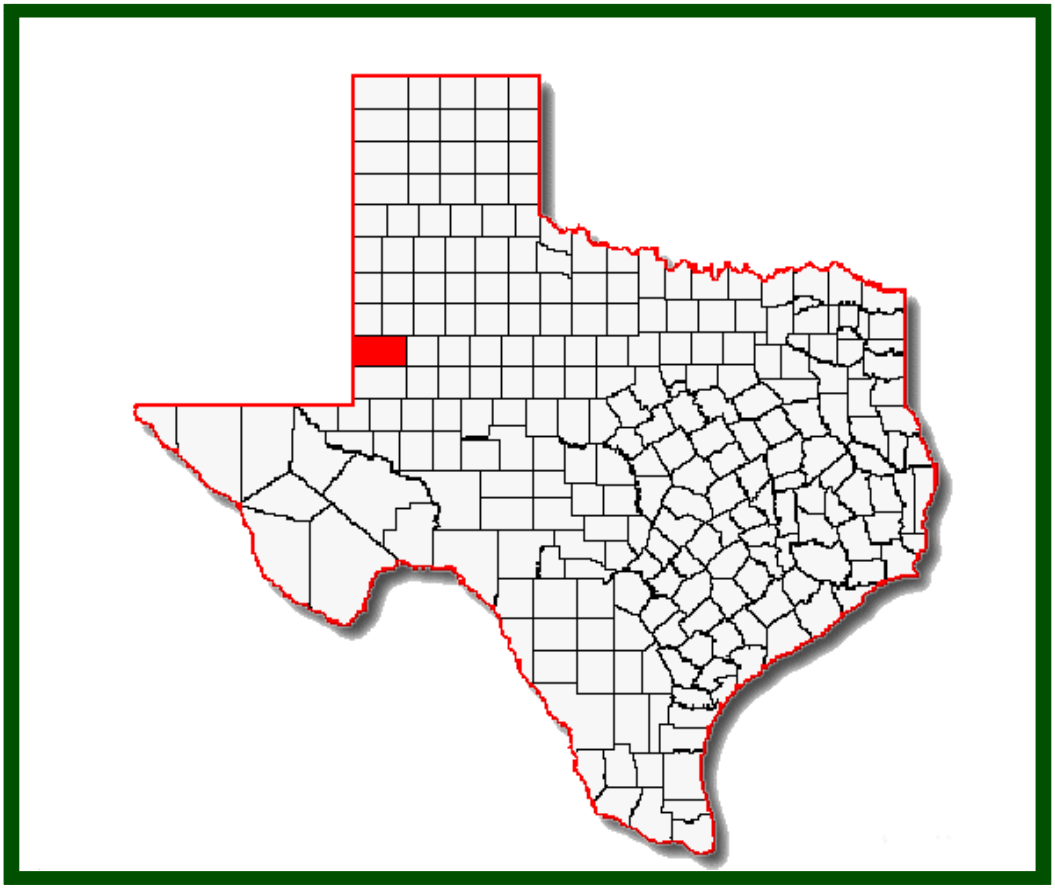
INTEGRATED PEST MANAGEMENT



Gaines County
IPM Program
2012

TEXAS IPM
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TEXAS A&M AGRILIFE EXTENSION

TEXAS A&M AGRILIFE EXTENSION

GAINES COUNTY
INTEGRATED PEST MANAGEMENT PROGRAM

2012 ANNUAL REPORT

Prepared by

Manda G. Anderson

Manda G. Anderson

Extension Agent – Integrated Pest Management

Gaines County

in cooperation with

Texas Pest Management Association

&

Gaines County IPM/TPMA Steering Committee

TEXAS IPM

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Introduction

The Gaines County Integrated Pest Management (IPM) Program is part of the Texas IPM Program and serves as a multi-purpose education effort to provide the Gaines County agriculture industry with up-to-date information on all aspects of IPM. The Gaines County IPM Program is coordinated by Manda Anderson, Extension Agent – IPM, from the Texas AgriLife Extension Office in Seminole. Texas Pest Management Association (TPMA) provides the fiscal operations including paying salary, travel and liability insurance and workers compensation for the scouts as well as bookkeeping services. The local IPM/TPMA Steering Committee (made up of growers, consultants, and agriculture industry representatives) is the fundamental local support unit for the Gaines County IPM Program. This committee met on April 5, 2012 and January 22, 2013 to determine local priorities, develop educational programs, identify our target audiences, and develop applied research and result demonstrations to address the local needs. In the fall of 2012, an evaluation instrument (post survey approach) was utilized to measure programmatic impact of the Gaines County IPM Program. Additionally, as a committee, we utilize the results from the evaluation to modify the IPM Program and increase applicability to our target audience.

In 2012 the Gaines County IPM Program ran a survey scouting program which encompassed cotton and peanuts. This survey scouting program was funded by twenty-three business/farm sponsors who brought in over $10,550. Fourteen fields were scouted throughout the season for pest and beneficial populations, along with crop stage and development. The information gathered from these fields was used to write the Gaines County IPM Newsletter (See Appendix A) that was sent out to over 360 growers, ginners, crop consultants and agriculture industry representatives. The Gaines County IPM Program also was the lead or cooperator on seventeen research trials to evaluate cotton variety performance, disease management, nematode management, and cotton irrigation practices. Results from these trials will be provided to the growers in a book titled “2012 Gaines County, Texas Cotton, Peanut, and Wheat Research Reports.” Additionally, the Gaines County IPM Program had several educational events throughout the season such as presentations at field days and grower meetings, newspaper articles, blog postings, and newsletters.

Acknowledgements and Recognition

2012 IPM/TPMA Steering Committee

Shelby Elam	Jack Shanklin
Chuck Rowland	Raymond McPherson
Kurt Brown	Michael Todd
Jud Cheuvront	Weldon Shook
Scott Nolen	Roy Johnson

2012 Gaines County Commissioners Court

Gaines County Judge	Lance Celander
Commissioner, Precinct 1	Danny Yocom
Commissioner, Precinct 2	Craig Belt
Commissioner, Precinct 3	Blair Tharp
Commissioner, Precinct 4	Biz Houston

2012 Gaines County IPM Program Sponsors and Contributors

Carter & Co. Irrigation Inc.
Oasis Gin Inc.
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BASF Corporation
Baucum Insurance Agency
Crop Plus Insurance Agency
Doyle Fincher Farms
Valley Irrigation & Pump Service Inc.
Lynn and Leca Addison
Keith and Carol Addison
Anderson Welding Pump & Machine Service Inc.
Birdsong Peanuts
Five Points Gin Inc.
Gaines County Farm Bureau
Moore-Haralson Agency PC
Ten High Gin Inc.
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Monsanto (provided seed for research)
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Otis Johnson
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Field Scout/Research Aides

Zamara Thibodeaux, Kimberly Garcia, and Michael Green

The field scouts were responsible for the weekly monitoring and reporting of insect populations, disease status and crop development. They were also responsible with helping establish and collect data from research plots. Special appreciation is extended to the field scouts for their dedication.

Special Thanks to the following Texas AgriLife Extension and Research Faculty for their Programming Support, Assistance, and Collaboration Efforts

Dr. David Ragsdale.....	Entomology Department Head, College Station
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Dr. Danny Nusser...….....	Regional Program Director, Lubbock
Dr. Pat Porter…….	Extension Entomologist, Lubbock
Dr. Jason Woodward……	Extension Plant Pathologist, Lubbock
Dr. Terry Wheeler…….	Research Plant Pathologist, Lubbock
Dr. Mark Kelley.....	Extension Agronomist, Lubbock
Dr. Calvin Trostle…….	Extension Agronomist, Lubbock
Dr. Peter Dotray……	Extension Weed and Herbicide Science, Lubbock
Dr. Jackie Smith……	Extension Ag Economist, Lubbock
Jay Yates……...	Extension Risk Management Specialist, Lubbock
Jeff Pate.....	Extension Risk Management Specialist, Lubbock
Dr. Dana Porter…….	Extension Ag Engineering Specialist, Lubbock
Scott Russell.....	Extension Agent - IPM, Terry and Yoakum Counties
Terry Millican……....	County Extension Agent – Ag, Seminole
Connie Lambert.....	EA-IPM Secretary, Gaines County, Seminole

Texas Pest Management Association

The support and assistance of David Oefinger, Executive Director of Texas Pest Management Association, is greatly appreciated.

TEXAS A&M AGRILIFE EXTENSION

Making a Difference

2012 Gaines County Integrated Pest Management (IPM) Program

Manda Anderson, Extension Agent – IPM, Gaines County

Relevance

Gaines County is the number one cotton and peanut producer in the state of Texas, with approximately 321,111 and 32,934 planted acres of cotton and peanuts in 2012, respectively. Water and economic development are two of the top three critical issues identified by the Texas Community Futures Forum for Gaines County. The number one top agriculture issue is agriculture profitability. The Gaines County IPM Program 2012 target audience is cotton and peanut producers, and agriculture industry representatives. By providing education on current crop and pest management tools and techniques, our goal is that the target audience will implement pest management strategies to maintain yields and net profit.

Response

Based on priorities identified by the Gaines County IPM Program Steering Committee and the 2011 IPM Program Evaluation, the following educational programs were developed and successfully implemented in 2012:

- ***2012 Gaines County, Texas Cotton and Peanut Research Reports*** **Book**
- **Author and Co-Author of 5 posters presented at the 2012 Beltwide Cotton Conference**
- ***2011 Gaines County IPM Program Research Trial Results*** **presentation at the SandyLand Ag Conference**
- **Two Interactive Presentations on Insects for Youth**
- **Gaines County IPM Survey Scouting Program**
- **9 editions of the *Gaines County IPM Newsletter***
- **Participated in 25 of the weekly IPM Radio Programs**
- **Interviewed for 7 newspaper articles published by the Seminole Sentinel and 4 articles published by Southwest Farm Press Daily.**
- **16 on-farm applied research trials**

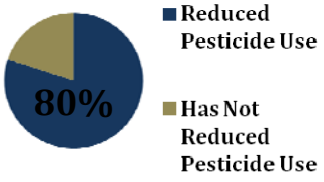
An **evaluation instrument** (post survey approach) was utilized to measure programmatic impact of the Gaines County IPM Program. Twenty-two individuals responded to the survey. Of those responding, 10 were producers (45%), 2 were private consultants (9%), 4 were agriculture retail representatives (18%), 4 were agriculture industry representatives (18%), 1 was a cotton ginner (5%), and 1 was a peanut company representatives (6%).

Results

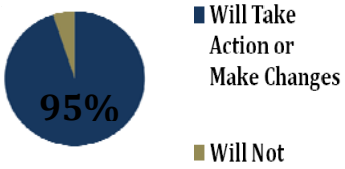
(100%) 10 of 10 producers said they anticipate benefiting economically as a direct result of what they learned from the IPM Program. The average IPM Program value, as indicated by the producers, was **$36.89 per acre**. The average farm size, as indicated by the producers, was 2742 acres. This would indicate that the IPM Program's value is **$101,152 for an average size farm**.

(100%) 10 of 10 producers said they selected varieties to plant on their farm based on the results from the Gaines County IPM Program research trials.

(80%) 8 of 10 producers said the Gaines County IPM Program research and education activities have resulted in lower pesticide use on their operations in recent years.

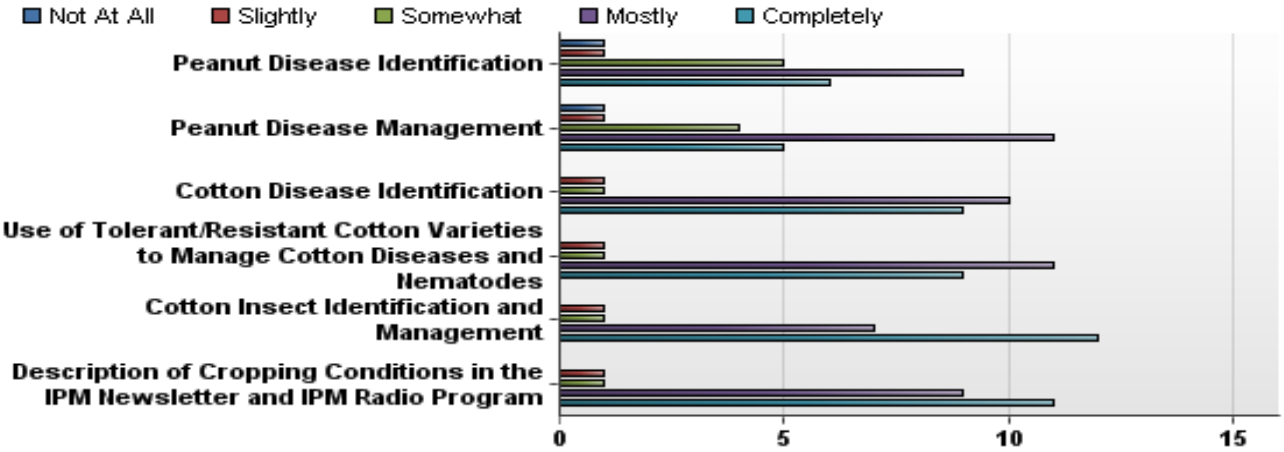


Producers reduced their pesticide applications by 34%.

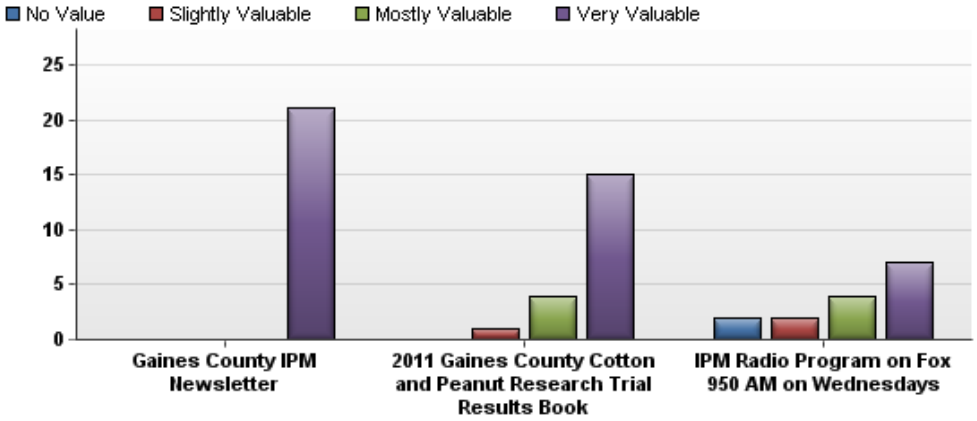


(95%) 20 of 21 respondents said they plan to take action or make changes based on information provided by the Gaines County IPM Program.

The number of respondents who said the Gaines County IPM Newsletter, grower meetings, research trial results, and radio program *completely, mostly, somewhat, slightly,* or *not at all* increased their knowledge of the following items:



The number of respondents who said the following items were *very valuable*, *mostly valuable*, *slightly valuable*, or *no value* to their operations:



Results indicate that Gaines County producers, agriculture industry & retail, peanut companies, and crop consultants highly value the information provided by the Gaines County IPM Program.

The following are testimonials from clientele:

"Thanks for continuing to help producers gain knowledge."

