

Arkansas

ROW CROP VERIFICATION



UofA DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System



Cotton Research Verification Program

2012 Annual Report

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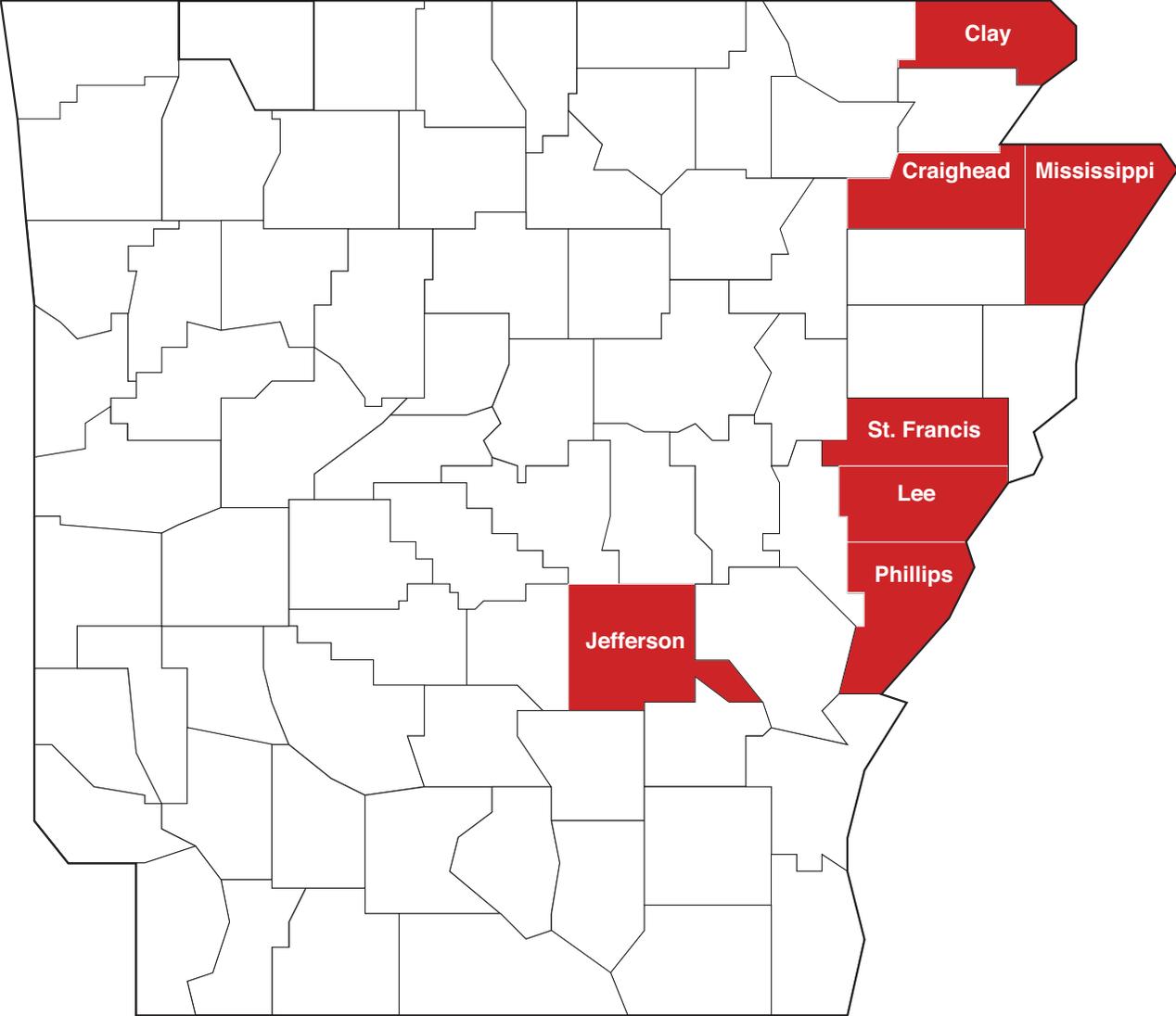
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FIGURE 1. Locations of 2012 Cotton Research Verification Fields



Cotton Research Verification Program 2012 Annual Report

Introduction

The University of Arkansas Division of Agriculture has been conducting the Cotton Research Verification Program (CRVP) since 1980. This is an interdisciplinary effort in which recommended Best Management Practices and production technologies are applied in a timely manner to a specific farm field. Since the inception of the CRVP in 1980, there have been 248 irrigated fields entered into the program. Producers are asked what they would like to improve in their current operation, then a field is chosen that fits a standard model of the producer's operation and requires the necessary recommendations to improve the farm.

Once a field is chosen, samples are taken to determine the nutrient levels of the field. The samples are taken in a grid pattern to achieve a more complete picture of the field's fertility requirements. Results are then provided to the producer who can choose to use the precision application method, if it is available in their respective areas. Nematode samples are also taken and problem spots in the field are noted so they can be monitored more closely during the year for potential problems.

All of the recommendations made to the producers in the program are based on proven research by University of Arkansas Division of Agriculture researchers in their respective disciplines. The producer agrees to apply the necessary recommendations in a timely manner.

There were seven fields enrolled in the 2012 CRVP; all of the fields were furrow irrigated. The fields were located from Jefferson County in the southeast part of the state to Clay County in the northeast part of the state.

Objectives

The Cotton Research Verification Program objectives are to:

1. Conduct on-farm field trials to verify the utility of research-based recommendations with the intent of optimizing potential for profits.
2. Educate cotton producers with timely management decisions through Best Management Practices and Integrated Pest Management.
3. Develop an on-farm database for use in economic analyses and computer-assisted management programs.
4. Aid researchers in identifying areas of production requiring further study and improve or refine existing recommendations which contribute to profitable cotton production.
5. Increase county Extension agents' expertise in cotton production.
6. Utilize and incorporate data and findings from the CRVP program into Extension educational programs at the county and state levels.

