2016

Gaines, Terry, and Yoakum Results & Demonstration Book




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2016 IPM Program Sponsors

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- Larry's Chemical and Spray, Inc. (now part of CPS) of Brownfield, Texas
- Needmore Gin, Inc. of Meadow, Texas
- New-Tex Gin, Inc. of Plains, Texas
- West Gaines Seed, Inc. of Seminole, Texas
- Ag Aero of Seminole, Texas

2016 Year In Review

The 2016 growing season got started off to a slightly later start than usual, thanks to moisture received during early May. Once equipment was able to access fields there was suffiecent moisture to allow for adequate germination of cotton, peanuts, and sorghum. Insect and disease pressure remained light in cotton and peanuts, while sorghum once again had to battle sugarcan aphid infestations. Much of the season was very favorable crop production with the exception of the month of July where we experieced very hot and dry conditions (**Tables 1-3**). Rain and severe thunderstorms came in during October and early November that led to harvest issues for all crops, and in some cases fields were so damaged by hail that they were a complete loss.

Table 1. Average Tempertures and Precipitation Total for Brownfield, Texas recorded at the West Texas Mesonet Weather Station.

Month	Avg. High	Avg. Low	Avg. Temp.	Precipitation	Monthly Heat Unit Accumulation	Accumulated Heat Units During Growing Season
January	56.6	28.3	42.4	0.39	0	---
Feburary	63.8	31.8	47.8	0.21	8.00	---
March	70.9	40.5	55.6	0.53	24.5	---
April	75.3	47.2	61.2	1.61	95.5	---
May	81.4	53.9	67.7	1.93	281.5	281.5
June	90	64.4	77.2	1.87	515.5	797.0
July	98.2	68.8	83.5	0.10	705.0	1502.0
August	88.1	65.3	76.7	4.75	518.5	2020.5
September	81.9	61.3	71.6	2.70	349.0	2369.5
October	80.3	51.3	65.8	0.20	197.0	2566.5
November	64.5	41.7	53.1	2.67	18	2584.5
December	54.4	29.3	41.8	0.50	0	--

Table 2. Average Tempertures and Precipitation Total for Plains, Texas recorded at the West Texas Mesonet Weather Station.

Month	Avg. High	Avg. Low	Avg. Temp.	Precipitation	Monthly Heat Unit Accumulation	Accumulated Heat Units During Growing Season
January	65.2	24.6	41.0	0.14	0	--
Feburary	64.4	28.4	46.4	0.24	8.0	--
March	71.3	38.2	54.7	0	13.5	--
April	72.8	42.6	57.7	1.38	72.5	--
May	81.5	51.4	66.4	2.05	233.5	233.5
June	90.9	62.1	76.5	2.31	495.5	729.0
July	98.8	67.8	83.3	0.50	723.0	1452.0
August	88.5	64.2	76.3	6.46	506.0	1958.0
September	83.0	60.3	71.6	1.52	349.0	2307.0
October	80.7	50.2	65.4	1.70	189.0	2496.0
November	65.5	39.2	52.4	2.40	11.0	2507.0
December	56.1	26.9	41.5	0.40	0	**--**

Table 3. Average Tempertures and Precipitation Total for Seminole, Texas recorded at the West Texas Mesonet Weather Station.

Month	Avg. High	Avg. Low	Avg. Temp.	Precipitation	Monthly Heat Unit Accumulation	Accumulated Heat Units During Growing Season
January	58.8	29.3	44.0	0.09	0.00	--
Feburary	65.7	33.5	49.6	0.14	19.0	--
March	72.5	40.9	56.7	0.00	36.0	--
April	76.6	48.3	62.5	1.24	120.5	--
May	84.0	55.8	69.9	1.53	319	319
June	92.0	64.5	78.3	1.70	548.5	867.5
July	89.8	69.8	84.8	0.35	767.5	1635.0
August	99.8	69.8	84.8	10.79	769.5	2404.5
September	83.9	62.0	72.9	2.25	388.0	2792.5
October	81.8	53.4	67.6	0.29	246.0	3038.5
November	66.2	43.6	54.9	1.16	29.5	3068.0
December	56.7	30.1	43.4	0.70	0	--

Cotton

Cotton planting started slightly later than normal due to precipitation that was received in April and May, but this moisture was very welcome as it helped the crop get off to a good start. Seedling diseases were observed in a few fields, and caused a few fields to be replanted. These issues were caused by fields be at or above field capacity (amount of water a soil can hold) and moderate temperatures. Thrips pressure was light thanks to adequate growing conditions during

May and June, with no fields in the scouting program reaching the economic threshold of 1 thrips per true leaf. Early in the season we also saw a few fields around the area become infected with Bacterial Blight (angular leaf spot), and thanks to the drier weather pattern we shifted into went dormant for awhile until the correct environmental conditions arrived. Fields in the scouting program started to square around mid-June, and insect pressure remained low. Both fleahoppers and lygus bugs were observed in fields up until after peak bloom, but the population of these insects never reached their respective economic threshold. Blooming began around the first of July, and typically we can see the blooming period last over six weeks. The month of July was plagued with adverse growing conditions. The first ten to fourteen days of the month saw temperature at or above the century mark, with no measurable rainfall. This hot dry spell caused many cotton fields to have a short bloom period and cut-out earlier than expected. This occurred mostly on dryland fields and on pivots that have low water capacities. The wet August along with the first freeze not occurring until the 19th of November help the crop mature bolls that under a normal year may not have matured. Due to the wet August and cooler temperuatures Verticillium wilt was very prevalent in the three counties. Some fields had infection so bad that the crop was defoliatied by late September. These symptoms came on late enough in the growing season that there was not a real noticable yield drag due to the infection. Bacterial Blight (Angular leaf spot) was also flared by the cooler moist conditions brought in by the August percipation, but in the scouting program fields did not effect yield. Rain in early November caused some defoliation issues due to regrowth after the first shot of harvest aids, and also kept some producers out of the field for around 14 days. Some of these storms were accompanied by hail, which in some parts of Gaines and Terry Counties led to fields being a complete loss. Leaf grade and quality of the crop saw imporvement from what they were last year. As I write this at the end of Novemeber most farmers I have talked to are pleasntly pleased with their yields, especially with the harsh weather we had during the month of July. The 2016 growing season definitely had its ups and downs with the weather and markets most of the year, but has turned out to be a good year production wise.

Peanuts

Overall the peanut production for 2016 was very calm. There was not much disease or insect pressure observed in the scouting program fields. Much like cotton, at planting there was adequate soil moisture to lead to a uniform stand, with only a handful of fields succumbing to seedling diseases, some of which needed to be replanted. Peanuts fields began pegging in mid June. The hot dry spell that set in during the month of July did have a negative impact on pegging and pod set, but thanks to a wetter than normal August the negtive effects July weather pattern was offset. Pod rots were observed in Gaines and Terry Counties starting in the first week of August. This disease was more prevalent in fields that did not receive a preventative fungicide application 60 to 75 days after germination. Spidermites were observed in one field in the middle of August, but never reached a level at which the field needed to be treated for them. Foliar feeding insects became very abundant in peanut fields during the month of September, and I only heard of one field needing to be sprayed. During late August Sclerotina blight was being observed in peanut field in Western Gaines County to a level where field were being treated. Leaf spots and pod rots were being observed in September, and some field were sprayed which delayed harvest of some field due to Post Harvest restrictions of the fungicides used. Peanut production for the year was average, with some fields having better than expected yeild which was dependent on if the field received timely rains.

Sorghum

Thanks to the the early season moisture sorghum was also able to get off to a good start. Whorl feeding worms were observed, but thanks to the dry hot conditions and beneficial insects remained below the economic threshold. Sugarcane aphids arrived in the Gaines, Terry, and Yoakum Counties area in mid August and it did not take long for them to reach treatable populations. Headworms were also an issue and well as spidermites, and in one field there was treatable populations of headworms, sugarcane aphids, yellow sugarcane aphids, and spidermites occuring at the same time. Thankfully the work of my fellow IPM agents last year helped get a handle on when to spray to best manage the sugarcane aphid. Sorghum harvest started in late August to early Septmber for the early planted sorghum, while the bulk of the sorghum acres were not harvested until October.

COTTON RESEARCH

Terry County PhytoGen Innovation Variety Trial
Texas A&M AgriLife Extension Service
Terry County
Cooperator: Don Carrol
Tyler Mays, Zack Bradshaw, Katelyn Kowles

Summary

A field trial was initiated to evaluate seven PhytoGen varieties for their fit in commercial cotton production of Terry County, Texas. Eight varieties; Stoneville (ST) 4946GLB2, PhytoGen (PHY)308WRF, PHY223WRF, PHY444WRF, PHY312WRF, PHY333WRF, PHY243WRF, and PHY417WRF were arranged in a randomized complete block design replicated three times. Plots were eight rows wide by one-half mile long, and were sown on 17 May at a seeding rate of 45,000 seeds/acre. Verticillium Wilt symptoms showed up in early September, and incidence and severity was significantly lower in PHY243WRF than all other varieties. Lint yields ranged from 878.39 lbs. lint/acre in PHY417WRF to 1292.65 lbs. lint/acre in ST4946GLB2, and PHY417WRF produced significantly less lint than ST4946GLB2 but not the other six PhytoGen varieties. Loan values ranged from 51.42 cents/pound in PHY308WRF to 56.267 cents/pound in PHY333WRF, and no statistical differences were observed between varieties. Net returns were calculated by obtaining the lint value and seed value per acre and subtracting the ginning cost, stripping and moduling cost, and seed cost. The net returns ranged from $372.00 per acre in PHY417WRF to $613.67 in ST4946GLB2, and PHY417WRF had a net return that was significantly lower than both PHY333WRF and ST4946, but not the other five PhytoGen varieties. The results of this trial indicate that PHY417WRF was not a good fit for cotton production in Terry County.

Objective

Variety selection is a major decision farmers make every year than have implications on the profitability of their farm. Replicated large plot field trials are a good way for farmers to see how emerging varieties perform in their area. The objective of this study was to evaluate seven PhytoGen varieties and one Stoneville variety on their fit in Terry County.

Materials and Methods

The field trial was planted on 17 May 2016 at a seeding rate of 45,738 seeds/acre on a 40-inch row spacing. Treatments were arranged in a Randomized Complete Block Design replicated three times with 8 treatments. Soil types included an Amarillo fine sandy loam (28.8 % of field), Pep loam with a 0-1 percent slope (33.7% of field), and Pep loam with a 1 to 3 percent slope (37.5 % of field). Irrigation was applied by sub-surface, and 6.92 inches of rain was received. Fertilizer was also applied through drip irrigation applying 150 pounds of Nitrogen throughout the year. Prior to planting Trifluralin was applied and incorporated through overhead irrigation, RoundUp was used as a burndown, and Warrant was applied at planting. Stand counts were taken at 10 and 13 days after planting (DAP) on 1/1000th of an acre in four random locations in each plot. Vigor ratings were taken at 10 and 13 DAP on a 1 (excellent) to 5 (poor). At 140 DAP the final plant height, total number of nodes, node of first fruiting branch, and Nodes Above Cracked Boll (NACB) was collected on 7 consecutive plants per plot. Starting in late September verticillium wilt was observed in the field, and at 143 DAP Verticillium Wilt incidence and severity data was collected. Verticillium Wilt incidence was calculated by count the number of plants infested in 60 feet and dividing by the total number of plants in 60 feet. Verticillium wilt severity data was collected on a 1 (no symptoms) to 10 (plant death) scale on a per plot basis (**Table 1**).

Table 1. Verticillium Wilt 1-10 Severity Rating Scale used for the PhytoGen Innovation Trial in Meadow, Texas.

Rating	Description of Symptoms
1	No foliar symptoms
2	Slight foliar symptoms. Yellowing of leaves that may or may not be due to Verticillium Wilt
3	Moderate foliar symptoms. Leaf yellowing with leaves starting to wilt
4	Sever foliar symptoms. Leaves are completely yellow and wilted, defoliation may be beginning.
5	0-15% defoliation
6	16-30 % defoliation
7	31-45% defoliation
8	46-60% defoliation
9	61-75% defoliation
10	76-100% defoliation

Plots were stripped on 29 November, and seed cotton plot weights were obtained using towable platform scale. After the plots were weighed a grab sample of each plot was taken for ginning and fiber analysis. Samples were ginned on 21 December using the research gin at the Texas A&M AgriLife Research and Extension Center in Lubbock. Seed yield, lint turnout, and lint yield were calculated by weighing the grab sample prior to harvest, and getting the weight of the lint and seed after the whole sample had passed through the research gin. Fiber samples of 40 grams was then submitted to Texas Tech University's Fiber and Biopolymer Research Institute for HVI analysis. Loan values were calculated using the 2016 Crop Cotton Loan Value Calculator, produced by Cotton Incorporated. Net Returns were calculated by multiplying the loan value by the lint yield, then adding the estimated value of the seed, and subtracting the ginning cost, seed cost, and stripping and moduling cost. Analysis of Variance was used to test for statistical differences between treatment means for each independent variable with a confidence level of 95 percent ($P>0.05$). When difference between treatment means for an independent variable, means were separated using Student-Newman-Keuls with a confidence level of 95 percent ($P>0.05$).

