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Texas A&M System

*Improving Life Through Science and Technology.*

AgriLIFE EXTENSION
Texas A&M System

*Improving Lives. Improving Texas.*

Texas AgriLife Research and Extension Center at Lubbock
1102 E FM 1294
Lubbock, TX 79403-6603

Please notice that both our agencies are currently undergoing rebranding and now have new identities as shown by the above logos. The following page has a letter from Drs. Smith and Hussey outlining the change. Although our name has changed, our mission to meet Southern High Plains production agriculture needs remains. We thank Lamesa Cotton Growers for their 18 years of support for the AG-CARES Program on behalf of our Texas A&M agencies.

The overall mission of AG-CARES is to develop cotton-based cropping systems utilizing new technologies to optimize cotton profitability for the Southern High Plains. This site provides our scientists the ability to scale up their experiments closer to those conditions that producers encounter on their farms. Dawson County is an extremely important location for our research and extension scientists to conduct work on sandy soils in West Texas. We completed our third year on the 20 acres of subsurface drip irrigation at AG-CARES. The system continues to perform well without serious maintenance problems indicative of good water quality. This research compliments that at the Helms Farms near Halfway on heavier soils. It allows comparison of management systems for crop production with drip irrigation compared to center pivot systems across the region.

In 2007, there were at least 125 cotton varieties being offered with a few more expected in the coming season. Our Lubbock Center cotton program is addressing this issue through large scale variety tests at multiple locations across the Southern High Plains. We are continuing to look at selected varieties to determine their response under low, medium, and high irrigation levels at AG-CARES. So far our results continue to indicate that all varieties do not respond equally across all irrigation levels. Producers who have farms with differing irrigation capacities may want to carefully choose their varieties.

AG-CARES allows us to leverage funds provided by producers groups, commodities, state agencies, and industries to meet and address agricultural needs of producers in the area. Major funding sources include Lamesa Cotton Growers, Texas State Support Committee for Cotton, Cotton Incorporated, Texas Peanut Producers Board, seed and chemical companies, and businesses in Lamesa. Our federal, state and county elected officials continue to provide strong support for the success of AG-CARES.

Lamesa Cotton Growers continue to provide great support, leadership and direction for our programs through their officers: Matt Farmer, Jerry Chapman, Kevin Pepper and John Farris. Dr. Randy Boman, and Tommy Doederlein, and Drs. Wayne Keeling and Dana Porter provide leadership within the Lubbock Texas AgriLife group. Danny Carmichael has served as our site manager for a number of years. We are indebted to all those mentioned above as well as the many staff members of the Lubbock Research and Extension Center and the Dawson County Extension Office who provided support at this site.

Jaroy Moore
Resident Director of Research
Texas AgriLife Research and
Extension Center

Darrell Dromgoole
Regional Program Director -
Texas AgriLife Extension Service
Agriculture and Natural Resources

January 9, 2008

TEXAS A&M AgriLIFE
Teaching • Research • Extension • Service

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# Introducing: New Family Brand for Texas Agricultural Experiment Station and Texas Cooperative Extension

To: Friends of Agriculture

From:


Texas AgriLife R
Edward G. Smith, director
Texas AgriLife Extension Service mhussey@tamu.edu
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Within the Texas A&M University System, the agencies you know as the Texas Agricultural Experiment Station and Texas Cooperative Extension, representing two key components of the land-grant mission, have been long-standing partners with you in research and knowledge transfer to improve the prosperity of our state.

Together, our agencies are now moving forward with a new brand and a new vision for building our capacity to serve production agriculture, agribusinesses and other private enterprises, consumers, communities, and all our clientele in Texas and beyond. We are excited to report that, effective January 1, 2008, our respective agency names became **Texas AgriLife Research** and **Texas AgriLife Extension Service**.

With this re-branding, we look forward to gaining broader recognition and understanding of our work. Building on the foundation that "Agriculture is Life," these names will enable us to better communicate the life-sustaining and life-changing impacts of programs from both agencies. We're confident this re-branding will enhance the impacts of our programs, as they become more widely known, and will strengthen our ability to secure external resources, ultimately increasing our capacity to work with you and to achieve greater advancements in research and extension education.


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As we move forward, we carry the same dedicated commitment to our respective missions, our partners, and the programs and services you are accustomed to receiving. For Texas AgriLife Research, we share an agenda to strengthen production agriculture; develop renewable fuels; foster environmental enhancement; manage water and other natural resources for sustainable growth; assure a safe, healthy, and abundant food supply; and develop cutting-edge technology in molecular science.

For Texas AgriLife Extension Service, the term AgriLife also encompasses the breadth of extension programming beyond agriculture and natural resources, which includes community economic development, family and consumer sciences, and youth development—all areas pertaining to vital aspects of everyday life.

Our agencies remain members of the Texas A&M System, with close ties to the College of Agriculture and Life Sciences at Texas A&M University. The College also has undertaken a new endeavor—re-shaping its recruiting efforts, and developing new marketing and student experiences to defy out-dated perceptions and raise awareness about the diverse and emerging careers in today's agriculture and life sciences.

We began this strategic positioning initiative under our former Vice Chancellor, Dr. Elsa Murano, who is now president of Texas A&M University, and the agencies' re-branding was approved by the Texas A&M System Board of Regents in 2007. We expect the search for a new vice chancellor to begin in the near future.

We are grateful for your past and continued recognition of our research and extension education programs. Our world-renowned researchers and extension experts remain a resource for you and stand ready to assist you to the best of their ability. As always, we welcome any opportunity to learn more about your priorities.

On behalf of the new Texas AgriLife Research and the Texas AgriLife Extension Service, we thank you for your support and wish you a very prosperous New Year.

MH/ES:lam

Enclosure

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# PARTICIPATING STAFF
# TEXAS AGRILIFE RESEARCH
# TEXAS AGRILIFE EXTENSION

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## LAMESA COTTON GROWERS, INC. 2007

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### THE LAMESA COTTON GROWERS WOULD LIKE TO THANK THE FOLLOWING FOR THEIR CONTRIBUTIONS TO THE AG-CARES PROJECT:

Americot Cotton SeedNational Cotton Council
Bayer CropScience/FiberMaxNational Peanut Board
Cotton Inc. - State Support ProgramSam Stevens, Inc.
Dawson County Commissioners Court Sygenta Crop Protection
Dupont Ag ProductsTexas Peanut Producers Board
Monsanto/Delta and Pine Land Co.

TITLE:

Cotton Variety Performance as Affected by Low-Energy Precision Application (LEPA) Irrigation Levels at AG-CARES, Lamesa, TX, 2003 - 2007.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Randy Boman, and John Everitt; Professor, Agricultural Engineer-Irrigation, Extension Agronomist-Cotton, and Sr. Research Associate

MATERIALS AND METHODS:

Plot Size: 4 rows by 500 feet, 3 replications
Planting Date: May 7, 2003; May 3, 2004; May 9, 2005; May 3, 2006, May 16, 2007
Varieties: FiberMax 989 BR, Stoneville 5599 BR, Delta Pine 515 BR
Herbicides: Prowl 3 pt/A PPI
Roundup WeatherMax 22 oz/A POST
Roundup WeatherMax 22 oz/A PDIR
Fertilizer: 130-34-0
Irrigation in-season:

| | 2003 | 2004 | 2005 | 2006 | 2007 | Avg. |
|---|---|---|---|---|---|---|
| Low | 6.6” | 7.2” | 7.5” | 8.0” | 3.0” | 5.9” |
| Medium | 8.8” | 9.6” | 10.0” | 12.6” | 4.0” | 9.0” |
| High | 11.0” | 12.0” | 12.0” | 16.8” | 5.0” | 11.4” |

Harvest Date: October 14, 2003; October 19, 2004; October 17, 2005; October 30, 2006, October 28, 2007.

RESULTS AND DISCUSSION:

A trial was conducted in 2003, 2004, 2005, and 2006 to compare effects of three irrigation levels on lint yield and gross revenue per acre for three cotton varieties. Two longer-season “picker” type varieties [FiberMax (FM) 989 BR and Stoneville (ST) 5599 BR] were compared to a “stripper” variety [Paymaster (PM) 2280BG/RR]. In each year cotton was planted in early May, fertilized according to soil test recommendations and harvested in October. Irrigation treatments included a base irrigation (medium) which reflected the irrigation available at AG-CARES. Low and high water treatments were + or – 25% of the base quantity. Results of these studies are summarized into the 2006 report.

In 2007, PM 2280 BR was replaced with DP 515 BR, which had exhibited good nematode tolerance in previous trials. Cotton lint yields ranged from 1055 to 1650 lbs/A in 2007 (Table 1). When averaged across irrigation levels, ST 5599 BR produced higher yields than FM 898 BR or DP 515 BR. When averaged across varieties, yields increased from the low to medium (base) irrigation level, but were not increased at the high irrigation level. ST 5599 BR produced the lowest lint value, due to shorter staple length. Gross revenues were highest with ST 5599 BR and similar at the medium and high irrigation levels (Table 2).

Five year average yields and gross revenues are summarized in Tables 3 and 4. Higher yields were produced with ST 5599 BR than FM 989 BR at all water levels. When averaged across varieties, similar yields were produced with medium and high irrigation levels. Gross revenues per acre were greater with ST 5599 BR over the five-year period, but higher lint values with FM 989 BR reduced the benefits of higher yields produced with ST 5599 BR.