The CRVP program is a highly successful demonstration of the importance of timely management decisions and incorporation of new technology into cotton production. It also serves as an excellent training tool for county Extension agents to learn more about cotton production. Contributing to the success of the program is the commitment of Extension and Research personnel; grower cooperation; the program organization, planning and implementation; and the close attention to program objectives. The CRVP allows participants to manage field situations that are not always conducive to maximum economic yield. The program also allows demonstration of alternative production systems for problem or yield-limiting situations encountered in grower fields.

Methods and Materials

Annually, a committee comprised of University of Arkansas Research and Extension personnel meets and agrees on recommended programs and management options to be used in the current program. The committee is broad based with Research and Extension each having at least one representative from each subject-matter area. The committee members also serve as advisors during the growing season. The CRVP coordinator is responsible for implementing recommendations on the CRVP demonstrations in-season.

Cooperators are chosen by the county Extension staff and approved by the CRVP coordinator. The cooperator agrees to manage the field for two years using research-based recommendations as directed by the CRVP coordinator and county Extension agent. Field visits are conducted weekly by the verification coordinator and the county agent during the production and harvest period. A designated county Extension agent in each county collects field data twice weekly and maintains regular contact with the CRVP coordinator and cooperator. An area farm management specialist summarizes the economic analysis on each field through use of field operations data collected during the season.

Twice weekly insect scouting is performed during the season using the Cooperative Extension Service whole plant search method. Irrigation scheduling and plant monitoring data are collected and updated at least once a week. Plant monitoring is evaluated through the use of COTMAN.

2012 Field Information

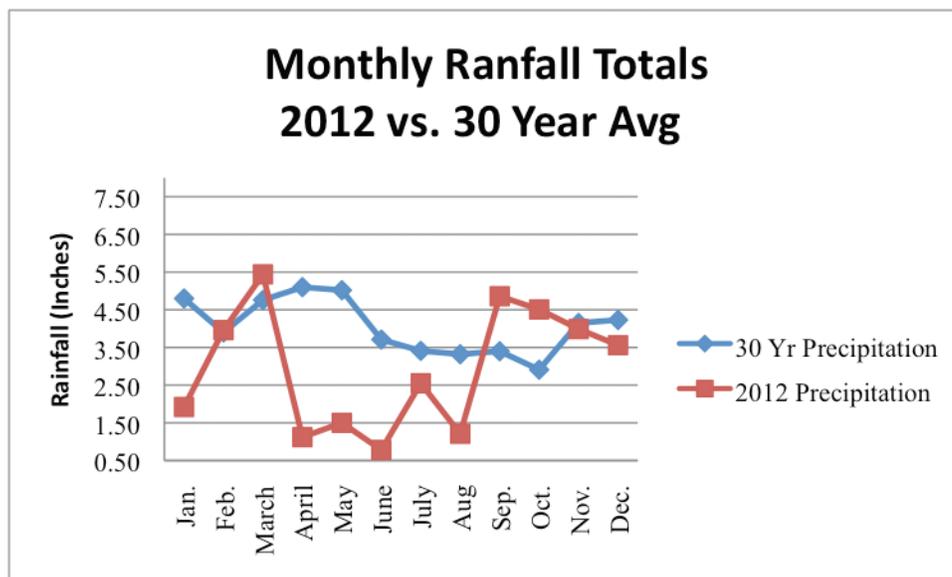
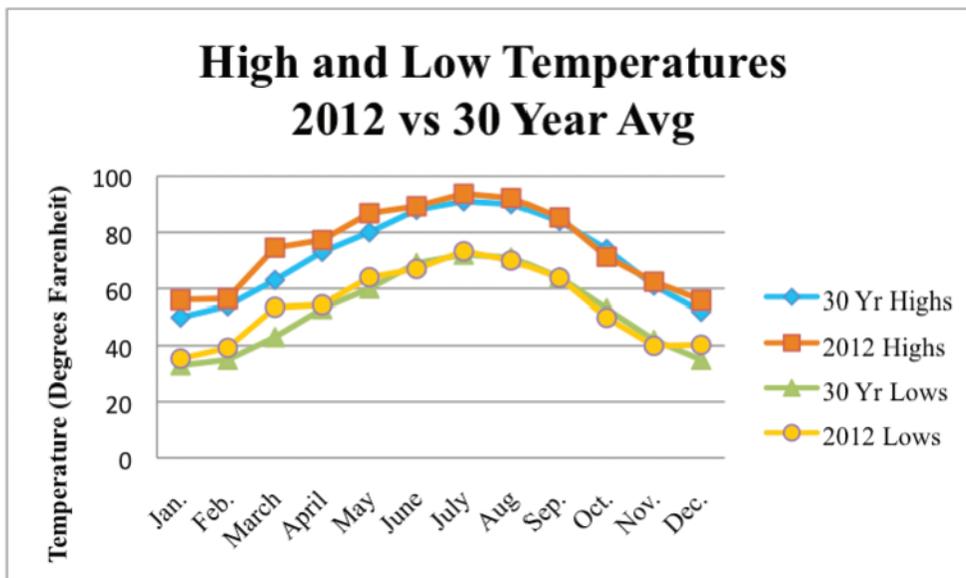
General information regarding location, variety, soil series, planting date, previous crop, acres per field and yield is included in the table below. The average field size was 50 acres over the seven fields in the 2012 verification project.

Soil type varied across all seven locations. Two locations (Craighead and Jefferson) had lighter silt and sandy loam type soils while the other five locations (Clay, Lee, Mississippi, St. Francis and Phillips) had heavier soils with increased clay content. Soil analysis was performed for each location (except the Lee County field) to gain information about the fertility program needed for each field. Nematode analysis was also performed to gather information on the species and number of nematodes in each field.