Results and Discussion

Stand counts at 10 DAP were not statistically different and plant populations ranged from 31, 416.7 plants per acre in PHY 417WRF to 38,666.7 plants per acre in PHY 308WRF (df=7,13; F=1.841; P=0.1622). At 13 DAP the plant population was statistically different (df=7,13; F=6.984; P=0.0014), total plant populations ranged from 26,666.7 in PHY 444WRF to as high as 35,750.0 plants per acre in PHY 223WRF. Vigor rating were statistically different at both 10 (df=7,13; F=3.328; P=0.0293) and 13 (df=7,13; F=4.995; P=0.0062) DAP. Vigor rating at 10 DAP were highest in PHY 243WRF (avg. 1.4) and lowest in PHY 417 WRF (avg. 2.6). At 13 DAP the vigor ratings were highest in both PHY 223WRF and PHY 243WRF (avg. 1.3) and lowest in PHY 417WRF (avg. 2.6). Stand count and vigor data can be seen below in **Table 2**.

Table 2. Stand count and vigor rating data from 10 and 13 Days After Planting, at the PhytoGen Innovation Trial in Meadow, Texas.

Variety	Stand @10 DAP	Vigor @10 DAP	Stand @13 DAP	Vigor @13 DAP
ST 4946 GLB2	35,666.7	2.0 ab*	34,833.3 a	2.0 ab
PHY 308 WRF	38,666.7	1.6 ab	35,416.7 a	1.7 ab
PHY 223 WRF	37,333.3	1.8 ab	35,750.0 a	1.3 b
PHY 243 WRF	38,000.0	1.4 b	34,416.7 a	13. b
PHY 444 WRF	31,500.0	2.3 ab	26,666.7 c	2.4 a
PHY 312 WRF	37,476.2	1.9 ab	32,666.7 ab	1.8 ab
PHY 333 WRF	34,750.0	2.9 ab	32,916.7 ab	1.8 ab
PHY 417 WRF	31,416.7	2.6 a	29,166.7 bc	2.6 a

*treatments with the same letter are not statistically different (P<0.05).

Plant mapping data can be seen in **Table 3**, and the average height of the varieties were not statistically different, ranging from 19.3 inches in PHY 223WRF to as tall as 24.2 in PHY 312WRF. Total number of nodes per plant ranged from 16.7 nodes in both PHY 333WRF and ST 4946GLB2 to as high as 20.6 in PHY 417WRF, and were statistically different (df=7,13; F=6.655P=0.0017). The PhytoGen variety 417WRF had significantly more nodes per plant than the PhytoGen varieties 333WRF, 243WRF, and 308WRF; and the Stoneville variety 4946GLB2. The average node of the first fruiting branch ranged from 5.8 (PHY 333WRF) to 7.3 (PHY 312WRF), and was significantly different (df=7,13; F=3.25; P=0.0318). The PhytoGen variety 333WRF had a significantly lower first fruiting branch than all other varieties in the trial. Nodes Above Cracked Bolls was also significantly different (df=7,13; F=5.793; P=0.0033), and range from 1.2 NACB (PHY 223WRF) to 6.0 (PHY 312WRF).

Table 3. Plant mapping data taken at 140 Days After Planting, at the PhytoGen Innovation Trial in Meadow, Texas.

Variety	Plant Height	Total Nodes	First Fruiting Branch	NACB
ST 4946 GLB2	21.048	16.7 c*	6.5 ab	2.5 bc
PHY 308 WRF	20.548	18.0 bc	6.5 ab	2.2 bc
PHY 223 WRF	19.262	19.1 abc	7.0 ab	1.2 c
PHY 243 WRF	19.476	18.0 bc	6.2 ab	3.2 abc
PHY 444 WRF	22.190	19.0 abc	7.0 ab	3.6 ab
PHY 312 WRF	24.161	19.4 ab	7.3a	6.0 a
PHY 333 WRF	22.214	16.7 c	5.8 b	3.1 abc
PHY 417 WRF	24.012	20.6 a	7.1 ab	4.3 ab

*treatment means followed by the same letter are not statistically different (P<0.05).

Significant differences were observed in both the incidence (df=7,13; F=47.150; P=0.0001) and severity (df=7,13; F=40.830; P=0.0001) of verticillium wilt (**Table 4**). The PhytoGen variety 243WRF had the lowest incidence (14.70%) and was statistically lower than all other treatments. The PhytoGen variety 417WRF (77.08%), had a significantly higher incidence than all varieties except for PHY 333WRF and ST4946GLB2. The severity of the verticillium wilt infection was lowest in PHY 243, which was statistically lower than all other treatments. The highest severity of Verticillium wilt infection occurred in ST4946GLB2 and was significantly worse than the other treatments except for PHY 417WRF, PHY 333WRF, and PHY 444WRF.

Table 4. Verticillium Wilt Incidence and Severity Data from the PhytoGen Innovation Trial in Meadow, Texas taken at 143 DAP.

Variety	Verticillium Wilt Incidence (%)	Verticillium Wilt Severity
ST 4946 GLB2	67.08 ab*	8.000 a
PHY 308 WRF	33.66 d	3.667 c
PHY 223 WRF	31.04 d	3.333 c
PHY 243 WRF	14.70 e	2.000 d
PHY 444 WRF	57.52 b	6.500 ab
PHY 312 WRF	45.08 c	5.619 b
PHY 333 WRF	70.77 a	8.000 a
PHY 417 WRF	77.08 a	7.833 a

*treatment means followed by the same letter are not statistically different (p<0.05)

No statistical differences were observed for seed cotton weight per acre, and weights ranged from 2820.98 lbs/acre in PHY 417WRF to 3,786.01 lbs./acre in ST 4946GLB2 (df=7,13; F=2.743; P=0.0552). The grab samples from each plot were ginned using a mini research gin. Lint turnout was significantly different ranging from 30.38 percent to 34.31 percent in PHY 223WRF and PHY 444WRF, respectively (df= 7,13; F=3.863; P=0.0171). The percent turnout was significantly lower in PHY223WRF than PHY444WRF and ST4949GLB2 (**Figure 1**). Lint yield averaged 1,086.11 lbs./acre across all treatments, and treatment means ranged from 878.39 lbs./acre in PHY417WRF to 1292.65 lbs./acre in ST4946GLB2. Statistical differences were observed between treatments with the competitor check ST4946GLB2 being statistically higher than PHY417WRF (df= 7,13; F=3.859; P=0.0172; **Figure 2**). Pounds of seed produced per acre was also calculated at the time of ginning, and ranged from 1,265.61 lbs. seed/acre in PHY417WRF to 1,826.57 in ST4946GLB. Statistical differences were observed between treatments in relation to the pounds of seed produced per acre, with ST4946GLB2 producing significantly more than PHY417WRF (df= 7,13; F=2.929; P=0.0449; **Figure 2**).

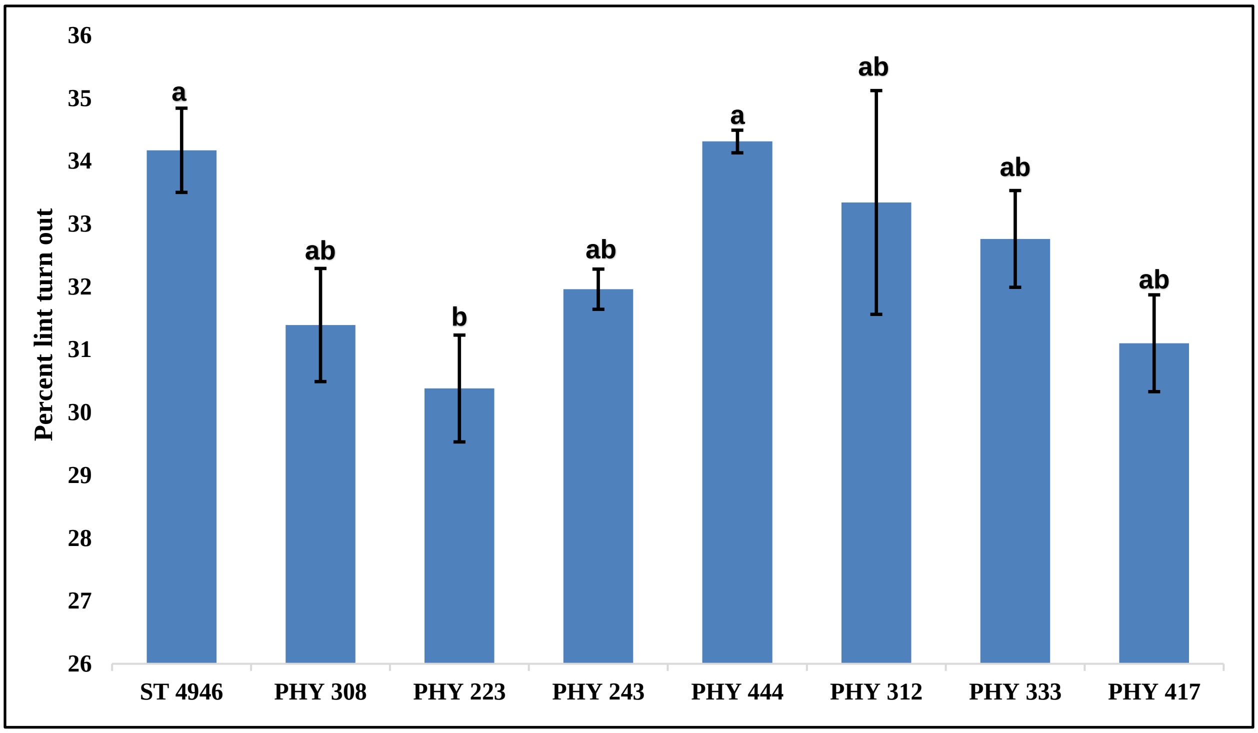

Figure 1. Lint turnout treatment means, from the PhytoGen Innovation Trial in Meadow, Texas. Treatments with the same letter are not statistically different at P>0.05.

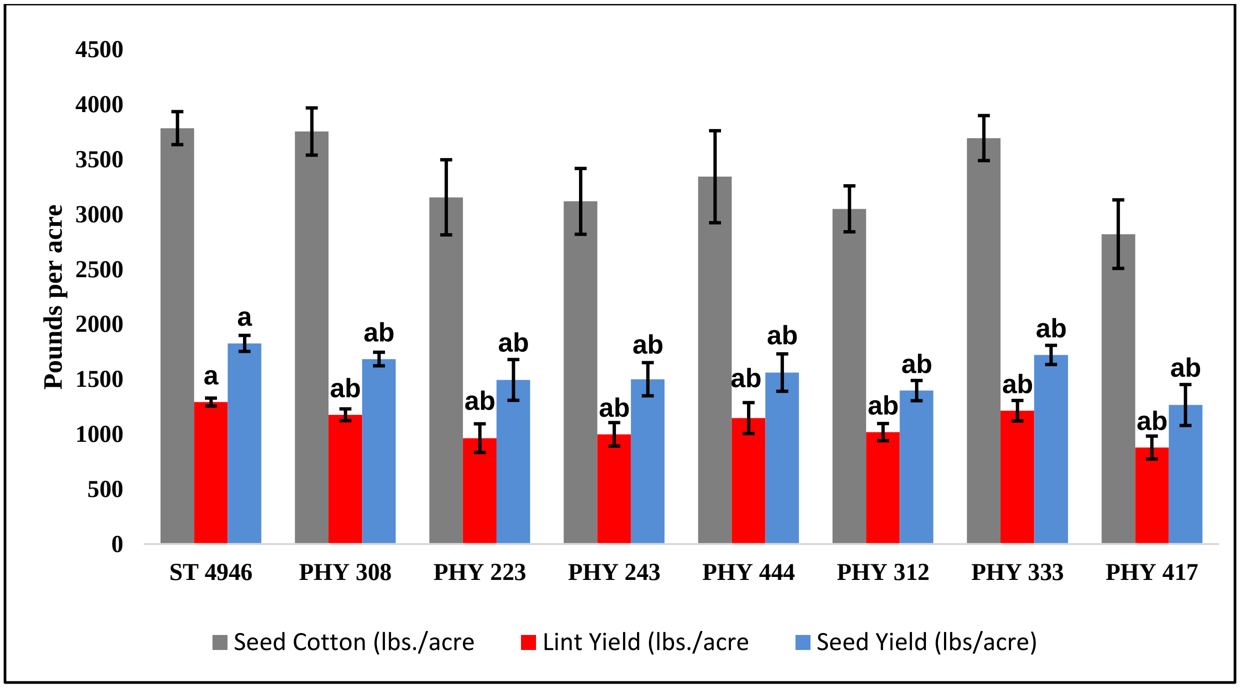

Figure 2. Seed cotton yield (gray bars), lint yield (red bars), and seed yield (blue bars), in pounds per acre for the PhytoGen Innovation Trial in Meadow, Texas. Treatments with the same mean in the same color bar are not statistically different at P>0.05.