Table 1. Effects of variety and LEPA irrigation levels on cotton lint yields at AG-CARES, Lamesa, TX, 2007.

| Variety | L | M | H | Avg. |
|---|---|---|---|---|
| | ---------------------------------------------lbs lint/A----------------------------------------- | | | |
| FM 989BR | 1003 | 1307 | 1319 | 1210 B |
| DP 515 BR | 1055 | 1322 | 1299 | 1225 B |
| ST 5599BR | 1337 | 1650 | 1626 | 1538 A |
| | 1132 b | 1426 a | 1415 a | |

Table 2. Effects of variety and LEPA irrigation levels on gross revenues at AG-CARES, Lamesa, TX, 2007.

| Variety | L | M | H | Avg. |
|---|---|---|---|---|
| | ----------------------------------------------$/A---------------------------------------------- | | | |
| FM 989BR | 545 | 750 | 759 | 685 B |
| DP 515 BR | 578 | 759 | 745 | 695 B |
| ST 5599BR | 697 | 931 | 880 | 836 A |
| | 607 b | 814 a | 795 a | |

Table 3. Five year average effect of variety and LEPA irrigation levels on cotton lint yields at AG-CARES, Lamesa, TX, 2003 thru 2007.

| Variety | L | M | H | Avg. |
|---|---|---|---|---|
| | ---------------------------------------------lbs lint/A----------------------------------------- | | | |
| FM 989BR | 882 | 1222 | 1224 | 1109 B |
| ST 5599BR | 1053 | 1360 | 1456 | 1319 A |
| | 968 b | 1291 a | 1340 a | |

Table 4. Five year average effect of variety and LEPA irrigation levels on gross revenues at AG-CARES, Lamesa, TX, 2003 thru 2007.

| Variety | L | M | H | Avg. |
|---|---|---|---|---|
| | ----------------------------------------------$/A---------------------------------------------- | | | |
| FM 989BR | 467 | 660 | 671 | 599 A |
| ST 5599BR | 519 | 687 | 737 | 647 A |
| | 493 b | 673 a | 704 a | |

TITLE:

Gross Margins as Affected by Cotton Variety and Low-Energy Precision Application (LEPA) Irrigation Levels at AG-CARES, Lamesa, TX, 2003 - 2006.

AUTHORS:

Curtis Wilde, Jeff Johnson, Wayne Keeling, and Jim Bordovsky; Graduate Research Assistant, Assistant Professor, Professor, and Agricultural Engineer-Irrigation

MATERIALS AND METHODS:

A trial was conducted in 2003, 2004, 2005, and 2006 to compare effects of three irrigation levels on lint yield and gross revenue per acre for three cotton varieties. Two longer-season “picker” type varieties FiberMax, FM 989BR, and Stoneville, ST 5599BR were compared to a “stripper” variety Paymaster, PM 2280BR. Irrigation treatments included a base irrigation, Medium, which reflected the irrigation capacity available at AG-CARES and was targeted to approximately 80% of evapotranspiration demand in a year assuming average rainfall. Low and high water treatments were approximately -25% and +25% of the base, respectively.

Production functions were estimated for yield and quality attributes of each variety to determine gross margins. The Daily Price Estimation System (DPES) was used to determine lint price based on the estimated production functions for quality attributes. Variable costs were determined by actual cost of production.

RESULTS AND DISCUSSION:

The estimated yield production functions are:

$$Y^{PM\ 2280BR} = \underset{(77.64)}{471.24} + \underset{(51.51)}{325.79} DY04 + \underset{(58.43)}{314.93} DY05 + \underset{(55.30)}{109.47} DY06 + \underset{(25.01)}{96.63} wat - \underset{(2.32)}{6.25} wat^2$$

$$Y^{FM\ 989BR} = \underset{(99.83)}{536.10} + \underset{(66.25)}{151.46} DY04 + \underset{(75.13)}{443.44} DY05 - \underset{(71.11)}{2.46} DY06 + \underset{(32.16)}{109.36} wat - \underset{(2.99)}{4.55} wat^2$$

$$Y^{ST\ 5599BR} = \underset{(94.15)}{806.41} - \underset{(62.47)}{187.44} DY04 + \underset{(70.85)}{255.83} DY05 - \underset{(67.05)}{45.31} DY06 + \underset{(30.32)}{97.6} wat - \underset{(2.82)}{2.32} wat^2$$

where *Y* represents yield and *DY04*, *DY05*, and *DY06* are dummy variables representing the environmental effects of each year from 2004 through 2006. *Wat* is the summation of the seasonal rainfall and irrigation applied less the minimum total seasonal water value. The numbers in parenthesis are standard errors.

Results are shown by average seasonal total water available calculated as the summation of seasonal irrigation and seasonal rainfall. ST 5599BR showed the highest lint yields followed FM 989BR with PM 2280BR having the lowest lint yield across water levels (Figure1). FM 989BR illustrated the highest lint price followed by PM 2280BR and then ST 559BR (Figure 2). When gross margins were looked at ST 5599BR and FM 989BR were similar at lower water levels with ST 5599BR having an advantage at higher water levels. PM 2280BR produced the lowest gross margin (Figure 3). When considering variance and production risk, ST 5599BR had the highest probability of a gross margin greater than $50 and the lowest probability of having a gross margin less than -$50 followed by FM 989BR and PM 2280BR at each water level (Figure 4).

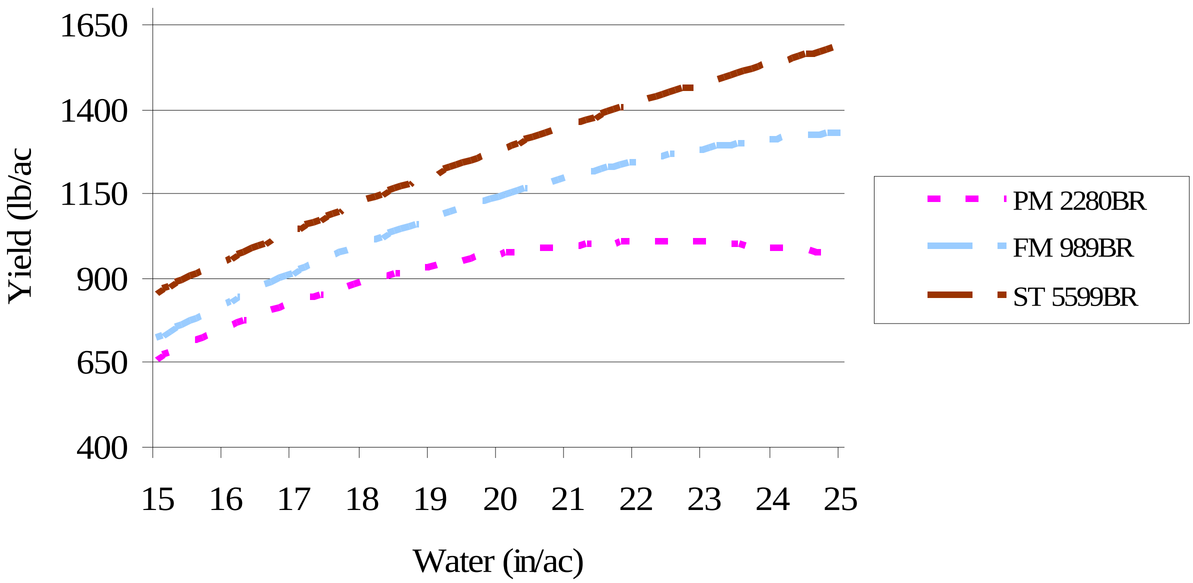



Figure 1. Effects of Water Levels on Cotton Lint Yields.

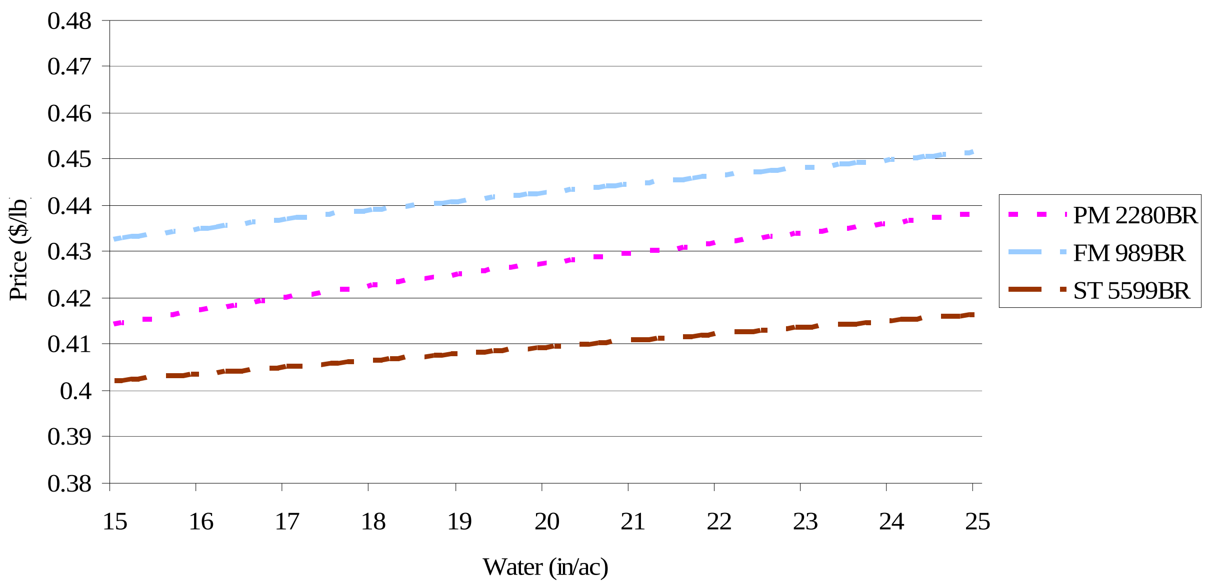



Figure 2. Effects of Water Levels on Cotton Lint Price.