2012 Growing Season

Growing conditions were similar across the Arkansas Delta region during planting in 2012. Warm, dry weather was prevalent during the early part of April. Although temperatures were conducive to planting, dry weather during much of April depleted soil moisture in the planting zone. Six of the seven CRVP fields were planted on or before May 1; however, they required a rain event to emerge to an acceptable stand. The Mississippi County field received heavy rainfall following planting, and the soil crusted leaving more than half of the field unable to emerge. The field was replanted on May 16. Higher daytime and nighttime temperatures continued during all of July and much of August. All of the fields were cut-out prior to August 10. Warm and dry weather

Variety, Soil Series, Previous Crop, Acreage and Lint Yield in the 2012 Cotton Verification Program by County					
County	Variety	Soil Series	Previous Crop	Acreage	Lint Yield
Clay	ST 5458 B2RF	Falaya-Amagon	Cotton	74	1056
Craighead	AM 1511 B2RF/ FM 1944 GLB2	Fountain	Cotton	64	1401
Jefferson	ST 5458 B2RF	Roxana	Soybeans	45	913
Lee	ST 5445 LLB2	Alligator-Sharkey	Cotton	36	1120
Mississippi	ST 5458 B2RF	Rilla-Herbert	Cotton	35	1317
Phillips	ST 5458 B2RF	Dundee	Cotton	42	750
St. Francis	DPL 0912 B2RF	Calloway-Grenada	Cotton	53	1215
Average				50	1110



continued through September and allowed for successful defoliation of all fields. Good harvest weather allowed for all of the fields to be harvested by the first part of November.

Plant bug numbers were moderate this year, and insecticide applications were made starting around June 20. Fields in the verification program were treated an average of three times for plant bugs. Bollworm pressure was light, and no additional treatments had to be made for control. The hot, dry conditions were favorable for spider mite colonies to develop. Four fields (Craighead, Jefferson, Lee and Mississippi Counties) had additional applications made to control spider mite populations.

Glyphosate-resistant pigweed pressure was present throughout the state again this year. The Lee County field had the heaviest pigweed pressure of all the verification fields. However, the field was planted with a Liberty Link variety (ST 5445LLB) which allowed for the pigweed to be managed by using a combination of Liberty herbicide and residual herbicides. Glyphosate-resistant horseweed (aka Marestalk) was not a problem in any of the verification fields this year due to an appropriate burndown program with the use of residual herbicides. Morningglory was also present and was difficult to control in many of the fields.

Results and Discussion

Clay County

The Clay County field combined an experienced county agent with a young cotton producer. The goal of the program in this county was to help the producer become familiar with University of Arkansas recommendations. A second goal was to improve a field that was phosphorus and potassium deficient and yielded poorly the previous year.

Field work was completed the previous fall, and new rows were pulled up. A total of 180 lbs of 0-0-60 fertilizer was applied during the fall. In the early spring, soil samples were taken to check fertility levels. Phosphorus and potassium deficiencies were found. A total of 100 lbs of 0-46-0 was applied and then 100 lbs of 0-60-0 was applied two weeks later. At the 6th leaf stage, 94 lbs of nitrogen and 4 lbs of sulfur were applied. At bloom, 75 lbs of 0-0-60 was applied to prevent potassium-deficient symptoms from appearing.

Reflex was applied after the rows were knocked down. The field was planted on April 28 in Stoneville 5458B2RF. The final plant population was 38,000 plants per acre. Cotoran was applied at planting, and two applications of Roundup and Dual were applied to the field. The field stayed clean throughout the growing season. Insect pressure was moderate, and three applications were made mainly for plant bugs. A total of 16 ounces of plant growth regulator was applied during the season.

The field started the growing season in good shape. The plants began to fruit and retained a large percentage of fruit early. This prevented rank growth; however, it also put pressure on the plants to take up extra nutrients to fill out the large fruit retention. Two weeks after bloom, potassium-deficient symptoms began to show throughout the field. The field reached cut-out (NAWF-5) on July 22. The field yielded 1,056 lbs/ac, which was 54 lbs/ac less than the CRVP average. The producer stated that this was a major increase over the 2011 yield in which the field yielded a little over 500 lbs/ac.

Craighead County

The Craighead County field was in the second year of the program. The producer was well pleased with the results from the 2011 season and wanted to build on the recommendations he learned the previous year. The producer was also interested in improving the irrigation efficiency of this field.

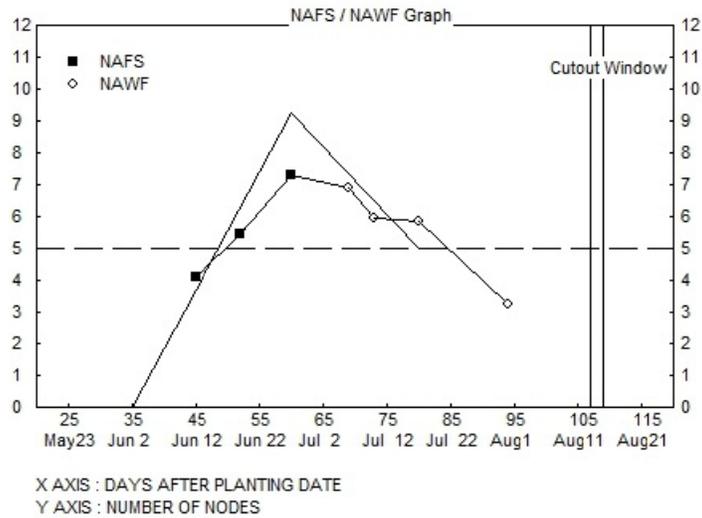
Pre-plant fertilizer was applied at a variable rate, and new rows were put up. Ringside (generic Reflex) was applied pre-plant and diuron was applied at planting for broadleaf weed control. The field was split by a field road and was bordered on one side by Liberty Link soybeans. To prevent any problems from drift, the 10 acres by the soybeans were planted into Fibermax 1944 GLB2. This variety contains traits that make it tolerant to both glyphosate and glufosiate (Liberty) herbicides. The rest of the field was planted into Americot1511 B2RF. The field was fully emerged by May 4.

Soon after emergence, the field was pressured by western flower thrips. Although these thrips are in the same family as tobacco thrips, the insecticides that control tobacco thrips do not provide adequate control for western flower thrips. Radiant was recommended to control the heavy thrips population. The plants remained stunted for several days. Although the field did begin to grow normally, it was about 10 days behind schedule as indicated by the COTMAN graph. Normal fruiting should begin around 35 days after planting. However, this field began squaring at 45 days after planting. Timely input applications had to be made the rest of the season to promote earliness. A total of 110 lbs of urea was applied, and the field grew normally the rest of the season.