Fiber quality data measurements included micronaire, length, uniformity, strength, elongation, color grade, and leaf grade, and this data can be seen in **Table 5**. Micronaire ranged from 3.2 in PHY417WRF and PHY444WRF to 4.2 in PHY 308WRF, with PHY417 and PHY444 having statistically lower micronaire than all other varieties in the trial (df=7,13; F=6.459; P=0.002). Discounts were awarded to PHY417WRF and PHY444WRF for being below 3.5, and all other varieties received a premium. Fiber length ranged from 1.11 (36-32nds) in PHY417WRF to 1.23 (39-32nds) in PHY223WRF, and the PhytoGen varieties PHY223WRF, PHY243WRF, and PHY312WRF were statistically longer than all other varieties (df= 7,13; F=21.527; P=0.0001). Uniformity ranged from 79.196 in PHY243WRF to as high as 83.53 in PHY223WRF, and statistical differences were observed between varieties (df= 7,13; F= 8.781; P=0.0005). The variety PHY243 had statistically lower uniformity than all varieties except for PHY417WRF. Fiber strength ranged from 27.73 to as high as 31.87 in PHY243WRF and PHY308WRF, respectively. The fiber strength in PHY308WRF was significantly higher than ST4946GLB2, PHY243WRF, PHY444WRF, PHY312WRF, PHY333, and PHY417 (df= 7,13; F= 8.208; P= 0.0006). Elongation was statistically different ranging from 7.10 in PHY444WRF to high as 8.67 in PHY417WRF (df=7,13; F=8.103; P=0.0007). Fiber elongation in PHY417 was statistically higher than PHY223WRF, PHY444WRF, PHY312WRF, and PHY333WRF. Leaf grades ranged from a 1.67 to 5.33 in PHY444WRF and PHY308WRF, respectively. The competitor check ST4946GLB2 and PHY444WRF has significantly lower leaf grades than PHY308WRF and PHY312WRF, while PHY308 had statistically higher leaf grade thanPHY223 as well (df= 7,13; F=8.758; P= 0.0005).

Table 5. Fiber quality results from the PhytoGen Innovation Trial in Meadow, Texas.

Variety	Micronaire	Length	Uniformity	Strength	Elongation	Color Grade	Leaf Grade
ST4946GLB2	4.17 a*	1.12 bc	80.86 bc	29.80 bc	8.43 ab	31,31,31	2.3 c
PHY308WRF	4.23 a	1.15 bc	81.70 bc	31.87 a	7.93 abc	41,41,41	5.3 a
PHY223WRF	4.03 a	1.23 a	83.53 a	30.67 ab	7.17 c	41,41,41	3.3 bc
PHY243WRF	3.90 a	1.20 a	79.19 d	27.73 c	7.93 abc	41,31,41	3.0 bc
PHY444WRF	3.17 a	1.22 a	81.47 bc	29.17 bc	7.10 c	31,31,31	1.6 c
PHY312WRF	4.01 a	1.14 bc	82.27 ab	28.74 bc	7.64 bc	-,31,41	4.3 ab
PHY333WRF	3.83 a	1.16 b	81.57 bc	28.23 c	7.43 c	31,31,31	3.0 bc
PHY417WRF	3.17 b	1.11 c	80.16 cd	28.87 bc	8.67 a	31,31,31	3.3 bc

*Treatments followed by the same letter is not statistically different, Student-Newman-Keuls at p=0.05.

Loan values and net returns per acre was also calculated for all varieties and the mean for each treatment can be seen in **Table 6**. Loan values ranged from 51.42 cents per pound in PHY308WRF to as high as 56.27 cents per pound in PHY333WRF, and were not statistically different (df= 7,13; F=1.749; P= 0.1822). Of the eight varieties, only two came out below the base of 52.00 cents per pound, these varieties included PHY308WRF and PHY417WRF. Net returns in the trial average between $372.00 and $613.67 in PHY417WRF and ST4946GLB2, respectively. The net return per acre of PHY417WRF was significantly lower than the $578.33 and 613.67 net returns of PHY333WRF and ST4946GLB2, respectively (df= 7,13; F= 4.020; P= 0.0147).

Table 6. Economic analysis of varieties from the PhytoGen Innovation Trial in Meadow, Texas.

Variety	**Loan Value (cents/lb.)[A]**	**Net Return per Acre ($/acre)[B]**
ST4946GLB2	55.79	$613.67 a*
PHY308WRF	51.42	$499.67 ab
PHY223WRF	55.23	$453.00 ab
PHY243WRF	54.79	$467.33 ab
PHY444WRF	53.99	$523.00 ab
PHY312WRF	53.66	$455.86 ab
PHY333WRF	56.267	$578.33 a
PHY417WRF	51.74	$372.00 b

[A]- calculated using the 2016 crop Cotton Loan Value calculator developed by Lawrence Falconer and Jeanne Reeves.

[B]-calculated by subtracting stripping and moduling cost, ginning cost, and seed cost. Seed cost were obtained from Brownfield Farmers Coop.

*-treatments followed by the same letter are not statistically different, Student-Newman, Keuls at P=0.05

Conclusions

The data indicates that the competitor check (ST4946GLB2) does not yield significantly more than all PhytoGen varieties except for PHY417WRF which did not yield significantly lower than the other six PhytoGen varieties. Loan values were not statistically different, however, due to the difference in lint yield per acre the net returns for each variety were statistically different, with PHY417WRF having a net return that was significantly lower than PHY333WRF and the competitor check. Based on the result of this trial all varieties except for PHY417WRF were a good fit for this field under the growing conditions provided throughout the season.

Acknowledgements

The authors would like to thank Don Carrol for allowing use to use part of his land, as well as, his equipment to plant and harvest the trial. Individual results may vary, and performance may vary from location to location and from year to year. These results may not be an indicator of results you may obtain as local growing, soil, and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. Trade names of commercial products used in this report is included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas AgriLife Extension Service and the Texas A&M University System is implied. Readers should realize that results from one

experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Terry County Cotton Defoliation Trial
Texas A&M AgriLife Extension Service-Terry County
Cooperator: Walter King
Tyler Mays and Zach Bradshaw

Summary

A field trial was conducted to evaluate six harvest aid tank mixes on their ability to prepare the crop for harvest. Six common harvest aids were arranged in a randomized complete block design with 30 foot by two row wide plots replicated three times. Harvest Aids were applied using a two row CO2 backpack sprayer fitted with TeeJet XR11002VS nozzles calibrated to apply 17.4 gallons per acre. Plots were treated on 17 October, and plots were rated for the percent green leaf, percent desiccated, percent defoliated, percent open boll, and regrowth at 7 and 14 Days After Treatment (DAT). At 7 DAT all harvest aids had significantly less green leaf than the untreated control, and statistically higher percentage of desiccation, defoliation, and open bolls than the untreated control. The harvest aids at 14 DAT had significantly lower percentage of green leaf than the untreated control, and significantly more percent desiccated, defoliated, and open bolls than the untreated control. The harvest aids had a statistically lower regrowth rating than the untreated control at 7DAT. However, at 14 DAT all harvest aids except form Gramoxone alone at 20 oz./acre had a rating that was statistically lower than the control. Based on these results all harvest aids were effective at preparing the crop for harvest at 7 DAT, but at 14 DAT all harvest aids except for Gramoxone at 20 oz./acre were effective at preparing the crop for harvest.

Objective

Preparing cotton for harvest can be complicated due to annual variations in weather. Defoliating cotton effectively and economically can have major implications on fiber quality, which can limit the marketability of the crop. Additionally, since cotton defoliation occurs at the end of the growing season inputs have usually ran low, and finding an economical and effective defoliant that leads to a timely harvest is an important task that farmers are faced with annually.

Materials and Methods

The field trial was initiated on October 17, 2016; at Walter King's farm one half mile north of the intersection of Farm to Market Road 2196 and U.S. Highway 385. On the day of application, the cotton crop averaged 65 percent open, and a ethephon product was added to the defoliation mixture in every plot. Plots were two rows wide by 30 feet long on forty inch centers. Defoliants were applied using a two-row boom fitted with six XR11002VS nozzles (Teejet Technologies; Glendale Heights, IL, USA) and was calibrated to apply 17.4 gallons per acre with a operating pressure of 30 pounds per square inch. Treatments were arranged in a randomized complete block design replicated three time with six treatments (**Table 1**), and an untreated control. Data was collected on the percent of green tissue, percent of leaves desiccated, percent of leaves defoliated, percent of bolls open, and regrowth/harvestability; and was collected on seven day intervals. The regrowth was measured on a 0-5 scale where 0 is no regrowth and harvestable and 5 is extreme regrowth and the crop is not harvestable.

Due to skewness in the data for green leaf percentage, percent open bolls, and regrowth at 7 DAT (days after treatment), data was subjected to an Arcsine square root percent transformation to remove the skewness. At 14 DAT all except for the regrowth rating was skewed and was subjected to transformations before the Analysis of Variance was conducted. The percent green leaf data at 14 DAT was transformed using the Square Root (X+0.5), where X is the percent green leaf. The percent desiccated, defoliated, and percent of bolls open at 14 DAT were transformed using the Arcsine square root percentage transformation. Treatments were analyzed for statistical differences using Analysis of Variance with a confidence limit of 95 percent (α=0.05). In the case of statistical differences treatment means were analyzed using Student Newman-Keuls with a 95 percent confidence limit (P=0.05).

Table 1. Explanation of treatments included in the 2016 Terry County Cotton Defoliation Trial at Walter King Farms in Brownfield, Texas.

Treatment	Description
1	Ginstar @ 8 oz/acre + Superboll @ 32 oz/acre + NIS @ 0.5% volume/volume
2	Aim @ 1 oz/acre + Superboll @ 32 oz/acre + COC @ 1% volume/volume
3	Sharpen @ 1 oz/acre + Superboll @ 32 oz/acre + MSO @ 0.5% volume/volume
4	Gramoxone @ 20 oz/acre + Superboll @ 32 oz/acre + NIS @ 0.5% volume/volume
5	Gramoxone @ 12 oz/acre + Aim @ 1 oz/acre + Superboll @ 32 oz/acre + COC @ 1% volume/volume
6	ETX @ 1.25 oz/acre + Superboll @32 oz/acre + COC @ 1% volume/volume
7	Untreated Control

Results and Discussion

Data from rating taken at 7 DAT (Days After Treatment) can be seen in **Figure 1**. At 7 DAT the percent desiccated ranged from 0 percent in the untreated control to 56.3 percent in Gramoxone at 12 oz. per acre tank mixed with Aim at 1 oz. per acre, and was statistically different (df=6,12;F=8.716;P=0.0008). The untreated control had a statistically lower percent of the plant desiccated than all the harvest aids. The percent of the plant defoliated at 7 DAT ranged from 8.3 to 55 percent in the untreated check and Sharpen, respectively. The percent defoliated was significantly lower in the untreated check compared to Ginstar, Sharpen, Gramoxone, and ETX (df=6,13; F=4.9; P=0.0094). The percent green leaf ranged from 90 percent in the untreated control to as low as 10 percent in Gramoxone tank mixed with Aim. The percent green leaf in all treatments was significantly lower than the untreated control (df=6,12; F=29.235; P= 0.0001). The Superboll product was a 6 lbs./gallon ethephon product much like Prep, and the application of this in the tank significantly increased the percent of bolls open at 7DAT with 86.8 percent open in the untreated control and 99 percent open in all the treated plots (df=6,12; F=115.618; P=0.0001).