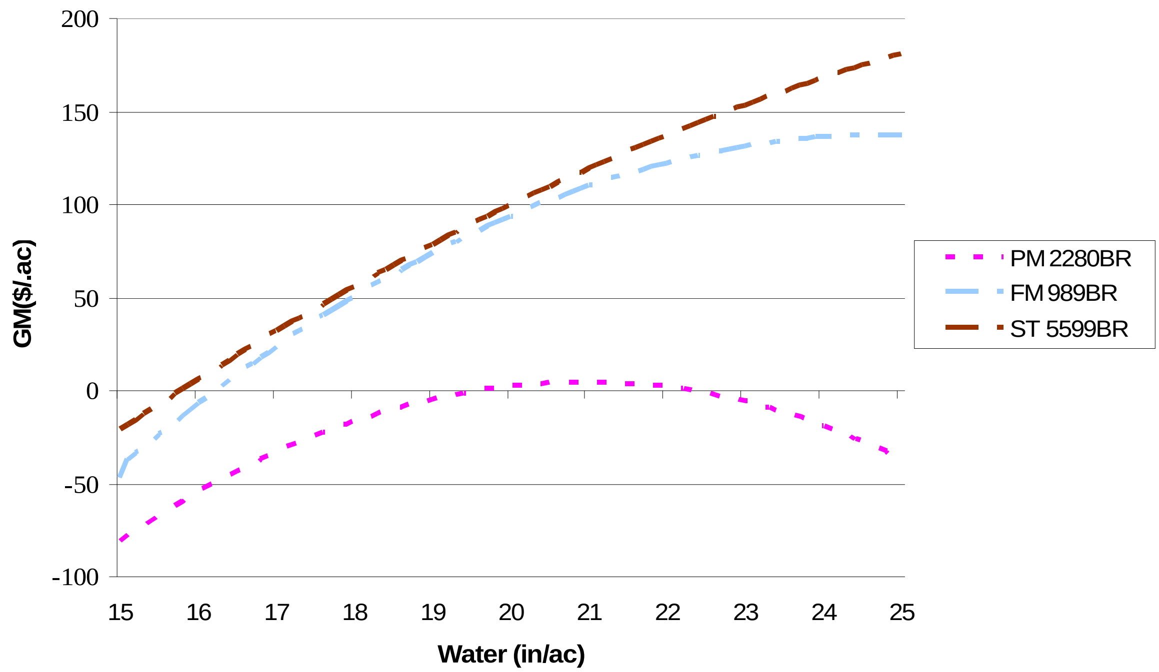



Figure 3. Effects of Water Levels on Gross Margins.

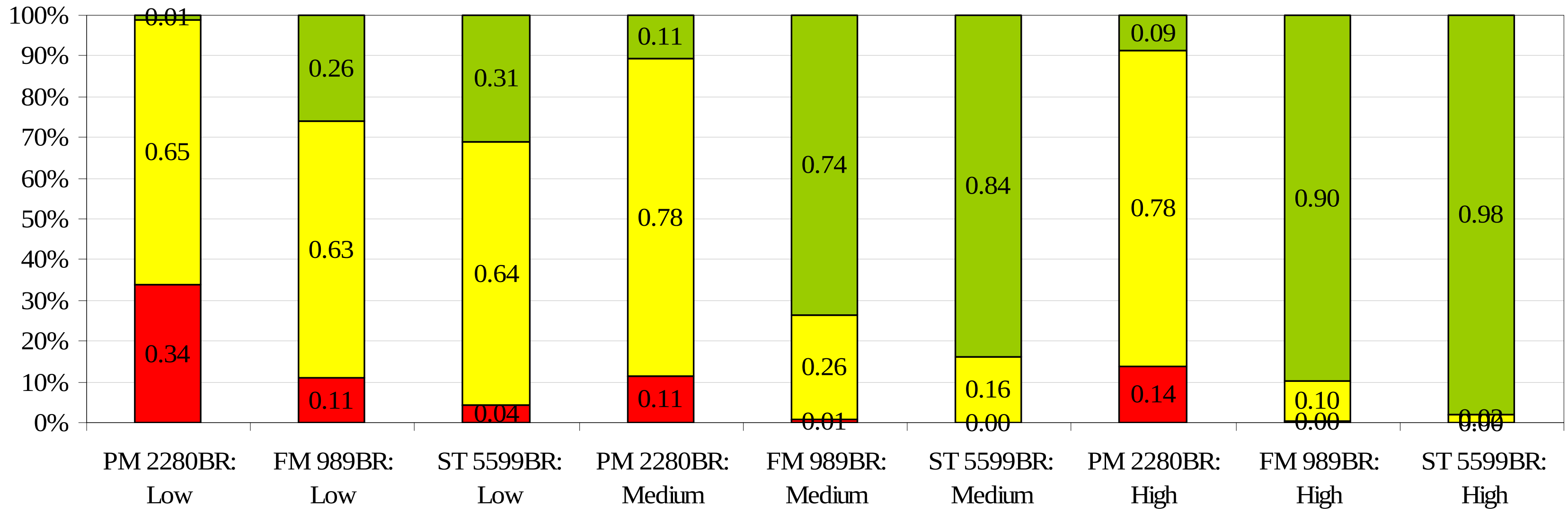



Figure 4. Variety and Irrigation Level Probabilities for Gross Margins less than -$50 and greater than $50.

TITLE:

Gross Margins as Affected by Low-Energy Precision Application (LEPA) Irrigation Scenarios at AG-CARES, Lamesa, TX, 2003 - 2006.

AUTHORS:

Curtis Wilde, Jeff Johnson, Wayne Keeling, and Jim Bordovsky; Graduate Research Assistant, Assistant Professor, Professor, and Agricultural Engineer-Irrigation

MATERIALS AND METHODS:

A trial was conducted in 2003, 2004, 2005, and 2006 to compare effects of three irrigation scenarios on lint yield and gross revenue for ST 5599BR. Production functions were estimated for yield and quality attributes of ST 5599BR to determine gross margins. The Daily Price Estimation System (DPES) was used to determine lint price based on the estimated production functions for quality attributes. Variable costs were determined by actual cost of production.

Three irrigation scenarios were also considered involving a limited irrigation capacity. The first was the BIL which was the medium irrigation level, which reflected the irrigation capacity available at AG-CARES and targeted to approximately 80% of evapotranspiration demand in a year assuming average rainfall, level applied across the entire field. The second was the 1/2IL where one-half of the field was irrigated at the low level, -25% of medium irrigation level, and the other half at the high level, +25% of the medium irrigation level. The third scenario, 1/3IL where the field was split into 1/3's with one third watered at the low level, another third at the medium level, and the last at the high level (Figure 1).

RESULTS AND DISCUSSION:

Irrigating at the 1BIL scenario produced the highest average gross margin per acre. The 1/3I scenario provided higher average gross returns per acre than the 1/2I. These results are shown in table 1. When considering variance and production risk, the BIL scenario had the highest probability of average gross margin per acre greater than $100 and the lowest probability of an average gross margin per acre less than $50 followed by 1/2BIL and 1/3BIL scenarios (Figure 2).

Table 1. Gross Margins for Irrigation Scenarios ($/ac).

| Scenario | BIL | 1/3IL | 1/2IL |
|---|---|---|---|
| Gross Margin | $98.20 | $92.67 | $89.91 |

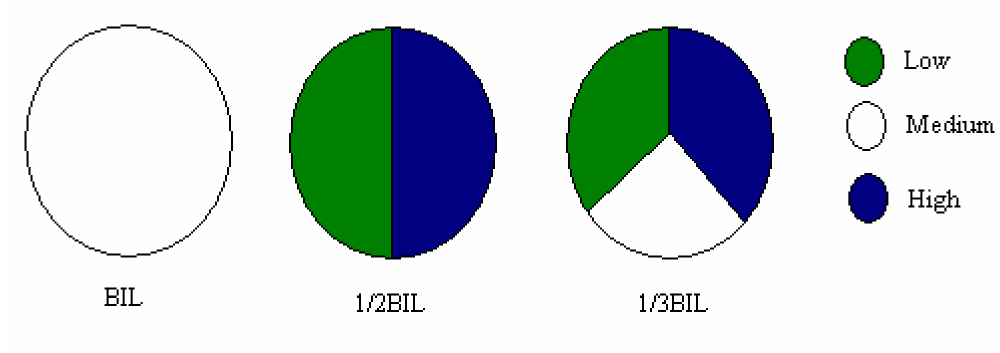



Figure 1. Irrigation Scenarios.

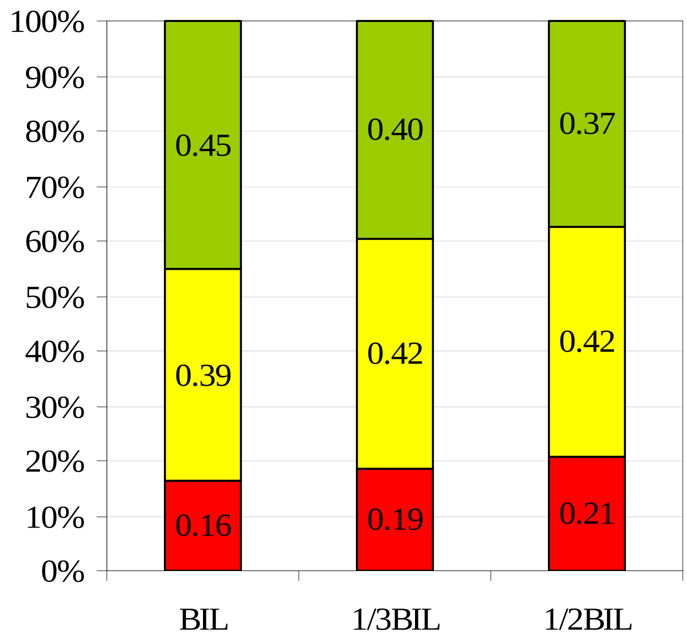



Figure 2. Irrigation Scenario Probabilities for Gross Margins less than $50 and greater than $100.

TITLE:

Cotton Variety Performance as Affected by Low-Energy Precision Application (LEPA) Irrigation Levels at AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Randy Boman and John Everitt; Professor, Agricultural Engineer-Irrigation, Extension Agronomist-Cotton, and Sr. Research Associate

MATERIALS AND METHODS:

| | |
|---|---|
| Plot Size: | 4 rows by 500 feet, 3 replications |
| Planting Date: | May 15 |
| Varieties: | Stoneville 4554 B2RF |
| | FiberMax 9063 B2RF |
| | Americot 1532 B2RF |
| | Delta Pine 143 B2RF |
| Herbicides: | Prowl 3 pt/A PPI |
| | Roundup WeatherMax 22 oz/A POST |
| | Roundup WeatherMax 22 oz/A POST |
| Fertilizer: | 130-34-0 |

Irrigation in-season:

| | Low | Medium | High |
|---|---|---|---|
| Total | 3” | 4” | 5” |

Harvest Date: October 26

RESULTS AND DISCUSSION:

Four Roundup Ready Flex/Bollgard II varieties, which performed well in small and large plot variety trials, were planted under three low-energy precision application (LEPA) irrigation levels in 2006 and again in 2007. Irrigation level is based on pumping capacities of 0.12”, 0.18”, and 0.24”/day. Due to timely rainfall, irrigation applied during the growing season totaled only 3”, 4”, and 5”/A. No irrigation was applied preplant or for crop germination. Cotton lint yields ranged from 949 to 1620 lbs/A (Table 1). When averaged across irrigation levels, similar yields were produced with AMC 1532 B2RF, ST 4554 B2RF, AND DP 143 B2RF. FM 9063 B2RF produced lower yields compared to the other three varieties. When varieties were averaged across irrigation levels, increasing irrigation increased yields from 1131 to 1440 lbs/A. Lint values ranged from 57.43 to 59.07 ¢/lb, with no differences between varieties or irrigation levels (Table 2). Gross revenues ($/A) were calculated by multiplying lint yield x lint value. When averaged across irrigation levels, gross revenues ranged from $694 to $843/A, with differences between varieties (Table 3). Total revenues increased from $658 to $845/A with increasing irrigation. This study will continue in 2008 and further analysis of these results will be conducted by agricultural economists to compare profitability of varieties and irrigation inputs.