Morningglory was the dominant weed in this field. Roundup was applied early to suppress morningglories that had already emerged. The first Dual application was applied at a later date to give the cotton a chance to recover from the thrips damage. A post-direct application of Caporal and MSMA was applied to control morningglories

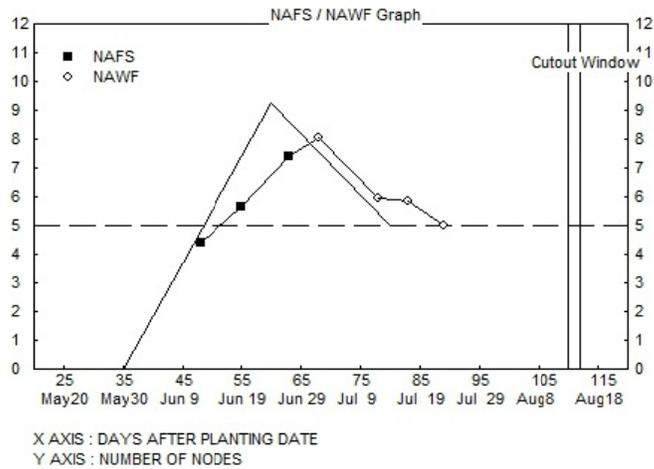
Clay County (COTMAN Curve)

NAFS/NAWF GRAPH



Craighead County (COTMAN Curve)

NAFS/NAWF GRAPH



present and some small pigweed that had emerged since the last residual application. A lay-by application consisted of MSMA for weeds already emerged and Direx for residual weed control. Insect pressure was moderate in this field. A total of four treatments for plant bugs was required for this field.

The producer wanted to work on irrigation efficiency in this field. The PHAUCET program was utilized to ensure that the proper hole size was used for the corresponding row length in the field. The producer was very pleased with the outcome of the PHAUCET program and stated that he felt by using this program he was able to save enough time to equal one irrigation. The producer also stated that he learned he could irrigate one side of the field using holes in every middle that increased the water infiltration.

The field responded well to the fertilizer and timely irrigation. As fall approached, the field looked very good and yielded 1,401 lbs/acre, which was 291 lbs greater than the mean in the 2012 verification program.

Jefferson County

Fall tillage was conducted to bury the residue from the previous crop. The field was disked again in the spring, and Treflan was applied and incorporated. Beds were pulled up and knocked down prior to planting to produce a fine seedbed. The field was planted in ST 5458B2RF at a rate of 41,000 seed/acre. Cotoran was applied as a pre-emerge application to add residual control of weeds. Roundup and Dual were applied for early-season weed control. A total of 95 units of nitrogen was applied, and the water furrows were then plowed. Roundup and Dual were applied again. A lay-by application is a normal recommendation. However, weather events prevented the producer from getting in the field, and the cotton grew too tall to get through with a set of row hoods. During the rest of the season, a few pigweed escapes were noticed and were hoed out by the producer. Although hand-weeding adds expenses that have

not been needed in previous years, glyphosate-resistant weeds have increased the need for this expense. A “zero tolerance” approach was taken for all escaped pigweeds to ensure that the weeds were unable to add seed to the soil seed bank.

Insect pressure was moderate. The field had to be sprayed four times for plant bugs. Abba and Bidrin were tank mixed on the second application to provide control of spider mites. After the neighboring corn fields started to dry down, a flush of plant bugs invaded the field. An application of 0.75 lb of acephate and bifenthrin was used to control the insects before the field reached the point that insecticide applications could be terminated.

The field was slightly ahead of schedule when it began squaring. Soon after the first irrigation, the weather turned hot, which kept the field on schedule. The field responded well to the input management and irrigation. This field yielded 913 lbs/acre, which was 197 lbs below the mean of the program.

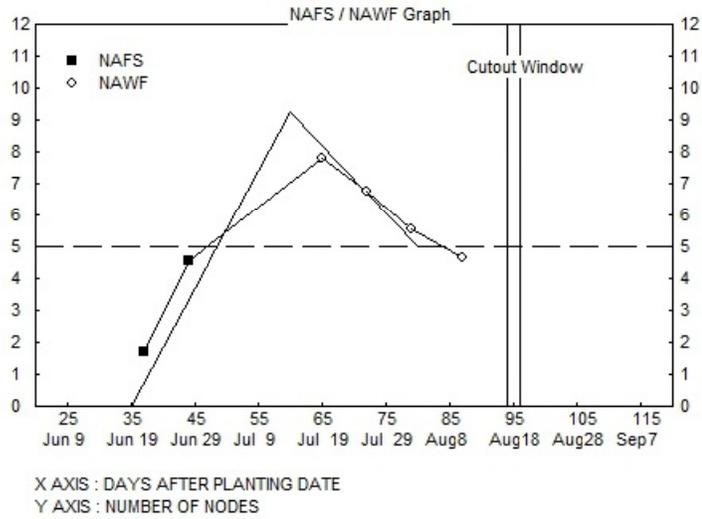
Lee County

The Lee County field was a new situation for the CRVP. The field had spots of heavy glyphosate-resistant pigweed pressure. To combat the problem, a Liberty Link variety (Stoneville 5445 LLB2) was chosen to plant in the field. This was the first occasion that a Liberty Link variety was planted in the verification program.

Roundup, dicamba and First Shot were applied to the field as a burndown application. The rows were then pulled and knocked down for planting. Gramoxone and diuron were applied at planting to provide weed control. An application of Liberty and Warrant was applied to the field to control any weeds that had emerged as well as to put a residual layer down. A lay-by application of Gramoxone and Valor was applied under row hoods. Liberty was applied at the same time as a directed spray. A total of 90 units of nitrogen and 60 units of potassium were applied.