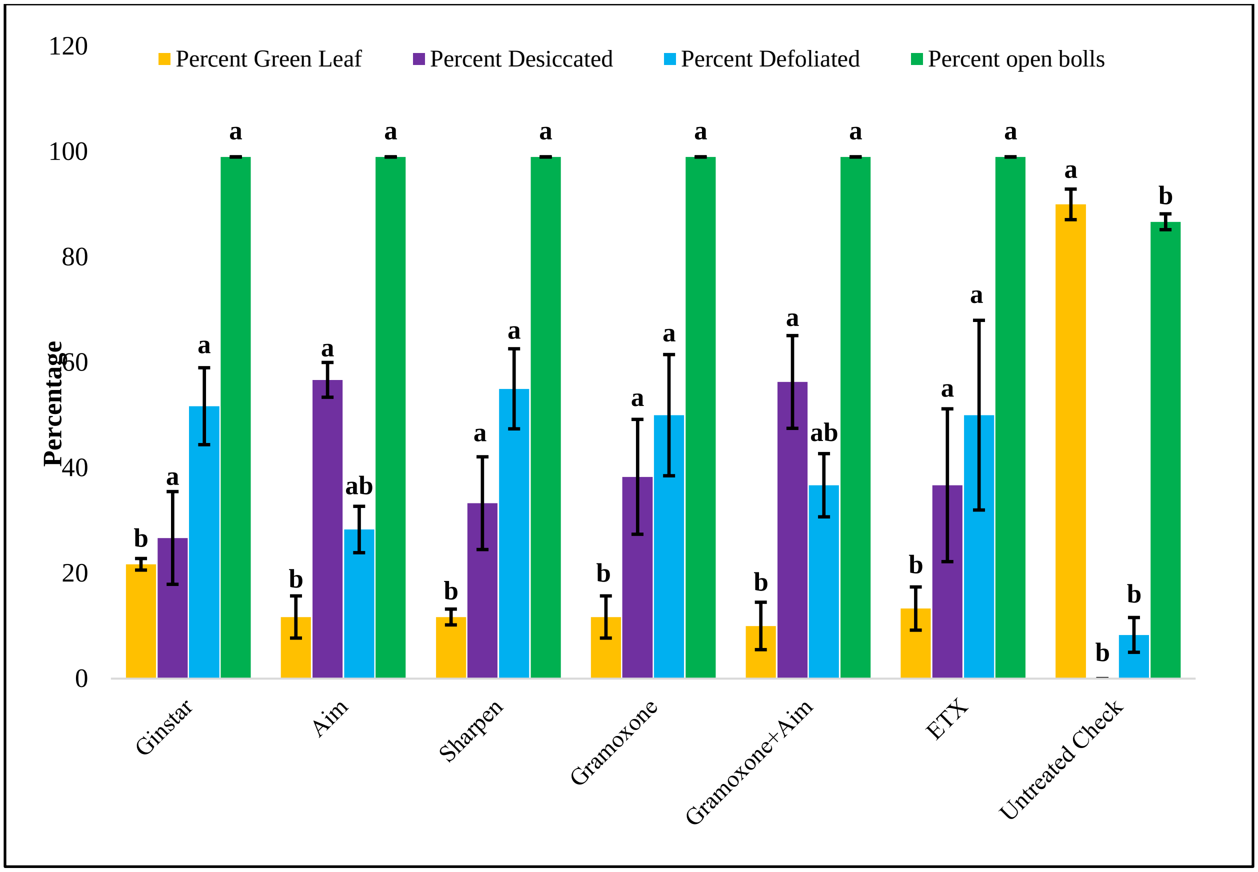

Figure 1. Percent green leaf (gold), percent desiccated (purple), Percent defoliated (blue), and percent open bolls (green) at 7 Days After Treatment for the 2016 Terry County Cotton Defoliation Trail at Walter King's Farm. Treatments with the same letters are not statistically different, Student-Newman-Keuls at P=0.05.

Data collected at 14 DAT can be seen in **Figure 2**. The percent green leaf at 14 DAT ranged from 7.8 percent in Aim to 95 percent in the untreated control. The percent green leaf was statistically higher in the untreated control compared to all harvest aids (df= 6,12; F= 41.044; P=0.0001). The untreated check had significantly less desiccated tissue than all the harvest aids (df= 6,12; F= 12.876; P= 0.0001). At 14 DAT the Aim treatment was significantly higher than all other harvest aids with between 1.74 and 2.4 fold increase. The percent defoliated ranged from 3.3 percent in the untreated check and 78.4 percent in the Ginstar treatment. The untreated control was significantly lower than the harvest aids, while Aim was statistically lower than Ginstar (df= 6,12; F= 21.331; P= 0.0001). Between 7 and 14 DAT the percent bolls open in the harvest aids did not increase, but did increase by 1.4 percent in the untreated check. The percent bolls open at 14 DAT as statistically higher in the harvest aids than the untreated check and ranged from 91.8 percent in the untreated check and 99 percent in the harvest aids (df= 6,12; F= 34.897; P= 0.0001).

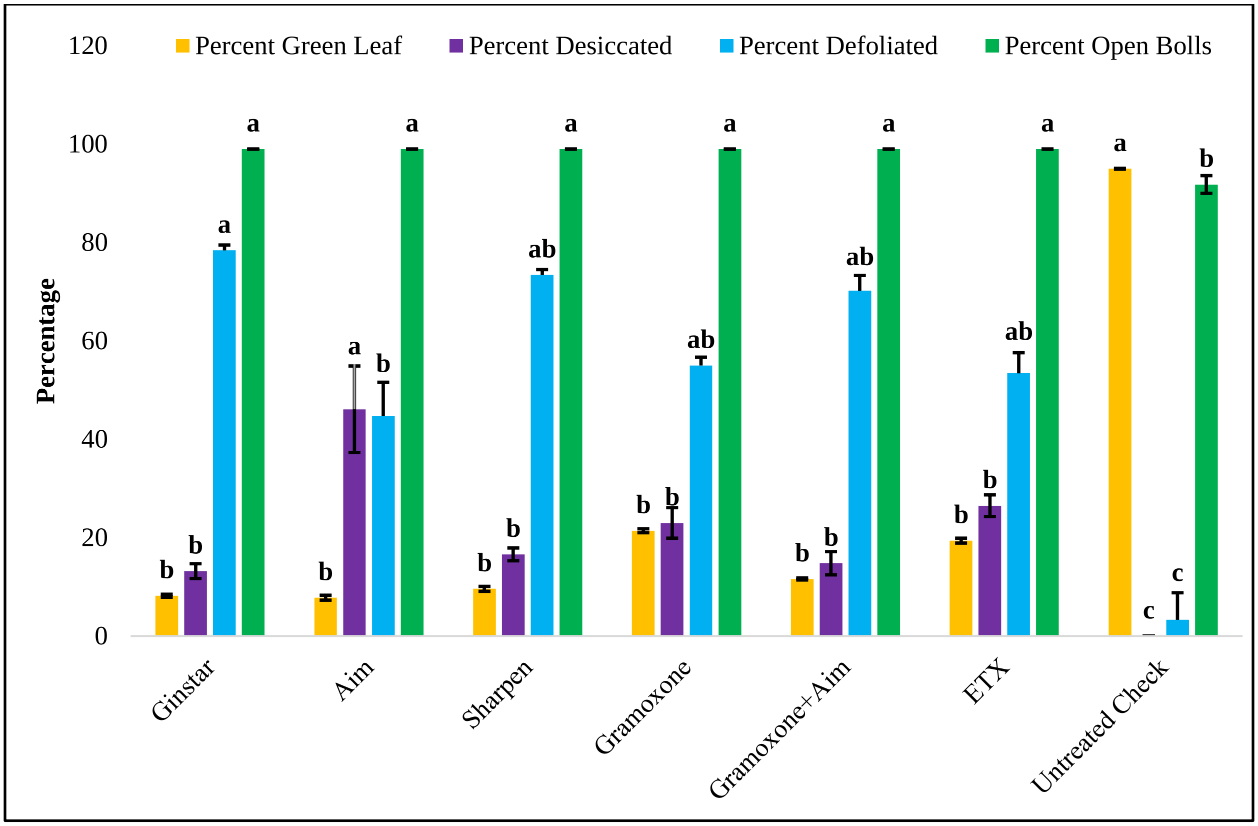

Figure 2. Percent green leaf (gold), percent desiccated (purple), Percent defoliated (blue), and percent open bolls (green) at 14 Days After Treatment for the 2016 Terry County Cotton Defoliation Trail at Walter King's Farm. Treatments with the same letters are not statistically different, Student-Newman-Keuls at P=0.05.

Regrowth ratings were also taken at 7 and 14 DAT, and can be seen in **Figure 3**. At 7 DAT regrowth ranged from an average rating of 0.1 in ETX to as high at 5.0 in the untreated check and were statistically different (df= 6,12; F= 4.896; P= 0.0094). The Sharpen treatment had a regrowth rating that was not statistically higher than the other harvest aids or significantly lower than the untreated check. At this time, all but the untreated check were able to be harvested since the regrowth in the Sharpen treatment was at the base of the plant. At 14 DAT the regrowth ratings ranged from 2.3 in the Aim treatment to 5.0 in the untreated check, and was significantly different (df= 6,12; F= 5.688; P= 0.0053).The untreated check was significantly higher than Ginstar, Aim, Sharpen, Gramoxone plus Aim, and ETX, whereas the Gramoxone alone was not significantly different from the untreated check or the other harvest aids. The treatments at 14 DAT were higher, and this can be contributed to the warmer than average temperature since the application of the harvest aids. Most of the regrowth in the harvest aid treatments except for

Gramoxone alone was at the base of the plant which would not lead to harvest issues. At this point, all but ETX, Gramoxone, and the untreated check were still harvestable.

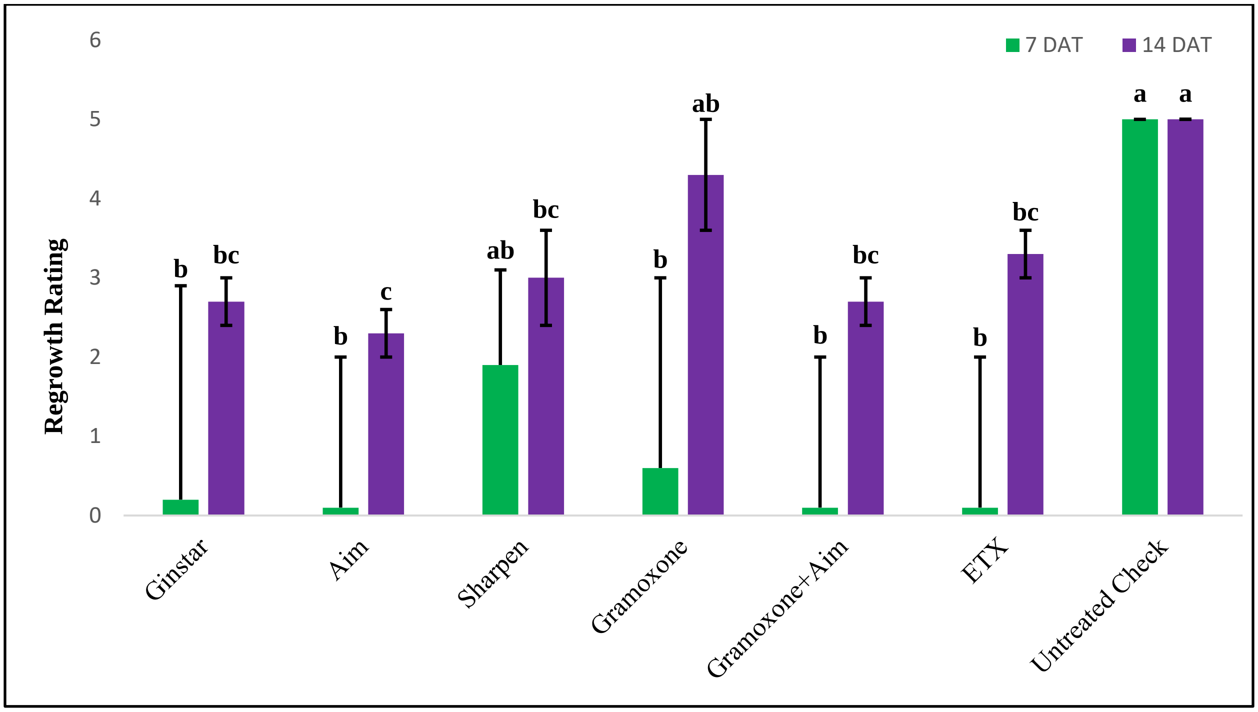

Figure 3. Regrowth ratings at 7 and 14 DAT for the 2016 Terry County Cotton Defoliation Trial at Walter King's Farm. Treatments with the same letters are not statistically different, Student-Newman-Keuls at P=0.05.