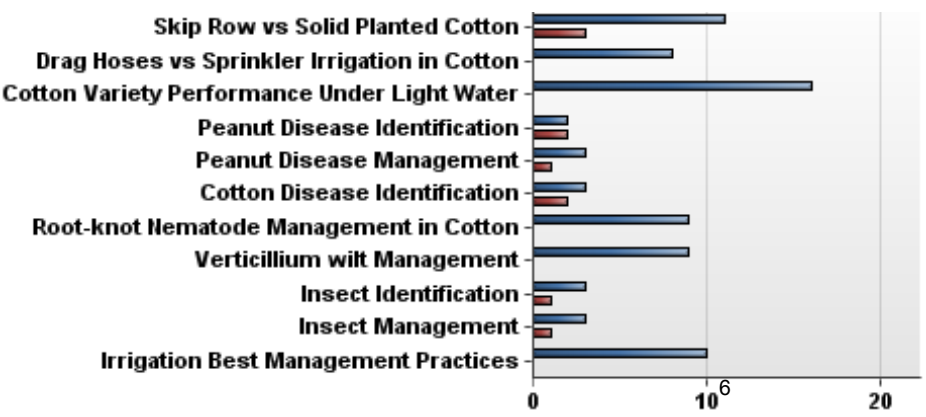
"Manda does a great job working with all the growers in her geography."

"All of it very informative, especially with the section on cotton that applies to us."

"All aspects were helpful and informative."

"Great Program."

Future Needs Identified by Clientele



- Number of respondents that indicated they do think the following items should be addressed.
- Number of respondents that indicated they do not think the following items should be addressed.

Educational Activities

Newsletters	
No. Issues Written	9
No. Non-Extension Clientele on Mailing List	40
No. Non-Extension Clientele on E-mail List	249
Total Non-Extension Clientele	289
Articles in Local Growers Newsletters	2
Radio Programs	23
Articles in National Trade Journals	4
Peer Review Publications	1
Published Abstracts or Proceedings	5
Education Articles Published on website	13
Blog Postings	13
Scientific Presentations/Posters	5
Newspaper Articles	
No. Prepared	7
No. Newspaper Carrying	5
Farm Visits	574
Scouts Trained	48
CEU Credits Offered	13
Integrated Pest Management Steering Committee Meetings	2
Presentations Made	
County Meetings	2
Field Days/Tours	2
Regional Meetings	2
Schools	2
No. Applied Research/Demonstration Projects	17
No. Involving Cotton	16
No. Involving Peanut	1
No. Direct Ag. Contacts	10,436
Other Direct Contacts	440

2012 Gaines County Crop Production Review

A majority of the peanut and cotton fields where planted in late April and throughout the month of May. Gaines County was missed by several of the storms that passed through west Texas prior to planting. However, early May shower blessed parts of Gaines County with some much need rainfall. Rainfall totals ranged from 1.5 inches to as much as 4.5 inches. There was some hail mixed in with the rainfall and there were a few cotton fields hailed out. Gaines County was still a long ways from replenishing the depleted sub-soil moisture.

During the past couple of years we have seen an increase in the number of fields that are infested with wireworms. Wireworms are the soil dwelling larvae of click beetles. Problems with wireworms appeared to be greatest in fields following grain crops. Some growers were able to search in the soil and find some wireworms. Wireworms were feeding on the cotyledons prior to plant emergence. This was causing "shot" holes in the leaves. Wireworms were also feeding on the stem of the young plants. Most of the time they would feed on several areas of the stem and they did not chew the stem completely in half.

Hemileuca slosseri (Buckmoth) larvae were being found throughout Gaines County. The larva were pale yellow with tufts of black branched spines and a reddish head. They were being found in high numbers around homes, schools, barns, and Shinnery oak. The larvae's primary host is Shinnery oak (*Quercus havardii*).

The 2011 drought left several farmers skeptical of the weather and likelihood of making a bountiful crop in 2012. Thankfully the weather seemed to have taken a turn for the better and by June we had already surpassed the 2011 year-end rainfall totals. We still were a long ways from replenishing the full soil moisture profile. However, the rainfall that we received during the week of May 7, and on May 26 and June 4 had given us hope and a better outlook for the 2012 crop.

In early June peanuts were looking good and some of the earlier planted fields are starting to bloom. Cotton stages ranged from seed in the ground to squaring, with a majority of the cotton in the 2-4 true leaf stage. Most fields were benefiting from the rainfall. However, wind, hail, and blowing sand had damaged some young cotton plants. Wind damaged cotton was sometimes confused with thrips damage. Both caused the leaves to cup upwards. However, wind damaged leaves tended to have burnt edges. Whereas, thrips damaged leaves did not have the burned edges. Instead thrips feeding was causes deformation of the leaves. Thrips pressure remained relatively light in a majority of the fields. However, we had picked up some heavy populations in scattered fields.

In early June we were also seeing grasshoppers in pastures, CRP, and in corners of fields. However, we had not seen or heard of any damage from them. Weeds were the major concern at this time. With regards to resistant weeds, we had not confirmed any resistant weeds in Gaines County at this

point. However, there were a couple of fields that we were investigating in Gaines County. At this time we were also picking up Beet Armyworms is some of the non-Bt fields. Worm sizes ranged from just hatched to 1/4 inch.

By mid to late June we were needing another good rainfall event soon to keep the dryland fields growing and to replenish our depleted soil moisture. Peanut plants were starting to bloom. Cotton stages ranged from cotyledon cotton to squaring cotton, with a majority of the cotton in the 4-8 true leaf stage. We were still picking up a few beet armyworms in non-Bt cotton. However, the survival rate of beet armyworms was really low. In non-Bt fields, we were only finding one worm per plant. Most worms were dying form natural causes (weather, beneficial insects, low humidity, cannibalism). We were also picking up stink bug eggs and a few beneficial insects (mainly spiders and big-eyed bugs). Other than that insect pressure was relatively light. Conversely, nematodes were starting to cause significant damage to the root system in some cotton fields and concerns of weed resistance/tolerance continued to be a hot topic.

By early July the earliest planted cotton and peanut fields were starting to bloom and form small pods, respectively. July 3 & 4 brought scattered showers to the county. Rain ranged from 0 to 1+ inches. The town of Seminole did not receive any rainfall. The whole county was in desperate need of a good soaking rainfall. Most dryland fields were hanging on and waiting for the next good rain. Due to spotty showers and varying pumping capacities, there were huge differences in the irrigated crop stages and development. Cotton ranged from pre-squaring to blooming. Some peanut fields were pegging and starting to form small pods, while other peanut fields had not formed any pegs. Weeds were still the main concern at this time. We were starting to find light populations of cotton fleahoppers. We continued to find light populations of beet armyworms and boll worms in peanuts and non-Bt cotton. We were also finding an occasional cotton square borer. Beneficial insects (including spiders, big-eyed bugs, lacewings, and ladybird beetles) were relatively abundant and they were keeping most insect pests at bay.

In late July a majority of the fields had very low insect pest pressure. We were only picking up really light populations of the following insects in cotton: aphids, spidermites, bollworms, fall armyworms, and lygus. In peanuts we were picking up light populations of bollworms, fall armyworms, wireworms, grubworms, and southern corn root worm. We were still picking up relatively high populations of beneficial insects in most fields. The beneficial insects were likely one of the key players in helping to keep most insect pest at bay. Bollworm and Fall armyworm continued to be present in cotton and peanuts. Ages of worms range from one day old to 12 days old. Therefore, we were starting to see more of a continuous egg lay and overlapping generations. Several growers were battling heavy weed pressure that they were having trouble controlling with glyphosate. Verticillium wilt and Fusarium wilt had started to show up in some cotton fields. Peanuts were blooming, setting pegs, and forming small-medium pods. The cooler temperatures (in comparison to 2011) had helped with flower and fruit set. The fuller canopies had also helped to reduce temperatures and increase humidity in the canopy, which had created a more favorable environment for flowering, pollination, pegging and pod development. We were seeing some leaf spot in Spanish peanuts.

In early August, we were in desperate need of rainfall in order to supply the plants with moisture to help finish out the crop. We had already started to see some shedding of cotton squares and small bolls. This natural shedding process helps the plants to adjust their fruit load, which allows the plants to shift all of its effort into maturing the retained fruit and producing harvestable bolls. Several cotton fields were quickly approaching cutout. Those field that are at 4 - 5 Nodes Above White Flower (NAWF) were considered cutout. We did have some fields that had maintained 7 – 9 NAWF, however, these fields had above normal irrigation capacities. Peanuts were continuing to peg and form pods. We also had several fields with formed pods. The peanut crop looked significantly better than it did at this same time in 2011. The 2012 peanut crop had a much better start, which had resulted in larger canopies that are more conducive for peanut pollination and pegging. Verticillium wilt and Fusarium wilt incidence had increased in cotton fields. Insect pest pressure remained light. Beneficial insects numbers were still holding steady, despite there being very few pests to feed on. Weeds were still the main concern. Several hoe crews were helping to clean up weeds and some producers had also run a cultivator through the fields. Pod rot was starting to show up in more peanut fields. Most of the pod rot thus far had been caused by Pythium, but we were also picking up some pod rot caused by Rhizoctonia.

By mid-August a majority of the cotton had reached cutout and several fields had started to shed squares and small bolls. Cracked bolls had been observed in a couple of fields. Cotton stages ranged from 0-7 Nodes Above White Flower (NAWF), with a majority of the fields in the 2-4 NAWF. Overall, insect pest pressure was very light. We were finding very light populations of aphids, spider mites, bollworms, and armyworms. Beneficial insects (mainly spiders, green lacewings, and assassin bugs) were still hanging in there. August 13 storms brought barely measure rainfall to most of the county, with the except of the Loop area which received 2.5 inches of rain and Seagraves received 0.63 inches. For the most part, the peanut crop looked very good. We were still picking up light populations of "worms" in peanuts. We were also picking up more pod rot caused by Rhizoctonia and Pythium. We were observing salt damage in a couple of peanut fields. Salts were left behind as the irrigation water evaporated. This allowed for a buildup of salt in the root zone. Since we did not have any good flushing rains during the last two years, we had a double build up (2 years worth) of salts.

In late August two situations were being created out in the cotton fields. First were those fields that had previously reached cutout and then received above average rainfall, which resulted in regrowth. These fields would likely be harder to defoliate. Second were those fields that had received little to no rainfall. These fields were showing signs of excessive stress. The same scenario was being seen on those peanut fields which had not received any rainfall. A majority of our cotton crop had long past cutout (5 NAWF) and the plants had shed their remaining squares and small bolls. Peanut pod rot was the major concern in most peanut fields. Verticillium wilt was starting to show up in a few peanut fields. We were also continuing to see a significant impact of salinity in a couple of peanut

fields. *Kurtomathrips morrilli* were confirmed in three cotton fields in Gaines County and they had been reported in other counties north of Gaines County.

From mid-August to mid-September the crop had been on a role coaster ride in regards to Heat Unit (H.U.) accumulation. We had some days that were really warm followed by days that were cool. In regards to rainfall, we had slowly added to our rainfall total for the year. However, rainfall continued to be very spotty within the county. Hail had also been mixed in with some of the storms. A cotton field west of Seminole was completely defoliated, while the adjoining peanut field had significant leaf loss. Kurtomathrips were still being found in cotton fields throughout Gaines County. Small areas of infestation were quickly spreading throughout the whole field within a weeks worth of time. This rapid spread throughout the field usually occurred right after the water was cutoff on the field. Leaf spot was a concern at this time. This cool wet weather was conducive for leaf spot development. Verticillium wilt was becoming more evident in peanut fields.

We were also seeing a lot of salinity issues in peanuts. The salts accumulated at the edge of the leaf, causing the leaf edges to become necrotic and die.

A majority of the crop was harvest in late October and November.

Seasonal Heat Unit (H.U.) records for cotton (DD60s), National Climatic Data Center

						Avg. Monthly H.U.						Avg. Monthly Accumulated H.U.
Month	08	09	10	11	12		08	09	10	11	12	
May	319	310	308	362	393	338	319	310	308	362	393	338
June	626	549	645	748	644	642	945	859	953	1110	1037	981
July	586	613	533	756	629	623	1531	1472	1486	1866	1666	1604
August	536	619	623	792	651	644	2067	2091	2109	2658	2317	2248
September	260	295	443	379	379	351	2327	2386	2552	3037	2696	2600
October	105	118	140	174	157	139	2432	2504	2692	3211	2853	2738
November	16	6	2	20	37	16	2448	2510	2694	3231	2890	2755

Making a difference 2010

AgriLIFE EXTENSION
Texas A&M System

Agriculture and Natural Resources

2012 Research Reports

Efficiency of Abound FL Application over Time in a Peanut Field

Terry Wheeler (Texas A&M AgriLife Research, Lubbock), Manda Anderson (Texas A&M AgriLife Extension Service, Seminole), Jason Woodward (Texas A&M AgriLife Extension Service, Lubbock), and Scott Russell (Texas A&M AgriLife Research, Brownfield).

Fungicide studies conducted from 2009 – 2011 to manage pod rot caused by *Pythium* and *Rhizoctonia*, were aimed at comparing early, calendar-based fungicide applications versus threshold based applications. The early, calendar-based applications had reduced pod rot compared with threshold based systems. However, it was possible that the earliness of the application was the reason for better disease control, since the first application was made before many pods were present. The objective of the test conducted in 2012 was to examine the effect of application timing (earliness) on disease control and on chemical residue present on foliage, soil, and pods. To accomplish this, each treatment occurred at a different week of the season, with the first application made on 9 July and the last application made on 17 August. There were six treatments with a single application made at a different time during the summer, a nontreated check, and a well-treated check where two applications were made (19 July and 17 August). Plots were intensively sampled weekly to rate for pod rot, starting on 16 July and continuing until the end of August. Samples were sent for chemical (azoxystrobin) concentration analysis of certain treatments on 17 and 31 July and 15 August. Plots (1,000 ft. long and 4 rows wide) were thrashed with a 4-row machine and harvest weight was taken via load cells under a peanut trailer. Three small samples were taken from each harvested plot to grade.

Chemical analysis. The producer made an infurrow, at-plant application with Abound FL. There was still Abound FL present in the soil at the first sampling date (17 July, Fig. 1).

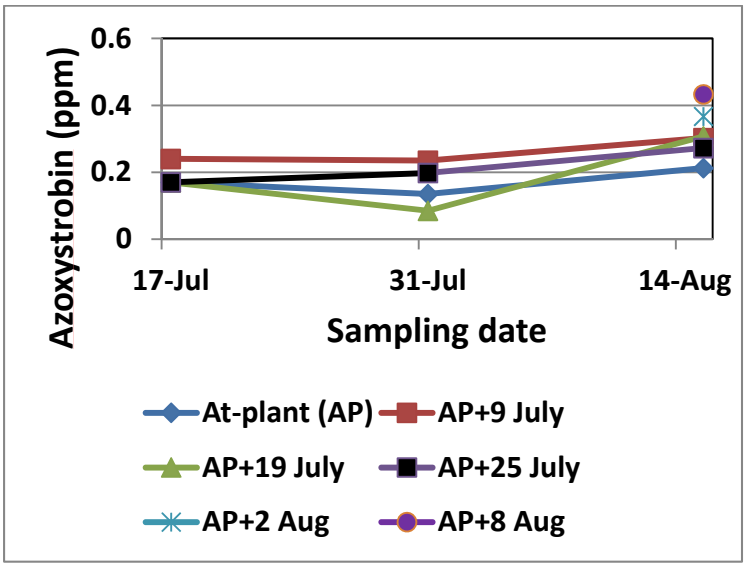


Figure 1. Concentration of fungicide in soil at three sampling times and six application times.

