



## INSECT PEST MANAGEMENT IN VIRGINIA COTTON, PEANUT, SOYBEAN, AND SORGHUM

2013

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*Examining sorghum for lep larvae*

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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:**

- 1<sup>st</sup> tl: first true leaf
- ai: active ingredient
- BC: broadcast
- BMSB: brown marmorated stink bug
- cotyl: cotyledon
- cwt: hundred-weight
- GC: ground-cracking
- IF: in-furrow
- RCBD: randomized complete block design
- Tidewater AREC: Tidewater Agricultural Research and Extension Center

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## Climatological Summary of the 2013 Growing Season—Tidewater AREC, Suffolk, VA

**Table 1. Daily maximum and minimum temperatures (°F) for 2013.**

Day of month	JAN		FEB		MAR		APR		MAY		JUN	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	46	30	58	24	52	30	65	45	70	54	89	63
2	48	35	40	13	49	34	73	34	61	52	91	64
3	42	31	42	26	42	28	58	30	70	44	89	69
4	42	20	46	21	46	25	58	29	68	47	80	63
5	46	22	49	30	48	21	56	37	62	42	90	50
6	52	32	57	28	53	34	62	32	66	51	80	54
7	50	29	57	28	44	30	56	29	74	52	80	67
8	52	22	52	39	52	31	73	41	77	48	84	66
9	57	31	52	28	51	33	81	56	73	51	86	62
10	70	38	48	18	61	23	87	58	81	54	90	70
11	59	28	55	26	65	31	90	58	88	65	84	66
12	60	43	63	44	72	43	86	64	86	60	86	64
13	60	48	62	42	71	31	85	68	75	44	92	69
14	65	51	59	29	57	27	82	64	66	35	95	60
15	67	40	50	26	51	21	81	68	70	51	77	53
16	48	29	63	34	60	34	70	56	88	60	85	59
17	50	38	44	23	76	38	77	52	90	58	84	60
18	47	29	33	13	47	34	86	57	85	57	88	66
19	44	20	49	28	47	36	82	57	78	60	85	62
20	56	30	59	22	65	30	85	49	83	63	79	56
21	61	25	49	18	56	25	60	39	80	63	80	55
22	60	26	47	29	42	20	59	35	83	63	85	54
23	35	11	46	34	52	21	57	46	86	66	86	67
24	36	18	45	37	57	27	63	38	81	63	89	68
25	32	10	55	27	43	30	78	52	72	40	89	68
26	29	11	45	25	46	25	66	35	69	40	92	67
27	37	14	63	40	50	30	73	38	75	42	93	64
28	41	21	60	32	53	28	73	38	80	52	91	69
29	42	32			55	25	69	52	90	62	91	66
30	46	30			58	28	69	54	89	68	88	66
31	65	45			55	32			91	58		
<b>Avg.</b>	<b>49.8</b>	<b>28.7</b>	<b>51.7</b>	<b>28.0</b>	<b>54.1</b>	<b>29.2</b>	<b>72.0</b>	<b>47.0</b>	<b>77.6</b>	<b>53.7</b>	<b>86.6</b>	<b>62.9</b>



**Table 1, continued. Daily maximum and minimum temperatures (°F) for 2013.**

Day of month	JUL		AUG		SEP		OCT		NOV		DEC	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	83	67	85	66	90	69	75	43				
2	85	70	84	63	93	67	82	50				
3	87	68	91	67	90	69	85	51				
4	88	68	91	66	88	67	87	59				
5	91	68	83	57	85	59	87	56				
6	92	68	84	61	89	60	91	59				
7	91	67	78	64	82	50	87	64				
8	92	70	88	67	81	54	87	56				
9	87	68	90	71	80	55	76	55				
10	89	70	94	73	87	61	65	50				
11	91	70	95	69	91	64	66	55				
12	88	66	91	68	91	64	68	57				
13	81	66	93	70	92	66	72	60				
14	89	70	91	65	85	62	75	59				
15	90	70	77	53	75	45	72	51				
16	92	76	79	54	80	55	68	56				
17	95	68	80	62	84	52	75	55				
18	95	68	77	67	85	46	79	56				
19	93	74	83	64	75	46	74	52				
20	95	70	77	60	78	51	69	47				
21	91	69	78	62	80	50	66	32				
22	92	70	89	66	81	60	70	44				
23	92	70	90	64	77	50	68	50				
24	90	67	88	59	70	40	62	38				
25	92	66	83	55	74	43	58	28				
26	81	59	88	67	77	52	57	24				
27	85	59	84	56	77	52	63	31				
28	90	70	90	66	75	50	68	33				
29	88	70	95	68	74	51	69	43				
30	89	69	88	67	75	45	73	44				
31	89	60	90	70			73	50				
Avg.	89.5	68.1	86.3	64.1	82.0	55.2	73.1	48.6				

**Table 2. Daily precipitation (inches) for 2013—Tidewater AREC, Suffolk, VA.**

<b>Day of month</b>	<b>JAN</b>	<b>FEB</b>	<b>MAR</b>	<b>APR</b>	<b>MAY</b>	<b>JUN</b>
1	0	0	0	0.36	0.06	0
2	0.5	0	0	0	0.11	0
3	0.03	0	0	0	0	0.04
4	0	0	0	0	0	0.3
5	0	0	0	0.86	0	0
6	0.05	0	0.49	0	0	0
7	0	0	0.4	0	0.08	1.36
8	0	1.9	0	0	0.05	0.6
9	0	0.03	0	0	0.2	0
10	0	0	0	0	0	0
11	0	0.1	0	0	0	1.52
12	0.04	0.03	0.34	0.08	0.2	0
13	0	0.06	0.06	0	0	0
14	0.03	0.14	0	0	0	0.23
15	0.36	0	0	0	0	0
16	0.2	0	0	0.1	0	0
17	0.6	0.22	0.17	0	0	0
18	0.99	0	0.1	0.04	0.38	0.94
19	0	0	0.08	0	0.3	0.35
20	0	0.04	0	0.84	0.84	0
21	0	0	0	0	0.45	0
22	0	0	0	0	0	0
23	0	0.5	0.02	0	0.05	0.29
24	0	0.21	0	0	0.05	0
25	0	0	0.97	0	0.19	0
26	4.3	0	0.05	0	0	0
27	0	0.86	0	0	0	0.41
28	0	0	0	0	0	0.75
29	0		0	0.63	0	0.32
30	0		0	0.54	0	0
31	0.47		0		0	
<b>Total</b>	<b>7.57</b>	<b>4.09</b>	<b>2.68</b>	<b>3.45</b>	<b>2.96</b>	<b>7.11</b>

**Table 2, continued. Daily precipitation (inches) for 2013—Tidewater AREC, Suffolk, VA.**

<b>Day of month</b>	<b>JUL</b>	<b>AUG</b>	<b>SEP</b>	<b>OCT</b>	<b>NOV</b>	<b>DEC</b>
1	0	0.41	0	0		
2	0.08	0.39	0.32	0		
3	0.46	0	0	0		
4	0.04	0.16	0.27	0		
5	0	0	0	0		
6	0	0	0	0		
7	0	0.22	0	0		
8	0	0	0	0.45		
9	0.27	0	0	0.06		
10	0	0	0	0		
11	0	0.34	0	0.35		
12	1.3	0	0	0.08		
13	0	0	0.3	0.12		
14	0.4	0.05	0	0.28		
15	0	0	0	0.03		
16	0	0	0	0		
17	0.02	0	0	0		
18	0	0.94	0	0		
19	0	0.03	0	0		
20	0	0.05	0	0		
21	0	0	0	0		
22	0	0.03	0.75	0		
23	0.12	0	0	0		
24	0	1.1	0	0.06		
25	0.45	0	0	0		
26	0	0	0	0		
27	0	0	0	0		
28	0	0	0	0		
29	0	0	0	0		
30	0.04	0	0	0		
31	0	0		0		
<b>Total</b>	<b>3.18</b>	<b>3.72</b>	<b>1.64</b>	<b>1.43</b>		

**Table 3. Soil types, nutrient analyses (ppm), and pH for tests conducted in 2013—Tidewater AREC, Suffolk, VA.**

Field #	Crop(s)	Soil type(s)	P	K	Ca	Mg	Zn	Mn	pH
5	Cotton	Eunola, Dragston, Rains	18	38	197	16	0.4	1.1	6.21
14	Peanut & soybean	Dragston, Emporia	13	54	214	19	0.3	1.1	6.45
15	Sorghum	Emporia, Nansemond	37	38	232	23	0.4	1.4	6.59
27	Cotton	Emporia, Uchee	32	42	195	25	0.6	1.3	6.13
35	Cotton	Nansemond, Dragston	31	50	256	31	0.4	1.9	6.63
36	Peanut	Uchee, Nansemond	41	45	234	22	0.4	1.4	6.37
48	Cotton	Dragston, Rains, Weston	42	108	626	106	1.3	2.1	6.36
62B	Cotton	Dragston, Nansemond, Rains	27	72	429	63	0.5	1.7	6.42
63A	Cotton	Emporia, Nansemond	23	53	289	25	0.4	1.2	6.27
63C	Soybean	Emporia, Nansemond	25	100	405	70	0.3	1.3	6.34
64B	Peanut	Emporia, Nansemond	25	69	323	29	0.6	1.3	6.27
66	Cotton	Nansemond, Emporia, Eunola	31	66	319	25	0.5	1.8	6.37
67	Peanut & soybean	Eunola, Emporia, Nansemond	24	51	290	23	0.4	1.8	6.39



## **Cotton Insect Pest Management Tests and Demonstrations**

**Test: CT13-THP-REGIONAL-1, Evaluation of efficacy of liquid in-furrow insecticide treatments alone and in combination with insecticide seed treatments (Objective 4A)**

#	Material(s)	Rate	Application details
1	Orthene 97	16 oz/A	Liquid in-furrow
2	Avicta Complete + Orthene 97	Seed treatment 8 oz/A	--- Liquid in-furrow
3	Admire Pro 4.6F	9 oz/A	Liquid in-furrow
4	Avicta Complete + Admire Pro 4.6F	Seed treatment 7.4 oz/A	--- Liquid in-furrow
5	Avicta Complete	Seed treatment	---
6	Aeris + Trilex Advanced	Seed treatment	---
7	Aeris + Trilex Advanced + Admire Pro 4.6F	Seed treatment 7.4 oz/A	--- Liquid in-furrow
8	Aeris + Trilex Advanced + Poncho/VOTiVO	Seed treatment	---
9	Temik 15G	5 lb/A	Granular in-furrow
10	Velum Total	14 oz/A	Liquid in-furrow
11	UTC, fungicide	---	---

Aeris is a mixture of Gaucho Grande 5FS at 0.375 mg ai/seed and thiodicarb at 0.375 mg ai seed. Avicta Complete Cotton is a mixture of Avicta 500FS at 0.15 mg ai/seed, Cruiser 5FS at 0.34 mg ai/seed, and Dynasty CST 125FS at 0.03 mg ai/seed.

Poncho/VOTiVO is a mixture of 4.17 lb clothianidin and 0.84 lb *Bacillus firmus* per gallon

<b>Test:</b> CT13-THP-REGIONAL-1
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> PHY 367 WRF
<b>Field:</b> 5
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 7
<b>Harvest date:</b> Oct 18
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Liquid in-furrow</b>	<b>Nozzle type:</b> microtube	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 51	<b>GPA:</b> 5
<b>Granular in-furrow</b>	Tractor-mounted inverted polypropylene jars with calibrated lid holes			

**Field preparation:** Rip-strip till on May 4

Test name: **CT13-THP-REGIONAL-1**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/02	Gramoxone	1 qt
5/08	Prowl H2O	1 pt
5/08	Cotoran 4L	1 qt
5/27	Roundup WeatherMax	22 oz
6/13	Roundup WeatherMax	1 qt
6/27	Roundup WeatherMax	1 qt
7/09	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
7/30	Hero	10 oz
8/08	Baythroid	3 oz
8/15	Brigade	6 oz
8/15	Belt	2 oz

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/24	Pentia	10 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/27	24-0-0	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Defoliation**

Date	Product	Rate/A
9/30	Finish	1 qt
9/30	Folex	10 oz
9/30	Super Boll	10 oz
9/30	Free Fall	3 oz

**Table 4. Thrips injury ratings<sup>1</sup>, CT13-THP-REGIONAL-1 (Objective 4A). Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate/A	Application details	May 22	May 28	Jun 3	Jun 10
1	Orthene 97	16 oz/A	Liquid IF	0.44 b	0.88 bc	1.06 cd	0.94 c
2	Avicta Complete + Orthene 97	Seed treatment 8 oz/A	--- Liquid IF	0.00 c	0.75 c-e	0.88 de	0.81 cd
3	Admire Pro 4.6F	9 oz/A	Liquid IF	0.00 c	0.81 b-d	0.75 e	0.63 ef
4	Avicta Complete + Admire Pro 4.6F	Seed treatment 7.4 oz/A	--- Liquid IF	0.00 c	0.81 b-d	0.75 e	0.56 f
5	Avicta Complete	Seed treatment	---	0.25 bc	0.81 b-d	1.75 b	1.38 b
6	Aeris + Trilex Advanced	Seed treatment	---	0.13 c	0.88 bc	1.31 c	1.25 b
7	Aeris + Trilex Advanced + Admire Pro 4.6F	Seed treatment 7.4 oz/A	--- Liquid IF	0.06 c	0.63 e	0.75 e	0.75 de
8	Aeris + Trilex Advanced + Poncho/VOTiVO	Seed treatment	---	0.19 bc	0.94 b	1.13 cd	1.38 b
9	Temik 15G	5 lb/A	Granular IF	0.06 c	0.81 b-d	0.94 de	0.75 de
10	Velum Total	14 oz/A	Liquid IF	0.06 c	0.69 de	0.75 e	0.75 de
11	UTC, fungicide	---	---	1.19 a	2.00 a	3.69 a	3.25 a
	LSD			0.27	0.17	0.27	0.16

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

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



**Table 5. Mean number of thrips per 5 plants, CT13-THP-REGIONAL-1 (Objective 4A). Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate/A	Application details	May 20		May 28		Jun 3		Jun 10	
				Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult
1	Orthene 97	16 oz/A	Liquid IF	0.25	0.00	0.25 b	0.50 c	3.25 bc	3.50 ab	17.25 cd	13.50
2	Avicta Complete + Orthene 97	Seed treatment 8 oz/A	---	0.00	0.00	0.25 b	1.50 bc	2.50 bc	2.25 bc	29.00 bc	13.50
3	Admire Pro 4.6F	9 oz/A	Liquid IF	0.00	0.25	0.00 b	3.00 a-c	1.50 bc	1.00 c	4.50 d	4.75
4	Avicta Complete + Admire Pro 4.6F	Seed treatment 7.4 oz/A	---	0.00	0.50	0.25 b	5.25 a	1.00 bc	2.25 bc	6.75 d	13.00
5	Avicta Complete	Seed treatment	---	0.25	0.25	1.25 b	4.50 ab	2.75 bc	5.25 a	37.25 ab	13.50
6	Aeris + Trilex Advanced	Seed treatment	---	0.00	1.00	0.50 b	2.00 bc	4.00 bc	3.50 ab	24.25 b-d	10.00
7	Aeris + Trilex Advanced + Admire Pro 4.6F	Seed treatment 7.4 oz/A	---	0.00	0.25	0.25 b	5.25 a	1.25 bc	1.75 bc	13.75 cd	21.50
8	Aeris + Trilex Advanced + Poncho/VOTiVO	Seed treatment	---	0.00	1.50	0.50 b	1.50 bc	6.50 b	1.50 bc	21.25 b-d	11.50
9	Temik 15G	5 lb/A	Granular IF	0.00	0.75	0.75 b	1.50 bc	0.50 c	0.75 c	9.50 cd	7.00
10	Velum Total	14 oz/A	Liquid IF	0.00	1.25	0.25 b	6.00 a	2.00 bc	0.75 c	6.75 d	18.00
11	UTC, fungicide	---	---	0.00	2.00	8.75 a	1.75 bc	34.75 a	3.50 ab	50.75 a	14.00
	LSD			NS	NS	2.00	3.17	5.70	2.06	19.81	NS

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

**Table 6. Plant height<sup>1</sup>, number of true leaves<sup>1</sup>, and aboveground biomass<sup>2</sup>, CT13-THP-REGIONAL-1 (Objective 4A). Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate/A	Application details	May 28		Jun 3		Jun 10		Jun 19
				Height (cm)	True leaves	Height (cm)	True leaves	Height (cm)	True leaves	Biomass (g)
1	Orthene 97	16 oz/A	Liquid IF	5.20	0.80 ab	7.95	2.40 ab	10.58 a-c	3.55	8.34 bc
2	Avicta Complete + Orthene 97	Seed treatment 8 oz/A	--- Liquid IF	5.10	0.95 a	8.03	2.45 ab	10.55 a-c	3.65	9.01 b
3	Admire Pro 4.6F	9 oz/A	Liquid IF	5.15	0.80 ab	8.08	2.35 ab	10.00 b-d	3.70	9.31 b
4	Avicta Complete + Admire Pro 4.6F	Seed treatment 7.4 oz/A	--- Liquid IF	4.95	0.85 ab	7.80	2.45 ab	10.65 ab	3.65	8.79 bc
5	Avicta Complete	Seed treatment	---	4.95	0.85 ab	7.73	2.30 ab	10.13 b-d	3.50	7.89 bc
6	Aeris + Trilex Advanced	Seed treatment	---	5.10	0.60 bc	7.58	2.45 ab	9.80 d	3.25	7.71 bc
7	Aeris + Trilex Advanced + Admire Pro 4.6F	Seed treatment 7.4 oz/A	--- Liquid IF	5.15	0.60 bc	7.33	2.25 b	9.95 b-d	3.40	8.43 bc
8	Aeris + Trilex Advanced + Poncho/VOTiVO	Seed treatment	---	4.90	0.65 bc	7.75	2.60 ab	9.85 cd	3.60	7.71 bc
9	Temik 15G	5 lb/A	Granular IF	4.98	0.75 a-c	7.68	2.30 ab	11.15 a	3.55	13.39 a
10	Velum Total	14 oz/A	Liquid IF	5.03	0.80 ab	8.30	2.65 a	10.63 ab	3.60	7.86 bc
11	UTC, fungicide	---	---	5.03	0.50 c	8.03	1.75 c	9.78 d	3.20	6.98 c
	LSD			NS	0.27	NS	0.35	0.74	NS	1.94

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

<sup>1</sup>Based on sampling five plants per plot.

<sup>2</sup>Aboveground biomass based on cutting 5 plants/plot at soil level, pooling those samples into labeled paper bags, and drying at 60°C for 48 hours.

**Table 7. Stand counts and yield, CT13-THP-REGIONAL-1 (Objective 4A). Tidewater AREC, Suffolk, VA, 2013. Planting date was May 7.**

#	Material	Rate/A	Application details	Plants/35 row ft <sup>1</sup>		Lint lb/acre <sup>2</sup>
				May 16	Jun 19	
1	Orthene 97	16 oz/A	Liquid in-furrow	89.25	96.88 bc	1725
2	Avicta Complete + Orthene 97	Seed treatment 8 oz/A	--- Liquid in-furrow	86.13	92.25 c	1664
3	Admire Pro 4.6F	9 oz/A	Liquid in-furrow	93.25	101.13 b	1742
4	Avicta Complete + Admire Pro 4.6F	Seed treatment 7.4 oz/A	--- Liquid in-furrow	83.75	91.75 c	1668
5	Avicta Complete	Seed treatment	---	88.00	92.38 c	1653
6	Aeris + Trilex Advanced	Seed treatment	---	92.38	98.50 bc	1754
7	Aeris + Trilex Advanced + Admire Pro 4.6F	Seed treatment 7.4 oz/A	--- Liquid in-furrow	90.50	96.13 bc	1725
8	Aeris + Trilex Advanced + Poncho/VOTiVO	Seed treatment	---	94.25	100.75 b	1655
9	Temik 15G	5 lb/A	Granular in-furrow	95.00	109.38 a	1860
10	Velum Total	14 oz/A	Liquid in-furrow	90.00	98.63 bc	1541
11	UTC, fungicide	---	---	97.13	97.50 bc	1446
	LSD			NS	7.20	NS

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Cotton was harvested on October 18. Gross yields were reduced by 60.5% to account for seed and trash.

**Table 8. Nematode counts per 500 cc soil from untreated plots on June 25, 2013, CT13-THP-REGIONAL-1 (Objective 4A). Tidewater AREC, Suffolk, VA, 2013.**

<b>Sample #</b>	<b><i>Meloidogyne</i> (Root-knot) juveniles</b>	<b><i>Tylencho-</i> <i>rhyncus</i> (Stunt)</b>	<b><i>Hoplolaimus</i> (Lance)</b>	<b><i>Mesocrico-</i> <i>nema</i> (Ring)</b>	<b><i>Trichodorus</i> (Stubby root)</b>
<b>1</b>	0	0	60	80	0
<b>2</b>	0	40	160	0	0
<b>3</b>	20	80	0	220	0
<b>4</b>	20	40	0	80	60

**Test: CT13-THP-REGIONAL-2, Evaluation of thrips management programs with and without pre-emergent herbicides**

#	Insecticide(s)	Pre-emergent herbicide(s)	Application date(s)
1	No at-plant insecticide	None	---
2	Avicta Complete	None	---
3	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	None	--- May 20 (insecticide)
4	No at-plant insecticide	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	May 6 (herbicides)
5	Avicta Complete	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	May 6 (herbicides)
6	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	May 6 (herbicides) May 20 (insecticide)
7	No at-plant insecticide	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	May 6 (herbicides)
8	Avicta Complete	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	May 6 (herbicides)
9	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	May 6 (herbicides) May 20 (insecticide)

<b>Test:</b> CT13-THP-REGIONAL-2
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> PHY 367 WRF
<b>Field:</b> 5
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> Factorial
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 6
<b>Harvest date:</b> Oct 25
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Broadcast with backpack</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 18	<b>GPA:</b> 14.3
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**Field preparation:** Rip-strip till on May 4

Test name: **CT13-THP-REGIONAL-2**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/02	Gramoxone	1 qt
5/27	Roundup WeatherMax	22 oz
6/13	Roundup WeatherMax	1 qt
6/27	Roundup WeatherMax	1 qt
7/19	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
7/30	Hero	10 oz
8/08	Baythroid	3 oz
8/15	Brigade	6 oz
8/15	Belt	2 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/27	24-0-0	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/24	Pentia	10 oz

**Defoliation**

Date	Product	Rate/A
10/03	Finish	1 qt
10/03	Folex	10 oz
10/03	Super Boll	10 oz
10/03	Free Fall	3 oz

**Table 9. Thrips injury ratings<sup>1</sup>, CT13-THP-REGIONAL-2. Tidewater AREC, Suffolk, VA, 2013. Planting date and pre-emergent herbicide application date was May 6; the broadcast at 1<sup>st</sup> true leaf bud application was May 20.**

#	Insecticide(s)	Pre-emergent herbicides	May 22	May 30	Jun 3	Jun 10
1	No at-plant insecticide	None	0.75 d	3.00 c	4.06 c	3.56 c
2	Avicta Complete	None	0.25 e	0.94 d	1.25 f	0.75 f
3	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	None	0.25 e	0.50 d	0.69 g	0.56 f
4	No at-plant insecticide	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	1.81 b	3.63 b	4.00 c	3.81 bc
5	Avicta Complete	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	1.00 c	2.75 c	3.19 d	3.06 d
6	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	0.69 d	3.19 bc	2.94 e	1.56 e
7	No at-plant insecticide	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	2.00 a	4.63 a	4.75 a	4.50 a
8	Avicta Complete	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	2.00 a	4.19 a	4.44 b	4.00 b
9	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	1.94 ab	4.38 a	4.13 c	3.69 bc
	LSD		0.18	0.51	0.19	0.43

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

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

**Table 10. Mean number of thrips per 5 plants, CT13-THP-REGIONAL-2 . Tidewater AREC, Suffolk, VA, 2013. Planting date and pre-emergent herbicide application date was May 6; the broadcast at 1<sup>st</sup> true leaf bud application was May 20.**

#	Insecticide(s)	Pre-emergent herbicides	May 21		May 29		Jun 3		Jun 11	
			Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult
1	No at-plant insecticide	None	2.50	2.25	7.75 bc	1.75	16.50 a	5.00	21.00	6.25
2	Avicta Complete	None	0.00	1.75	2.50 cd	1.75	10.50 a-c	2.75	20.25	8.75
3	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	None	0.00	1.00	0.75 d	1.25	6.25 bc	3.50	13.00	8.25
4	No at-plant insecticide	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	2.75	2.25	13.75 b	2.25	12.50 ab	3.00	16.00	10.75
5	Avicta Complete	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	0.25	1.25	4.50 cd	1.50	11.75 a-c	6.25	20.25	12.00
6	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	0.00	0.75	1.25 cd	1.75	4.25 bc	3.00	9.75	9.50
7	No at-plant insecticide	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	1.25	2.25	24.50 a	1.50	19.75 a	3.00	14.00	7.00
8	Avicta Complete	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	1.00	1.00	3.00 cd	1.75	12.50 ab	6.00	17.00	17.00
9	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	0.50	0.75	2.25 cd	0.00	3.00 c	4.75	13.25	17.25
	LSD		NS	NS	6.96	NS	9.28	NS	NS	NS

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



**Table 11. Plant height<sup>1</sup>, number of true leaves<sup>1</sup>, and aboveground biomass<sup>2</sup>, CT13-THP-REGIONAL-2. Tidewater AREC, Suffolk, VA, 2013. Planting date and pre-emergent herbicide application date was May 6; the broadcast at 1<sup>st</sup> true leaf bud application was May 20.**

#	Insecticide(s)	Pre-emergent herbicides	May 29		Jun 3		Jun 11		Jun 17
			Height (cm)	True leaves	Height (cm)	True leaves	Height (cm)	True leaves	Biomass (g)
1	No at-plant insecticide	None	5.30 a	1.00 bc	5.10 a	1.95 b	10.25 b	3.05 bc	5.14 bc
2	Avicta Complete	None	5.35 a	1.25 b	5.10 a	2.00 b	10.28 b	3.30 b	6.62 ab
3	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	None	5.35 a	1.55 a	5.15 a	2.80 a	11.25 a	4.00 a	8.00 a
4	No at-plant insecticide	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	4.00 c	0.20 e	4.25 b	1.40 c	8.80 cd	2.50 c	4.89 bc
5	Avicta Complete	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	4.50 b	0.70 d	4.38 b	1.90 b	9.00 cd	2.95 bc	6.39 ab
6	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	4.38 bc	0.80 cd	4.60 b	2.75 a	9.55 bc	4.10 a	6.35 ab
7	No at-plant insecticide	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	3.08 e	0.00 e	3.10 d	0.30 d	6.20 f	1.60 d	3.65 c
8	Avicta Complete	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	3.50 d	0.20 e	3.63 c	1.75 bc	8.23 de	2.70 c	6.20 ab
9	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	3.45 de	0.20 e	3.50 cd	1.85 bc	7.65 e	2.60 c	5.27 bc
	LSD		0.41	0.29	0.42	0.47	0.88	0.60	2.27

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

<sup>1</sup>Based on sampling five plants per plot.