Conclusions

The result of this trial indicate that the harvest aids used in the trial are effective at preparing cotton for harvest within 7 to 10 days. At 14 DAT the untreated check, ETX, and Gramoxone were ready for harvest. The harvest aids provided adequate defoliation at both 7 DAT ranging from 8.3 percent defoliated to as high as 55 percent, and at 14 DAT ranging from 3.3 percent in the untreated check to 78.4 percent in the Ginstar treatment. Based on these results the most economical harvest aids at 7 DAT was Gramoxone alone at 20 oz. per acre, and at 14 DAT the most economical harvest aid was Gramoxone at 12 oz. per acre tank mixed with Aim at 1 oz. per acre.

Acknowledgements

The authors would like to thank Walter King for allowing them to use part of his land to conduct this trial. Additionally, we would like to thank Dr. Seth Byrd, Texas A&M AgriLife

Extension Cotton Agronomist, and the Brownfield Farmers Coop for providing the chemicals to conduct this trial. Individual results may vary, and performance may vary from location to location and from year to year. These results may not be an indicator of results you may obtain as local growing, soil, and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. Trade names of commercial products used in this report is included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas A&M AgriLife Extension Service and the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Management of Thrips Using In-Furrow applications of Velum Total
Texas A&M AgriLife Extension Service
Gaines County
Cooperator: Shelby Elam
Tyler Mays, Zach Bradshaw, Bubba Lamolinare, Terry Millican, Terry Wheeler

Summary

Thrips damage cotton between emergence and squaring, and can cause a delay in maturity and in extreme conditions can cause plant death. This field trial was initiated to evaluate seed treatment and in-furrow insecticides on their ability to manage thrips populations in cotton. Eight treatments were replicated four times, data collection included thrips damage ratings on a 1-5 scale at 25 and 31 Days After Planting (DAP), adult and immature thrips counts at 25 and 31 DAP, and lint yield per acre. Thrips damage ratings were not statistically affected by the treatments at either 25 or 31 DAP. Adult thrips counts were also not statistically different at either collection date, however, immature thrips counts at 25 DAP were statistically lower in Gaucho plus Aeris with a Fluopyram seed treatment than Gaucho plus Aeris and Gaucho alone. Additionally, at 25 DAP the number of immature thrips in Gaucho plus Admire Pro in furrow at a rate of 9 oz./acre, and Gaucho plus Velum Total in furrow at a 18 oz./acre rate were significantly lower than Gaucho plus Aeris. Lint yield ranged from 1,293.5 lbs./acre in Gaucho plus Admire Pro in furrow at 9 oz./acre to 1467.8 lbs./acre in Gaucho plus Velum Total in furrow at 18 oz./acre, and was not statistical differences were observed between the amount of lint produced per acre for any of the treatments. The low thrips populations experience in this field made it hard to draw conclusions on how well each treatment managed thrips populations. However, data at 25 DAP indicates that the immature thrips population at this time may be significantly lower in Gaucho plus Aeris with a Fluopyram seed treatment than Guacho alone.

Objective

Thrips are a seedling pest of cotton, and in much of the state are only considered a minor pest. In cotton growing regions and years where the early part of the season experience cool, wet conditions thrips are considered a severe pest. Thrips populations are often higher in cotton fields near maturing small grains, or seedling corn fields. Thrips damage to cotton can cause the terminal bud to be destroyed, which can lead to excessive branching and delayed crop maturity. The first line of defense against thrips is seed treatments and in furrow insecticides. This trial was conducted to evaluate the combination of seed treatments and in furrow insecticides on their ability to manage thrips populations.

Materials and Methods

The field trial was planted at Shelby Elam's Farm south of Seminole, Texas, The Stoneville variety 4946GLB2 was planted at a seeding rate of 45,000 seeds/acre on a forty-inch row spacing. Plots were four rows wide by 36-foot-long, with the two center rows designated for harvest. Eight treatments were arranged in a randomized complete block design replicated four times (**Table1**).

Table 1. Description of Treatments with seed treatments and chemical applied In-Furrow.

Treatment	Seed Treatment	In-Furrow Chemical
1	Gaucho	No In-Furrow
2	Gaucho plus Aeris	No In-Furrow
3	Gaucho plus Aeris plus Fluopyram	No In-Furrow
4	Gaucho	Admire Pro Systemic Pro at 9 oz./acre
5	Gaucho plus Aeris	Admire Pro Systemic Pro at 9 oz./acre
6	Gaucho	Velum Total at 14 oz./acre
7	Gaucho plus Aeris	Velum Total at 14 oz./acre
8	Gaucho	Velum Total at 18 oz./acre

Thrips damage ratings were taken at the two-leaf (25 Days After Planting) and four leaf (31 Days After Planting) growth stage. The thrips damage rating scale was on a scale of 0 (no damage) to 5 (severe damage; **Table 2**). At the time of the thrips damage rating five plants on the two outer rows were pulled and placed in mason jars to count the number of adult and immature thrips per plot, using the thrips washing method.

Table 2. Description of 0-5 Thrips Damage Rating Scale for Cotton

Numerical Rating	Description
0	No damage
1	Slight crinkling of one or more true leaves, no apparent damage to the terminal
2	Moderate crinkling of one or more true leaves, slight damage to terminal
3	True leaves both crinkled and stunted, terminal is also crinkled and stunted
4	Severe leaf and terminal stunting and curling
5	Dead plants

Plots were harvested on 15 November, 2016 using a two-row stripper. Due to high request to use the research gin at the Texas A&M AgriLife Research and Extension Center at Lubbock, samples were not ginned. A standard 27% gin turnout was used to calculate the amount of lint produced per acre. Analysis of Variance of treatment means was conducted in ARM 16.1 with a confidence level of 95 percent. When the Analysis of variance show statistical difference between means treatments were separated using Student–Newman-Keuls with a confidence level of 95 percent.

Results and Discussion

Thrips damage ratings at 25 DAP were not statistically different (df= 7,21; F=0.765; P=0.6225), and ranged from a rating of 1 in Gaucho with Admire Pro at 9oz/acre and Gaucho plus Aeris with Admire pro at 9 oz/acre to a rating of 2 in all other plots (**Figure 1**). Damage ratins at 31 DAP were also not statistically different (df= 7,21; F=1.182; P=0.3546). Thrips Damage ratings at 31 DAP ranged from a rating of 2 in Gaucho plus Aeris to as high as a 4 rating in Gaucho plus Velum Total at a rate of 14 oz./acre (df=7,21; F=1.182; P=0.3546; **Figure 1**).

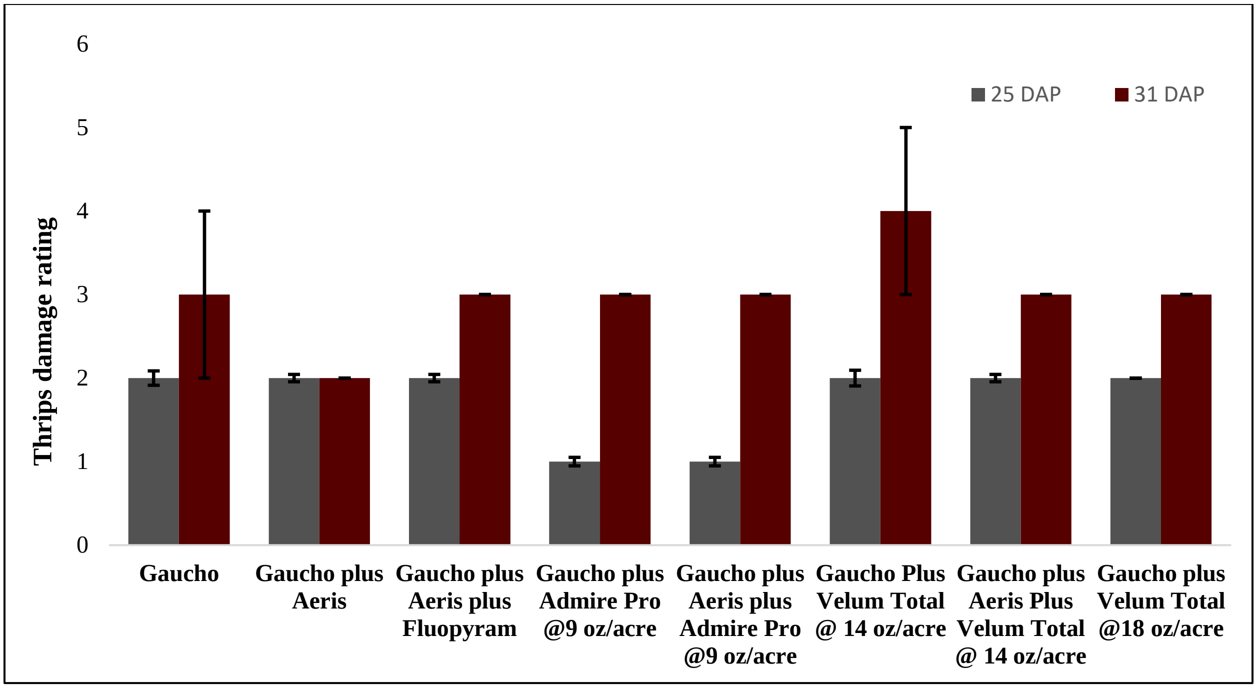

Figure 1. Thrips damage rating taken at 25(gray) and 31(red) days after planting in Seminole, Texas.

Adult thrips counts at 25 DAP was not statistically different (df= 7,21; F= 0.387; P= 0.8994), and ranged from .1 adult thrips per plant to as high as 0.25 adult thrips per plant (Figure 3). The amount of immature thrips per plant at 25 DAP was statistically different (df=7,21; F= 5.083; P=0.0017; **Figure 2**). Immature thrips per plants ranged from 0 immature thrips per plant in Guacho with Aeris and a Fluopyram seed treatment, Guacho with Admire Pro at 9 oz./acre, and Gaucho with Velum Total at 18 oz./acre; to as high as 0.6 immature thrips per plant in Guacho with Aeris. At 31 DAP no statistical differences were observed between treatment for the number of adult thrips per plant and the number of immature thrips per plant (**Figure 3**).

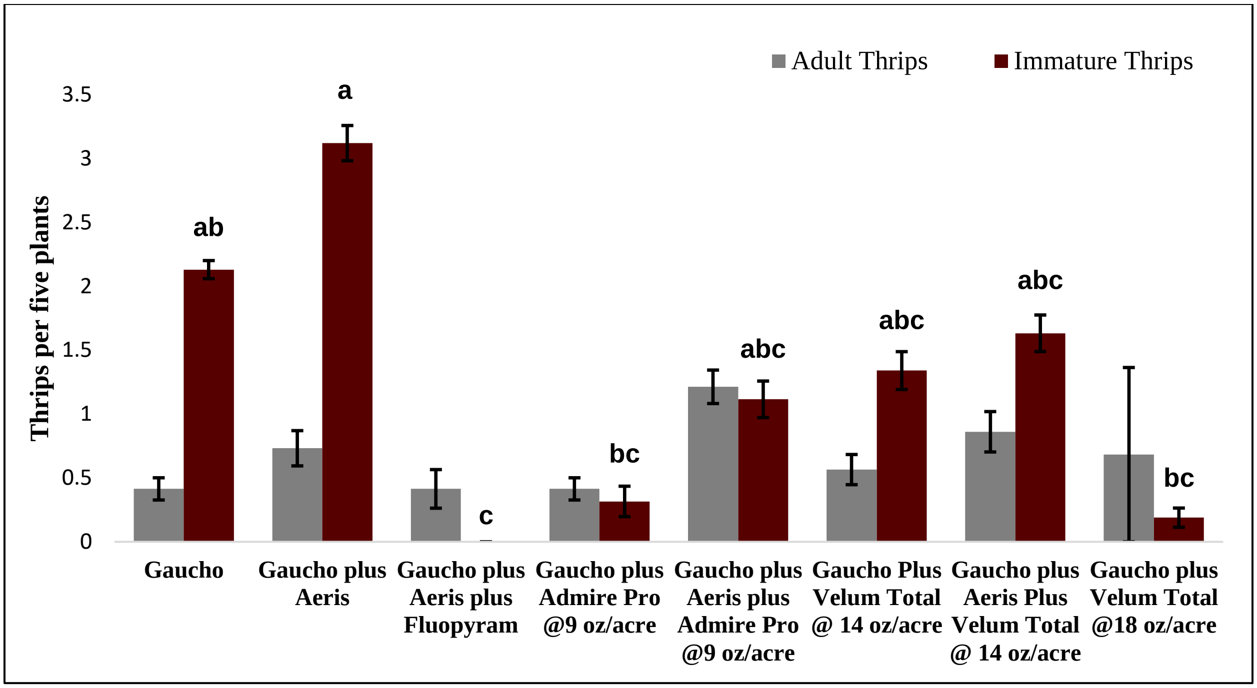

Figure 2. Adult (gray) and Immature (red) thrips counts taken at 25 DAP from Seminole Texas. Treatments with the same letter are not statistically different at a confidence level of 95%.