The fungicide was at similar concentrations in the soil throughout the sampling time and between all treatments, regardless of application time (Fig. 1). This indicates that some concentration of the fungicide remained from the at-plant application in the soil, and that subsequent applications during the growing season were not successful at increasing the concentration in the soil. The fungicide applications need to reach the soil to be able to control pod rot successfully. The only application that reached the soil was the one applied to the soil at planting.

Most of the fungicide remained on the plant foliage with the in-season applications (Fig. 2, Table 1). Unfortunately, Fig.2 clearly shows that an application was made over the entire test area between 31 July and 14 August, presumable by the producer. The nontreated check (◆) had a large increase in concentration (from 0 to 1.9 ppm) between the last two sampling times. A similar response was seen with the 9 July application (■) when the concentration was appropriately high at the first sampling date (17 July), and then dropped at the second sampling date (31 July), but inexplicably increased dramatically on the third sampling date. This only could have occurred if another application was made to those plots. Similarly, the concentration of azoxystrobin for applications made on 19 July and 25 July did not drop between the 31 July and 14 August sampling dates, as would have been expected. So, the objectives of the experiment will be more difficult to answer given the overtreatment that occurred in August.

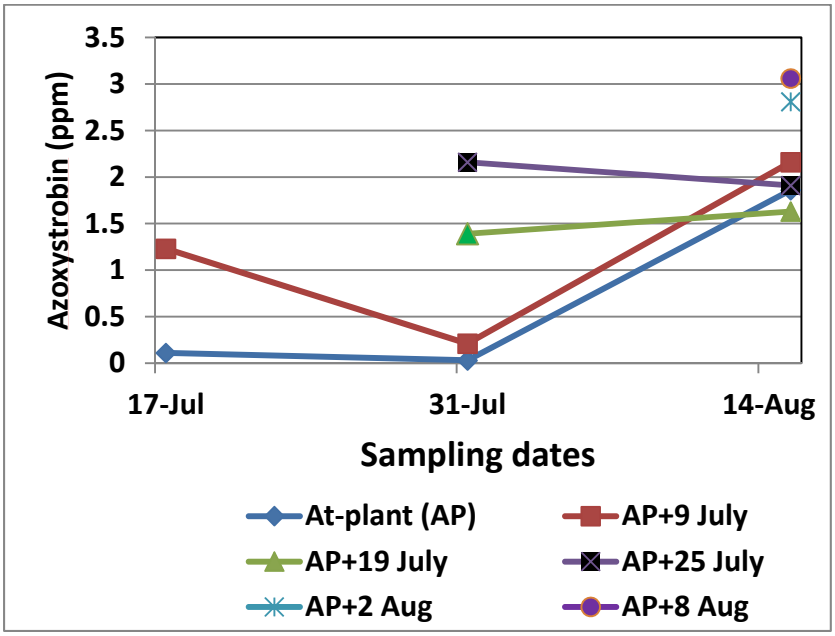


Figure 2. Concentration of fungicide on foliage at three sampling times and six application times.

Table 1. Percentage and concentration of azoxystrobin found on the foliage versus the pods.

Parameter	Sampling date	Fungicide application date					
		None	9 July	19 July	25 July	2 Aug.	8 Aug.
Foliage (F) ppm	17 July	0.1050	1.2325				
Pods (P) ppm	17 July	0.0125	0.1175				
% F/(F+P)	17 July	89.4%	91.3%				
Foliage ppm	31 July	0.0250	0.2075	1.3925	2.1600		
Pods ppm	31 July	0.0325	0.0386	0.0325	0.0375		
% F/(F+P)[a]	31 July	43.5%	84.3%	97.7%	98.3%		
% (F+P)[a]/(F+P)[b]	31 July	2.6%	11.2%	64.8%	100%		
Foliage ppm	15 Aug.	1.8600	2.1550	1.6250	1.9100	3.655	5.09
Pods ppm	15 Aug.	0.0650	0.0725	0.0925	0.1375	0.1025	0.1025
% F/(F+P)[a]	15 Aug.	96.6%	96.7%	94.6%	93.3%	97.3%	98.0%
% (F+P)[a]/(F+P)[b]	15 Aug.	37.1%	42.9%	33.1%	39.4%	72.4%	100%

[a]The foliage and pod concentrations were of the same application date.
[b]The foliage and pod concentrations were from the most recent application date to the sampling date (9 July on the 17 July sampling date; 25 July on the 31 July sampling date; 8 Aug., on the 15 Aug. sampling date).

The concentration of Abound FL in the soil remained constant for all the treatments and throughout all the sampling dates (or at least not significantly different), therefore it will be assumed that there was little contribution to the soil concentration by the fungicide applications made after planting. To examine how much of the application was staying on the foliage and how much was making its way to the pods, the concentration on the foliage was divided by the concentration on the foliage and pods, at the most recent application time to the sampling date. So, for the July 17 sampling date, there was 91% of the product on the foliage at 6 days after application. On the July 31 sampling date, there was 98.3% of the product on the foliage at 6 days after application. On the 15 August sampling date, there was 98% of the product on the foliage at 7 days after application. It appears that almost no product was making its way to the soil to protect the pods against *Rhizoctonia* and *Pythium* pod rot. The application of fungicide was made at 20 gal/acre and 30 psi.

In terms of how fast the fungicide was degrading on the foliage and pods, the July 31 sampling date provides the best information. There was a strong linear decline in fungicide concentration on the foliage over time (Fig. 3). The model predicted that immediately after application, the initial concentration was 2.88 ppm, and that the fungicide declined at a rate of 0.1217 ppm/day, or at a rate of 4.2%/day. There was very little fungicide left on the leaves by 3 weeks after application. It is not known if this decline would be typical with other strobilurin type fungicides meant to provide leaf spot protection. The situation on the pods was completely different, and there was no decline in concentration over time (Table 1), but there was also a very low concentration on the pods, probably below that necessary to give disease control.

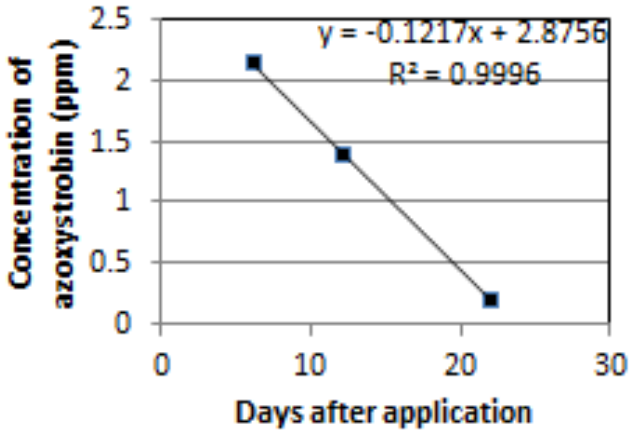


Fig. 3. Concentration of azoxystrobin on the foliage over time after fungicide applications.

Pod Rot over Time. Intensive sampling began on 11 July and terminated on 29 August, which was when the overtreatment with fungicide across the entire test area was discovered. There was no differences between treatments and pod rot at each sampling date, so they will be averaged to present the general dynamics of pod rot in this field during the sampling time (Fig. 4).

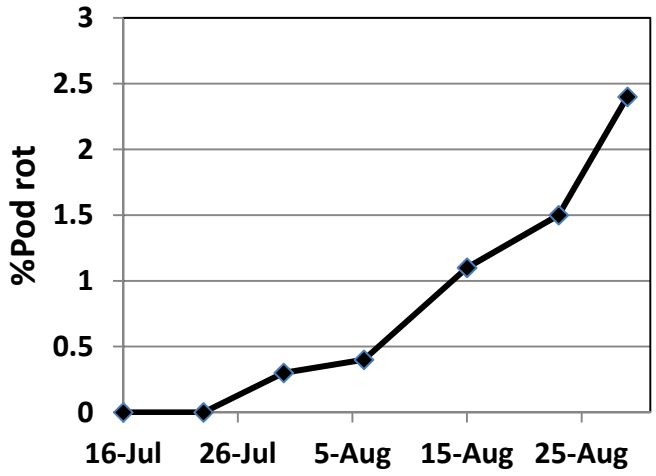


Figure 4. Pod rot over time in 2012.

In previous years, pod rot measurements over a number of weeks were analyzed to determine treatment differences, however, in 2012, there were only 1 or 2 measurements that were made when pod rot was present, and before the over-treatment occurred. So, even if the potential was there for treatment differences, there was not enough time to measure it definitely before the overtreatment was made. The primary fungus causing pod rot in 2012 was *Pythium* (Fig. 5), which is interesting because the dominant fungus in the other half of this circle in 2011 was *Rhizoctonia*.

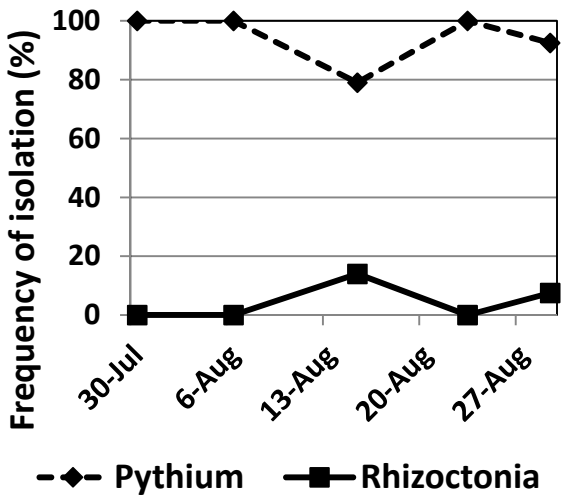


Figure 5. Frequency of *Pythium* and *Rhizoctonia* isolated from rotted pods in 2012.

Harvest. There were no treatment differences with respect to any of the measured parameters, including yield, grade, % damaged kernels, value ($)/acre (Table 2).

Table 2. Selected measurements taken from harvest in 2012.

Application Time	Yield (lbs/acre)	Value ($)/acre	Grade	% Damaged Kernels
None	5,779	1,008	71.1	0.5
July 9	5,514	969	71.3	0.8
July 19	5,513	969	70.8	0.6
July 25	5,600	991	71.6	0.4
Aug. 2	5,613	987	71.3	0.5
Aug. 8	5,573	979	71.9	0.6
Aug. 15	5,550	955	69.7	1.2
July 19 + Aug. 15	5,699	994	70.7	0.8

Conclusion

We did not achieve our original objective which was to determine if early applications of Abound FL would result in better pod rot control than later applications. However, we did determine that very little fungicide from all applications made it to the pods, so there was very little pod rot protection. The best way to improve pod rot control will require better applications, before we can determine the best time of the summer to make applications. The application volume of 20 gal/acre and 30 psi was not sufficient in 2012, which was a year when plants grew rapidly so foliage was thick, to allow fungicide to reach the soil. Future work should probably look at night time or early morning applications when foliage is positioned better to allow fungicide to reach the ground, and in increased water volume and pressure.

Replicated LESA Supplemental (Limited) Irrigation Cotton Variety Research Trial - 2012

Cooperator: Cheuvront Farms

Manda Anderson, Extension Agent - IPM
Dr. Mark Kelley, Extension Agronomist – Cotton

Gaines County

Summary Significant differences were observed for all yield, economic, and some HVI fiber quality parameters measured. Lint turnout ranged from a low of 30.9% and a high of 36.2% for All-Tex Nitro-44 B2RF and Phytogen 499WRF, respectively. Lint yield varied with a low of 258 lb/acre (FiberMax 2989GLB2) and a high of 326 lb/acre (PhytoGen 499WRF). Lint loan values ranged from a low of $0.4738/lb (FiberMax 2989GLB2) to a high of $0.5355/lb (All-Tex Nitro-44 B2RF). Net value/acre among varieties ranged from a high of $134.62 (PhytoGen 499WRF) to a low of $81.71 (FiberMax 2989GLB2), a difference of $52.91. Micronaire values ranged from a low of 4.2 for All-Tex Nitro-44 B2RF to a high of 4.9 for FiberMax 2989GLB2. Staple averaged 32.4 across all varieties with a low of 30.6 for FiberMax 2989GLB2 and a high of 33.7 for All-Tex Nitro-44 B2RF. Strength values averaged 27.7 g/tex with a high of 30.5 g/tex for All-Tex Nitro-44 B2RF and a low of 24.1 g/tex for FiberMax 2989GLB2. These data indicate that differences can be obtained in terms of net value/acre due to variety and technology selection.

Objective The objective of this project was to compare agronomic characteristics, yields, gin turnout, fiber quality, and economic returns of transgenic cotton variety under supplemental irrigated production in Gaines County.

Materials and Methods

Varieties: All-Tex Nitro-44 B2RF, Deltapine 1044B2RF, FiberMax 2484B2F, FiberMax 2989GLB2, NexGen 1511B2RF, PhytoGen 499WRF

Experimental design: Randomized complete block with 3 replications

Seeding rate: 3 seeds/row-ft in 36-inch row spacing

Plot size: 6 rows by variable length of field (712ft to 1744ft long)

Planting date: 17-May

Soil Texture: Sandy

Irrigation: This location was under a LESA center pivot. This trial received approximately 9.1 inches of irrigation and rainfall throughout the growing season.

Harvest: Plots were harvested on 22-October using a commercial stripper harvester. Harvest material was transferred into a weigh wagon with integral electronic scales to determine individual plot weights. Plot yields were adjusted to lb/acre.

Gin Turnout: Grab samples were taken by plot and ginned at the Texas A&M AgriLife Research and Extension Center at Lubbock to determine gin turnouts.

Fiber Analysis: Lint samples were submitted to the Fiber and Biopolymer Research Institute at Texas Tech University for HVI analysis, and USDA Commodity Credit Corporation (CCC) Loan values were determined for each variety by plot.

Ginning cost and seed values: Ginning costs were based on $3.00 per cwt. of bur cotton and seed value/acre was based on $250/ton. Ginning costs did not include checkoff.

Seed and technology fees: Seed and technology costs were calculated using the appropriate seeding rate (3 seed/row-ft) for the 36 row spacing and entries using the online Plains Cotton Growers Seed Cost Comparison Worksheet available at: http://www.plainscotton.org/Seed/PCGseed12.xls

Results and Discussion

Significant differences were observed for all yield, economic, and some HVI fiber quality parameters measured (Tables 1 and 2). Lint turnout ranged from a low of 30.9% and a high of 36.2% for All-Tex Nitro-44 B2RF and Phytogen 499WRF, respectively. Seed turnout ranged from a high of 49.6% for FiberMax 2989GLB2 to a low of 46.5% for Deltapine 1044B2RF. Bur cotton yields averaged 863 lb/acre with a high of 911 lb/acre for All-Tex Nitro-44 B2RF, and a low of 754 lb/acre for FiberMax 2989GLB2. Lint yield varied with a low of 258 lb/acre (FiberMax 2989GLB2) and a high of 326 lb/acre (PhytoGen 499WRF). Seed yield ranged from a high of 425 lb/acre for All-Tex Nitro-44 B2RF to a low of 373 lb/acre for FiberMax 2989GLB2. Lint loan values ranged from a low of $0.4738/lb (FiberMax 2989GLB2) to a high of $0.5355/lb (All-Tex Nitro-44 B2RF). After adding lint and seed value, total value/acre for varieties ranged from a low of $169.01 for FiberMax 2989GLB2 to a high of $225.42 for PhytoGen 499WRF. When subtracting ginning, seed and technology fee costs, the net value/acre among varieties ranged from a high of $134.62 (PhytoGen 499WRF) to a low of $81.71 (FiberMax 2989GLB2), a difference of $52.91.