<sup>2</sup>Aboveground biomass based on cutting 5 plants/plot at soil level, pooling those samples into labeled paper bags, and drying at 60°C for 48 hours.

**Table 12. Stand counts and yield, CT13-THP-REGIONAL-2 . Tidewater AREC, Suffolk, VA, 2013. Planting date and pre-emergent herbicide application date was May 6; the broadcast at 1<sup>st</sup> true leaf bud application was May 20.**

#	Insecticide(s)	Pre-emergent herbicides	Plants/35 row ft <sup>1</sup>		Lint lb/acre <sup>2</sup>
			May 16	Jun 17	
1	No at-plant insecticide	None	94.75	98.13 ab	1297 b
2	Avicta Complete	None	91.38	98.25 ab	1639 a
3	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	None	92.13	98.88 a	1666 a
4	No at-plant insecticide	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	93.13	93.25 a-d	1174 bc
5	Avicta Complete	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	92.38	95.13 a-c	1327 b
6	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 1 qt/A + Reflex @ 1 pt/A	88.13	92.38 b-d	1366 ab
7	No at-plant insecticide	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	89.00	86.00 e	884 c
8	Avicta Complete	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	90.00	90.75 c-e	1145 bc
9	Avicta Complete + Orthene 97 @ 6 oz/A (1 <sup>st</sup> tl bud)	Prowl H <sub>2</sub> O @ 2 qt/A + Reflex @ 2 pt/A	86.13	87.63 de	1138 bc
	LSD		NS	6.28	311.7

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Cotton was harvested on October 25. Gross yields were reduced by 60.24% to account for seed and trash.

**Test: CT13-THP-REGIONAL-3, Evaluation of efficacy of insecticide seed treatments alone and in combination with foliar applied insecticides for managing thrips on seedling cotton (Objective 4B)**

#	Material(s)	Rate	Application details	Application date
1	Avicta Complete + Orthene 97	Seed treatment 3 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	May 20
2	Avicta Complete + Orthene 97	Seed treatment 6 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	May 20
3	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 1.5 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	May 20
4	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 3 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	May 20
5	Avicta Complete	Seed treatment	---	
6	UTC, fungicide	---	---	

<b>Test:</b> CT13-THP-REGIONAL-3
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> PHY 367 WRF
<b>Field:</b> 5
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 6
<b>Harvest date:</b> Oct 25
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Broadcast with backpack</b>	<b>Nozzle type:</b> 8004VS	<b>Nozzle spacing:</b> 18	<b>PSI:</b> 18	<b>GPA:</b> 14.3
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**Field preparation:** Rip-strip till on May 4

Test name: **CT13-THP-REGIONAL-3**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/02	Gramoxone	1 qt
5/06	Prowl H2O	1 pt
5/06	Cotoran 4L	1 qt
5/27	Roundup WeatherMax	22 oz
6/13	Roundup WeatherMax	1 qt
6/27	Roundup WeatherMax	1 qt
7/09	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
7/30	Hero	10 oz
8/08	Baythroid	3 oz
8/15	Brigade	6 oz
8/15	Belt	2 oz

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/24	Pentia	10 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/27	24-0-0	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Defoliation**

Date	Product	Rate/A
10/03	Finish	1 qt
10/03	Folex	10 oz
10/03	Super Boll	10 oz
10/03	Free Fall	3 oz

**Table 13. Thrips injury ratings<sup>1</sup>, CT13-THP-REGIONAL-3 (Objective 4B). Tidewater AREC, Suffolk, VA, 2013. Planting date was May 6; the broadcast at 1<sup>st</sup> true leaf bud application was May 20.**

#	Material(s)	Rate/A	Application details	May 22	May 29	Jun 3	Jun 11
1	Avicta Complete + Orthene 97	Seed treatment 3 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	0.56 bc	1.00 bc	3.00 c	0.94 c
2	Avicta Complete + Orthene 97	Seed treatment 6 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	0.69 b	1.06 bc	3.00 c	0.81 c
3	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 1.5 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	0.50 bc	0.75 c	2.75 d	1.00 c
4	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 3 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	0.44 c	0.81 bc	1.56 e	0.75 c
5	Avicta Complete	Seed treatment	---	0.50 bc	1.13 b	3.50 b	2.00 b
6	UTC, fungicide	---	---	1.88 a	2.75 a	4.44 a	4.50 a
	LSD			0.20	0.32	0.25	0.91

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

<sup>1</sup>*Thrips injury based on a 0-5 scale, 0 = no injury and 5 = dead plants.*

**Table 14. Mean number of thrips per 5 plants, CT13-THP-REGIONAL-3 (Objective 4B). Tidewater AREC, Suffolk, VA, 2013. Planting date was May 6; the broadcast at 1<sup>st</sup> true leaf bud application was May 20.**

#	Material(s)	Rate/A	Application details	May 21		May 29		Jun 3		Jun 11	
				Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult
1	Avicta Complete + Orthene 97	Seed treatment 3 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	0.50 b	1.50	1.50 b	1.25	15.50 a	6.75	26.25	17.50
2	Avicta Complete + Orthene 97	Seed treatment 6 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	0.25 b	1.25	1.25 b	1.00	2.00 b	6.25	27.25	19.75
3	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 1.5 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	0.50 b	2.00	2.00 b	1.00	2.75 b	7.00	27.25	14.00
4	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 3 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	0.50 b	1.75	0.50 b	1.50	4.31 b	5.38	18.50	16.75
5	Avicta Complete	Seed treatment	---	1.50 ab	1.75	1.75 b	3.00	15.29 a	7.41	35.50	14.00
6	UTC, fungicide	---	---	2.75 a	1.25	19.75 a	1.25	14.25 a	6.50	36.50	13.25
	LSD			1.67	NS	6.89	NS	9.03	NS	NS	NS

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

**Table 15. Plant height<sup>1</sup>, number of true leaves<sup>1</sup>, and aboveground biomass<sup>2</sup>, CT13-THP-REGIONAL-3 (Objective 4B). Tidewater AREC, Suffolk, VA, 2013. Planting date was May 6; the broadcast at 1<sup>st</sup> true leaf bud application was May 20.**

#	Material	Rate/A	Application details	May 29		Jun 3		Jun 11		Jun 17
				Height (cm)	True leaves	Height (cm)	True leaves	Height (cm)	True leaves	Biomass (g)
1	Avicta Complete + Orthene 97	Seed treatment 3 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	4.80	0.80 bc	4.78	2.65	10.10 ab	3.50	7.57
2	Avicta Complete + Orthene 97	Seed treatment 6 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	4.73	1.05 ab	4.50	2.45	10.10 ab	3.25	7.10
3	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 1.5 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	4.85	1.20 a	4.73	2.75	10.38 a	3.00	7.37
4	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 3 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	4.65	0.75 bc	4.63	2.37	9.63 bc	2.90	5.89
5	Avicta Complete	Seed treatment	---	4.93	0.80 bc	4.57	2.57	9.73 a-c	2.65	7.23
6	UTC, fungicide	---	---	4.73	0.65 c	4.90	1.95	9.23 c	3.25	5.85
	LSD			NS	0.33	NS	NS	0.65	NS	NS

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

<sup>1</sup>Based on sampling five plants per plot.

<sup>2</sup>Aboveground biomass based on cutting 5 plants/plot at soil level, pooling those samples into labeled paper bags, and drying at 60°C for 48 hours.

**Table 16. Stand counts and yield, CT13-THP-REGIONAL-3 (Objective 4B). Tidewater AREC, Suffolk, VA, 2013. Planting date was May 6; the broadcast at 1<sup>st</sup> true leaf bud application was May 20.**

#	Material(s)	Rate/A	Application details	Plants/35 row ft <sup>1</sup>		Lint lb/acre <sup>2</sup>
				May 16	Jun 17	
1	Avicta Complete + Orthene 97	Seed treatment 3 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	91.88	98.50	1435 ab
2	Avicta Complete + Orthene 97	Seed treatment 6 oz/A	--- Broadcast at 1 <sup>st</sup> true leaf bud	91.00	94.75	1490 ab
3	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 1.5 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	92.88	99.00	1676 a
4	Avicta Complete + Radiant 1SC + Dyne-Amic	Seed treatment 3 oz/A 0.625% v/v	--- Broadcast at 1 <sup>st</sup> true leaf bud	89.00	92.00	1505 ab
5	Avicta Complete	Seed treatment	---	90.38	92.75	1283 bc
6	UTC, fungicide	---	---	93.50	96.00	1123 c
	LSD			NS	NS	265.8

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Cotton was harvested on October 25. Gross yields were reduced by 59.64% to account for seed and trash.

**Table 17. Nematode counts per 500 cc soil from untreated plots on June 25, 2013, CT13-THP-REGIONAL-3 (Objective 4B). Tidewater AREC, Suffolk, VA, 2013.**

Sample #	<i>Meloidogyne</i> (Root-knot) juveniles	<i>Tylenchorhynchus</i> (Stunt)	<i>Hoplolaimus</i> (Lance)	<i>Mesocriconema</i> (Ring)	<i>Trichodorus</i> (Stubby root)
1	60	240	0	120	60
2	300	120	0	280	0
3	100	40	0	180	0
4	160	100	0	140	40



**Test: CT13-THP-REGIONAL-4, On-farm evaluation of the effects of tillage system (conventional, strip tillage, or no tillage) and application of acephate at first true leaf on immature thrips populations separately under irrigated and dryland conditions**

#	Residue	Insecticide treatment	Application date
1	Low	Untreated	
2	Low	Orthene 97 @ 6 oz/A (1 <sup>st</sup> true leaf bud)	Jun 3
3	High	Orthene 97 @ 6 oz/A (1 <sup>st</sup> true leaf bud)	Jun 3
4	High	Untreated	

<b>Test:</b> CT13-THP-REGIONAL-4
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> PHY 499 WRF
<b>Field:</b> n/a
<b>Location:</b> Jason Hodges farm, Southampton Co., VA

<b>Experimental design:</b> Replicated strip
<b>Plot size:</b> 45' x length of field
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 9
<b>Harvest date:</b> n/a
<b>Row feet harvested:</b> n/a

**Treatment application(s):**

<b>Broadcast by grower</b>	<b>Nozzle type:</b> 8003AI	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 60	<b>GPA:</b> 10
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**Field preparation:** Strip till

**Table 18. Stand counts<sup>1</sup> and thrips injury ratings<sup>2</sup>, CT13-THP-REGIONAL-4 (Jason Hodges farm, Southampton Co.). Tidewater AREC, Suffolk, VA, 2013.**

#	Residue	Insecticide treatment	Plants/10 row ft		Thrips injury ratings	
			Jun 6	Jun 19	May 31	Jun 6
1	Low	Untreated	24.6	23.5	2.94 ab	3.13 a
2	Low	Orthene 97 @ 6 oz/A (1 <sup>st</sup> true leaf bud)	23.0	22.3	2.00 b	0.88 b
3	High	Orthene 97 @ 6 oz/A (1 <sup>st</sup> true leaf bud)	23.3	24.6	2.25 b	0.81 b
4	High	Untreated	23.4	23.1	3.25 a	3.31 a
	LSD		NS	NS	0.95	0.44

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

<sup>1</sup>Stand counts based on two 10-row-ft samples per plot.

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

**Table 19. Mean number of thrips per 5 plants, CT13-THP-REGIONAL-4 (Jason Hodges farm, Southampton Co.). Tidewater AREC, Suffolk, VA, 2013.**

#	Residue	Insecticide treatment	May 20		May 31		Jun 6	
			Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult
1	Low	Untreated	0.00	4.25	3.75 a	11.25	2.25	4.00
2	Low	Orthene 97 @ 6 oz/A (1 <sup>st</sup> true leaf bud)	---	---	1.00 b	6.00	3.25	13.25
3	High	Orthene 97 @ 6 oz/A (1 <sup>st</sup> true leaf bud)	---	---	0.25 b	6.25	4.75	12.50
4	High	Untreated	0.25	6.75	1.00 b	4.75	3.25	3.75
	LSD		NS	NS	2.26	NS	NS	NS

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

**Table 20. Plant height<sup>1</sup>, number of true leaves<sup>1</sup>, and aboveground biomass<sup>2</sup>, CT13-THP-REGIONAL-4 (Jason Hodges farm, Southampton Co.). Tidewater AREC, Suffolk, VA, 2013.**

#	Residue	Insecticide treatment	May 31		Jun 6		Jun 19
			Height (cm)	True leaves	Height (cm)	True leaves	Biomass (g)
1	Low	Untreated	8.68	1.70 a	12.03	3.60	14.30
2	Low	Orthene 97 @ 6 oz/A (1 <sup>st</sup> true leaf bud)	8.90	1.55 ab	12.43	3.55	16.61
3	High	Orthene 97 @ 6 oz/A (1 <sup>st</sup> true leaf bud)	8.80	1.25 bc	12.10	3.40	16.70
4	High	Untreated	8.30	1.20 c	11.80	3.50	16.84
	LSD		NS	0.35	NS	NS	NS

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

<sup>1</sup>*Based on sampling five plants per plot.*

<sup>2</sup>*Aboveground biomass based on cutting 5 plants/plot at soil level, pooling those samples into labeled paper bags, and drying at 60°C for 48 hours.*

**Test: CT13-THP-SEED-TRT-1, Evaluation of seed treatments for thrips management in cotton**

#	Material(s)*	Rate/acre
1	Base only	See footnote
2	Aeris Seed Applied System	0.75 mg ai/seed
3	Gaucho 600FS Poncho Votivo 2 <sup>nd</sup> Gen.	0.375 mg ai/seed 0.424 mg ai/seed
4	Avicta Complete Pak—Avicta Avicta Complete Pak—Cruiser	0.15 mg ai/seed 0.375 mg ai/seed

\*All treatments contain the following base materials: Vortex FL @ 2.5 g ai/100 kg, Baytan 30 @ 10 g ai/100 kg, Allegiance FL @ 15.6 g ai/100 kg, Pro-Ized Blue Colorant @ 67.8 ml/100 kg, Calcium Carbonate @ 500 g/100 kg, Color Coat White @ 65.2 ml/100 kg, Secure Plus Seed Gloss 661 @ 391 ml/100 kg, Suspending Agent @ 25 g/100 kg, Talc @ 250 g/100 kg.

<b>Test:</b> CT13-THP-SEED-TRT-1
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> ST 4946 GLB2
<b>Field:</b> 5
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 6
<b>Harvest date:</b> Oct 25
<b>Row feet harvested:</b> 70

**Field preparation:** Rip-strip till on May 4

**Comments:** 2-row plots with DP 1028 B2RF (insecticide untreated) for guards/borders

Test name: **CT13-THP-SEED-TRT-1**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/02	Gramoxone	1 qt
5/06	Prowl H2O	1 pt
5/06	Cotoran 4L	1 qt
5/27	Roundup WeatherMax	22 oz
6/13	Roundup WeatherMax	1 qt
6/27	Roundup WeatherMax	1 qt
7/09	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
7/30	Hero	10 oz
8/08	Baythroid	3 oz
8/15	Brigade	6 oz
8/15	Belt	2 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/27	24-0-0	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/24	Pentia	10 oz

**Defoliation**

Date	Product	Rate/A
10/03	Finish	1 qt
10/03	Folex	10 oz
10/03	Super Boll	10 oz
10/03	Free Fall	3 oz

**Table 21. Stand counts per 35 row ft<sup>1</sup>, CT13-THP-SEED-TRT-1. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate/A	May 14	May 24
1	Base only	See footnote	82.5	95.8
2	Aeris Seed Applied System	0.75 mg ai/seed	83.6	93.5
3	Gaucho 600FS Poncho Votivo 2 <sup>nd</sup> Gen.	0.375 mg ai/seed 0.424 mg ai/seed	85.3	93.9
4	Avicta Complete Pak—Avicta Avicta Complete Pak—Cruiser	0.15 mg ai/seed 0.375 mg ai/seed	87.5	97.3
	LSD		NS	NS

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

<sup>1</sup>Based on counting all living plants per row (two 35-ft rows were sampled per plot). Planting date was May 6.

**Table 22. Thrips injury ratings<sup>1</sup>, CT13-THP-SEED-TRT-1. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate/A	May 24	May 30	Jun 4	Jun 11
1	Base only	See footnote	2.50 a	3.75 a	4.38 a	4.44 a
2	Aeris Seed Applied System	0.75 mg ai/seed	0.75 d	0.56 c	2.50 c	0.75 bc
3	Gaucho 600FS Poncho Votivo 2 <sup>nd</sup> Gen.	0.375 mg ai/seed 0.424 mg ai/seed	1.13 c	0.56 c	2.69 bc	0.63 c
4	Avicta Complete Pak—Avicta Avicta Complete Pak—Cruiser	0.15 mg ai/seed 0.375 mg ai/seed	1.56 b	0.75 b	2.75 b	0.88 b
	LSD		0.21	0.15	0.21	0.19

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

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

**Table 23. Standardized vigor ratings and yield, CT13-THP-SEED-TRT-1. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate/A	Vigor ratings <sup>1</sup>		Lint lb/acre <sup>2</sup>
			May 24	Jun 26	
1	Base only	See footnote	5.13 a	3.00 a	1505 b
2	Aeris Seed Applied System	0.75 mg ai/seed	2.75 b	1.00 b	1846 a
3	Gaucho 600FS Poncho Votivo 2 <sup>nd</sup> Gen.	0.375 mg ai/seed 0.424 mg ai/seed	3.00 b	1.00 b	1742 a
4	Avicta Complete Pak—Avicta Avicta Complete Pak—Cruiser	0.15 mg ai/seed 0.375 mg ai/seed	2.19 c	1.25 b	1835 a
	LSD		0.31	0.40	158.5

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

<sup>1</sup>Plant vigor based on a 1-6 scale, 1 = excellent, 2 = very good, 3 = good, 4 = satisfactory, 5 = marginally unsatisfactory, and 6 = unsatisfactory.

<sup>2</sup>Cotton was harvested on October 25. Gross yields were reduced by 59.0% to account for seed and trash.

**Table 24. Mean number of thrips per 5 plants, collected from the guard rows of treatment 1, CT13-THP-SEED-TRT-1. Tidewater AREC, Suffolk, VA, 2013.**

#	May 30						
	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> )	
Trt 1 guard rows	38.00	1.75	0.25	0.00	0.75	0.75	3.50

**Test: CT13-THP-SEED-TRT-3, Evaluation of seed and in-furrow treatments for thrips management in cotton**

#	Material(s)*	Rate
1	Gaucho 600FS	0.375 mg ai/seed
2	Temik 15G	5 lb/A (IF)
3	Gaucho 600FS BCS-AR83685 500SC Aeris Seed Applied System	0.375 mg ai/seed 0.175 mg ai/seed 0.75 mg ai/seed
4	Gaucho 600FS BCS-AR83685 500SC	0.375 mg ai/seed 0.263 mg ai/seed
5	Gaucho 600FS BCS-AR83685 500SC	0.375 mg ai/seed 0.35 mg ai/seed
6	Gaucho 600FS Velum Total	0.19 mg ai/seed 10 oz/A (liquid IF)
7	Gaucho 600FS Velum Total	0.19 mg ai/seed 14 oz/A (liquid IF)
8	Gaucho 600FS Velum Total	0.19 mg ai/seed 18 oz/A (liquid IF)

\*All treatments contain the following base materials: Vortex FL @ 2.5 g ai/100 kg, Baytan 30 @ 10 g ai/100 kg, Allegiance FL @ 15.6 g ai/100 kg, Pro-Ized Blue Colorant @ 67.8 ml/100 kg, Calcium Carbonate @ 375 g/100 kg.

<b>Test:</b> CT13-THP-SEED-TRT-3
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> ST 4946 GLB2
<b>Field:</b> 5
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 9
<b>Harvest date:</b> Nov 4
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Liquid in-furrow</b>	<b>Nozzle type:</b> microtube	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 51	<b>GPA:</b> 5
<b>Granular in-furrow</b>	Tractor-mounted inverted polypropylene jars with calibrated lid holes			

**Field preparation:** Rip-strip till on May 4

**Comments:** Used seed for Treatment 2 in guard rows.



Test name: **CT13-THP-SEED-TRT-3**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/02	Gramoxone	1 qt
5/08	Prowl H2O	1 pt
5/08	Cotoran 4L	1 qt
6/13	Roundup WeatherMax	1 qt
6/27	Roundup WeatherMax	1 qt
7/09	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
7/30	Hero	10 oz
8/08	Baythroid	3 oz
8/15	Brigade	6 oz
8/15	Belt	2 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/27	24-0-0	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/24	Pentia	10 oz

**Defoliation**

Date	Product	Rate/A
10/18	Finish	1 qt
10/18	Folex	10 oz
10/18	Super Boll	10 oz
10/18	Free Fall	3 oz

**Table 25. Stand counts<sup>1</sup>, thrips injury ratings<sup>2</sup>, earliness ratings<sup>3</sup>, and yield<sup>4</sup>, CT13-THP-SEED-TRT-3. Tidewater AREC, Suffolk, VA, 2013.**

#	Material(s)	Rate(s)	Plants/35 row ft	Thrips injury ratings				Earliness	Lint lb/acre
			Jun 4	May 24	May 30	Jun 4	Jun 12	Sep 25	
1	Gaucho 600FS	0.375 mg ai/seed	98.6	0.50	0.81 a	1.94 a	1.00 a	4.83 bc	1663
2	Temik 15G	5 lb/A (IF)	102.1	0.50	0.81 a	1.13 b	0.50 c	4.70 c	1813
3	Gaucho 600FS BCS-AR83685 500SC Aeris Seed Applied System	0.375 mg ai/seed 0.175 mg ai/seed 0.75 mg ai/seed	102.3	0.50	0.81 a	1.00 bc	0.50 c	4.91 bc	1838
4	Gaucho 600FS BCS-AR83685 500SC	0.375 mg ai/seed 0.263 mg ai/seed	99.9	0.50	0.81 a	1.88 a	0.75 b	4.36 d	1669
5	Gaucho 600FS BCS-AR83685 500SC	0.375 mg ai/seed 0.35 mg ai/seed	100.9	0.50	0.88 a	1.88 a	0.69 b	5.04 b	1882
6	Gaucho 600FS Velum Total	0.19 mg ai/seed 10 oz/A (liquid IF)	101.4	0.50	0.75 ab	1.19 b	0.50 c	4.66 cd	1714
7	Gaucho 600FS Velum Total	0.19 mg ai/seed 14 oz/A (liquid IF)	101.1	0.50	0.63 bc	0.94 bc	0.50 c	5.36 a	1840
8	Gaucho 600FS Velum Total	0.19 mg ai/seed 18 oz/A (liquid IF)	100.3	0.50	0.50 c	0.81 c	0.25 d	5.03 b	1805
	LSD		NS	NS	0.18	0.30	0.07	0.30	NS

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

<sup>1</sup>Based on counting all living plants per row (two 35-ft rows were sampled per plot). Planting date was May 9.

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

<sup>3</sup>Earliness ratings based on the number of nodes between the uppermost cracked boll and the uppermost harvestable boll. Twenty plants were sampled per plot.

<sup>4</sup>Cotton was harvested on November 4. Gross yields were reduced by 60.88% to account for seed and trash.