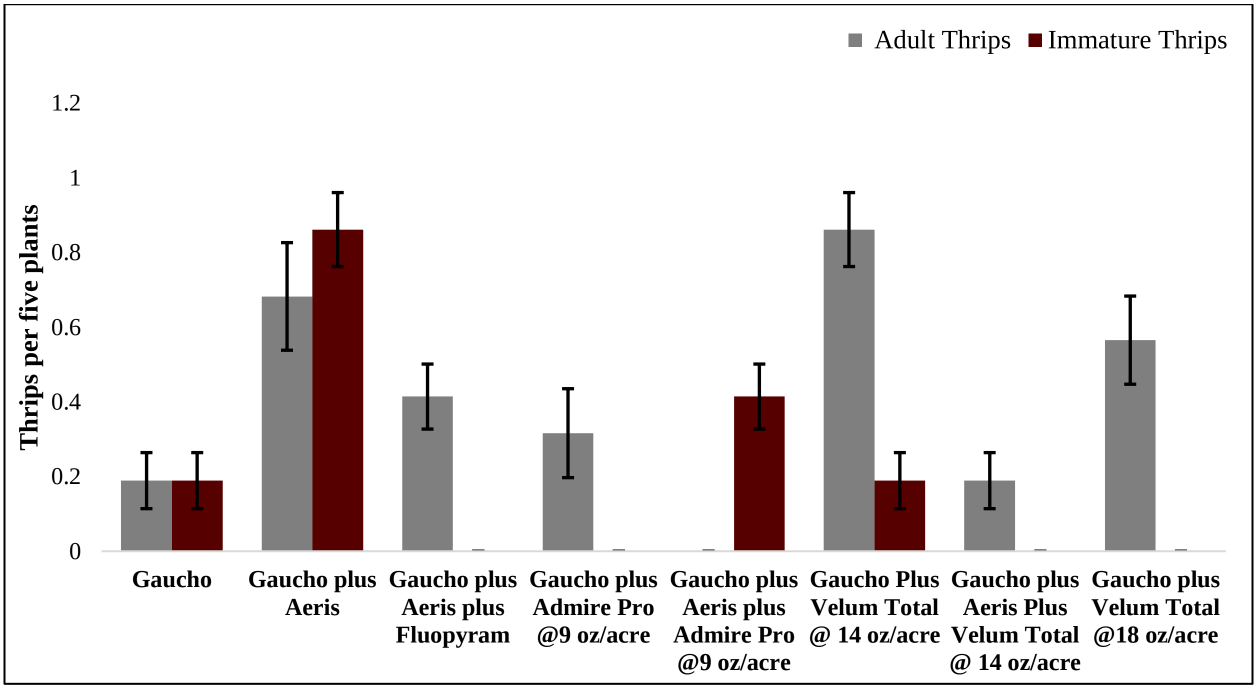

Figure 3. Adult (gray) and Immature (red) thrips counts taken at 31 DAP from Seminole Texas.

Lint yields ranged from 1,293.5 lbs. lint per acre to as high as 1,467.8 lbs lint per acre in Gaucho plus Admire Pro at 9 oz./acre and Gaucho plus Velum Total at 18 oz./acre, respectively.

No statistical differences were observed between the treatments for the pound of lint produced per acre (df= 7,21; F= 1.040; P=0.4342; **Figure 4**).

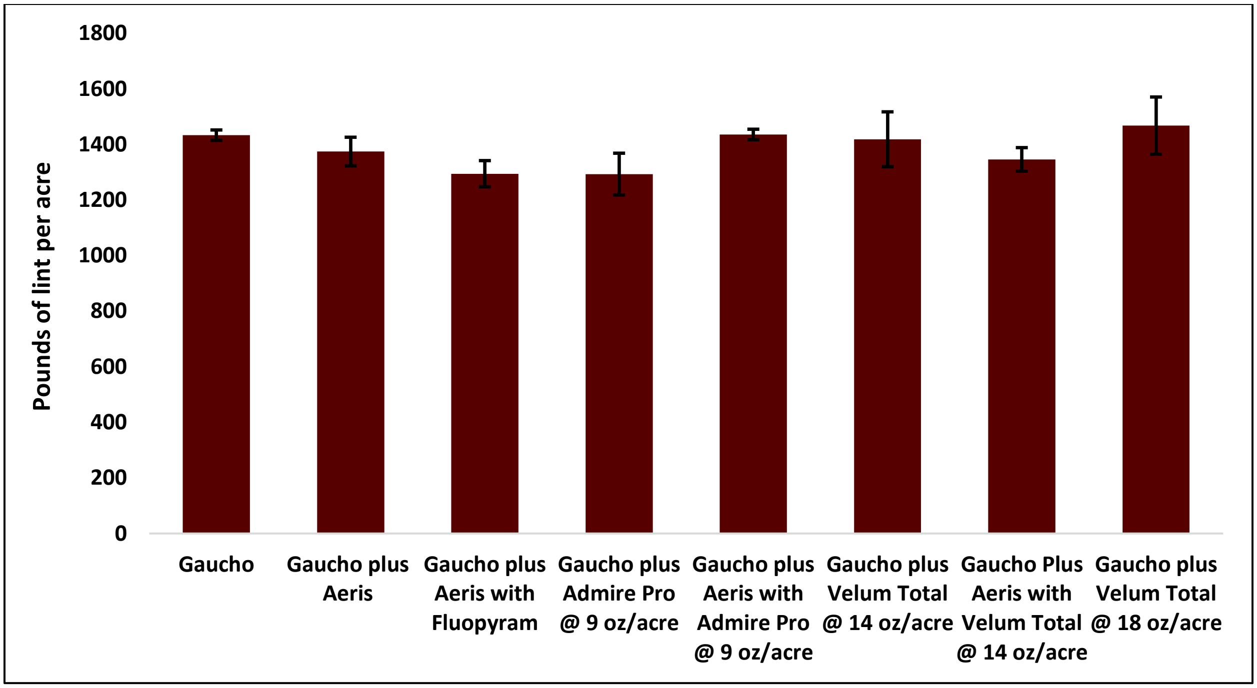

Figure 4. Pounds of lint produced by variety from Seminole, Texas.

Conclusions

There were no statistical differences between treatments for the insect damage rating, and significant differences were only observed at 25DAP for the number of immature thrips on five plants. Thrips throughout the year were well below threshold due to adequate growing conditions after planting. Statistical differences were not observed between treatments for the lint yield per acre, which ranged from 1,293.5 lbs. lint/acre to 1,467.8 lbs. lint/acre in Gaucho plus Admire Pro at 9 oz./acre in furrow and Gaucho plus Velum Total at 18 oz./acre in furrow. The low thrips populations during the season made it hard to draw conclusions on the ability of these treatments to manage thrips populations. However, based on this data at 25 DAP the immature thrips population in Gaucho plus Aeris can be significantly lower than the immature thrips populations in Gaucho alone.

Acknowledgements

The authors would like to think Shelby Elam for allowing them to use part of his land to conduct this trial. Additionally, we would like to thank Dr. Terry Wheeler and her employees for help with planting and harvest. Trade names of commercial products used in this report is included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas AgriLife Extension Service and the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Results from Root-knot Nematode Variety Trials

Texas A&M AgriLife Extension

Dawson, Gaines, Hockley, and Terry Counties

Terry Wheeler, Jason Woodward, Kerry Siders, Tyler Mays

Trials were planted at Seminole (20 May), Lamesa (23 May), Brownfield (24 May), and Levelland (26 May). Plots were four rows wide (40-inch centers), and 36 feet long. Data collected included plant stands, galls (caused by root-knot nematodes), root-knot nematode density in August, yield, and fiber quality (HVI). The Seminole and Brownfield sites had moderate to high pressure from root-knot; the Lamesa site had low to moderate pressure; and the Levelland site had very low pressure from root-knot nematode. Varieties were arranged in a randomized complete block design with six replications per variety. PHY 499WRF and NG 3406B2XF served as susceptible checks in these trials.

Table 1. Results from variety trial conducted near Seminole.

Variety[1]	Yield X Loan ($/acre)	Plants /foot	Galls /Root	Root-Knot Nematodes /500cc soil	Lbs of Lint/ acre	Lint Turnout	Loan ($/lb)
BX 1739GLT	**772 a**	1.87	1.1	16,344 abc	**1,434**	32.2	0.538
FM 1911GLT	**766 ab**	2.76	1.3	15,912 abc	**1,426**	31.4	0.537
ST 4946GLB2	**761 ab**	2.17	1.2	6,168 a-d[3]	**1,449**	29.8	0.525
PHY 499WRF	**728 abc**	2.52	1.6	7,728 abc	**1,443**	29.1	0.505
NG 3406B2XF	**720 a-d**	2.68	2.3	22,920 ab	**1,295**	29.5	0.556
BX 1736GLT	**718 a-d**	1.94	1.2	4,608 a-d	**1,430**	30.3	0.503
PHY 487WRF	**705 a-e**	2.53	1.1	1,080 e	**1,349**	27.9	0.523
BX 1733GLT	684 b-f	2.27	1.5	12,504 abc	1,256	27.5	0.545
DP 1747NRB2XF	667 c-f	1.06	0.7	2,208 cde	**1,419**	28.7	0.470
BX 1774GLTP	664 c-f	2.36	2.2	12,000 abc	1,191	27.1	0.558
PHY 417WRF	653 c-f	2.07	0.4	212 f	**1,379**	29.0	0.474
DP 1558NRB2RF	651 c-f	1.12	1.6	2,592 b-e	**1,355**	26.4	0.481
DP 16R252NRB2XF	644 d-g	0.98	0.6	3,096 b-e	**1,361**	29.7	0.473
FM 2011GT	624 e-h	2.64	1.6	6,084 a-d	1,239	29.0	0.504
DP 1454NRB2RF	613 fgh	0.80	1.6	2,256 de	**1,332**	28.7	0.460
PHY 308WRF	564 gh	3.09	1.4	9,624 abc	1,175	24.0	0.480
BX 1737GLT	559 h	2.67	2.4	31,680 a	1,018	26.7	0.549
BX 1775GLTP	412 i	2.54	2.1	13,608 ab	817	25.4	0.505
DP 16R225NRB2XF	------	0.31	0.3	1,824 cde	------[4]	26.8	0.464
MSD(0.05)[2]	*84*	*0.34*	*1.8*		*163*	*0.024*	*0.064*

[1]BX is an experimental line from Bayer CropSciences; DP is Deltapine; FM is Fibermax; NG is NexGen; PHY is Phytogen; and ST is Stoneville.
[2]MSD is minimum significant difference at P=0.05. Means followed by the same letter are not significantly different at P=0.05.
[3]Nematode densities were LOG10 transformed to determine statistical differences.
[4]Only one replication of this variety had a sufficient stand to harvest so yield is not presented.

Table 2. Fiber properties of varieties in a trial near Seminole.