Micronaire values ranged from a low of 4.2 for All-Tex Nitro-44 B2RF to a high of 4.9 for FiberMax 2989GLB2. Staple averaged 32.4 across all varieties with a

low of 30.6 for FiberMax 2989GLB2 and a high of 33.7 for All-Tex Nitro-44 B2RF. Strength values averaged 27.7 g/tex with a high of 30.5 g/tex for All-Tex Nitro-44 B2RF and a low of 24.1 g/tex for FiberMax 2989GLB2. Elongation ranged from a high of 8.2% for NexGen 1511B2RF to a low of 5.6% for FiberMax 2484B2RF. Values for reflectance (Rd) and yellowness (+b) averaged 78.2 and 9.1, respectively.

Conclusions

These data indicate that differences can be obtained in terms of net value/acre due to variety and technology selection. During the 2012 growing season Gaines County experienced high temperatures and very little rainfall. The environmental conditions prior to and during the growing season were a limiting factor in the varieties performance overall. It should be noted that no inclement weather was encountered at this location prior to harvest and therefore, no pre-harvest losses were observed. Additional multi-site and multi-year applied research is needed to evaluate varieties and technology across a series of environments.

Acknowledgements

Appreciation is expressed to Cheuvront Farms for the use of his land, equipment and labor for this demonstration.

Table 1. Harvest results from the Supplemental (Limited) Irrigation Trial, Cheuvront Farms Farm, Seminole, TX, 2012.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed/technology cost	Net value
	-------- % --------		---------- lb/acre ----------			$/lb	---------- $/acre ----------					
PhytoGen 499WRF	36.2	46.6	900	326	420	0.5302	172.92	52.51	225.42	27.01	63.79	134.62 a
NexGen 1511B2RF	36.2	46.9	891	322	418	0.4897	157.79	52.29	210.08	26.73	58.29	125.05 ab
All-Tex Nitro-44 B2RF	30.9	46.7	911	281	425	0.5355	150.63	53.17	203.80	27.32	60.17	116.31 bc
Deltapine 1044B2RF	32.4	46.5	892	289	415	0.5027	145.19	51.85	197.04	26.75	59.65	110.64 bc
FiberMax 2484B2F	34.4	47.2	829	285	391	0.5155	146.89	48.86	195.75	24.86	63.34	107.55 c
FiberMax 2989GLB2	34.2	49.6	754	258	373	0.4738	122.32	46.69	169.01	22.61	64.69	81.71 d
Test average	34.0	47.3	863	294	407	0.5079	149.29	50.89	200.18	25.88	61.66	112.65
CV, %	3.9	2.5	4.6	4.5	4.5	5.1	4.6	4.5	4.6	4.6	--	7.1
OSL	0.0034	0.0794†	0.0044	0.0006	0.0366	0.098†	0.0001	0.0372	0.0005	0.0043	--	0.0002
LSD	2.4	1.7	72	24	33	0.0383	12.46	4.18	16.63	2.15	--	14.50

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.
CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, †indicates signficance at the 0.10 level.
Note: some columns may not add up due to rounding error.

Assumes:
$3.00/cwt ginning cost.
$250/ton for seed.
Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Table 2. HVI fiber property results from the Supplemental (Limited) Irrigation Trial, Cheuvront Farms Farm, Seminole, TX, 2012.

Entry	Micronaire	Staple	Uniformity	Strength	Elongation	Leaf	Rd	+b	Color grade	
	units	32^{nds} inch	%	g/tex	%	grade	reflectance	yellowness	color 1	color 2
All-Tex Nitro-44 B2RF	4.2	33.7	79.7	30.5	7.1	2.7	78.3	9.0	2.0	1.0
NexGen 1511B2RF	4.6	30.8	78.3	26.6	8.2	2.0	76.9	9.5	2.3	1.3
Deltapine 1044B2RF	4.8	32.6	78.2	28.0	8.0	1.7	78.1	9.3	2.0	1.0
FiberMax 2484B2F	4.5	33.3	78.3	27.6	5.6	2.0	80.2	8.6	2.0	1.0
FiberMax 2989GLB2	4.9	30.6	77.2	24.1	5.6	1.7	78.3	9.0	2.0	1.0
PhytoGen 499WRF	4.5	33.5	79.3	29.6	7.8	1.3	77.0	9.5	2.0	1.3
Test average	4.6	32.4	78.5	27.7	7.1	1.9	78.2	9.1	2.1	1.1
CV, %	3.7	4.4	2.2	5.9	4.7	47.0	0.4	3.1	--	--
OSL	0.0047	0.08†	0.5755	0.0087	<0.0001	0.5809	<0.0001	0.0200	--	--
LSD	0.3	2.1	NS	3.0	0.6	NS	0.6	0.5	--	--

CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, †indicates significance at the 0.10 level, NS - not significant

Replicated Dryland Cotton Variety Research Trial - 2012

Cooperator: Cody Walters

Manda Anderson, Extension Agent - IPM
Dr. Mark Kelley, Extension Agronomist – Cotton

Gaines County

Summary Significant differences were noted for lint turnout and net value. Lint turnout averaged 22.2% with a high of 23.8% and low of 20.4% for Deltapine 1044B2RF and Stoneville 5458B2RF, respectively. After subtracting ginning, seed costs and technology fees, the net value/acre among varieties ranged from a high of $94.44/acre (Deltapine 1044B2RF) to a low of $63.50/acre (Phytogen 375WRF), a difference of $30.94.

Significant differences were observed among varieties for micronaire, elongation, leaf, and reflectance. Micronaire values ranged from a low of 3.0 for Stoneville 5458B2RF to a high of 3.9 for All-Tex Epic RF. Elongation averaged 7.0% across varieties with a high of 7.8% for Phytogen 499WRF and a low of 6.3% for Stoneville 5458B2RF. Color grade components of Rd (reflectance) and +b (yellowness) averaged 80.4 and 8.5, respectively.

These data indicate that differences can be obtained in terms of net value/acre due to variety selection. Additional multi-site and multi-year applied research is needed to evaluate varieties across a series of environments.

Objective The objective of this project was to compare agronomic characteristics, yields, gin turnout, fiber quality, and economic returns of transgenic cotton varieties under dryland production in the Texas High Plains.

Materials and Methods

Varieties:	All-Tex Edge B2RF, All-Tex Epic RF, Deltapine 1044B2RF, Deltapine 1219B2RF, FiberMax 2989GLB2, PhytoGen 375WRF, PhytoGen 499WRF, and Stoneville 5458B2RF
Experimental design:	Randomized complete block with three (3) replications.
Seeding rate:	2.5 seed/row-ft in 40 inch row spacings.
Plot size:	6 rows by variable length (1456 to 1713 feet)
Planting date:	28-May
Irrigation:	2.5” of irrigation were applied via LESA irrigation preplant with 14.5” of LEPA irrigation during the growing season for a total of 17” applied irrigation.
Rainfall:	7.73 inches of rainfall from 5-June to 1-October

Harvest: Plots were harvested on 14-November using a commercial stripper harvester without a field cleaner. Harvested material was transferred to a weigh wagon with integral electronic scales to record individual plot weights. Plot weights were subsequently converted to lb/acre basis.

Gin turnout: Grab samples were taken by plot and ginned at the Texas A&M AgriLife Research and Extension Center at Lubbock to determine gin turnouts.

Fiber analysis: Lint samples were submitted to the Texas Tech University – Fiber and Biopolymer Research Institute for HVI analysis, and USDA Commodity Credit Corporation (CCC) loan values were determined for each variety by plot.

Ginning cost and seed values: Ginning cost were based on $3.00 per cwt. of bur cotton and seed value/acre was based on $250/ton. Ginning cost did not include check-off.

Seed and Technology fees: Seed and technology costs were calculated using the appropriate seeding rate (2.5 seed/row-ft) for the 40-inch row spacing and entries using the online Plains Cotton Growers Seed Cost Comparison Worksheet available at: http://www.plainscotton.org/Seed/PCGseed12.xls .

Results and Discussion

Significant differences were noted for lint turnout and net value (Table 1). Lint turnout averaged 22.2% with a high of 23.8% and low of 20.4% for Deltapine 1044B2RF and Stoneville 5458B2RF, respectively. After subtracting ginning, seed costs and technology fees, the net value/acre among varieties ranged from a high of $94.44/acre (Deltapine 1044B2RF) to a low of $63.50/acre (Phytogen 375WRF), a difference of $30.94.

Significant differences were observed among varieties for micronaire, elongation, leaf, and reflectance (Table 2). Micronaire values ranged from a low of 3.0 for Stoneville 5458B2RF to a high of 3.9 for All-Tex Epic RF. Elongation averaged 7.0% across varieties with a high of 7.8% for Phytogen 499WRF and a low of 6.3% for Stoneville 5458B2RF. Color grade components of Rd (reflectance) and +b (yellowness) averaged 80.4 and 8.5, respectively.

Conclusions

These data indicate that differences can be obtained in terms of net value/acre due to variety selection. Additional multi-site and multi-year applied research is needed to evaluate varieties across a series of environments.

Acknowledgements

Appreciation is expressed to Cody Walters for the use of his land, equipment and labor for this demonstration.

Table 1. Harvest results from the Dryland Production Trial, Cody Walters Farm, Loop, TX, 2012.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed/technology cost	Net value
	-------- % --------		---------- lb/acre ----------			$/lb	---------- $/acre ----------					
Deltapine 1044B2RF	23.8	39.9	924	220	369	0.5495	120.78	46.12	166.90	27.73	44.74	94.44 a
All-Tex Epic RF	22.8	38.2	957	218	366	0.5248	114.30	45.69	159.99	28.70	37.21	94.07 a
All-Tex Edge B2RF	21.4	39.2	1011	217	396	0.5492	119.00	49.53	168.53	30.32	44.39	93.82 a
PhytoGen 499WRF	22.4	37.0	989	222	366	0.5482	121.75	45.74	167.49	29.68	47.84	89.96 ab
FiberMax 2989GLB2	21.6	37.5	945	204	354	0.5282	107.61	44.30	151.91	28.35	48.51	75.05 abc
Stoneville 5458B2RF	20.4	38.7	995	203	385	0.5027	102.12	48.12	150.24	29.85	47.51	72.88 bc
Deltapine 1219B2RF	23.1	38.6	845	195	326	0.5143	100.27	40.74	141.01	25.36	44.74	70.91 bc
PhytoGen 375WRF	22.0	36.5	834	184	304	0.5353	98.36	37.98	136.34	25.01	47.84	63.50 c
Test average	22.2	38.2	937	208	358	0.5315	110.52	44.78	155.30	28.12	45.35	81.83
CV, %	4.2	5.5	11.1	11.3	11.2	4.8	11.1	11.2	11.1	11.1	--	17.3
OSL	0.0134	0.5117	0.3471	0.4499	0.1852	0.2832	0.1536	0.1846	0.2266	0.3452	--	0.0807†
LSD	1.6	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	20.30

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.
CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, †indicates significance at the 0.10 level, NS - not significant.
Note: some columns may not add up due to rounding error.

Assumes:
$3.00/cwt ginning cost.
$250/ton for seed.
Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Table 2. HVI fiber property results from the Dryland Production Trial, Cody Walters Farm, Loop, TX, 2012.

Entry	Micronaire	Staple	Uniformity	Strength	Elongation	Leaf	Rd	+b	Color grade	
	units	32^{nds} inch	%	g/tex	%	grade	reflectance	yellowness	color 1	color 2
All-Tex Edge B2RF	3.7	35.7	79.0	29.4	6.3	3.0	82.0	7.6	2.3	1.0
All-Tex Epic RF	3.9	33.3	79.2	27.8	7.7	1.0	79.8	8.8	2.0	1.0
Deltapine 1044B2RF	3.8	34.8	80.2	28.4	7.8	1.3	81.8	8.1	2.0	1.0
Deltapine 1219B2RF	3.2	34.3	79.1	28.7	6.4	1.3	82.1	8.3	1.3	1.0
FiberMax 2989GLB2	3.4	35.3	79.1	29.8	6.6	1.7	78.9	8.4	2.3	1.3
PhytoGen 375WRF	3.2	35.5	80.5	28.1	6.7	1.3	81.0	8.8	1.3	1.0
PhytoGen 499WRF	3.5	34.7	80.9	29.4	7.8	1.7	80.4	8.4	2.0	1.0
Stoneville 5458B2RF	3.0	35.1	79.6	29.5	6.3	1.7	77.7	9.4	2.0	1.3
Test average	3.5	34.8	79.7	28.9	7.0	1.6	80.4	8.5	1.9	1.1
CV, %	9.0	3.0	1.6	4.4	8.6	39.4	1.7	9.3	--	--
OSL	0.0265	0.2022	0.5051	0.4579	0.0118	0.0571†	0.0149	0.2791	--	--
LSD	0.5	NS	NS	NS	1.0	0.9	2.5	NS	--	--

CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, †indicates significance at the 0.10 level, NS - not significant

Replicated LESA Irrigation Cotton Variety Research Trial Under Light Root-Knot Nematode Pressure - 2012

Cooperator: Scott Nolen Farms

Manda Anderson, Extension Agent - IPM
Dr. Jason Woodward, Extension Plant Pathologist

Gaines County

Summary Significant differences were observed for all the yield, economic, and some HVI fiber quality parameters measured. Lint turnout ranged from a low of 29.29% and a high of 35.2% for All-Tex Nitro-44 B2RF and Deltapine 174RF, respectively. Seed turnout ranged from a low of 44.8% for All-Tex Nitro-44 B2RF and NexGen 1511B2RF to a high of 48.1% for All-Tex 106466B2RF. Bur cotton yields averaged 2618 lb/acre with a high of 2819 lb/acre for PhytoGen 499WRF, and a low of 2257 lb/acre for NexGen 4012B2RF. After adding lint and seed value, and subtracting ginning, seed and technology fee costs, the net value/acre among varieties ranged from a high of $500.37 (PhytoGen 499WRF) to a low of $382.63 (All-Tex 106466B2RF), a difference of $117.73.

Micronaire values ranged from a low of 4.5 for All-Tex Nitro-44 B2RF to a high of 5.2 for Stoneville 4288B2RF and NexGen 1511B2RF. Staple averaged 34.3 across all varieties with a low of 32.4 for NexGen 1511B2RF and a high of 35.9 for All-Tex Nitro-44 B2RF. Strength values averaged 29.3 g/tex with a high of 31.7 g/tex for All-Tex Nitro-44 B2RF and a low of 27.0 g/tex for All-Tex 106466B2RF.

Objective The objective of this project was to compare agronomic characteristics, yields, gin turnout, fiber quality, and economic returns of transgenic cotton variety under light southern root-knot nematode pressure in Gaines County.

Materials and Methods

Varieties: All-Tex 106466B2RF, All-Tex Nitro-44 B2RF, Deltapine 1044B2RF, Deltapine 174RF, NexGen 1511B2RF, NexGe 4012B2RF, PhytoGen 367WRF, PhytoGen 499WRF, Stoneville 4288B2RF, Stoneville 5458B2RF

Experimental design: Randomized complete block with 3 replications

Seeding rate: 4 seeds/row-ft in 36-inch row spacing

Plot size: 6 rows by variable length of field (1153ft to 2278ft long)

Planting date: 18-May

Soil Texture: Sandy

Irrigation: This location was under a LESA center pivot. This trial received approximately 15.49 inches of irrigation and rainfall throughout the growing season.