**Table 26. Mean number of thrips per 5 plants, collected from the guard rows of treatment 1, CT13-THP-SEED-TRT-3. Tidewater AREC, Suffolk, VA, 2013.**

#	Immature thrips	Adult thrips (May 30)					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> )	
Trt 1 guard rows	9.5	2.25	0.00	0.00	0.00	2.00	4.25

**Test: CT13-THP-SEED-TRT-4, Evaluation of seed treatments for thrips management in cotton**

#	Material(s)	Rate	Units
<b>1</b>	Apron XI 3 LS	7.5	ga/100kgseed
	Maxim 4 FS	2.5	ga/100kgseed
	Sythane 40 WP	21	ga/100kgseed
	Dynasty Cst 125 FS	0.03	mga/seed
<b>2</b>	Apron XI 3 LS	7.5	ga/100kgseed
	Maxim 4 FS	2.5	ga/100kgseed
	Sythane 40 WP	21	ga/100kgseed
	Dynasty Cst 125 FS	0.03	mga/seed
	Cruiser 5 FS	0.375	mga/seed
<b>3</b>	Apron XI 3 LS	7.5	ga/100kgseed
	Maxim 4 FS	2.5	ga/100kgseed
	Sythane 40 WP	21	ga/100kgseed
	Dynasty Cst 125 FS	0.03	mga/seed
	A16115	0.49	mga/seed
	Cruiser 5 FS	0.035	mga/seed
<b>4</b>	Apron XI 3 LS	7.5	ga/100kgseed
	Maxim 4 FS	2.5	ga/100kgseed
	Sythane 40 WP	21	ga/100kgseed
	Dynasty Cst 125 FS	0.03	mga/seed
	A20703	0.525	mga/seed
<b>5</b>	STP15142	15	ga/100kgseed
	STP15199	10	ga/100kgseed
	STP17141	40	ga/100kgseed
	A17823	21	ga/100kgseed
	A16115	0.49	mga/seed
	Cruiser 5 FS	0.035	mga/seed
<b>6</b>	STP15142	15.0	ga/100kgseed
	A17823	21.0	ga/100kgseed
	STP15101	2.5	ga/100kgseed
	STP15199	10.0	ga/100kgseed
	STP16191	5.0	ga/100kgseed
	STP15142	15.0	ga/100kgseed
	STP15273	0.375	mga/seed
STP17217	0.375	mga/seed	
<b>7</b>	STP15142	15	ga/100kgseed
	A17823	21	ga/100kgseed
	STP15101	2.5	ga/100kgseed
	STP15199	10	ga/100kgseed
	STP16191	5	ga/100kgseed
	STP15142	15	ga/100kgseed
	STP15273	0.375	mga/seed
	STP17217	0.375	mga/seed
STP20282	0.424	mga/seed	
<b>8</b>	Apron XI 3 LS	7.5	ga/100kgseed
	Maxim 4 FS	2.5	ga/100kgseed
	Sythane 40 WP	21	ga/100kgseed
	Dynasty Cst 125 FS	0.03	mga/seed
	A16115	0.49	mga/seed
	Cruiser 5 FS	0.035	mga/seed
	Vydate L 2 SL	17	flozpr/a (Foliar broadcast on Jun 10)

<b>Test:</b> CT13-THP-SEED-TRT-4
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> PHY 367 WRF
<b>Field:</b> 66
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 9
<b>Harvest date:</b> Oct 18
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Broadcast with backpack</b>	<b>Nozzle type:</b> 8004VS	<b>Nozzle spacing:</b> 18	<b>PSI:</b> 18	<b>GPA:</b> 14.3
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**Field preparation:** Rip-strip till on May 8

Test name: **CT13-THP-SEED-TRT-4**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/02	Gramoxone	1 qt
5/09	Prowl H2O	1 pt
5/09	Cotoran 4L	1 qt
5/09	Acumen	1 pt
6/13	Roundup WeatherMax	1 qt
7/09	Buccaneer	22 oz

**Additional insecticides**

Date	Product	Rate/A
7/30	Hero	8 oz
8/08	Baythroid	10 oz
8/15	Brigade	6 oz
8/15	Belt	2 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/26	24-0-0	40 units
6/26	Boron	1 qt
6/26	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Growth regulators**

Date	Product	Rate/A
7/09	Pentia	6 oz
7/27	Pentia	12 oz

**Defoliation**

Date	Product	Rate/A
10/03	Finish	1 qt
10/03	Folex	10 oz
10/03	Super Boll	10 oz
10/03	Free Fall	3 oz

**Table 27. Thrips injury ratings<sup>1</sup>, CT13-THP-SEED-TRT-4. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Units	May 28	Jun 3	Jun 10
<b>1</b>	Apron Xl 3 LS	7.5	ga/100kgseed	2.75 a	4.50 a	4.38 a
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
<b>2</b>	Apron Xl 3 LS	7.5	ga/100kgseed	1.00 b	2.75 b	2.94 b
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
	Cruiser 5 FS	0.375	mga/seed			
<b>3</b>	Apron Xl 3 LS	7.5	ga/100kgseed	0.69 cd	2.63 bc	2.81 bc
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
	A16115	0.49	mga/seed			
	Cruiser 5 FS	0.035	mga/seed			
<b>4</b>	Apron Xl 3 LS	7.5	ga/100kgseed	0.94 b	2.38 c	3.25 b
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
	A20703	0.525	mga/seed			
<b>5</b>	STP15142	15	ga/100kgseed	0.69 cd	2.44 bc	1.63 de
	STP15199	10	ga/100kgseed			
	STP17141	40	ga/100kgseed			
	A17823	21	ga/100kgseed			
	A16115	0.49	mga/seed			
	Cruiser 5 FS	0.035	mga/seed			
<b>6</b>	STP15142	15.0	ga/100kgseed	0.81 bc	1.38 d	0.88 e
	A17823	21.0	ga/100kgseed			
	STP15101	2.5	ga/100kgseed			
	STP15199	10.0	ga/100kgseed			
	STP16191	5.0	ga/100kgseed			
	STP15142	15.0	ga/100kgseed			
	STP15273	0.375	mga/seed			
	STP17217	0.375	mga/seed			
<b>7</b>	STP15142	15	ga/100kgseed	0.56 d	1.69 d	0.94 e
	A17823	21	ga/100kgseed			
	STP15101	2.5	ga/100kgseed			
	STP15199	10	ga/100kgseed			
	STP16191	5	ga/100kgseed			
	STP15142	15	ga/100kgseed			
	STP15273	0.375	mga/seed			
	STP17217	0.375	mga/seed			
	STP20282	0.424	mga/seed			
	<b>8</b>	Apron Xl 3 LS	7.5			
Maxim 4 FS		2.5	ga/100kgseed			
Systhane 40 WP		21	ga/100kgseed			
Dynasty Cst 125 FS		0.03	mga/seed			
A16115		0.49	mga/seed			
Cruiser 5 FS		0.035	mga/seed			
Vydate L 2 SL		17	flozpr/a (Jun 10)			
LSD			0.23	0.34	0.92	

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

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

**Table 28. Mean number of thrips per 5 plants, CT13-THP-SEED-TRT-4. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Units	May 23		May 31		Jun 5		Jun 13	
				Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult	Imma- ture	Adult
1	Apron XI 3 LS	7.5	ga/100kgseed	0.75	5.50	43.00 a	2.75	64.25 a	2.25	82.25 de	8.50
	Maxim 4 FS	2.5	ga/100kgseed								
	Systhane 40 WP	21	ga/100kgseed								
	Dynasty Cst 125 FS	0.03	mga/seed								
2	Apron XI 3 LS	7.5	ga/100kgseed	1.00	3.50	6.75 b	7.50	24.50 b	13.00	119.75 b-d	13.50
	Maxim 4 FS	2.5	ga/100kgseed								
	Systhane 40 WP	21	ga/100kgseed								
	Dynasty Cst 125 FS	0.03	mga/seed								
	Cruiser 5 FS	0.375	mga/seed								
3	Apron XI 3 LS	7.5	ga/100kgseed	0.75	6.50	2.00 b	6.50	12.75 b	10.75	160.25 ab	8.00
	Maxim 4 FS	2.5	ga/100kgseed								
	Systhane 40 WP	21	ga/100kgseed								
	Dynasty Cst 125 FS	0.03	mga/seed								
	A16115	0.49	mga/seed								
	Cruiser 5 FS	0.035	mga/seed								
4	Apron XI 3 LS	7.5	ga/100kgseed	0.25	3.00	3.00 b	5.50	18.50 b	12.50	180.00 a	10.25
	Maxim 4 FS	2.5	ga/100kgseed								
	Systhane 40 WP	21	ga/100kgseed								
	Dynasty Cst 125 FS	0.03	mga/seed								
	A20703	0.525	mga/seed								
5	STP15142	15	ga/100kgseed	0.00	6.75	5.25 b	3.75	11.00 b	7.50	135.00 bc	10.75
	STP15199	10	ga/100kgseed								
	STP17141	40	ga/100kgseed								
	A17823	21	ga/100kgseed								
	A16115	0.49	mga/seed								
	Cruiser 5 FS	0.035	mga/seed								
6	STP15142	15.0	ga/100kgseed	1.25	4.00	5.00 b	7.00	14.75 b	15.25	73.00 e	7.75
	A17823	21.0	ga/100kgseed								
	STP15101	2.5	ga/100kgseed								
	STP15199	10.0	ga/100kgseed								
	STP16191	5.0	ga/100kgseed								
	STP15142	15.0	ga/100kgseed								
	STP15273	0.375	mga/seed								
	STP17217	0.375	mga/seed								
7	STP15142	15	ga/100kgseed	0.75	6.25	5.50 b	4.25	9.75 b	8.75	102.00 c-e	12.75
	A17823	21	ga/100kgseed								
	STP15101	2.5	ga/100kgseed								
	STP15199	10	ga/100kgseed								
	STP16191	5	ga/100kgseed								
	STP15142	15	ga/100kgseed								
	STP15273	0.375	mga/seed								
	STP17217	0.375	mga/seed								
	STP20282	0.424	mga/seed								
	8	Apron XI 3 LS	7.5								
Maxim 4 FS		2.5	ga/100kgseed								
Systhane 40 WP		21	ga/100kgseed								
Dynasty Cst 125 FS		0.03	mga/seed								
A16115		0.49	mga/seed								
Cruiser 5 FS		0.035	mga/seed								
Vydate L 2 SL		17	flozpr/a (Jun 10)								
LSD				NS	NS	10.16	NS	19.87	NS	42.79	NS

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

**Table 29. Mean number of mites and aphids per 5 plants, CT13-THP-SEED-TRT-4. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Units	Jun 5	
				Mites	Aphids
1	Apron XI 3 LS	7.5	ga/100kgseed	0.00	0.25
	Maxim 4 FS	2.5	ga/100kgseed		
	Sythane 40 WP	21	ga/100kgseed		
	Dynasty Cst 125 FS	0.03	mga/seed		
2	Apron XI 3 LS	7.5	ga/100kgseed	0.00	0.00
	Maxim 4 FS	2.5	ga/100kgseed		
	Sythane 40 WP	21	ga/100kgseed		
	Dynasty Cst 125 FS	0.03	mga/seed		
	Cruiser 5 FS	0.375	mga/seed		
3	Apron XI 3 LS	7.5	ga/100kgseed	0.00	0.00
	Maxim 4 FS	2.5	ga/100kgseed		
	Sythane 40 WP	21	ga/100kgseed		
	Dynasty Cst 125 FS	0.03	mga/seed		
	A16115	0.49	mga/seed		
Cruiser 5 FS	0.035	mga/seed			
4	Apron XI 3 LS	7.5	ga/100kgseed	0.00	0.00
	Maxim 4 FS	2.5	ga/100kgseed		
	Sythane 40 WP	21	ga/100kgseed		
	Dynasty Cst 125 FS	0.03	mga/seed		
	A20703	0.525	mga/seed		
5	STP15142	15	ga/100kgseed	0.00	0.00
	STP15199	10	ga/100kgseed		
	STP17141	40	ga/100kgseed		
	A17823	21	ga/100kgseed		
	A16115	0.49	mga/seed		
Cruiser 5 FS	0.035	mga/seed			
6	STP15142	15.0	ga/100kgseed	0.00	0.00
	A17823	21.0	ga/100kgseed		
	STP15101	2.5	ga/100kgseed		
	STP15199	10.0	ga/100kgseed		
	STP16191	5.0	ga/100kgseed		
	STP15142	15.0	ga/100kgseed		
	STP15273	0.375	mga/seed		
STP17217	0.375	mga/seed			
7	STP15142	15	ga/100kgseed	0.00	0.00
	A17823	21	ga/100kgseed		
	STP15101	2.5	ga/100kgseed		
	STP15199	10	ga/100kgseed		
	STP16191	5	ga/100kgseed		
	STP15142	15	ga/100kgseed		
	STP15273	0.375	mga/seed		
	STP17217	0.375	mga/seed		
STP20282	0.424	mga/seed			
8	Apron XI 3 LS	7.5	ga/100kgseed	0.00	0.00
	Maxim 4 FS	2.5	ga/100kgseed		
	Sythane 40 WP	21	ga/100kgseed		
	Dynasty Cst 125 FS	0.03	mga/seed		
	A16115	0.49	mga/seed		
	Cruiser 5 FS	0.035	mga/seed		
Vydate L 2 SL	17	flozpr/a (Jun 10)			
	LSD			NS	NS

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



**Table 30. Mean number of other arthropods from 10 sweeps of a single row on June 27, CT13-THP-SEED-TRT-4. Tidewater AREC, Suffolk, VA, 2013.**

<b>Treatment #</b>	<b>Ladybug</b>	<b>Japanese beetle</b>	<b>Click beetle</b>	<b>Bigeyed bug</b>	<b>Leafhopper</b>	<b>Ant</b>	<b>Parasitoid</b>	<b>Spider</b>	<b>Orius</b>	<b>Aphid</b>	<b>Brown stink bug</b>	<b>Fly</b>	<b>Beetle (species unknown)</b>	<b>Blister beetle</b>	<b>Nabid</b>
<b>1</b>	0.25	0.00	0.25	0.25	0.50	1.50	0.00	0.25	0.00	0.00	0.25	0.00	0.00	0.00	0.25
<b>2</b>	1.25	0.00	0.75	0.00	1.00	0.00	0.00	0.00	0.00	0.25	0.00	0.50	0.00	0.00	0.00
<b>3</b>	0.75	0.00	0.25	0.25	0.00	0.50	0.25	0.00	0.25	0.00	0.00	0.25	0.25	0.00	0.00
<b>4</b>	0.25	0.00	0.75	0.00	0.50	0.25	0.25	0.25	0.00	0.00	0.00	0.25	0.00	0.25	0.00
<b>5</b>	0.50	0.00	0.00	0.25	0.25	1.00	0.25	0.25	0.25	0.00	0.00	0.50	0.00	0.00	0.00
<b>6</b>	0.25	0.00	0.50	0.25	0.00	0.50	0.50	0.50	0.00	0.00	0.00	0.25	0.00	0.00	0.00
<b>7</b>	0.00	0.25	1.25	0.00	0.25	0.25	0.00	0.75	0.25	0.25	0.00	0.00	0.00	0.00	0.00
<b>8</b>	0.25	0.00	0.25	0.00	0.25	0.25	0.25	1.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00

**Table 31. Stand counts per 35 row ft<sup>1</sup>, CT13-THP-SEED-TRT-4. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Units	May 29	Jun 4	Jun 12
<b>1</b>	Apron Xl 3 LS	7.5	ga/100kgseed	94.3	91.8	90.5 bc
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
<b>2</b>	Apron Xl 3 LS	7.5	ga/100kgseed	90.3	90.5	90.3 bc
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
	Cruiser 5 FS	0.375	mga/seed			
<b>3</b>	Apron Xl 3 LS	7.5	ga/100kgseed	89.8	89.5	88.3 c
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
	A16115	0.49	mga/seed			
	Cruiser 5 FS	0.035	mga/seed			
<b>4</b>	Apron Xl 3 LS	7.5	ga/100kgseed	94.8	95.5	94.3 a-c
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
	A20703	0.525	mga/seed			
<b>5</b>	STP15142	15	ga/100kgseed	93.0	94.8	97.0 ab
	STP15199	10	ga/100kgseed			
	STP17141	40	ga/100kgseed			
	A17823	21	ga/100kgseed			
	A16115	0.49	mga/seed			
	Cruiser 5 FS	0.035	mga/seed			
<b>6</b>	STP15142	15.0	ga/100kgseed	98.8	99.0	100.5 a
	A17823	21.0	ga/100kgseed			
	STP15101	2.5	ga/100kgseed			
	STP15199	10.0	ga/100kgseed			
	STP16191	5.0	ga/100kgseed			
	STP15142	15.0	ga/100kgseed			
	STP15273	0.375	mga/seed			
	STP17217	0.375	mga/seed			
<b>7</b>	STP15142	15	ga/100kgseed	92.3	92.8	92.8 a-c
	A17823	21	ga/100kgseed			
	STP15101	2.5	ga/100kgseed			
	STP15199	10	ga/100kgseed			
	STP16191	5	ga/100kgseed			
	STP15142	15	ga/100kgseed			
	STP15273	0.375	mga/seed			
	STP17217	0.375	mga/seed			
	STP20282	0.424	mga/seed			
<b>8</b>	Apron Xl 3 LS	7.5	ga/100kgseed	98.3	99.3	100.8 a
	Maxim 4 FS	2.5	ga/100kgseed			
	Systhane 40 WP	21	ga/100kgseed			
	Dynasty Cst 125 FS	0.03	mga/seed			
	A16115	0.49	mga/seed			
	Cruiser 5 FS	0.035	mga/seed			
	Vydate L 2 SL	17	flozpr/a (Jun 10)			
LSD			NS	NS	8.53	

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

<sup>1</sup>Based on counting all living plants in row 1 of each plot.

**Table 32. Vigor<sup>1</sup> and phytotoxicity<sup>2</sup> ratings, and yield<sup>3</sup>, CT13-THP-SEED-TRT-4. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Units	Vigor		Phytotoxicity		Lint lb/acre
				May 31	Jun 13	May 31	Jun 13	
1	Apron XI 3 LS	7.5	ga/100kgseed	85.0 d	80.0 f	0.0	0.0	1566 e
	Maxim 4 FS	2.5	ga/100kgseed					
	Systhane 40 WP	21	ga/100kgseed					
	Dynasty Cst 125 FS	0.03	mga/seed					
2	Apron XI 3 LS	7.5	ga/100kgseed	91.3 bc	91.5 d	0.0	0.0	1835 a-c
	Maxim 4 FS	2.5	ga/100kgseed					
	Systhane 40 WP	21	ga/100kgseed					
	Dynasty Cst 125 FS	0.03	mga/seed					
	Cruiser 5 FS	0.375	mga/seed					
3	Apron XI 3 LS	7.5	ga/100kgseed	90.0 c	90.0 e	0.0	0.0	1777 b-d
	Maxim 4 FS	2.5	ga/100kgseed					
	Systhane 40 WP	21	ga/100kgseed					
	Dynasty Cst 125 FS	0.03	mga/seed					
	A16115	0.49	mga/seed					
	Cruiser 5 FS	0.035	mga/seed					
4	Apron XI 3 LS	7.5	ga/100kgseed	92.5 b	100.0 a	0.0	0.0	1761 b-d
	Maxim 4 FS	2.5	ga/100kgseed					
	Systhane 40 WP	21	ga/100kgseed					
	Dynasty Cst 125 FS	0.03	mga/seed					
	A20703	0.525	mga/seed					
5	STP15142	15	ga/100kgseed	90.0 c	94.5 bc	0.0	0.0	1739 c-e
	STP15199	10	ga/100kgseed					
	STP17141	40	ga/100kgseed					
	A17823	21	ga/100kgseed					
	A16115	0.49	mga/seed					
	Cruiser 5 FS	0.035	mga/seed					
6	STP15142	15.0	ga/100kgseed	91.3 bc	95.0 b	0.0	0.0	1943 ab
	A17823	21.0	ga/100kgseed					
	STP15101	2.5	ga/100kgseed					
	STP15199	10.0	ga/100kgseed					
	STP16191	5.0	ga/100kgseed					
	STP15142	15.0	ga/100kgseed					
	STP15273	0.375	mga/seed					
	STP17217	0.375	mga/seed					
7	STP15142	15	ga/100kgseed	100.0 a	93.5 c	0.0	0.0	1986 a
	A17823	21	ga/100kgseed					
	STP15101	2.5	ga/100kgseed					
	STP15199	10	ga/100kgseed					
	STP16191	5	ga/100kgseed					
	STP15142	15	ga/100kgseed					
	STP15273	0.375	mga/seed					
	STP17217	0.375	mga/seed					
	STP20282	0.424	mga/seed					
8	Apron XI 3 LS	7.5	ga/100kgseed	90.0 c	95.0 b	0.0	0.0	1634 de
	Maxim 4 FS	2.5	ga/100kgseed					
	Systhane 40 WP	21	ga/100kgseed					
	Dynasty Cst 125 FS	0.03	mga/seed					
	A16115	0.49	mga/seed					
	Cruiser 5 FS	0.035	mga/seed					
	Vydate L 2 SL	17	flozpr/a (Jun 10)					
LSD			2.41	1.20	NS	NS	184.5	

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

<sup>1</sup>Plant vigor rated on a scale of 0-100, where 100 = most vigorous.

<sup>2</sup>Phytotoxicity rated on a scale of 0-100, where 0 = no phytotoxicity and 100 = all plants exhibiting signs of phytotoxicity.

<sup>3</sup>Cotton was harvested on October 18. Gross yields were reduced by 58.83% to account for seed and trash.

**Test: CT13-THP-SEED-TRT-5, Evaluation of Aeris seed treatment plus multiple Admire Pro rates for thrips management in cotton**

#	Material(s)	Rate/acre
1	Aeris	0.75 mg ai/seed
2	Aeris + Admire Pro	0.75 mg ai/seed 3.5 oz/A (liquid IF)
3	Aeris + Admire Pro	0.75 mg ai/seed 5 oz/A (liquid IF)
4	Aeris + Admire Pro	0.75 mg ai/seed 7 oz/A (liquid IF)
5	Aeris + Admire Pro	0.75 mg ai/seed 9 oz/A (liquid IF)

<b>Test:</b> CT13-THP-SEED-TRT-5
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> PHY 367 WRF
<b>Field:</b> 5
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 15
<b>Harvest date:</b> Nov 4
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Liquid in-furrow</b>	<b>Nozzle type:</b> microtube	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 51	<b>GPA:</b> 5
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**Field preparation:** Rip-strip till on May 4

**Comments:** PHY 367 WRF insecticide-untreated guard rows and DP 1028 B2RF insecticide-untreated border rows.

Test name: **CT13-THP-SEED-TRT-5**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/02	Gramoxone	1 qt
5/08	Acumen	1 pt
5/08	Cotoran 4L	1 qt
5/27	Roundup WeatherMax	1 qt
6/13	Roundup WeatherMax	1 qt
6/27	Roundup WeatherMax	1 qt
7/09	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
7/30	Hero	10 oz
8/08	Baythroid	3 oz
8/15	Brigade	6 oz
8/15	Belt	2 oz

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/24	Pentia	10 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/27	24-0-0	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Defoliation**

Date	Product	Rate/A
10/18	Finish	1 qt
10/18	Folex	10 oz
10/18	Super Boll	10 oz
10/18	Free Fall	3 oz

**Table 33. Thrips injury ratings<sup>1</sup> and yield<sup>2</sup>, CT13-THP-SEED-TRT-5. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate/A	Thrips injury ratings			Lint lb/acre
			May 29	Jun 4	Jun 12	
1	Aeris	0.75 mg ai/seed	0.44	1.56 a	0.75 a	1784 bc
2	Aeris + Admire Pro	0.75 mg ai/seed 3.5 oz/A (liquid IF)	0.44	1.00 b	0.50 b	1908 ab
3	Aeris + Admire Pro	0.75 mg ai/seed 5 oz/A (liquid IF)	0.38	0.81 c	0.50 b	1752 c
4	Aeris + Admire Pro	0.75 mg ai/seed 7 oz/A (liquid IF)	0.31	0.50 d	0.44 b	1819 bc
5	Aeris + Admire Pro	0.75 mg ai/seed 9 oz/A (liquid IF)	0.44	0.50 d	0.25 c	1977 a
	LSD		NS	0.13	0.09	147.2

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

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

<sup>2</sup>Cotton was harvested on November 4. Gross yields were reduced by 60.97% to account for seed and trash.

**Test: CT13-THP-FOLIAR-1, Evaluation of selected foliar insecticides for thrips management in cotton**

#	Material(s)	Rate/acre	Application date
1	Requiem EC	2 pt/A	Jun 12
2	Requiem EC	4 pt/A	Jun 12
3	Orthene 97	4 oz/A	Jun 12
4	Untreated	---	

<b>Test:</b> CT13-THP-FOLIAR-1
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> DP 1028 B2RF
<b>Field:</b> 5
<b>Location:</b> Tidewater AREC

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 2 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 15
<b>Harvest date:</b> n/a
<b>Row feet harvested:</b> n/a

**Treatment application(s):**

<b>Broadcast with backpack</b>	<b>Nozzle type:</b> 8004VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 18	<b>GPA:</b> 14.3
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**Field preparation:** Rip-strip till on May 4

**Comments:** Pre-treatment counts from the untreated plots on Jun 11 indicated 26.00 immature and 10.75 adult thrips per 5 plants (n=4).

Test name: **CT13-THP-FOLIAR-1**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/02	Gramoxone	1 qt
5/08	Acumen	1 pt
5/08	Cotoran 4L	1 qt
5/27	Roundup WeatherMax	22 oz
6/13	Roundup WeatherMax	1 qt
6/27	Roundup WeatherMax	1 qt
7/09	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
7/30	Hero	10 oz
8/08	Baythroid	3 oz
8/15	Brigade	6 oz
8/15	Belt	2 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/27	24-0-0-3	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
7/10	24-0-0-3	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/24	Pentia	10 oz

**Defoliation**

Date	Product	Rate/A
10/18	Finish	1 qt
10/18	Folex	10 oz
10/18	Super Boll	10 oz
10/18	Free Fall	3 oz



**Table 34. Mean number of thrips per 5 plants, CT13-THP-FOLIAR-1. Tidewater AREC, Suffolk, VA, 2013. Treatments were broadcast on Jun 12.**

#	Material	Rate	Jun 14		Jun 17	
			Immature	Adult	Immature	Adult
1	Requiem EC	2 pt/A	21.50	4.50	23.25	1.00
2	Requiem EC	4 pt/A	19.00	2.25	21.25	1.75
3	Orthene 97	4 oz/A	16.50	3.25	28.75	4.00
4	Untreated	---	21.25	3.50	37.50	3.00
	LSD		NS	NS	NS	NS

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

**Test: CT13-BW-1-Variety, Value of bollworm sprays on double-gene insect-resistant cotton varieties**

#	Variety	Date(s) treated for “Bollworm Protected” plots
1	CG 3428 B2RF	Aug 14
2	CG 3787 B2RF	Aug 14
3	DG 2285 B2RF	Aug 14
4	DG 2530 B2RF	Aug 14
5	DG 2570 B2RF	Aug 14
6	DP 1028 B2RF	Aug 14
7	DP 1137 B2RF	Aug 14
8	DP 1321 B2RF	Aug 14
9	FM 1944 GLB2	Aug 14
10	NG 1511 B2RF	Aug 14
11	PHY 339 WRF	Aug 14
12	PHY 575 WRF	Aug 14
13	ST 5288 B2RF	Aug 14
14	DP 174 RF	Aug 8 and Aug 14
15	SSG UA 222	Aug 8 and Aug 14

Each variety was treated with insecticides targeting bollworm, or untreated. In the treated plots, double-gene insect resistant varieties (treatments 1-13) received one spray (Brigade @ 6.4 oz/A plus Belt @ 2 oz/A) at 6 days after egg threshold. Conventional varieties (treatments 14-15) received two sprays for bollworm (Brigade @ 6.4 oz/A at egg threshold on Aug 8, and then at 6 days after egg threshold received Brigade @ 6.4 oz/A plus Belt @ 2 oz/A). All seed was insecticide-treated with imidacloprid or thiamethoxam.