Table 1. Effects of B2RF variety and LEPA irrigation levels on cotton lint yields at AG-CARES, Lamesa, TX, 2007.

| | L | M | H | Avg. |
|---|---|---|---|---|
| Variety | ---------------------------------------------lbs/A----------------------------------------- | | | |
| AMC 1532 B2RF | 1218 | 1450 | 1620 | 1430 A |
| ST 4554 B2RF | 1202 | 1352 | 1377 | 1310 AB |
| FM 9063 B2RF | 949 | 1275 | 1315 | 1180 B |
| DP 143 B2RF | 1155 | 1453 | 1447 | 1352 AB |
| | 1131 b | 1382 a | 1440 a | |

Table 2. Effects of B2RF variety and LEPA irrigation levels on lint value at AG-CARES, Lamesa, TX, 2007.

| | L | M | H | Avg. |
|---|---|---|---|---|
| Variety | ----------------------------------------------¢/lb---------------------------------------------- | | | |
| AMC 1532 B2RF | 58.07 | 58.30 | 58.77 | 58.37 A |
| ST 4554 B2RF | 57.43 | 58.50 | 58.86 | 58.23 A |
| FM 9063 B2RF | 58.83 | 59.07 | 58.80 | 58.90 A |
| DP 143 B2RF | 58.43 | 58.20 | 58.46 | 58.36 A |
| | 58.19 a | 58.51 a | 58.72 a | |

Table 3. Effects of B2RF variety and LEPA irrigation levels on gross revenues at AG-CARES, Lamesa, TX, 2007.

| | L | M | H | Avg. |
|---|---|---|---|---|
| Variety | ---------------------------------------------$/A--------------------------------------------- | | | |
| AMC 1532 B2RF | 707 | 844 | 950 | 843 A |
| ST 4554 B2RF | 691 | 790 | 810 | 764 AB |
| FM 9063 B2RF | 558 | 752 | 772 | 694 B |
| DP 143 B2RF | 675 | 846 | 846 | 789 AB |
| | 658 b | 808 a | 845 a | |

TITLE:

Replicated Roundup Ready, Bollgard II/Roundup Ready Flex “Stacked Gene”, and Widestrike/Roundup Ready Flex "Stacked Gene" Cotton Variety Demonstration Under LEPA Irrigation, AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Jeff Wyatt, Tommy Doederlein, Randy Boman, Mark Kelley, Aaron Alexander, and Rhett Overman; EA-ANR Dawson County, EA-IPM Dawson/Lynn Counties, Extension Agronomist-Cotton, Extension Program Specialist-Cotton, Graduate Student Assistant, and Extension Assistant-Cotton.

MATERIALS AND METHODS:

| | |
|---|---|
| Varieties: | All-Tex Apex B2RF, All-Tex Arid B2RF, Americot 1622B2RF, Americot 1664B2RF, Deltapine 104B2RF, Deltapine 121RF, Deltapine 143B2RF, FiberMax 9058F, FiberMax 9063B2F, FiberMax 9068F, FiberMax 9150F, FiberMax 9180B2F, PhytoGen 485WRF, Stoneville 4427B2RF, Stoneville 4554B2RF, and Stoneville 5327B2RF |
| Experimental design: | Randomized complete block with 3 replications |
| Seeding rate: | 4.0 seeds/row-ft in 40-inch row spacing (John Deere MaxEmerge vacuum planter) |
| Plot size: | 4 rows by variable length due to circular pivot rows (348-872 ft long). |
| Planting date: | 15-May |
| Weed management: | Roundup Weather Max was applied at 22 oz/acre on 13-June and on 16-July with 22 oz/acre Class Act. |
| Irrigation: | LEPA irrigation |

| | | | |
|---|---|---|---|
| April: | 0.00" | May: | 0.00" |
| June: | 0.00" | July: | 0.88" |
| August: | 0.00" | September: | 2.84" |

Total irrigation: 4.52"

Rainfall:

| | | | |
|---|---|---|---|
| April: | 0.60" | July: | 2.40" |
| May: | 6.90" | August: | 2.30" |
| June: | 4.74" | September: | 1.50" |

Total rainfall: 18.50"
Total moisture: 23.02"

| | |
|---|---|
| Insecticides: | Temik was applied at in-furrow at planting at 3.5 lbs/acre. Aphids were controlled at this site with an application of Centric. This location is in an active boll weevil eradication zone, but no applications were made by the Texas Boll Weevil Eradication Program. |
| Fertilizer management: | Preplant fertilizer consisting of 10-34-0 was applied at a rate of 100 lb/acre in April. An additional 90 lbs N/acre using 32-0-0 was fertigated in 3 - 30 lb N/acre increments during the growing season. |

| | |
|---|---|
| Harvest aids: | Harvest aids included Bolld (6-lb ethephon/gal) at 21.0 oz/acre with Def at 12 oz/acre ground applied 20-October. A follow-up application of Gramoxone Inteon at 16 oz/acre plus NIS was applied via ground rig on 30-October. |
| Harvest: | Plots were harvested on 6-November using a commercial John Deere 7445 with field cleaner. Harvested 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 University Research and Extension Center at Lubbock to determine gin turnouts. |
| Fiber analysis: | Lint samples were submitted to the International Textile Center 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 $2.45 per cwt. of bur cotton and seed value/acre was based on $150/ton. Ginning costs did not include checkoff. |

RESULTS AND DISCUSSION:

Significant differences were noted for most parameters measured (Tables 1 and 2). Lint turnout ranged from 32.9% for Americot 1622B2RF, to 38.1% for Deltapine 121RF. Bur cotton yields varied from a low of 3641 lb/acre (All Tex Arid B2RF) to a high of 4285 lb/acre (Deltapine 143B2RF). This resulted in lint yields from 1224 lb/acre to 1585 lb/acre for All Tex Arid B2RF and Stoneville 4554B2RF, respectively. A test average 1414 lb/acre lint yield was observed at this location. Lint loan values ranged from a low of $0.5627/lb, for PhytoGen 485WRF, to a high of $0.5945/lb for FiberMax 9180B2F. Lint value ranged from a high of $912.39 (Stoneville 4554B2RF) to a low of $707.08 (All Tex Arid B2RF). After adding lint and seed values and subtracting ginning and seed/technology costs, net values per acre averaged $821.37/acre. A high of $909.46 for Stoneville 4554B2RF, and a low of $713.34 for All Tex Arid B2RF was observed, a difference of $196.12/acre. Micronaire ranged from a low of 4.1 for Deltapine 143B2RF to a high of 4.7 for Deltapine 121RF, Stoneville 4554B2RF, and PhytoGen 485WRF. Staple length averaged 36.5 across all varieties with a low of 35.2 (All-Tex Arid B2RF) and a high of 38.1 (Americot 1622B2RF). Percent uniformity ranged from a low of 80.2 (Deltapine 143B2RF) to a high of 83.2 (Americot 1622B2RF). A test average strength of 29.4 g/tex was observed and Americot 1664B2RF produced the lowest value (27.2), and FiberMax 9068F produced the highest (31.9). Elongation percent ranged from a high of 10.1% (Stoneville 4554B2RF) to a low of 7.2% (FiberMax 9150F). These data indicate that substantial differences can be obtained in terms of gross value/acre due to variety and technology selection. It should be noted that no inclement weather was encountered at this location prior to harvest. Additional multi-site and multi-year applied research is needed to evaluate varieties across a series of environments.

ACKNOWLEDGMENTS:

Appreciation is expressed to Danny Carmichael, Research Associate - AG-CARES, Lamesa; John Everitt, Research Associate - Texas AgriLife Research, Lubbock for their assistance with this project; Dr. John Gannaway - Texas AgriLife Research, for his cooperation, and Texas Department of

Agruculture - Food and Fiber Research for HVI Testing at Texas Tech University - International Textile Center.

DISCLAIMER CLAUSE:

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1.  Harvest results from the replicated irrigated cotton variety demonstration, AG-CARES, Lamesa, TX, 2007