Cultivar[1]	Mic[3]	Length	Unif	Strength	Elon	Rd	+b	Leaf
BX 1733GLT	3.80	1.18	80.50	31.15	8.40	77.40	8.10	3.0
BX 1736GLT	3.85	1.22	83.00	30.55	9.05	75.85	8.75	4.5
BX 1737GLT	3.70	1.17	80.45	30.10	8.60	78.75	8.05	2.5
BX 1739GLT	3.95	1.20	81.15	30.70	6.80	78.75	7.50	4.0
BX 1774GLTP	4.25	1.21	81.65	29.70	7.60	79.95	7.45	3.5
BX 1775GLTP	3.55	1.17	79.90	29.45	9.70	78.40	7.80	3.5
DP 1454NRB2RF	3.05	1.14	79.85	29.55	8.50	76.05	8.95	4.0
DP 1558NRB2RF	3.55	1.18	80.55	31.20	8.65	76.15	8.85	4.0
DP 16R225NRB2XF	2.75	1.18	81.10	29.95	9.20	75.75	8.55	4.5
DP 16R252NRB2XF	3.45	1.16	81.20	30.10	8.70	75.85	8.85	5.0
DP 1747NRB2XF	3.05	1.13	79.15	29.10	7.85	75.60	9.40	3.5
FM 1911GLT	4.50	1.24	81.85	31.65	7.80	78.85	7.65	3.0
FM 2011GT	5.05	1.17	80.85	31.45	7.45	78.40	7.80	4.5
NG 3406B2XF	4.55	1.16	81.60	29.45	9.70	78.30	8.20	3.5
PHY 308WRF	4.60	1.16	82.40	31.85	9.15	74.50	8.05	7.0
PHY 417WRF	3.45	1.14	81.75	29.90	9.50	77.00	7.90	6.0
PHY 487WRF	4.25	1.11	81.45	29.10	8.75	77.00	8.10	3.5
PHY 499WRF	4.15	1.15	82.25	31.35	9.85	77.05	8.00	5.0
ST 4946GLB2	4.45	1.18	82.25	31.80	9.35	77.15	8.60	4.5
MSD[2](0.05)	*0.76*	*0.03*	*1.42*	*1.05*	*0.43*	*1.16*	*0.55*	*2.9*

[1]BX is an experimental line from Bayer CropSciences; DP is Deltapine; FM is Fibermax; NG is NexGen; PHY is Phytogen; and ST is Stoneville.
[2]MSD is minimum significant difference at P=0.05.
[3]Mic=micronaire, unif=uniformity, elon=elongation.

Table 3. Results from a variety trial conducted near Brownfield.

Variety[1]	Yield X Loan ($/acre)	Plants /foot	Galls[3] /Root	Root-Knot Nematodes /500cc soil[3]	Lbs of Lint/ acre	Lint Turnout (%)	Loan ($/lb)
BX 1736GLT	**433**	2.25	83 a	1,848 ab	**877**	28.5	0.4940
DP 1558NRB2RF	**430**	1.86	52 ab	1,056 ab	**798**	28.7	0.5393
BX 1735GLT	**415**	2.33	50 ab	307 bc	**779**	27.1	0.5385
FM 1911GLT	**400**	2.38	54 a	1,740 ab	693	28.3	0.5705
ST 4946GLB2	346	2.19	73 a	180 c	672	26.8	0.5163
PHY 417WRF	321	2.21	25 b	793 ab	635	27.2	0.5065
PHY 499WRF	251	2.19	67 a	5,220 a	462	24.8	0.5438
MSD (0.05)[2]	*63*				*126*		*ns*

[1]BX is an experimental line from Bayer CropSciences; DP is Deltapine; FM is Fibermax; PHY is Phytogen; and ST is Stoneville.
[2]MSD is minimum significant difference at P=0.05.
[3]Nematode densities were LOG10 transformed and galls were square root transformed to determine statistical differences. There were pigweed problems at this site and some of the reproduction could have been on the pigweed rather than the variety.

Table 4. Fiber properties of varieties in a trial near Brownfield.

Cultivar[1]	Mic[3]	Length	Unif	Strength	Elon	Rd	+b	Leaf
BX 1735GLT	3.87	1.19	81.67	30.10	7.67	78.43	8.97	3.7
BX 1736GLT	3.65	1.20	82.60	29.60	8.45	77.10	9.20	3.5
DP 1558NRB2RF	4.25	1.14	81.10	29.25	8.20	79.10	9.40	2.5
FM 1911GLT	4.20	1.19	81.20	30.50	7.10	80.00	8.70	3.0
PHY 417WRF	3.35	1.13	81.35	29.50	8.85	77.90	8.45	4.5
PHY 499WRF	3.95	1.14	82.30	29.25	8.75	77.95	8.55	4.5
ST 4946GLB2	4.35	1.14	82.15	30.80	8.65	77.65	9.00	4.0
MSD(0.05)[2]	*0.76*	*0.03*	*1.09*	*ns*	*0.84*	*ns*	*0.78*	*ns*

[1]BX is an experimental line from Bayer CropSciences; DP is Deltapine; FM is Fibermax; PHY is Phytogen; and ST is Stoneville.
[2]MSD is minimum significant difference at P=0.05.
[3]Mic=micronaire, unif=uniformity, elon=elongation.

Table 5. Results from a variety trial conducted near Lamesa.

Variety[1]	Yield X Loan ($/acre)	Plants /foot	Galls /Root	Root-Knot Nematodes /500cc soil[3]	Lbs of Lint/ acre	Lint Turn out	Loan ($/lb)
FM 1911GLT	**580 a**	2.43	3.10	3,790 a-e	**1,148**	28.9	0.505
FM 2011GT	**560 a**	2.65	2.53	2,520 c-f	**1,121**	27.4	0.500
FM 1888GL	490 b	2.35	5.13	13,360 abc	999	28.2	0.491
BX 1774GLTP	461 bc	2.43	5.32	18,430 a	899	27.4	0.514
NG 3406B2XF	435 cd	2.62	4.85	13,460 ab	903	27.4	0.482
BX 1739GLT	425 cde	2.17	3.00	9,113 a-d	806	28.6	0.527
BX 1736GLT	424 cde	2.29	4.02	1,883 e-i	935	27.0	0.454
ST 4946GLB2	402 de	1.98	2.42	1,800 e-i	853	24.1	0.471
PHY 308WRF	387 e	2.69	2.45	1,233 e-i	890	25.1	0.435
BX 1735GLT	384 e	2.07	2.52	1,393 d-g	950	24.7	0.404
DP 1747NRB2XF	329 f	1.86	1.43	620 f-i	787	27.3	0.431
DP 16R251NRB2XF	331 f	1.81	2.09	287 ghi	761	23.8	0.435
DP 1558NRB2RF	306 fg	1.83	2.72	493 ij	719	25.1	0.426
PHY 487WRF	307 fg	2.20	3.15	637 hij	733	23.5	0.417
PHY 417WRF	304 fg	1.76	1.85	60 j	779	26.3	0.390
PHY 499WRF	285 gh	2.06	2.38	3,360 b-f	721	25.4	0.400
DP 16R228NRB2XF	281 gh	1.62	2.23	337 ghi	700	25.2	0.402
BX 1733GLT	248 h	2.00	2.45	4,897 e-h	598	23.4	0.415
DP 1454NRB2RF	213 i	1.56	3.73	1,340 ghi	512	25.2	0.417
MSD(0.05)[2]		0.26	2.61		95		0.076

[1]BX is an experimental line from Bayer CropSciences; DP is Deltapine; FM is Fibermax; NG is NexGen; PHY is Phytogen; and ST is Stoneville.
[2]MSD is minimum significant difference at P=0.05.
[3]Nematode densities were LOG10 transformed to determine statistical differences.

Table 6. Fiber properties of a variety trial near Lamesa.

Cultivar[1]	Mic[3]	Length	Unif	Strength	Elon	Rd	+b	Leaf
BX 1733GLT	2.70	1.14	78.05	29.15	7.90	75.20	9.10	3.5
BX 1735GLT	2.70	1.18	79.50	28.95	8.30	74.30	9.45	5.5
BX 1736GLT	3.20	1.17	80.20	29.05	8.35	74.30	9.00	6.0
BX 1739GLT	3.45	1.16	79.65	29.90	6.75	77.40	8.15	4.0
BX 1774GLTP	3.55	1.18	80.25	28.80	7.40	79.10	7.15	4.0
DP 1454NRB2RF	2.80	1.09	78.30	27.50	7.90	75.65	9.15	5.0
DP 1558NRB2RF	2.95	1.11	77.55	27.85	8.05	74.20	9.45	5.5
DP 16R228NRB2XF	2.55	1.13	79.40	26.95	8.35	74.95	8.80	6.0
DP 16R251NRB2XF	2.95	1.17	79.15	28.05	8.05	75.45	9.40	5.0
DP 1747NRB2XF	2.70	1.09	77.60	27.15	7.70	76.20	9.50	3.5
FM 1888GL	3.70	1.19	81.50	32.60	6.90	76.60	7.95	6.0
FM 1911GLT	3.75	1.16	78.45	30.20	7.65	77.35	7.50	5.0
FM 2011GT	3.65	1.17	81.50	30.25	7.55	77.15	7.85	5.5
NG 3406B2XF	3.20	1.10	80.35	27.90	9.70	76.70	8.30	4.5
PHY 308WRF	3.45	1.14	81.60	30.30	8.95	73.25	8.60	7.0
PHY 417WRF	2.50	1.10	79.40	28.35	8.90	76.65	8.55	4.5
PHY 487WRF	2.70	1.08	79.20	27.50	8.45	75.40	9.15	4.5
PHY 499WRF	2.65	1.10	78.50	27.75	8.55	75.30	8.85	5.5
ST 4946GLB2	2.90	1.13	80.30	29.65	8.90	76.25	9.20	3.5
MSD (0.05)[2]	0.43	0.05	2.23	2.18	0.51	1.99	0.58	3.5

[1]BX is an experimental line from Bayer CropSciences; DP is Deltapine; FM is Fibermax; NG is NexGen; PHY is Phytogen; and ST is Stoneville.
[2]MSD is minimum significant difference at P=0.05.
[3]Mic=micronaire, unif=uniformity, elon=elongation.

Table 7. Results from a variety trial conducted near Levelland.

Variety[1]	Yield X Loan ($/acre)	Plants /foot	Root-Knot Nematodes /500cc soil	Lbs of Lint/ acre	Lint Turn out	Loan ($/lb)
DP 16R251NRB2XF	**568**	3.13	0	**996**	33.0	0.567
FM 1888GL	**541**	3.22	73	**961**	31.8	0.559
FM 2011GT	**540**	3.42	0	**1,003**	30.2	0.536
DP 16R228NRB2XF	**530**	2.38	17	**947**	30.7	0.556
DP 16R225NRB2XF	**529**	2.93	0	**968**	32.0	0.543
ST 4946GLB2	**514**	3.09	0	**973**	30.8	0.536
PHY 308WRF	478	3.78	40	866	27.6	0.548
FM 1953GLTP	477	3.56	40	834	29.8	0.567
FM 1911GLT	466	3.41	33	871	30.2	0.544
PHY 499WRF	459	3.36	0	891	29.1	0.533
NG 3406B2XF	446	3.54	100	849	30.1	0.522
PHY 417WRF	441	3.06	0	844	31.7	0.519
PHY 487WRF	417	3.63	0	884	29.4	0.470
DP 16R252NRB2XF	405	3.06	0	**912**	31.4	0.444
BX 1736GLT	385	3.38	57	715	29.4	0.541
MSD(0.05)[2]	*64*	*0.24*		*106*		*0.076*

[1]BX is an experimental line from Bayer CropSciences; DP is Deltapine; FM is Fibermax; NG is NexGen; PHY is Phytogen; and ST is Stoneville.
[2]MSD is minimum significant difference at P=0.05.

Table 8. Fiber properties of a variety trial near Levelland.

Cultivar[1]	Mic[3]	Length	Unif	Strength	Elon	Rd	+b	Leaf
BX 1736GLT	3.55	1.12	28.45	80.45	9.25	79.45	8.80	3.0
DP 16R225NRB2XF	4.45	1.10	27.70	82.40	10.85	80.10	8.85	4.5
DP 16R228NRB2XF	4.30	1.11	27.15	82.70	9.85	80.60	9.15	3.0
DP 16R251NRB2XF	4.05	1.16	28.30	80.70	9.00	81.90	9.25	3.0
DP 16R252NRB2XF	3.30	1.10	26.95	79.75	8.75	78.95	8.15	5.5
FM 1888GL	4.70	1.12	30.50	81.55	7.40	81.35	7.95	3.0
FM 1911GLT	4.90	1.10	29.20	80.95	8.00	82.15	7.80	2.5
FM 1953GLTP	4.20	1.16	29.35	81.60	9.25	83.55	7.15	3.0
FM 2011GT	4.80	1.09	29.60	81.80	8.10	80.80	7.95	3.5
NG 3406B2XF	4.65	1.05	27.00	81.30	10.10	79.95	8.10	2.5
PHY 308WRF	4.55	1.10	29.40	81.45	9.70	79.15	8.80	4.0
PHY 417WRF	3.90	1.05	27.00	80.15	9.70	81.65	8.40	2.0
PHY 487WRF	4.55	0.99	25.00	80.00	9.85	80.55	8.90	3.0
MSD(0.05)	*1.02*	*0.05*	*0.98*	*2.21*	*1.00*	*2.44*	*0.80*	*2.0*

[1]BX is an experimental line from Bayer CropSciences; DP is Deltapine; FM is Fibermax; NG is NexGen; PHY is Phytogen; and ST is Stoneville.
[2]MSD is minimum significant difference at P=0.05.
[3]Mic=micronaire, unif=uniformity, elon=elongation.

