81.9 bcd	81.9 bc
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf		
	Induce	0.25	% v/v	1 st true leaf		
	Orthene 97	6	oz wt/a	7-10 DAT		
8	Avicta Duo Cot 202				99.1 a	100.0 a
	Orthene 97	6	oz wt/a	1 st true leaf		
	A21390 (Minecto Pro)	4	fl oz/a	7-10 DAT		
	Induce	0.25	% v/v	7-10 DAT		
9	Avicta Duo Cot 202				84.6 abc	86.6 ab
	Orthene 97	6	oz wt/a	1 st true leaf		
	A21390 (Minecto Pro)	6	fl oz/a	7-10 DAT		
	Induce	0.25	% v/v	7-10 DAT		
	LSD				16.55	16.31

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on counting all plants in rows 1 and 2 of each plot.

Table 21. Thrips injury ratings¹ and yield², CT16-THP-Syngenta-100A4. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on May 19, with 7-10 days after treatment (DAT) applications on May 26.

#	Material(s)	Rate(s)	Rate unit	Application timing	Thrips injury rating			Lint lb/acre
					May 31	Jun 6	Jun 16	
1	Dynasty CST				4.438 a	4.500 a	4.375 a	1126
2	Dynasty CST				3.500 b	2.125 b	2.125 b	1216
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
3	Dynasty CST				2.875 c	1.750 c	1.438 c	1207
	A21390 (Minecto Pro)	8	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
4	Dynasty CST				3.500 b	2.063 b	2.125 b	1175
	Orthene 97	6	oz wt/a	1 st true leaf				
5	Dynasty CST				2.938 c	2.063 b	2.250 b	1267
	Radiant SC	2	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
6	Avicta Duo Cot 202				1.688 d	1.000 d	0.750 d	1176
	A21390 (Minecto Pro)	4	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
	Orthene 97	6	oz wt/a	7-10 DAT				
7	Avicta Duo Cot 202				1.250 e	0.750 e	0.813 d	1155
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
	Orthene 97	6	oz wt/a	7-10 DAT				
8	Avicta Duo Cot 202				1.250 e	0.500 f	0.438 e	1278
	Orthene 97	6	oz wt/a	1 st true leaf				
	A21390 (Minecto Pro)	4	fl oz/a	7-10 DAT				
	Induce	0.25	% v/v	7-10 DAT				
9	Avicta Duo Cot 202				1.250 e	0.438 f	0.313 e	1367
	Orthene 97	6	oz wt/a	1 st true leaf				
	A21390 (Minecto Pro)	6	fl oz/a	7-10 DAT				
	Induce	0.25	% v/v	7-10 DAT				

Table 22. Mean number of thrips, aphids, and mites per 5 plants, CT16-THP-Syngenta-100A4. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on May 19, with 7-10 DAT applications on May 26.

#	Material(s)	Rate(s)	Rate unit	Application timing	May 24 (1 st true leaf stage)			
					Immature thrips	Adult thrips	Aphids	Mites
1	Dynasty CST				11.8 a	3.0 a	0.8	0.0
2	Dynasty CST				1.3 c	1.8 a-c	0.5	0.0
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
3	Dynasty CST				3.3 bc	2.0 ab	1.0	0.0
	A21390 (Minecto Pro)	8	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
4	Dynasty CST				2.8 bc	0.5 bc	0.0	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
5	Dynasty CST				4.8 b	0.5 bc	0.8	0.0
	Radiant SC	2	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
6	Avicta Duo Cot 202				0.8 c	1.5 a-c	0.0	0.0
	A21390 (Minecto Pro)	4	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
	Orthene 97	6	oz wt/a	7-10 DAT				
7	Avicta Duo Cot 202				0.8 c	2.8 a	0.3	0.0
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
	Orthene 97	6	oz wt/a	7-10 DAT				
8	Avicta Duo Cot 202				1.0 c	0.5 bc	0.0	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
	A21390 (Minecto Pro)	4	fl oz/a	7-10 DAT				
	Induce	0.25	% v/v	7-10 DAT				
9	Avicta Duo Cot 202				1.8 bc	0.3 c	0.0	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
	A21390 (Minecto Pro)	6	fl oz/a	7-10 DAT				
	Induce	0.25	% v/v	7-10 DAT				
	LSD				3.21	1.65	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Table 23. Mean number of thrips, aphids, and mites per 5 plants, CT16-THP-Syngenta-100A4. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on May 19, with 7-10 DAT applications on May 26.

#	Material(s)	Rate(s)	Rate unit	Application timing	May 31 (2 nd true leaf stage)			
					Immature thrips	Adult thrips	Aphids	Mites
1	Dynasty CST				18.8 a	2.3	4.0	0.0
2	Dynasty CST				10.5 b	1.8	0.0	0.0
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
3	Dynasty CST				9.0 bc	1.8	1.5	0.0
	A21390 (Minecto Pro)	8	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
4	Dynasty CST				5.8 b-d	1.0	0.0	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
5	Dynasty CST				4.0 cd	1.8	22.0	0.0
	Radiant SC	2	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
6	Avicta Duo Cot 202				2.5 d	1.8	0.3	0.0
	A21390 (Minecto Pro)	4	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
	Orthene 97	6	oz wt/a	7-10 DAT				
7	Avicta Duo Cot 202				1.8 d	2.3	0.3	0.0
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
	Orthene 97	6	oz wt/a	7-10 DAT				
8	Avicta Duo Cot 202				1.3 d	2.0	0.3	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
	A21390 (Minecto Pro)	4	fl oz/a	7-10 DAT				
	Induce	0.25	% v/v	7-10 DAT				
9	Avicta Duo Cot 202				1.8 d	1.8	0.5	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
	A21390 (Minecto Pro)	6	fl oz/a	7-10 DAT				
	Induce	0.25	% v/v	7-10 DAT				
	LSD				5.18	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Table 24. Mean number of thrips, aphids, and mites per 5 plants, CT16-THP-Syngenta-100A4. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on May 19, with 7-10 DAT applications on May 26.

#	Material(s)	Rate(s)	Rate unit	Application timing	Jun 7 (4 th true leaf stage)			
					Immature thrips	Adult thrips	Aphids	Mites
1	Dynasty CST				6.8	1.3	0.3	0.0
2	Dynasty CST				7.0	1.0	2.5	0.0
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
3	Dynasty CST				13.0	2.8	0.0	0.0
	A21390 (Minecto Pro)	8	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
4	Dynasty CST				6.3	0.5	0.0	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
5	Dynasty CST				9.5	1.8	0.3	0.0
	Radiant SC	2	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
6	Avicta Duo Cot 202				5.8	1.8	6.5	0.0
	A21390 (Minecto Pro)	4	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
	Orthene 97	6	oz wt/a	7-10 DAT				
7	Avicta Duo Cot 202				3.5	2.0	0.8	0.0
	A21390 (Minecto Pro)	6	fl oz/a	1 st true leaf				
	Induce	0.25	% v/v	1 st true leaf				
	Orthene 97	6	oz wt/a	7-10 DAT				
8	Avicta Duo Cot 202				4.0	1.8	0.8	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
	A21390 (Minecto Pro)	4	fl oz/a	7-10 DAT				
	Induce	0.25	% v/v	7-10 DAT				
9	Avicta Duo Cot 202				3.5	1.3	0.0	0.0
	Orthene 97	6	oz wt/a	1 st true leaf				
	A21390 (Minecto Pro)	6	fl oz/a	7-10 DAT				
	Induce	0.25	% v/v	7-10 DAT				
	LSD				NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: CT16-THP-SYNGENTA-102A3—Efficacy of insecticides, including A20703C s treatment with foliar Minecto Pro or acephate oversprays, against thrips in cotton

Protocol: ICL102A3-2016US

Year: 2016

Crop: Cotton

Variety: not provided

Location: Tidewater AREC, Field 67, Suffolk, VA

Field preparation: Rip-strip-till on April 25

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 fungicide-only FM 1944 GLB2 border rows

Row spacing: 36"

Planting date: May 20

Harvest date: October 24

Treatment application:

Broadcast w/ backpack Nozzle type: 8002EVS **Nozzle spacing:** 18" **PSI:** 18 **GPA:** 14.3

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1000	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	May-17-2016	Liberty	29	FL OZ/A
6.	May-20-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Prowl H2O	1	PT/A
8.	Jun-03-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-13-2016	24-0-0-3	80	Units/A
11.	Jul-13-2016	Boron	2	QT/A
12.	Jul-13-2016	Roundup WeatherMax	28	FL OZ/A
13.	Jul-20-2016	Pentia	12	FL OZ/A
14.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
15.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
16.	Aug-05-2016	Pentia	16	FL OZ/A
17.	Aug-16-2016	Prevathon	27	FL OZ/A
18.	Oct-5-2016	Finish	1	QT/A
19.	Oct-5-2016	Dropp	3	FL OZ/A

Table 25. Stand counts¹ and fresh weight of 5 plants, CT16-THP-Syngenta-102A3. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on June 6.

#	Material(s)	Rate(s)	Rate unit	Application timing	Plants/35 row ft		Fresh weight (grams per 5 plants)
					Jun 1	Jun 17	
1	A9382				119.5	112.8	10.50
	A9459						
	A7568						
	A21606						
	A20703						
2	A9382				112.8	110.0	12.58
	A9459						
	A7568						
	A21606						
	A20703						
3	A9382				110.5	104.3	8.73
	A9459						
	A7568						
	A21606						
	A20703						
4	Orthene 97	6	oz/A	BC 1 st tl			
	A9382				115.3	110.8	10.85
	A9459						
	A7568						
	A21606						
5	A21390 (Minecto Pro)	8.1	fl oz/a	BC 1 st tl			
	A9382				112.0	101.0	9.35
	A9459						
	A7568						
	A21606						
	A20703						
	A18121						

	A7568						
	A21606						
	A20703						
	A18121						
	Orthene 97	6	oz/A	BC 1 st tl			
7	A9382				112.8	107.0	12.40
	A9459						
	A7568						
	A21606						
	A20703						
	A18121						
	A21390 (Minecto Pro)	8.1	fl oz/a	BC 1 st tl			
8	A18640				120.0	111.0	13.58
	A18115						
	A17823						
	A22031						
	A18190						
	LSD				NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on counting all plants in row 2 of each plot.

Table 26. Thrips injury ratings¹ and yield², CT16-THP-Syngenta-102A3. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on June 6.

#	Material(s)	Rate(s)	Rate unit	Application timing	Thrips injury rating		Lint lb/acre
					Jun 9 (2 nd true leaf showing)	Jun 17	
1	A9382				4.000 a	4.125 a	1321
	A9459						
	A7568						
	A21606						
	A20703						
2	A9382				2.875 c	3.500 b	1396
	A9459						
	A7568						
	A21606						
	A20703						
3	A9382				2.813 c	2.750 c	1356
	A9459						
	A7568						
	A21606						
	A20703						
4	Orthene 97	6	oz/A	BC 1 st tl			
	A9382				3.563 b	2.750 c	1379
	A9459						
	A7568						
	A21606						
	A20703						
5	A21390 (Minecto Pro)	8.1	fl oz/a	BC 1 st tl			
	A9382				2.375 d	1.375 d	1373
	A9459						
	A7568						
	A21606						
	A20703						
6	A18121						
	A9382				2.125 e	1.125 d	1370
	A9459						

	A7568						
	A21606						
	A20703						
	A18121						
	Orthene 97	6	oz/A	BC 1 st tl			
7	A9382				2.313 de	0.750 e	1524
	A9459						
	A7568						
	A21606						
	A20703						
	A18121						
	A21390 (Minecto Pro)	8.1	fl oz/a	BC 1 st tl			
8	A18640				1.188 f	0.813 e	1646
	A18115						
	A17823						
	A22031						
	A18190						
	LSD				0.2084	0.2709	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Thrips injury based on a 0-5 scale, 0 = no injury and 5 = dead plants.

²Cotton was harvested on October 24. Yields are based on representative gin samples with a mean of 47.1% lint.

Table 27. Mean number of thrips per 5 plants, CT16-THP-Syngenta-102A3. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on June 6.

#	Material(s)	Rate(s)	Rate unit	Application timing	Jun 9		Jun 16	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	A9382				35.3 a	1.3	14.0	2.3
	A9459							
	A7568							
	A21606							
2	A9382				11.8 b	2.0	16.0	5.0
	A9459							
	A7568							
	A21606							
	A20703							
3	A9382				10.0 b	1.3	14.7	4.4
	A9459							
	A7568							
	A21606							
	A20703							
	Orthene 97	6	oz/A	BC 1 st tl				
4	A9382				12.3 b	1.0	15.0	4.8
	A9459							
	A7568							
	A21606							
	A20703							
	A21390 (Minecto Pro)	8.1	fl oz/a	BC 1 st tl				
5	A9382				15.8 b	2.0	11.5	4.5
	A9459							
	A7568							
	A21606							
	A20703							
	A18121							
6	A9382				7.3 b	1.8	8.5	2.3
	A9459							

	A7568							
	A21606							
	A20703							
	A18121							
	Orthene 97	6	oz/A	BC 1 st tl				
7	A9382				8.8 b	2.5	15.3	4.3
	A9459							
	A7568							
	A21606							
	A20703							
	A18121							
	A21390 (Minecto Pro)	8.1	fl oz/a	BC 1 st tl				
8	A18640				6.8 b	2.3	9.3	3.0
	A18115							
	A17823							
	A22031							
	A18190							
	LSD				10.87	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: CT16-THP-SYNGENTA-100A3—Efficacy of insecticides, including A20703C s treatment, against thrips in cotton

Protocol: ICL100A3-2016US

Year: 2016

Crop: Cotton

Variety: not provided

Location: Tidewater AREC, Field 67, Suffolk, VA

Field preparation: Rip-strip-till on April 25

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 fungicide-only FM 1944 GLB2 border rows

Row spacing: 36"

Planting date: May 20

Harvest date: October 24

Treatment application:

Liquid in-furrow **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.75 **GPA:** 5

Broadcast w/ backpack **Nozzle type:** 8002EVS **Nozzle spacing:** 18" **PSI:** 18 **GPA:** 14.3

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1000	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	May-17-2016	Liberty WeatherMax	29	FL OZ/A
6.	May-20-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Prowl H2O	1	PT/A
8.	Jun-03-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-13-2016	24-0-0-3	80	Units/A
11.	Jul-13-2016	Boron	2	QT/A
12.	Jul-20-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-05-2016	Bifenthrin	6.4	FL OZ/A
15.	Aug-05-2016	Admire Pro	1.7	FL OZ/A
16.	Aug-16-2016	Prevathon	27	FL OZ/A
17.	Oct-5-2016	Finish	1	QT/A
18.	Oct-5-2016	Dropp	3	FL OZ/A

Table 28. Stand counts¹ and fresh weight of 5 plants, CT16-THP-Syngenta-100A3. Tidewater AREC, Suffolk, VA, 2016. The 1st true leaf applications were broadcast on June 6.

#	Material(s)	Rate(s)	Rate unit	Application timing	Plants/35 row ft		Fresh weight (grams per 5 plants)
					Jun 1	Jun 17	
1	A9382				111.5	103.3	9.93
	A9459						
	A7568						
	A21606						
2	A9382				112.5	106.5	10.88
	A9459						
	A7568						
	A21606						
	A9765						
3	A9382				106.0	97.5	10.65
	A9459						
	A7568						
	A21606						
	A18121						
4	A9382				115.5	114.0	13.15
	A9459						
	A7568						
	A21606						
	A20703						
5	A9382				115.3	111.0	12.73
	A9459						
	A7568						
	A21606						
	A20703						
	Orthene 97	6	oz/A	BC 1 st tl			
6	A9382				113.5	106.8	9.90
	A9459						

	A18121						
7	A9382				115.8	102.0	10.35
	A9459						
	A7568						
	A21606						
	A20703						
	A18121						
	Orthene 97	6	oz/A	BC 1 st tl			
8	A18640				111.3	103.3	9.90
	A18115						
	A17823						
	A22031						
	A18190						
9	A18640				110.0	104.0	11.45
	A18115						
	A17823						
	A22031						
	A18190						
	Orthene 97	6	oz/A	BC 1 st tl			
10	A18640				113.8	100.8	12.48
	A18115						
	A17823						
	A22031						
	A21617 (=Velum Total)	18	fl oz/a	Liquid IF			
	LSD				NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on counting all plants in row 2 of each plot.

Table 29. Thrips injury ratings¹ and yield², CT16-THP-Syngenta-100A3. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate(s)	Rate unit	Application timing	Thrips injury rating		Lint lb/acre
					Jun 9 (2 nd true leaf)	Jun 17	
1	A9382				3.750 a	4.500 a	1,260
	A9459						
	A7568						
	A21606						
	A9382				2.875 b	4.000 b	1,363
2	A9459						
	A7568						
	A21606						
	A9765						
	A9382				1.438 d	1.750 d	1,554
3	A9459						
	A7568						
	A21606						
	A18121						
	A9382				1.750 cd	2.750 c	1,383
4	A9459						
	A7568						
	A21606						
	A20703						
	A9382				2.750 b	2.813 c	1,375
5	A9459						
	A7568						
	A21606						
	A20703						
	Orthene 97	6	oz/A	BC 1 st tl			
6	A9382				1.875 c	1.500 d	1,456
	A9459						
	A7568						
	A21606						
	A20703						

	A18121						
7	A9382				1.563 cd	1.500 d	1,520
	A9459						
	A7568						
	A21606						
	A20703						
	A18121						
	Orthene 97	6	oz/A	BC 1 st tl			
8	A18640				0.813 e	0.813 ef	1,483
	A18115						
	A17823						
	A22031						
	A18190						
9	A18640				1.563 cd	0.875 e	1,431
	A18115						
	A17823						
	A22031						
	A18190						
	Orthene 97	6	oz/A	BC 1 st tl			
10	A18640				0.750 e	0.563 f	1,471
	A18115						
	A17823						
	A22031						
	A21617 (=Velum Total)	18	fl oz/a	Liquid IF			
	LSD				0.3955	0.3088	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Thrips injury based on a 0-5 scale, 0 = no injury and 5 = dead plants.

²Cotton was harvested on October 24. Yields are based on representative gin samples with a mean of 45.9% lint.