| 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 4554B2RF | 38.0 | 50.2 | 4171 | 1585 | 2094 | 0.5757 | 912.39 | 157.03 | 1069.42 | 102.19 | 57.77 | 909.46 | a |
| Deltapine 121RF | 38.1 | 48.7 | 4018 | 1530 | 1954 | 0.5863 | 897.21 | 146.58 | 1043.79 | 98.43 | 49.77 | 895.59 | ab |
| Stoneville 5327B2RF | 37.0 | 48.9 | 4117 | 1524 | 2014 | 0.5842 | 890.40 | 151.08 | 1041.49 | 100.88 | 57.77 | 882.84 | abc |
| Stoneville 4427B2RF | 35.9 | 50.1 | 4244 | 1526 | 2127 | 0.5662 | 863.21 | 159.51 | 1022.72 | 103.98 | 57.77 | 860.97 | abcd |
| FiberMax 9180B2F | 35.4 | 49.4 | 4043 | 1434 | 2004 | 0.5945 | 852.47 | 150.27 | 1002.74 | 99.05 | 56.31 | 847.39 | abcd |
| Deltapine 104B2RF | 33.7 | 52.0 | 4195 | 1413 | 2182 | 0.5875 | 829.85 | 163.67 | 993.52 | 102.77 | 51.67 | 839.08 | abcde |
| Deltapine 143B2RF | 33.5 | 48.8 | 4285 | 1434 | 2093 | 0.5847 | 838.71 | 156.97 | 995.68 | 104.98 | 59.02 | 831.68 | abcde |
| Americot 1664B2RF | 36.3 | 50.9 | 3876 | 1405 | 1972 | 0.5837 | 820.26 | 147.88 | 968.13 | 94.97 | 53.58 | 819.59 | abcde |
| FiberMax 9068F | 36.4 | 50.5 | 3792 | 1380 | 1917 | 0.5918 | 816.72 | 143.80 | 960.51 | 92.91 | 50.29 | 817.32 | abcde |
| FiberMax 9058F | 36.6 | 48.6 | 3856 | 1412 | 1876 | 0.5802 | 818.85 | 140.73 | 959.58 | 94.49 | 47.90 | 817.19 | abcde |
| All Tex Apex B2RF | 37.4 | 50.9 | 3699 | 1381 | 1882 | 0.5835 | 806.22 | 141.20 | 947.42 | 90.61 | 53.97 | 802.84 | bcdef |
| FiberMax 9150F | 36.9 | 47.7 | 3739 | 1379 | 1785 | 0.5770 | 795.81 | 133.85 | 929.66 | 91.61 | 47.90 | 790.15 | cdef |
| PhytoGen 485WRF | 35.0 | 50.0 | 4025 | 1405 | 2011 | 0.5627 | 790.64 | 150.83 | 941.47 | 98.60 | 54.77 | 788.09 | def |
| Americot 1622B2RF | 32.9 | 51.2 | 3961 | 1305 | 2031 | 0.5913 | 771.72 | 152.30 | 924.01 | 97.06 | 53.58 | 773.38 | def |
| FiberMax 9063B2F | 35.3 | 49.8 | 3646 | 1290 | 1819 | 0.5912 | 762.84 | 136.46 | 899.29 | 89.33 | 56.87 | 753.10 | ef |
| All Tex Arid B2RF | 33.6 | 53.4 | 3641 | 1224 | 1944 | 0.5778 | 707.08 | 145.82 | 852.90 | 89.20 | 50.36 | 713.34 | f |
| Test average | 35.7 | 50.1 | 3957 | 1414 | 1982 | 0.5824 | 823.40 | 148.62 | 972.02 | 96.94 | 53.71 | 821.37 | |
| CV, % | 2.7 | 2.6 | 5.3 | 5.9 | 6.4 | 1.7 | 6.2 | 6.4 | 6.2 | 5.3 | -- | 6.8 | |
| OSL | <0.0001 | 0.0011 | 0.0035 | 0.0008 | 0.0287 | 0.0155 | 0.0029 | 0.0287 | 0.0096 | 0.0035 | -- | 0.0122 | |
| LSD | 1.6 | 2.1 | 348 | 140 | 213 | 0.0163 | 85.34 | 15.98 | 100.55 | 8.52 | -- | 93.18 | |

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:

$2.45/cwt ginning cost.

$150/ton for seed.

Value for lint based on CCC loan value from grab samples and ITC HVI results.

Table 2. HVI fiber property results from the replicated irrigated cotton variety demonstration, AG-CARES, Lamesa, TX, 2007

| Entry | Micronaire | Staple | Uniformity | Strength | Elongation | Leaf | Rd | +b | Color grade | |
|---|---|---|---|---|---|---|---|---|---|---|
| | units | 32nds inches | % | g/tex | % | grade | reflectance | yellowness | color 1 | color 2 |
| Stoneville 4554B2RF | 4.7 | 35.6 | 82.2 | 28.9 | 10.1 | 2.7 | 79.3 | 9.0 | 2.3 | 1 |
| PhytoGen 485WRF | 4.7 | 35.6 | 83.0 | 30.1 | 9.8 | 3.3 | 77.9 | 9.0 | 2.3 | 1 |
| Deltapine 104B2RF | 4.2 | 35.8 | 82.6 | 30.7 | 9.4 | 2.7 | 80.5 | 8.6 | 2.0 | 1 |
| Deltapine 121RF | 4.7 | 35.5 | 82.9 | 29.3 | 9.2 | 1.7 | 80.4 | 9.0 | 1.7 | 1 |
| Americot 1664B2RF | 4.4 | 36.5 | 82.1 | 27.2 | 9.0 | 2.0 | 80.4 | 8.6 | 2.0 | 1 |
| All Tex Apex B2RF | 4.4 | 36.1 | 80.9 | 27.5 | 8.9 | 1.0 | 80.8 | 8.9 | 1.7 | 1 |
| Stoneville 5327B2RF | 4.6 | 36.7 | 81.8 | 29.7 | 8.6 | 1.7 | 80.4 | 9.1 | 1.7 | 1 |
| Americot 1622B2RF | 4.2 | 38.1 | 83.2 | 27.6 | 8.5 | 1.3 | 81.8 | 8.4 | 1.7 | 1 |
| All Tex Arid B2RF | 4.3 | 35.2 | 80.9 | 29.5 | 8.4 | 2.3 | 80.3 | 8.1 | 2.3 | 1 |
| Deltapine 143B2RF | 4.1 | 37.2 | 80.2 | 28.5 | 8.4 | 2.3 | 81.3 | 8.4 | 1.7 | 1 |
| Stoneville 4427B2RF | 4.5 | 35.5 | 82.2 | 28.0 | 8.1 | 3.0 | 79.9 | 8.9 | 1.7 | 1 |
| FiberMax 9068F | 4.4 | 37.5 | 82.5 | 31.9 | 7.9 | 2.0 | 82.4 | 8.0 | 1.7 | 1 |
| FiberMax 9180B2F | 4.3 | 37.0 | 82.7 | 30.8 | 7.9 | 1.3 | 82.3 | 8.1 | 1.7 | 1 |
| FiberMax 9063B2F | 4.4 | 37.8 | 82.0 | 30.3 | 7.6 | 1.0 | 82.2 | 7.8 | 1.7 | 1 |
| FiberMax 9058F | 4.1 | 37.4 | 81.8 | 28.1 | 7.4 | 2.0 | 82.3 | 8.1 | 1.3 | 1 |
| FiberMax 9150F | 4.2 | 36.6 | 81.4 | 31.5 | 7.2 | 3.0 | 80.2 | 7.8 | 3.0 | 1 |
| Test average | 4.4 | 36.5 | 82.0 | 29.4 | 8.5 | 2.1 | 80.8 | 8.5 | 1.9 | 1.0 |
| CV, % | 2.9 | 1.9 | 1.1 | 3.9 | 3.6 | 42.8 | 1.2 | 2.2 | -- | -- |
| OSL | <0.0001 | <0.0001 | 0.0085 | 0.0001 | <0.0001 | 0.0535 | <0.0001 | <0.0001 | -- | -- |
| LSD | 0.2 | 1.1 | 1.4 | 1.9 | 0.5 | 1.5 | 1.6 | 0.3 | -- | -- |

CV - coefficient of variation.
OSL - observed significance level, or probability of a greater F value.
LSD - least significant difference at the 0.05 level.

TITLE:

Long-Term Effects of Tillage on Cotton Yield at AG-CARES, Lamesa, TX, 2007

AUTHORS:

Wayne Keeling and John Everitt; Professor and Sr. Research Associate

MATERIALS AND METHODS:

| | |
|---|---|
| Plot size: | 16 rows by 250 feet, 3 replications |
| Planting date: | May 22 |
| Variety: | ST 4554 B2RF |
| Herbicides: | Prowl – 3pt/a PDI |
| | Roundup WeatherMax 2202/APOST |
| | Roundup WeatherMax 2202/APOST |
| | Fertilizer – 130-34-0 |
| Irrigation: | In season – 4" |
| Harvest Date: | November 5 |

RESULTS AND DISCUSSION:

This study was initiated in 1998 to compare the long-term effects on cotton yield of conventional tillage and no-tillage. Each year, the conventional tillage blocks were moldboard plowed or chiseled, preplant herbicide was incorporated, listed, rod-weeded and cultivated during the growing season. The no-till blocks were planted in a rye cover crop and have not had any tillage operation performed since the study began. Excellent yields were produced in 2007 with no yield difference between the two systems. Early-season cotton growth was much better in the no-till cover crop plots, but the conventional till plots made good growth during the summer and produced similar yields. Cotton lint yields, loan values, and gross returns per acre are summarized in Table 1.

Table 1. Cotton yield as affected by tillage as AG-CARES, Lamesa, TX 2007.

| Tillage | Yield (lb/ac) | Loan Value ($) | Gross Return ($/ac) |
|---|---|---|---|
| Conventional | 1473 a | 57.48 a | 846 a |
| No-till (cover crop | 1485 a | 57.45 | 853a |

TITLE:

Effect of Cover Crops on Root-knot Nematode and Cotton at AG-CARES, Lamesa, TX, 2005 – 2007.

AUTHORS:

Terry Wheeler, Victor Mendoza, Evan Arnold, and Daniel Archer, Professor, and technicians.

MATERIALS AND METHODS:

| | |
|---|---|
| Cover crops: | none, oats, wheat, and rye, planted on November 17, (2006) |
| Temik 15G rates: | 0, 3.5, and 5 lbs/acre |
| Plot size: | 40 ft., 2-rows wide, 6-8 replications |
| Planting date: | May 15 |
| Sampling dates: | Plant roots on June 18, soil samples on July 9 |
| Harvest | November 6 |
| Variety | Fibermax 989BR |

OBJECTIVES:

To determine if root-knot nematodes cause more damage to cotton in the presence of a winter cover (which is a host for the nematode) compared to the absence of a winter cover.

RESULTS:

Yield was consistently better (10% increase in yield) in the presence of Temik 15G at 3.5 or 5 lbs/acre compared to its absence (Table 1). The winter cover did not result in any change in yield (yield averaged 1,433 to 1,438 lbs of lint/acre depending on cover treatment).

Root galling at 35 days after planting was affected by rate of Temik 15G (Table 1), but not by cover crop (data not shown). When Temik 15G was not used, then root-knot nematode population density was similar across all winter cover treatments. However, when Temik 15G was 3.5 or 5 lbs/acre, then root-knot nematode density was higher for wheat and rye than for no cover (Table 2). The oat cover plots were killed by the cold in 2006, and poorly established in 2007, so the oat plots resembled in part the no cover plots.