Harvest: Plots were harvested on 20-October using a commercial stripper harvester. Harvest material was transferred into a weigh wagon with integral electronic scales to determine individual plot weights. Plot yields were adjusted to lb/acre.

Gin Turnout: Grab samples were taken by plot and ginned at the Texas A&M AgriLife Research and Extension Center at Lubbock to determine gin turnouts.

Fiber Analysis: Lint samples were submitted to the Fiber and Biopolymer Research Institute at Texas Tech University for HVI analysis, and USDA Commodity Credit Corporation (CCC) Loan values were determined for each variety by plot.

Ginning cost and seed values: Ginning costs were based on $3.00 per cwt. of bur cotton and seed value/acre was based on $250/ton. Ginning costs did not include checkoff.

Seed and technology fees: Seed and technology costs were calculated using the appropriate seeding rate (4 seed/row-ft) for the 36 row spacing and entries using the online Plains Cotton Growers Seed Cost Comparison Worksheet available at: http://www.plainscotton.org/Seed/PCGseed12.xls

Results and Discussion

Significant differences were observed for all the yield, economic, and some HVI fiber quality parameters measured (Tables 1 and 2). Lint turnout ranged from a low of 29.29% and a high of 35.2% for All-Tex Nitro-44 B2RF and Deltapine 174RF, respectively. Seed turnout ranged from a low of 44.8% for All-Tex Nitro-44 B2RF and NexGen 1511B2RF to a high of 48.1% for All-Tex 106466B2RF. Bur cotton yields averaged 2618 lb/acre with a high of 2819 lb/acre for PhytoGen 499WRF, and a low of 2257 lb/acre for NexGen 4012B2RF. Lint yield varied with a low of 738 lb/acre (All-Tex 106466B2RF) and a high of 943 lb/acre (PhytoGen 499WRF). Seed yield ranged from a high of 1294 lb/acre for Stoneville 4288B2RF to a low of 1080 lb/acre for NexGen 4012B2RF. Lint loan values ranged from a low of $0.4892/lb (NexGen 1511B2RF) to a high of $0.5635/lb (All-Tex Nitro-44 B2RF). After adding lint and seed value, total value/acre for varieties ranged from a low of $534.62 for All-Tex 106466B2RF to a high of $669.992 for PhytoGen 499WRF. When subtracting ginning, seed and technology fee costs, the net value/acre among varieties ranged from a high of $500.37 (PhytoGen 499WRF) to a low of $382.63 (All-Tex 106466B2RF), a difference of $117.73.

Micronaire values ranged from a low of 4.5 for All-Tex Nitro-44 B2RF to a high of 5.2 for Stoneville 4288B2RF and NexGen 1511B2RF. Staple averaged 34.3 across all varieties with a low of 32.4 for NexGen 1511B2RF and a high of 35.9 for All-Tex Nitro-44 B2RF. Strength values averaged 29.3 g/tex with a high of 31.7 g/tex for All-Tex Nitro-44 B2RF and a low of 27.0 g/tex for All-Tex 106466B2RF. Elongation ranged from a high of 9.0% for Deltapine 1044B2RF to a low of 5.9% for NexGen 4012B2RF. Values for reflectance (Rd) and yellowness (+b) averaged 79.5 and 8.6, respectively.

Conclusions

These data indicate that differences can be obtained in terms of net value/acre and fiber quality under light southern root-knot nematode pressure. During the 2012 growing season Gaines County experienced high temperatures and very little rainfall. The environmental conditions prior to and during the growing season were a limiting factor in the varieties performance overall. It should be noted that no inclement weather was encountered at this location prior to harvest and therefore, no pre-harvest losses were observed. Additional multi-site and multi-year applied research is needed to evaluate varieties and technology across a series of environments.

Acknowledgements

Appreciation is expressed to Scott Nolen Farms for the use of his land, equipment and labor for this demonstration.

Table 1. Harvest results from the Cotton Variety Trial Under Light Root-Knot Nematode Pressure, Scott Nolen Farm, Seminole, TX, 2012.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed/technology cost	Net value	
	-------- % --------		---------- lb/acre ----------			$/lb	---------- $/acre ----------						
PhytoGen 499WRF	33.5	45.3	2819	943	1277	0.5412	510.42	159.57	669.99	84.58	85.05	500.37	a
PhytoGen 367WRF	32.0	45.8	2786	892	1276	0.5495	489.90	159.48	649.39	83.59	85.05	480.75	ab
Deltapine 174RF	35.2	45.6	2533	892	1154	0.5270	470.33	144.29	614.62	76.00	69.94	468.69	abc
Stoneville 5458B2RF	33.4	46.2	2756	919	1273	0.5063	465.53	159.12	624.65	82.69	84.45	457.50	bc
Deltapine 1044B2RF	31.0	46.2	2689	834	1242	0.5260	438.56	155.30	593.86	80.68	79.53	433.64	cd
Stoneville 4288B2F	30.5	46.2	2802	854	1294	0.5158	440.28	161.81	602.09	84.06	84.45	433.58	cd
NexGen 1511B2RF	35.1	44.8	2551	896	1144	0.4892	438.07	142.95	581.03	76.54	77.73	426.76	cd
All-Tex Nitro-44 B2RF	29.2	44.8	2590	756	1160	0.5635	426.02	145.01	571.03	77.71	80.23	413.08	de
NexGen 4012B2RF	32.8	47.8	2257	741	1080	0.5427	401.86	134.95	536.81	67.71	75.45	393.65	de
All-Tex 106466B2RF	30.9	48.1	2392	738	1150	0.5297	390.91	143.72	534.62	71.76	80.23	382.63	e
Test average	32.3	46.1	2618	846	1205	0.5291	447.19	150.62	597.81	78.53	80.21	439.06	
CV, %	3.0	1.9	4.7	4.9	4.7	4.0	4.8	4.7	4.8	4.7	--	5.7	
OSL	<0.0001	0.0026	0.0002	<0.0001	0.0014	0.0189	<0.0001	0.0014	0.0002	0.0002	--	0.0003	
LSD	1.7	1.5	212	71	98	0.0364	36.87	12.27	49.05	6.35	--	42.72	

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.
CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level.
Note: some columns may not add up due to rounding error.

Assumes:
$3.00/cwt ginning cost.
$250/ton for seed.
Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Table 2. HVI fiber property results from the Cotton Variety Trial Under Light Root-Knot Nematode Pressure, Scott Nolen Farm, Seminole, TX, 2012.

Entry	Micronaire	Staple	Uniformity	Strength	Elongation	Leaf	Rd	+b	Color grade	
	units	32^{nds} inch	%	g/tex	%	grade	reflectance	yellowness	color 1	color 2
All-Tex 106466B2RF	4.8	33.4	79.9	27.0	6.7	1.7	80.5	8.3	2.0	1.0
All-Tex Nitro-44 B2RF	4.5	35.9	81.3	31.7	7.9	2.7	80.8	8.1	2.0	1.0
NexGen 1511B2RF	5.2	32.4	80.1	28.4	8.7	2.0	79.6	8.6	2.0	1.0
Deltapine 1044B2RF	5.1	34.5	80.5	30.4	9.0	1.7	80.2	8.1	2.3	1.0
Deltapine 174RF	5.1	34.6	79.6	28.3	7.9	2.0	79.3	8.6	2.3	1.0
NexGen 4012B2RF	5.0	34.7	80.9	30.5	5.9	1.7	79.6	8.8	2.0	1.0
PhytoGen 367WRF	4.8	34.3	80.8	29.4	7.8	1.7	79.9	8.8	2.0	1.0
PhytoGen 499WRF	5.0	35.2	82.8	31.2	8.4	3.0	78.8	8.6	2.7	1.0
Stoneville 4288B2F	5.2	34.2	80.5	27.5	7.4	1.7	79.2	8.7	2.3	1.0
Stoneville 5458B2RF	5.1	33.8	80.0	28.6	7.2	1.0	77.6	9.6	2.0	1.0
Test average	5.0	34.3	80.6	29.3	7.7	1.9	79.5	8.6	2.2	1.0
CV, %	1.6	2.7	1.6	4.4	5.5	49.9	1.1	2.4	--	--
OSL	<0.0001	0.0167	0.2195	0.0031	<0.0001	0.4260	0.0155	<0.0001	--	--
LSD	0.1	1.6	NS	2.2	0.7	NS	1.5	0.4	--	--

CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, NS - not significant

Replicated LESA Irrigation Cotton Variety Research Trial Under Moderate Root-Knot Nematode Pressure - 2012

Cooperator: Cheuvront Farms

Manda Anderson, Extension Agent - IPM
Dr. Jason Woodward, Extension Plant Pathologist

Gaines County

Summary Significant differences were observed for most of the yield, economic, and HVI fiber quality parameters measured. Bur cotton yields averaged 3331 lb/acre with a high of 3903 lb/acre for Stoneville 4288B2RF, and a low of 3060 lb/acre for FiberMax 9160B2RF. Lint loan values ranged from a low of $0.5233/lb (Deltapine 1044B2RF) to a high of $0.5705/lb (Stoneville 4288B2RF). After adding lint and seed value, and subtracting ginning, seed and technology fee costs, the net value/acre among varieties ranged from a high of $844.68 (Stoneville 4288B2RF) to a low of $608.87 (Phytogen 499WRF), a difference of $235.81.

Micronaire values ranged from a low of 3.0 for Deltapine 1044B2RF to a high of 3.5 for Stoneville 4288B2RF. Staple averaged 36.4 across all varieties with a low of 35.0 for Stoneville 5458B2RF and a high of 37.5 for FiberMax 9160B2RF. Uniformity ranged from a high of 82.4 (FiberMax 9160B2RF) to a low of 78.8 (Stoneville 5458B2RF).

Objective The objective of this project was to compare agronomic characteristics, yields, gin turnout, fiber quality, and economic returns of transgenic cotton variety under moderate southern root-knot nematode pressure in Gaines County.

Materials and Methods

Varieties: Deltapine 1044B2RF, FieberMax 9160B2RF, PhytoGen 367WRF, PhytoGen 499WRF, Stoneville 4288B2RF, Stoneville 5458B2RF

Experimental design: Randomized complete block with 3 replications

Seeding rate: 4 seeds/row-ft in 36-inch row spacing

Plot size: 6 rows by variable length of field (914ft to 1859ft long)

Planting date: 30-May

Soil Texture: Sandy

Irrigation: This location was under a LESA center pivot. This trial received approximately 12.15 inches of irrigation and rainfall throughout the growing season.

Harvest: Plots were harvested on 23-October using a commercial stripper harvester. Harvest material was transferred into a weigh wagon with integral electronic scales to determine individual plot weights. Plot yields were adjusted to lb/acre.

Gin Turnout: Grab samples were taken by plot and ginned at the Texas A&M AgriLife Research and Extension Center at Lubbock to determine gin turnouts.

Fiber Analysis: Lint samples were submitted to the Fiber and Biopolymer Research Institute at Texas Tech University for HVI analysis, and USDA Commodity Credit Corporation (CCC) Loan values were determined for each variety by plot.

Ginning cost and seed values: Ginning costs were based on $3.00 per cwt. of bur cotton and seed value/acre was based on $250/ton. Ginning costs did not include checkoff.

Seed and technology fees: Seed and technology costs were calculated using the appropriate seeding rate (4 seed/row-ft) for the 36 row spacing and entries using the online Plains Cotton Growers Seed Cost Comparison Worksheet available at: http://www.plainscotton.org/Seed/PCGseed12.xls

Results and Discussion

Significant differences were observed for most of the yield, economic, and HVI fiber quality parameters measured (Tables 1 and 2). Lint turnout was set at 36% for all varieties. Seed turnout ranged from a low of 47.1% for Phytogen 499WRF to a high of 50.1% for Stoneville 4288B2RF. Bur cotton yields averaged 3331 lb/acre with a high of 3903 lb/acre for Stoneville 4288B2RF, and a low of 3060 lb/acre for FiberMax 9160B2RF. Lint yield varied with a low of 1102 lb/acre (FiberMax 9160B2RF) and a high of 1405 lb/acre (Stoneville 4288B2RF). Seed yield ranged from a high of 1957 lb/acre for Stoneville 4288B2RF to a low of 1462 lb/acre for Phytogen 499WRF. Lint loan values ranged from a low of $0.5233/lb (Deltapine 1044B2RF) to a high of $0.5705/lb (Stoneville 4288B2RF). After adding lint and seed value, total value/acre for varieties ranged from a low of $787.07 for PhytoGen 499WRF to a high of $1046.24 for Stoneville 4288B2RF. When subtracting ginning, seed and technology fee costs, the net value/acre among varieties ranged from a high of $844.68 (Stoneville 4288B2RF) to a low of $608.87 (Phytogen 499WRF), a difference of $235.81.

Micronaire values ranged from a low of 3.0 for Deltapine 1044B2RF to a high of 3.5 for Stoneville 4288B2RF. Staple averaged 36.4 across all varieties with a low of 35.0 for Stoneville 5458B2RF and a high of 37.5 for FiberMax 9160B2RF. Uniformity ranged from a high of 82.4 (FiberMax 9160B2RF) to a low of 78.8 (Stoneville 5458B2RF). Elongation ranged from a high of 8.6% for Deltapine 1044B2RF to a low of 5.2% for FiberMax 9160B2RF. Values for reflectance (Rd) and yellowness (+b) averaged 81.1 and 8.1, respectively.

Conclusions

These data indicate that differences can be obtained in terms of net value/acre and fiber quality under moderate southern root-knot nematode pressure. During the 2012 growing season Gaines County experienced high temperatures and very little rainfall. The environmental conditions prior to and during the growing season were a limiting factor in the varieties performance overall. It should be noted that no inclement weather was encountered at this location prior to harvest and therefore, no pre-harvest losses were observed. Additional multi-site and multi-year applied research is needed to evaluate varieties and technology across a series of environments.

Acknowledgements

Appreciation is expressed to Cheuvront Farms for the use of his land, equipment and labor for this demonstration.

Table 1. Harvest results from the Cotton Variety Trial Under Moderate Root-knot Nematode Pressure, Cheuvront Farms Farm, Seminole, TX, 2012.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed/technology cost	Net value	
	-------- % --------		---------- lb/acre ----------			$/lb	---------- $/acre ----------						
Stoneville 4288B2F	36.0	50.1	3903	1405	1957	0.5705	801.65	244.58	1046.24	117.10	84.45	844.68	a
PhytoGen 367WRF	36.0	47.5	3485	1255	1655	0.5357	672.07	206.90	878.97	104.55	85.05	689.36	b
Deltapine 1044B2RF	36.0	48.0	3257	1172	1563	0.5233	613.55	195.37	808.92	97.70	79.53	631.68	c
FiberMax 9160B2F	36.0	49.8	3060	1102	1523	0.5577	614.36	190.35	804.71	91.81	84.45	628.46	c
Stoneville 5458B2RF	36.0	49.7	3177	1144	1580	0.5323	608.93	197.54	806.47	95.32	84.45	626.69	c
PhytoGen 499WRF	36.0	47.1	3105	1118	1462	0.5407	604.35	182.72	787.07	93.15	85.05	608.87	c
Test average	36.0	48.7	3331	1199	1623	0.5434	652.48	202.91	855.39	99.94	83.83	671.62	
CV, %	--	3.3	3.6	3.6	3.6	3.1	3.6	3.6	3.6	3.6	--	4.1	
OSL	--	0.1660	<0.0001	<0.0001	<0.0001	0.054†	<0.0001	<0.0001	<0.0001	<0.0001	--	<0.0001	
LSD	--	NS	219	79	106	0.0249	42.99	13.35	56.33	6.56	--	49.77	

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.
CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
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Note: some columns may not add up due to rounding error.