Evaluation of Foliar Insecticide Applications for Cotton Fleahopper Control in Cotton
Texas A&M AgriLife Extension Service
Hale County
Suhas Vyavhare, Blayne Reed

Summary

This test was conducted in a commercial cotton field near Plainview, TX. The field was planted late May at 30-inch row spacing. The field was irrigated using center-pivot irrigation method. The experiment was designed as an RCB with 7 treatments and 4 replications. The plots were 4-rows wide x 40 ft in length. Treatments were applied on July 15 at bloom stage of cotton. Insecticide applications were made with a CO_2 pressurized hand-boom sprayer calibrated to deliver 10 gpa through hollow cone TeeJet TXVS6 spray tip nozzles (2 per row) at 30 psi. Wind speed was well below 10 mph during spray applications. Three drop cloth samples were taken from middle two rows of each plot at 3DAT, 7 DAT, 10DAT, 14DAT, and 21DAT. Numbers of CFH adults and nymphs were counted in each drop cloth sample. Data were analyzed by ANOVA and means were separated by LSD.

Numbers of CFH adults did not vary significantly among treatments on any of the sampling dates. There was a significant impact of insecticidal treatments on numbers of CFH nymphs across all sampling dates. At 3DAT and 14 DAT, plots treated with insecticide Diamond showed significantly higher number of CFH nymphs as compared to all other insecticidal treatments. While at 21 DAT, there was no significant difference in number of CFH nymphs among insecticidal treatments.

Table 1

Treatment/formulation	Rate amt product/acre	3 DAT CFHs per 3 row-ft			7 DAT CFHs per 3 row-ft			10 DAT CFHs per 3 row-ft		
		nymphs	adults	total*	nymphs*	adults	total	nymphs*	adults	total*
Untreated check	-	2.33 a	0.00 a	1.78 a	3.60 a	0.40 a	4.20 a	2.10 a	0.10 a	2.30 a
Diamond + Orthene 97	6 fl oz + 4 oz wt	0.00 c	0.00 a	0.00 b	0.00 c	0.10 a	0.20 c	0.00 b	0.10 a	0.10 b
Diamond	9 fl oz	1.42 b	0.17 a	0.90 a	1.00 b	0.10 a	1.80 b	0.90 ab	0.30 a	1.20 ab
Carbine	4 oz wt	0.42 c	0.08 a	0.16 b	0.40 bc	0.20 a	1.00 bc	0.40 ab	0.00 a	0.40 b
**Transform WG	1.5 oz wt	0.08 c	0.17 a	0.06 b	0.00 c	0.10 a	0.20 c	0.00 b	0.10 a	0.10 b
Orthene 97	4 oz wt	0.00 c	0.08 a	0.01 b	0.10 c	0.30 a	0.80 bc	0.00 b	0.00 a	0.00 b
Bidrin 8	8 fl oz	0.00 c	0.00 a	0.00 b	0.00 c	0.00 a	0.00 c	0.00 b	0.00 a	0.00 b

Means in a column followed by the same letter are not significantly different (LSD, P = 0.05). *Data were transformed using Arcsine square root % transformation. **Insecticide Transform WG is not approved for use on cotton in Texas.

Table 2

Treatment/formulation	Rate amt product/acre	14 DAT CFHs per 3 row-ft			21 DAT CFHs per 3 row-ft		
		nymphs*	adults	total*	nymphs	adults	total
Untreated check	-	3.10 a	0.20 a	3.20 a	2.90 a	0.30 a	2.80 a
Diamond + Orthene 97	6 fl oz + 4 oz wt	0.00 c	0.10 a	0.10 c	1.10 b	0.30 a	0.90 bc
Diamond	9 fl oz	1.40 b	0.30 a	1.70 b	1.20 b	0.30 a	0.90 bc
Carbine	4 oz wt	0.20 c	0.00 a	0.20 c	1.50 b	0.40 a	1.50 ab
**Transform WG	1.5 oz wt	0.00 c	0.00 a	0.00 c	0.30 b	0.20 a	0.20 c
Orthene 97	4 oz wt	0.10 c	0.20 a	0.20 c	0.80 b	0.60 a	0.90 bc
Bidrin 8	8 fl oz	0.00 c	0.10 a	0.00 c	1.20 b	0.30 a	1.20 bc

Means in a column followed by the same letter are not significantly different (LSD, P = 0.05). *Data were transformed using Arcsine square root % transformation. **Insecticide Transform WG is not approved for use on cotton in Texas.

Acknowledgements

These results may not be an indicator of results you may obtain as local growing, soil, and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. Trade names of commercial products used in this report is included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas AgriLife Extension Service and the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Evaluation of Foliar Insecticide Applications for Western Flower Thrips Control in Cotton

Texas A&M AgriLife Extension Service
Lubbock County
Suhas Vyavhare

Summary

This test was conducted in field at the Texas A&M AgriLife Research and Extension center in Lubbock, TX. The field was planted on May 27 on 40-inch row spacing. The field was irrigated using furrow irrigation. The experiment was designed as an RCB with 3 treatments and 4 replications. The plots were 4-rows wide x 30 ft in length. Treatments were applied on Jun 24. Insecticide applications were made with a CO_2 pressurized hand-boom sprayer calibrated to deliver 10 gpa through hollow cone TeeJet TXVS6 spray tip nozzles (2 per row) at 30 psi. Wind speed was well below 10 mph during spray applications.
Sampling was done at 4DAT and 13DAT. 10 randomly selected plants from each plot on each sampling date were taken to the laboratory in glass mason jar containing 75% ethyl alcohol. Number of thrips adults and nymphs in each sample were counted by washing technique. Data were analyzed by ANOVA and means were separated by LSD.

Number of WFT immatures reduced significantly in response to acephate application at 4DAT. At 13DAT, however, both insecticidal treatments had significantly lower number of WFT immatures than untreated plots. Numbers of WFT adults did not vary significantly across treatments at both 4DAT and 13DAT.

Table 1

Treatment/ formulation	Rate product/acre	WTF/10 plants 4DAT adults	immatures	total	13DAT adults	immatures	total
Untreated check	-	3.5 a	4.3 a	7.8 a	1.5 a	6.3 a	7.8 a
Acephate 97UP	12 oz wt	1.5 a	0.8 b	2.3 b	2.3 a	1.3 b	3.5 a
Bidrin 8	8 fl oz	1.8 a	3.3 a	5.0 ab	3.8 a	1.5 b	5.3 a

Values in a column followed by the same letter are not significantly different (LSD, P = 0.05).

Acknowledgements

Individual results may vary, and performance may vary from location to location and from year to year. These results may not be an indicator of results you may obtain as local growing, soil, and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. Trade names of commercial products used in this report is included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas AgriLife Extension Service and the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Evaluation of Foliar Insecticide Applications for Grasshopper Control in Cotton
Texas A&M AgriLife Extension Service
Hale County
Suhas Vyavhare, Blayne Reed

Summary

This test was conducted in a commercial cotton field near Plainview, TX. The field was planted on Jun 4 on 40-inch row spacing. The field was irrigated using a drip irrigation system. The experiment was designed as an RCB with 6 treatments and 4 replications. The plots were 4-rows wide x 40 ft in length. Treatments were applied on Aug 12. Insecticide applications were made with a CO_2 pressurized hand-boom sprayer calibrated to deliver 10 gpa through hollow cone TeeJet TXVS6 spray tip nozzles (2 per row) at 30 psi. Wind speed was well below 10 mph during spray applications. Insect sampling was done by swinging the sweep net through the top of the canopy. Each sample consisted of DGs collected in 25 consecutive sweeps taken in a row while walking forward. Sweep net contents (foliage + insects) were placed in plastic zip-lock bags and brought to the laboratory. Plastic bags containing insects were stored at 3^0 C for further processing. Laboratory processing included counting of DG nymphs and adults found per sample. Sampling was done at 3 DAT, 7 DAT, and 21 DAT. Data were analyzed by ANOVA and means were separated by LSD.

There was a significant reduction in total number of DGs in response to insecticide applications at 3DAT. At 7DAT, plots treated with Lorsban 4E had significantly higher numbers of DGs per 25 sweeps as compared to other insecticidal treatments. No significant difference was observed in numbers of DGs among treatments at 21DAT.

Acknowledgements

Individual results may vary, and performance may vary from location to location and from year to year. These results may not be an indicator of results you may obtain as local growing, soil, and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. Trade names of commercial products used in this report is included only for better understanding and clarity. Reference to commercial products or trade

names is made with the understanding that no discrimination is intended and no endorsement by Texas AgriLife Extension Service and the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1

Treatment/	Rate amt	3 DAT			7 DAT			21 DAT		
		DGs per 25 sweeps			DGs per 25 sweeps			DGs per 25 sweeps		
formulation	product/acre	adults	nymphs*	total*	adults	nymphs*	total*	adults	nymphs**	total
Untreatd check	-	2.00 a	3.40 a	5.40 a	1.50 a	4.30 a	5.80 a	2.50 a	2.00 a	4.50 a
Baythroid XL	2.8 fl oz	0.00 a	0.00 b	0.00 b	0.00 a	0.00 b	0.00 c	1.00 a	0.00 a	1.00 a
Hero	10.3 fl oz	0.00 a	0.00 b	0.00 b	0.00 a	0.00 b	0.00 c	1.50 a	0.70 a	3.00 a
Prevathon	10 fl oz	0.00 a	1.10 ab	1.10 b	0.00 a	0.40 b	0.40 c	1.00 a	0.00 a	1.00 a
Prevathon	20 fl oz	0.00 a	1.10 ab	1.10 b	0.00 a	0.00 b	0.00 c	0.50 a	0.10 a	1.00 a
Lorsban 4E	16 fl oz	0.50 a	1.10 ab	1.70 b	1.50 a	0.80 b	2.20 b	1.50 a	0.70 a	3.00 a

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

*Data were transformed using square root of X+0.5; **Arcsine square root % transformation.

Evaluation of Foliar Insecticide Applications for Conchuela Stink Bug Control In Cotton

Texas A&M AgriLife Extension Service
Hale County
Suhas Vyavhare, Katelyn Kesheimer, Adam Kesheimer

Summary

This test was conducted in a commercial cotton field near McAdoo, TX. The field was planted on Jun 3 on 40-inch rows (2:1 skip-row). The field was irrigated using a drip irrigation system. The experiment was designed as an RCB with 6 treatments and 4 replications. The plots were 2-rows wide x 40 ft in length. Treatments were applied on Oct 28 at the beginning of boll opening stage of cotton. Insecticide applications were made with a CO_2 pressurized hand-boom sprayer calibrated to deliver 10 gpa through hollow cone TeeJet TXVS6 spray tip nozzles (2 per row) at 30 psi. Wind speed was well below 10 mph during spray applications. Two drop cloth samples were taken from each plot at 7 DAT. Numbers of CSTs were counted in each drop cloth sample. Data collection was terminated 14 DAT due to low numbers of CSTs. Data were analyzed by ANOVA and means were separated by LSD. Data show all insecticide products tested provided excellent control of CST when applied at highest labeled rates. No nymphs were seen so data presented are CST adults per 6 row-ft.

Acknowledgements

The authors would like to thank Walter King for allowing them to use part of his land to conduct this trial. Additionally, we would like to thank Dr. Seth Byrd, Texas A&M AgriLife Extension Cotton Agronomist, and the Brownfield Farmers Coop for providing the chemicals to conduct this trial. Individual results may vary, and performance may vary from location to location and from year to year. These results may not be an indicator of results you may obtain as local growing, soil, and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. Trade names of commercial products used in this report is included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by Texas AgriLife Extension Service and the Texas A&M University System is

implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1

Treatment/formulation	Rate (amt product/acre)	Stink bugs/ 6 ft-row (7DAT)
Untreated check	-	4.5 a
Bidrin 8	8 fl oz	0.8 b
Hero	10.3 fl oz	0.0 b
Baythroid XL	2.8 fl oz	0.0 b
Bifenthrin 2EC	6.4 fl oz	0.0 b
Acephate 97UP	12 oz wt	0.8 b

Means in a column followed by the same or no letter are not significantly different (LSD, P>0.05).