Table 1. Affect of Temik 15G on cotton yield, root galling, and root-knot nematode density, averaged over four cover treatments and three years.

| Temik 15G lbs/acre | Lbs of lint per acre | Galls/ plant | Root-knot nematodes per 500 $cm^3$ soil |
|---|---|---|---|
| 0 | 1,343 b | 8.6 a | 10,245 a |
| 3.5 | 1,489 a | 3.9 b | 5,955 b |
| 5 | 1,479 a | 3.3 b | 6,697 b |

Table 2. Affect of cover crop when Temik 15G was applied at planting at 3.5 or 5 lbs/acre, on root-knot nematode midseason population density, averaged over three years.

| Cover | Root-knot nematodes per 500 $cm^3$ soil | Lbs of lint per acre | Galls/ Plant |
|---|---|---|---|
| None | 2,078 c | 1,495 | 2.5 |
| Oats | 5,457 bc | 1,478 | 4.0 |
| Rye | 7,339 b | 1,476 | 4.6 |
| Wheat | 10,814 a | 1,486 | 3.3 |

TITLE:

Large Plot Nematicide Trials to Compare Temik 15G versus Seed Treatments. at AG-CARES, Lamesa, TX., 2007.iu

AUTHORS:

Terry Wheeler and Evan Arnold, Professor and Technician

MATERIALS AND METHODS:

| | |
|---|---|
| Test area: | Conventional tilled wedge, spans 3 – 7, 16-row plots the length of wedge |
| Treatments: | Cruiser; Aeris + Trilex; Avicta Complete Pack; Temik 15G at 3.5 lbs/acre; Temik 15G + Trilex (fungicide seed treatment). |
| Variety: | Fibermax 9063B2RF |
| Planted: | May 22 |
| Sampling: | Roots on June 20 and soil on July 13 |
| Harvest: | November 7 |

RESULTS:

Plots that were treated with Temik 15G had significantly fewer root galls than for seed treatments (Cruiser, Aeris, or Avicta, Table 1). This indicates that nematode protection was much better with Temik 15G than with the seed treated nematicides. However, there were no differences in yield (Table 1).

Table 1. Affect of nematicide treatments on yield and nematode parameters.

| Treatment | Lbs of lint per acre | Galls/ plant | Root-knot nematodes per 500 $cm^3$ soil. |
|---|---|---|---|
| Cruiser | 1,492 | 3.5 a | 960 |
| Aeris + Trilex | 1,555 | 3.5 a | 560 |
| Avicta Complete Pack | 1,574 | 3.7 a | 1,240 |
| Temik 15G | 1,568 | 0.4 b | 240 |
| Temik 15G + Trilex | 1,433 | 0.4 b | 2,360 |

TITLE:

Effect of Nematicide Seed Treatments and Temik 15G At-Planting and as a Side-dress at AG-CARES, Lamesa, TX., 2007.

AUTHORS:

Terry Wheeler, Daniel Archer, Evan Arnold, and Victor Mendoza, Professor and technicians.

MATERIALS AND METHODS:

| | |
|---|---|
| Variety: | Fibermax 9063 B2RF |
| Plot size: | 34.5 ft. long, 2-rows wide, with 5 replications |
| Treatments: | None; Aeris + Trilex + Temik 15G (5 lbs/a) at plant; Aeris + Trilex + Temik 15G (5 lbs/a) at pinhead size square; Aeris + Trilex + Temik 15G at plant and at pinhead size square; Avicta complete pack (Avicta) + Temik 15G (5 lbs/a) at plant; Avicta + Temik 15G (5 lbs/a) at pinhead size square; Avicta + Temik 15G applied at plant and at pinhead size square. |
| Planting: | May 14 |
| Root sampling: | June 19 |
| Side dress application: | July 11 |
| Harvest: | October 25 |

RESULTS:

Yield was highest for seed treated with Aeris and Temik 15G applied at plant and at pinhead size square (Table 1). Yield was significantly lower for seed treated with Aeris + Trilex or Avicta complete pack, when Temik 15G was omitted at planting (1,262 lbs of lint/a versus 1,542 lbs of lint/acre with Temik 15G). Temik 15G at planting significantly reduced root galls (13.1 versus 2.0 with Temik 15G) and root-knot nematode population density (3,187 root-knot/500 $cm^3$ soil versus 1,601 root-knot/500 $cm^3$ soil with Temik 15G) for seed treated with either Aeris or Avicta. The side dress Temik 15G significantly reduce root-knot nematodes at midseason for seed treated with either Aeris or Avicta (2,981 root-knot/500 $cm^3$ soil versus 1,807 root-knot/500 $cm^3$ soil with Temik 15G side dress).

Table 1. Affect of Temik 15G applied at plant or side dress at pinhead size square to seed treated with Avicta complete pack or Aeris + Trilex.

| Seed Treatment | Temik 15G at planting (lbs/a) | Temik15G side dress (lbs/a) | Lbs of lint/acre | Galls/ root | Root-knot/ 500 $cm^3$ soil |
|---|---|---|---|---|---|
| none | 0 | 0 | 1,319 c | 11.5 a | 2,088 |
| Aeris + Trilex | 0 | 5 | 1,315 c | 10.2 ab | 1,840 |
| Avicta Complete Pack | 0 | 5 | 1,269 c | 14.1 a | 1,464 |
| Aeris + Trilex | 5 | 0 | 1,547 ab | 4.4 b | 2,064 |
| Avicta Complete Pack | 5 | 0 | 1,477 bc | 1.5 c | 1,896 |
| Aeris + Trilex | 5 | 5 | 1,699 a | 1.0 c | 1,028 |
| Avicta Complete Pack | 5 | 5 | 1,445 bc | 1.2 c | 696 |

TITLE:

Cotton Variety Performance as Affected by Sub-surface Drip Irrigation (SDI) Levels at AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Randy Boman, and John Everitt; Professor, Agricultural Engineer-Irrigation, Extension Agronomist-Cotton, and Sr. Research Associate

MATERIALS AND METHODS:

| | |
|---|---|
| Plot Size: | 4 rows by 400 feet, 3 replications |
| Planting Date: | May 15, 2006 |
| Varieties: | Stoneville 4554 B2RF |
| | FiberMax 9063 B2RF |
| | Americot 1532 B2RF |
| | Delta Pine 143 B2RF |
| Planting Populations: | 32, 56, and 80 thousand seed/A |
| Herbicides: | Caparol 1 qt/A PRE |
| | Roundup WeatherMax 22 oz/A POST |
| | Roundup WeatherMax 22 oz/A POST |
| Fertilizer: | 120-50-0 |
| Plant Growth Regulators: | Pentia 16 oz/A – Early Bloom |

Irrigation in-season:

| | Medium | High |
|---|---|---|
| In-season | 6.7” | 10.0” |

Harvest Date: November 4-5, 2007

RESULTS AND DISCUSSION:

The same four varieties evaluated under LEPA were grown under two levels of SDI irrigation, with irrigation level based on maximum pumping capacities of 0.17” and 0.25”/day. Total irrigation applied for the season was 6.7” and 10”/A for the two treatments. Cotton was planted on May 22 and harvested November 7. When averaged across irrigation treatments, highest yields were produced with AMC 1532 B2RF and ST 4554 B2RF. FM 9063 B2RF and DP 143 B2RF produced lower yields (Table 1). When averaged across varieties, similar yields were produced with both irrigation levels, with the additional water not resulting in increased yield. Cotton lint values ranged from 55.77 to 59.07 ¢/Lb with no differences due to variety or irrigation level (Table 2). Gross revenues ranged from $894 to $1091/A, with differences between varieties, but not between irrigation level (Table 3). FM 9063 B2RF and ST 4554 B2RF were also planted at three populations (32, 52, and 80 thousand seed/A) within each irrigation treatment. Final stands counts for the three seedling rates were 28, 46, and 66 thousand plants/A. Cotton lint yield, lint values, or gross revenues were not affected by population (Tables 4,5, and 6). These results indicate that planting as few as 32,000 seed/A (~2.5 seeds/Ft of row) can produce yields equal to higher seeding rates, resulting in significant seed cost savings.

Table 1. Effects of variety and SDI levels on lint yields at AG-CARES, Lamesa, TX, 2006.

| Variety | M | H | Avg. |
|---|---|---|---|
| | ---lbs/A--- | | |
| AMC 1532 B2RF | 1758 | 1730 | 1744 AB |
| ST 4554 B2RF | 1849 | 1816 | 1832 A |
| FM 9063 B2RF | 1702 | 1716 | 1709 B |
| DP 143 B2RF | 1603 | 1612 | 1608 B |
| | 1719 a | 1728 a | |

Table 2. Effects of variety and SDI levels on lint values at AG-CARES, Lamesa, TX, 2006.

| Variety | M | H | Avg. |
|---|---|---|---|
| | ---¢/lb--- | | |
| AMC 1532 B2RF | 58.73 | 58.60 | 58.33 AB |
| ST 4554 B2RF | 58.86 | 59.07 | 58.31 AB |
| FM 9063 B2RF | 59.27 | 59.00 | 59.04 A |
| DP 143 B2RF | 58.00 | 55.77 | 57.18 B |
| | 58.87 a | 58.10 a | |

Table 3. Effects of variety and SDI levels on gross revenues at AG-CARES, Lamesa, TX, 2006.

| Variety | M | H | Avg. |
|---|---|---|---|
| | ---$/A--- | | |
| AMC 1532 B2RF | 1015 | 1028 | 1021 AB |
| ST 4554 B2RF | 1065 | 1091 | 1078 A |
| FM 9063 B2RF | 1016 | 1004 | 1010 B |
| DP 143 B2RF | 934 | 894 | 914 B |
| | 1008 a | 1004 a | |

Table 4. Effects of variety, population, and SDI levels on lint yields at AG-CARES, Lamesa, TX, 2006.

| Variety | 32 (28K) | 52 (46K) | 80 (66K) |
|---|---|---|---|
| | ---lbs/A--- | | |
| FM 9063 B2RF Med Irrigation | 1610 | 1716 | 1567 |
| FM 9063 B2RF High Irrigation | 1717 | 1702 | 1593 |
| ST 4554 B2RF Med Irrigation | 1798 | 1816 | 1834 |
| ST 4554 B2RF High Irrigation | 1848 | 1849 | 1788 |
| | 1743 a | 1771 a | 1696 a |

Table 5. Effects of variety, population, and SDI levels on lint values at AG-CARES, Lamesa, TX, 2006.