Assumes:
$3.00/cwt ginning cost.
$250/ton for seed.
Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Table 2. HVI fiber property results from the Cotton Variety Trial Under Moderate Root-knot Nematode Pressure, Cheuvront Farms Farm, Seminole, TX, 2012.

Entry	Micronaire	Staple	Uniformity	Strength	Elongation	Leaf	Rd	+b	Color grade	
	units	32^{nds} inch	%	g/tex	%	grade	reflectance	yellowness	color 1	color 2
Deltapine 1044B2RF	3.0	36.5	80.9	32.3	8.6	2.0	82.3	7.9	2.0	1.0
FiberMax 9160B2F	3.3	37.5	82.4	31.7	5.2	1.7	83.0	7.5	1.7	1.0
PhytoGen 367WRF	3.2	36.1	81.5	31.3	8.1	3.0	79.7	8.4	2.0	1.0
PhytoGen 499WRF	3.2	36.7	82.1	31.9	7.2	2.7	80.6	8.0	2.3	1.0
Stoneville 4288B2F	3.5	36.6	80.9	30.1	6.9	2.3	81.8	8.2	2.0	1.0
Stoneville 5458B2RF	3.3	35.0	78.8	31.4	7.0	2.7	79.2	8.8	2.0	1.3
Test average	3.3	36.4	81.1	31.4	7.2	2.4	81.1	8.1	2.0	1.1
CV, %	4.6	1.6	1.1	3.4	15.2	33.9	1.2	4.1	--	--
OSL	0.0222	0.0065	0.0064	0.2644	0.0420	0.4173	0.0040	0.0115	--	--
LSD	0.3	1.0	1.6	NS	2.0	NS	1.7	0.6	--	--

CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, NS - not significant

Alternatives to Temik 15G for Management of Root-knot Nematodes

By: Terry Wheeler (Texas AgriLife Research, Lubbock), Kerry Siders (Texas AgriLife Extension Service, Hockley/Cochran counties), Manda Anderson (Texas AgriLife Extension Service, Gaines county), Scott Russell (Texas AgriLife Extension Service, Terry/Yoakum counties)

Introduction: Root-knot nematodes infest at least 40% of the cotton acreage in the Southern High Plains. Prior to 2011, many cotton producers used Temik 15G (aldicarb) to manage nematode problems. Alternative methods of nematode control include: nematicide seed treatments (Aeris, Avicta), fumigation (Telone II, Vapam), crop rotation (peanut), and using partially resistant cultivars (Deltapine 174RF, Phytogen (PHY) 367WRF, Stoneville (ST) 4288B2F, and ST 5458B2F). A test was initiated in 2011 to examine the chemical and varietal components of nematode control at two sites, and was funded by the Plains Cotton Improvement Program. This project was continued in 2012 at four sites, and funded by the Texas Cotton State Support Committee.

Chemical treatments in all tests are:

1) None (no insecticide or nematicides)
2) Cruiser (insecticide only)
3) Avicta Complete Cotton (insecticide, nematicide, and extra fungicide protection)
4) Cruiser on seed, plus Vydate CLV (insecticide/nematicide) at the 4-5 leaf stage
5) Avicta Complete Cotton on seed, plus Vydate CLV
6) Temik 15G at 5 lbs/acre in the furrow at planting
7) Cruiser on seed and fumigation with Telone II (3 gal/acre) before planting.

Varieties in the test include Fibermax (FM) 9160B2F as a susceptible variety at all sites; PHY 367WRF as a partially resistant variety at Whiteface and Brownfield; and ST 5458B2F as a partially resistant variety at Brownfield, Lamesa, and Seminole.

All sites were planted with four row plots, 33-36 feet long, with a factorial arrangement of all treatments, in a randomized complete block design with six replications. Data collected included plant stand, galls/root at 35 days after planting, root-knot nematode density in August, and yield.

Results:

Lamesa (LAM12): The root-knot nematode pressure was low at this site early in the season, with an average of 1.7 galls for FM 9160B2F and 1.2 galls/root for ST 5458B2F (Table 1). There was no chemical effect on galls/root (Table 2), root-knot nematode density (Table 3), yield (Table 4), or net value (yield x loan value – chemical and variety costs) (Table 5). Buildup of the nematode population during the season was good, with an average of 9,446 root-knot/500 cm^3 soil for FM

9180B2F and 3,883 root-knot/500 cm^3 soil for ST 5458B2F (Table 1). The partially resistant ST 5458B2F yielded more (1,302 lbs of lint/acre) than FM 9160B2F (1,262 lbs of lint/acre, Table 1). However, the net value was higher for FM 9160B2F ($713/acre) than for ST 5458B2F ($687/acre) in 2012 (Table 1). The average values for all variety/chemical combinations for galls/root, root-knot nematode density, yield and net value for Lamesa are in Table 6.

Table 1. Effect of variety[1] on root galling, root-knot nematode (RK) density, lint yield, and value ($)/acre (lint yield x loan value) for six locations[2].

	Galls		RK/500 cm^3 soil		Lint yield		Yield x loan ($/a)	
Location	**S**	**R**	**S**	**R**	**S**	**R**	**S**	**R**
WF11	5.2 a[3]	4.0 a	9,538 a	1,090 b	1,115 b	1,241 a	1,026 b	1,131 a
WF12	1.4 a	0.3 b	4,418 a	615 b	700 b	742[4] a	381 b	401 a[1]
SEM11	13.3 a	10.0 b	23,777 a	8,147 b	804 b	1,002 a	721 b	865 a
SEM12	1.2 a	0.5 b	10,690 a	2,291 b	1,096 a	1,093 a	544 a	543 a
LAM12	1.7 a	1.2 b[4]	9,447 a	3,883 b	1,262 b	1,302 a[5]	713 a	687 b
BF12	7.0 a	3.3 c	14,295 a	6,851 b	556 b	606 a	284 b	308 a
		5.0 b		8,354 b		578 ab		278 b
Average	**5.3**	**3.5**	**12,351**	**4,462**	**870**	**938**	**565**	**602**

[1]The susceptible (S) variety was Fibermax 9160B2F. The partially resistant (R) variety was either (Stoneville 5458B2F or Phytogen 367WRF). At the BF12 site, both partially resistant varieties were tested, with PHY 367WRF as the top entry and ST 5458B2F as the bottom entry.
[2]There were two locations in 2011 (WF11= Whiteface 2011 and SEM11 = Seminole 2011), and four locations in 2012 (WF12, SEM12, LAM12 (Lamesa, 2012), and BF12 (Brownfield 2012).
[3]Different letters indicate significant differences between varieties within a location, at $P = 0.05$, unless otherwise indicated.
[4]$P \leq 0.054$.
[5]$P = 0.077$.

Table 2. Effect of nematicides on root galling at approximately 35 days after planting at six locations[2] tested in 2011 or 2012.

Chemical[1]	WF11	WF12	SEM11	SEM12	LAM12	BF12	Average
None	4.6 a[3]	0.7 a	13.8 a	1.6 a	1.9 a	5.5 a	4.7
Insecticide (I)	1.8 a	1.5 a	12.8 a	0.3 a	0.9 a	5.7 a	3.8
NST[1]	5.5 a	0.5 a	11.6 a	1.1 a	1.4 a	5.2 a	4.2
I + Vydate (V)	1.2 a	1.2 a	13.2 a	0.5 a	1.6 a	3.8 a	3.6
NST + V	4.7 a	0.6 a	13.1 a	1.0 a	1.6 a	4.4 a	4.2
Temik 15G	7.1 a	0.7 a	6.1 b	0.2 a	1.6 a	5.5 a	3.5
I + Telone II	4.2 a	0.6 a	5.3 b	0.8 a	1.2 a	5.4 a	2.9

[1]Insecticide was Cruiser, NST was Avicta Complete Cotton, which was a nematicide seed treatment (Avicta 500) that also included an insecticide (Cruiser) and fungicide combination (Dynasty). Vydate CLV (17 oz/acre) was included as an over-the-top banded nematicide at the 4-5 leaf stage. Temik 15G (aldicarb) was applied at 5 lbs/acre in the furrow at planting. Telone II (3 gal/a) was applied in the bed before planting (number of days varied with location) at a depth of 12 inches and then seed was treated with Cruiser to provide insect protection.
[2]There were two locations in 2011 (WF11= Whiteface 2011 and SEM11 = Seminole 2011), and four locations in 2012 (WF12, SEM12, LAM12 (Lamesa, 2012), and BF12 (Brownfield 2012).

[3]Different letters indicate significant differences between varieties within a column at $P = 0.05$.

Table 3. Effect of nematicides on root-knot nematode density/500 cm^3 soil in August at six locations[2] tested in 2011 or 2012.

Chemical[1]	WF11	WF12	SEM11	SEM12	LAM12	BF12	Average
None	10,390 a[3]	2,320 a	17,835 a	4,278 a	4,112 a	11,740 a	8,446
Insecticide (I)	5,240 a	3,510 a	12,315 a	3,932 a	8,035 a	14,200 a	7,872
NST	4,190 a	1,270 a	21,330 a	3,928 a	3,960 a	8,339 a	7,170
I + Vydate (V)	150 b	2,660 a	16,095 a	7,009 a	4,437 a	6,349 a	6,117
NST + V	6,480 a	2,930 a	18,240 a	11,300 a	10,703 a	8,052 a	9,618
Temik 15G	5,350 a	3,967 a	14,670 a	8,033 a	10,325 a	7,343 a	8,281
I + Telone II	5,280 a	960 a	11,700 a	6,952 a	5,083 a	12,810 a	7,131

[1]Insecticide was Cruiser, NST was Avicta Complete Cotton, which was a nematicide seed treatment (Avicta 500) that also included an insecticide (Cruiser) and fungicide combination (Dynasty). Vydate CLV (17 oz/acre) was included as an over-the-top banded nematicide at the 4-5 leaf stage. Temik 15G (aldicarb) was applied at 5 lbs/acre in the furrow at planting. Telone II (3 gal/a) was applied in the bed before planting (number of days varied with location) at a depth of 12 inches and then seed was treated with Cruiser to provide insect protection.
[2]There were two locations in 2011 (WF11= Whiteface 2011 and SEM11 = Seminole 2011), and four locations in 2012 (WF12, SEM12, LAM12 (Lamesa, 2012), and BF12 (Brownfield 2012).
[3]Different letters indicate significant differences between varieties within a column at $P = 0.05$.

Table 4. Effect of nematicides on lint yield (lbs/a) at six locations[2] tested in 2011 or 2012.

Chemical[1]	WF11	WF12	SEM11	SEM12	LAM12	BF12	Average
None	1,158 a[3]	726 a	857 a	1,126 a	1,229 a	598 a	949
Insecticide (I)	1,136 a	716 a	888 a	1,137 a	1,254 a	544 a	946
NST	1,201 a	736 a	850 a	1,101 a	1,285 a	579 a	959
I + Vydate (V)	1,214 a	735 a	981 a	997 a	1,299 a	558 a	964
NST + V	1,131 a	719 a	926 a	1,120 a	1,329 a	604 a	972
Temik 15G	1,123 a	674 a	886 a	1,078 a	1,266 a	588 a	936
I + Telone II	1,285 a	741 a	934 a	1,099 a	1,314 a	592 a	994

[1]Insecticide was Cruiser, NST was Avicta Complete Cotton, which was a nematicide seed treatment (Avicta 500) that also included an insecticide (Cruiser) and fungicide combination (Dynasty). Vydate CLV (17 oz/acre) was included as an over-the-top banded nematicide at the 4-5 leaf stage. Temik 15G (aldicarb) was applied at 5 lbs/acre in the furrow at planting. Telone II (3 gal/a) was applied in the bed before planting (number of days varied with location) at a depth of 12 inches and then seed was treated with Cruiser to provide insect protection.
[2]There were two locations in 2011 (WF11= Whiteface 2011 and SEM11 = Seminole 2011), and four locations in 2012 (WF12, SEM12, LAM12 (Lamesa, 2012), and BF12 (Brownfield 2012).
[3]Different letters indicate significant differences between varieties within a column at $P = 0.05$.

Table 5. Effect of nematicides on net value[1] ($/acre) at six locations[2] tested in 2011 or 2012.

Chemical[3]	WF11	WF12	SEM11	SEM12	LAM12	BF12	Average
None	1,059 a[4]	320 a	664 b	485 a	596 a	226 a	558
Insecticide (I)	1,031 a	306 ab	709 ab	482 a	602 a	205 ab	556
NST[1]	1,082 a	309 ab	638 b	457 ab	611 a	199 b	549
I + Vydate (V)	1,097 a	311 ab	783 a	407 bc	622 a	185 b	568
NST + V	1,013 a	295 ab	705 ab	460 ab	629 a	203 ab	551
Temik 15G	1,010 a	274 b	661 b	444 ab	599 a	197 b	531
I + Telone II	1,093 a	245 c	643 b	389 c	561 a	130 c	510

[1]Net value is the (yield (lbs of lint/acre) x loan value) – variety cost ($74.35/acre) – chemical cost. Chemical costs for Cruiser was $8.10/acre, Avicta Complete Cotton was $16.20/acre, Cruiser + Vydate CLV = $13.65/acre, Avicta Complete Cotton + Vydate CLV = $21.75/acre, Temik 15G = $17.50/acre, and Cruiser + Telone II = $82.80/acre.
[2]There were two locations in 2011 (WF11= Whiteface 2011 and SEM11 = Seminole 2011), and four locations in 2012 (WF12, SEM12, LAM12 (Lamesa, 2012), and BF12 (Brownfield 2012).
[3]Insecticide was Cruiser, NST was Avicta Complete Cotton, which was a nematicide seed treatment (Avicta 500) that also included an insecticide (Cruiser) and fungicide combination (Dynasty). Vydate CLV (17 oz/acre) was included as an over-the-top banded nematicide at the 4-5 leaf stage. Temik 15G (aldicarb) was applied at 5 lbs/acre in the furrow at planting. Telone II (3 gal/a) was applied in the bed before planting (number of days varied with location) at a depth of 12 inches and then seed was treated with Cruiser to provide insect protection.
[4]Different letters indicate significant differences between varieties within a column at $P = 0.05$.

Table 6. Measured variables at Lamesa in 2012 for each combination of chemical treatment and variety (Average of six replications).