<b>Test:</b> CT13-BW-1-Variety
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Varieties:</b> See treatment list
<b>Field:</b> 63A
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> Split-plot
<b>Plot size:</b> 2 rows x 40’ plus 2 guard rows
<b>Row spacing:</b> 36”
<b>Planting date:</b> May 17
<b>Harvest date:</b> Nov 13
<b>Row feet harvested:</b> 80

**Treatment application(s):**

<b>Broadcast using Spider Spray Trac</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18”	<b>PSI:</b> 30	<b>GPA:</b> 16.5
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**Field preparation:** Rip-strip till on May 15

**Comments:** PHY 367 WRF (with Avicta) guard rows.

Test name: **CT13-BW-1-Variety**

**Herbicides**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
4/02	2,4-D Amine	1.5 pt
4/02	Roundup	22 oz
5/17	Touchdown	1 qt
5/18	Cotoran 4L	1 qt
5/18	Acumen	1 pt
6/27	Select Max	12 oz

**Additional insecticides**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
6/04	Orthene 97	6 oz

**Growth regulators**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
7/08	Pentia	6 oz
7/24	Pentia	12 oz

**Lime & fertilizer**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
4/03	6-16-39	330 lb
6/27	24-0-0	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
6/27	Induce	1 qt**
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*

\*per 150 gallons of water  
 \*\*per 100 gallons of water

**Defoliation**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
10/21	Finish	1 qt
10/21	Folex	10 oz
10/21	Super Boll	10 oz
10/21	Free Fall	3 oz

**Table 35. Stand counts<sup>1</sup>, percent external bollworm damage<sup>2</sup>, and yield<sup>3</sup>, CT13-BW1. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Plants/40 row ft (Jun 24)		External damage (Aug 21)		External damage (Aug 29)		External damage (Sep 3)		Lint lb/acre	
		Protected	Not pro- tected	Protected	Not pro- tected	Protected	Not pro- tected	Protected	Not pro- tected	Protected	Not pro- tected
1	CG 3428 B2RF	93.6 f	93.8 d	0.00	2.00 a	1.00	0.00 c	0.00	1.00	1735 g	1657 g
2	CG 3787 B2RF	114.9 a-c	110.0 a-c	0.00	0.00 b	0.00	0.00 c	0.00	0.00	2025 a-e	1951 a-c
3	DG 2285 B2RF	111.9 a-c	109.0 bc	0.00	0.00 b	0.00	1.00 c	0.00	2.00	2052 a-c	1903 b-d
4	DG 2530 B2RF	95.8 ef	101.4 cd	0.00	0.00 b	0.00	0.00 c	0.00	0.00	1827 fg	1716 fg
5	DG 2570 B2RF	118.9 a	117.3 ab	0.00	0.00 b	2.00	1.00 c	0.00	1.00	1961 b-f	1884 b-e
6	DP 1028 B2RF	107.8 cd	108.8 bc	0.00	0.00 b	1.00	0.00 c	0.00	0.00	1916 c-f	1768 d-g
7	DP 1137 B2RF	103.3 de	109.8 a-c	0.00	0.00 b	0.00	0.00 c	0.00	0.00	1863 d-g	1804 c-g
8	DP 1321 B2RF	109.5 cd	114.3 ab	0.00	0.00 b	0.00	0.00 c	0.00	2.00	2096 ab	2014 ab
9	FM 1944 GLB2	110.3 b-d	110.9 ab	0.00	0.00 b	0.00	2.00 bc	0.00	1.00	2018 a-e	1899 b-d
10	NG 1511 B2RF	109.6 cd	109.9 a-c	0.00	0.00 b	1.00	0.00 c	2.00	1.00	2112 ab	2067 a
11	PHY 339 WRF	118.6 a	110.9 ab	0.00	0.00 b	0.00	1.00 c	0.00	2.00	2029 a-d	1839 c-f
12	PHY 575 WRF	117.5 ab	111.0 ab	0.00	0.00 b	1.00	0.00 c	0.00	0.00	1850 e-g	1724 fg
13	ST 5288 B2RF	112.0 a-c	111.1 ab	0.00	0.00 b	0.00	1.00 c	0.00	0.00	1907 c-g	1828 c-f
14	DP 174 RF	114.4 a-c	118.9 a	0.00	0.00 b	1.00	5.00 ab	0.00	4.00	2141 a	1813 c-g
15	SSG UA 222	111.5 a-c	113.4 ab	0.00	0.00 b	0.00	6.00 a	0.00	3.00	1955 b-f	1740 e-g
	LSD	7.55	9.33	NS	0.85	NS	3.24	NS	NS	178.6	157.8

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot. Note that bollworm insecticides had not been applied by this sampling date.

<sup>2</sup>External bollworm damage based on a sample of 25 bolls per plot.

<sup>3</sup>Cotton was harvested on November 13. Gross yields were reduced for each plot (57.6-63.6%) to account for seed and trash.

<b>Treatment means (stand, % bollworm damage, yield)</b>	<b>Stand</b>	<b>Aug 21</b>	<b>Aug 29</b>	<b>Sep 3</b>	<b>Yield</b>
1. With insecticide.....	110.0	0.00	0.47	0.13	1966 a
2. Without insecticide.....	110.0	0.13	1.13	1.13	1838 b
LSD .....	NS	NS	NS	NS	53.4

<b>Variety mean (stand, % bollworm damage, yield)</b>	<b>Stand</b>	<b>Aug 21</b>	<b>Aug 29</b>	<b>Sep 3</b>	<b>Yield</b>
1. CG 3428 B2RF.....	93.7 j	1.00	0.50	0.50	1696 h
2. CG 3787 B2RF.....	112.4 de	0.00	0.00	0.00	1988 a-d
3. DG 2285 B2RF.....	110.4 e-g	0.00	0.50	1.00	1978 a-e
4. DG 2530 B2RF.....	98.6 i	0.00	0.00	0.00	1771 gh
5. DG 2570 B2RF.....	118.1 a	0.00	1.50	0.50	1923 b-f
6. DP 1028 B2RF.....	108.3 gh	0.00	0.50	0.00	1842 d-h
7. DP 1137 B2RF.....	106.5 h	0.00	0.00	0.00	1834 e-h
8. DP 1321 B2RF.....	111.9 ef	0.00	0.00	1.00	2061 ab
9. FM 1944 GLB2.....	110.6 ef	0.00	1.00	0.50	1958 a-e
10. NG 1511 B2RF.....	109.8 fg	0.00	0.50	1.50	2089 a
11. PHY 339 WRF.....	114.8 bc	0.00	0.50	1.00	1934 b-e
12. PHY 575 WRF.....	114.3 cd	0.00	0.50	0.00	1787 f-h
13. ST 5288 B2RF.....	111.6 ef	0.00	0.50	0.00	1868 c-g
14. DP 174 RF.....	116.6 ab	0.00	3.00	2.00	2000 a-c
15. SSG UA 222.....	112.4 de	0.00	3.00	1.50	1847 d-g
LSD .....	2.30	---	---	NS	146.4

<b>Split plot analysis (stand, % bollworm damage, yield)</b>	<b>Stand</b>	<b>Aug 21</b>	<b>Aug 29</b>	<b>Sep 3</b>	<b>Yield</b>
Treatment .....	0.8615	0.1817	0.0796	0.0723	0.0054
Variety.....	<0.0001	0.0009	0.0164	0.2348	<0.0001
Treatment x variety .....	0.4430	0.0009	0.0099	0.2028	0.7952

**Test: CT13-BW-2, Value of bollworm sprays on conventional cotton varieties**

#	Variety	Date(s) treated for “Bollworm Protected” plots
1	SSG HQ 110 CT	Aug 8 and Aug 14
2	SSG HQ 210 CT	Aug 8 and Aug 14
3	SSG CT Linwood	Aug 8 and Aug 14
4	SSG UA 222	Aug 8 and Aug 14
5	Americot UA 48	Aug 8 and Aug 14

Each variety was treated with insecticides targeting bollworm, or untreated. In the treated plots, conventional varieties (treatments 1-5) received two sprays for bollworm (Brigade @ 6.4 oz/A at egg threshold on Aug 8, and then at 6 days after egg threshold received Brigade @ 6.4 oz/A plus Belt @ 2 oz/A). All seed was insecticide-treated with imidacloprid or thiamethoxam.

<b>Test:</b> CT13-BW-2
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Varieties:</b> See treatment list
<b>Field:</b> 63A
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> Split-plot
<b>Plot size:</b> 2 rows x 40’ plus 2 guard rows
<b>Row spacing:</b> 36”
<b>Planting date:</b> May 17
<b>Harvest date:</b> Nov 12
<b>Row feet harvested:</b> 80

**Treatment application(s):**

<b>Broadcast using Spider Spray Trac</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18”	<b>PSI:</b> 30	<b>GPA:</b> 16.5
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**Field preparation:** Rip-strip till on May 15

**Comments:** PHY 367 WRF (with Avicta) guard rows.

Test name: CT13-BW-2

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/17	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/17	Touchdown	1 qt
5/18	Cotoran 4L	1 qt
5/18	Acumen	1 pt
6/27	Select Max	12 oz

**Additional insecticides**

Date	Product	Rate/A
6/04	Orthene 97	6 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/27	24-0-0	40 units
6/27	Boron	1 qt
6/27	Agrotain	1.5 qt*
6/27	Induce	1 qt**
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water **per 100 gallons of water		

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/24	Pentia	12 oz

**Defoliation**

Date	Product	Rate/A
10/21	Finish	1 qt
10/21	Folex	10 oz
10/21	Super Boll	10 oz
10/21	Free Fall	3 oz

**Table 36. Stand counts<sup>1</sup>, percent external bollworm damage<sup>2</sup>, and yield<sup>3</sup>, CT13-BW2. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Plants/40 row ft (Jun 24)		External damage (Aug 21)		External damage (Aug 29)		External damage (Sep 3)		Lint lb/acre	
		Protected	Not pro- tected	Protected	Not pro- tected	Protected	Not pro- tected	Protected	Not pro- tected	Protected	Not pro- tected
1	SSG HQ 110 CT	96.4 b	98.5 cd	0.00	0.00	0.00	4.00 b	0.00	3.00	1905	1678 a
2	SSG HQ 210 CT	109.8 a	102.0 bc	0.00	1.00	1.00	11.00 a	0.00	1.00	1789	1519 b
3	SSG CT Linwood	94.0 b	91.5 d	1.00	1.00	3.00	6.00 ab	0.00	6.00	1986	1652 ab
4	SSG UA 222	109.4 a	113.9 a	0.00	0.00	0.00	4.00 b	1.00	4.00	1967	1667 ab
5	Americot UA 48	112.8 a	108.1 ab	0.00	0.00	1.00	1.00 b	1.00	4.00	1916	1792 a
	LSD	7.80	8.65	NS	NS	NS	5.93	NS	NS	NS	158.1

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot. Note that bollworm insecticides had not been applied by this sampling date.

<sup>2</sup>External bollworm damage based on a sample of 25 bolls per plot.

<sup>3</sup>Cotton was harvested on November 12. Gross yields were reduced for each plot (59.2-65.1%) to account for seed and trash.



<b>Treatment means (stand, % bollworm damage, yield)</b>	<b>Stand</b>	<b>Aug 21</b>	<b>Aug 29</b>	<b>Sep 3</b>	<b>Yield</b>
1. With insecticide.....	104.5	0.20	1.00	0.40 b	1912 a
2. Without insecticide.....	102.8	0.40	5.20	3.60 a	1662 b
LSD .....	NS	NS	--	2.08	138.7

<b>Variety mean (stand, % bollworm damage, yield)</b>	<b>Stand</b>	<b>Aug 21</b>	<b>Aug 29</b>	<b>Sep 3</b>	<b>Yield</b>
1. SSG HQ 110 CT.....	97.4 bc	0.00	2.00	1.50	1791 a
2. SSG HQ 210 CT.....	105.9 ab	0.50	6.00	0.50	1654 a
3. SSG CT Linwood.....	92.8 c	1.00	4.50	3.00	1819 a
4. SSG UA 222.....	111.6 a	0.00	2.00	2.50	1817 a
5. Americot UA 48.....	110.4 a	0.00	1.00	2.50	1854 a
LSD .....	9.21	NS	--	NS	219.4

<b>Split plot analysis (stand, % bollworm damage, yield)</b>	<b>Stand</b>	<b>Aug 21</b>	<b>Aug 29</b>	<b>Sep 3</b>	<b>Yield</b>
Treatment .....	0.4337	0.3910	0.0087	0.0163	0.0105
Variety.....	<0.0001	0.3118	0.0178	0.4745	0.0239
Treatment x variety .....	0.2093	0.8646	0.0470	0.5821	0.4614

**Test: CT13-BW-3GeneBt, Efficacy of 3-gene Bt cotton against lepidopteran pests**

#	Variety code
1	WS1
2	WS2
3	WS3
4	NonBt1

All seed treated with Cruiser and Dynasty.

<b>Test:</b> CT13-BW-3GeneBt
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Varieties:</b> see treatment list
<b>Field:</b> 62B
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 40'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 28
<b>Harvest date:</b> n/a
<b>Row feet harvested:</b> n/a

**Field preparation:** Rip-strip till on May 28

**Comments:** Crop was mowed (destroyed) prior to boll opening.

Test name: **CT13-BW-3GeneBt**

**Herbicides**

Date	Product	Rate/A
4/02	2,4-D Amine	1.5 pt
4/02	Roundup	22 oz
5/16	Touchdown	1 qt
5/30	Cotoran 4L	1 qt
5/30	Acumen	1 pt
6/06	Buccaneer	22 oz
6/21	Roundup WeatherMax	22 oz
7/09	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
6/06	Orthene 97	8 oz
6/21	Radiant	5 oz

**Lime & fertilizer**

Date	Product	Rate/A
3/22	8-15-36	300 lb
6/26	24-0-0	40 units
6/26	Boron	1 qt
6/26	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Growth regulators**

Date	Product	Rate/A
7/09	Pentia	6 oz
7/27	Pentia	14 oz
8/09	Pentia	1 pt

**Defoliation**

Date	Product	Rate/A
	(none)	

**Table 37. Stand counts per 40 row ft<sup>1</sup>, CT13-BW-3GeneBt. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety code	Jun 21
1	WS1	125.3
2	WS2	127.1
3	WS3	130.4
4	NonBt1	127.9
	LSD	NS

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

<sup>1</sup>*Based on counting all living plants per row (two 40-ft rows were sampled per plot). Planting date was May 28.*

**Table 38. Percent of squares and bolls damaged by lep larvae, CT13-BW-3GeneBt. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety code	% damaged squares			% damaged bolls				
		Aug 13 <sup>1</sup>	Aug 20 <sup>2</sup>	Aug 27 <sup>2</sup>	Aug 13 <sup>1</sup>	Aug 20 <sup>2</sup>	Aug 27 <sup>2</sup>	Sep 3 <sup>2</sup>	Sep 9 <sup>2</sup>
1	WS1	1.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
2	WS2	0.50	0.00	0.00	0.00	1.00	0.00 b	0.00	0.00
3	WS3	1.00	0.00	0.00	0.00	0.00	1.00 b	0.00	0.00
4	NonBt1	2.00	0.00	1.00	0.00	1.00	5.00 a	0.00	0.00
	LSD	NS	NS	NS	NS	NS	3.20	NS	NS

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

<sup>1</sup>Based on sampling 50 squares or bolls per plot.

<sup>2</sup>Based on sampling 25 squares or bolls per plot.

**Table 39. Number of lep larvae associated with squares and bolls, CT13-BW-3GeneBt. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety code	Lep larvae on 50 squares	Lep larvae on 25 squares		Lep larvae on 50 bolls	Lep larvae on 25 bolls			
		Aug 13 <sup>1</sup>	Aug 20 <sup>2</sup>	Aug 27 <sup>2</sup>	Aug 13 <sup>1</sup>	Aug 20 <sup>2</sup>	Aug 27 <sup>2</sup>	Sep 3 <sup>2</sup>	Sep 9 <sup>2</sup>
1	WS1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	WS2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	WS3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	NonBt1	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	LSD	NS	NS	NS	NS	NS	NS	NS	NS

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

<sup>1</sup>Based on sampling 50 squares or bolls per plot.

<sup>2</sup>Based on sampling 25 squares or bolls per plot.

**Test: CT13-BW-4-TWINLINK, Agronomic effects and insecticidal efficacy of TwinLink Plus insect resistant (IR) cotton**

#	Seed lot	Trait package
1	GL9250	GlyTol/LL
2	ST4946GLB2	GlyTol/LL/B2
3	66G0900	Experimental
4	66G1900	TwinLink
5	66G190V	TwinLink + Vip3a
6	66G090V	Experimental
7	11G0900	Experimental
8	11G1900	TwinLink
9	11G190V	TwinLink + Vip3a
10	11G090V	Experimental

<b>Test:</b> CT13-BW-4-TWINLINK
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Varieties:</b> see treatment list
<b>Field:</b> 62B
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 40'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 28
<b>Harvest date:</b> n/a
<b>Row feet harvested:</b> n/a

**Field preparation:** Rip-strip till on May 28

**Comments:** Crop was mowed (destroyed) prior to boll opening.

Test name: **CT13-BW-4-TWINLINK**

**Herbicides**

Date	Product	Rate/A
4/02	2,4-D Amine	1.5 pt
4/02	Roundup	22 oz
5/16	Touchdown	1 qt
5/30	Cotoran 4L	1 qt
5/30	Acumen	1 pt
6/06	Buccaneer	22 oz
6/21	Roundup WeatherMax	22 oz
7/09	Buccaneer	22 oz
7/27	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
6/06	Orthene 97	8 oz
6/21	Radiant	5 oz

**Lime & fertilizer**

Date	Product	Rate/A
3/22	8-15-36	300 lb
6/26	24-0-0	40 units
6/26	Boron	1 qt
6/26	Agrotain	1.5 qt*
7/10	24-0-0	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gallons of water		

**Growth regulators**

Date	Product	Rate/A
7/09	Pentia	6 oz
7/27	Pentia	14 oz
8/09	Pentia	1 pt

**Defoliation**

Date	Product	Rate/A
	(none)	

**Table 40. Stand counts per 40 row ft<sup>1</sup>, CT13-BW-4-TWINLINK. Tidewater AREC, Suffolk, VA, 2013.**

#	Seed lot	Trait package	Jun 21
1	GL9250	GlyTol/LL	115.8 d
2	ST4946GLB2	GlyTol/LL/B2	118.0 d
3	66G0900	Experimental	129.3 bc
4	66G1900	TwinLink	131.4 ab
5	66G190V	TwinLink + Vip3a	132.8 ab
6	66G090V	Experimental	131.8 ab
7	11G0900	Experimental	134.1 a
8	11G1900	TwinLink	125.8 c
9	11G190V	TwinLink + Vip3a	119.3 d
10	11G090V	Experimental	132.8 ab
	LSD		4.42

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

<sup>1</sup>*Based on counting all living plants per row (two 40-ft rows were sampled per plot). Planting date was May 28.*



**Table 41. Percent of squares and bolls damaged by lep larvae, CT13-BW-4-TWINLINK. Tidewater AREC, Suffolk, VA, 2013.**

#	Seed lot	Trait package	% damaged squares			% damaged bolls				
			Aug 13 <sup>1</sup>	Aug 20 <sup>2</sup>	Aug 27 <sup>2</sup>	Aug 13 <sup>1</sup>	Aug 20 <sup>2</sup>	Aug 27 <sup>2</sup>	Sep 3 <sup>2</sup>	Sep 9 <sup>2</sup>
1	GL9250	GlyTol/LL	1.50	0.00	1.00	0.00 b	1.00	5.00 a	1.00	0.00
2	ST4946GLB2	GlyTol/LL/B2	0.50	0.00	0.00	0.00 b	0.00	0.00 b	0.00	1.00
3	66G0900	Experimental	0.50	0.00	0.00	0.00 b	0.00	1.00 b	0.00	1.00
4	66G1900	TwinLink	1.50	1.00	0.00	1.50 a	0.00	1.00 b	0.00	1.00
5	66G190V	TwinLink + Vip3a	0.50	0.00	1.00	0.00 b	0.00	0.00 b	1.00	0.00
6	66G090V	Experimental	1.50	1.00	0.00	0.50 ab	0.00	0.00 b	0.00	0.00
7	11G0900	Experimental	0.50	0.00	0.00	0.00 b	1.00	0.00 b	1.00	0.00
8	11G1900	TwinLink	0.50	0.00	0.00	0.50 ab	1.00	0.00 b	0.00	0.00
9	11G190V	TwinLink + Vip3a	1.50	1.00	0.00	1.00 ab	1.00	0.00 b	0.00	0.00
10	11G090V	Experimental	0.00	1.00	0.00	1.00 ab	0.00	1.00 b	0.00	0.00
	LSD		NS	NS	NS	1.03	NS	2.83	NS	NS

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

<sup>1</sup>Based on sampling 50 squares or bolls per plot.

<sup>2</sup>Based on sampling 25 squares or bolls per plot.

**Table 42. Number of lep larvae associated with squares and bolls, CT13-BW-4-TWINLINK. Tidewater AREC, Suffolk, VA, 2013.**

#	Seed lot	Trait package	Lep lar- vae on 50 squares	Lep larvae on 25 squares		Lep lar- vae on 50 bolls	Lep larvae on 25 bolls			
			Aug 13 <sup>1</sup>	Aug 20 <sup>2</sup>	Aug 27 <sup>2</sup>	Aug 13 <sup>1</sup>	Aug 20 <sup>2</sup>	Aug 27 <sup>2</sup>	Sep 3 <sup>2</sup>	Sep 9 <sup>2</sup>
1	GL9250	GlyTol/LL	0.00	0.00	0.00	0.00	0.25	0.50 a	0.00	0.00
2	ST4946GLB2	GlyTol/LL/B2	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
3	66G0900	Experimental	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
4	66G1900	TwinLink	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
5	66G190V	TwinLink + Vip3a	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
6	66G090V	Experimental	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
7	11G0900	Experimental	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
8	11G1900	TwinLink	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
9	11G190V	TwinLink + Vip3a	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
10	11G090V	Experimental	0.00	0.00	0.00	0.00	0.00	0.00 b	0.00	0.00
	LSD		NS	NS	NS	NS	NS	0.26	NS	NS

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

<sup>1</sup>Based on sampling 50 squares or bolls per plot.

<sup>2</sup>Based on sampling 25 squares or bolls per plot.

**Test: CT13-LEP-FOLIAR, Evaluation of selected insecticides for lepidopteran pest management in cotton**

#	Material(s)	Rate	Application date(s)
1	Belt 4SC + Brigade 2EC	3 oz/A (egg threshold) 2.6 oz/A (egg threshold)	Aug 8
2	Besiege	12.5 oz/A (egg threshold)	Aug 8
3	Prevathon + Asana XL	27 oz/A (egg threshold) 8 oz/A (egg threshold)	Aug 8
4	Blackhawk + Brigade 2EC	3.2 oz/A (egg threshold) 2.6 oz/A (egg threshold)	Aug 8
5	DiPel ES (Kur.) + Brigade 2EC	16 oz/A (egg threshold) 2.6 oz/A (egg threshold)	Aug 8
6	Steward 1.25EC + Brigade 2EC	9.2 oz/A (egg threshold) 2.6 oz/A (egg threshold)	Aug 8
7	Karate Z	1.6 oz/A (egg threshold) 2.56 oz/A (6 d after egg threshold)	Aug 8 Aug 14
8	Hero	5.2 oz/A (egg threshold) 5.2 oz/A (6 d after egg threshold)	Aug 8 Aug 14
9	Brigade 2EC	2.6 oz/A (egg threshold) 6.4 oz/A (6 d after egg threshold)	Aug 8 Aug 14
10	Untreated	---	

<b>Test:</b> CT13-LEP-FOLIAR
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> DP 174 RF
<b>Field:</b> 48
<b>Location:</b> Tidewater AREC

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 15
<b>Harvest date:</b> Nov 12
<b>Row feet harvested:</b> 70

**Treatment application(s):**

Broadcast with Spider Spray Trac	Nozzle type: 8002VS	Nozzle spacing: 18"	PSI: 30	GPA: 16.5
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**Field preparation:** No-till

Test name: **CT13-LEP-FOLIAR**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
3/30	Roundup WeatherMax	22 oz
4/27	Buccaneer	1 qt
5/29	Roundup WeatherMax	22 oz
6/06	Buccaneer	22 oz
6/21	Roundup WeatherMax	22 oz
7/17	Durango	1 qt

**Additional insecticides**

Date	Product	Rate/A
6/06	Orthene 97	8 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/26	24-0-0-3	40 units
6/26	Boron	1 qt
7/10	24-0-0-3	40 units
7/10	Boron	1 qt

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/17	Pentia	1 pt

**Defoliation**

Date	Product	Rate/A
10/18	Finish	1 qt
10/18	Folex	10 oz
10/18	Super Boll	10 oz
10/18	Free Fall	3 oz

**Table 43. Percent of bolls damaged by lep larvae and yield, CT13-LEP-FOLIAR. Tidewater AREC, Suffolk, VA, 2013. Egg threshold treatments were applied on Aug. 8.**

#	Material(s)	Rate and timing	% damaged bolls <sup>1</sup>			Lint lb/acre <sup>2</sup>
			Aug 21	Aug 29	Sep 3	
1	Belt 4SC + Brigade 2EC	3 oz/A (egg threshold) 2.6 oz/A (egg threshold)	0.00	0.00 c	0.00	1899 a
2	Besiege	12.5 oz/A (egg threshold)	1.00	0.00 c	1.00	1835 ab
3	Prevathon + Asana XL	27 oz/A (egg threshold) 8 oz/A (egg threshold)	1.00	0.00 c	0.00	1857 ab
4	Blackhawk + Brigade 2EC	3.2 oz/A (egg threshold) 2.6 oz/A (egg threshold)	2.00	1.00 bc	0.00	1692 cd
5	DiPel ES (Kur.) + Brigade 2EC	16 oz/A (egg threshold) 2.6 oz/A (egg threshold)	0.00	1.00 bc	0.00	1733 bc
6	Steward 1.25EC + Brigade 2EC	9.2 oz/A (egg threshold) 2.6 oz/A (egg threshold)	1.00	1.00 bc	1.00	1724 bc
7	Karate Z	1.6 oz/A (egg threshold) 2.56 oz/A (6 d after egg threshold)	0.00	0.00 c	0.00	1822 a-c
8	Hero	5.2 oz/A (egg threshold) 5.2 oz/A (6 d after egg threshold)	0.00	0.00 c	0.00	1805 a-c
9	Brigade 2EC	2.6 oz/A (egg threshold) 6.4 oz/A (6 d after egg threshold)	0.00	2.00 b	1.00	1823 a-c
10	Untreated	---	0.00	4.00 a	0.00	1577 d
	LSD		NS	1.93	NS	138.3

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

<sup>1</sup>Based on sampling 25 bolls per plot.