| Variety | 32 (28K) | 52 (46K) | 80 (66K) |
|---|---|---|---|
| | -------------------------¢/lb------------------------------ | | |
| FM 9063 B2RF Med Irrigation | 58.43 | 59.27 | 56.40 |
| FM 9063 B2RF High Irrigation | 57.67 | 59.00 | 58.23 |
| ST 4554 B2RF Med Irrigation | 58.87 | 58.67 | 58.57 |
| ST 4554 B2RF High Irrigation | 59.00 | 59.07 | 58.07 |
| | 58.49 a | 59.00 a | 57.81 a |

Table 6. Effects of variety, population, and SDI levels on gross revenues at AG-CARES, Lamesa, TX, 2006.

| Variety | 32 (28K) | 52 (46K) | 80 (66K) |
|---|---|---|---|
| | ------------------------------$/A-------------------------------- | | |
| FM 9063 B2RF Med Irrigation | 942 | 1016 | 882 |
| FM 9063 B2RF High Irrigation | 989 | 1004 | 928 |
| ST 4554 B2RF Med Irrigation | 1058 | 1065 | 1074 |
| ST 4554 B2RF High Irrigation | 1089 | 1091 | 1038 |
| | 1019 a | 1044 a | 980 a |

TITLE:

Effects of Irrigation and Plant Density on Yield, Quality and Yield Components at AG-CARES in Lamesa, TX, 2006

AUTHORS:

Lu Feng, Craig Bednarz, Cory Mills, Wayne Keeling, Jim Bordovsky, Randy Boman, John Everett.  Texas Tech University and Texas AgriLife Research and Extension

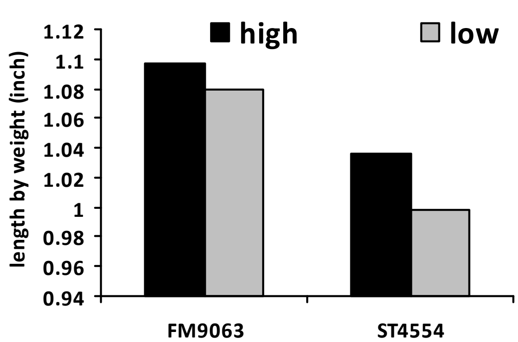
OBJECTIVES:

The objectives of this study are to determine how yield, quality and within-boll yield components are changed with various levels of irrigation and plant densities.

MATERIALS AND METHODS:

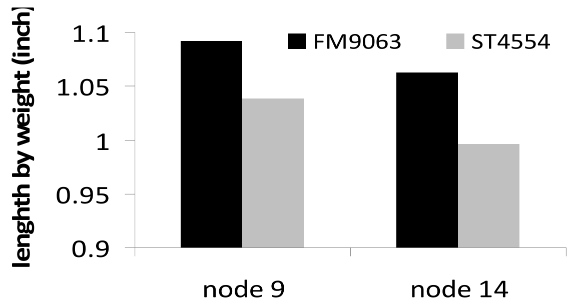
Studies were conducted in 2006 and 2007 under subsurface drip irrigation. The experiment in the field was a completely randomized block design with treatments arranged as a sub-sub split plot. Two sub surface irrigation treatments (0.25 inches per day maximum and 0.17 inches per day maximum) were the main plot, three plant densities (32,000, 52,000 and 80,000 plants/acre) and two cultivars (ST.4554 BII/RF and FM 9063 BII/RF) respectively comprised the sub plot and the sub-sub plot. Before machine harvest, plants from each plot were hand harvested from 10 feet of a row, and mapped according to node and fruiting position to look at the within-plant boll distribution. Also, first position bolls from node 9 and node 14 were picked and  mapped with seed position. Various parameters including locule number, seed number, mote number, seed mass, seed surface area and fiber properties for each seed position were determined.

RESULTS:



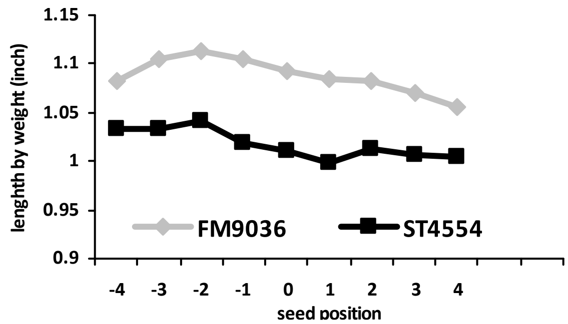

P=0.0579

Increased irrigation resulted in longer fiber length for both varieties and the variety of ST4554 was more sensitive to irrigation.



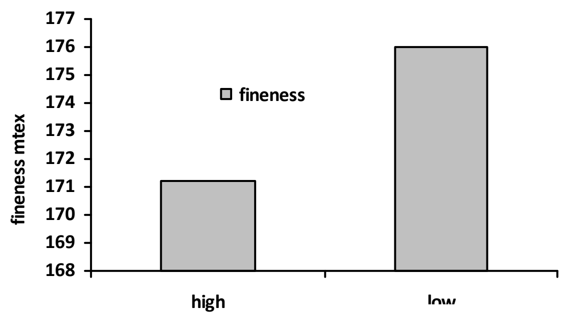

P=0.0078

Fiber length from node 9 is longer than that from node 14.



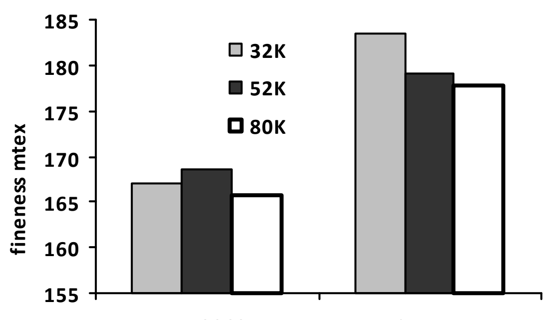

P=0.0002

In the locule, fiber length associated with seed position tends to bear longer fiber near the pedicel.



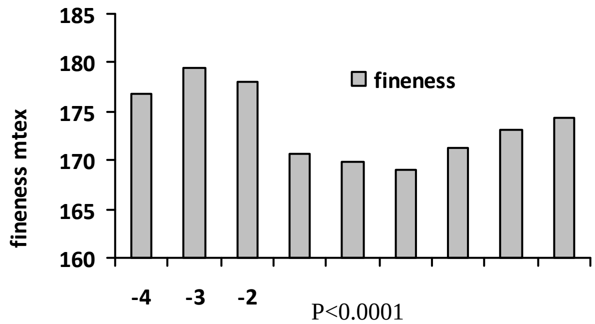

P=0.0004

Plants growing under high irrigation produced finer fiber than did plants growing under low irrigation.



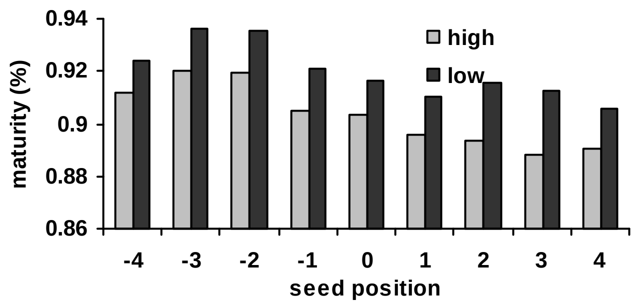

P=0.043

Plant density influenced fiber fineness but was dependent on cotton variety.



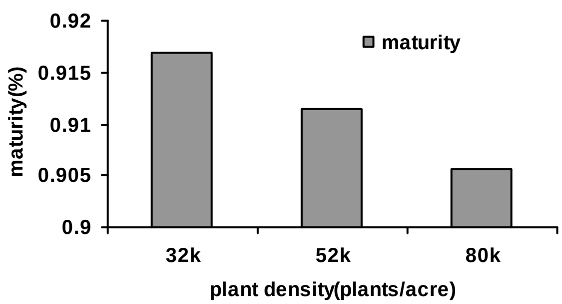

P<0.0001

Fiber fineness in a locule varied with seed position. The central part of the locule resulted in finer fiber.




P=0.0071

The high irrigation rate reduced fiber maturity which may be due to longer vegetative growth caused by high irrigation.
Seeds close to the pedicel within a locule possess more mature fiber. This could be the result of a source to sink relationship.




P=0.039

Higher plant density resulted in less mature fiber in comparison with lower plant density.

Not all of our results are discussed here.

TITLE:

Effect of Cover Crop and Duration of Nitrogen Fertigation in Subsurface Drip Irrigated Cotton at AG-CARES, Lamesa, TX, 2007

AUTHORS:

Kevin Bronson, Adi Malapati, Meg Parajulee, Dana Porter, and Jason Nusz.

METHODS AND PROCEDURES:

| | |
|---|---|
| Experimental Design: | Randomized complete block with 6 replications |
| Plot Size: | 53.3 ft wide (16, 40 inch row) and 823 ft long. |
| Experimental area: | 6 ac |
| Soil Type | Amarillo sandy loam |
| Variety | Americot 1532B2RF |
| Soil Sampling | 1/6 acre grid |
| N fertilizer rate: | Starter rate of 50 lb N/ac and 40 lb $P_20_5$/ac<br>80 lb N/ ac during the season as fertigation |
| Duration of fertigation: | 21 or 30 days from the start of fertigation (June 24th) |
| Date | May 22$^{nd}$ |
| Harvest Date | November 9$^{th}$ |

RESULTS AND DISCUSSION:

Irrigated cotton (*Gossypium hirsutum* L.) is grown on half of the cotton area in the Southern High Plains (SHP) of Texas  Water and nitrogen (N) are the major constraints to cotton production in this region. Subsurface drip irrigation (SDI) systems can convey water to the root zone with a greater efficiency than other systems including furrow irrigation and LEPA systems, and have been increasingly adopted in the Southern High Plains. Recent estimates of cropland in SDI in the SHP exceed 250,000 ac.

Cotton fields are most susceptible to erosion when there is no vegetative ground cover or plant residue on the soil surface. A cover crop like rye can provide a vegetative cover during spring wherein there is no crop to alleviate force of falling raindrops, which otherwise would detach soil particles and make them prone to erosion. It also slows the rate of runoff, thus improving moisture infiltration into the soil. Effect of cover crop during spring and Nutrient management in SDI systems has not received as much attention as water management. The time and rate of N fertilizer injection in SDI cotton need optimizing in order to prevent N loss through leaching and denitrification.