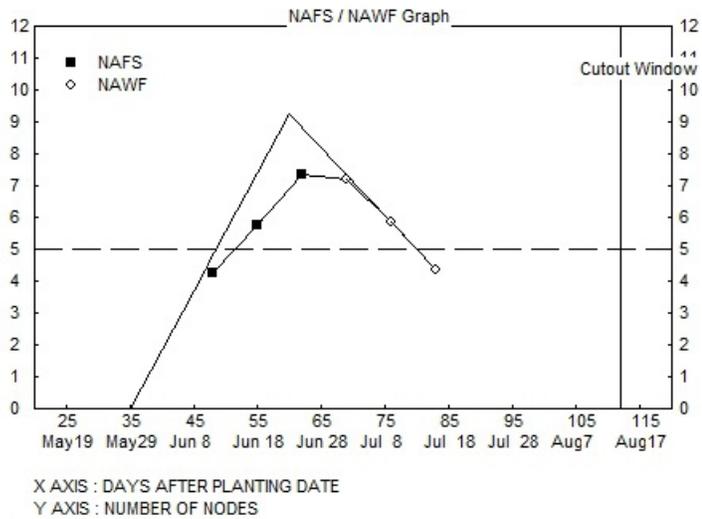
Jefferson County (COTMAN Curve)

NAFS/NAWF GRAPH



Lee County (COTMAN Curve)

NAFS/NAWF GRAPH



Insect pressure in this field was mild, and only three applications were needed for insect control. The lack of insect pressure and the good growing weather ensured that the cotton retained most of its fruit. The high fruit retention kept the plants from getting rank growth. It also caused early cut-out. The field reached cut-out on July 14.

The high fruit retention and timely application of inputs promoted earliness. The field responded well to the inputs and yielded well. The field yielded 1,100 lbs/acre, which was 10 lbs/acre less than the CRVP average. However, the producer was pleased with the Liberty Link system and the amount of pigweed control he received from this program.

Mississippi County

The Mississippi County field paired an experienced cotton farmer with a new county agent who also had extensive cotton experience. The agent, a former consultant, wanted to familiarize himself with the University of Arkansas recommendations for cotton production. The producer expressed that he wanted to work on irrigation efficiency and timing of irrigations.

Rows were pulled and knocked down in preparation for planting. Reflex was applied to the field for residual pigweed control. Although this field was not considered a pigweed problem field, allowing any pigweed to emerge and go to seed can cause a population to increase very quickly. The field was planted in Stoneville 5458 B2RF. Liberty and diuron were applied to control any weeds that had emerged and to add another residual application. The field began to emerge 5 days after planting; however, a heavy rainstorm swept over the area, and the field received about 2 inches of rain in a short period of time. The soil crusted over, and half the field was unable to emerge. The field was replanted on May 16 and emerged to a stand within 7 days. The field stayed ahead of schedule, which is shown by the COTMAN curve, throughout much of the early season.

Weed control was excellent throughout the season. After the diuron from planting began to break, the middles were plowed for irrigation and Roundup and Dual were applied to control any weeds that had emerged and to apply a residual layer. The field received a rain a few days later which activated the Dual. A lay-by application including Gramoxone and Valor was applied underneath the row hoods, and Roundup was applied directed underneath the plants for grass control.

Insect pressure was mild in this field, and it was only treated three times for plant bug populations. The last application included the miticide Abba for control of spider mites.

The producer wanted to work on irrigation efficiency and timing of irrigation applications. This work was even more important in a year that was very dry. To improve irrigation efficiency, the PHAUCET program was used to indicate the proper wheel size to enable every row to be watered. Irrigating every row improved water infiltration and uptake by the plants. An atmometer (ET gauge) was used to schedule irrigation applications.

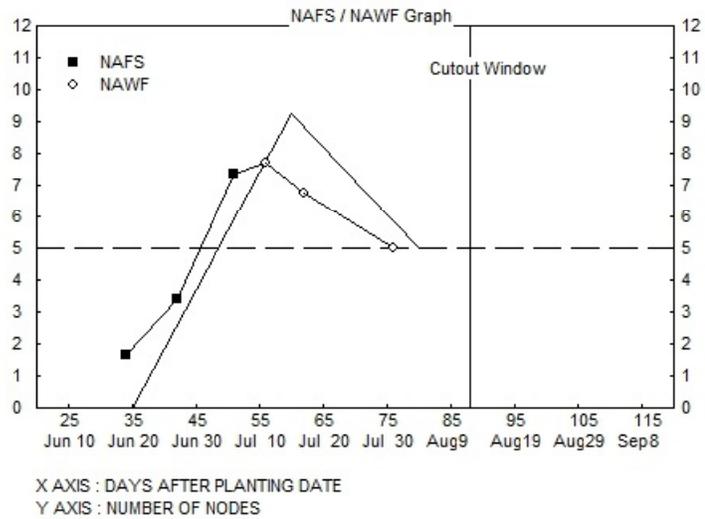
The field responded well to the inputs and timely irrigations. As fall arrived the field was in good condition. It yielded 1,317 lbs/acre, which was 207 lbs greater than the mean in the 2012 verification program.

Phillips County

The Phillips County cotton verification field was in the second year of the verification program. The producer wanted to continue to work on incorporating University recommendations into his overall cotton production program. Nematode samples were taken and root-knot nematodes were found at levels that would cause economic damage. The main treatment for nematode levels in cotton has normally been to use Temik. Temik has been taken off the market, so the

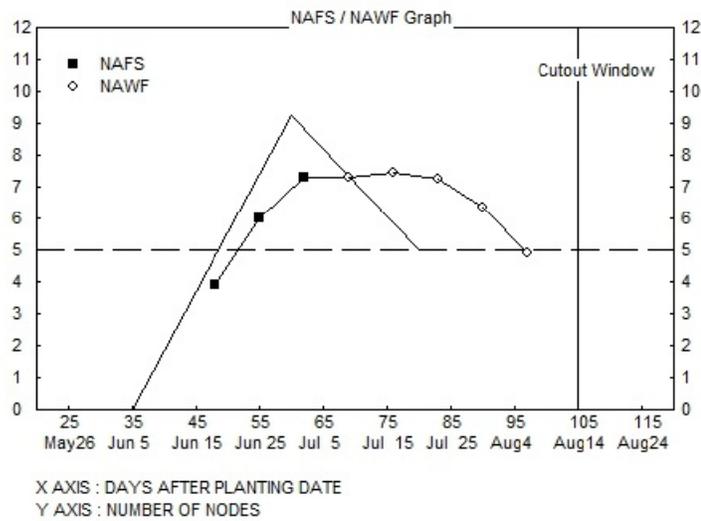
Mississippi County (COTMAN Curve)