<sup>2</sup>Cotton was harvested on November 12. Gross yields were reduced by 60.2% to account for seed and trash.

**Test: CT13-SBUG-1, Evaluation of selected insecticides for stink bug management in cotton**

#	Material(s)*	Rate	Application date(s)
1	CMT4586 Methylated seed oil UAN 28%	8 oz/A 0.25% v/v 2.5% v/v	Jul 29, Aug 5, and Aug 12
2	Belay 2.13SC Non-ionic surfactant	4 oz/A 0.25% v/v	Jul 29, Aug 5, and Aug 12
3	Belay 2.13SC Brigade 2EC Non-ionic surfactant	3 oz/A 3.2 oz/A 0.25% v/v	Jul 29, Aug 5, and Aug 12
4	Bidrin 8SL Non-ionic surfactant	6 oz/A 0.25% v/v	Jul 29, Aug 5, and Aug 12
5	Endigo ZC Non-ionic surfactant	5 oz/A 0.25% v/v	Jul 29, Aug 5, and Aug 12
6	Brigade 2EC Non-ionic surfactant	5.6 oz/a 0.25% v/v	Jul 29, Aug 5, and Aug 12
7	Untreated	---	

<b>Test:</b> CT13-SBUG-1
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> DP 0912 B2RF
<b>Field:</b> 27
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 15
<b>Harvest date:</b> Oct 25
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Broadcast on July 29 and August 5 with Spider Spray Trac</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 30	<b>GPA:</b> 16.5
<b>Broadcast on August 12 with Spider Spray Trac</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 38	<b>GPA:</b> 19.88

**Field preparation:** Rip-strip till on May 14

Test name: CT13-SBUG-1

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/13	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
6/05	Volunteer	12 oz
6/24	Roundup WeatherMax	22 oz

**Additional insecticides**

Date	Product	Rate/A
6/05	Orthene 97	8 oz

**Lime & fertilizer**

Date	Product	Rate/A
2/06	Lime	1000 lb
4/03	6-16-39	330 lb
4/13	Backdrop	1 gal*
6/26	24-0-0-3	40 units
6/26	Boron	1 qt
6/26	Agrotain	1.5 qt*
7/10	24-0-0-3	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gal water		

**Growth regulators**

Date	Product	Rate/A
7/05	Pentia	4 oz
7/17	Pentia	12 oz

**Defoliation**

Date	Product	Rate/A
10/03	Finish	1 qt
10/03	Folex	10 oz
10/03	Super Boll	10 oz
10/03	Free Fall	3 oz

**Table 44. Percent internal boll damage and yield, CT13-SBUG-1. Tidewater AREC, Suffolk, VA, 2013. Treatments were applied on July 29, August 5, and again on August 12.**

#	Material(s)	Rate/A	Percent internal boll damage <sup>1</sup>				Lint lb/acre <sup>2</sup>
			Aug 5	Aug 13	Aug 19	Aug 27	
1	CMT4586 Methylated seed oil UAN 28%	8 oz/A 0.25% v/v 2.5% v/v	25.0	35.0 ab	12.50 b	47.50 ab	1796 ab
2	Belay 2.13SC Non-ionic surfactant	4 oz/A 0.25% v/v	22.5	27.5 a-c	22.50 b	45.00 ab	1650 b
3	Belay 2.13SC Brigade 2EC Non-ionic surfactant	3 oz/A 3.2 oz/A 0.25% v/v	10.0	5.0 c	2.50 b	22.50 c	1904 a
4	Bidrin 8SL Non-ionic surfactant	6 oz/A 0.25% v/v	20.0	17.5 bc	2.50 b	20.00 c	1742 ab
5	Endigo ZC Non-ionic surfactant	5 oz/A 0.25% v/v	20.0	30.0 a-c	12.50 b	32.50 bc	1673 b
6	Brigade 2EC Non-ionic surfactant	5.6 oz/a 0.25% v/v	20.0	20.0 bc	7.50 b	17.50 c	1844 ab
7	Untreated	---	42.5	55.0 a	52.50 a	57.50 a	1346 c
	LSD		NS	27.9	20.42	21.44	229.6

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

<sup>1</sup>Based on sampling ten 0.9-1.1-inch-diameter bolls per plot.

<sup>2</sup>Cotton was harvested on October 25. Gross yields were reduced by 57.47% to account for seed and trash.



**Test: CT13-SBUG-2, Evaluation of selected insecticides for stink bug management in cotton**

#	Material(s)*	Rate	Application date(s)
1	Untreated	---	
2	Bidrin 8	8 oz/A	Jul 29, Aug 5, and Aug 12
3	Bidrin 8	6.4 oz/A	Jul 29, Aug 5, and Aug 12
4	Bidrin XP11	12.8 oz/A	Jul 29, Aug 5, and Aug 12
5	Belay 2.13SC NIS	4 oz/A 0.25% v/v	Jul 29, Aug 5, and Aug 12
6	Endigo ZC	6 oz/A	Jul 29, Aug 5, and Aug 12
7	Brigade 2EC	6.4 oz/A	Jul 29, Aug 5, and Aug 12
8	Karate Z	2.56 oz/A	Jul 29, Aug 5, and Aug 12

<b>Test:</b> CT13-SBUG-2
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> PHY 499 WRF
<b>Field:</b> 35
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 10
<b>Harvest date:</b> Nov 4
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Broadcast on July 29 and August 5 with Spider Spray Trac</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 30	<b>GPA:</b> 16.5
<b>Broadcast on August 12 with Spider Spray Trac</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 38	<b>GPA:</b> 19.88

**Field preparation:** Rip-strip till on May 9

Test name: CT13-SBUG-2

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
4/18	Ignite	1 qt
4/25	Roundup WeatherMax	1 qt
5/10	Acumen	1 pt
5/10	Cotoran	1 qt
6/05	Volunteer	12 oz
6/24	Select Max	12 oz

**Additional insecticides**

Date	Product	Rate/A
6/05	Orthene 97	8 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/26	24-0-0-3	40 units
6/26	Boron	1 qt
6/26	Agrotain	1.5 qt*
7/10	24-0-0-3	40 units
7/10	Boron	1 qt
7/10	Agrotain	1.5 qt*
*per 150 gal water		

**Growth regulators**

Date	Product	Rate/A
7/09	Pentia	6 oz

**Defoliation**

Date	Product	Rate/A
10/18	Finish	1 qt
10/18	Folex	10 oz
10/18	Super Boll	10 oz
10/18	Free Fall	3 oz

**Table 45. Percent internal boll damage and yield, CT13-SBUG-2. Tidewater AREC, Suffolk, VA, 2013. Treatments were applied on July 29, August 5, and again on August 12.**

#	Material(s)	Rate/A	Percent internal boll damage <sup>1</sup>				Lint lb/acre <sup>2</sup>
			Aug 5	Aug 12	Aug 19	Aug 27	
1	Untreated	---	20.0	15.0 b	7.50 b	35.00	1338 c
2	Bidrin 8	8 oz/A	12.5	10.0 bc	7.50 b	10.00	1566 a-c
3	Bidrin 8	6.4 oz/A	12.5	0.0 c	5.00 b	27.50	1714 ab
4	Bidrin XPII	12.8 oz/A	20.0	0.0 c	5.00 b	2.50	1797 a
5	Belay 2.13SC NIS	4 oz/A 0.25% v/v	32.5	30.0 a	22.50 a	20.00	1428 c
6	Endigo ZC	6 oz/A	15.0	7.5 bc	5.00 b	5.00	1438 c
7	Brigade 2EC	6.4 oz/A	12.5	12.5 bc	0.00 b	20.00	1445 c
8	Karate Z	2.56 oz/A	15.0	7.5 bc	7.50 b	10.00	1500 bc
	LSD		NS	14.4	10.76	NS	233.4

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

<sup>1</sup>Based on sampling ten 0.9-1.1-inch-diameter bolls per plot.

<sup>2</sup>Cotton was harvested on November 4. Gross yields were reduced by 58.91% to account for seed and trash.

**Test: CT13-SBUG-3, Evaluation of multiple applications of a pyrethroid insecticide for stink bug management in cotton**

#	Material and rate	Spray timing	Application date(s)
1	Brigade 2EC @ 6.4 oz/A	3 <sup>rd</sup> week of bloom	Jul 29
2	Brigade 2EC @ 6.4 oz/A	3 <sup>rd</sup> week of bloom 4 <sup>th</sup> week of bloom	Jul 29 and Aug 5
3	Brigade 2EC @ 6.4 oz/A	3 <sup>rd</sup> week of bloom 4 <sup>th</sup> week of bloom 5 <sup>th</sup> week of bloom	Jul 29, Aug 5, and Aug 12
4	Untreated	---	

<b>Test:</b> CT13-SBUG-3
<b>Year:</b> 2013
<b>Crop:</b> Cotton
<b>Variety:</b> DP 174 RF
<b>Field:</b> 48
<b>Location:</b> Tidewater AREC, Suffolk, VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 15
<b>Harvest date:</b> Nov 12
<b>Row feet harvested:</b> 70

**Treatment application(s):**

Broadcast on July 29 and August 5 with Spider Spray Trac	Nozzle type: 8002VS	Nozzle spacing: 18"	PSI: 30	GPA: 16.5
Broadcast on August 12 with Spider Spray Trac	Nozzle type: 8002VS	Nozzle spacing: 18"	PSI: 38	GPA: 19.88

**Field preparation:** No-till

Test name: **CT13-SBUG-3**

**Herbicides**

Date	Product	Rate/A
3/30	2,4-D Amine	1.5 pt
3/30	Roundup WeatherMax	22 oz
4/27	Buccaneer	1 qt
5/29	Roundup WeatherMax	22 oz
6/06	Buccaneer	22 oz
6/21	Roundup WeatherMax	22 oz
7/17	Durango	1 qt

**Additional insecticides**

Date	Product	Rate/A
6/06	Orthene 97	8 oz

**Lime & fertilizer**

Date	Product	Rate/A
4/03	6-16-39	330 lb
6/26	24-0-0-3	40 units
6/26	Boron	1 qt
7/10	24-0-0-3	40 units
7/10	Boron	1 qt

**Growth regulators**

Date	Product	Rate/A
7/08	Pentia	6 oz
7/17	Pentia	1 pt

**Defoliation**

Date	Product	Rate/A
10/18	Finish	1 qt
10/18	Folex	10 oz
10/18	Super Boll	10 oz
10/18	Free Fall	3 oz

**Table 46. Percent internal boll damage and yield, CT13-SBUG-3. Tidewater AREC, Suffolk, VA, 2013. Treatments were applied on July 29 (3<sup>rd</sup> week of bloom), August 5 (4<sup>th</sup> week of bloom), and/or August 12 (5<sup>th</sup> week of bloom).**

#	Material and rate	Spray timing	Percent internal boll damage <sup>1</sup>				Lint lb/acre <sup>2</sup>
			Aug 5	Aug 12	Aug 19	Aug 27	
1	Brigade 2EC @ 6.4 oz/A	3 <sup>rd</sup> week of bloom	25.0	15.0	5.00	12.50	1707
2	Brigade 2EC @ 6.4 oz/A	3 <sup>rd</sup> week of bloom 4 <sup>th</sup> week of bloom	12.5	5.0	25.00	22.50	1856
3	Brigade 2EC @ 6.4 oz/A	3 <sup>rd</sup> week of bloom 4 <sup>th</sup> week of bloom 5 <sup>th</sup> week of bloom	15.0	12.5	2.50	10.00	2018
4	Untreated	---	10.0	32.5	27.50	32.50	1706
	LSD		NS	NS	NS	NS	NS

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

<sup>1</sup>Based on sampling ten 0.9-1.1-inch-diameter bolls per plot.

<sup>2</sup>Cotton was harvested on November 12. Gross yields were reduced by 60.5% to account for seed and trash.



## **Peanut Insect Pest Management Tests and Demonstrations**

**Test: PT13-THP-1, Evaluation of in-furrow granular and foliar at-ground-cracking insecticides for thrips management in peanut**

#	Material	Rate	Date(s) treated
1	Benevia 10OD	13.6 oz/A (foliar at cracking and again in 6 d)	May 22 and 28
2	Exirel 10SE	13.6 oz/A (foliar at cracking and again in 6 d)	May 22 and 28
3	Exirel 10SE	13.6 oz/A (foliar at cracking)	May 22
4	Exirel 10SE	20.7 oz/A (foliar at cracking)	May 22
5	Exirel 10SE	20.7 oz/A (foliar at cracking and again in 6 d)	May 22 and 28
6	Thimet 20G Exirel 10SE	5 lb/A (IF) 13.6 oz/A (foliar at cracking)	May 22
7	Thimet 20G	5 lb/A (IF)	
8	Exirel 10SE + Vydate C-LV	13.6 oz/A (foliar at cracking) 34 oz/A (foliar at cracking)	May 22
9	Vydate C-LV	34 oz/A (foliar at cracking)	May 22
10	Untreated	---	

<b>Test:</b> PT13-THP-1
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Variety:</b> CHAMPS
<b>Field:</b> 64B
<b>Location:</b> Tidewater AREC, Suffolk, VA
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 10
<b>Dig date:</b> Sep 27
<b>Harvest date:</b> Oct 3
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Granular in-furrow</b>	Tractor-mounted inverted polypropylene jars with calibrated lid holes			
<b>Broadcast with backpack</b>	<b>Nozzle type:</b> 8004VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 18	<b>GPA:</b> 14.3

**Field preparation:** Rip-strip till on April 17

**Comments:** CHAMPS guard and border rows.



Test name: **PT13-THP-1**

**Herbicides**

Date	Product	Rate/A
4/11	Ignite	1 qt
4/18	Prowl	1 pt
4/18	Dual Magnum	1 pt
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
6/21	Select Max	1 pt
7/08	Intrro	1 qt
7/09	Storm	1.5 pt
7/09	Basagran	1.5 pt
8/05	Select Max	1 pt

**Additional insecticides**

Date	Product	Rate/A
7/09	Danitol	10 oz
7/26	Danitol	8 oz

**Fungicides**

Date	Product	Rate/A
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

Date	Product	Rate/A
6/13	Coverall	1 pt*
6/21	Induce	1 qt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/09	Coverall	1 pt*
7/26	Manganese	1 qt
8/05	Induce	1 qt*
*per 100 gallons of water		

**Fumigants**

Date	Product	Rate/A
4/18	Metam	7.5 gal

**Table 47. Stand counts<sup>1</sup> and thrips injury ratings<sup>2</sup>, PT13-THP-1. Tidewater AREC, Suffolk, VA, 2013. Foliar at cracking treatments were broadcast on May 22.**

#	Material	Rate	Plants/35 row ft	Thrips injury ratings			
			May 23	May 30	Jun 4	Jun 12	Jun 18
1	Benevia 10OD	13.6 oz/A (foliar at cracking and again in 6 d)	100.1	0.25 c	1.31 e	1.63 h	2.81 f
2	Exirel 10SE	13.6 oz/A (foliar at cracking and again in 6 d)	94.6	0.38 bc	0.94 f	3.56 f	3.38 e
3	Exirel 10SE	13.6 oz/A (foliar at cracking)	100.1	0.31 bc	2.44 c	4.50 c	5.75 c
4	Exirel 10SE	20.7 oz/A (foliar at cracking)	99.3	0.31 bc	2.06 d	3.81 e	5.56 cd
5	Exirel 10SE	20.7 oz/A (foliar at cracking and again in 6 d)	96.6	0.38 bc	0.94 f	2.56 g	3.00 f
6	Thimet 20G Exirel 10SE	5 lb/A (IF) 13.6 oz/A (foliar at cracking)	94.5	0.38 bc	0.50 g	0.75 i	1.56 g
7	Thimet 20G	5 lb/A (IF)	97.9	0.38 bc	0.63 g	0.88 i	1.00 h
8	Exirel 10SE + Vydate C-LV	13.6 oz/A (foliar at cracking) 34 oz/A (foliar at cracking)	96.3	0.38 bc	2.06 d	4.25 d	5.50 d
9	Vydate C-LV	34 oz/A (foliar at cracking)	93.5	0.50 b	3.69 b	4.81 b	6.13 b
10	Untreated	---	97.6	2.00 a	4.38 a	6.25 a	6.94 a
	LSD		NS	0.19	0.27	0.18	0.20

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants. Peanut was planted on May 10.

**Table 48. Mean number of thrips per 10 terminal leaflets, PT13-THP-1. Tidewater AREC, Suffolk, VA, 2013. Foliar at cracking treatments were broadcast on May 22.**

#	Material	Rate	May 24 <sup>1</sup>		May 30 <sup>2</sup>		Jun 5 <sup>3</sup>		Jun 13 <sup>4</sup>	
			Imma- ture thrips	Adult thrips	Imma- ture thrips	Adult thrips	Imma- ture thrips	Adult thrips	Imma- ture thrips	Adult thrips
1	Benevia 100D	13.6 oz/A (foliar at cracking and again in 6 d)	0.25 bc	1.75 c	0.00	4.00	3.25 b	7.50 cd	29.00 de	3.00
2	Exirel 10SE	13.6 oz/A (foliar at cracking and again in 6 d)	0.00 c	2.50 bc	0.25	6.00	5.00 b	6.50 d	27.00 de	3.25
3	Exirel 10SE	13.6 oz/A (foliar at cracking)	0.25 bc	3.50 a-c	1.00	6.00	14.00 b	13.25 a-c	56.75 a-c	1.75
4	Exirel 10SE	20.7 oz/A (foliar at cracking)	0.00 c	1.25 c	0.50	5.50	9.50 b	14.25 ab	65.50 ab	1.75
5	Exirel 10SE	20.7 oz/A (foliar at cracking and again in 6 d)	0.75 ab	2.50 bc	0.50	2.50	4.00 b	15.50 ab	40.50 b-d	3.25
6	Thimet 20G Exirel 10SE	5 lb/A (IF) 13.6 oz/A (foliar at cracking)	0.25 bc	1.25 c	0.00	4.25	6.00 b	9.00 b-d	11.25 e	1.50
7	Thimet 20G	5 lb/A (IF)	1.25 a	4.00 a-c	0.50	7.25	14.25 b	6.25 d	30.00 de	1.00
8	Exirel 10SE + Vydate C-LV	13.6 oz/A (foliar at cracking) 34 oz/A (foliar at cracking)	0.00 c	1.75 c	0.25	8.25	16.25 ab	19.00 a	76.00 a	1.00
9	Vydate C-LV	34 oz/A (foliar at cracking)	0.75 ab	4.75 ab	0.50	7.25	28.25 a	6.25 d	32.50 c-e	1.50
10	Untreated	---	0.50 bc	6.25 a	1.25	6.00	15.75 ab	5.25 d	42.50 b-d	1.25
	LSD		0.71	2.88	NS	NS	13.16	6.53	25.35	NS

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

<sup>1</sup>Species composition from the untreated check on May 24 consisted of 80% tobacco thrips (*Frankliniella fusca*), 8% Western flower thrips (*F. occidentalis*), 0% Eastern flower thrips (*F. tritici*), 12% onion thrips (*Thrips tabaci*), and 0% soybean thrips (*Neohydatothrips variabilis*).

<sup>2</sup>Species composition from the untreated check on May 30 consisted of 92% tobacco thrips, 4% onion thrips, and 4% soybean thrips.

<sup>3</sup>Species composition from the untreated check on June 5 consisted of 90% tobacco thrips, 5% Western flower thrips, and 5% onion thrips.

<sup>4</sup>Species composition from the untreated check on June 13 consisted of 100% tobacco thrips.

**Table 49. Vigor<sup>1</sup> and phytotoxicity<sup>2</sup> ratings, PT13-THP-1. Tidewater AREC, Suffolk, VA, 2013. Foliar at cracking treatments were broadcast on May 22.**

#	Material	Rate	Vigor	Phytotoxicity
			May 31	May 31
1	Benevia 10OD	13.6 oz/A (foliar at cracking and again in 6 d)	99.3 a	0.0 b
2	Exirel 10SE	13.6 oz/A (foliar at cracking and again in 6 d)	95.0 c	0.0 b
3	Exirel 10SE	13.6 oz/A (foliar at cracking)	95.0 c	0.0 b
4	Exirel 10SE	20.7 oz/A (foliar at cracking)	95.0 c	0.0 b
5	Exirel 10SE	20.7 oz/A (foliar at cracking and again in 6 d)	95.0 c	0.0 b
6	Thimet 20G Exirel 10SE	5 lb/A (IF) 13.6 oz/A (foliar at cracking)	97.8 b	13.8 a
7	Thimet 20G	5 lb/A (IF)	95.0 c	13.0 a
8	Exirel 10SE + Vydate C-LV	13.6 oz/A (foliar at cracking) 34 oz/A (foliar at cracking)	95.0 c	0.0 b
9	Vydate C-LV	34 oz/A (foliar at cracking)	90.5 d	0.0 b
10	Untreated	---	90.0 d	0.0 b
	LSD		1.32	1.53

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

<sup>1</sup>*Plant vigor rated on a scale of 0-100, where 100 = most vigorous.*

<sup>2</sup>*Phytotoxicity rated on a scale of 0-100, where 0 = no phytotoxicity and 100 = all plants exhibiting signs of phytotoxicity.*

**Table 50. Tomato spotted wilt virus (TSWV) hits and yield, PT13-THP-1. Tidewater AREC, Suffolk, VA, 2013. Foliar at cracking treatments were broadcast on May 22.**

#	Material	Rate	TSWV hits/70 row ft <sup>1</sup>		Yield <sup>2</sup> (lb/A)
			Aug 13	Sep 24	
1	Benevia 100D	13.6 oz/A (foliar at cracking and again in 6 d)	1.00	9.50	5,950
2	Exirel 10SE	13.6 oz/A (foliar at cracking and again in 6 d)	2.75	5.75	5,567
3	Exirel 10SE	13.6 oz/A (foliar at cracking)	2.50	6.75	5,762
4	Exirel 10SE	20.7 oz/A (foliar at cracking)	1.50	4.50	6,501
5	Exirel 10SE	20.7 oz/A (foliar at cracking and again in 6 d)	1.25	12.25	5,733
6	Thimet 20G Exirel 10SE	5 lb/A (IF) 13.6 oz/A (foliar at cracking)	4.50	8.75	5,752
7	Thimet 20G	5 lb/A (IF)	6.50	17.25	6,217
8	Exirel 10SE + Vydate C-LV	13.6 oz/A (foliar at cracking) 34 oz/A (foliar at cracking)	0.50	3.75	5,864
9	Vydate C-LV	34 oz/A (foliar at cracking)	3.00	8.00	5,850
10	Untreated	---	2.00	10.25	5,772
	LSD		NS	NS	NS

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

<sup>1</sup>Based on visual inspection of all plants in two rows from each plot.

<sup>2</sup>Yield based on weight of peanut with moisture content of 7%. Dig date = September 27 and harvest date = October 3.

**Test: PT13-THP-2, Evaluation of seed treatments and in-furrow granular insecticides for thrips management in peanut**

#	Material	Rate
1	Untreated	---
2	Dynasty PD	0.075 mg ai/seed
3	Cruiser 70WS	0.25 mg ai/seed
4	Dynasty PD Cruiser 70WS	0.075 mg ai/seed 0.25 mg ai/seed
5	A17461	0.318 mg ai/seed
6	Avicta 500FS A17461	0.25 mg ai/seed 0.318 mg ai/seed
7	Dynasty PD Thimet 20G	0.075 mg ai/seed 5 lb/A
8	Dynasty PD Temik 15G	0.075 mg ai/seed 5 lb/A

<b>Test:</b> PT13-THP-2
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Variety:</b> Bailey
<b>Field:</b> 36
<b>Location:</b> Tidewater AREC, Suffolk, VA
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 9
<b>Dig date:</b> Sep 26
<b>Harvest date:</b> Oct 1
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Granular in-furrow</b>	Tractor-mounted inverted polypropylene jars with calibrated lid holes
---------------------------	---

**Field preparation:** Rip-strip till on April 17

**Comments:** Guard rows are Bailey with Dynasty alone.

Test name: **PT13-THP-2**

**Herbicides**

Date	Product	Rate/A
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
6/21	Select Max	1 pt
7/08	Intrro	1 qt
8/05	Select Max	1 pt

**Additional insecticides**

Date	Product	Rate/A
7/26	Danitol	8 oz

**Fungicides**

Date	Product	Rate/A
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

Date	Product	Rate/A
6/13	Coverall	1 pt*
6/21	Induce	1 qt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/26	Manganese	1 qt
8/05	Induce	1 qt*
*per 100 gallons of water		

**Fumigants**

Date	Product	Rate/A
4/19	Metam	7.5 gal

**Table 51. Stand counts<sup>1</sup> and thrips injury ratings<sup>2</sup>, PT13-THP-2. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Plants/35 row ft	Thrips injury ratings				
			May 23	May 29	Jun 3	Jun 10	Jun 17	Jun 24
1	Untreated	---	91.9 a	2.50 a	4.00 a	5.25 a	7.00 a	5.38 b
2	Dynasty PD	0.075 mg ai/seed	87.1 ab	2.13 b	3.88 a	5.06 b	7.00 a	6.00 ab
3	Cruiser 70WS	0.25 mg ai/seed	79.0 bc	0.50 d	1.94 bc	3.94 d	5.75 b	6.38 a
4	Dynasty PD Cruiser 70WS	0.075 mg ai/seed 0.25 mg ai/seed	90.5 a	0.50 d	2.31 b	4.06 cd	5.44 bc	6.50 a
5	A17461	0.318 mg ai/seed	85.4 ab	0.50 d	1.75 c	4.13 c	5.25 c	5.50 b
6	Avicta 500FS A17461	0.25 mg ai/seed 0.318 mg ai/seed	76.6 c	0.69 c	2.25 bc	4.00 cd	5.75 b	5.50 b
7	Dynasty PD Thimet 20G	0.075 mg ai/seed 5 lb/A	84.3 a-c	0.50 d	0.63 d	0.75 e	1.13 d	1.75 c
8	Dynasty PD Temik 15G	0.075 mg ai/seed 5 lb/A	81.4 bc	0.50 d	0.56 d	0.56 f	0.88 d	1.06 c
	LSD		8.22	0.14	0.54	0.17	0.45	0.81

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants. Peanut was planted on May 9.