Variety[1]	Chemical[4]	Plants /ft. row	Galls/ root	RK[2]/ 500 cc soil	Lbs of lint/acre	Net value[3] ($/acre)
FM	None	1.79	2.1	4,760	1,187	601
FM	Insecticide (I)	1.45	1.1	7,070	1,211	641
FM	NST	2.16	1.3	5,020	1,296	622
FM	I+Vydate (V)	1.89	1.7	6,827	1,293	632
FM	NST+Vydate	2.25	2.2	18,980	1,289	608
FM	Temik 15G	2.22	2.4	14,430	1,240	588
FM	I+Telone II	2.13	1.2	9,040	1,320	596
ST	None	2.09	1.7	3,463	1,270	603
ST	Insecticide (I)	1.96	0.7	9,000	1,298	581
ST	NST	2.15	1.6	2,900	1,273	642
ST	I+Vydate (V)	2.48	1.6	2,047	1,306	626
ST	NST+Vydate	2.36	1.0	2,427	1,368	590
ST	Temik 15G	2.32	0.8	6,220	1,293	533
ST	I+Telone II	2.23	1.2	1,127	1,309	596

[1]FM is Fibermax 9160B2F, ST is Stoneville 5458B2F.
[2]RK is root-knot nematode.
[3]Net value is the (yield (lbs of lint/acre) x loan value) – variety cost ($74.35/acre) – chemical cost. Chemical costs for Cruiser was $8.10/acre, Avicta Complete Cotton was $16.20/acre,

Cruiser + Vydate CLV = $13.65/acre, Avicta Complete Cotton + Vydate CLV = $21.75/acre, Temik 15G = $17.50/acre, and Cruiser + Telone II = $82.80/acre.
[4]Insecticide was Cruiser, NST was Avicta Complete Cotton, which was a nematicide seed treatment (Avicta 500) that also included an insecticide (Cruiser) and fungicide combination (Dynasty). Vydate CLV (17 oz/acre) was included as an over-the-top banded nematicide at the 4-5 leaf stage. Temik 15G (aldicarb) was applied at 5 lbs/acre in the furrow at planting. Telone II (3 gal/a) was applied in the bed before planting (number of days varied with location) at a depth of 12 inches and then seed was treated with Cruiser to provide insect protection.

Whiteface 2012 (WF12): The root-knot nematode pressure was low at this site this year, as seen with the low gall ratings (Table 1). There was a variety response to all measured variables, with the susceptible variety having more galls/root and higher density of root-knot nematode than the partially resistant PHY 367WRF (Table 1). PHY 367WRF had higher yield and better net value than the susceptible FM 9160B2F (Table 1). Chemical treatments did not affect root galls (Table 2), root-knot nematode density (Table 3), or lint yield (Table 4). However, the most profitable treatment was the nontreated check, while the fumigation treatment had the lowest net value and Temik 15G had the second lowest net value (Table 5). All variety/treatment combinations are presented in Table 7.

Table 7. Measured variables at Whiteface in 2012 for each combination of chemical treatment and variety (average of six replications).

Variety[1]	Chemical[4]	Plants /ft. row	Galls/ root	RK[2]/ 500 cc Soil	Lbs of Lint/acre	Net value[3] ($/acre)
FM	None	2.4	1.1	4,533	708	311
FM	Insecticide (I)	2.5	2.7	6,680	668	281
FM	NST	2.2	0.7	1,420	698	290
FM	I+Vydate (V)	2.4	2.1	5,120	710	299
FM	NST+Vydate	2.4	1.0	5,120	717	294
FM	Temik 15G	2.4	1.1	6,293	681	279
FM	I+Telone II	2.6	1.0	1,760	716	233
PHY	None	2.7	0.4	107	744	329
PHY	Insecticide (I)	2.5	0.4	340	764	331
PHY	NST	2.6	0.3	1,120	774	329
PHY	I+Vydate (V)	2.6	0.3	200	760	324
PHY	NST+Vydate	2.5	0.3	740	722	295
PHY	Temik 15G	2.7	0.4	1,640	668	270
PHY	I+Telone II	2.4	0.3	160	765	258

[1]FM is Fibermax 9160B2F, PHY is Phytogen 367WRF.
[2]RK is root-knot nematode.
[3]Net value is the (yield (lbs of lint/acre) x loan value) – variety cost ($74.35/acre for FM or $76.54 for PHY) – chemical cost. Chemical costs for Cruiser was $8.10/acre, Avicta Complete Cotton was $16.20/acre, Cruiser + Vydate CLV = $13.65/acre, Avicta Complete Cotton + Vydate CLV = $21.75/acre, Temik 15G = $17.50/acre, and Cruiser + Telone II = $82.80/acre.
[4]Insecticide was Cruiser, NST was Avicta Complete Cotton, which was a nematicide seed treatment (Avicta 500) that also included an insecticide (Cruiser) and fungicide combination

(Dynasty). Vydate CLV (17 oz/acre) was included as an over-the-top banded nematicide at the 4-5 leaf stage. Temik 15G (aldicarb) was applied at 5 lbs/acre in the furrow at planting. Telone II (3 gal/a) was applied in the bed before planting (number of days varied with location) at a depth of 12 inches and then seed was treated with Cruiser to provide insect protection.

Seminole (SEM12): Root-knot nematode pressure was light early in the season at this site, based on early season gall ratings (Table 1), but did build up adequately over the course of the season. Galls/root and root-knot nematode density was affected by variety (Table 1), where the susceptible variety had higher numbers than the partially resistant ST 5458B2F. Yield and net value (yield x loan value) was similar between both varieties (Table 1). Chemical treatment did not affect galls/root, root-knot nematode density, or yield (Tables 2-4). However, net value was highest for the non-nematicide treatments (untreated check and Cruiser seed treatment) and lowest for plots treated with Temik 15G or Telone II (Table 5). The individual variety/treatment combinations are presented in Table 8.

Table 8. Measured variables at Seminole in 2012 for each combination of chemical treatment and variety (average of six replications).

Variety[1]	Chemical[4]	Plants /ft. row	Galls/ root	RK[2]/ 500 cc soil	Lbs of Lint/acre	Net value[3] ($/acre)
FM	None	2.8	2.8	4,840	1,158	500
FM	Insecticide (I)	2.9	0.3	6,500	1,167	496
FM	NST	3.0	1.1	5,260	1,099	455
FM	I+Vydate (V)	2.8	0.7	12,720	977	397
FM	NST+Vydate	2.9	1.6	20,240	1,070	435
FM	Temik 15G	3.1	0.3	13,890	1,141	474
FM	I+Telone II	2.9	1.2	11,377	1,058	368
ST	None	2.9	0.4	3,717	1,094	470
ST	Insecticide (I)	2.9	0.4	1,363	1,108	469
ST	NST	3.2	1.1	2,597	1,103	458
ST	I+Vydate (V)	3.1	0.4	1,298	1,017	418
ST	NST+Vydate	3.0	0.5	2,360	1,170	486
ST	Temik 15G	3.1	0.2	2,177	1,015	413
ST	I+Telone II	2.8	0.4	2,527	1,140	410

[1]FM is Fibermax 9160B2F, ST is Stoneville 5458B2F.
[2]RK is root-knot nematode.
[3]Net value is the (yield (lbs of lint/acre) x loan value) – variety cost ($74.35/acre) – chemical cost. Chemical costs for Cruiser was $8.10/acre, Avicta Complete Cotton was $16.20/acre, Cruiser + Vydate CLV = $13.65/acre, Avicta Complete Cotton + Vydate CLV = $21.75/acre, Temik 15G = $17.50/acre, and Cruiser + Telone II = $82.80/acre.
[4]Insecticide was Cruiser, NST was Avicta Complete Cotton, which was a nematicide seed treatment (Avicta 500) that also included an insecticide (Cruiser) and fungicide combination (Dynasty). Vydate CLV (17 oz/acre) was included as an over-the-top banded nematicide at the 4-5 leaf stage. Temik 15G (aldicarb) was applied at 5 lbs/acre in the furrow at planting. Telone II (3 gal/a) was applied in the bed before planting (number of days varied with location) at a depth of 12 inches and then seed was treated with Cruiser to provide insect protection.

Brownfield (BF12): Root-knot nematode early season populations were not quite as low at Brownfield as at the other three sites in 2012, but they still were not as high as desirable to show response of nematicides treatments. Most variables measured were affected by variety (galls, root-knot nematode density, yield, and net value, Table 1). Chemical treatment did not affect galls (Table 2), root-knot nematode density (Table 3), or yield (Table 4). However, there was an interaction between variety and chemical treatment with respect to net value (Table 9). In all three varieties, net value was poorer for Telone II than most other treatments, due to the small yield response to this product and high cost of the product. Other differences were inconsistent between varieties. For example the seed treatment Cruiser plus Vydate was among the best treatments with FM 9160B2F, but was one of the poorer treatments for PHY 367WRF (Table 9).

Table 9. Measured variables at Seminole in 2012 for each combination of chemical treatment and variety (average of six replications).

Variety[1]	Chemical[4]	Plants /ft. row	Galls/ root	RK[2]/ 500 cc Soil	Lbs of Lint/acre	Net value[3] ($/acre)
FM	None	2.3	8.6	17,940	582	234 a[5]
FM	Insecticide (I)	2.2	7.8	23,700	486	181 bc
FM	NST	2.2	6.3	10,540	520	181 bc
FM	I+Vydate (V)	2.1	5.5	8,080	578	200 ab
FM	NST+Vydate	2.0	6.4	14,653	555	165 bc
FM	Temik 15G	2.3	8.2	8,590	572	197 ab
FM	I+Telone II	2.2	6.1	16,560	601	151 c
PHY	None	2.1	4.9	8,220	621	239 a
PHY	Insecticide (I)	2.3	4.1	4,500	568	222 a
PHY	NST	2.0	3.0	4,970	617	210 ab
PHY	I+Vydate (V)	1.8	2.6	3,167	549	177 b
PHY	NST+Vydate	2.0	2.7	4,783	644	228 a
PHY	Temik 15G	2.1	2.6	8,140	622	223 a
PHY	I+Telone II	2.0	3.3	14,180	624	158 c
ST	None	2.7	3.1	9,060	591	204 a
ST	Insecticide (I)	2.6	5.3	14,400	577	213 a
ST	NST	2.5	6.2	9,507	600	206 a
ST	I+Vydate (V)	1.9	3.2	7,800	548	176 a
ST	NST+Vydate	3.0	4.2	4,720	613	215 a
ST	Temik 15G	2.7	5.8	5,300	569	171 a
ST	I+Telone II	2.0	6.9	7,690	550	80 b

[1]FM is Fibermax 9160B2F, PHY is Phytogen 367WRF, ST is Stoneville 5458B2F.
[2]RK is root-knot nematode.
[3]Net value is the (yield (lbs of lint/acre) x loan value) – variety cost ($74.35/acre) – chemical cost. Chemical costs for Cruiser was $8.10/acre, Avicta Complete Cotton was $16.20/acre, Cruiser + Vydate CLV = $13.65/acre, Avicta Complete Cotton + Vydate CLV = $21.75/acre, Temik 15G = $17.50/acre, and Cruiser + Telone II = $82.80/acre.

[4]Insecticide was Cruiser, NST was Avicta Complete Cotton, which was a nematicide seed treatment (Avicta 500) that also included an insecticide (Cruiser) and fungicide combination (Dynasty). Vydate CLV (17 oz/acre) was included as an over-the-top banded nematicide at the 4-5 leaf stage. Temik 15G (aldicarb) was applied at 5 lbs/acre in the furrow at planting. Telone II (3 gal/a) was applied in the bed before planting (number of days varied with location) at a depth of 12 inches and then seed was treated with Cruiser to provide insect protection.
[5]Different letters indicate significantly different net values, within a variety (P=0.05).

Summary for 2012

Variety performance was weaker in 2012 than in 2011, which was probably due to much lower root-knot nematode populations early in the growing season. Partially resistant cultivars usually had higher yields in 2012 than the susceptible FM 9160B2F though not in every case. In 2011 the yield advantage of the partially resistant varieties to root-knot nematode was much higher than the susceptible variety. However, in 2012, the partially resistant variety had a higher yield in 3 of 4 sites, and similar yield in one site as the susceptible variety. In 2011, the partially resistant variety returned approximately $124/acre more than the susceptible variety (based yield x loan value). In a very weak nematode year (2012), the partially resistant variety returned approximately $4/acre more than the susceptible variety.

In general, chemical performance was poor to none in 2012, so the "best" treatment was to use no chemical control of nematodes or thrips. Fumigation with Telone II did not provide for much of a yield boost, and had a very high cost ($82.80/acre for fumigation plus Cruiser treated seed). This resulted in a lower net return than all other treatments, consistently. Probably with the low nematode pressure, fumigation would not have been cost effective, but also there have been problems in getting optimal application of fumigation. This product should go out in moist, but not wet soil, and the soil should not receive irrigation or rain for at least 48 hrs after application. We have made the applications either in dry soil (before prewatering), or in wet soil during the prewatering phase, so this treatment probably hasn't gotten a fair test. The other chemical treatments were applied adequately. Vydate CLV was a fairly consistent treatment in 2011, but did not look effective in 2012, though it may have been that early season nematode pressure was too low for Vydate CLV to act on anything. The only treatment that is "season-long" is resistant variety, and they were effective as seen with the significant reductions in galls/root and root-knot nematode density in August at all sites.

Replicated Drag Hose vs Sprinkler Irrigation Cotton Research Trial - 2012

Cooperator: Shelby Elam Farms

Manda Anderson, Extension Agent - IPM

Gaines County

Summary Significant differences were observed for most of the yield, economic, and one of the HVI fiber quality parameters measured. After adding lint and seed value, and subtracting ginning, seed and technology fee costs, the net value/acre for the drag hose plots was $794.64, and $704.06 for the sprinkler plots, a difference of $90.58. Micronaire values were 4.8 for drag hose plots and 4.6 for the sprinkler irrigation plots.

Objective The objective of this project was to compare agronomic characteristics, yields, gin turnout, fiber quality, and economic returns of cotton under drag hose and sprinkler irrigation in Gaines County.

Materials and Methods

Variety: Deltapine 1044B2RF

Treatments: Sprinkler irrigation vs Drag Hose Irrigation (Sprinkler irrigation was utilized early season to get uniform stand establishment throughout the entire trial. Drag hoses were installed on 25-May on the drag hose plots).

Experimental design: 3 replications

Seeding rate: 3.5 seeds/row-ft in 40-inch row spacing

Plot size: 4 rows by variable length of field (188ft to 606ft long)

Planting date: 14-May

Soil Texture: Sandy

Irrigation: This trial received approximately 8.21 inches of irrigation and rainfall throughout the growing season.

Harvest: Plots were harvested on 11-October using a commercial stripper harvester. Harvest material was transferred into a weigh wagon with integral electronic scales to determine individual plot weights. Plot yields were adjusted to lb/acre.

Gin Turnout: Grab samples were taken by plot and ginned at the Texas A&M AgriLife Research and Extension Center at Lubbock to determine gin turnouts.

Fiber Analysis: Lint samples were submitted to the Fiber and Biopolymer Research Institute at Texas Tech University for HVI analysis, and USDA Commodity Credit Corporation (CCC) Loan values were determined for each variety by plot.

Ginning cost and seed values: Ginning costs were based on $3.00 per cwt. of bur cotton and seed value/acre was based on $250/ton. Ginning costs did not include checkoff.