NAFS/NAWF GRAPH



Phillips County (COTMAN Curve)

NAFS/NAWF GRAPH



treatment of this field consisted of using the variety Stoneville 5458 B2RF that was treated with the nematicide Avicta. The producer used a seeding rate of 42,000 seed/acre.

New beds were pulled, and Treflan was applied for pre-emergent control of pigweed and grasses. Prowl was applied at planting for another layer of residual control. The field received rainfall soon after planting. The cotton began to emerge at the same time and was damaged by the Prowl. This damage caused the plants to become stunted. After several days, the field began to grow properly; however, it stayed behind schedule throughout the season. This is shown in the COTMAN curve.

The field stayed clean throughout the season. The first application consisted of only Roundup for control of weeds already emerged. A residual herbicide is usually recommended at the first application; however, due to the setback caused by the Prowl, the residual herbicide was held out to allow the cotton to recover from this damage. The lay-by application consisted of Roundup and Valor.

Insect pressure was moderate. Three applications were made for plant bug control. Diamond was used twice in this field to help with control of plant bug nymphs. The Diamond provided excellent control.

The field appeared to be growing well until it was defoliated in September. The field yielded 750 lbs/acre, which was 360 lbs less than the average. A combination of both the Prowl damage and the higher levels of root-knot nematodes contributed to the loss in yield.

St. Francis County

The St. Francis County field combined a young cotton producer with good experience in cotton production with an experienced county agent.

A new county agent with little cotton experience was also included in the program for training purposes in cotton production and University of Arkansas recommendations. The producer was interested in using recommendations in his production system.

A burndown application of Touchdown and dicamba was applied early. A pre-plant application of 275 lbs/acre of 0-46-60 was applied, and rows were pulled. The field was planted in Deltapine 0912 B2RF. Diuron was applied pre-emerge for weed control. The field received a rain soon after planting which activated the diuron and gave enough moisture for the field to emerge to a good stand.

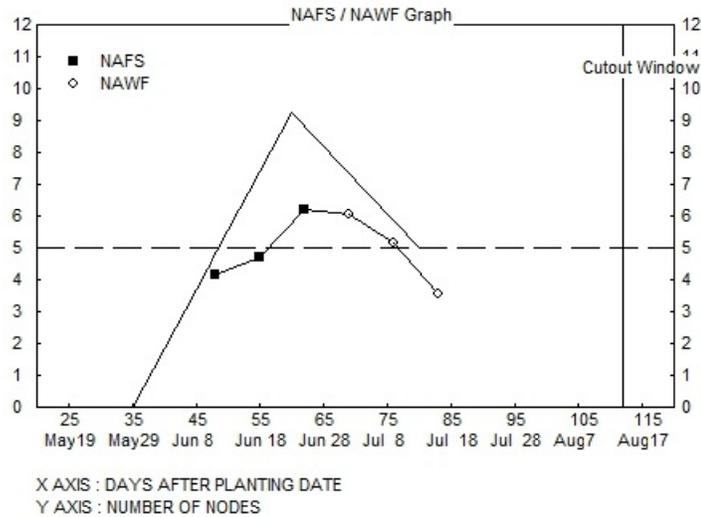
The field stayed incredibly clean throughout the season. The dry weather and not disturbing the field once the diuron was activated helped to keep the field clean for several weeks. Two other residual applications were made to the field the rest of the season to prevent weeds from emerging.

Insect pressure in this field was moderate, and four applications were made to control plant bugs. The field cut-out early in the season, which is shown in the COTMAN graph. The earliness of the field allowed for the field to be pushed further than in years when the weather was not as cooperative. One extra plant bug application was made after the field reached the proper amount of heat units to be safe from plant bug damage (250 heat units past cut-out). The field reached this point on July 21, and the application was made on the July 24. This application was made to protect young fruit in the top of the plant that still had a chance to make.

The field responded well to the inputs, and even though it reached cut-out early in the season, the field yielded well. The field had a yield of 1,215 lbs/acre, which was 105 lbs/acre greater than the average of the verification program.

St. Francis County (COTMAN Curve)

NAFS/NAWF GRAPH



Economic Analysis

This section provides information on production costs for the 2012 CRVP. Records of field operations on each field provide the basis for estimating these costs. The field records were compiled by the CRVP coordinator, county Extension agents and cooperators. Production data from the seven fields were applied to determine costs and returns above operating costs as well as total specified costs. Operating costs and total costs per pound indicate the commodity price needed to meet each cost type.

Operating expenses are those expenditures that would generally require annual cash outlays and would be included on an annual operating loan application. Actual quantities of all operating inputs as reported by the cooperators are used in this analysis. Input prices are determined by data from the 2012 Crop Enterprise Budgets published by the Cooperative Extension Service and information provided by the producer cooperators.

Fuel and repair costs for machinery are calculated using a budget calculator based on parameters and standards established by the American Society of Agricultural and Biological Engineers. Machinery repair costs should be regarded as estimated values for full-service repairs, and actual cash outlays could differ as producers provide unpaid labor for equipment maintenance.

Ownership costs of machinery are determined by a capital recovery method which determines the amount of money that should be set aside each year to replace the value of equipment used in production. Machinery costs are estimated by applying engineering formulas to representative prices of new equipment. This measure differs from typical depreciation methods as well as actual annual cash expenses for machinery.