**Table 52. Mean number of thrips per 10 terminal leaflets, PT13-THP-2. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	May 22						
			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> )	
1	Untreated	---	1.00	0.75	0.00	0.00	0.25	0.00	1.00
2	Dynasty PD	0.075 mg ai/seed	1.50	2.25	0.00	0.00	0.00	0.25	2.50
3	Cruiser 70WS	0.25 mg ai/seed	0.50	1.75	0.00	0.00	0.00	0.00	1.75
4	Dynasty PD Cruiser 70WS	0.075 mg ai/seed 0.25 mg ai/seed	0.25	1.25	0.00	0.00	0.00	0.00	1.25
5	A17461	0.318 mg ai/seed	0.75	0.25	0.00	0.00	0.00	0.00	0.25
6	Avicta 500FS A17461	0.25 mg ai/seed 0.318 mg ai/seed	0.50	1.25	0.00	0.00	0.00	0.00	1.25
7	Dynasty PD Thimet 20G	0.075 mg ai/seed 5 lb/A	0.75	0.50	0.00	0.00	0.00	0.00	0.50
8	Dynasty PD Temik 15G	0.075 mg ai/seed 5 lb/A	0.50	0.00	0.00	0.00	0.00	0.00	0.00
	LSD		NS	NS	NS	NS	NS	NS	NS

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

**Table 53. Mean number of thrips per 10 terminal leaflets, PT13-THP-2. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Jun 4							
			Immature thrips	Adult thrips					Soybean ( <i>Neohydatothrips variabilis</i> )	Total adult thrips
				Tobacco ( <i>Frankliniella fusca</i> )	Western ( <i>Frankliniella occidentalis</i> )	Eastern ( <i>Frankliniella tritici</i> )	Onion ( <i>Thrips tabaci</i> )			
1	Untreated	---	33.00	7.00	0.00	0.00	0.25	0.00	7.25	
2	Dynasty PD	0.075 mg ai/seed	36.50	4.25	0.00	0.00	0.00	0.00	4.25	
3	Cruiser 70WS	0.25 mg ai/seed	9.25	9.75	0.75	0.00	0.00	0.00	10.50	
4	Dynasty PD Cruiser 70WS	0.075 mg ai/seed 0.25 mg ai/seed	11.00	6.50	0.50	0.00	0.00	0.00	7.00	
5	A17461	0.318 mg ai/seed	9.00	7.50	0.00	0.00	0.25	0.00	7.75	
6	Avicta 500FS A17461	0.25 mg ai/seed 0.318 mg ai/seed	19.00	11.50	0.25	0.00	0.50	0.00	12.25	
7	Dynasty PD Thimet 20G	0.075 mg ai/seed 5 lb/A	4.75	11.75	0.25	0.25	0.50	0.00	12.75	
8	Dynasty PD Temik 15G	0.075 mg ai/seed 5 lb/A	0.75	1.50	0.50	0.00	0.00	0.00	2.00	
	LSD		NS	NS	NS	NS	NS	NS	NS	

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

**Table 54. Vigor<sup>1</sup> and phytotoxicity ratings, PT13-THP-2. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Vigor (%)			Phytotoxicity (%)		
			May 30	Jun 6	Jun 13	May 30	Jun 6	Jun 13
1	Untreated	---	83.8 b	77.0 f	79.8 e	5.0 b	0.0 b	0.0 b
2	Dynasty PD	0.075 mg ai/seed	83.8 b	80.0 e	79.3 e	5.0 b	0.0 b	0.0 b
3	Cruiser 70WS	0.25 mg ai/seed	81.3 b	89.0 d	83.0 d	5.0 b	0.0 b	0.0 b
4	Dynasty PD Cruiser 70WS	0.075 mg ai/seed 0.25 mg ai/seed	83.8 b	93.0 c	85.0 c	5.0 b	0.0 b	0.0 b
5	A17461	0.318 mg ai/seed	87.5 b	89.5 d	85.0 c	5.0 b	0.0 b	0.0 b
6	Avicta 500FS A17461	0.25 mg ai/seed 0.318 mg ai/seed	85.0 b	89.5 d	83.3 d	5.0 b	0.0 b	0.0 b
7	Dynasty PD Thimet 20G	0.075 mg ai/seed 5 lb/A	88.8 b	95.8 b	95.5 b	73.8 a	25.0 a	16.5 a
8	Dynasty PD Temik 15G	0.075 mg ai/seed 5 lb/A	100.0 a	100.0 a	100.0 a	0.0 c	0.0 b	0.0 b
	LSD		7.84	1.05	1.14	1.30	0.00	0.90

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

<sup>1</sup>Vigor based on plot with highest vigor in each replicate = 100%. Planting date = May 9.

**Table 55. Tomato spotted wilt virus (TSWV) hits and yield, PT13-THP-2. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	TSWV hits/70 row ft <sup>1</sup>		Yield <sup>2</sup> (lb/A)
			Aug 13	Sep 25	
1	Untreated	---	3.75 a	7.25 ab	5,364 c
2	Dynasty PD	0.075 mg ai/seed	1.25 b	2.00 bc	5,275 c
3	Cruiser 70WS	0.25 mg ai/seed	0.00 b	0.75 c	5,695 bc
4	Dynasty PD Cruiser 70WS	0.075 mg ai/seed 0.25 mg ai/seed	1.25 b	10.50 a	5,547 bc
5	A17461	0.318 mg ai/seed	0.75 b	1.50 bc	5,717 bc
6	Avicta 500FS A17461	0.25 mg ai/seed 0.318 mg ai/seed	0.50 b	2.25 bc	5,699 bc
7	Dynasty PD Thimet 20G	0.075 mg ai/seed 5 lb/A	0.75 b	4.25 bc	5,866 b
8	Dynasty PD Temik 15G	0.075 mg ai/seed 5 lb/A	1.25 b	12.00 a	6,472 a
	LSD		1.77	6.03	450.3

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

<sup>1</sup>Based on visual inspection of all plants in two rows from each plot.

<sup>2</sup>Yield based on weight of peanut with moisture content of 7%. Dig date = September 26 and harvest date = October 1.

**Test: PT13-THP-3, Influence of granular in-furrow insecticide on peanut cultivars for thrips management**

#	Variety	Material
1	Sugg	Dynasty PD
2	Sugg	CruiserMaxx Peanut
3	Sugg	Dynasty PD Thimet 20G @ 5 lb/A (IF)
4	Sugg	CruiserMaxx Peanut Thimet 20G @ 5 lb/A (IF)
5	Bailey	Dynasty PD
6	Bailey	CruiserMaxx Peanut
7	Bailey	Dynasty PD Thimet 20G @ 5 lb/A (IF)
8	Bailey	CruiserMaxx Peanut Thimet 20G @ 5 lb/A (IF)

<b>Test:</b> PT13-THP-3
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Varieties:</b> Sugg, Bailey
<b>Field:</b> 14
<b>Location:</b> Tidewater AREC, Suffolk, VA
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' with 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 9
<b>Dig date:</b> Sep 26
<b>Harvest date:</b> Oct 2
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Granular in-furrow</b>	Tractor-mounted inverted polypropylene jars with calibrated lid holes
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**Field preparation:** Rip-strip till on April 17

**Comments:** Guard rows are CHAMPS with Dynasty alone.

Test name: PT13-THP-3

**Herbicides**

Date	Product	Rate/A
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
7/08	Intrro	1 qt
7/09	Select Max	1 pt
8/05	Poast Plus	1.5 pt

**Additional insecticides**

Date	Product	Rate/A
7/26	Danitol	8 oz

**Fungicides**

Date	Product	Rate/A
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

Date	Product	Rate/A
6/13	Coverall	1 pt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/09	Induce	1 qt*
7/26	Manganese	1 qt
8/05	Induce	1 qt*
*per 100 gallons of water		

**Fumigants**

Date	Product	Rate/A
4/19	Metam	7.5 gal

**Table 56. Stand counts<sup>1</sup> and thrips injury ratings<sup>2</sup>, PT13-THP-3. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Material and rate	Plants/35 row ft	Thrips injury ratings			
			May 24	May 29	Jun 4	Jun 10	Jun 17
1	Sugg	Dynasty PD	85.0 bc	2.94 a	3.75 a	5.13 a	6.25 a
2	Sugg	CruiserMaxx Peanut	96.1 a	1.00 b	1.50 b	3.25 b	5.31 b
3	Sugg	Dynasty PD Thimet 20G @ 5 lb/A	93.6 a	0.69 cd	0.69 c	0.75 c	0.94 c
4	Sugg	CruiserMaxx Peanut Thimet 20G @ 5 lb/A	94.1 a	0.56 d	0.56 c	0.75 c	1.06 c
5	Bailey	Dynasty PD	92.3 ab	2.94 a	3.69 a	5.13 a	6.25 a
6	Bailey	CruiserMaxx Peanut	84.8 bc	0.81 bc	1.38 b	3.25 b	5.31 b
7	Bailey	Dynasty PD Thimet 20G @ 5 lb/A	90.0 ab	0.56 d	0.69 c	0.75 c	0.94 c
8	Bailey	CruiserMaxx Peanut Thimet 20G @ 5 lb/A	81.8 c	0.56 d	0.56 c	0.75 c	1.06 c
	LSD		8.16	0.21	0.26	0.14	0.27

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants. Peanut was planted on May 9.

**Table 57. Mean number of thrips per 10 terminal leaflets, PT13-THP-3. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Material and rate	May 22		May 30		Jun 4		Jun 12	
			Immature	Adult	Immature	Adult	Immature	Adult	Immature	Adult
1	Sugg	Dynasty PD	1.75	2.50	1.00	4.00	14.00 b	4.50	13.25 b	1.50
2	Sugg	CruiserMaxx Peanut	0.50	1.25	1.25	6.25	8.25 b	5.75	39.25 a	1.50
3	Sugg	Dynasty PD Thimet 20G @ 5 lb/A	0.75	1.50	0.50	3.00	4.00 b	6.00	6.25 b	4.00
4	Sugg	CruiserMaxx Peanut Thimet 20G @ 5 lb/A	0.00	0.75	0.00	3.25	2.75 b	7.00	5.00 b	5.25
5	Bailey	Dynasty PD	1.00	3.00	2.00	3.50	28.75 a	6.25	25.25 ab	1.75
6	Bailey	CruiserMaxx Peanut	0.25	1.50	0.75	6.25	9.00 b	4.25	39.50 a	2.25
7	Bailey	Dynasty PD Thimet 20G @ 5 lb/A	0.75	1.00	1.00	5.75	4.25 b	3.00	10.00 b	2.50
8	Bailey	CruiserMaxx Peanut Thimet 20G @ 5 lb/A	0.00	1.50	1.75	5.00	7.00 b	8.50	14.00 b	3.00
	LSD		NS	NS	NS	NS	12.79	NS	22.90	NS

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



**Table 58. Tomato spotted wilt virus (TSWV) hits and yield, PT13-THP-3. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Material and rate	TSWV hits/70 row ft <sup>1</sup>		Yield <sup>2</sup> (lb/A)
			Aug 13	Sep 25	
1	Sugg	Dynasty PD	0.00	8.00 a	5,714 d
2	Sugg	CruiserMaxx Peanut	0.00	5.75 a-c	6,120 cd
3	Sugg	Dynasty PD Thimet 20G @ 5 lb/A	0.00	3.00 b-d	6,558 a-c
4	Sugg	CruiserMaxx Peanut Thimet 20G @ 5 lb/A	2.00	7.00 ab	6,501 bc
5	Bailey	Dynasty PD	0.00	1.50 cd	6,390 bc
6	Bailey	CruiserMaxx Peanut	0.75	2.75 b-d	6,212 c
7	Bailey	Dynasty PD Thimet 20G @ 5 lb/A	0.00	1.25 d	6,713 ab
8	Bailey	CruiserMaxx Peanut Thimet 20G @ 5 lb/A	0.00	2.50 cd	7,033 a
	LSD		NS	4.32	485.5

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

<sup>1</sup>Based on visual inspection of all plants in two rows from each plot.

<sup>2</sup>Yield based on weight of peanut with moisture content of 7%. Dig date = September 26 and harvest date =October 2.

**Test: PT13-THP-4, Evaluation of at-planting, liquid in-furrow insecticides for thrips management in peanut**

#	Material	Rate
1	Admire Pro	7 oz/A (liquid IF)
2	Admire Pro	8.5 oz/A (liquid IF)
3	Admire Pro	10.5 oz/A (liquid IF)
4	Orthene 97	8 oz/A (liquid IF)
5	Orthene 97	12 oz/A (liquid IF)
6	Orthene 97	16 oz/A (liquid IF)
7	Untreated	---

<b>Test:</b> PT13-THP-4
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Variety:</b> CHAMPS
<b>Field:</b> 36
<b>Location:</b> Tidewater AREC, Suffolk, VA
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 14
<b>Dig date:</b> Sep 26
<b>Harvest date:</b> Oct 1
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Liquid in-furrow</b>	<b>Nozzle type:</b> microtube	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 51	<b>GPA:</b> 5
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**Comments:** CHAMPS guard and border rows.

Test name: **PT13-THP-4**

**Herbicides**

Date	Product	Rate/A
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
6/21	Select Max	1 pt
7/08	Intrro	1 qt
8/05	Poast Plus	1.5 pt

**Additional insecticides**

Date	Product	Rate/A
7/26	Danitol	8 oz

**Fungicides**

Date	Product	Rate/A
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

Date	Product	Rate/A
6/13	Coverall	1 pt*
6/21	Induce	1 qt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/26	Manganese	1 qt
8/05	Induce	1 qt*

\*per 100 gallons of water

**Fumigants**

Date	Product	Rate/A
4/19	Metam	7.5 gal

**Table 59. Stand counts<sup>1</sup> and thrips injury ratings<sup>2</sup>, PT13-THP-4. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Plants/35 row ft	Thrips injury ratings			
			May 29	May 29	Jun 4	Jun 13	Jun 24
1	Admire Pro	7 oz/A (liquid IF)	89.9	0.31 b	0.50 cd	0.75 cd	1.38 de
2	Admire Pro	8.5 oz/A (liquid IF)	97.1	0.25 b	0.38 de	0.50 e	0.81 ef
3	Admire Pro	10.5 oz/A (liquid IF)	96.5	0.25 b	0.25 e	0.25 f	0.50 f
4	Orthene 97	8 oz/A (liquid IF)	93.5	0.25 b	0.88 b	1.31 b	5.13 b
5	Orthene 97	12 oz/A (liquid IF)	91.5	0.31 b	0.63 c	0.88 c	3.75 c
6	Orthene 97	16 oz/A (liquid IF)	87.3	0.31 b	0.50 cd	0.63 de	1.94 d
7	Untreated	---	91.8	1.25 a	3.69 a	6.25 a	6.38 a
	LSD		NS	0.12	0.17	0.14	0.62

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants. Peanut was planted on May 14.

**Table 60. Tomato spotted wilt virus (TSWV) hits and yield, PT13-THP-4. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	TSWV hits/70 row ft <sup>1</sup>		Yield <sup>2</sup> (lb/A)
			Aug 13	Sep 25	
1	Admire Pro	7 oz/A (liquid IF)	6.25	18.50	5,406
2	Admire Pro	8.5 oz/A (liquid IF)	1.50	8.25	6,185
3	Admire Pro	10.5 oz/A (liquid IF)	0.25	11.50	6,229
4	Orthene 97	8 oz/A (liquid IF)	2.75	11.50	5,893
5	Orthene 97	12 oz/A (liquid IF)	4.75	11.25	5,671
6	Orthene 97	16 oz/A (liquid IF)	1.75	14.25	5,611
7	Untreated	---	5.75	6.75	5,459
	LSD		NS	NS	NS

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

<sup>1</sup>*Based on visual inspection of all plants in two rows from each plot.*

<sup>2</sup>*Yield based on weight of peanut with moisture content of 7%. Dig date = September 26 and harvest date = October 1.*

**Test: PT13-THP-5, Evaluation of at-planting, liquid and granular in-furrow insecticides; seed treatments; and foliar broadcasts for thrips management in peanut**

#	Material <sup>1</sup>	Rate	Application date
1	CruiserMaxx Peanut		
2	Admire Pro	8.5 oz/A (liquid IF)	
3	Thimet 20G	5 lb/A (IF)	
4	Orthene 97	16 oz/A (liquid IF)	
5	CruiserMaxx Peanut Orthene 97	4 oz/A (foliar broadcast)	May 28
6	Admire Pro Orthene 97	7 oz/A (liquid IF) 4 oz/A (foliar broadcast)	May 28
7	Thimet 20G Orthene 97	3.5 lb/A 4 oz/A (foliar broadcast)	May 28
8	CruiserMaxx Peanut Admire Pro	7 oz/A (liquid IF)	
9	CruiserMaxx Peanut Orthene 97	12 oz/A (liquid IF)	
10	CruiserMaxx Peanut Verimark 20SC	13.5 oz/A (liquid IF)	
11	CruiserMaxx Peanut Thimet 20G	3.5 lb (IF)	
12	Untreated	---	

<sup>1</sup>Treatments 2, 3, 4, 6, 7, and 12 contained the seed treatment Dynasty PD.

<b>Test:</b> PT13-THP-5
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Variety:</b> Sugg
<b>Field:</b> 67
<b>Location:</b> Tidewater AREC, Suffolk, VA
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 14
<b>Dig date:</b> Sep 26
<b>Harvest date:</b> Oct 2
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Liquid in-furrow</b>	<b>Nozzle type:</b> microtube	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 51	<b>GPA:</b> 5
<b>Granular in-furrow</b>	Tractor-mounted inverted polypropylene jars with calibrated lid holes			
<b>Broadcast with backpack</b>	<b>Nozzle type:</b> 8004VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 18	<b>GPA:</b> 14.3

**Field preparation:** Rip-strip till on April 17

**Comments:** CHAMPS guard and border rows.

Test name: **PT13-THP-5**

**Herbicides**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
6/21	Select Max	1 pt
7/08	Intrro	1 qt
8/05	Poast Plus	1.5 pt

**Additional insecticides**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
7/26	Danitol	8 oz

**Fungicides**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
6/13	Coverall	1 pt*
6/21	Induce	1 qt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/26	Manganese	1 qt
8/05	Induce	1 qt*
*per 100 gallons of water		

**Fumigants**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
4/19	Metam	7.5 gal

**Table 61. Stand counts<sup>1</sup> and thrips injury ratings<sup>2</sup>, PT13-THP-5. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	Plants/35 row ft	Thrips injury ratings				
			May 29	May 29	Jun 3	Jun 10	Jun 18	Jun 24
1	CruiserMaxx Peanut		87.5	0.31 b	1.19 b	3.75 b	5.13 b	6.63 a
2	Admire Pro	8.5 oz/A (liquid IF)	91.8	0.25 b	0.50 c	0.50 f	0.50 h	0.56 g
3	Thimet 20G	5 lb/A (IF)	92.5	0.31 b	0.63 c	0.69 ef	1.00 f	1.31 ef
4	Orthene 97	16 oz/A (liquid IF)	83.6	0.25 b	0.50 c	1.06 d	1.38 e	2.00 d
5	CruiserMaxx Peanut Orthene 97	4 oz/A (foliar broadcast)	90.9	0.25 b	0.69 c	2.31 c	3.69 c	4.81 b
6	Admire Pro Orthene 97	7 oz/A (liquid IF) 4 oz/A (foliar broadcast)	95.5	0.31 b	0.50 c	0.50 f	0.50 h	0.56 g
7	Thimet 20G Orthene 97	3.5 lb/A 4 oz/A (foliar broadcast)	92.6	0.25 b	0.56 c	0.69 ef	0.81 g	1.81 de
8	CruiserMaxx Peanut Admire Pro	7 oz/A (liquid IF)	92.8	0.25 b	0.50 c	0.56 f	0.63 h	0.56 g
9	CruiserMaxx Peanut Orthene 97	12 oz/A (liquid IF)	86.5	0.25 b	0.56 c	0.94 de	1.81 d	2.81 c
10	CruiserMaxx Peanut Verimark 20SC	13.5 oz/A (liquid IF)	92.9	0.25 b	0.56 c	0.75 d-f	1.00 f	1.19 f
11	CruiserMaxx Peanut Thimet 20G	3.5 lb (IF)	96.6	0.25 b	0.50 c	0.81 d-f	1.00 f	1.25 ef
12	Untreated	---	91.4	1.00 a	2.44 a	5.63 a	7.00 a	6.38 a
	LSD		NS	0.09	0.20	0.36	0.14	0.62

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants. Peanut was planted on May 14.



**Table 62. Tomato spotted wilt virus (TSWV) hits and yield, PT13-THP-5. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	TSWV hits/70 row ft <sup>1</sup>		Yield <sup>2</sup> (lb/A)
			Aug 13	Sep 25	
1	CruiserMaxx Peanut		0.00	3.00 bc	5,323
2	Admire Pro	8.5 oz/A (liquid IF)	0.00	3.00 bc	5,606
3	Thimet 20G	5 lb/A (IF)	0.00	3.75 bc	5,574
4	Orthene 97	16 oz/A (liquid IF)	0.50	9.00 a	5,608
5	CruiserMaxx Peanut Orthene 97	4 oz/A (foliar broadcast)	0.00	1.75 c	6,059
6	Admire Pro Orthene 97	7 oz/A (liquid IF) 4 oz/A (foliar broadcast)	0.00	4.50 bc	6,130
7	Thimet 20G Orthene 97	3.5 lb/A 4 oz/A (foliar broadcast)	0.00	5.00 bc	5,858
8	CruiserMaxx Peanut Admire Pro	7 oz/A (liquid IF)	0.00	2.25 bc	5,616
9	CruiserMaxx Peanut Orthene 97	12 oz/A (liquid IF)	0.00	2.00 bc	6,041
10	CruiserMaxx Peanut Verimark 20SC	13.5 oz/A (liquid IF)	0.25	4.75 bc	5,569
11	CruiserMaxx Peanut Thimet 20G	3.5 lb (IF)	0.00	3.00 bc	5,569
12	Untreated	---	0.00	5.75 ab	5,125
	LSD		NS	3.92	NS

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

<sup>1</sup>Based on visual inspection of all plants in two rows from each plot.

<sup>2</sup>Yield based on weight of peanut with moisture content of 7%. Dig date = September 26 and harvest date = October 2.

**Test: PT13-THP-SCR, Belay for thrips and rootworm management in peanut**

#	Material <sup>1</sup>	Rate	Date treated
1	Untreated	---	
2	Belay 2.13SC Orthene 97	12 oz/A (IF) 12 oz/A (IF)	
3	Belay 2.13SC Admire Pro 4.60SC	12 oz/A (IF) 7 oz/A (IF)	
4	CruiserMaxx Peanut Belay 2.13SC	Seed treatment 12 oz/A (IF)	
5	Belay 2.13SC	12 oz/A (IF)	
6	CruiserMaxx Peanut Lorsban 15G	Seed treatment 13 lb/A (at pegging)	Jul 8
7	Orthene 97	12 oz/A (IF)	
8	Admire Pro 4.60SC	7 oz/A (IF)	

<sup>1</sup>Treatments 1, 2, 3, 5, 7, and 8 contained the seed treatment Dynasty PD.

<b>Test:</b> PT13-THP-SCR
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Variety:</b> Bailey
<b>Field:</b> 14
<b>Location:</b> Tidewater AREC
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 10
<b>Dig date:</b> Sep 26
<b>Harvest date:</b> Oct 2
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Liquid in-furrow</b>	<b>Nozzle type:</b> microtube	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 51	<b>GPA:</b> 5
<b>Band using bike rig (trt 6):</b> applied in a 12-14" band over the row with a field cycle-mounted Noble applicator, setting = 12				

**Field preparation:** Rip-strip on April 17

**Comments:** Guard rows were CHAMPS.

Test name: **PT13-THP-SCR**

**Herbicides**

Date	Product	Rate/A
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
7/08	Intrro	1 qt
7/09	Select Max	1 pt
8/05	Poast Plus	1.5 pt

**Additional insecticides**

Date	Product	Rate/A
7/26	Danitol	8 oz

**Fungicides**

Date	Product	Rate/A
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

Date	Product	Rate/A
6/13	Coverall	1 pt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/09	Induce	1 qt*
7/26	Manganese	1 qt
8/05	Induce	1 qt*
*per 100 gallons of water		

**Fumigants**

Date	Product	Rate/A
4/19	Metam	7.5 gal

**Table 63. Thrips injury ratings<sup>1</sup>, PT13-THP-SCR. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate	May 29	Jun 4	Jun 13	Jun 21
1	Untreated	---	2.81 a	3.75 a	5.75 a	6.00 a
2	Belay 2.13SC Orthene 97	12 oz/A (IF) 12 oz/A (IF)	0.50 c	0.44 e	1.00 e	0.69 e
3	Belay 2.13SC Admire Pro 4.60SC	12 oz/A (IF) 7 oz/A (IF)	0.50 c	0.31 e	0.25 g	0.50 e
4	CruiserMaxx Peanut Belay 2.13SC	Seed treatment 12 oz/A (IF)	0.56 bc	0.81 c	3.94 c	4.44 c
5	Belay 2.13SC	12 oz/A (IF)	0.63 bc	1.75 b	3.88 c	4.38 c
6	CruiserMaxx Peanut Lorsban 15G	Seed treatment 13 lb/A (at pegging)	0.56 bc	1.88 b	4.63 b	4.88 b
7	Orthene 97	12 oz/A (IF)	0.69 b	0.75 cd	1.75 d	1.38 d
8	Admire Pro 4.60SC	7 oz/A (IF)	0.63 bc	0.63 d	0.81 f	0.50 e
	LSD		0.16	0.16	0.13	0.19

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

<sup>1</sup>Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants. Peanut was planted on May 10.

**Table 64. Tomato spotted wilt virus (TSWV) hits<sup>1</sup>, southern corn rootworm mean percent damaged pods<sup>2</sup>, and yield<sup>3</sup>, PT13-THP-SCR. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate and timing	TSWV hits/70 row ft		Mean percent scarified pods	Mean percent penetrated pods	Yield (lb/A)
			Aug 13	Sep 25			
1	Untreated	---	0.00	1.75 bc	1.75	0.00	5,991
2	Belay 2.13SC Orthene 97	12 oz/A (IF) 12 oz/A (IF)	0.00	0.75 c	2.00	0.00	6,668
3	Belay 2.13SC Admire Pro 4.60SC	12 oz/A (IF) 7 oz/A (IF)	0.00	3.00 a-c	2.00	0.00	6,914
4	CruiserMaxx Peanut Belay 2.13SC	Seed treatment 12 oz/A (IF)	0.00	4.25 ab	1.75	0.25	6,906
5	Belay 2.13SC	12 oz/A (IF)	0.00	4.50 ab	1.50	0.00	6,751
6	CruiserMaxx Peanut Lorsban 15G	Seed treatment 13 lb/A (at pegging)	0.00	1.75 bc	0.25	0.00	6,644
7	Orthene 97	12 oz/A (IF)	0.00	4.00 ab	1.00	0.00	6,510
8	Admire Pro 4.60SC	7 oz/A (IF)	0.00	5.50 a	3.00	0.00	6,294
	LSD		NS	2.92	NS	NS	NS

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

<sup>1</sup>Based on visual inspection of all plants in two rows from each plot.