Table 30. Mean number of thrips per 5 plants, CT16-THP-Syngenta-100A3. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate(s)	Rate unit	Application timing	Jun 9		Jun 16	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	A9382				43.5 a	3.5	14.0 bc	2.5
	A9459							
	A7568							
	A21606							
	A9382				27.3 b	6.0	31.8 a	3.8
2	A9459							
	A7568							
	A21606							
	A9765							
	A9382				20.5 bc	2.8	12.8 bc	2.0
3	A9459							
	A7568							
	A21606							
	A18121							
	A9382				15.0 b-d	3.5	17.0 b	2.0
4	A9459							
	A7568							
	A21606							
	A20703							
	A9382				10.0 cd	3.0	9.5 bc	2.3
5	A9459							
	A7568							
	A21606							
	A20703							
	Orthene 97	6	oz/A	BC 1 st tl				
6	A9382				11.0 cd	2.3	9.8 bc	1.5
	A9459							
	A7568							
	A21606							
	A20703							

	A18121							
7	A9382				7.8 cd	2.8	8.8 bc	1.0
	A9459							
	A7568							
	A21606							
	A20703							
	A18121							
	Orthene 97	6	oz/A	BC 1 st tl				
8	A18640				6.8 d	3.0	7.8 bc	2.3
	A18115							
	A17823							
	A22031							
	A18190							
9	A18640				5.0 d	4.3	7.8 bc	2.3
	A18115							
	A17823							
	A22031							
	A18190							
	Orthene 97	6	oz/A	BC 1 st tl				
10	A18640				5.3 d	1.8	3.8 c	0.8
	A18115							
	A17823							
	A22031							
	A21617 (=Velum Total)	18	fl oz/a	Liquid IF				
	LSD				13.06	NS	11.62	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: CT16-THP-PBUG-VCB-1—Evaluation of tarnished plant bug management programs in Virginia cotton

Protocol: Virginia Cotton Board

Year: 2016

Crop: Cotton

Variety: DP 1538 B2XF (with Aeris)

Location: Tidewater AREC, Field 13, Suffolk, VA

Field preparation: Rip-strip-till on May 24

Experimental design: Randomized complete block

Plot size: 8 rows x 35' long

Row spacing: 36"

Planting date: May 24

Harvest date: November 17

Treatment application:

Broadcast w/ Spider Spray Trac Nozzle type: 8002TJ Nozzle spacing: 18" PSI: 38 GPA: 1

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-24-2016	2,4-D	1.5	PT/A
2.	Apr-06-2016	Roundup	28	FL OZ/A
3.	Apr-22-2016	9-12-38	311	LB/A
4.	Apr-25-2016	12-16-32	246	LB/A
5.	Jun-11-2016	Orthene 97	10	OZ/A
6.	Jun-20-2016	Orthene 97	12	OZ/A
7.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
8.	Jul-09-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jul-11-2016	24-0-0-3	90	Units/A
10.	Jul-13-2016	Boron	2	QT/A
11.	Jul-20-2016	Pentia	12	FL OZ/A
12.	Aug-05-2016	Pentia	16	FL OZ/A
13.	Aug-16-2016	Showdown	28	FL OZ/A
14.	Aug-16-2016	Induce	0.25	% V/V
15.	Oct-21-2016	Finish	1	QT/A
16.	Oct-21-2016	Dropp	5	FL OZ/A
17.	Oct-21-2016	Folex	4	FL OZ/A

Plant Bug Sprays

Lep Spray

Stink Bug Sprays

CT16-PBUG-VCB-1

Treatment applications

The liquid Transform formulation (21.8% sulfoxaflor) was used in this trial

Prevathon
27 oz/a
16 Aug

Trt 1: Lep control only

Prevathon
27 oz/a
16 Aug

Brigade
6.4 oz/a
+
Orthene
16 oz/a
24 Aug
29 Aug
8 Sep

Trt 2: Protected from 3rd week of bloom

Transform
2 oz/a
6 July
13 July
19 July

Prevathon
27 oz/a
16 Aug

Brigade
6.4 oz/a
+
Orthene
16 oz/a
24 Aug
29 Aug
8 Sep

Trt 3: Protected from 1st square to 1st bloom and from 3rd week of bloom on

Transform
2 oz/a
26 July
4 Aug
11 Aug

Prevathon
27 oz/a
16 Aug

Brigade
6.4 oz/a
+
Orthene
16 oz/a
24 Aug
29 Aug
8 Sep

Trt 4: Protected from 1st bloom

Transform
2 oz/a
6 July
13 July
19 July
26 July
4 Aug
11 Aug

Prevathon
27 oz/a
16 Aug

Brigade
6.4 oz/a
+
Orthene
16 oz/a
24 Aug
29 Aug
8 Sep

Trt 5: Protected from 1st square

← 1st square

← 1st bloom

Table 31. Percent square retention¹ and damaged terminals², CT16-PBUG-VCB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Spray timing	% Square retention		% Damag termina
		Jul 11	Jul 18	Jul 19
1	Lep pests only	94.4	97.8	0.0
2	3rd wk of bloom	94.8	97.1	0.0
3	1st square to 1st bloom	96.8	97.5	0.0
4	1st bloom	91.9	98.4	0.0
5	1st square	93.0	97.9	0.0
	LSD	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Square retention counts were based on sampling 10 plants for squares physically present on the plant and for missing squares.

²Ten plants per plot were examined for damaged/darkened terminals.

Table 32. Percent dirty blooms¹, CT16-PBUG-VCB-1. Tidewater AREC, Suffolk, VA, 2016. Date of first bloom was July 22-25 for all plots.

#	Spray timing	% Dirty blooms	
		Jul 25	Aug 3
1	Lep pests only	12.60	18.0
2	3rd wk of bloom	4.55	25.0
3	1st square to 1st bloom	8.18	13.0
4	1st bloom	19.23	7.0
5	1st square	15.28	18.0
	LSD	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on sampling all available blooms in a plot for plant bug injury (up to 25 blooms/plot).

Table 33. Insect counts¹, CT16-PBUG-VCB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Spray timing	Jul 12			
		Beat cloth		Sweep net	
		Plant bug nymphs	Plant bug adults	Plant bug nymphs	Plant bu adults
1	Lep pests only	0.0	0.0	0.3	1.3
2	3rd wk of bloom	0.5	0.0	0.0	1.0
3	1st square to 1st bloom	0.0	0.0	0.0	0.8
4	1st bloom	0.3	0.0	0.0	1.5
5	1st square	0.0	0.3	0.0	1.3
	LSD	NS	NS	NS	NS

Table 33 (continued).

#	Spray timing	Jul 18		Jul 25	
		Beat cloth	Sweep net	Beat cloth	Sweep net
		Plant bug nymphs	Plant bug adults	Plant bug nymphs	Plant bug adults
1	Lep pests only	0.5	0.0	1.5	0.5
2	3rd wk of bloom	0.5	0.0	1.5	0.5
3	1st square to 1st bloom	0.0	0.0	0.0	0.5
4	1st bloom	0.3	0.0	1.0	0.5
5	1st square	0.0	0.0	0.3	0.0
	LSD	NS	NS	NS	NS

#	Spray timing	Aug 2		Aug 3	
		Sweep net		Beat cloth	
		Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Lep pests only	0.0	0.3	1.0	0.0
2	3rd wk of bloom	0.0	0.0	1.3	0.0
3	1st square to 1st bloom	0.0	0.0	1.0	0.0
4	1st bloom	0.0	0.0	0.0	0.0
5	1st square	0.3	0.0	0.5	0.0
	LSD	NS	NS	NS	NS

#	Spray timing	Aug 10			
		Sweep net		Beat cloth	
		Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Lep pests only	0.8	0.0	1.8 a	0.0
2	3rd wk of bloom	0.5	0.0	1.3 ab	0.0
3	1st square to 1st bloom	0.3	0.0	1.5 ab	0.0
4	1st bloom	0.0	0.0	0.0 c	0.0
5	1st square	0.8	0.0	0.5 bc	0.0
	LSD	NS	NS	1.08	NS

Table 33 (continued).

#	Spray timing	Aug 15			
		Sweep net		Beat cloth	
		Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Lep pests only	0.3	0.0	1.5	0.0
2	3rd wk of bloom	0.3	0.0	1.3	0.0
3	1st square to 1st bloom	0.0	0.0	2.0	0.0
4	1st bloom	0.8	0.0	0.5	0.0
5	1st square	0.5	0.0	0.5	0.0
	LSD	NS	NS	NS	NS

#	Spray timing	Aug 24			
		Sweep net		Beat cloth	
		Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Lep pests only	2.8 ab	0.0	12.3 a	0.0
2	3rd wk of bloom	1.0 bc	0.0	15.8 a	0.3
3	1st square to 1st bloom	3.3 a	0.5	14.5 a	0.5
4	1st bloom	2.0 a-c	0.0	5.5 b	0.0
5	1st square	0.8 c	0.5	4.0 b	0.0
	LSD	1.83	NS	4.98	NS

#	Spray timing	Aug 29			
		Sweep net		Beat cloth	
		Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Lep pests only	0.0	0.0	0.3	0.0
2	3rd wk of bloom	0.0	0.0	0.0	0.0
3	1st square to 1st bloom	0.0	0.0	0.0	0.0
4	1st bloom	0.0	0.0	0.0	0.0
5	1st square	0.0	0.0	0.0	0.0
	LSD	NS	NS	NS	NS

Table 33 (continued).

#	Spray timing	Sep 6		Sep 7	
		Sweep net		Beat cloth	
		Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Lep pests only	0.8	0.3	0.3	0.0
2	3rd wk of bloom	0.5	0.0	0.0	0.0
3	1st square to 1st bloom	0.3	0.0	0.0	0.0
4	1st bloom	0.5	0.0	0.0	0.0
5	1st square	0.3	0.0	0.3	0.0
	LSD	NS	NS	NS	NS

#	Spray timing	Sep 14			
		Sweep net		Beat cloth	
		Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Lep pests only	0.0	0.0	0.0	0.0
2	3rd wk of bloom	0.0	0.0	0.0	0.0
3	1st square to 1st bloom	0.0	0.0	0.0	0.0
4	1st bloom	0.0	0.0	0.0	0.0
5	1st square	0.0	0.0	0.0	0.0
	LSD	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Samples consisted of one beat cloth (28" x 36" black cloth) and/or one 15-sweep sample per plot.

Table 34. Percent internal boll injury¹, CT16-PBUG-VCB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Spray timing	% Internal boll injury					
		Aug 9	Aug 15	Aug 22	Aug 29	Sep 7	Sep 14
1	Lep pests only	34.0 a	22.0 a-c	53.5 a	60.0 a	31.5 a	41.5
2	3rd wk of bloom	25.0 ab	30.0 ab	36.0 b	36.8 b	11.8 b	15.0
3	1st square to 1st bloom	33.0 a	38.0 a	33.0 b	55.0 ab	3.3 b	21.8
4	1st bloom	14.0 b	11.0 c	27.3 bc	16.8 c	6.8 b	16.5
5	1st square	17.0 b	17.0 bc	17.5 c	13.5 c	8.3 b	21.8
	LSD	14.20	16.45	12.28	19.56	18.5	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on cracking open up to twenty-five (August 9-22) or fifteen (August 29 and afterwards) 0.9-1.1-inch-diameter bolls per plot and noting internal bug injury expressed as warts.*

Table 35. Percent of bolls damaged by lep larvae¹, CT16-PBUG-VCB-1. Tidewater AI Suffolk, VA, 2016.

#	Spray timing	% External boll injury	
		Aug 26	Aug 31
1	Lep pests only	1.0	0.0
2	3rd wk of bloom	0.0	0.0
3	1st square to 1st bloom	0.0	0.0
4	1st bloom	0.0	0.0
5	1st square	0.0	0.0
	LSD	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on sampling 25 bolls per plot.*

Table 36. Yield¹, CT16-PBUG-VCB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Spray timing	Lint lb/acre
1	Lep pests only	962 b
2	3rd wk of bloom	947 b
3	1st square to 1st bloom	993 b
4	1st bloom	1,165 a
5	1st square	1,107 a
	LSD	101.1

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Cotton was harvested on November 17. Yields are based on representative gin samples with a mean of 45% i*

Test: CT16-THP-PBUG-VCB-2—Evaluation of tarnished plant bug management programs in Virginia cotton

Protocol: Virginia Cotton Board

Year: 2016

Crop: Cotton

Variety: DP 1538 B2XF (with AeriS)

Location: Tidewater AREC, Field 5, Suffolk, VA

Field preparation: Rip-strip-till on May 24

Experimental design: Randomized complete block

Plot size: 8 rows x 35' long

Row spacing: 36"

Planting date: May 24 (replant)

Harvest date: November 17

Treatment application:

Broadcast w/ Spider Spray Trac Nozzle type: 8002TJ **Nozzle spacing:** 18" **PSI:** 38 **GPA:** 19.88

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1500	LB/A
2.	Mar-24-2016	2,4-D	1.5	PT/A
3.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
4.	Apr-22-2016	9-12-38	311	LB/A
5.	Apr-27-2016	Prowl H2O	1	PT/A
6.	Apr-27-2016	Cotoran 4L	1	QT/A
7.	May-20-2016	Roundup WeatherMax	20	FL OZ/A
8.	May-26-2016	Warrent	3	PT/A
9.	Jun-11-2016	Orthene 97	8	OZ/A
10.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
11.	Jul-09-2016	Roundup WeatherMax	28	FL OZ/A
12.	Jul-11-2016	24-0-0-3	90	Units/A
13.	Jul-13-2016	Boron	2	QT/A
14.	Jul-13-2016	Roundup WeatherMax	28	FL OZ/A
15.	Jul-20-2016	Pentia	12	FL OZ/A
16.	Aug-05-2016	Pentia	16	FL OZ/A
17.	Aug-10-2016	Select Max	23	FL OZ/A
18.	Aug-10-2016	Induce	0.25	% V/V
19.	Aug-16-2016	Showdown	28	FL OZ/A
20.	Aug-16-2016	Induce	0.25	% V/V
21.	Oct-21-2016	Finish	1	QT/A
22.	Oct-21-2016	Dropp	5	FL OZ/A
23.	Oct-21-2016	Folex	4	FL OZ/A

Plant Bug Sprays

Lep Spray

Stink Bug Sprays

CT16-PBUG-VCB-2 *Treatment applications*

The liquid Transform formulation (21.8% sulfoxaflor) was used in this trial

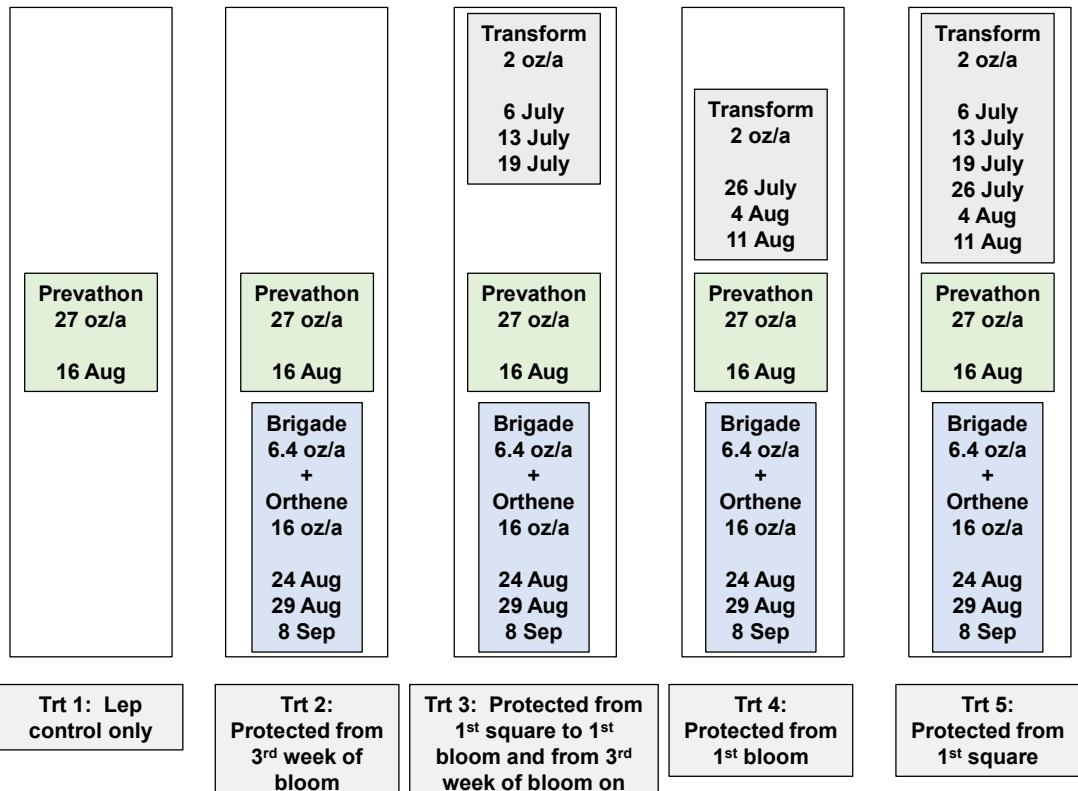


Table 37. Percent square retention¹ and damaged terminals², CT16-PBUG-VCB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Spray timing	% Square retention		% Damag termina
		Jul 11	Jul 18	Jul 19
1	Lep pests only	98.1	97.7	0.0
2	3rd wk of bloom	93.6	95.5	0.0
3	1st square to 1st bloom	93.6	97.1	0.0
4	1st bloom	93.1	94.8	0.0
5	1st square	96.7	98.4	0.0
	LSD	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Square retention counts were based on sampling 10 plants for squares physically present on the plant and for missing squares.

²Ten plants per plot were examined for damaged/darkened terminals.

Table 38. Percent dirty blooms¹, CT16-PBUG-VCB-2. Tidewater AREC, Suffolk, VA, 2016. Date of first bloom was July 22-26.

#	Spray timing	% Dirty blooms	
		Jul 25	Aug 3
1	Lep pests only	19.18	13.0
2	3rd wk of bloom	0.00	19.0
3	1st square to 1st bloom	6.25	4.0
4	1st bloom	3.58	10.0
5	1st square	5.00	5.0
	LSD	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on sampling all available blooms in a plot for plant bug injury (up to 25 blooms/plot). Very few blooms available to sample on July 25.

Table 39. Insect counts¹, CT16-PBUG-VCB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Spray timing	Jul 12			
		Beat cloth		Sweep net	
		Plant bug nymphs	Plant bug adults	Plant bug nymphs	Plant bug adults
1	Lep pests only	0.0	0.0	0.0	0.3
2	3rd wk of bloom	0.3	0.0	0.0	0.3
3	1st square to 1st bloom	0.0	0.0	0.0	0.3
4	1st bloom	0.5	0.0	0.0	0.8
5	1st square	0.0	0.0	0.0	0.8
	LSD	NS	NS	NS	NS

Table 39 (continued).

#	Spray timing	Jul 18		Jul 25	
		Beat cloth	Sweep net	Beat cloth	Sweep net
		Plant bug nymphs	Plant bug adults	Plant bug nymphs	Plant bug adults
1	Lep pests only	0.0	0.0	1.3 a	0.3
2	3rd wk of bloom	0.3	0.0	1.5 a	0.3
3	1st square to 1st bloom	0.0	0.0	0.0 b	0.0
4	1st bloom	0.0	0.0	0.0 b	0.3
5	1st square	0.0	0.0	0.0 b	0.0
	LSD	NS	NS	0.49	NS

#	Spray timing	Aug 3			
		Beat cloth		Sweep net	
		Plant bug nymphs	Stink bugs	Plant bug adults	Stink bugs
1	Lep pests only	1.0	0.0	0.5	0.0
2	3rd wk of bloom	0.5	0.0	0.8	0.3
3	1st square to 1st bloom	0.3	0.0	0.3	0.5
4	1st bloom	0.5	0.3	1.0	0.0
5	1st square	0.5	0.0	0.3	0.0
	LSD	NS	NS	NS	NS

#	Spray timing	Aug 10			
		Beat cloth		Sweep net	
		Plant bug nymphs	Stink bugs	Plant bug adults	Stink bugs
1	Lep pests only	0.3	0.0	0.0	0.3
2	3rd wk of bloom	0.8	0.0	0.0	0.0
3	1st square to 1st bloom	0.5	0.0	0.8	0.0
4	1st bloom	0.0	0.0	0.8	0.0
5	1st square	0.3	0.0	0.0	0.0
	LSD	NS	NS	NS	NS

Table 39 (continued).