Seed and technology fees: Seed and technology costs were calculated using the appropriate seeding rate (3.5 seed/row-ft) for the 40 row spacing and entries using the online Plains Cotton Growers Seed Cost Comparison Worksheet available at: http://www.plainscotton.org/Seed/PCGseed12.xls

Results and Discussion

Significant differences were observed for most of the yield, economic, and one of the HVI fiber quality parameters measured (Tables 1 and 2). Bur cotton yields averaged 3942 lb/acre with the drag hose plots making 4167 lb/acre, and the sprinkler plots making 3717 lb/acre. Lint yield was 1375 lb/acre for the drag hose plots, and 1224 lb/acre for the sprinkler plots. Seed yield for the drag hose plots was 1999 lb/acre, and the sprinkler plots were 1809 lb/acre. After adding lint and seed value, total value/acre for the drag hose plots was $982.28, and $878.19 for the sprinkler plots. When subtracting ginning, seed and technology fee costs, the net value/acre for the drag hose plots was $794.64, and $704.06 for the sprinkler plots, a difference of $90.58. Micronaire values were 4.8 for drag hose plots and 4.6 for the sprinkler irrigation plots.

Conclusions

These data indicate that differences can be obtained in terms of net value/acre when comparing sprinkler irrigation to drag hose irrigation. During the 2012 growing season Gaines County experienced high temperatures and very little rainfall. Additional multi-site and multi-year applied research is needed to evaluate irrigation types across a series of environments.

Acknowledgements

Appreciation is expressed to Shelby Elam Farms for the use of his land, equipment and labor for this demonstration.

Table 1. Harvest results from the Drag Hose Vs Sprinkler Irrigation, Shelby Elam Farm, Seminole, TX, 2012.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed/technology cost	Net value
	-------- % --------		---------- lb/acre ----------			$/lb	---------- $/acre ----------					
Drag Hose	33.0	48.0	4167	1375	1999	0.5325	732.38	249.90	982.28	125.00	62.63	794.64 a
Sprinkler	32.9	48.7	3717	1224	1809	0.5328	652.11	226.08	878.19	111.50	62.63	704.06 b
Test average	33.0	48.3	3942	1300	1904	0.5327	692.25	237.99	930.23	118.25	62.63	749.35
CV, %	1.5	1.9	3.3	3.3	3.2	3.1	3.3	3.2	3.2	3.3	--	3.5
OSL	0.8259	0.4581	0.0503†	0.0492	0.0617†	0.9825	0.0491	0.0617†	0.0518†	0.0503†	--	0.0521†
LSD	NS	NS	307	150	145	NS	79.45	18.13	72.04	9.19	--	62.85

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.
CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, †indicates significance at the 0.10 level, NS - not significant.
Note: some columns may not add up due to rounding error.

Assumes:
$3.00/cwt ginning cost.
$250/ton for seed.
Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Table 2. HVI fiber property results from the Drag Hose Vs Sprinkler Irrigation, Shelby Elam Farm, Seminole, TX, 2012.

Entry	Micronaire	Staple	Uniformity	Strength	Elongation	Leaf	Rd	+b	Color grade	
	units	32^{nds} inch	%	g/tex	%	grade	reflectance	yellowness	color 1	color 2
Drag Hose	4.8	33.5	80.6	28.4	8.0	1.7	78.2	9.0	2.0	1.0
Sprinkler	4.6	33.7	80.6	28.6	8.3	1.7	78.0	8.9	2.7	1.0
Test average	4.7	33.6	80.6	28.5	8.2	1.7	78.1	9.0	2.3	1.0
CV, %	1.5	1.0	2.3	2.4	13.6	42.4	0.2	1.2	--	--
OSL	0.0742†	0.5286	1.0000	0.7586	0.7483	1.0000	0.3701	0.5286	--	--
LSD	0.2	NS	NS	NS	NS	NS	NS	NS	--	--

CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level, †indicates significance at the 0.10 level, NS - not significant

Bayer CropScience Irrigated CAP Trial
Seminole, TX - 2012

Cooperator: Jud Cheuvront

Manda Anderson, Extension Agent - IPM, Gaines County

Planted: 17-May
Harvested: 12-November

Table 1. Harvest results from the Bayer CropScience Irrigated CAP Trial (1 replication), Cheuvront Farms, Seminole, TX, 2012.

Variety	Lint Yield (lbs/A)	Turnout	Mic	Staple	Strength	Unif	Loan Value* (¢/lb)	Value / A ($/A)
FM 2484B2F	2,089	0.369	4.03	39	30.9	83.0	57.45	$1,200
FM 2989GLB2	2,050	0.369	4.19	37	28.9	80.8	56.95	$1,168
BX 1347GLB2	1,977	0.355	4.37	39	29.0	83.2	57.10	$1,129
FM 1944GLB2-PV	1,962	0.344	3.62	39	33.1	81.6	57.25	$1,123
FM 9170B2F	1,949	0.368	3.67	38	31.0	83.2	57.40	$1,118
ST 4946GLB2*	1,798	0.375	3.99	38	31.2	83.6	57.55	$1,035
FM 1944GLB2	1,797	0.357	3.79	39	32.9	82.1	57.45	$1,032
FM 1740B2F	1,796	0.361	3.91	37	30.8	83.4	57.45	$1,032
ST 6448GLB2**	1,765	0.354	3.73	39	30.5	82.9	57.35	$1,012
ST 4288B2F	1,760	0.330	3.80	38	29.4	81.7	57.05	$1,004
FM 9180B2F	1,724	0.330	3.95	40	30.5	85.0	57.65	$994
ST 5458B2RF	1,718	0.356	4.28	37	26.3	81.7	56.95	$978

Loan Value calculated from 2012 CCC Loan Schedule using uniform color grade of 21 and uniform leaf grade of 3.

*Tested as BX 1346GLB2 **Tested as BX 1348GLB2

This trial received approximately 19.52 inches of irrigation and rainfall throughout the growing season.

Bayer CropScience Irrigated CAP Trial
Loop, TX - 2012

Cooperator: Ricky Mills

Manda Anderson, Extension Agent - IPM, Gaines County

Planted: 22-May
Harvested: 24-October

Table 1. Harvest results from the Bayer CropScience Irrigated CAP Trial (1 replication), Ricky Mills Farms, Loop, TX, 2012.

Variety	Lint Yield (lbs/A)	Turnout	Mic	Staple	Strength	Unif	Loan Value* (¢/lb)	Value / A ($/A)
BX 1347GLB2	1,145	0.299	4.19	38	26.5	82.2	57.05	$653
FM 2484B2F	1,063	0.300	3.72	39	31.5	83.6	57.55	$612
ST 4946GLB2*	1,007	0.315	4.06	37	32.1	82.7	57.45	$578
ST 4288B2F	1,000	0.265	4.07	39	32.1	83.7	57.55	$575
FM 9170B2F	978	0.292	3.71	38	32.2	81.9	57.35	$561
FM 1944GLB2	946	0.264	3.97	38	29.6	81.7	57.05	$540
ST 5458B2RF	923	0.302	4.59	35	27.5	80.7	55.75	$515
FM 1944GLB2-PV	889	0.277	4.06	39	31.4	82.9	57.45	$511
FM 1740B2F	868	0.307	3.98	36	28.5	81.5	56.75	$493
FM 2989GLB2	844	0.288	4.09	37	29.9	82.6	57.15	$482
ST 6448GLB2**	731	0.259	3.67	41	27.0	82.5	56.90	$416
FM 9180B2F	716	0.258	4.31	37	30.9	82.8	57.20	$409

Loan Value calculated from 2012 CCC Loan Schedule using uniform color grade of 21 and uniform leaf grade of 3.

*Tested as BX 1346GLB2 **Tested as BX 1348GLB2

This trial received approximately 13.21 inches of irrigation and rainfall throughout the growing season.

TEXAS A&M AGRILIFE EXTENSION

Phytogen Irrigated Innovation Trial
Seminole, TX - 2012

Cooperator: Froese Farms

Manda Anderson, Extension Agent - IPM, Gaines County

Planted: 21-May
Harvested: 8-November

Table 1. Harvest results from the Phytogen Irrigated Innovation Trial (3 replications), Froese Farms, Seminole, TX, 2012.

Variety	Lint Yield (lbs/A)	Percent Turnout	Mic	Length	Strength	Unif	Loan Value* (¢/lb)	Crop Value ($/A)
PHY 499 WRF	1354	0.342	3.5	1.14	32.5	82.5	0.5315	$720
PHY 499 WRF ACPB	1313	0.346	3.7	1.15	32.1	83.0	0.5387	$707
ST 5458 B2RF	1308	0.335	3.6	1.17	31.6	81.6	0.5247	$686
DP 1044 B2RF	1239	0.322	3.7	1.13	30.8	81.3	0.5365	$665
PHY 367 WRF	1210	0.316	3.7	1.15	31.7	82.5	0.5380	$651
PHY 375 WRF	1121	0.298	3.6	1.13	29.7	81.7	0.5288	$593

This trial received approximately 19.23 inches of irrigation and rainfall throughout the growing season.

Deltapine Irrigated FACT Trial
Seminole, TX - 2012

Cooperator: Tim Neufeld Farms

Manda Anderson, Extension Agent - IPM, Gaines County

Planted: 4-May
Harvested: 1-November

Table 1. Harvest results from the Phytogen Irrigated Innovation Trial (1 replications), Tim Neufeld Farms, Seminole, TX, 2012.

Entry	Brand	Product Name	Value / A ($/A)	Lint Yield (lbs/A)	Loan Value (¢/lb)	Staple	Length	Strength	Mic	Percent Lint Turnout	Unif
1	Monsanto	Experimental	$473.92	894	0.5300	33.6	1.05	28.9	4.8	38.0	79.4
2	Deltapine	DP 0912 B2RF	$472.04	882	0.5350	34.6	1.08	31.1	5.0	38.7	80.9
3	Deltapine	DP 1044 B2RF	$457.46	922	0.4960	33.6	1.05	28.5	5.4	37.1	79.9
4	Deltapine	DP 1359 B2RF *	$440.74	780	0.5650	35.8	1.12	31.6	4.8	38.6	81.3
5	Monsanto	Experimental	$438.32	787	0.5570	34.9	1.09	30.1	4.9	39.7	81.3
6	Deltapine	DP 174 RF	$432.94	844	0.5130	34.2	1.07	29.1	5.1	39.9	81.2
7	FiberMax	FM 1740 B2RF	$425.83	800	0.5320	34.9	1.09	28.5	5.2	39.1	82.3
8	Monsanto	Experimental	$420.36	792	0.5310	34.6	1.08	28.4	5.0	41.7	81.5
9	Monsanto	Experimental	$402.84	754	0.5340	34.9	1.09	30.9	5.0	41.3	81.0
10	Monsanto	Experimental	$398.50	775	0.5140	34.2	1.07	29.9	5.2	38.6	82.7
11	FiberMax	FM 9170 B2F	$380.92	671	0.5380	37.1	1.16	31.8	4.6	37.9	83.0
12	Deltapine	DP 1032 B2RF	$369.81	710	0.5210	34.9	1.09	27.4	5.3	38.7	82.9
13	Monsanto	Experimental	$345.54	623	0.5550	34.6	1.08	29.6	4.8	37.2	80.5
14	Deltapine	DP 1321 B2RF *	$293.70	519	0.5660	37.1	1.16	29.8	4.7	39.4	84.3
15	Monsanto	Experimental	$292.18	605	0.4830	33.0	1.03	28.4	5.5	40.5	80.4
16	Monsanto	Experimental	$289.79	542	0.5350	34.9	1.09	31.3	5.2	38.6	81.8
		TEST AVERAGE	**$395.93**	**744**	**0.5316**	**34.8**	**1.09**	**29.7**	**5.0**	**39.1**	**81.5**

Value Calculation based on $0.52/Lb(+/-) discounts/premiums from the 2011 USDA Loan Chart (Ranked by Value $/A). All plots were assigned a base color (31) and leaf grade (3).
Entries listed as "Monsanto" brand are experimental varieties, and not for sale.

* Indicates variety that has been advanced into commercial production. Key: 11R112B2R2 = DP 1321 B2RF; 11R124B2R2 = DP 1311 B2RF; 11R159B2R2 = DP 1359 B2RF

Individual results may vary, and performance may vary from location to location and from year to year. This result 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 year whenever possible.

This trial received approximately 20.6 inches of irrigation and rainfall throughout the growing season.

Deltapine Limited Irrigated FACT Trial
Seagraves, TX - 2012

Cooperator: Marcus Crow Farms

Manda Anderson, Extension Agent - IPM, Gaines County

Planted: 30-May
Harvested: 20-November

Table 1. Harvest results from the Phytogen Irrigated Innovation Trial (1 replications), Marcus Crow Farms, Seagraves, TX, 2012.

Entry	Brand	Product Name	Value / A ($/A)	Lint Yield (lbs/A)	Loan Value (¢/lb)	Staple	Length	Strength	Mic	Percent Lint Turnout	Unif
1	FiberMax	FM 1740 B2RF	$288.89	539	0.5360	33.9	1.06	29.0	5.0	32.0	81.4
2	FiberMax	FM 9170 B2F	$286.04	506	0.5650	35.5	1.11	32.1	4.4	37.8	81.7
3	Monsanto	Experimental	$267.04	507	0.5265	34.6	1.08	27.7	5.0	32.4	78.1
4	Monsanto	Experimental	$233.54	442	0.5280	33.6	1.05	26.8	4.1	30.6	78.9
5	Monsanto	Experimental	$226.02	441	0.5120	33.3	1.04	27.7	4.7	30.1	79.8
6	Deltapine	DP 0912 B2RF	$201.56	389	0.5180	33.0	1.03	29.4	4.9	33.3	81.2
7	Deltapine	DP 1044 B2RF	$199.67	362	0.5520	34.9	1.09	30.3	4.4	32.1	79.6
8	Deltapine	DP 1359 B2RF *	$195.67	355	0.5515	34.9	1.09	29.8	4.2	28.4	79.1
9	Deltapine	DP 174 RF	$193.40	341	0.5665	35.5	1.11	30.3	4.2	30.0	82.2
10	Monsanto	Experimental	$187.93	366	0.5135	32.6	1.02	28.2	4.2	28.2	79.2
11	Monsanto	Experimental	$183.23	377	0.4865	31.4	0.98	27.4	5.0	31.3	79.8
12	Deltapine	DP 1321 B2RF *	$177.33	346	0.5130	33.6	1.05	29.2	4.3	29.9	79.9
13	Monsanto	Experimental	$175.03	315	0.5550	34.9	1.09	29.7	4.9	28.6	81.7
14	Deltapine	DP 1032 B2RF	$173.29	341	0.5085	32.6	1.02	27.7	4.8	29.5	78.7
15	Monsanto	Experimental	$166.69	294	0.5665	35.8	1.12	31.4	4.1	29.3	80.4
16	Monsanto	Experimental	$157.02	303	0.5180	33.3	1.04	29.8	4.7	25.3	81.3
		TEST AVERAGE	**$207.02**	**389**	**0.5323**	**34.0**	**1.06**	**29.2**	**4.5**	**30.6**	**80.2**

Value Calculation based on $0.52/Lb(+/-) discounts/premiums from the 2011 USDA Loan Chart (Ranked by Value $/A). All plots were assigned a base color (31) and leaf grade (3).
Entries listed as "Monsanto" brand are experimental varieties, and not for sale.

* Indicates variety that has been advanced into commercial production. Key: 11R112B2R2 = DP 1321 B2RF; 11R124B2R2 = DP 1311 B2RF; 11R159B2R2 = DP 1359 B2RF

Individual results may vary, and performance may vary from location to location and from year to year. This result 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 year whenever possible.

This trial received approximately 5.95 inches of irrigation and rainfall throughout the growing season.

Making a difference 2010

AgriLIFE EXTENSION
Texas A&M System

Agriculture and Natural Resources

Appendix A

2012 Gaines County IPM Newsletters