<sup>2</sup>A pre-harvest sample of 100 full-sized pods were randomly selected per plot after digging. Samples were taken on September 27.

<sup>3</sup>Yield based on weight of peanut with moisture content of 7%. Dig date = September 26 and harvest date = October 2.

**Test: PT13-THP-REGIONAL-VA, Multi-state evaluation of a seed treatment and in-furrow granular insecticide for thrips management in virginia-type peanut**

#	Variety	Treatment	Rate
1	Bailey	Dynasty PD	---
2	Bailey	CruiserMaxx Peanut	
3	Bailey	CruiserMaxx Peanut Orthene 97	4 oz/A broadcast on May 24
4	Bailey	Dynasty PD Thimet 20G	5 lb/A
5	CHAMPS	Dynasty PD	---
6	CHAMPS	CruiserMaxx Peanut	
7	CHAMPS	CruiserMaxx Peanut Orthene 97	4 oz/A broadcast on May 24
8	CHAMPS	Dynasty PD Thimet 20G	5 lb/A
9	Sugg	Dynasty PD	---
10	Sugg	CruiserMaxx Peanut	
11	Sugg	CruiserMaxx Peanut Orthene 97	4 oz/A broadcast on May 24
12	Sugg	Dynasty PD Thimet 20G	5 lb/A

<b>Test:</b> PT13-THP-REGIONAL-VA
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Varieties:</b> Bailey, CHAMPS, Sugg
<b>Field:</b> 64B
<b>Location:</b> Tidewater AREC, Suffolk, VA
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 13
<b>Dig date:</b> Sep 27
<b>Harvest date:</b> Oct 3
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Granular in-furrow</b>	Tractor-mounted inverted polypropylene jars with calibrated lid holes			
<b>Broadcast with backpack</b>	<b>Nozzle type:</b> 8004VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 18	<b>GPA:</b> 14.3

**Field preparation:** Rip-strip till on April 17

Test name: **PT13-THP-REGIONAL-VA**

**Herbicides**

Date	Product	Rate/A
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
6/21	Select Max	1 pt
7/08	Intrro	1 qt
7/09	Storm	1.5 pt
7/09	Basagran	1.5 pt
8/05	Select Max	1 pt

**Additional insecticides**

Date	Product	Rate/A
7/09	Danitol	10 oz
7/26	Danitol	8 oz

**Fungicides**

Date	Product	Rate/A
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

Date	Product	Rate/A
6/13	Coverall	1 pt*
6/21	Induce	1 qt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/09	Coverall	1 pt*
7/26	Manganese	1 qt
8/05	Induce	1 qt*
*per 100 gallons of water		

**Fumigants**

Date	Product	Rate/A
4/18	Metam	7.5 gal

**Table 65. Stand counts<sup>1</sup> and thrips injury ratings<sup>2</sup>, PT13-THP-REGIONAL-VA. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Treatment and rate(s)	Plants/35 row ft	Thrips injury ratings			
			May 30	May 30	Jun 6	Jun 12	Jun 18
1	Bailey	Dynasty PD	104.6 a-c	1.69 a	4.88 a	6.69 a	6.94 a
2	Bailey	CruiserMaxx Peanut	109.1 a	0.25 d	2.69 bc	4.75 b	4.94 b
3	Bailey	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	106.6 ab	0.25 d	2.25 c	3.13 c	3.81 d
4	Bailey	Dynasty PD Thimet 20G @ 5 lb/A (IF)	107.4 ab	0.31 d	0.75 d	1.00 d	1.25 e
5	CHAMPS	Dynasty PD	104.0 a-c	1.25 b	4.88 a	6.69 a	6.94 a
6	CHAMPS	CruiserMaxx Peanut	101.9 b-d	0.38 d	2.88 b	4.63 b	4.88 b
7	CHAMPS	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	99.3 c-e	0.25 d	2.19 c	4.69 b	4.06 c
8	CHAMPS	Dynasty PD Thimet 20G @ 5 lb/A (IF)	105.3 ab	0.25 d	0.75 d	1.00 d	1.13 e
9	Sugg	Dynasty PD	96.4 de	0.81 c	4.88 a	6.69 a	6.94 a
10	Sugg	CruiserMaxx Peanut	95.8 e	0.25 d	2.69 bc	4.69 b	4.81 b
11	Sugg	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	98.4 de	0.25 d	2.69 bc	3.13 c	4.19 c
12	Sugg	Dynasty PD Thimet 20G @ 5 lb/A (IF)	94.1 e	0.25 d	0.81 d	0.81 d	1.06 e
	LSD		5.51	0.33	0.54	0.21	0.21

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants. Peanut was planted on May 13.



**Table 66. Mean number of thrips per 10 terminal leaflets, PT13-THP-REGIONAL-VA. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Treatment and rate(s)	Jun 3 <sup>1</sup>		Jun 10 <sup>2</sup>	
			Immature	Adult	Immature	Adult
1	Bailey	Dynasty PD	7.50 ab	3.50	62.00 a	0.75
2	Bailey	CruiserMaxx Peanut	3.25 cd	6.50	67.75 a	2.00
3	Bailey	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	1.50 cd	7.75	46.75 ab	2.75
4	Bailey	Dynasty PD Thimet 20G @ 5 lb/A (IF)	0.50 d	7.25	18.00 b	3.00
5	CHAMPS	Dynasty PD	10.00 a	7.00	78.25 a	2.00
6	CHAMPS	CruiserMaxx Peanut	3.00 cd	9.00	61.00 a	3.75
7	CHAMPS	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	2.75 cd	7.50	57.00 a	2.25
8	CHAMPS	Dynasty PD Thimet 20G @ 5 lb/A (IF)	5.00 bc	5.25	17.25 b	2.50
9	Sugg	Dynasty PD	9.75 a	8.25	59.75 a	1.50
10	Sugg	CruiserMaxx Peanut	1.00 cd	3.50	53.25 a	2.50
11	Sugg	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	3.00 cd	7.75	64.00 a	4.50
12	Sugg	Dynasty PD Thimet 20G @ 5 lb/A (IF)	0.75 d	8.75	16.00 b	2.50
	LSD		4.17	NS	31.84	NS

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

<sup>1</sup>Species composition from treatments 1, 5, and 9 on June 3 consisted of 97% tobacco thrips (*Frankliniella fusca*), 3% Western flower thrips (*F. occidentalis*), 0% Eastern flower thrips (*F. tritici*), 0% onion thrips (*Thrips tabaci*), and 0% soybean thrips (*Neohydatothrips variabilis*).

<sup>2</sup>Species composition from treatments 1, 5, and 9 on June 10 consisted of 100% tobacco thrips.

**Table 67. Tomato spotted wilt virus (TSWV) hits and yield, PT13-THP-REGIONAL-VA. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Treatment and rate(s)	TSWV hits/70 row ft <sup>1</sup>		Yield <sup>2</sup> (lb/A)
			Aug 13	Sep 24	
1	Bailey	Dynasty PD	0.00	2.50 cd	5,308
2	Bailey	CruiserMaxx Peanut	1.00	2.25 cd	5,261
3	Bailey	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	0.00	1.50 d	5,101
4	Bailey	Dynasty PD Thimet 20G @ 5 lb/A (IF)	0.00	2.00 cd	5,729
5	CHAMPS	Dynasty PD	0.50	6.25 ab	4,892
6	CHAMPS	CruiserMaxx Peanut	0.00	3.25 b-d	5,286
7	CHAMPS	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	0.00	4.50 b-d	5,633
8	CHAMPS	Dynasty PD Thimet 20G @ 5 lb/A (IF)	0.00	8.75 a	5,505
9	Sugg	Dynasty PD	1.25	3.25 b-d	4,667
10	Sugg	CruiserMaxx Peanut	1.50	5.25 a-c	4,977
11	Sugg	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	0.50	4.00 b-d	4,306
12	Sugg	Dynasty PD Thimet 20G @ 5 lb/A (IF)	0.25	2.25 cd	5,067
	LSD		NS	3.51	NS

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

<sup>1</sup>Based on visual inspection of all plants in two rows from each plot.

<sup>2</sup>Yield based on weight of peanut with moisture content of 7%. Dig date = September 27 and harvest date = October 3.

<b>Variety means: yield</b>	<b>Yield</b>
1. Bailey .....	5350 a
2. CHAMPS .....	5358 a
3. Sugg.....	4734
<hr/>	
LSD	403.1

<b>Insecticide material means: yield</b>	<b>Yield</b>
1. Dynasty PD .....	4961
2. CruiserMaxx Peanut .....	5175
3. CruiserMaxx Peanut + Orthene 97 @ 4 oz/A (Broadcast).....	5013
4. Dynasty PD + Thimet 20G @ 5 lb/A (IF).....	5467
<hr/>	
LSD	NS

<b>P-values: yield</b>	<b>Yield</b>
Variety .....	0.0075
Insecticide material .....	0.1930
Variety x insecticide material.....	0.4335
<hr/>	

**Test: PT13-THP-REGIONAL-RUNNER, Multi-state evaluation of a seed treatment and in-furrow granular insecticide for thrips management in runner-type peanut**

#	Variety	Treatment	Rate
1	GA 06G	Dynasty PD	---
2	GA 06G	CruiserMaxx Peanut	
3	GA 06G	CruiserMaxx Peanut Orthene 97	4 oz/A broadcast on May 28
4	GA 06G	Dynasty PD Thimet 20G	5 lb/A
5	GA Greener	Dynasty PD	---
6	GA Greener	CruiserMaxx Peanut	
7	GA Greener	CruiserMaxx Peanut Orthene 97	4 oz/A broadcast on May 28
8	GA Greener	Dynasty PD Thimet 20G	5 lb/A
9	GA 12Y	Dynasty PD	---
10	GA 12Y	CruiserMaxx Peanut	
11	GA 12Y	CruiserMaxx Peanut Orthene 97	4 oz/A broadcast on May 24
12	GA 12Y	Dynasty PD Thimet 20G	5 lb/A

<b>Test:</b> PT13-THP-REGIONAL-RUNNER
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Varieties:</b> GA 06G, GA Greener, GA 12Y
<b>Field:</b> 64B
<b>Location:</b> Tidewater AREC, Suffolk, VA
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 13
<b>Dig date:</b> Sep 27
<b>Harvest date:</b> Oct 3
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Granular in-furrow</b>	Tractor-mounted inverted polypropylene jars with calibrated lid holes			
<b>Broadcast with backpack</b>	<b>Nozzle type:</b> 8004VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 18	<b>GPA:</b> 14.3

**Field preparation:** Rip-strip till on April 17

Test name: **PT13-THP-REGIONAL-RUNNER**

**Herbicides**

Date	Product	Rate/A
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
6/21	Select Max	1 pt
7/08	Intrro	1 qt
7/09	Storm	1.5 pt
7/09	Basagran	1.5 pt
8/05	Select Max	1 pt

**Additional insecticides**

Date	Product	Rate/A
7/09	Danitol	10 oz
7/26	Danitol	8 oz

**Fungicides**

Date	Product	Rate/A
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

Date	Product	Rate/A
6/13	Coverall	1 pt*
6/21	Induce	1 qt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/09	Coverall	1 pt*
7/26	Manganese	1 qt
8/05	Induce	1 qt*
*per 100 gallons of water		

**Fumigants**

Date	Product	Rate/A
4/18	Metam	7.5 gal

**Table 68. Stand counts<sup>1</sup> and thrips injury ratings<sup>2</sup>, PT13-THP-REGIONAL-RUNNER. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Treatment and rate(s)	Plants/35 row ft	Thrips injury ratings			
			May 30	May 30	Jun 6	Jun 12	Jun 18
1	GA 06G	Dynasty PD	71.8 b	1.00 a	4.44 a	6.13 b	6.75 a
2	GA 06G	CruiserMaxx Peanut	74.9 b	0.25 c	2.44 b	4.50 c	5.25 c
3	GA 06G	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 28)	65.1 c	0.31 c	1.31 cd	2.38 g	4.00 e
4	GA 06G	Dynasty PD Thimet 20G @ 5 lb/A (IF)	77.0 b	0.25 c	0.69 d	0.75 h	0.81 g
5	GA Greener	Dynasty PD	29.5 e	0.88 ab	3.63 a	6.25 b	6.75 a
6	GA Greener	CruiserMaxx Peanut	38.4 d	0.25 c	2.13 bc	4.19 d	5.19 c
7	GA Greener	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 28)	34.6 de	0.25 c	2.19 bc	2.63 f	4.00 e
8	GA Greener	Dynasty PD Thimet 20G @ 5 lb/A (IF)	32.6 de	0.25 c	0.69 d	0.75 h	0.94 f
9	GA 12Y	Dynasty PD	127.8 a	0.81 b	4.44 a	6.63 a	6.75 a
10	GA 12Y	CruiserMaxx Peanut	126.6 a	0.38 c	2.63 b	4.31 d	5.38 b
11	GA 12Y	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	122.9 a	0.25 c	1.75 bc	3.00 e	4.25 d
12	GA 12Y	Dynasty PD Thimet 20G @ 5 lb/A (IF)	126.3 a	0.25 c	0.75 d	0.75 h	0.88 fg
	LSD		5.81	0.15	0.95	0.17	0.12

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

<sup>1</sup>Based on sampling all plants in rows 1 and 2 of each plot.

<sup>2</sup>Thrips injury rated on a 0-10 scale, 0 = no injury and 10 = dead plants. Peanut was planted on May 13.

**Table 69. Mean number of thrips per 10 terminal leaflets, PT13-THP-REGIONAL-RUNNER. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Treatment and rate(s)	Jun 3 <sup>1</sup>		Jun 10 <sup>2</sup>	
			Immature	Adult	Immature	Adult
1	GA 06G	Dynasty PD	12.00 bc	3.75	87.50 a	2.00
2	GA 06G	CruiserMaxx Peanut	5.00 cd	6.25	53.00 bc	3.75
3	GA 06G	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 28)	6.75 cd	4.75	20.75 d-f	4.25
4	GA 06G	Dynasty PD Thimet 20G @ 5 lb/A (IF)	1.50 d	3.50	5.00 f	3.25
5	GA Greener	Dynasty PD	15.75 ab	5.00	92.75 a	3.00
6	GA Greener	CruiserMaxx Peanut	7.00 cd	6.75	43.75 b-e	7.50
7	GA Greener	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 28)	0.50 d	3.75	22.50 c-f	6.50
8	GA Greener	Dynasty PD Thimet 20G @ 5 lb/A (IF)	2.25 d	4.75	8.50 f	4.75
9	GA 12Y	Dynasty PD	19.50 a	4.00	68.50 ab	2.50
10	GA 12Y	CruiserMaxx Peanut	7.25 cd	4.75	68.00 ab	2.75
11	GA 12Y	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	4.75 d	7.00	47.75 b-d	4.00
12	GA 12Y	Dynasty PD Thimet 20G @ 5 lb/A (IF)	1.75 d	4.50	13.75 ef	3.25
	LSD		7.12	NS	31.49	NS

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

<sup>1</sup>Species composition from treatments 1, 5, and 9 on June 3 consisted of 98% tobacco thrips (*Frankliniella fusca*), 2% Western flower thrips (*F. occidentalis*), 0% Eastern flower thrips (*F. tritici*), 0% onion thrips (*Thrips tabaci*), and 0% soybean thrips (*Neohydatothrips variabilis*).

<sup>2</sup>Species composition from treatments 1, 5, and 9 on June 10 consisted of 100% tobacco thrips. Two specimens were too badly damaged to identify.

**Table 70. Tomato spotted wilt virus (TSWV) hits and yield, PT13-THP-REGIONAL-RUNNER. Tidewater AREC, Suffolk, VA, 2013.**

#	Variety	Treatment and rate(s)	TSWV hits/70 row ft <sup>1</sup>		Yield <sup>2</sup> (lb/A)
			Aug 13	Sep 24	
1	GA 06G	Dynasty PD	0.00	2.25 bc	4,842 bc
2	GA 06G	CruiserMaxx Peanut	0.00	0.50 c	4,489 c
3	GA 06G	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 28)	0.25	3.25 ab	5,048 a-c
4	GA 06G	Dynasty PD Thimet 20G @ 5 lb/A (IF)	0.00	1.00 bc	4,537 c
5	GA Greener	Dynasty PD	0.00	1.50 bc	3,144 d
6	GA Greener	CruiserMaxx Peanut	0.00	2.75 a-c	3,544 d
7	GA Greener	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 28)	0.00	2.25 bc	3,557 d
8	GA Greener	Dynasty PD Thimet 20G @ 5 lb/A (IF)	0.50	4.75 a	3,337 d
9	GA 12Y	Dynasty PD	0.00	0.75 c	5,365 ab
10	GA 12Y	CruiserMaxx Peanut	0.00	1.25 bc	5,465 ab
11	GA 12Y	CruiserMaxx Peanut Orthene 97 @ 4 oz/A (broadcast May 24)	0.00	1.00 bc	5,798 a
12	GA 12Y	Dynasty PD Thimet 20G @ 5 lb/A (IF)	0.00	0.75 c	5,611 ab
	LSD		NS	2.41	775.2

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

<sup>1</sup>Based on visual inspection of all plants in two rows from each plot.

<sup>2</sup>Yield based on weight of peanut with moisture content of 7%. Dig date = September 27 and harvest date = October 3.



<b>Variety means: yield</b>	<b>Yield</b>
1. GA 06G .....	4738 b
2. GA Greener .....	3389 c
3. GA 12Y .....	5560 a
LSD	366.5

<b>Insecticide material means: yield</b>	<b>Yield</b>
1. Dynasty PD .....	4450
2. CruiserMaxx Peanut .....	4596
3. CruiserMaxx Peanut + Orthene 97 @ 4 oz/A (Broadcast).....	4779
4. Dynasty PD + Thimet 20G @ 5 lb/A (IF).....	4607
LSD	NS

<b>P-values: yield</b>	<b>Yield</b>
Variety .....	<0.0001
Insecticide material .....	0.3149
Variety x insecticide material.....	0.8102

**Test: PT13-SCR-1, Belay for rootworm management in peanut**

#	Material	Rate	Date treated
1	Untreated	---	
2	Belay 2.13SC	12 oz/A (=4.67 oz/A applied in a 14-inch band, pre-plant incorporated)	Apr 19
3	Belay 2.13SC	12 oz/A (IF)	May 10
4	Belay 2.13SC	12 oz/A (broadcast at pegging)	Jul 8
5	Lorsban 15G	13 lb/A (at pegging)	Jul 8

<b>Test:</b> PT13-SCR-1
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Variety:</b> CHAMPS
<b>Field:</b> 14
<b>Location:</b> Tidewater AREC
<b>Experimental design:</b> RCBD

<b>Plot size:</b> 2 rows x 35' plus 2 guard rows
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 10
<b>Dig date:</b> Sep 26
<b>Harvest date:</b> Oct 2
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Band with backpack (trt 2)</b>	<b>Nozzle type:</b> 8004E	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 23	<b>GPA:</b> 16.8
<b>Liquid in-furrow (trt 3)</b>	<b>Nozzle type:</b> microtube	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 51	<b>GPA:</b> 5
<b>Broadcast with backpack (trt 4)</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 18	<b>GPA:</b> 14.3
<b>Band using bike rig (trt 5):</b> applied in a 12-14" band over the row with a field cycle-mounted Noble applicator, setting = 12				

**Field preparation:** Rip-strip till on April 17.

**Comments:** CHAMPS guard rows.

Test name: **PT13-SCR-1**

**Herbicides**

Date	Product	Rate/A
6/13	Storm	1.5 pt
6/13	Basagran	1 pt
7/08	Intrro	1 qt
7/09	Select Max	1 pt
8/05	Poast Plus	1.5 pt

**Additional insecticides**

Date	Product	Rate/A
5/31	Orthene 97	4 oz
7/26	Danitol	8 oz

**Fungicides**

Date	Product	Rate/A
7/06	Provost	10 oz
7/26	Provost	10 oz
8/05	Omega	1 pt
8/20	Provost	10 oz
9/19	Bravo	1.5 pt

**Lime, fertilizer, landplaster, & adjuvants**

Date	Product	Rate/A
6/13	Coverall	1 pt*
6/25	Boron	1 qt
6/25	Manganese	1 qt
6/25	Landplaster Gypsum 420	1400 lb
7/06	Boron	1 qt
7/06	Manganese	1 qt
7/09	Induce	1 qt*
7/26	Manganese	1 qt
8/05	Induce	1 qt*
*per 100 gallons of water		

**Fumigants**

Date	Product	Rate/A
4/19	Metam	7.5 gal

**Table 71. Southern corn rootworm mean percent damaged pods<sup>1</sup> and yield, PT13-SCR1. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate and timing	Mean percent scarified pods	Mean percent penetrated pods	Yield <sup>2</sup> (lb/A)
1	Untreated	---	6.25 a	0.00	6,770
2	Belay 2.13SC	12 oz/A (=4.67 oz/A applied in a 14-inch band, pre-plant incorporated)	3.50 bc	0.25	6,837
3	Belay 2.13SC	12 oz/A (IF)	5.00 ab	0.25	7,685
4	Belay 2.13SC	12 oz/A (broadcast at pegging)	2.75 c	0.00	7,277
5	Lorsban 15G	13 lb/A (at pegging)	3.25 bc	0.00	7,232
	LSD		1.92	NS	NS

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

<sup>1</sup>*A pre-harvest sample of 100 full-sized pods were randomly selected per plot after digging. Samples were taken on September 27.*

<sup>2</sup>*Yield based on weight of peanut with moisture content of 7%. Dig date = September 26 and harvest date = October 2.*

**Test: PT13-SCR-2, On-farm assessment of Belay for rootworm management in peanut**

#	Material	Rate	Date treated
1	Belay 2.13SC + Acephate + Optimize Lift	12 oz/A (IF) (IF) (IF)	May 4
2	Belay 2.13SC	12 oz/A (broadcast at pegging)	Jul 6
3	Chlorpyrifos	12.5 lb/A (at pegging)	Jul 6
4	Untreated		---

<b>Test:</b> PT13-SCR-2
<b>Year:</b> 2013
<b>Crop:</b> Peanut
<b>Variety:</b> Gregory
<b>Field:</b> n/a
<b>Location:</b> Henry Goodrich farm, Surry Co., VA
<b>Experimental design:</b> Replicated strip

<b>Plot size:</b> 6 rows x length of field (500-1400 ft)
<b>Row spacing:</b> 36"
<b>Planting date:</b> May 4
<b>Dig date:</b> Sep 26
<b>Harvest date:</b> n/a
<b>Row feet harvested:</b> n/a

**Treatment application(s):**

<b>In-furrow application</b>	<b>Nozzle type:</b> 4002	<b>Nozzle spacing:</b> 36"	<b>PSI:</b> 20	<b>GPA:</b> 5
<b>Belay broadcast</b>	<b>Nozzle type:</b> 8004	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 60	<b>GPA:</b> 18
<b>Chlorpyrifos application:</b> 12.5 pounds on July 6				

**Field preparation:** Moldboard plow, cultipacker, field cultivator, bedded with Vapam

**Comments:** Henry Goodrich is acknowledged for his assistance with this test. This test was not irrigated.

Test name: **PT13-SCR-2**

**Herbicides**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
4/18	Prowl	1.8pt
4/18	Metolachlor	1.8pt
4/18	Thunder	2.6 oz
4/18	Strongarm	0.25 oz
6/05	Storm	1.5 pt

**Additional insecticides**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
5/04	Acephate	1 lb IF
6/05	Acephate	0.5 lb banded
8/22	Lambda-cyhalothrin	4 oz

**Fungicides**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
7/05	Tebuzol	6.6 oz
7/05	CL 720	1.25 pt
7/24	Stratego	10 oz
8/08	Endura	10 oz
8/22	Fontellis	20 oz
9/07	CL 720	1.5 pt

**Lime, fertilizer, & landplaster**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
3/09	6-17-35	200 lb
5/04	Lift	0.1g IF
7/05	Mandate	0.75 qt
7/05	Chemsol	1.5 lb
7/05	Energy Boost	0.75 lb
7/10	Pro gyp plaster	1600 lb
7/24	Chemsol	0.75 lb
7/24	Manganese sulfate 14%	0.75 qt
7/24	Boron	0.6g
8/08	Chemsol	1.5 lb
8/08	Manganese sulfate 14%	0.75 qt

**Fumigants**

<b>Date</b>	<b>Product</b>	<b>Rate/A</b>
4/16	Vapam	7.75 gal

**Table 72. Southern corn rootworm mean percent damaged pods<sup>1</sup>, yield<sup>2</sup>, and dollar value per acre<sup>3</sup>, PT13-SCR2 (Henry Goodrich farm, Surry Co., VA). Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Rate and timing	Mean percent scarified pods	Mean percent penetrated pods	Yield (lb/A)	Dollar value/A
1	Belay 2.13SC + Acephate + Optimize Lift	12 oz/A (IF) (IF) (IF)	7.67 a	0.00	6,247	1,099
2	Belay 2.13SC	12 oz/A (broadcast at pegging)	6.00 a	0.00	6,212	1,085
3	Chlorpyrifos	12.5 lb/A (at pegging)	1.67 b	0.00	6,174	1,095
4	Untreated		6.17 a	0.00	6,231	1,079
	LSD		2.49	NS	---	---

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

<sup>1</sup>*A pre-harvest sample of 100 full-sized pods were randomly selected per plot after digging. Samples were taken from 6 replicates on October 1.*

<sup>2</sup>*Yields were based on 1 or 2 replicates and therefore were not statistically analyzed.*

<sup>3</sup>*Dollar value based on loan with LSK less tax.*



## **Soybean Insect Pest Management Tests and Demonstrations**



**Test: SB13-TCAH-1, Evaluation of selected seed treatment and foliar insecticides for threecornered alfalfa hopper and kudzu bug management in soybean**

#	Material	Application date
1	USG 7553nRS Renwood Pro	---
2	USG 7553nRS Renwood Pro Plus	---
3	USG 7553nRS Renwood Pro, with Sniper @ 6.4 oz/A	Jul 30
4	USG 7553nRS Renwood Pro Plus, with Sniper @ 6.4 oz/A	Jul 30

<b>Test:</b> SB13-TCAH-1
<b>Year:</b> 2013
<b>Crop:</b> Soybean
<b>Variety:</b> USG 7553
<b>Field:</b> n/a
<b>Location:</b> The Taylor Place, LLC (Taylor and Jodie Clarke), Brunswick Co., VA

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 22 rows x variable lengths
<b>Row spacing:</b> 15"
<b>Planting date:</b> May 4
<b>Harvest date:</b> Oct 28
<b>Row feet harvested:</b> 138-215' x 15'

**Treatment application(s):**

<b>Speed:</b> 4.0-4.2 mph	<b>Nozzle type:</b> Teejet TTIJ11002 nozzle (twin fan air induction)	<b>PSI:</b> 50	<b>GPA:</b> 18
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Combine for harvest 9500 with 915f head @ 2.8-3.0mph

**Table 73. Mean number of kudzu bugs per 15 sweeps<sup>1</sup>, SB13-TCAH/KB-1. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Jun 20			Jun 26			Jul 3		
		Adults	Nymphs	Egg masses	Adults	Nymphs	Egg masses	Adults	Nymphs	Egg masses
1	USG 7553nRS Renwood Pro	6.81	1.75	1.13	12.81	0.81	0.88	3.13	1.69	0.06
2	USG 7553nRS Renwood Pro Plus	8.38	1.81	1.13	13.69	1.88	1.06	3.06	3.06	0.00
3	USG 7553nRS Renwood Pro, with Sniper @ 6.4 oz/A (Jul 30)	6.00	1.31	0.69	12.50	1.56	0.88	3.88	3.06	0.13
4	USG 7553nRS Renwood Pro Plus, with Sniper @ 6.4 oz/A (Jul 30)	8.81	2.75	0.75	10.38	2.25	0.94	4.31	1.75	0.06
	LSD	NS	NS	NS	NS	NS	NS	NS	NS	NS

**Table 73, continued.**

#	Material	Jul 10			Jul 17			Aug 7 <sup>2</sup>		
		Adults	Nymphs	Egg masses	Adults	Nymphs	Egg masses	Adults	Nymphs	Egg masses
1	USG 7553nRS Renwood Pro	4.25	4.75 b	0.00	2.38 b	3.50 b	0.31	4.56 b	3.75 b	0.00
2	USG 7553nRS Renwood Pro Plus	4.06	8.13 a	0.06	2.06 b	6.56 a	0.44	15.00 a	7.56 a	0.06
3	USG 7553nRS Renwood Pro, with Sniper @ 6.4 oz/A (Jul 30)	4.75	4.00 b	0.06	3.94 a	2.00 b	0.25	0.56 b	0.38 c	0.00
4	USG 7553nRS Renwood Pro Plus, with Sniper @ 6.4 oz/A (Jul 30)	3.31	7.25 a	0.00	2.00 b	5.81 a	0.06	0.50 b	0.06 c	0.06
	LSD	NS	1.94	NS	1.52	1.81	NS	5.11	2.49	NS

**Table 73, continued.**

#	Material	Aug 15		
		Adults	Nymphs	Egg masses
1	USG 7553nRS Renwood Pro	5.31 b	4.44 a	0.00
2	USG 7553nRS Renwood Pro Plus	11.00 a	4.50 a	0.00
3	USG 7553nRS Renwood Pro, with Sniper @ 6.4 oz/A (Jul 30)	0.00 c	0.00 b	0.00
4	USG 7553nRS Renwood Pro Plus, with Sniper @ 6.4 oz/A (Jul 30)	0.06 c	0.00 b	0.00
	LSD	2.79	1.54	NS

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

<sup>1</sup>Two rows were sampled per sweep. Four 15-sweep samples were taken per plot.