#	Spray timing	Aug 15			
		Beat cloth		Sweep net	
		Plant bug nymphs	Stink bugs	Plant bug adults	Stink bugs
1	Lep pests only	0.8	0.0	0.0	0.0
2	3rd wk of bloom	1.8	0.0	0.0	0.0
3	1st square to 1st bloom	1.0	0.0	0.5	0.0
4	1st bloom	1.0	0.0	0.3	0.0
5	1st square	2.3	0.0	1.0	0.0
	LSD	NS	NS	NS	NS

#	Spray timing	Aug 24			
		Beat cloth		Sweep net	
		Plant bug nymphs	Stink bugs	Plant bug adults	Stink bugs
1	Lep pests only	5.3	0.5	0.3	0.3
2	3rd wk of bloom	5.0	0.5	0.3	0.0
3	1st square to 1st bloom	4.5	0.0	0.8	0.0
4	1st bloom	1.8	0.0	0.3	0.0
5	1st square	2.3	0.3	0.8	0.3
	LSD	NS	NS	NS	NS

#	Spray timing	Aug 29			
		Beat cloth		Sweep net	
		Plant bug nymphs	Stink bugs	Plant bug adults	Stink bugs
1	Lep pests only	0.5	0.0	0.3	0.0
2	3rd wk of bloom	0.0	0.0	0.3	0.0
3	1st square to 1st bloom	0.0	0.0	0.0	0.0
4	1st bloom	0.3	0.0	0.0	0.0
5	1st square	0.5	0.0	0.3	0.0
	LSD	NS	NS	NS	NS

Table 39 (continued).

#	Spray timing	Sep 6			
		Beat cloth		Sweep net	
		Plant bug nymphs	Stink bugs	Plant bug adults	Stink bugs
1	Lep pests only	1.8 a	0.0	0.8	0.0
2	3rd wk of bloom	1.0 ab	0.0	0.8	0.0
3	1st square to 1st bloom	0.3 bc	0.0	0.5	0.0
4	1st bloom	0.3 bc	0.0	0.8	0.0
5	1st square	0.0 c	0.0	0.5	0.0
	LSD	0.86	NS	NS	NS

#	Spray timing	Sep 14			
		Beat cloth		Sweep net	
		Plant bug nymphs	Stink bugs	Plant bug adults	Stink bugs
1	Lep pests only	0.3	0.0	0.0	0.0
2	3rd wk of bloom	0.0	0.0	0.0	0.0
3	1st square to 1st bloom	0.0	0.0	0.0	0.0
4	1st bloom	0.0	0.0	0.0	0.0
5	1st square	0.0	0.0	0.0	0.0
	LSD	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Samples consisted of one beat cloth (28" x 36" black cloth) and one 15-sweep sample per plot.

Table 40. Percent internal boll injury¹, CT16-PBUG-VCB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Spray timing	% Internal boll injury					
		Aug 8	Aug 15	Aug 22	Aug 29	Sep 7	Sep 14
1	Lep pests only	16.0	20.0	27.0	23.3	10.0	26.8
2	3rd wk of bloom	13.0	16.0	25.0	11.8	5.3	7.4
3	1st square to 1st bloom	17.0	15.0	25.0	8.3	1.8	5.0
4	1st bloom	13.0	24.0	12.0	11.5	1.8	7.4
5	1st square	18.0	8.0	19.0	6.8	1.8	10.0
	LSD	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on cracking open twenty-five (August 8-22) or fifteen (August 29 and afterwards) 0.9-1.1-inch-diameter bolls per plot and noting internal bug injury expressed as warts.*

Table 41. Percent of bolls damaged by lep larvae¹, CT16-PBUG-VCB-2. Tidewater AI Suffolk, VA, 2016.

#	Spray timing	% External boll injury	
		Aug 26	Aug 31
1	Lep pests only	1.0	0.0
2	3rd wk of bloom	0.0	0.0
3	1st square to 1st bloom	0.0	0.0
4	1st bloom	0.0	0.0
5	1st square	0.0	0.0
	LSD	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on sampling 25 bolls per plot.*

Table 42. Yield¹, CT16-PBUG-VCB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Spray timing	Lint lb/acre
1	Lep pests only	1,049 c
2	3rd wk of bloom	1,162 bc
3	1st square to 1st bloom	1,319 a
4	1st bloom	1,272 ab
5	1st square	1,357 a
	LSD	151.1

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Cotton was harvested on November 17. Yields are based on representative gin samples with a mean of 44.4%*

Test: CT16-THP-PBUG-DOW-1—Efficacy of insecticides, including Transform, against tarnished plant bug in Virginia cotton

Protocol: NA16C1C005

Year: 2016

Crop: Cotton

Variety: DP 1538 B2XF (with Aeris)

Location: Tidewater AREC, Field 13, Suffolk, VA

Field preparation: Rip-strip-till on May 24

Experimental design: Randomized complete block

Plot size: 8 rows x 35' long

Row spacing: 36"

Planting date: May 24

Harvest date: November 17

Treatment application:

Broadcast w/ Spider Spray Trac Nozzle type: 8002TJ Nozzle spacing: 18" PSI: 38 GPA: 19.88

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-24-2016	2,4-D	1.5	PT/A
2.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
3.	Apr-25-2016	12-16-32	246	LB/A
4.	May-25-2016	Cotoran 4L	1	QT/A
5.	May-25-2016	Prowl H2O	1	PT/A
6.	Jun-11-2016	Orthene 97	10	OZ/A
7.	Jun-20-2016	Orthene 97	12	OZ/A
8.	Jun-24-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jul-09-2016	Roundup WeatherMax	28	FL OZ/A
10.	Jul-11-2016	24-0-0-3	90	UNITS/A
11.	Jul-13-2016	Boron	2	QT/A
12.	Jul-21-2016	Pentia	12	FL OZ/A
13.	Aug-05-2016	Pentia	16	FL OZ/A
14.	Aug-16-2016	Induce	0.25	% V/V
15.	Aug-16-2016	Showdown	28	FL OZ/A
16.	Aug-16-2016	Prevathon	27	FL OZ/A
17.	Oct-21-2016	Finish	1	QT/A
18.	Oct-21-2016	Dropp	5	FL OZ/A
19.	Oct-21-2016	Folex	4	FL OZ/A

Table 43. Percent square retention¹ and damaged terminals², CT16-PBUG-DOW-1. Tidewater AREC, Suffolk, VA, 2016. Treatments were applied on July 26 and August 4.

#	Material(s)	Rate(s)	Rate unit	Application timing	% Square retention		% Damaged terminals
					Jul 11 (pre-treatment)	Jul 18 (pre-treatment)	Jul 19 (pre-treatment)
1	Untreated			.	92.0	96.6	0.0
2	Transform WG	1.5	oz wt/a	Threshold	92.8	98.3	0.0
	Transform WG	1.5	oz wt/a	5-7 DAT			
3	Brigade	6.4	fl oz/a	Threshold	91.1	97.9	0.0
	Orthene	8	oz wt/a	Threshold			
	Brigade	6.4	fl oz/a	5-7 DAT			
	Orthene	8	oz wt/a	5-7 DAT			
4	Transform WG	1.5	oz wt/a	Threshold	94.3	98.3	0.0
	Brigade	6.4	fl oz/a	5-7 DAT			
	Orthene	8	oz wt/a	5-7 DAT			
	LSD				NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Square retention counts were based on sampling 10 plants for squares physically present on the plant and for missing squares.

²Ten plants per plot were examined for damaged/darkened terminals.

Table 44. Percent dirty blooms¹, CT16-PBUG-DOW-1. Tidewater AREC, Suffolk, VA, 2016. Date of first bloom was July 22-25 for all plots. Treatments were applied on July 26 and August 4.

#	Material(s)	Rate(s)	Rate unit	Application timing	% Dirty blooms (pre-treatment)	% Dirty blooms (after 1 treatment)
					Jul 25	Aug 3
1	Untreated			.	10.33	14.0
2	Transform WG	1.5	oz wt/a	Threshold	27.40	16.0
	Transform WG	1.5	oz wt/a	5-7 DAT		
3	Brigade	6.4	fl oz/a	Threshold	20.50	0.0
	Orthene	8	oz wt/a	Threshold		
	Brigade	6.4	fl oz/a	5-7 DAT		
	Orthene	8	oz wt/a	5-7 DAT		
4	Transform WG	1.5	oz wt/a	Threshold	12.75	6.0
	Brigade	6.4	fl oz/a	5-7 DAT		
	Orthene	8	oz wt/a	5-7 DAT		
	LSD				NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on sampling all available blooms in a plot for plant bug injury (up to 25 blooms/plot).*

Table 45. Plant bug counts¹, CT16-PBUG-DOW-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate(s)	Rate unit	Application timing	Pre-treatment (Jul 12)			
					Beat cloth		Sweep net	
					Nymphs	Adults	Nymphs	Adults
1	Untreated			.	0.3	0.0	0.0	0.5
2	Transform WG	1.5	oz wt/a	Threshold	0.3	0.0	0.0	0.8
	Transform WG	1.5	oz wt/a	5-7 DAT				
3	Brigade	6.4	fl oz/a	Threshold	0.5	0.0	0.5	1.3
	Orthene	8	oz wt/a	Threshold				
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
4	Transform WG	1.5	oz wt/a	Threshold	0.3	0.3	0.8	1.0
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
	LSD				NS	NS	NS	NS

#	Material(s)	Rate(s)	Rate unit	Application timing	Pre-treatment (Jul 18)		Pre-treatment (Jul 25)	
					Beat cloth	Sweep net	Beat cloth	Sweep net
					Nymphs	Adults	Nymphs	Adults
1	Untreated			.	0.3	0.0	1.5	0.3
2	Transform WG	1.5	oz wt/a	Threshold	0.5	0.0	1.5	0.3
	Transform WG	1.5	oz wt/a	5-7 DAT				
3	Brigade	6.4	fl oz/a	Threshold	0.3	0.0	2.3	0.0
	Orthene	8	oz wt/a	Threshold				
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
4	Transform WG	1.5	oz wt/a	Threshold	0.3	0.0	1.8	0.0
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
	LSD				NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Samples consisted of one beat cloth (28" x 36" black cloth) and one 15-sweep sample per plot.

Table 46. Post-treatment insect counts¹, CT16-PBUG-DOW-1. Tidewater AREC, Suffolk, VA, 2016. Treatments were applied on July 26 and August 4.

#	Material(s)	Rate(s)	Rate unit	Application timing	Aug 2		Aug 3	
					Sweep net		Beat cloth	
					Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Untreated			.	0.3	0.0	1.0	0.0
2	Transform WG	1.5	oz wt/a	Threshold	0.5	0.0	1.5	0.0
	Transform WG	1.5	oz wt/a	5-7 DAT				
3	Brigade	6.4	fl oz/a	Threshold	0.0	0.0	0.3	0.0
	Orthene	8	oz wt/a	Threshold				
	Brigade	6.4	fl oz/a	5-7 DAT				
4	Orthene	8	oz wt/a	5-7 DAT				
	Transform WG	1.5	oz wt/a	Threshold	0.3	0.0	0.8	0.0
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
	LSD				NS	NS	NS	NS

#	Material(s)	Rate(s)	Rate unit	Application timing	Aug 10			
					Sweep net		Beat cloth	
					Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Untreated			.	0.3	0.0	1.3	0.0
2	Transform WG	1.5	oz wt/a	Threshold	0.0	0.0	1.0	0.0
	Transform WG	1.5	oz wt/a	5-7 DAT				
3	Brigade	6.4	fl oz/a	Threshold	0.0	0.0	0.3	0.0
	Orthene	8	oz wt/a	Threshold				
	Brigade	6.4	fl oz/a	5-7 DAT				
4	Orthene	8	oz wt/a	5-7 DAT				
	Transform WG	1.5	oz wt/a	Threshold	0.0	0.0	0.5	0.0
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
	LSD				NS	NS	NS	NS

Table 46 (continued).

#	Material(s)	Rate(s)	Rate unit	Application timing	Aug 15			
					Sweep net		Beat cloth	
					Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Untreated			.	0.5	0.0	1.8	0.0
2	Transform WG	1.5	oz wt/a	Threshold	0.5	0.0	0.8	0.0
	Transform WG	1.5	oz wt/a	5-7 DAT				
3	Brigade	6.4	fl oz/a	Threshold	0.3	0.0	1.3	0.0
	Orthene	8	oz wt/a	Threshold				
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
4	Transform WG	1.5	oz wt/a	Threshold	0.8	0.0	1.0	0.0
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
	LSD				NS	NS	NS	NS

#	Material(s)	Rate(s)	Rate unit	Application timing	Aug 24			
					Sweep net		Beat cloth	
					Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Untreated			.	1.0	0.0	11.5 a	0.0
2	Transform WG	1.5	oz wt/a	Threshold	1.0	0.0	5.5 b	0.3
	Transform WG	1.5	oz wt/a	5-7 DAT				
3	Brigade	6.4	fl oz/a	Threshold	1.3	0.0	0.5 c	0.0
	Orthene	8	oz wt/a	Threshold				
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
4	Transform WG	1.5	oz wt/a	Threshold	1.3	0.0	0.3 c	0.3
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
	LSD				NS	NS	4.8	NS

Table 46 (continued).

#	Material(s)	Rate(s)	Rate unit	Application timing	Aug 29			
					Sweep net		Beat cloth	
					Plant bug adults	Stink bugs	Plant bug nymphs	Stink bugs
1	Untreated			.	1.8	0.0	0.5	0.0
2	Transform WG	1.5	oz wt/a	Threshold	2.3	0.0	2.0	0.0
	Transform WG	1.5	oz wt/a	5-7 DAT				
3	Brigade	6.4	fl oz/a	Threshold	0.5	0.0	1.3	0.3
	Orthene	8	oz wt/a	Threshold				
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
4	Transform WG	1.5	oz wt/a	Threshold	2.0	0.0	0.0	0.0
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
	LSD				NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Samples consisted of one beat cloth (28" x 36" black cloth) and/or one 15-sweep sample per plot.

Table 47. Percent internal boll injury¹, CT16-PBUG-DOW-1. Tidewater AREC, Suffolk, VA, 2016. Treatments were applied on July 26 and August 4.

#	Material(s)	Rate(s)	Rate unit	Application timing	% Internal boll injury			
					Aug 9	Aug 15	Aug 22	Aug 29
1	Untreated			.	22.0 a	9.0	16.0 ab	56.8 a
2	Transform WG	1.5	oz wt/a	Threshold	30.0 a	17.0	20.0 a	53.0 a
	Transform WG	1.5	oz wt/a	5-7 DAT				
3	Brigade	6.4	fl oz/a	Threshold	10.0 b	11.0	1.0 c	25.0 b
	Orthene	8	oz wt/a	Threshold				
	Brigade	6.4	fl oz/a	5-7 DAT				
4	Orthene	8	oz wt/a	5-7 DAT				
	Transform WG	1.5	oz wt/a	Threshold	26.0 a	11.0	7.0 bc	23.3 b
	Brigade	6.4	fl oz/a	5-7 DAT				
	Orthene	8	oz wt/a	5-7 DAT				
	LSD				11.39	NS	10.66	15.16

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on cracking open twenty-five 0.9-1.1-inch-diameter bolls per plot and noting internal bug injury expressed as warts.*

Table 48. Percent of bolls damaged by lep larvae¹, CT16-PBUG-DOW-1. Tidewater AREC, Suffolk, VA, 2016. Treatments were applied on July 26 and August 4.

#	Material(s)	Rate(s)	Rate unit	Application timing	% External boll injury	
					Aug 26	Aug 31
1	Untreated			.	0.0	0.0
2	Transform WG	1.5	oz wt/a	Threshold	0.0	0.0
	Transform WG	1.5	oz wt/a	5-7 DAT		
3	Brigade	6.4	fl oz/a	Threshold	0.0	0.0
	Orthene	8	oz wt/a	Threshold		
	Brigade	6.4	fl oz/a	5-7 DAT		
4	Orthene	8	oz wt/a	5-7 DAT		
	Transform WG	1.5	oz wt/a	Threshold	0.0	0.0
	Brigade	6.4	fl oz/a	5-7 DAT		
	Orthene	8	oz wt/a	5-7 DAT		
	LSD				NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on sampling 25 bolls per plot.*

Table 49. Yield¹, CT16-PBUG-DOW-1. Tidewater AREC, Suffolk, VA, 2016. Treatments were applied on July 26 and August 4.

#	Material(s)	Rate(s)	Rate unit	Application timing	Lint lb/acre
1	Untreated			.	628 b
2	Transform WG	1.5	oz wt/a	Threshold	708 b
	Transform WG	1.5	oz wt/a	5-7 DAT	
3	Brigade	6.4	fl oz/a	Threshold	1,052 a
	Orthene	8	oz wt/a	Threshold	
	Brigade	6.4	fl oz/a	5-7 DAT	
	Orthene	8	oz wt/a	5-7 DAT	
4	Transform WG	1.5	oz wt/a	Threshold	999 a
	Brigade	6.4	fl oz/a	5-7 DAT	
	Orthene	8	oz wt/a	5-7 DAT	
	LSD				184.2

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Cotton was harvested on November 17. Yields are based on representative gin samples with a mean of 46.3% lint.*

Test: CT16-BW-1—Evaluation of bollworm-resistant cotton varieties**Protocol:** n/a**Year:** 2016**Crop:** Cotton**Variety:** see treatment list (all had insecticide-treated seed)**Location:** Tidewater AREC, Field 63A, Suffolk, VA**Field preparation:** Rip-strip-till on May 24**Experimental design:** Randomized complete block**Plot size:** 2 rows x 35' long with 2 border rows of DP 1441 RF**Row spacing:** 36"**Planting date:** May 25**Harvest date:** November 3**Materials applied for plot maintenance:**

No.	Date	Product Name	Rate	Rate unit
1.	Mar-24-2016	2,4-D	1.5	PT/A
2.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
3.	Apr-22-2016	9-12-39	311	LB/A
4.	May-20-2016	Roundup WeatherMax	1	QT/A
5.	May-26-2016	Prowl H2O	1	PT/A
6.	May-26-2016	Cotoran 4L	1	QT/A
7.	Jun-09-2016	Orthene 97	8	OZ/A
8.	Jun-27-2016	Roundup WeatherMax	28	FL OZ/A
9.	Jul-20-2016	Pentia	12	FL OZ/A
10.	Aug-11-2016	Roundup WeatherMax	28	FL OZ/A
11.	Oct-17-2016	Finish	1	QT/A
12.	Oct-17-2016	Dropp	5	FL OZ/A
13.	Oct-17-2016	Folex	3	FL OZ/A

Table 50. Percent of bolls injured by lep larvae¹ and yield², CT16-BW-1. Tidewater AREC, Suffolk, VA, 2016. No insecticides were applied for bollworm management.