Operating costs, total costs, costs per pound and returns are presented in Table 1 in the Appendix. Costs in this report do not include land costs, management or other expenses and

fees not associated with production. Budget summaries for cotton are presented in Table 2. The price received for cotton of \$0.72/lb is the Arkansas average based on the January 2013 Market News Report from USDA for December prices in the North Delta. The average cotton yield for all verification fields is 1,110 lb/acre.

Average operating costs for cotton in Table 1 are \$514.46 per acre. Table 2 indicates that chemicals are the largest expense category at \$130.96/acre. Fertilizers and nutrients are the second-largest expense category at \$113.36/acre. Seeds and associated technology fees average \$108.32/acre.

With an average yield of 1,110 lb/acre, average operating costs are \$0.48/lb in Table 1. Operating costs range from a low of \$420.29 in Phillips County to a high of \$634.85 in Clay County. Returns to operating costs average \$284.95 per acre. The range is from a low of \$119.71 in Phillips County to a high of \$477.84 in Craighead County. Average fixed costs are \$86.59, which leads to average total costs of \$601.06 per acre. The average returns to total specified costs is \$198.35 per acre. The low is \$7.86 in Clay County, and the high is \$384.30 in Craighead County. Total specified costs average \$0.55/lb.

APPENDIX

TABLE 1.
Operating Costs, Total Costs and Returns for
2012 Cotton Research Verification Program

Field	Operating Costs	Operating Costs Per Pound	Returns to Operating Costs	Total Fixed Costs	Total Costs	Returns to Total Costs	Total Costs Per Pound
Clay	634.85	0.60	125.47	117.60	752.46	7.86	0.71
Craighead	530.88	0.38	477.84	93.55	624.42	384.30	0.45
Jefferson	508.55	0.56	148.81	76.62	585.17	72.19	0.64
Lee	464.80	0.41	341.60	91.03	555.83	250.57	0.50
Mississippi	507.41	0.39	440.83	96.25	603.66	344.58	0.46
Phillips	420.29	0.56	119.71	28.92	449.22	90.78	0.60
St. Francis	534.44	0.44	340.36	102.19	636.63	238.17	0.52
Average	514.46	0.48	284.95	86.59	601.06	198.35	0.55

TABLE 2.
Summary of Revenue and Expenses Per Acre
2012 Cotton Research Verification Program

Receipts	Field							
	Clay	Craighead	Jefferson	Lee	Mississippi	Phillips	St. Francis	Average
Yield (lb)	1,056	1,401	913	1,120	1,317	750	1,215	1,110
Price (\$/lb)	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Total Crop Revenue	760.32	1008.72	657.36	806.40	948.24	540	874.80	799.41
Cottonseed Value	127.78	169.52	110.47	135.52	159.36	90.75	147.02	134.34
Operating Expenses								
Seed	85.01	100.67	126	85.44	147.06	113.40	100.67	108.32
Fertilizers & Nutrients	204.48	56.05	129.10	106.24	82.33	61.20	154.15	113.36
Herbicides	59.03	68.73	35.68	80.91	73.47	65.67	32.42	59.41
Insecticides	41.07	34.18	60.06	43.24	43.55	22.58	47.82	41.79
Other Chemicals	18.73	86.83	22.77	23.27	19.56	16.17	20.99	29.76
Custom Applications	31	6	12	12	6	6	0	10.43
Diesel Fuel	32.91	31.47	25.42	21.37	30.82	12.01	30.43	26.35
Repairs & Maintenance	32.52	25.31	21.73	27.48	28.91	7.91	28.95	24.69
Irrigation Energy Costs	73.56	65.39	22.13	22.13	22.13	15.81	65.39	40.93
Labor, Field Activities	15.05	17.25	15.18	5.29	15.13	4.63	14.54	12.44
Other Inputs & Fees, Pre-harvest	41.49	39.01	38.47	37.43	38.44	34.93	39.09	38.41
Post-Harvest Expenses	127.78	169.52	110.47	135.52	159.36	90.75	147.02	134.34
Custom Harvest	0	0	0	0	0	60	0	8.57
Net Operating Expenses	634.85	530.88	508.55	464.80	507.41	420.29	534.44	514.46
Returns to Operating Expenses	125.47	477.84	148.81	341.60	440.83	119.71	340.36	284.95
Land Rent	0	0	0	0	0	0	0	0
Capital Recovery & Fixed Costs	117.60	93.55	76.62	91.03	96.25	28.92	102.19	86.59
Total Specified Expenses¹	752.46	624.42	585.17	555.83	603.66	449.22	636.63	601.06
Returns to Specified Expenses	7.86	384.30	72.19	250.57	344.58	90.78	238.17	198.35
Operating Expenses/lb	0.60	0.38	0.56	0.41	0.39	0.56	0.44	0.48
Total Expenses/lb	0.71	0.45	0.64	0.50	0.46	0.60	0.52	0.55

¹Does not include land costs, management or other expenses and fees not associated with production.

TABLE 3.
Variety, Soil Series, Previous Crop, Acreage and Lint Yield in the
2012 Cotton Research Verification Program by County

County	Variety	Soil Series	Previous Crop	Acreage	Lint Yield
Clay	ST 5458 B2RF	Falaya-Amagon	Cotton	74	1056
Craighead	AM 1511 B2RF/ FM 1944 GLB2	Fountain	Cotton	64	1401
Jefferson	ST 5458 B2RF	Roxana	Soybeans	45	913
Lee	ST 5445 LLB2	Alligator-Sharkey	Cotton	36	1120
Mississippi	ST 5458 B2RF	Rilla-Herbert	Cotton	35	1317
Phillips	ST 5458 B2RF	Dundee	Cotton	42	750
St. Francis	DPL 0912 B2RF	Calloway-Grenada	Cotton	53	1215
Average				50	1110

TABLE 4.
Soil Test Results and Total Applied Fertilizer in the
2012 Cotton Research Verification Program by County

County	pH	P	K	S	Total Applied Fertilizer
	----- Lbs/Acre -----				N-P-K-S-B ¹
Clay	6	31	85	7	94-46-213-4.8-1
Craighead	6.5	59*	138*	7	110-0-43
Jefferson ²	.	.	.	.	90-70-60-0
Lee ²	.	.	.	.	99-0-60-0
Mississippi	6	73*	136*	10	85-0-45-0
Phillips	6	83*	161*	10	90-0-0-0
St. Francis	7	58*	159*	10	91-46-105-12

¹Nitrogen-Phosphorus-Potassium-Sulfur-Boron

²The Jefferson County and Lee County fields had already been sampled and had the fertilizer applied.