<sup>2</sup>First post-insecticide broadcast application sample.

**Table 74. Yield<sup>1</sup>, SB13-TCAH/KB-1. Tidewater AREC, Suffolk, VA, 2013.**

#	Material	Yield (bu/A)
1	USG 7553nRS Renwood Pro	39.9
2	USG 7553nRS Renwood Pro Plus	40.1
3	USG 7553nRS Renwood Pro, with Sniper @ 6.4 oz/A (Jul 30)	39.5
4	USG 7553nRS Renwood Pro Plus, with Sniper @ 6.4 oz/A (Jul 30)	40.0
	LSD	NS

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

<sup>1</sup>Yield based on weight of soybean with moisture content of 13%.



## **Sorghum Insect Pest Management Tests and Demonstrations**

**Test: SORGHUM-13-LEP-1, Evaluation of selected insecticides for lepidopteran pest management in 'DKS38-88' sorghum**

#	Material	Rate	Application type	Application date
1	Tombstone	3 oz/A	Broadcast	Aug 14
2	Belt	3 oz/A	Broadcast	Aug 14
3	Blackhawk	3 oz/A	Broadcast	Aug 14
4	Tombstone	3 oz/A	Band	Aug 14
5	Belt	3 oz/A	Band	Aug 14
6	Blackhawk	3 oz/A	Band	Aug 14
7	Untreated	---	---	---

Seed was treated with Concep Poncho.

<b>Test:</b> Sorghum13-LEP-1
<b>Year:</b> 2013
<b>Crop:</b> Sorghum
<b>Variety:</b> DKS38-88
<b>Field:</b> 15
<b>Location:</b> Tidewater AREC

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> Jun 4
<b>Harvest date:</b> Oct 24
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Broadcast using Spider Spray Trac</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 38	<b>GPA:</b> 19.88
<b>Band using Spider Spray Trac</b>	<b>Nozzle type:</b> TJ-60	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 38	<b>GPA:</b> 19.88

**Land preparation:** Rip-strip till on June 1

**Comments:** Cultivated on June 27

Test name: Sorghum13-LEP-1

**Herbicides**

Date	Product	Rate/A
4/13	Roundup WeatherMax	1 qt
5/27	Roundup WeatherMax	22 oz
6/04	Bicep	1.5 qt

**Additional insecticides**

Date	Product	Rate/A

**Fertilizer**

Date	Product	Rate/A
3/29	8-15-36	300 lb
6/04	24-0-0-3	60 units
6/27	24-0-0-3	60 units

**Fungicides**

Date	Product	Rate/A

**Dessicant**

Date	Product	Rate/A
9/25	Roundup WeatherMax	1.5 qt

**Table 75. Mean number of corn earworm larvae per 20-heads<sup>1</sup>, SORGHUM-13-LEP-1. Tidewater AREC, Suffolk, VA, 2013. Insecticide treatments were applied on August 14. Variety = ‘DKS38-88’.**

#	Material	Rate	Application type	Aug 21				Aug 28			
				Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae
1	Tombstone	3 oz/A	Broadcast	0.00	0.00 c	0.25 b	0.25 b	0.00	0.00	0.00 b	0.00 b
2	Belt	3 oz/A	Broadcast	0.25	0.25 bc	0.25 b	0.75 b	0.50	0.00	0.00 b	0.50 b
3	Blackhawk	3 oz/A	Broadcast	0.00	0.50 bc	0.50 b	1.00 b	0.00	0.25	0.00 b	0.25 b
4	Tombstone	3 oz/A	Band	0.25	0.50 bc	0.00 b	0.75 b	0.00	0.25	0.25 b	0.50 b
5	Belt	3 oz/A	Band	0.00	1.50 b	0.75 b	2.25 b	0.25	0.25	0.25 b	0.75 b
6	Blackhawk	3 oz/A	Band	0.00	0.00 c	0.25 b	0.25 b	0.00	0.50	0.75 ab	1.25 b
7	Untreated	---	---	0.50	4.25 a	3.00 a	7.75 a	0.50	0.50	1.75 a	2.75 a
	LSD			NS	1.29	1.14	2.24	NS	NS	1.05	1.39

**Table 75, continued.**

#	Material	Rate	Application type	Sep 4				Sep 11			
				Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae
1	Tombstone	3 oz/A	Broadcast	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Belt	3 oz/A	Broadcast	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00
3	Blackhawk	3 oz/A	Broadcast	0.00	0.00	0.25	0.25	0.00	0.00	0.00	0.00
4	Tombstone	3 oz/A	Band	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Belt	3 oz/A	Band	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Blackhawk	3 oz/A	Band	0.00	0.25	0.50	0.75	0.00	0.00	0.00	0.00
7	Untreated	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	LSD			NS	NS	NS	NS	NS	NS	NS	NS

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

<sup>1</sup>Twenty heads per plot were cut on each sample date. Heads were shaken inside a bucket to dislodge larvae.

**Table 76. Sorghum yield, SORGHUM-13-LEP-1. Tidewater AREC, Suffolk, VA, 2013. Insecticide treatments were applied on August 14. Variety = ‘DKS38-88’.**

#	Material	Rate	Application type	Yield <sup>1</sup> (bu/A)
1	Tombstone	3 oz/A	Broadcast	76.6 ab
2	Belt	3 oz/A	Broadcast	87.7 a
3	Blackhawk	3 oz/A	Broadcast	84.1 a
4	Tombstone	3 oz/A	Band	71.8 b
5	Belt	3 oz/A	Band	87.3 a
6	Blackhawk	3 oz/A	Band	78.3 ab
7	Untreated	---	---	69.1 b
	LSD			11.23

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

<sup>1</sup>Yield based on weight of sorghum with moisture content of 13.5% and 56 lb/bu. Harvest date = October 24.

**Application type means: yield**

	Yield
1. Broadcast .....	82.8
2. Band .....	79.1
3. Untreated .....	69.1
LSD .....	NS

**Insecticide material means: yield**

	Yield
1. Tombstone .....	74.2 bc
2. Belt .....	87.5 a
3. Blackhawk .....	81.2 ab
4. Untreated .....	69.1 c
LSD .....	9.0147

**P-values: yield**

	Yield
Application type (broadcast/band/untreated) .....	0.2625
Insecticide material .....	0.0096
Application type x insecticide material .....	0.7685



**Test: SORGHUM-13-LEP-2, Evaluation of selected insecticides for lepidopteran pest management in 'DKS54-00' sorghum**

#	Material	Rate	Application type	Application date
1	Tombstone	3 oz/A	Broadcast	Aug 21
2	Belt	3 oz/A	Broadcast	Aug 21
3	Blackhawk	3 oz/A	Broadcast	Aug 21
4	Tombstone	3 oz/A	Band	Aug 21
5	Belt	3 oz/A	Band	Aug 21
6	Blackhawk	3 oz/A	Band	Aug 21
7	Untreated	---	---	---

Seed was treated with Concep Poncho.

<b>Test:</b> Sorghum13-LEP-2
<b>Year:</b> 2013
<b>Crop:</b> Sorghum
<b>Variety:</b> DKS54-00
<b>Field:</b> 15
<b>Location:</b> Tidewater AREC

<b>Experimental design:</b> RCBD
<b>Plot size:</b> 4 rows x 35'
<b>Row spacing:</b> 36"
<b>Planting date:</b> Jun 4
<b>Harvest date:</b> Oct 24
<b>Row feet harvested:</b> 70

**Treatment application(s):**

<b>Broadcast using Spider Spray Trac</b>	<b>Nozzle type:</b> 8002VS	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 38	<b>GPA:</b> 19.88
<b>Band using Spider Spray Trac</b>	<b>Nozzle type:</b> TJ-60	<b>Nozzle spacing:</b> 18"	<b>PSI:</b> 38	<b>GPA:</b> 19.88

**Land preparation:** Rip-strip till on June 1

**Comments:** Cultivated on June 27

Test name: Sorghum13-LEP-2

**Herbicides**

Date	Product	Rate/A
4/13	Roundup WeatherMax	1 qt
5/27	Roundup WeatherMax	22 oz
6/04	Bicep	1.5 qt

**Additional insecticides**

Date	Product	Rate/A

**Fungicides**

Date	Product	Rate/A

**Fertilizer**

Date	Product	Rate/A
3/29	8-15-36	300 lb
6/04	24-0-0-3	60 units
6/27	24-0-0-3	60 units

**Dessicant**

Date	Product	Rate/A
9/25	Roundup WeatherMax	1.5 qt

**Table 77. Mean number of corn earworm larvae per 20-heads<sup>1</sup>, SORGHUM-13-LEP-2. Tidewater AREC, Suffolk, VA, 2013. Insecticide treatments were applied on August 21. Variety = 'DKS54-00'.**

#	Material	Rate	Application type	Aug 28				Sep 4			
				Small larvae	Medium larvae	Large larvae	Total larvae	Small larvae	Medium larvae	Large larvae	Total larvae
1	Tombstone	3 oz/A	Broadcast	0.25	1.00 b	1.00	2.25 b	0.00	0.00	0.00	0.00
2	Belt	3 oz/A	Broadcast	0.50	1.00 b	0.25	1.75 bc	0.00	0.00	0.00	0.00
3	Blackhawk	3 oz/A	Broadcast	0.00	0.50 b	0.50	1.00 bc	0.00	0.00	0.00	0.00
4	Tombstone	3 oz/A	Band	0.00	0.50 b	0.00	0.50 bc	0.25	0.00	0.00	0.25
5	Belt	3 oz/A	Band	0.00	0.00 b	0.00	0.00 c	0.00	0.00	0.00	0.00
6	Blackhawk	3 oz/A	Band	0.25	0.50 b	0.50	1.25 bc	0.00	0.00	0.00	0.00
7	Untreated	---	---	0.25	3.00 a	1.75	5.00 a	0.00	0.00	0.25	0.25
	LSD			NS	1.27	NS	2.22	NS	NS	NS	NS

**Table 77, continued.**

#	Material	Rate	Application type	Sep 11			
				Small larvae	Medium larvae	Large larvae	Total larvae
1	Tombstone	3 oz/A	Broadcast	0.00	0.25	0.00	0.25
2	Belt	3 oz/A	Broadcast	0.00	0.00	0.00	0.00
3	Blackhawk	3 oz/A	Broadcast	0.00	0.00	0.00	0.00
4	Tombstone	3 oz/A	Band	0.00	0.00	0.25	0.25
5	Belt	3 oz/A	Band	0.00	0.00	0.00	0.00
6	Blackhawk	3 oz/A	Band	0.00	0.00	0.00	0.00
7	Untreated	---	---	0.00	0.00	0.00	0.00
	LSD			NS	NS	NS	NS

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

<sup>1</sup>*Twenty heads per plot were cut on each sample date. Heads were shaken inside a bucket to dislodge larvae.*

**Table 78. Sorghum yield, SORGHUM-13-LEP-2. Tidewater AREC, Suffolk, VA, 2013. Insecticide treatments were applied on August 21. Variety = ‘DKS54-00’.**

#	Material	Rate	Application type	Yield <sup>1</sup> (bu/A)
1	Tombstone	3 oz/A	Broadcast	75.1
2	Belt	3 oz/A	Broadcast	81.1
3	Blackhawk	3 oz/A	Broadcast	74.5
4	Tombstone	3 oz/A	Band	75.1
5	Belt	3 oz/A	Band	73.1
6	Blackhawk	3 oz/A	Band	81.5
7	Untreated	---	---	68.1
	LSD			NS

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

<sup>1</sup>Yield based on weight of sorghum with moisture content of 13.5% and 56 lb/bu. Harvest date = October 24.

**Application type means: yield**

	Yield
1. Broadcast.....	76.9
2. Band.....	76.6
3. Untreated.....	68.1
LSD.....	NS

**Insecticide material means: yield**

	Yield
1. Tombstone.....	75.1
2. Belt.....	77.1
3. Blackhawk.....	78.0
4. Untreated.....	68.1
LSD.....	NS

**P-values: yield**

	Yield
Application type (broadcast/band/untreated).....	0.9371
Insecticide material.....	0.8273
Application type x insecticide material.....	0.3223

## Corn earworm survey of field corn in Virginia, 2013

Annually, we conduct a survey to estimate *Helicoverpa zea* (corn earworm) infestation levels in field corn in mid- to late July. Corn is considered a nursery crop for earworm, allowing the pest to complete a lifecycle and then move on to other crops such as soybean, cotton, and peanut in August. Over 30 years of data show that there is a linear correlation between the infestation level in corn and the amount of soybean acreage that gets treated with insecticide for this pest.

To conduct the survey this year, the number of corn earworms found in 50 ears of corn was recorded in 5 corn fields in each of 30 counties, totaling 7,500 ears and 150 fields sampled. When fields were known to contain Bt or non-Bt corn, this was noted. Otherwise, samples were considered to be random and assumed to be representative of the actual Bt/non-Bt composition in each county. Age of earworms, or if they had already exited the ears, was also recorded (data not shown). We greatly appreciate the help of Virginia Cooperative Extension Agriculture and Natural Resource (ANR) Agents, Virginia Tech faculty and staff, and volunteers in this effort. These cooperators are acknowledged below. We also would like to thank the many growers who graciously allowed us to inspect their fields for earworm.

Results of the survey are provided in the attached table. Statewide, approximately 18% of ears were infested with earworms. For comparison, 30% of ears were infested in 2012, 33% of ears were infested in 2011; 40% in 2010; and 36% in 2009. Regional averages for 2013 were 9.2% infested ears in the Northern Neck, 15.1% in Mid-Eastern, 20.2% in South-Central, 23.4% in the Southeast, and 16.2% on the Eastern Shore.

This survey is intended to be a representative sample, not a complete picture. We always recommend scouting individual fields to determine exactly what is happening in terms of corn earworm as well as other pests and crop problems. Also, please check the black light trap data on the [Virginia Ag Pest Advisory](#) and other reports posted weekly to keep up-to-date on the insect pest situation.

### Acknowledgments for the 2013 Virginia field corn survey

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**Table 79. Corn earworm survey of field corn in Virginia, 2013.**

<b>County</b>	<b># Fields</b>	<b># Ears Sampled</b>	<b>% Ears Infested</b>	<b>Field type(s)</b>
<b>Eastern Shore</b>				
Accomack	5	250	20.0	5 random samples
Northampton	5	250	12.4	5 random samples
<i>Regional avg. %</i>			<i>16.2</i>	
<b>Mid-Eastern</b>				
Charles City	5	250	18.8	5 random samples
Essex	5	250	6.0	5 random samples
Gloucester	5	250	17.6	5 random samples
Hanover	5	250	19.2	4 Bt, 1 non-Bt
Henrico	5	250	30.8	5 random samples
James City	5	250	19.6	5 random samples
King and Queen	5	250	5.2	5 random samples
King William	5	250	8.8	5 random samples
Mathews	5	250	13.6	5 random samples
Middlesex	5	250	12.0	5 random samples
New Kent	5	250	14.0	5 random samples
<i>Regional avg. %</i>			<i>15.1</i>	
<b>Southeast</b>				
Chesapeake	5	250	11.6	4 Bt, 1 non-Bt
Dinwiddie	5	250	31.2	2 Bt, 3 non-Bt
Greensville	5	250	31.2	5 random samples
Isle of Wight	5	250	38.0	5 Bt
Prince George	5	250	36.8	1 non-Bt, 4 random samples
Southampton	5	250	14.0	5 Bt
Suffolk	5	250	36.4	5 random samples
Surry	5	250	14.8	4 Bt, 1 random sample
Sussex	5	250	14.0	5 Bt
Virginia Beach	5	250	6.4	4 Bt, 1 non-Bt
<i>Regional avg. %</i>			<i>23.4</i>	
<b>South-Central</b>				
Amelia	5	250	9.6	3 Bt, 2 non-Bt
Charlotte	5	250	38.0	1 Bt, 4 non-Bt
Goochland	5	250	8.8	4 Bt, 1 non-Bt
Nottoway	5	250	29.2	3 Bt, 2 non-Bt
Powhatan	5	250	15.2	5 Bt
<i>Regional avg. %</i>			<i>20.2</i>	
<b>Northern Neck</b>				
Richmond	5	250	10.0	5 random samples
Westmoreland	5	250	8.4	5 random samples
<i>Regional avg. %</i>			<i>9.2</i>	
<b>State average</b>			<b>18.4%</b>	

**Table 80. Average nightly number of corn earworm moths captured in eastern Virginia black light traps, 2013 season.**

Nightly trap catch average for week ending:																		
Location (county-town)	5/23	5/30	6/06	6/13	6/20	6/27	7/03	7/11	7/18	7/25	8/01	8/08	8/15	8/22	8/29	9/05	9/12	9/19
<b>Southeast</b>																		
Accomack-Painter	n/a	n/a	n/a	0.0	0.0	3.3	1.3	1.1	n/a	n/a	2.1	0.1	n/a	0.9	n/a	n/a	n/a	n/a
Chesapeake-Ballahack Rd	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.0	2.3	2.0	1.4	1.4	1.7	1.7	2.9	n/a	n/a	n/a
Dinwiddie-Old Hickory	n/a	n/a	n/a	n/a	n/a	n/a	4.0	7.3	6.9	6.1	10.9	13.6	35.0	5.1	13.4	36.9	26.4	n/a
Dinwiddie-McKenney	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5.0	6.3	19.4	4.0	11.7	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	0.7	0.8	3.3	n/a	n/a	n/a	n/a	n/a
Petersburg	n/a	n/a	n/a	n/a	1.3	0.4	2.0	1.0	2.3	1.4	0.7	3.1	3.6	2.9	2.1	2.7	1.7	0.6
Prince George-Templeton	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.1	0.6	0.5	0.6	1.3	2.6	0.7	0.9	0.0	0.3	0.3
Prince George-Disputanta	n/a	n/a	n/a	n/a	n/a	n/a	0.4	0.3	0.0	0.0	1.0	6.3	8.6	5.4	4.1	3.5	4.9	1.9
Southampton	n/a	n/a	n/a	n/a	0.3	n/a	n/a	n/a	n/a	0.1	0.6	3.0	4.0	3.5	n/a	5.0	4.0	3.0
Suffolk-Holland	0.9	0.3	0.3	0.3	0.1	0.1	0.5	0.4	0.4	0.0	1.7	5.6	7.3	4.6	1.7	1.3	5.5	1.0
Sussex-Waverly	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6.5	3.0	2.8	3.9	5.0	6.2	10.7	5.3	3.0	4.6
Virginia Beach-HRAREC	n/a	0.0	0.0	0.0	0.3	0.1	0.6	0.0	0.0	0.0	0.0	0.4	0.1	0.6	0.0	n/a	0.0	n/a
<b>North of James River</b>																		
Charles City	n/a	n/a	n/a	n/a	n/a	6.3	4.7	5.4	7.7	0.3	n/a	11.4	25.0	42.8	50.7	66.4	35.1	n/a
Essex	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.3	0.0	0.4	0.9	0.7	n/a	n/a	n/a
Gloucester	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2.5	3.5	8.0	5.5	4.5	2.0	2.5	1.0
King William	n/a	n/a	n/a	n/a	n/a	0.2	0.0	n/a	0.0	n/a	0.0	0.5	0.8	0.1	0.2	n/a	0.3	0.2
Middlesex	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	3.0	3.0	7.0	6.0	4.0	2.5	2.0	1.0
New Kent	n/a	n/a	n/a	n/a	n/a	2.4	4.3	0.9	6.3	n/a	n/a	6.8	17.4	47.5	10.5	15.6	2.1	n/a
Richmond Co.-Warsaw	n/a	n/a	0.3	0.9	0.5	0.4	0.0	0.0	0.0	0.0	0.6	2.4	4.1	0.9	1.4	1.6	4.9	2.3

*n/a = report not available.*

**Table 81. Average nightly number of brown marmorated stink bug (BMSB) captured in eastern Virginia black light traps, 2013 season.**

Nightly BMSB trap catch average for week ending:																		
Location (county-town)	5/23	5/30	6/06	6/13	6/20	6/27	7/03	7/11	7/18	7/25	8/01	8/08	8/15	8/22	8/29	9/05	9/12	9/19
<b>Southeast</b>																		
Accomack-Painter	n/a	n/a	n/a	0.0	0.0	0.1	0.0	n/a	0.3	n/a	0.0	0.0	0.3	0.0	n/a	n/a	n/a	n/a
Chesapeake-Ballahack Rd	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a	n/a	n/a
Dinwiddie-Old Hickory	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.7	1.1	0.6	n/a
Dinwiddie-McKenney	n/a	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	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	0.0	0.0	0.0	n/a	n/a	n/a	n/a	n/a
Petersburg	n/a	n/a	n/a	n/a	2.3	2.9	0.7	2.8	13.5	15.0	3.1	6.4	5.0	1.9	2.4	3.4	2.9	0.7
Prince George-Templeton	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Prince George-Disputanta	n/a	n/a	n/a	n/a	n/a	n/a	0.2	0.0	0.7	1.0	0.6	0.1	0.3	0.0	0.0	0.0	0.0	0.0
Southampton	n/a	n/a	n/a	n/a	0.0	n/a	n/a	n/a	n/a	0.0	0.0	0.0	0.0	0.0	n/a	0.0	0.0	0.0
Suffolk-Holland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sussex-Waverly	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.1	n/a	0.0	n/a	n/a	0.0	0.0	0.0	0.0
Virginia Beach-HRAREC	n/a	0.0	0.0	1.3	0.0	0.1	0.7	1.4	3.0	0.6	0.7	1.0	1.3	0.0	0.0	n/a	0.1	n/a
<b>North of James River</b>																		
Charles City	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0	1.8	0.4	n/a	0.0	2.0	0.0	1.0	0.0	0.5	n/a
Essex	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	0.0	0.0	1.1	0.3	0.0	n/a	n/a	n/a
Gloucester	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15.0	45.0	16.0	0.0	2.0	1.0	0.5	1.0
King William	n/a	n/a	n/a	n/a	n/a	1.3	0.9	n/a	2.7	n/a	1.0	3.2	5.4	0.0	0.0	n/a	0.3	0.0
Middlesex	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.0	2.5	15.0	42.0	0.0	0.0	1.0	1.0	0.5
New Kent	n/a	n/a	n/a	n/a	n/a	0.1	0.6	0.9	0.6	n/a	n/a	0.3	4.4	0.0	1.0	0.0	0.0	n/a
Richmond Co.-Warsaw	n/a	n/a	0.0	0.0	0.0	0.0	0.2	0.1	0.4	0.3	0.1	0.6	5.9	0.9	0.6	0.4	0.3	0.1

*n/a = report not available.*