#	Variety	% Boll injury				Lint lb/acre
		Aug 22	Aug 29	Sep 6	Sep 12	
1	DP 1538 B2XF	0.0 b	1.0 b	0.0 b	0.0 b	939 d
2	DP 1441 RF	8.0 a	18.0 a	16.0 a	20.0 a	1,130 c
3	PHY 499 WRF	5.0 ab	1.0 b	1.0 b	1.0 b	1,261 ab
4	PHY 495 W3RF	2.0 b	0.0 b	1.0 b	1.0 b	1,344 a
5	ST 5289 GLT	2.0 b	1.0 b	1.0 b	2.0 b	1,213 bc
6	BX 1776 GLTP	0.0 b	0.0 b	0.0 b	0.0 b	1,147 c
	LSD	5.15	3.75	7.21	4.26	97.0

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on sampling 25 bolls per plot. No bolls were removed during sampling.*

²*Cotton was harvested on November 3. Yields are based on gin samples from each plot (range = 41-50% lint).*

2016



Peanut Insect Pest Management Tests and Demonstrations

Test: PT16-THP-VPB-1—Evaluation of foliar-applied insecticides for thrips management in peanut

Protocol: Virginia Peanut Board

Year: 2016

Crop: Peanut

Variety: Wynne (fungicide-treated)

Location: Tidewater AREC, Field 21, Suffolk, VA

Field preparation: Rip-strip-till on May 11

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long

Row spacing: 36"

Planting date: May 11

Dig date: October 19

Harvest date: October 27

Treatment application:

Broadcast w/ backpack **Nozzle type:** 8002EVS **Nozzle spacing:** 18" **PSI:** 18 **GPA:** 14.3

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
2.	May-11-2016	Prowl H2O	1	PT/A
3.	May-11-2016	Dual Magnum	1.5	PT/A
4.	Jun-24-2016	Storm	1.5	PT/A
5.	Jun-24-2016	Induce	0.25	% V/V
6.	Jun-24-2016	Basagran	8	FL OZ/A
7.	Jun-29-2016	Asana XL	6	FL OZ/A
8.	Jun-30-2016	Mg	1	QT/A
9.	Jul-06-2016	Select Max	1	PT/A
10.	Jul-06-2016	Induce	0.25	% V/V
11.	Jul-07-2016	Intrro	1	QT/A
12.	Jul-11-2016	Landplaster	1500	LB/A
13.	Jul-20-2016	Provost	9	FL OZ/A
14.	Jul-20-2016	Asana XL	6	FL OZ/A
15.	Aug-04-2016	Mg	1	QT/A
16.	Aug-04-2016	Boron	1	QT/A
17.	Aug-11-2016	Boron	1	QT/A
18.	Aug-11-2016	Provost	9	FL OZ/A
19.	Aug-11-2016	Omega	1	PT/A
20.	Aug-26-2016	Select Max	1	PT/A
21.	Aug-26-2016	Induce	0.25	% V/V
22.	Sep-01-2016	Danitol 2.4EC	12	FL OZ/A
23.	Sep-01-2016	Provost	9	FL OZ/A
24.	Sep-26-2016	Bravo Weather Stik	1.5	PT/A
25.	Sep-26-2016	Omega 500	13	FL OZ/A

Table 51. Thrips injury ratings¹, Tomato spotted wilt virus (TSWV) hits², and yield³, PT16-THP-VPB-1. Tidewater AREC, Suffolk, VA, 2016. The at-cracking treatments were broadcast on June 1, with 7-10 DAT applied on June 8.

#	Material(s)	Rate	Rate unit	Application timing	Thrips injury rating		TSWV hits per 70 row ft		Yield (lb/acre)
					Jun 7	Jun 20	Jul 20	Sep 26	
1	Radiant	1.5	oz/a	Cracking	3.500 c	2.000 b	1.5	3.0	5,181
	Radiant	1.5	oz/a	7-10 DAT					
2	Radiant	3	oz/a	Cracking	2.875 e	1.688 c	2.0	2.0	4,965
	Radiant	3	oz/a	7-10 DAT					
3	Orthene	6	oz/a	Cracking	3.250 d	1.875 b	2.0	2.8	4,773
	Orthene	6	oz/a	7-10 DAT					
4	Orthene	8	oz/a	Cracking	3.125 d	1.688 c	2.5	2.5	4,739
	Orthene	8	oz/a	7-10 DAT					
5	Exirel	13.5	oz/a	Cracking	2.250 f	1.250 e	1.0	2.3	4,948
	Exirel	13.5	oz/a	7-10 DAT					
6	Exirel	20.5	oz/a	Cracking	1.833 g	1.000 f	1.5	1.3	5,327
	Exirel	20.5	oz/a	7-10 DAT					
7	Minecto Pro	4	oz/a	Cracking	3.750 b	1.688 c	0.5	2.0	5,076
	Minecto Pro	4	oz/a	7-10 DAT					
8	Minecto Pro	6	oz/a	Cracking	3.500 c	1.438 d	1.0	1.3	5,071
	Minecto Pro	6	oz/a	7-10 DAT					
9	Untreated				4.750 a	5.313 a	3.3	3.0	5,166
	LSD				0.1594	0.1570	NS	NS	

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants.

²Based on visual inspection of all plants in two rows per plot.

³Yield based on weight of peanut with moisture content of 7%. Dig date = October 19 and harvest date = October 27.

Table 52. Mean number of thrips per 10 terminal leaflets, PT16-THP-VPB-1. Tidewater AREC, Suffolk, VA, 2016. The at-cracking treatments were broadcast on June 1, with 7-10 DAT applied on June 8.

#	Material(s)	Rate	Rate unit	Application timing	Jun 7		Jun 14	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	Radiant	1.5	oz/a	Cracking	5.8	2.5	0.3 b	0.0
	Radiant	1.5	oz/a	7-10 DAT				
2	Radiant	3	oz/a	Cracking	6.5	3.0	0.5 b	0.3
	Radiant	3	oz/a	7-10 DAT				
3	Orthene	6	oz/a	Cracking	3.3	0.8	0.0 b	0.0
	Orthene	6	oz/a	7-10 DAT				
4	Orthene	8	oz/a	Cracking	5.5	3.5	0.8 b	0.0
	Orthene	8	oz/a	7-10 DAT				
5	Exirel	13.5	oz/a	Cracking	4.0	2.8	0.8 b	0.8
	Exirel	13.5	oz/a	7-10 DAT				
6	Exirel	20.5	oz/a	Cracking	6.8	3.3	0.5 b	0.3
	Exirel	20.5	oz/a	7-10 DAT				
7	Minecto Pro	4	oz/a	Cracking	5.3	1.3	0.5 b	0.3
	Minecto Pro	4	oz/a	7-10 DAT				
8	Minecto Pro	6	oz/a	Cracking	3.0	2.3	0.0 b	0.0
	Minecto Pro	6	oz/a	7-10 DAT				
9	Untreated				6.5	1.5	3.0 a	0.0
	LSD				NS	NS	1.53	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: PT16-THP-VPB-2—Evaluation of at-planting insecticides for thrips managemene peanut

Protocol: Virginia Peanut Board

Year: 2016

Crop: Peanut

Variety: Wynne (fungicide-treated)

Location: Tidewater AREC, Field 35, Suffolk, VA

Field preparation: Rip-strip-till on May 9

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long

Row spacing: 36"

Planting date: May 10

Dig date: October 14

Harvest date: n/a

Treatment application:

Liquid in-furrow

Nozzle type: microtubing **Nozzle spacing:** 36" **PSI:** 40.5 **GPA:** 5

Granular in-furrow

Tractor-mounted inverted polypropylene jars with calibrated lid holes

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1000	LB/A
2.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
3.	Apr-11-2016	0-40-0	100	LB/A
4.	May-11-2016	Dual Magnum	1.5	PT/A
5.	May-11-2016	Prowl H2O	1	PT/A
6.	Jun-24-2016	Induce	0.25	% V/V
7.	Jun-24-2016	Storm	1.5	PT/A
8.	Jun-24-2016	Basagran	8	FL OZ/A
9.	Jun-29-2016	Asana XL	6	FL OZ/A
10.	Jun-30-2016	Mg	1	QT/A
11.	Jul-06-2016	Select Max	1	PT/A
12.	Jul-06-2016	Induce	0.25	% V/V
13.	Jul-07-2016	Intrro	1	QT/A
14.	Jul-11-2016	Landplaster	1500	LB/A
15.	Jul-20-2016	Asana XL	6	FL OZ/A
16.	Jul-20-2016	Provost	9	FL OZ/A
17.	Jul-20-2016	Basagran	1.5	PT/A
18.	Jul-20-2016	Storm	1.5	PT/A
19.	Jul-20-2016	Induce	0.25	% V/V
20.	Aug-04-2016	Mg	1	QT/A
21.	Aug-04-2016	Boron	1	QT/A
22.	Aug-11-2016	Boron	1	QT/A
23.	Aug-11-2016	Omega 500	1	PT/A
24.	Aug-11-2016	Provost	9	FL OZ/A
25.	Aug-26-2016	Select Max	1	PT/A

26.	Aug-26-2016	Induce	0.25	% V/V
27.	Sep-01-2016	Danitol 2.4 EC	12	FL OZ/A
28.	Sep-01-2016	Provost	9	FL OZ/A
29.	Sep-26-2016	Bravo 720	1.5	PT/A
30.	Sep-26-2016	Omega 500	13	FL OZ/A

Table 53. Thrips injury ratings¹, PT16-THP-VPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 2	Jun 8	Jun 20
1	Verimark	13.5	oz/a	Liquid IF	1.875 b	3.500 b	3.250 b
2	Verimark	20.5	oz/a	Liquid IF	0.750 c	2.938 c	2.563 c
3	Velum Total	18	oz/a	Liquid IF	0.813 c	1.250 d	1.563 d
4	Admire Pro	7	oz/a	Liquid IF	0.563 d	0.813 e	0.750 f
5	Admire Pro	8.75	oz/a	Liquid IF	0.500 d	0.438 f	0.563 g
6	Admire Pro	10.5	oz/a	Liquid IF	0.250 e	0.250 f	0.250 h
7	Thimet	5	lb/a	Granular IF	0.500 d	0.750 e	0.750 f
8	AgLogic Aldicarb	7	lb/a	Granular IF	0.750 c	1.313 d	1.000 e
9	Untreated				3.125 a	4.438 a	5.500 a
	LSD				0.1656	0.1907	0.1096

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants.

Table 54. Stand counts¹ and Tomato spotted wilt virus (TSWV) hits², PT16-THP-VPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Plants per 35 row ft	TSWV hits per 70 row ft	
					Jun 2	Jul 20	Sep 26
1	Verimark	13.5	oz/a	Liquid IF	33.9	2.0	1.5
2	Verimark	20.5	oz/a	Liquid IF	37.6	0.5	1.8
3	Velum Total	18	oz/a	Liquid IF	39.9	1.3	2.8
4	Admire Pro	7	oz/a	Liquid IF	33.5	1.8	2.0
5	Admire Pro	8.75	oz/a	Liquid IF	33.1	1.3	1.5
6	Admire Pro	10.5	oz/a	Liquid IF	35.6	1.0	1.5
7	Thimet	5	lb/a	Granular IF	37.0	1.8	2.3
8	AgLogic Aldicarb	7	lb/a	Granular IF	29.8	1.8	2.3
9	Untreated				32.1	0.5	0.0
	LSD				NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Table 55. Mean number of thrips per 10 terminal leaflets, PT16-THP-VPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 2		Jun 10		Jun 16	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	Verimark	13.5	oz/a	Liquid IF	1.5 ab	3.5	3.0 b	1.8	1.3	0.8
2	Verimark	20.5	oz/a	Liquid IF	1.0 a-c	6.5	0.3 b	1.3	3.3	0.3
3	Velum Total	18	oz/a	Liquid IF	0.8 bc	2.0	1.3 b	2.0	1.5	0.8
4	Admire Pro	7	oz/a	Liquid IF	0.0 c	3.8	3.0 b	1.8	1.0	0.3
5	Admire Pro	8.75	oz/a	Liquid IF	0.0 c	1.8	1.3 b	1.0	2.3	0.0
6	Admire Pro	10.5	oz/a	Liquid IF	0.3 bc	2.3	1.0 b	2.0	1.0	0.3
7	Thimet	5	lb/a	Granular IF	0.8 bc	1.5	1.5 b	0.8	1.5	1.5
8	AgLogic Aldicarb	7	lb/a	Granular IF	0.3 bc	3.3	0.3 b	0.3	0.5	0.5
9	Untreated				2.3 a	2.8	6.5 a	1.5	0.3	0.3
	LSD				1.42	NS	3.05	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: PT16-THP-BAYER-1—Evaluation of at-planting, in-furrow pesticides for thrip management in peanut

Protocol: IP16USASKD

Year: 2016

Crop: Peanut

Variety: Wynne (fungicide-treated)

Location: Tidewater AREC, Field 21, Suffolk, VA

Field preparation: Rip-strip-till on May 11

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long

Row spacing: 36"

Planting date: May 11

Dig date: October 19

Harvest date: October 27

Treatment application:

Liquid in-furrow **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.5 **GPA:** 5

Granular in-furrow Tractor-mounted inverted polypropylene jars with calibrated lid holes

Broadcast w/ backpack **Nozzle type:** 8002EVS **Nozzle spacing:** 18" **PSI:** 18 **GPA:** 1

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Apr-06-2016	Roundup	28	FL OZ/A
2.	May-11-2016	Prowl H2O	1	PT/A
3.	May-11-2016	Dual Magnum	1.5	PT/A
4.	Jun-24-2016	Storm	1.5	PT/A
5.	Jun-24-2016	Induce	0.25	% V/V
6.	Jun-24-2016	Basagran	6	FL OZ/A
7.	Jun-29-2016	Asana XL	6	FL OZ/A
8.	Jun-30-2016	Mg	1	QT/A
9.	Jul-06-2016	Select Max	1	PT/A
10.	Jul-06-2016	Induce	0.25	% V/V
11.	Jul-07-2016	Intro	1	QT/A
12.	Jul-11-2016	Landplaster	1500	LB/A
13.	Jul-20-2016	Asana XL	6	FL OZ/A
14.	Jul-20-2016	Provost	9	FL OZ/A
15.	Aug-04-2016	Mg	1	QT/A
16.	Aug-04-2016	Boron	1	QT/A
17.	Aug-11-2016	Boron	1	QT/A
18.	Aug-11-2016	Provost	9	FL OZ/A
19.	Aug-11-2016	Omega 500	1	PT/A
20.	Aug-26-2016	Select Max	1	PT/A
21.	Aug-26-2016	Induce	0.25	% V/V
22.	Sep-01-2016	Danitol 2.4 E C	12	FL OZ/A
23.	Sep-01-2016	Provost	9	FL OZ/A
24.	Sep-26-2016	Bravo Weather Stik	1.5	PT/A
25.	Sep-26-2016	Omega 500	13	FL OZ/A

Table 56. Stand counts¹ and Tomato spotted wilt virus (TSWV) hits², PT16-THP-BAYER-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Plants per 35 row ft			TSWV hits per 70 row ft		
					Jun 3	Jul 20	Sep 26	Jun 3	Jul 20	Sep 26
1	Untreated control				57.1	2.5	2.0			
2	Thimet	5	lb/a	Granular IF	58.4	0.5	1.3			
3	Velum Total	14	oz/a	Liquid IF	53.1	1.0	3.8			
4	Velum Total	18	oz/a	Liquid IF	68.9	1.5	3.0			
5	Velum Total	14	oz/a	Liquid IF	59.8	2.5	1.3			
	Propulse	13.7	oz/a	BC at pegging						
6	Velum Total	18	oz/a	Liquid IF	61.0	0.0	1.8			
	Propulse	13.7	oz/a	BC at pegging						
7	AgLogic Aldicarb	7	lb/a	Granular IF	59.8	3.3	4.8			
	LSD				NS	NS	NS			

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on sampling all plants in rows 1 and 2 of each plot.

²Based on visual inspection of all plants in two rows per plot.

Table 57. Thrips injury ratings¹ and yield², PT16-THP-BAYER-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Thrips injury rating			Yield (lb/acre)
					Jun 3	Jun 8	Jun 20	
1	Untreated control				3.750 a	4.688 a	5.500 a	4,595
2	Thimet	5	lb/a	Granular IF	0.813 e	1.625 e	0.813 e	4,635
3	Velum Total	14	oz/a	Liquid IF	1.813 b	3.250 b	1.750 b	4,561
4	Velum Total	18	oz/a	Liquid IF	1.250 cd	2.750 cd	1.500 c	4,479
5	Velum Total	14	oz/a	Liquid IF	1.438 c	2.938 c	1.750 b	3,967
	Propulse	13.7	oz/a	BC at pegging				
6	Velum Total	18	oz/a	Liquid IF	1.250 cd	2.625 d	1.250 d	5,393
	Propulse	13.7	oz/a	BC at pegging				
7	AgLogic Aldicarb	7	lb/a	Granular IF	1.125 d	1.688 e	1.250 d	3,974
	LSD				0.2386	0.2498	0.2157	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: PT16-THP-AMVAC-1—Influence of Thimet on peanut**Protocol:** 16C18I044**Year:** 2016**Crop:** Peanut**Variety:** Wynne (fungicide-treated)**Location:** Tidewater AREC, Field 66, Suffolk, VA**Field preparation:** Rip-strip-till on May 16**Experimental design:** Randomized complete block**Plot size:** 2 rows x 35' long**Row spacing:** 36"**Planting date:** May 16**Dig date:** October 14**Harvest date:** October 20**Treatment application:****Liquid in-furrow** **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.5 **GPA:** 5**Granular in-furrow** Tractor-mounted inverted polypropylene jars with calibrated lid holes**Broadcast w/ backpack** **Nozzle type:** 8002EVS **Nozzle spacing:** 18" **PSI:** 18 **GPA:** 1**Materials applied for plot maintenance:**

No.	Date	Product Name	Rate	Rate unit
1.	Apr-06-2016	Roundup	28	FL OZ/A
2.	May-17-2016	Prowl H2O	1	PT/A
3.	May-17-2016	Dual Magnum	1.5	PT/A
4.	Jun-24-2016	Storm	1.5	PT/A
5.	Jun-24-2016	Induce	0.25	% V/V
6.	Jun-24-2016	Basagran	8	FL OZ/A
7.	Jun-29-2016	Asana XL	6	FL OZ/A
8.	Jun-30-2016	Mg	1	QT/A
9.	Jul-06-2016	Select Max	1	PT/A
10.	Jul-06-2016	Induce	0.25	% V/V
11.	Jul-07-2016	Intro	1	QT/A
12.	Jul-11-2016	Landplaster	1500	LB/A
13.	Jul-20-2016	Asana XL	6	FL OZ/A
14.	Jul-20-2016	Provost	9	FL OZ/A
15.	Aug-04-2016	Mg	1	QT/A
16.	Aug-04-2016	Boron	1	QT/A
17.	Aug-11-2016	Boron	1	QT/A
18.	Aug-11-2016	Provost	9	FL OZ/A
19.	Aug-11-2016	Omega 500	1	PT/A
20.	Aug-26-2016	Select Max	1	PT/A
21.	Aug-26-2016	Induce	0.25	% V/V
22.	Sep-01-2016	Danitol 2.4 E C	12	FL OZ/A
23.	Sep-01-2016	Provost	9	FL OZ/A
24.	Sep-26-2016	Bravo Weather Stik	1.5	PT/A
25.	Sep-26-2016	Omega 500	13	FL OZ/A

Table 58. Stand counts¹ and Tomato spotted wilt virus (TSWV) hits², PT16-THP-AMVAC-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Plants per 35 row ft	TSWV hits per 70 row ft	
					Jun 3	Jul 20	Sep 26
1	Dynasty PD	4	oz/cwt		68.3	1.0	1.0
2	Dynasty PD	4	oz/cwt		75.4	1.0	1.0
	Thimet	5.5	oz/1000 row-ft	In-furrow			
3	Dynasty PD	4	oz/cwt		73.9	0.0	1.0
	Admire Pro	10	fl oz/a	In-furrow			
4	Dynasty PD	4	oz/cwt		75.8	0.0	1.0
	Velum Total	18	fl oz/a	In-furrow			
5	Dynasty PD	4	oz/cwt		67.9	0.0	1.0
	Thimet	5.5	oz/1000 row-ft	In-furrow			
	Vydate	17	fl oz/a	BC 21 DAE			
	LSD				NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Based on sampling all plants in rows 1 and 2 of each plot.