*Denotes an optimum level according to soil tests.

TABLE 5.**Herbicides, Rates and Timings in the 2012 Cotton Research Verification Program by County**

County	Herbicide	Rate oz/acre	Timing
Clay	Dicamba	8 oz	Burndown
	Valor	2 oz	Burndown
	Roundup PMX	22 oz	Burndown
	Reflex	16 oz	Pre-Plant
	Cotoran	16 oz	Pre-Emerge
	Roundup PMX	22 oz	In-Season
	Dual Magnum	16 oz	In-Season
	Roundup PMX	22 oz	In-Season
	Dual Magnum	16 oz	In-Season
Craighead	Roundup	32 oz	Pre-Plant
	Ringside (generic Reflex)	16 oz	Pre-Plant
	Diuron	16 oz	Pre-Plant
	Roundup PMX	26 oz	In-Season
	Me-too-lachlor (generic Dual)	16 oz	In-Season
	Caporal	16 oz	Post Direct
	MSMA	32 oz	Post Direct
	MSMA	32 oz	Post Direct
	Diuron	24 oz	Lay-By
Jefferson	Treflan	24 oz	Pre-Plant
	Cotoran	28 oz	Pre-Emerge
	Roundup	32 oz	In-Season
	Dual Magnum	16 oz	In-Season
	Dual Magnum	16 oz	In-Season
Lee	Dicamba	8 oz	Burndown
	First Shot	0.6 oz	Burndown
	Roundup	28 oz	Burndown
	Gramoxone	32 oz	At Planting
	Diuron	16 oz	Pre-Emerge
	Liberty	29 oz	In-Season
	Warrant	48 oz	In-Season
	Gramoxone	24 oz	Lay-By
	Valor	1 oz	Lay-By
	Liberty	10 oz (directed)	Lay-By
Mississippi	Reflex	16 oz	Pre-Plant
	Liberty	29 oz	At Planting
	Diuron	16 oz	Pre-Emerge
	Roundup	32 oz	In-Season
	Dual Magnum	16 oz	In-Season
	Roundup PMX	11 oz (directed)	Lay-By
	Gramoxone	32 oz	Lay-By
	Valor	2 oz	Lay-By
Phillips	Treflan	24 oz	Pre-Plant
	Prowl	16 oz	Pre-Plant
	Roundup	32 oz	In-Season
	Roundup	32 oz	In-Season
	Dual Magnum	16 oz	In-Season
	Roundup	32 oz	Lay-By
	Valor	2 oz	Lay-By
St. Francis	Dicamba	8 oz	Burndown
	Touchdown	22 oz	Burndown
	Direx	12 oz	Pre-Emerge
	Roundup PMX	22 oz	In-Season
	Warrant	48 oz	In-Season
	Roundup PMX	22 oz	In-Season
	Warrant	48 oz	In-Season

TABLE 6.
Insecticides, Rates and Timings in the 2012 Cotton Research Verification Program by County

County	Insecticide	Rate lbs/oz/acre
Clay	Asana	2 oz
	Acephate	0.3 lb
	Centric	1.5 oz
	Diamond	6 oz
	Acephate	0.5 lb
	Diamond	6 oz
	Bidrin	6 oz
	Bifenthrin	6 oz
	Acephate	1 lb
Craighead	Ammo	1 oz
	Bracket 90	0.3 lb
	Centric	1.5 oz
	Acephate	1 lb
	Bidrin	6 oz
	Brigade	5 oz
	Bidrin	6 oz
	Brigade	6 oz
Jefferson	Centric	1.5 oz
	Diamond	6 oz
	Abba	10 oz
	Bidrin	6 oz
	Bidrin	6 oz
	Bifenthrin	5.7 oz
	Acephate	0.75 lb
	Bifenthrin	5.7 oz
Lee	Radiant	1.5 oz
	Radiant	0.6 oz
	Carbine	2.25 oz
	Centric	2 oz
	Diamond	6 oz
	Acephate	0.5 lb
	Bidrin	6 oz
Mississippi	Orthene	0.75 lb
	Bifenthrin	6 oz
	Bidrin	6 oz
	Abba	12 oz
	Orthene	0.75 lb
Phillips	Orthene	0.5 lb
	Diamond	6 oz
	Bidrin	6 oz
	Diamond	6 oz
	Orthene	1 lb
St. Francis	Radiant	1.5 oz
	Carbine	2 oz
	Centric	2 oz
	Tundra	5 oz
	Epi-Mek	6 oz
	Acephate	0.75 lb

TABLE 7.
Defoliation and Rates in the
2012 Cotton Research Verification Program by County

County	Defoliant	Rates
Clay	Folex	5 oz
	Prep	5 oz
	Dropp	2 oz
	Folex	5 oz
	Prep	36 oz
Craighead	Takedown	3.2 oz
	Bollbuster	16 oz
	Diuron	1.4 oz
	Aim	1 oz
	Bollbuster	48 oz
Jefferson	Dropp	2 oz
	Folex	8 oz
	Prep	8 oz
	Folex	10 oz
	Prep	32 oz
Lee	Folex	5 oz
	Prep	5 oz
	Ginstar	5 oz
	Prep	32 oz
Mississippi	Dropp	2 oz
	Prep	5 oz
	Folex	5 oz
	Folex	5 oz
	Prep	36 oz
Phillips	Folex	5 oz
	Prep	5 oz
	Ginstar	5 oz
	Prep	32 oz
St. Francis	Daze 4 SC	2 oz
	Folex	6 oz
	Daze 4 SC	2.5 oz
	Prep	26 oz



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