²Based on visual inspection of all plants in two rows per plot.

Table 59. Thrips injury ratings¹ and yield², PT16-THP-AMVAC-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Thrips injury rating			Yield (lb/acre)
					Jun 3	Jun 8	Jun 20	
1	Dynasty PD	4	oz/cwt		2.0 a	4.1 a	5.5 a	3,453
2	Dynasty PD	4	oz/cwt		0.5 c	0.8 c	0.8 b	3,547
	Thimet	5.5	oz/1000 row-ft	In-furrow				
3	Dynasty PD	4	oz/cwt		0.4 c	0.7 c	0.9 b	3,214
	Admire Pro	10	fl oz/a	In-furrow				
4	Dynasty PD	4	oz/cwt		1.3 b	2.3 b	0.9 b	3,747
	Velum Total	18	fl oz/a	In-furrow				
5	Dynasty PD	4	oz/cwt		0.5 c	0.8 c	0.8 b	4,100
	Thimet	5.5	oz/1000 row-ft	In-furrow				
	Vydate	17	fl oz/a	BC 21 DAE				
	LSD				0.09	0.12	0.23	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants.

²Yield based on weight of peanut with moisture content of 7%. Dig date = October 14 and harvest date = October 20.

Table 60. Mean number of thrips per 10 terminal leaflets, PT16-THP-AMVAC-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 1		Jun 8		Jun 16	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	Dynasty PD	4	oz/cwt		0.0	4.8	0.5	3.0	1.5	0.3
2	Dynasty PD	4	oz/cwt		0.0	3.0	0.3	4.5	1.8	1.0
	Thimet	5.5	oz/1000 row-ft	In-furrow						
3	Dynasty PD	4	oz/cwt		0.0	3.3	0.0	3.8	1.5	0.0
	Admire Pro	10	fl oz/a	In-furrow						
4	Dynasty PD	4	oz/cwt		0.0	1.3	0.0	5.3	2.8	0.5
	Velum Total	18	fl oz/a	In-furrow						
5	Dynasty PD	4	oz/cwt		0.0	3.3	0.0	4.8	1.5	1.3
	Thimet	5.5	oz/1000 row-ft	In-furrow						
	Vydate	17	fl oz/a	BC 21 DAE						
	LSD				NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: PT16-SCR-LEP-1—Evaluation of insecticides for managing rootworm and foliar feeding leps in peanut

Protocol: n/a

Year: 2016

Crop: Peanut

Variety: Wynne (fungicide-treated)

Location: Tidewater AREC, Field 21, Suffolk, VA

Field preparation: Rip-strip-till on May 11

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long

Row spacing: 36"

Planting date: May 11

Dig date: October 4

Harvest date: n/a

Treatment application:

Liquid in-furrow **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.5 **GPA:** 5

Broadcast w/ backpack **Nozzle type:** 8002EVS **Nozzle spacing:** 18" **PSI:** 18 **GPA:** 1

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
2.	May-11-2016	Prowl H2O	1	PT/A
3.	May-11-2016	Dual Magnum	1.5	PT/A
4.	Jun-8-2016	Orthene 97	8	OZ/A
5.	Jun-24-2016	Storm	1.5	PT/A
6.	Jun-24-2016	Induce	0.25	% V/V
7.	Jun-24-2016	Basagran	8	FL OZ/A
8.	Jun-29-2016	Asana XL	6	FL OZ/A
9.	Jun-30-2016	Mg	1	QT/A
10.	Jul-06-2016	Select Max	1	PT/A
11.	Jul-06-2016	Induce	0.25	% V/V
12.	Jul-07-2016	Intrro	1	QT/A
13.	Jul-11-2016	Landplaster	1500	LB/A
14.	Jul-20-2016	Provost	9	FL OZ/A
15.	Jul-20-2016	Asana XL	6	FL OZ/A
16.	Aug-04-2016	Mg	1	QT/A
17.	Aug-04-2016	Boron	1	QT/A
18.	Aug-11-2016	Boron	1	QT/A
19.	Aug-11-2016	Provost	9	FL OZ/A
20.	Aug-11-2016	Omega	1	PT/A
21.	Aug-26-2016	Select Max	1	PT/A
22.	Aug-26-2016	Induce	0.25	% V/V
23.	Sep-01-2016	Danitol 2.4EC	12	FL OZ/A
24.	Sep-01-2016	Provost	9	FL OZ/A
25.	Sep-26-2016	Bravo Weather Stik	1.5	PT/A
26.	Sep-26-2016	Omega 500	13	FL OZ/A

Table 61. Mean number of lep larvae per 3-ft beat cloth sample, and southern corn rootworm percent injured pods, PT16-SCR-LEP-1. Tidewater AREC, Suffolk, VA, 2016. Treatments 1 and 2 were applied at-planting as liquid in-furrows; Treatments 3 and 4 were applied at pegging on July 13.

#	Material	Rate	Rate unit	Beat cloth sample		Southern corn rootworm-injured pods ³	
				Aug 16 ¹	Aug 24 ²	Mean % scarified pods	Mean % penetrated pods
				Total lep larvae	Total lep larvae		
1	Verimark	13.5	fl oz/a	0.0	0.3	4.3	0.0
2	Prevathon	20	fl oz/a	0.0	0.5	1.8	0.0
3	Exirel	13.5	fl oz/a	0.1	0.0	1.3	0.0
4	Prevathon	20	fl oz/a	0.0	0.0	3.3	0.0
5	Untreated			0.0	0.0	2.8	0.0
	LSD			NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Two samples were taken per plot.*

²*One sample was taken per plot.*

³*100 full-sized pods were randomly selected per plot after digging. Samples were taken on October 5.*

Test: PT16-SCR-LEP-2—Evaluation of insecticides for managing rootworm and foliar-feeding leps in peanut

Protocol: n/a

Year: 2016

Crop: Peanut

Variety: Wynne (fungicide-treated)

Location: Tidewater AREC, Field 64B, Suffolk, VA

Field preparation: Rip-strip-till on May 26

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long

Row spacing: 36"

Planting date: May 26

Dig date: October 4

Harvest date: n/a

Treatment application:

Liquid in-furrow	Nozzle type: microtubing	Nozzle spacing: 36"	PSI: 40.5	GPA: 5
Broadcast w/ backpack	Nozzle type: 8002EVS	Nozzle spacing: 18"	PSI: 18	GPA: 14.3

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
2.	Apr-08-2016	0-40-0	100	LB/A
3.	May-26-2016	Prowl H2O	1	PT/A
4.	May-26-2016	Dual Magnum	1.5	PT/A
5.	Jun-9-2016	Orthene 97	8	OZ/A
6.	Jun-24-2016	Storm	1.5	PT/A
7.	Jun-24-2016	Induce	0.25	% V/V
8.	Jun-24-2016	Basagran	8	FL OZ/A
9.	Jun-29-2016	Asana XL	6	FL OZ/A
10.	Jun-30-2016	Mg	1	QT/A
11.	Jul-06-2016	Select Max	1	PT/A
12.	Jul-06-2016	Induce	0.25	% V/V
13.	Jul-07-2016	Intrro	1	QT/A
14.	Jul-11-2016	Landplaster	1500	LB/A
15.	Jul-20-2016	Provost	9	FL OZ/A
16.	Jul-20-2016	Asana XL	6	FL OZ/A
17.	Aug-04-2016	Mg	1	QT/A
18.	Aug-04-2016	Boron	1	QT/A
19.	Aug-11-2016	Boron	1	QT/A
20.	Aug-11-2016	Provost	9	FL OZ/A
21.	Aug-11-2016	Omega	1	PT/A
22.	Sep-01-2016	Danitol 2.4EC	12	FL OZ/A
23.	Sep-01-2016	Provost	9	FL OZ/A
24.	Sep-26-2016	Bravo Weather Stik	1.5	PT/A
25.	Sep-26-2016	Omega 500	13	FL OZ/A

Table 62. Mean number of lep larvae per 3-ft beat cloth sample, and southern corn rootworm percent injured pods, PT16-SCR-LEP-2. Tidewater AREC, Suffolk, VA, 2016. Treatments 1 and 2 were applied at-planting as liquid in-furrows; Treatments 3 and 4 were applied at pegging on July 13.

#	Material	Rate	Rate unit	Beat cloth sample		Southern corn rootworm-injured pods ³	
				Aug 16 ¹	Aug 24 ²	Mean % scarified pods	Mean % penetrated pods
				Total lep larvae	Total lep larvae		
1	Verimark	13.5	fl oz/a	0.0	0.0	5.8 a	0.0
2	Prevathon	20	fl oz/a	0.0	1.3	1.8 d	0.0
3	Exirel	13.5	fl oz/a	0.3	0.5	2.5 cd	0.0
4	Prevathon	20	fl oz/a	0.1	0.5	3.5 bc	0.0
5	Untreated			0.3	0.3	4.3 b	0.0
	LSD			NS	NS	1.30	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Two samples were taken per plot.*

²*One sample was taken per plot.*

³*100 full-sized pods were randomly selected per plot after digging. Samples were taken on October 5.*

Test: PT16-THP-NEM-NPB 1—Efficacy and yield benefits of insecticide, nematicide, and fungicide chemistries and pre-mixes for pest management in peanut (Test 1)

Protocol: National Peanut Board

Year: 2016

Crop: Peanut

Variety: Sullivan (treated with Dynasty PD)

Location: Tidewater AREC, Field 29, Suffolk, VA

Field preparation: Rip-strip-till on May 16

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long

Row spacing: 36"

Planting date: May 16

Dig date: October 17

Harvest date: October 24

Treatment application:

Liquid in-furrow **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.5 **GPA:** 5

Backpack (8-in band over row) **Nozzle type:** 8004E **Nozzle spacing:** 2/row **GPA:** 19.5

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-26-2016	Roundup WeatherMax	28	FL OZ/A
2.	Apr-11-2016	0-0-60	100	LB/A
3.	Apr-11-2016	0-40-0	100	LB/A
4.	May-22-2016	Boron	1	QT/A
5.	May-22-2016	Dual	2	PT/A
6.	May-22-2016	Prowl	1	PT/A
7.	Jun-11-2016	Peanut Maker Landplaster	1500	LB/A
8.	Jun-16-2016	Orthene	12	OZ/A
9.	Jun-24-2016	Storm	1.5	PT/A
10.	Jun-24-2016	Induce	0.125	% V/V
11.	Jul-20-2016	Select Max	1	PT/A
12.	Jul-20-2016	Induce	2	FL OZ/A
13.	Jul 20-2016	Asana	8	FL OZ/A
14.	Jul-21-2016	Mn	2	PT/A
15.	Aug-5-2016	Omega	1	PT/A
16.	Aug-15-2016	Steward	11.3	OZ/A
17.	Aug-18-2016	Mg	1	QT/A
18.	Sep-11-2016	Omega	1	PT/A

Table 63. Stand counts¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 2016. At-pegging treatments were broadcast on July 18.

#	Material(s)	Rate	Rate unit	Application timing	Plants per 35 row ft	
					Jun 3	Jun 14
1	Untreated control				106.9	123.4
2	Admire Pro	8.5	oz/a	Liquid IF	99.0	125.1
3	Velum Total	18	oz/a	Liquid IF	101.4	118.5
4	Proline	6.8	oz/a	Liquid IF	98.9	115.9
5	Propulse	16.2	oz/a	Liquid IF	100.8	117.3
6	Admire Pro	8.5	oz/a	Liquid IF	94.6	113.6
	Propulse	13.7	oz/a	BC at pegging		
7	Velum Total	18	oz/a	Liquid IF	90.6	120.0
	Propulse	13.7	oz/a	BC at pegging		
8	Admire Pro	8.5	oz/a	Liquid IF	97.8	120.1
	Proline	5.7	oz/a	BC at pegging		
9	Velum Total	18	oz/a	Liquid IF	95.5	116.3
	Proline	5.7	oz/a	BC at pegging		
	LSD				NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on sampling all plants in rows 1 and 2 of each plot.*

Table 64. Thrips injury ratings¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 3	Jun 8	Jun 21
1	Untreated control				3.313 a	4.125 a	4.938 ab
2	Admire Pro	8.5	oz/a	Liquid IF	0.500 e	1.250 d	0.438 ef
3	Velum Total	18	oz/a	Liquid IF	1.188 d	2.500 c	0.938 c
4	Proline	6.8	oz/a	Liquid IF	1.938 b	3.188 b	5.000 a
5	Propulse	16.2	oz/a	Liquid IF	2.188 b	3.875 a	4.813 b
6	Admire Pro	8.5	oz/a	Liquid IF	0.688 e	1.375 d	0.500 e
	Propulse	13.7	oz/a	BC at pegging			
7	Velum Total	18	oz/a	Liquid IF	1.250 cd	2.563 c	1.000 c
	Propulse	13.7	oz/a	BC at pegging			
8	Admire Pro	8.5	oz/a	Liquid IF	0.500 e	0.688 e	0.313 f
	Proline	5.7	oz/a	BC at pegging			
9	Velum Total	18	oz/a	Liquid IF	1.563 c	2.250 c	0.750 d
	Proline	5.7	oz/a	BC at pegging			
	LSD				0.3489	0.5210	0.1337

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants.

Table 65. Mean number of thrips per 10 terminal leaflets, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 3		Jun 9		Jun 16	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	Untreated control				0.3	5.8	1.5	1.8	0.3	0.3
2	Admire Pro	8.5	oz/a	Liquid IF	0.0	1.8	1.5	1.5	2.0	0.3
3	Velum Total	18	oz/a	Liquid IF	0.3	4.3	1.8	1.8	2.0	0.3
4	Proline	6.8	oz/a	Liquid IF	0.0	2.5	3.5	3.0	2.8	0.3
5	Propulse	16.2	oz/a	Liquid IF	0.0	4.8	2.0	1.0	2.0	0.3
6	Admire Pro	8.5	oz/a	Liquid IF	0.0	4.3	1.3	3.5	0.5	1.3
	Propulse	13.7	oz/a	BC at pegging						
7	Velum Total	18	oz/a	Liquid IF	0.0	4.5	0.3	0.8	1.5	0.5
	Propulse	13.7	oz/a	BC at pegging						
8	Admire Pro	8.5	oz/a	Liquid IF	0.0	1.8	0.8	2.3	2.5	0.0
	Proline	5.7	oz/a	BC at pegging						
9	Velum Total	18	oz/a	Liquid IF	0.0	3.0	0.8	3.3	0.8	0.3
	Proline	5.7	oz/a	BC at pegging						
	LSD				NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Table 66. Vigor ratings¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 201

#	Material(s)	Rate	Rate unit	Application timing	Jun 14
1	Untreated control				7.3 b
2	Admire Pro	8.5	oz/a	Liquid IF	8.8 a
3	Velum Total	18	oz/a	Liquid IF	8.8 a
4	Proline	6.8	oz/a	Liquid IF	7.3 b
5	Propulse	16.2	oz/a	Liquid IF	7.3 b
6	Admire Pro	8.5	oz/a	Liquid IF	8.5 a
	Propulse	13.7	oz/a	BC at pegging	
7	Velum Total	18	oz/a	Liquid IF	8.5 a
	Propulse	13.7	oz/a	BC at pegging	
8	Admire Pro	8.5	oz/a	Liquid IF	8.5 a
	Proline	5.7	oz/a	BC at pegging	
9	Velum Total	18	oz/a	Liquid IF	8.8 a
	Proline	5.7	oz/a	BC at pegging	
	LSD				0.80

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Vigor rated on a 1-10 scale, where 1=dead plant and 10=100% vigor.*

Table 67. Seedling disease ratings¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	May 31
1	Untreated control				3.15
2	Admire Pro	8.5	oz/a	Liquid IF	2.51
3	Velum Total	18	oz/a	Liquid IF	2.44
4	Proline	6.8	oz/a	Liquid IF	2.31
5	Propulse	16.2	oz/a	Liquid IF	2.16
6	Admire Pro	8.5	oz/a	Liquid IF	2.28
	Propulse	13.7	oz/a	BC at pegging	
7	Velum Total	18	oz/a	Liquid IF	2.14
	Propulse	13.7	oz/a	BC at pegging	
8	Admire Pro	8.5	oz/a	Liquid IF	2.51
	Proline	5.7	oz/a	BC at pegging	
9	Velum Total	18	oz/a	Liquid IF	2.23
	Proline	5.7	oz/a	BC at pegging	
	LSD				NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Disease rated on a 1-5 scale, where 1=no disease, 2=pinpoint lesions, 3=distinct lesion but not girdling stem, 4=lesion girdling stem, and 5=dead plant.*

Table 68a. Nematode counts per 500 cc soil (pre-plant samples)¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	<i>Meloidogyne</i> (Root-knot)	<i>Tylenchorynchus</i> (Stunt)	<i>Helicotylenchus</i> (Spiral)	<i>Hoplolaimus</i> (Lance)	<i>Mesocriconema</i> (Ring)	<i>Trichodorus</i> (Stubby root)	Other (<i>Tylenchus</i> spp.)
1	Untreated control				0	225	30	75	0	30	30
2	Admire Pro	8.5	oz/a	Liquid IF	0	705	15	0	15	45	0
3	Velum Total	18	oz/a	Liquid IF	15	435	15	90	45	0	15
4	Proline	6.8	oz/a	Liquid IF	0	615	60	90	0	45	45
5	Propulse	16.2	oz/a	Liquid IF	0	630	15	75	0	0	30
6	Admire Pro	8.5	oz/a	Liquid IF	0	255	0	90	30	0	15
	Propulse	13.7	oz/a	BC at pegging							
7	Velum Total	18	oz/a	Liquid IF	15	480	75	195	0	60	105
	Propulse	13.7	oz/a	BC at pegging							
8	Admire Pro	8.5	oz/a	Liquid IF	45	825	15	45	240	15	90
	Proline	5.7	oz/a	BC at pegging							
9	Velum Total	18	oz/a	Liquid IF	60	765	45	150	0	15	75
	Proline	5.7	oz/a	BC at pegging							
	LSD				NS	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Nematodes were sampled on May 16, 2016.

Table 68b. Nematode counts per 500 cc soil (mid-season samples)¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	<i>Meloidogyne</i> (Root-knot)	<i>Tylencho-rhyncus</i> (Stunt)	<i>Hoplo-laimus</i> (Lance)	<i>Mesocri-conema</i> (Ring)	<i>Trichodorus</i> (Stubby root)	<i>Belono-laimus</i> (Sting)
1	Untreated control				0	135	75	0	30	0
2	Admire Pro	8.5	oz/a	Liquid IF	0	225	0	0	0	0
3	Velum Total	18	oz/a	Liquid IF	0	105	120	60	0	0
4	Proline	6.8	oz/a	Liquid IF	0	420	30	240	0	0
5	Propulse	16.2	oz/a	Liquid IF	60	255	45	0	0	0
6	Admire Pro	8.5	oz/a	Liquid IF	0	210	0	60	45	15
	Propulse	13.7	oz/a	BC at pegging						
7	Velum Total	18	oz/a	Liquid IF	0	210	30	0	30	0
	Propulse	13.7	oz/a	BC at pegging						
8	Admire Pro	8.5	oz/a	Liquid IF	0	225	105	270	0	0
	Proline	5.7	oz/a	BC at pegging						
9	Velum Total	18	oz/a	Liquid IF	0	0	75	0	0	0
	Proline	5.7	oz/a	BC at pegging						
	LSD				NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Nematodes were sampled on August 12, 2016.

Table 69. Mid and late-season disease ratings¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Southern stem rot		Tomato spotted wilt virus		Sclerotinia		Cylindrocladium black rot		Yellowed/dead plants	
					Aug 17	Sep 14	Aug 17	Sep 14	Aug 17	Sep 14	Aug 17	Sep 14	Aug 17	Sep 14
1	Untreated control				0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Admire Pro	8.5	oz/a	Liquid IF	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Velum Total	18	oz/a	Liquid IF	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Proline	6.8	oz/a	Liquid IF	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Propulse	16.2	oz/a	Liquid IF	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3
6	Admire Pro	8.5	oz/a	Liquid IF	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Propulse	13.7	oz/a	BC at pegging										
7	Velum Total	18	oz/a	Liquid IF	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Propulse	13.7	oz/a	BC at pegging										
8	Admire Pro	8.5	oz/a	Liquid IF	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Proline	5.7	oz/a	BC at pegging										
9	Velum Total	18	oz/a	Liquid IF	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Proline	5.7	oz/a	BC at pegging										
	LSD				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Counts of infection centers in the two treatment rows of each plot for a total of 70 row feet. An infection center is a point with symptoms and signs of a disease and included 6 inches on either side of that point.

Table 70. At-harvest disease ratings¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	% Leaf-spot	% Defoliation	Sclerotinia ¹	South-ern stem rot ¹	% Yellow	Root rot ²	Pod rot ³	Root galling ⁴
					Oct 16	Oct 16	Oct 16	Oct 16	Oct 16	Oct 17	Oct 17	Oct 17
1	Untreated control				52.5	1.0	6.8	2.3	17.5	1.8	2.0	2.3
2	Admire Pro	8.5	oz/a	Liquid IF	42.5	1.0	15.8	0.8	12.5	2.0	2.3	2.0
3	Velum Total	18	oz/a	Liquid IF	42.5	1.0	6.3	1.5	10.0	1.8	2.0	1.8
4	Proline	6.8	oz/a	Liquid IF	48.8	1.0	6.5	3.0	15.0	1.5	1.5	2.0
5	Propulse	16.2	oz/a	Liquid IF	15.0	1.0	3.5	2.3	25.0	1.3	1.5	1.8
6	Admire Pro	8.5	oz/a	Liquid IF	16.3	1.0	4.5	1.8	22.5	1.5	1.8	1.8
	Propulse	13.7	oz/a	BC at pegging								
7	Velum Total	18	oz/a	Liquid IF	17.5	1.0	3.5	1.0	12.5	1.5	2.0	1.5
	Propulse	13.7	oz/a	BC at pegging								
8	Admire Pro	8.5	oz/a	Liquid IF	35.0	1.0	2.5	3.8	10.0	1.3	1.3	2.0
	Proline	5.7	oz/a	BC at pegging								
9	Velum Total	18	oz/a	Liquid IF	23.8	1.0	10.3	2.3	10.0	1.3	1.5	2.3
	Proline	5.7	oz/a	BC at pegging								
	LSD				NS	NS	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

¹Counts of infection centers in the two treatment rows of each plot for a total of 70 row feet. An infection center is a point with symptoms and signs of a disease and included 6 inches on either side of that point.

²Root rot rated on a scale of 0-6, where 0=none, 1=1-10%, 2=11-25%, 3=26-50%, 4=51-75%, 5=76-90%, and 6=91-100% of roots decayed (includes CBR).

³Pod rot rated on a scale of 0-6, where 0=none, 1=1-10%, 2=11-25%, 3=26-50%, 4=51-75%, 5=76-90%, and 6=91-100% of pods decayed.

⁴Root galling rated on a scale of 0-6, where 0=none, 1=1-10%, 2=11-25%, 3=26-50%, 4=51-75%, 5=76-90%, and 6=91-100% of roots with galls.

Table 71. Peanut yield¹, PT16-THP-NEM-NPB-1. Tidewater AREC, Suffolk, VA, 201

#	Material(s)	Rate	Rate unit	Application timing	Yield (lb/a)
1	Untreated control				5,542 c
2	Admire Pro	8.5	oz/a	Liquid IF	5,645 c
3	Velum Total	18	oz/a	Liquid IF	6,204 a-c
4	Proline	6.8	oz/a	Liquid IF	6,041 a-c
5	Propulse	16.2	oz/a	Liquid IF	6,076 a-c
6	Admire Pro	8.5	oz/a	Liquid IF	6,119 a-c
	Propulse	13.7	oz/a	BC at pegging	
7	Velum Total	18	oz/a	Liquid IF	6,557 ab
	Propulse	13.7	oz/a	BC at pegging	
8	Admire Pro	8.5	oz/a	Liquid IF	6,728 a
	Proline	5.7	oz/a	BC at pegging	
9	Velum Total	18	oz/a	Liquid IF	5,874 bc
	Proline	5.7	oz/a	BC at pegging	
	LSD				712.9

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Yield based on weight of peanut with moisture content of 7%. Dig date = October 17, harvest date = October 27, and weigh date = October 27.*

Test: PT16-THP-NEM-NPB 2—Efficacy and yield benefits of insecticide, nematicide, and fungicide chemistries and pre-mixes for pest management in peanut (Test 2)

Protocol: National Peanut Board

Year: 2016

Crop: Peanut

Variety: Sullivan (treated with Dynasty PD)

Location: Tidewater AREC, Field 46C, Suffolk, VA

Field preparation: Rip-strip-till on May 16

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long

Row spacing: 36"

Planting date: May 25

Dig date: October 18

Harvest date: October 26

Treatment application:

Liquid in-furrow **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.5 **GPA:** 5

Backpack (8-in band over row) **Nozzle type:** 8004E **Nozzle spacing:** 2/row **GPA:** 19.5

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Mar-10-2016	Lime	1500	LB/A
2.	Mar-26-2016	Roundup WeatherMax	28	FL OZ/A
3.	Apr-11-2016	0-40-0	100	LB/A
4.	May-26-2016	Strongarm	0.45	FL OZ/A
5.	May-26-2016	Dual Mag	2	PT/A
6.	May-26-2016	Prowl	1	PT/A
7.	Jun-11-2016	Peanut Maker Landplaster	1500	LB/A
8.	Jun-16-2016	Select Max	16	FL OZ/A
9.	Jun-16-2016	Induce	4	FL OZ/A
10.	Jun-16-2016	Orthene	12	OZ/A
11.	Jun-29-2016	Storm	1	PT/A
12.	Jun-29-2016	Induce	0.125	% V/V
13.	Jun-29-2016	Basagran	1	PT/A
14.	Jun-29-2016	Asana	6	FL OZ/A
15.	Jul-20-2016	Asana	8	FL OZ/A
16.	Jul-20-2016	Mn	2	PT/A
17.	Jul-21-2016	Provost	9	FL OZ/A
18.	Jul-21-2016	Select Max	1	PT/A
19.	Aug-5-2016	Omega	1	PT/A
20.	Aug-11-2016	Provost	9	FL OZ/A
21.	Aug-15-2016	Mg	1	QT/A
22.	Aug-15-2016	Steward	11.3	FL OZ/A
23.	Aug-30-2016	Provost	9	FL OZ/A
24.	Sep-11-2016	Omega	1	PT/A
25.	Sep-26-2016	Bravo	1.5	PT/A

Table 72. Stand counts¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 2016. At-pegging treatments were broadcast on July 18.

#	Material(s)	Rate	Rate unit	Application timing	Plants per 35 row ft	
					Jun 9	Jun 15
1	Untreated control				113.0	104.1
2	Admire Pro	8.5	oz/a	Liquid IF	114.9	108.8
3	Velum Total	18	oz/a	Liquid IF	116.8	107.5
4	Proline	6.8	oz/a	Liquid IF	103.6	94.1
5	Propulse	16.2	oz/a	Liquid IF	106.5	100.0
6	Admire Pro	8.5	oz/a	Liquid IF	115.1	105.6
	Propulse	13.7	oz/a	BC at pegging		
7	Velum Total	18	oz/a	Liquid IF	116.3	105.8
	Propulse	13.7	oz/a	BC at pegging		
8	Admire Pro	8.5	oz/a	Liquid IF	119.6	105.1
	Proline	5.7	oz/a	BC at pegging		
9	Velum Total	18	oz/a	Liquid IF	112.4	103.8
	Proline	5.7	oz/a	BC at pegging		
	LSD				NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on sampling all plants in rows 1 and 2 of each plot.*

Table 73. Thrips injury ratings¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 8	Jun 21	Jun 28
1	Untreated control				3.625 a	5.313 a	4.313 b
2	Admire Pro	8.5	oz/a	Liquid IF	0.500 d	0.688 d	0.750 e
3	Velum Total	18	oz/a	Liquid IF	2.063 c	1.000 c	1.625 d
4	Proline	6.8	oz/a	Liquid IF	3.500 b	5.313 a	4.250 b
5	Propulse	16.2	oz/a	Liquid IF	3.500 b	5.313 a	4.500 a
6	Admire Pro	8.5	oz/a	Liquid IF	0.500 d	0.750 d	0.750 e
	Propulse	13.7	oz/a	BC at pegging			
7	Velum Total	18	oz/a	Liquid IF	2.063 c	1.188 b	1.563 d
	Propulse	13.7	oz/a	BC at pegging			
8	Admire Pro	8.5	oz/a	Liquid IF	0.500 d	0.813 d	0.750 e
	Proline	5.7	oz/a	BC at pegging			
9	Velum Total	18	oz/a	Liquid IF	2.063 c	1.000 c	1.750 c
	Proline	5.7	oz/a	BC at pegging			
	LSD				0.1229	0.1560	0.1124

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants.

Table 74. Mean number of thrips per 10 terminal leaflets, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	June 8		Jun 15		Jun 21	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	Untreated control				0.3	1.0	5.5 bc	0.0 c	1.3	0.3
2	Admire Pro	8.5	oz/a	Liquid IF	0.8	1.3	2.8 b-d	0.8 a-c	1.3	0.3
3	Velum Total	18	oz/a	Liquid IF	0.0	1.8	1.0 d	0.5 bc	0.8	0.3
4	Proline	6.8	oz/a	Liquid IF	0.3	3.5	10.3 a	0.8 a-c	2.3	0.0
5	Propulse	16.2	oz/a	Liquid IF	1.3	2.8	6.8 ab	0.3 bc	1.0	0.3
6	Admire Pro	8.5	oz/a	Liquid IF	0.5	2.3	1.0 d	0.5 bc	0.5	0.0
	Propulse	13.7	oz/a	BC at pegging						
7	Velum Total	18	oz/a	Liquid IF	0.0	3.3	1.0 d	0.0 c	0.8	0.0
	Propulse	13.7	oz/a	BC at pegging						
8	Admire Pro	8.5	oz/a	Liquid IF	0.5	1.8	1.8 cd	1.3 ab	1.5	0.5
	Proline	5.7	oz/a	BC at pegging						
9	Velum Total	18	oz/a	Liquid IF	0.0	2.5	0.8 d	1.8 a	0.3	0.3
	Proline	5.7	oz/a	BC at pegging						
	LSD				NS	NS	4.46	1.07	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Table 75. Vigor ratings¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 201

#	Material(s)	Rate	Rate unit	Application timing	Jul 1
1	Untreated control				8.5 bc
2	Admire Pro	8.5	oz/a	Liquid IF	9.8 a
3	Velum Total	18	oz/a	Liquid IF	9.0 a-c
4	Proline	6.8	oz/a	Liquid IF	8.3 c
5	Propulse	16.2	oz/a	Liquid IF	8.3 c
6	Admire Pro	8.5	oz/a	Liquid IF	9.0 a-c
	Propulse	13.7	oz/a	BC at pegging	
7	Velum Total	18	oz/a	Liquid IF	9.3 ab
	Propulse	13.7	oz/a	BC at pegging	
8	Admire Pro	8.5	oz/a	Liquid IF	8.8 bc
	Proline	5.7	oz/a	BC at pegging	
9	Velum Total	18	oz/a	Liquid IF	9.3 ab
	Proline	5.7	oz/a	BC at pegging	
	LSD				0.89

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Vigor rated on a 1-10 scale, where 1=dead plant and 10=100% vigor.*

Table 76. Seedling disease ratings¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 8
1	Untreated control				2.08
2	Admire Pro	8.5	oz/a	Liquid IF	1.84
3	Velum Total	18	oz/a	Liquid IF	1.79
4	Proline	6.8	oz/a	Liquid IF	1.80
5	Propulse	16.2	oz/a	Liquid IF	1.91
6	Admire Pro	8.5	oz/a	Liquid IF	1.95
	Propulse	13.7	oz/a	BC at pegging	
7	Velum Total	18	oz/a	Liquid IF	1.65
	Propulse	13.7	oz/a	BC at pegging	
8	Admire Pro	8.5	oz/a	Liquid IF	2.00
	Proline	5.7	oz/a	BC at pegging	
9	Velum Total	18	oz/a	Liquid IF	1.81
	Proline	5.7	oz/a	BC at pegging	
	LSD				NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Disease rated on a 1-5 scale, where 1=no disease, 2=pinpoint lesions, 3=distinct lesion but not girdling stem, 4=lesion girdling stem, and 5=dead plant.*

Table 77a. Nematode counts per 500 cc soil (pre-plant samples)¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	<i>Meloidogyne</i> (Root-knot)	<i>Tylencho-</i> <i>rhyncus</i> (Stunt)	<i>Helico-</i> <i>tylenchus</i> (Spiral)	<i>Mesocri-</i> <i>conema</i> (Ring)	<i>Trichodorus</i> (Stubby root)
1	Untreated control				0	90	15	60	15
2	Admire Pro	8.5	oz/a	Liquid IF	0	75	0	15	30
3	Velum Total	18	oz/a	Liquid IF	0	105	0	90	15
4	Proline	6.8	oz/a	Liquid IF	0	120	0	90	30
5	Propulse	16.2	oz/a	Liquid IF	0	45	15	105	30
6	Admire Pro	8.5	oz/a	Liquid IF	0	30	0	75	15
	Propulse	13.7	oz/a	BC at pegging					
7	Velum Total	18	oz/a	Liquid IF	15	60	0	15	0
	Propulse	13.7	oz/a	BC at pegging					
8	Admire Pro	8.5	oz/a	Liquid IF	0	120	15	105	0
	Proline	5.7	oz/a	BC at pegging					
9	Velum Total	18	oz/a	Liquid IF	0	165	0	75	0
	Proline	5.7	oz/a	BC at pegging					
	LSD				NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Nematodes were sampled on May 16, 2016.

Table 77b. Nematode counts per 500 cc soil (mid-season samples)¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	<i>Meloidogyne</i> (Root-knot)	<i>Tylencho-</i> <i>rhyncus</i> (Stunt)	<i>Hoplolaimus</i> (Lance)	<i>Mesocri-</i> <i>conema</i> (Ring)	<i>Trichodorus</i> (Stubby root)
1	Untreated control				60	165 ab	30	255	30
2	Admire Pro	8.5	oz/a	Liquid IF	0	165 ab	0	30	15
3	Velum Total	18	oz/a	Liquid IF	45	225 a	15	315	60
4	Proline	6.8	oz/a	Liquid IF	30	135 a-d	0	240	15
5	Propulse	16.2	oz/a	Liquid IF	45	150 a-c	15	135	0
6	Admire Pro	8.5	oz/a	Liquid IF	30	15 e	30	465	75
	Propulse	13.7	oz/a	BC at pegging					
7	Velum Total	18	oz/a	Liquid IF	30	45 c-e	0	165	45
	Propulse	13.7	oz/a	BC at pegging					
8	Admire Pro	8.5	oz/a	Liquid IF	45	60 b-e	0	300	15
	Proline	5.7	oz/a	BC at pegging					
9	Velum Total	18	oz/a	Liquid IF	30	30 de	0	615	60
	Proline	5.7	oz/a	BC at pegging					
	LSD				NS	113.9	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Nematodes were sampled on August 12, 2016.

Table 78. Mid and late-season disease ratings¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Southern stem rot		Tomato spotted wilt virus		Sclerotinia		Cylindro-cladium black rot		Yellowed/dead plants	
					Aug 16	Sep 9	Aug 16	Sep 9	Aug 16	Sep 9	Aug 16	Sep 9	Aug 16	Sep 9
1	Untreated control				1.0	1.0	3.0	4.3	0.3	0.8	0.0	0.0	0.0	1.3
2	Admire Pro	8.5	oz/a	Liquid IF	1.8	0.3	1.8	3.0	0.8	0.3	0.0	0.0	0.0	0.3
3	Velum Total	18	oz/a	Liquid IF	3.5	1.8	2.0	3.8	0.5	0.5	0.0	0.0	0.0	2.0
4	Proline	6.8	oz/a	Liquid IF	1.5	0.0	2.3	2.5	0.0	0.5	0.0	0.0	0.0	1.5
5	Propulse	16.2	oz/a	Liquid IF	1.5	0.3	3.0	3.0	0.5	0.3	0.0	0.0	0.0	1.3
6	Admire Pro	8.5	oz/a	Liquid IF	1.3	0.0	2.3	4.0	0.0	0.5	0.0	0.0	0.0	1.0
	Propulse	13.7	oz/a	BC at pegging										
7	Velum Total	18	oz/a	Liquid IF	1.5	0.5	3.8	3.0	0.0	0.3	0.0	0.0	0.0	0.5
	Propulse	13.7	oz/a	BC at pegging										
8	Admire Pro	8.5	oz/a	Liquid IF	1.8	0.5	2.3	3.5	0.3	0.8	0.0	0.0	0.0	0.8
	Proline	5.7	oz/a	BC at pegging										
9	Velum Total	18	oz/a	Liquid IF	1.8	0.3	2.0	3.3	0.3	0.0	0.0	0.0	0.0	1.3
	Proline	5.7	oz/a	BC at pegging										
	LSD				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Counts of infection centers in the two treatment rows of each plot for a total of 70 row feet. An infection center is a point with symptoms and signs of a disease and included 6 inches on either side of that point.

Table 79. At-harvest disease ratings¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	% Leafspot	% Defoliation	Sclerotinia ¹	Southern stem rot ¹	Root rot ²	Pod rot ³
					Oct 18	Oct 18	Oct 18	Oct 18	Oct 23	Oct 23
1	Untreated control				5.0	1.0	11.0	7.8 a	2.8	2.5
2	Admire Pro	8.5	oz/a	Liquid IF	5.0	1.0	12.0	6.3 ab	2.5	2.5
3	Velum Total	18	oz/a	Liquid IF	5.0	1.0	12.0	5.3 a-c	2.3	2.5
4	Proline	6.8	oz/a	Liquid IF	5.0	1.0	14.0	6.5 ab	2.3	2.3
5	Propulse	16.2	oz/a	Liquid IF	5.0	1.0	9.3	7.3 a	2.3	2.3
6	Admire Pro	8.5	oz/a	Liquid IF	6.8	1.0	15.0	3.8 bc	1.8	2.3
	Propulse	13.7	oz/a	BC at pegging						
7	Velum Total	18	oz/a	Liquid IF	5.0	1.0	19.8	2.5 c	2.0	2.5
	Propulse	13.7	oz/a	BC at pegging						
8	Admire Pro	8.5	oz/a	Liquid IF	5.0	1.0	14.0	5.3 a-c	2.0	2.3
	Proline	5.7	oz/a	BC at pegging						
9	Velum Total	18	oz/a	Liquid IF	5.0	2.0	16.3	3.8 bc	2.3	2.8
	Proline	5.7	oz/a	BC at pegging						
	LSD				NS	NS	NS	3.27	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

¹Counts of infection centers in the two treatment rows of each plot for a total of 70 row feet. An infection center is a point with symptoms and signs of a disease and included 6 inches on either side of that point.

²Root rot rated on a scale of 0-6, where 0=none, 1=1-10%, 2=11-25%, 3=26-50%, 4=51-75%, 5=76-90%, and 6=91-100% of roots decayed (includes CBR).

³Pod rot rated on a scale of 0-6, where 0=none, 1=1-10%, 2=11-25%, 3=26-50%, 4=51-75%, 5=76-90%, and 6=91-100% of pods decayed.

Table 80. Peanut yield¹, PT16-THP-NEM-NPB-2. Tidewater AREC, Suffolk, VA, 201

#	Material(s)	Rate	Rate unit	Application timing	Yield (lb/a)
1	Untreated control				4,486 e
2	Admire Pro	8.5	oz/a	Liquid IF	4,583 de
3	Velum Total	18	oz/a	Liquid IF	4,898 b-c
4	Proline	6.8	oz/a	Liquid IF	5,048 a-c
5	Propulse	16.2	oz/a	Liquid IF	4,978 a-c
6	Admire Pro	8.5	oz/a	Liquid IF	4,712 c-d
	Propulse	13.7	oz/a	BC at pegging	
7	Velum Total	18	oz/a	Liquid IF	5,142 at
	Propulse	13.7	oz/a	BC at pegging	
8	Admire Pro	8.5	oz/a	Liquid IF	5,319 a
	Proline	5.7	oz/a	BC at pegging	
9	Velum Total	18	oz/a	Liquid IF	4,886 b-c
	Proline	5.7	oz/a	BC at pegging	
	LSD				358.9

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Yield based on weight of peanut with moisture content of 7%. Dig date = October 18, harvest date = October 25, and weigh date = November 1.

Test: PT16-THP-NEM-NPB 3—Efficacy and yield benefits of insecticide, nematicide, and fungicide chemistries and pre-mixes for pest management in peanut (Test 3)

Protocol: National Peanut Board

Year: 2016

Crop: Peanut

Variety: Sullivan (treated with Dynasty PD)

Location: Everett Farms, Southampton Co., VA

Field preparation:

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long

Row spacing: 36"

Planting date: May 10

Dig date: October 14

Harvest date: October 19

Treatment application:

Liquid in-furrow **Nozzle type:** microtubing **Nozzle spacing:** 36" **PSI:** 40.5 **GPA:** 5

Backpack (8-in band over row) **Nozzle type:** 8004E **Nozzle spacing:** 2/row **GPA:** 19.5

Table 81. Stand counts¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA). Tidewater AREC, Suffolk, VA, 2016. At-pegging treatments were broadcast on July 18.

#	Material(s)	Rate	Rate unit	Application timing	Plants per 35 row ft	
					Jun 2	Jun 9
1	Untreated control				71.8	90.3 d
2	Admire Pro	8.5	oz/a	Liquid IF	75.6	98.6 b-d
3	Velum Total	18	oz/a	Liquid IF	75.3	93.2 cd
4	Proline	6.8	oz/a	Liquid IF	83.5	107.6 a-c
5	Propulse	16.2	oz/a	Liquid IF	78.2	96.8 cd
6	Admire Pro	8.5	oz/a	Liquid IF	77.2	91.8 d
	Propulse	13.7	oz/a	BC at pegging		
7	Velum Total	18	oz/a	Liquid IF	79.9	95.1 cd
	Propulse	13.7	oz/a	BC at pegging		
8	Admire Pro	8.5	oz/a	Liquid IF	89.2	114.3 ab
	Proline	5.7	oz/a	BC at pegging		
9	Velum Total	18	oz/a	Liquid IF	87.3	114.4 a
	Proline	5.7	oz/a	BC at pegging		
	LSD				NS	15.69

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Based on sampling all plants in rows 1 and 2 of each plot.*

Table 82. Thrips injury ratings¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA). Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 2	Jun 8	Jun 21
1	Untreated control				3.417 a	3.750 a	5.000 a
2	Admire Pro	8.5	oz/a	Liquid IF	0.667 d	0.500 e	0.542 c
3	Velum Total	18	oz/a	Liquid IF	1.042 c	1.875 cd	1.792 b
4	Proline	6.8	oz/a	Liquid IF	1.625 b	2.708 b	5.000 a
5	Propulse	16.2	oz/a	Liquid IF	1.667 b	2.667 b	4.958 a
6	Admire Pro	8.5	oz/a	Liquid IF	0.500 d	0.500 e	0.583 c
	Propulse	13.7	oz/a	BC at pegging			
7	Velum Total	18	oz/a	Liquid IF	1.167 c	1.917 c	1.042 c
	Propulse	13.7	oz/a	BC at pegging			
8	Admire Pro	8.5	oz/a	Liquid IF	0.500 d	0.500 e	0.500 c
	Proline	5.7	oz/a	BC at pegging			
9	Velum Total	18	oz/a	Liquid IF	1.167 c	1.792 d	1.000 c
	Proline	5.7	oz/a	BC at pegging			
	LSD				0.2605	0.1039	0.6220

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

¹Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants.

Table 83. Mean number of thrips per 10 terminal leaflets, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA). Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 2		Jun 8		Jun 14	
					Immature thrips	Adult thrips	Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	Untreated control				0.5	4.5	4.8	3.3	3.5	0.8
2	Admire Pro	8.5	oz/a	Liquid IF	0.0	4.3	0.8	2.3	0.0	0.0
3	Velum Total	18	oz/a	Liquid IF	0.0	1.5	0.0	1.5	0.8	0.8
4	Proline	6.8	oz/a	Liquid IF	0.5	5.8	3.8	3.5	3.0	1.0
5	Propulse	16.2	oz/a	Liquid IF	0.5	6.0	0.8	2.5	2.5	0.3
6	Admire Pro	8.5	oz/a	Liquid IF	0.0	4.8	2.8	4.0	1.3	1.0
	Propulse	13.7	oz/a	BC at pegging						
7	Velum Total	18	oz/a	Liquid IF	0.3	3.3	0.3	2.5	1.0	0.5
	Propulse	13.7	oz/a	BC at pegging						
8	Admire Pro	8.5	oz/a	Liquid IF	0.0	3.5	1.3	3.0	1.3	1.0
	Proline	5.7	oz/a	BC at pegging						
9	Velum Total	18	oz/a	Liquid IF	0.0	3.0	1.3	2.8	4.0	0.3
	Proline	5.7	oz/a	BC at pegging						
	LSD				NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Table 84. Vigor ratings¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 2	Jul 1:
1	Untreated control				7.5	8.8
2	Admire Pro	8.5	oz/a	Liquid IF	8.2	9.0
3	Velum Total	18	oz/a	Liquid IF	7.7	8.8
4	Proline	6.8	oz/a	Liquid IF	8.3	9.3
5	Propulse	16.2	oz/a	Liquid IF	8.3	9.3
6	Admire Pro	8.5	oz/a	Liquid IF	7.5	8.8
	Propulse	13.7	oz/a	BC at pegging		
7	Velum Total	18	oz/a	Liquid IF	7.8	8.5
	Propulse	13.7	oz/a	BC at pegging		
8	Admire Pro	8.5	oz/a	Liquid IF	8.2	9.5
	Proline	5.7	oz/a	BC at pegging		
9	Velum Total	18	oz/a	Liquid IF	8.3	9.5
	Proline	5.7	oz/a	BC at pegging		
	LSD				NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Vigor rated on a 1-10 scale, where 1=dead plant and 10=100% vigor.*

Table 85. Seedling disease ratings¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA). Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Jun 1
1	Untreated control				2.68
2	Admire Pro	8.5	oz/a	Liquid IF	2.68
3	Velum Total	18	oz/a	Liquid IF	2.45
4	Proline	6.8	oz/a	Liquid IF	2.50
5	Propulse	16.2	oz/a	Liquid IF	2.32
6	Admire Pro	8.5	oz/a	Liquid IF	2.46
	Propulse	13.7	oz/a	BC at pegging	
7	Velum Total	18	oz/a	Liquid IF	2.38
	Propulse	13.7	oz/a	BC at pegging	
8	Admire Pro	8.5	oz/a	Liquid IF	2.48
	Proline	5.7	oz/a	BC at pegging	
9	Velum Total	18	oz/a	Liquid IF	2.63
	Proline	5.7	oz/a	BC at pegging	
	LSD				NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Disease rated on a 1-5 scale, where 1=no disease, 2=pinpoint lesions, 3=distinct lesion but not girdling stem, 4=lesion girdling stem, and 5=dead plant.*

Table 86a. Nematode counts per 500 cc soil (pre-plant samples)¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA). Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	<i>Meloidogyne</i> (Root-knot)	<i>Tylencho-</i> <i>rhyncus</i> (Stunt)	<i>Helico-</i> <i>tylenchus</i> (Spiral)	<i>Hoplolaimus</i> (Lance)	<i>Trichodorus</i> (Stubby root)
1	Untreated control				10	20	10	260	20
2	Admire Pro	8.5	oz/a	Liquid IF	20	0	0	510	10
3	Velum Total	18	oz/a	Liquid IF	0	20	30	420	30
4	Proline	6.8	oz/a	Liquid IF	10	10	10	320	0
5	Propulse	16.2	oz/a	Liquid IF	0	0	100	400	0
6	Admire Pro	8.5	oz/a	Liquid IF	0	20	0	60	10
	Propulse	13.7	oz/a	BC at pegging					
7	Velum Total	18	oz/a	Liquid IF	0	10	60	50	30
	Propulse	13.7	oz/a	BC at pegging					
8	Admire Pro	8.5	oz/a	Liquid IF	10	10	10	90	0
	Proline	5.7	oz/a	BC at pegging					
9	Velum Total	18	oz/a	Liquid IF	20	0	20	10	10
	Proline	5.7	oz/a	BC at pegging					
	LSD				NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Nematodes were sampled on May 11, 2016.

Table 86b. Nematode counts per 500 cc soil (mid-season samples)¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA). Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	<i>Tylenchorhyncus</i> (Stunt)	<i>Helicotylenchus</i> (Spiral)	<i>Hoplolaimus</i> (Lance)	<i>Trichodorus</i> (Stubby root)
1	Untreated control				20	0	18	0
2	Admire Pro	8.5	oz/a	Liquid IF	10	0	100	0
3	Velum Total	18	oz/a	Liquid IF	0	30	30	0
4	Proline	6.8	oz/a	Liquid IF	0	0	30	0
5	Propulse	16.2	oz/a	Liquid IF	0	0	30	0
6	Admire Pro	8.5	oz/a	Liquid IF	0	0	10	0
	Propulse	13.7	oz/a	BC at pegging				
7	Velum Total	18	oz/a	Liquid IF	10	40	30	30
	Propulse	13.7	oz/a	BC at pegging				
8	Admire Pro	8.5	oz/a	Liquid IF	0	10	60	0
	Proline	5.7	oz/a	BC at pegging				
9	Velum Total	18	oz/a	Liquid IF	60	20	40	0
	Proline	5.7	oz/a	BC at pegging				
	LSD				NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Nematodes were sampled on August 10, 2016.

Table 87. Mid and late-season disease ratings¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA). Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Southern stem rot		Tomato spotted wilt virus		Sclerotinia		Cylindro-cladium black rot		Yellowed/dead plants	
					Aug 18	Sep 16	Aug 18	Sep 16	Aug 18	Sep 16	Aug 18	Sep 16	Aug 18	Sep 16
1	Untreated control				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
2	Admire Pro	8.5	oz/a	Liquid IF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
3	Velum Total	18	oz/a	Liquid IF	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
4	Proline	6.8	oz/a	Liquid IF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Propulse	16.2	oz/a	Liquid IF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
6	Admire Pro	8.5	oz/a	Liquid IF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
	Propulse	13.7	oz/a	BC at pegging										
7	Velum Total	18	oz/a	Liquid IF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0
	Propulse	13.7	oz/a	BC at pegging										
8	Admire Pro	8.5	oz/a	Liquid IF	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
	Proline	5.7	oz/a	BC at pegging										
9	Velum Total	18	oz/a	Liquid IF	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
	Proline	5.7	oz/a	BC at pegging										
	LSD				NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Counts of infection centers in the two treatment rows of each plot for a total of 70 row feet. An infection center is a point with symptoms and signs of a disease and included 6 inches on either side of that point.

Table 88. At-harvest disease ratings¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA). Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	% Leafspot	% Defoliation	Southern stem rot ¹	% Yellow	Tomato spotted wilt virus ¹	Root rot ²	Pod rot ³
					Oct 11	Oct 11	Oct 11	Oct 11	Oct 11	Oct 16	Oct 16
1	Untreated control				1.0	0.1	0.3	65.0	0.3	2.0	2.0
2	Admire Pro	8.5	oz/a	Liquid IF	1.0	0.1	1.0	46.7	0.0	1.8	2.3
3	Velum Total	18	oz/a	Liquid IF	1.0	0.1	0.3	58.3	0.5	1.8	2.2
4	Proline	6.8	oz/a	Liquid IF	1.0	0.1	0.3	64.2	0.5	1.7	2.0
5	Propulse	16.2	oz/a	Liquid IF	1.0	0.1	1.0	62.5	0.3	1.8	2.5
6	Admire Pro	8.5	oz/a	Liquid IF	1.0	0.1	0.3	50.0	0.5	1.8	2.3
	Propulse	13.7	oz/a	BC at pegging							
7	Velum Total	18	oz/a	Liquid IF	1.0	0.1	0.3	53.3	0.2	2.0	2.0
	Propulse	13.7	oz/a	BC at pegging							
8	Admire Pro	8.5	oz/a	Liquid IF	1.0	0.1	0.8	55.0	0.5	1.7	2.3
	Proline	5.7	oz/a	BC at pegging							
9	Velum Total	18	oz/a	Liquid IF	1.0	0.1	0.2	58.3	0.0	1.7	2.0
	Proline	5.7	oz/a	BC at pegging							
	LSD				NS	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$). Arcsine transformation of percentage data was made in analysis to determine statistical significance.

¹Counts of infection centers in the two treatment rows of each plot for a total of 70 row feet. An infection center is a point with symptoms and signs of a disease and included 6 inches on either side of that point.

²Root rot rated on a scale of 0-6, where 0=none, 1=1-10%, 2=11-25%, 3=26-50%, 4=51-75%, 5=76-90%, and 6=91-100% of roots decayed (includes CBR).

³Pod rot rated on a scale of 0-6, where 0=none, 1=1-10%, 2=11-25%, 3=26-50%, 4=51-75%, 5=76-90%, and 6=91-100% of pods decayed.

Table 89. Peanut yield¹, PT16-THP-NEM-NPB-3 (Everett Farms, Southampton Co., VA Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Application timing	Yield (lb/a)
1	Untreated control				1,584 bc
2	Admire Pro	8.5	oz/a	Liquid IF	1,070 c
3	Velum Total	18	oz/a	Liquid IF	1,204 bc
4	Proline	6.8	oz/a	Liquid IF	2,222 a
5	Propulse	16.2	oz/a	Liquid IF	1,745 ab
6	Admire Pro	8.5	oz/a	Liquid IF	1,362 bc
	Propulse	13.7	oz/a	BC at pegging	
7	Velum Total	18	oz/a	Liquid IF	1,402 bc
	Propulse	13.7	oz/a	BC at pegging	
8	Admire Pro	8.5	oz/a	Liquid IF	1,718 ab
	Proline	5.7	oz/a	BC at pegging	
9	Velum Total	18	oz/a	Liquid IF	1,636 b
	Proline	5.7	oz/a	BC at pegging	
	LSD				551.6

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹*Yield based on weight of peanut with moisture content of 7%. Dig date = October 14 and harvest date = Oct 19.*

Test: PT16-LEP-DOW-1—Efficacy of selected insecticides, including Intrepid Edge, against lep pests in peanut

Protocol: NA16Q9K002

Year: 2016

Crop: Peanut

Location: Double B Farms, Sussex Co., VA

Experimental design: Randomized complete block

Plot size: 2 rows x 20' long

Treatment application:

Full coverage using backpack **Nozzle type:** D2-13 **Nozzle spacing:** 3 per row **PSI:** 36 **GPA:** 14.7

Table 90. Mean number of lep larvae per 3-ft beat cloth sample, PT16-LEP-DOW-1 (Double B Farms, Sussex Co., VA). Tidewater AREC, Suffolk, VA, 2016. Insecticide treatments were applied on August 10. Pre-treatment counts on August 9 indicated 5.7 small, 5.1 medium, and 2.2 large (12.9 total) lep larvae per 3 row feet.

#	Material	Rate	Rate unit	Aug 12				Aug 15				Aug 18			
				Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae
1	Untreated			3.3 a	0.8	1.3	5.3 a	1.3	0.5	1.5	3.3 a	0.8	0.5	0.3	1.5
2	Intrepid Edge	4	fl oz/a	0.8 b	0.3	0.3	1.3 b	0.3	0.5	0.3	1.0 b	0	0.3	1	1.3
	Induce	1	% v/v												
3	Intrepid Edge	5	fl oz/a	0.3 b	0.0	0.5	0.8 b	0.0	0.5	0.5	1.0 b	0	0.3	0.5	0.8
	Induce	1	% v/v												
4	Prevathon	14	fl oz/a	0.8 b	1.3	0.3	2.3 b	0.0	0.3	0.0	0.3 b	0	0	0	0
	Induce	1	% v/v												
5	Belt	2	fl oz/a	0.8 b	0.8	1.3	2.8 ab	0.5	0.5	0.0	1.0 b	0.3	0.3	0.3	0.8
	Induce	1	% v/v												
6	Besiege	7	fl oz/a	1.3 b	0.0	0.8	2.0 b	0.0	0.3	0.0	0.3 b	0	0.5	0	0.5
	Induce	1	% v/v												
	LSD			1.82	NS	NS	2.73	NS	NS	NS	1.41	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

Test: PT16-LEP-VALENT-1—Evaluation of selected insecticides for insect pest management in peanut

Protocol: 64.01-2015

Year: 2016

Crop: Peanut

Location: Double B Farms, Sussex Co., VA

Experimental design: Randomized complete block

Plot size: 2 rows x 20' long

Treatment application:

Full coverage using backpack **Nozzle type:** D2-13 **Nozzle spacing:** 3 per row **PSI:** 36 **GPA:** 1.

Table 91. Mean number of lep larvae per 3-ft beat cloth sample, PT16-LEP-VALENT-1 (Double B Farms, Sussex Co., VA). Tidewater AREC, Suffolk, VA, 2016. Insecticide treatments were applied on August 10. Pre-treatment counts on August 9 indicated 5.7 small, 5.1 medium, and 2.2 large (12.9 total) lep larvae per 3 row feet.

#	Material	Rate	Rate unit	Aug 12				Aug 15				Aug 18			
				Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae
1	Untreated			3.0	0.5	0.8	4.3	1.5	3.8	1.3	6.5	0	0.5	1	1.5
2	Belay	4	oz/a	2.3	2.5	1.8	6.5	1.0	3.3	2.0	6.3	1	0.5	1	2.5
	Induce	0.25	% v/v												
3	Asana XL	9.6	oz/a	2.0	0.5	1.3	3.8	0.3	2.0	4.3	6.5	0.8	1.3	0.8	2.8
	Induce	0.25	% v/v												
4	Endigo	4.5	oz/a	1.5	1.5	1.8	4.8	1.8	2.8	0.8	5.3	0.8	1	0.5	2.3
	Induce	0.25	% v/v												
5	Danitol	10	oz/a	3.0	1.8	1.8	6.5	1.5	3.5	4.3	9.3	0.5	1.3	1	2.8
	Induce	0.25	% v/v												
6	Danitol	16	oz/a	1.5	1.8	0.5	3.8	0.3	2.3	3.0	5.5	1.8	0.5	1.3	3.5
	Induce	0.25	% v/v												
	LSD			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

**Test: PT16-LEP-VALENT-2—Evaluation of selected insecticides for lep pest manage
in peanut**

Protocol: 64.50

Year: 2016

Crop: Peanut

Location: Double B Farms, Sussex Co., VA

Experimental design: Randomized complete block

Plot size: 2 rows x 20' long

Treatment application:

Full coverage using backpack **Nozzle type:** D2-13 **Nozzle spacing:** 3 per row **PSI:** 36 **GPA:** 1.

Table 92. Mean number of lep larvae per 3-ft beat cloth sample, PT16-LEP-VALENT-2 (Double B Farms, Sussex Co., VA). Tidewater AREC, Suffolk, VA, 2016. Insecticide treatments were applied on August 10. Pre-treatment counts on August 9 indicated 5.7 small, 5.1 medium, and 2.2 large (12.9 total) lep larvae per 3 row feet.

#	Material	Rate	Rate unit	Aug 12				Aug 15				Aug 18			
				Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae
1	Untreated			3.5	1.5	1.3	6.3	0.8	0.8	1.3	2.8	0.8	0.3	1.3	2.3
2	Dipel ES (Kur.)	16	oz/a	1.5	1.3	1.8	4.5	0.0	1.8	0.5	2.3	0.5	1	0.5	2
	Asana XL	6	oz/a												
3	Asana XL	6	oz/a	1.0	0.3	1.0	2.3	0.3	1.8	0.8	2.8	1	1.3	1.3	3.5
4	Steward	20.5	oz/a	0.8	0.5	0.0	1.3	0.0	1.0	0.3	1.3	0.3	0.5	0.8	1.5
5	Dipel ES (Kur.)	16	oz/a	1.5	1.8	0.8	4.0	0.0	1.8	1.0	2.8	0.3	1.3	1.3	2.8
6	Prevathon	16	oz/a	0.8	0.8	0.3	1.8	0.5	1.3	0.0	1.8	0	0.3	0.3	0.5
	LSD			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

2016



Soybean Insect Pest Management Tests and Demonstrations

Test: SB16-THP-DUPONT-1—Evaluation of seed treatments for early-season insect management in soybean

Protocol: USA-16-474

Year: 2016

Crop: Soybean

Variety: P53T73SR (glyphosate/sulfonylurea tolerant)

Seed spacing: 9.7 seed/ft

Guard rows variety: AG 5535

Location: Tidewater AREC, Field 15, Suffolk, VA

Field preparation: Rip-strip-till

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 guard rows

Row spacing: 36"

Planting date: May 19

Harvest date: November 4

Materials applied for plot maintenance:

No.	Date	Product Name	Rate	Rate unit
1.	Apr-6-2016	Roundup WeatherMax	28	OZ/A
2.	Apr-26-2016	10-26-26	151	LB/A
3.	May-20-2016	Roundup WeatherMax	1	QT/A
4.	May-20-2016	Dual Magnum	1.5	PT/A
5.	May-20-2016	Prowl	1	PT/A
6.	Jun-27-2016	Roundup WeatherMax	30	OZ/A
7.	Jun-27-2016	First Rate	0.3	OZ/A
8.	Jun-27-2016	Mg	1	QT/A

Table 93. Thrips injury ratings and yield, SB16-THP-DUPONT-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material	Rate	Rate unit	Thrips injury rating ¹		Yield (bu/acre) ²
				Jun 1 (unifoliolate leaves)	Jun 7	
1	PPST-Standard			0.500 ab	0.813 b	63.7 a-d
2	Lumiderm	18.75	ug ai/seed	0.500 ab	0.813 b	54.5 e
3	Lumiderm	37.5	ug ai/seed	0.438 bc	0.750 bc	67.5 a
4	Lumiderm	75	ug ai/seed	0.250 d	0.750 bc	65.2 a-c
5	Lumiderm	125	ug ai/seed	0.375 b-d	0.688 bc	65.7 ab
6	Lumiderm	175	ug ai/seed	0.313 cd	0.500 de	66.6 ab
10	Check-FST Only			0.625 a	1.250 a	61.4 b-d
	LSD			0.1481	0.1557	5.33

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on a visual rating on a scale of 0-5.

²Yield based on weight of soybean with moisture content of 13%. Harvest date was November 4.

Table 94. Bean leaf beetle defoliation, SB16-THP-DUPONT-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material	Rate	Rate unit	Percent defoliation ¹		
				Jun 3 (unifoliolate leaves/V1)	Jun 7	Jun 20
1	PPST-Standard			0.0	0.3	2.5 b
2	Lumiderm	18.75	ug ai/seed	0.3	1.5	2.5 b
3	Lumiderm	37.5	ug ai/seed	0.0	1.0	2.0 b
4	Lumiderm	75	ug ai/seed	0.0	0.8	1.8 b
5	Lumiderm	125	ug ai/seed	0.0	0.3	2.0 b
6	Lumiderm	175	ug ai/seed	0.0	0.5	1.3 b
10	Check-FST Only			0.8	1.0	7.0 a
	LSD			NS	NS	1.99

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on a visual estimate of 0-100%.

Table 95. Stand counts, vigor ratings, and phytotoxicity, SB16-THP-DUPONT-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material	Rate	Rate unit	Plants per 20 row ft ¹	Plants per 10 row ft ²		Vigor rating ³		Phytotoxicity ⁴	
				May 31	Jun 6	Jun 14	Jun 3	Jun 20	Jun 7	Jun 20
1	PPST-Standard			95.5	54.5	55.4	5	9 a	0	0
2	Lumiderm	18.75	ug ai/seed	107.8	57.0	58.9	5	9 a	0	0
3	Lumiderm	37.5	ug ai/seed	99.0	60.3	60.1	5	9 a	0	0
4	Lumiderm	75	ug ai/seed	108.3	60.1	61.3	5	9 a	0	0
5	Lumiderm	125	ug ai/seed	107.8	59.8	56.4	5	9 a	0	0
6	Lumiderm	175	ug ai/seed	98.0	60.0	56.1	5	9 a	0	0
10	Check-FST Only			104.3	64.1	57.6	5	6 b	0	0
	LSD			NS	NS	NS	NS	.	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on one 20-ft sample per plot.

²Based on two 10-ft samples per plot.

³Vigor ratings were based on the following scale:

- 1 = Visually and clearly inferior than check
- 2 = Significantly worse than check
- 3 = Noticeably worse than check
- 4 = Slightly worse than check
- 5 = FUNGICIDE-ONLY CHECK (Treatment 10)
- 6 = Slightly better than check
- 7 = Noticeably better than check
- 8 = Significantly better than check
- 9 = Visually and clearly superior than check

⁴Based on visual observation.

Table 96. Mean number of thrips per 10 or 5 plants, SB16-THP-DUPONT-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material(s)	Rate	Rate unit	Jun 2 (unifoliolate leaves, 10 plants)		Jun 13 (V3 stage, 5 plants)	
				Immature thrips	Adult thrips	Immature thrips	Adult thrips
1	PPST-Standard			0.3	9.8	5.0 b	2.8
2	Lumiderm	18.75	ug ai/seed	2.0	13.5	3.0 bc	7.8
3	Lumiderm	37.5	ug ai/seed	0.0	18.3	1.3 c	8.8
4	Lumiderm	75	ug ai/seed	0.8	14.0	1.8 bc	5.5
5	Lumiderm	125	ug ai/seed	2.0	14.5	0.3 c	5.5
6	Lumiderm	175	ug ai/seed	0.3	13.3	0.3 c	6.3
10	Check-FST Only			3.0	16.0	12.5 a	4.8
	LSD			NS	NS	3.51	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, $P=0.05$).

Table 97. Adult thrips species identification¹, CT16-THP-DUPONT-1. Tidewater AREC, Suffolk, VA, 2016.

Date and plant growth stage	Tobacco (<i>Frankliniella fusca</i>)	Western (<i>Frankliniella occidentalis</i>)	Eastern (<i>Frankliniella tritici</i>)	Onion (<i>Thrips tabaci</i>)	Soybean (<i>Neohydatothrips variabilis</i>)
Jun 2 (unifoliolate leaves) (n=103 adults)	62.1%	7.8%	0.0%	15.5%	14.6%
Jun 13 (V3 stage) (n=30 adults)	10.0%	0.0%	0.0%	6.7%	83.3%

¹Collected from Treatments 1 and 10.

Test: SB16-THP-VALENT-1—Efficacy of soybean seed treatments against early-sea insect pests in soybean

Protocol: 64.05_2016

Year: 2016

Crop: Soybean

Variety: AG 5533

Guard rows variety: AG 5535

Location: Tidewater AREC, Field 15, Suffolk, VA

Field preparation: Rip-strip-till on May 16

Experimental design: Randomized complete block

Plot size: 2 rows x 35' long with 2 guard rows

Row spacing: 36"

Planting date: May 17

Harvest date: November 4

Materials applied for plot maintenance:

No	Date	Product Name	Rate	Rate unit
1.	Apr-06-2016	Roundup WeatherMax	28	FL OZ/A
2.	Apr-26-2016	10-26-26	151	LB/A
3.	May-20-2016	Roundup WeatherMax	1	QT/A
4.	May-20-2016	Dual Mag	1.5	PT/A
5.	May-20-2016	Prowl H2O	1	PT/A
6.	Jun-27-2016	Roundup WeatherMax	30	FL OZ/A
7.	Jun-27-2016	First Rate	0.3	FL OZ/A
8.	Jun-27-2016	Mg	1	QT/A

Table 98. Stand counts, insect damage ratings, plant vigor ratings, and yield, SB16-THP-VALENT-1. Tidewater AREC, Suffolk, VA, 2016.

#	Material	Rate	Rate unit	Plants/35 row ft ¹			Bean leaf beetle damage (% defoliation) ²		Thrips injury ³		Vigor ⁴	Yield (bu/A) ⁵
				May 26	Jun 1	Jun 6	Jun 7	Jun 20	Jun 7	Jun 20	Jun 17	
1	Nipsit Inside Insect	22.68	g ai/cwt	125.8	159.9	153.3	0.0 b	1.0 b	1.188 a	0.938 a	7.3	49.8
2	V-10385	3.37	fl oz/cwt	147.3	177.3	169.8	0.8 a	1.3 ab	0.813 b	0.500 b	7.8	45.9
3	CruiserMaxx Vibrance	3.22	fl oz/cwt	135.3	170.6	166.3	0.0 b	1.0 b	0.750 b	0.625 b	7.8	47.7
4	Acceleron DX-109	0.8	fl oz/cwt	137.9	181.6	173.4	0.0 b	2.0 a	0.500 c	0.563 b	8.3	53.4
	Acceleron DX-309	0.4	fl oz/cwt									
	Acceleron DX-612	0.24	fl oz/cwt									
	Acceleron IX-409	2.0	fl oz/cwt									
	LSD			NS	NS	NS	0.40	0.77	0.1333	0.1999	NS	NS

Means within a column followed by the same letter(s) are not significantly different (LSD, P=0.05).

¹Based on sampling all plants in two rows per plot.

²Based on a visual rating on a scale of 0-100% defoliation.

³Based on a visual rating on a scale of 0-5.

⁴Based on a visual rating on a scale of 0=dead to 10=vigorous.

⁵Yield based on weight of soybean with moisture content of 13%. Harvest date was November 4.

Table 99. Average nightly number of corn earworm moths captured in eastern Virginia black light traps, 2016 season.

Nightly corn earworm moth trap catch average for the week ending:																	
Location (county-town)	6/09	6/16	6/23	6/30	7/07	7/14	7/21	7/28	8/04	8/11	8/18	8/25	9/01	9/08	9/15	9/22	9/29
Southeast																	
Dinwiddie-Old Hickory	n/a	n/a	n/a	n/a	0.0	0.9	1.9	1.7	3.1	16.1	23.0	n/a	27.9	20.0	5.7	2.3	n/a
Dinwiddie-Ford	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Isle of Wight	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.5*	n/a	n/a	n/a	n/a	n/a	n/a
Prince George-Templeton	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.8	1.4	3.0	4.0	2.5	4.8	3.0	3.4	1.0	n/a
Prince George-Disputanta	n/a	n/a	n/a	n/a	n/a	n/a	0.6	1.5	3.4	7.8	9.1	3.8	8.4	6.8	9.9	2.6	n/a
Southampton-Courtland	n/a	n/a	n/a	n/a	n/a	n/a	0.5	0.0	0.1	1.1	0.9	0.3	3.3	3.8	1.9	0.3	0.3
Suffolk-Holland	0.0	0.0	0.0	0.1	0.6	0.3	0.3	3.4	13.3	29.0	24.0	22.9	37.9	27.7	16.9	3.6	1.3
North of James River																	
Charles City (Glebe Lane)	n/a	0.4	0.7	n/a	0.7	6.3	n/a	6.9	4.6	21.6	5.6	8.7	55.6	14.6	16.9	n/a	n/a
Essex	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	4.8	4.0	2.1	2.0	4.0	n/a	n/a
Hanover	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Middlesex	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Kent (Holly Forks)	n/a	0.4	0.4	n/a	0.6	n/a	n/a	n/a	14.4	35.9	16.7	9.3	22.7	12.3	14.9	n/a	n/a
Richmond Co.-Warsaw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	2.4	8.0	10.1	4.3	4.0	2.7	12.4	2.4	0.6

n/a = report not available.

**indicates that report is for nightly pheromone trap catch.*

Table 100. Average nightly number of brown marmorated stink bugs (BMSB) captured in eastern Virginia black light traps, 2016 season.

Nightly BMSB trap catch average for the week ending:																	
Location (county-town)	6/09	6/16	6/23	6/30	7/07	7/14	7/21	7/28	8/04	8/11	8/18	8/25	9/01	9/08	9/15	9/22	9/29
Southeast																	
Dinwiddie-Old Hickory	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0	0.0	n/a
Dinwiddie-Ford	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Isle of Wight	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Prince George-Templeton	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Prince George-Disputanta	n/a	n/a	n/a	n/a	n/a	n/a	1.0	0.8	0.4	0.3	0.7	0.0	0.2	0.0	0.0	0.1	n/a
Southampton-Courtland	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.3	0.7	0.4	0.0	0.0	0.1	0.0	0.3	0.1	0.0
Suffolk-Holland	0.0	0.0	0.0	0.0	0.0	0.7	2.3	1.3	0.0	1.4	1.0	0.0	0.1	0.0	0.0	0.0	0.0
North of James River																	
Charles City (Glebe Lane)	n/a	0.0	0.0	n/a	2.4	0.7	n/a	0.0	0.7	3.7	1.4	0.0	0.3	0.1	0.0	n/a	n/a
Essex	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0	0.0	0.0	n/a	n/a
Hanover	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Middlesex	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Kent (Holly Forks)	n/a	0.0	0.0	n/a	1.0	n/a	n/a	n/a	2.6	7.6	4.3	0.3	0.0	1.9	0.0	n/a	n/a
Richmond Co.-Warsaw	0.0	0.0	0.0	0.0	0.0	0.6	0.4	5.1	2.9	5.4	5.7	1.4	1.1	0.1	0.6	0.1	0.0

n/a = report not available.