Cover crop was planted in the experimental field immediately after cotton harvest in half of the plot area (8 rows), whereas the other half was exposed to conventional tillage. Fine-tuning the timing of N fertigation can result in improved N use efficiency and profit in cotton. The rate of N fertilizer application was based on the pre-plant soil nitrate test, in which the soil nitrate was subtracted from 150 N/ac (N supply target for 2 ½ bale yield goal) to give an N fertilizer recommendation of 130 lb N/ac, of which 80 lb N was injected through the drip system for 21 or 30 days starting at first square.

Seed cotton was harvested with a John Deere 7445 four-row stripper harvester equipped with an AgriPlan yield monitoring system. Lint yields were significantly affected by the presence of cover crop, Lint yield averaged 1375 and 1256 lb/ac for conventional tillage and conservation tillage, respectively. Lower yields under conservation tillage can be attributed to low residual soil nitrate. There was no significant difference in the lint yield for the duration of fertilization treatments, but lint yields were higher for 21 days duration of fertigation compared to 30 days. This indicates that plants can efficiently use N fertilizer and yield high if applied within three weeks of first square in sub surface drip irrigation system.

Table 1. Early August Biomass, NDVI, and lint yield as affected by duration of N fertigation under SDI, Lamesa, TX 2006

| Treatment | Preplant 0-24 in. Soil Nitrate (lb/ac) | Biomass (lb/ac) | NDVI† | Lint lb/ac |
|---|---|---|---|---|
| 21 Days | 15 a | 2133 a | 0.7217 a | 1332 a |
| 30 Days | 10 b | 2293 a | 0.7238 a | 1300 a |

Table 2. Early August Biomass, NDVI, and lint yield as affected by covercrop under SDI, Lamesa, TX 2006

| Treatment | Preplant 0-24 in. Soil Nitrate (lb/ac) | Biomass (lb/ac) | NDVI† | Lint lb/ac |
|---|---|---|---|---|
| Conventional tillage | 22 a | 2610 a | 0.7230 a | 1375 a |
| Cover crop with Conservation | 3 b | 1816 b | 0.7226 a | 1256 b |

‡Means in all columns followed by the same letter are not significantly different at the 0.05
±Green vegetative index (GVI) = R820 / R550
†NDVI = ((R820-R550)/(R820+R550))
R = percent reflectance at λ (nm)

TITLE:

Effect of Cover Crop on Arthropod Population Dynamics in Subsurface Drip Irrigated Cotton at AGCARES, Lamesa, TX, 2007

AUTHORS:

Megha Parajulee, Stanley Carroll, Abhilash Balachandran, and Kevin Bronson

METHODS AND PROCEDURES:

| | |
|---|---|
| Experimental design: | Randomized complete block with 6 replications |
| Plot size: | 53.3 ft wide (16, 40-inch rows) and 823 ft long |
| Experimental area: | 6 acre |
| Soil type: | Amarillo sandy loam |
| Variety: | Americot 1532B2RF |
| Soil sampling: | 1/6 acre grid |
| N fertilizer rate: | Starter rate of 50 lb N/ac and 40 lb $P_20_5$/ac<br>80 lb N/ ac during the season as fertigation |
| Duration of fertigation: | 21 or 30 days from the start of fertigation (June 24) |
| Planting date: | May 22 |

A small grain cover crop was planted in the experimental field immediately after cotton harvest in 2006 in half of each experimental plot area (8 rows X 823 ft), whereas the other half was exposed to conventional tillage. There were three blocks each for conservation and conventional tillage treatments that served as replications. Arthropods were sampled weekly from plant emergence until crop cut-out. Arthropods sampled included thrips, cotton fleahoppers, cotton aphids, and arthropod predators (lady beetles, big-eyed bugs, assassin bugs, hooded beetles, and spiders). Thrips were sampled by visually inspecting 20 plants per plot for the first three weeks of plant growth (pre-squaring cotton). When cotton began squaring, a "Keep It Simple (KIS)" blower sampler was used to collect arthropods from the upper foliage of the plants from 200 row-ft section per plot. Samples were processed in the laboratory. When plants were at about 5-6 leaf stage (June 28), 10 randomly selected plants per plot were measured for plant height and total leaf area per plant.

RESULTS AND DISCUSSION:

Thrips activity was very low at the AGCARES research farm in 2007 and the density remained mostly at or below detectable levels throughout the growing season. Plant growth pattern, as indicated by plant height, was similar between conservation and conventional tillage plots. However, total leaf area per plant was higher in conventional tillage plots compared with that in conservation tillage plots (Table 1). We would have expected similar leaf area or maybe a slightly greater leaf area and taller plants in conservation tillage plots than in conventional tillage plots because plants in conservation tillage plots are better protected from sand blasting and wind damage during the early seedling stage. Our repeat work in 2008 and 2009 will address this issue with more data.

Cotton fleahopper density was also much below treatment threshold of 15-25 fleahoppers per 100 plants. There was no apparent difference in fleahopper densities between the two tillage treatments (Table 2). Arthropod predator densities varied between the two treatments through the season, but the average seasonal densities were similar between the two tillage treatments (Table 3).

Table 1. Leaf area ($cm^2$/plant) and plant height (inch) of pre-flower cotton in conventional and conservation tillage plots, Lamesa, TX, June 28, 2007.

| Treatment | Leaf area (sq. cm) | Plant height (inches) |
|---|---|---|
| Conventional tillage | 103.7 a | 14.6 a |
| Cover crop with Conservation tillage | 78.3 b | 13.8 a |

Table 2. Cotton fleahopper abundance (numbers/200 row-ft cotton foliage sampled by a KIS sampler) in conventional and conservation tillage plots, Lamesa, TX, 2007.

| Treatment | July 5 | July 12 | July 19 | July 25 | August 7 | August 15 |
|---|---|---|---|---|---|---|
| Conventional tillage | 8 a | 10 a | 10 a | 8 a | 1 a | 0 a |
| Cover crop with Conservation tillage | 6 a | 8 a | 9 a | 6 a | 3 a | 0 a |

Table 3. Average arthropod predators (all predators combined/200 row-ft foliage sampling by a KIS sampler) in conventional and conservation tillage plots, Lamesa, TX, 2007.

| Treatment | July 5 | July 12 | July 19 | July 25 | August 7 | August 15 | Average |
|---|---|---|---|---|---|---|---|
| Conventional tillage | 38 a | 9 a | 17 b | 27 a | 86 a | 28 a | 34.2 a |
| Cover crop with Conservation tillage | 24 b | 11 a | 27 a | 27 a | 71 b | 24 a | 30.7 a |

TITLE:

Comparing Subsurface Drip Irrigation Tape Lateral Spacing at AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Dana Porter, Jim Bordovsky, Wayne Keeling, Randy Boman, John Everitt, and Jim Barber

MATERIALS AND METHODS:

A major consideration in design of subsurface drip irrigation systems is drip tape lateral spacing. Common practice in the Texas Southern High Plains is to place the tape under alternate furrows. There is some concern however that in absence of timely rainfall at planting there is risk of poor germination and stand establishment, especially in sandy soils. Also, where salinity is a concern, narrower tape spacing is believed to help mitigate salinity affects in the root zone. Narrower tape spacing includes more tape and more connections, and therefore greater initial installation cost.

In order to address questions of drip lateral spacing and related soil and crop responses, the SDI system at AG-CARES was designed and installed to include tape laterals spaced on 40" centers (under each row) and 80" centers (under alternate furrows). These represent most SDI system installations in the region, with 80" spacing being the most common configuration.

Cotton grown over SDI in alternating zones with 40" and 80" tape spacing was managed similarly to target the same overall crop inputs (irrigation depths, fertilizer, etc.). Plots from these zones were harvested; seed cotton from each plot area was weighed, ginned, and sampled for quality parameters. Results are summarized in Table 1.

RESULTS AND DISCUSSION:

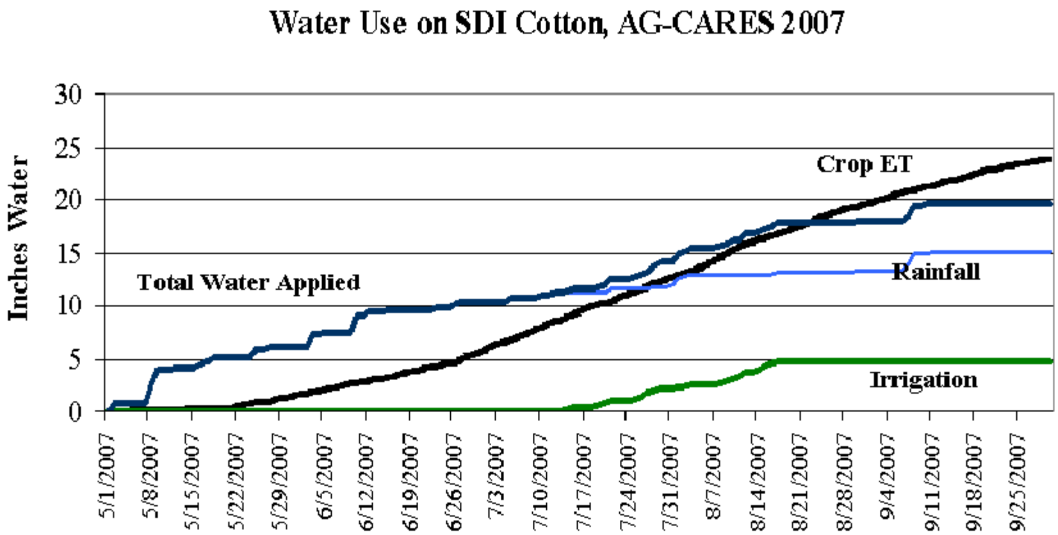
Mean yield from cotton plots over 40" tape lateral spacing was 1,615 lb/ac (range of 1,450 – 1,741 lb/ac); mean yield from cotton plots over 80" tape lateral spacing was 1,644 lb/ac (range of 1,552 – 1,697 lb/ac). Mean return from cotton plots over 40" tape lateral spacing was $944/ac; mean return from cotton plots over 80" tape lateral spacing was $966/ac. Results were more variable for the plots over the narrower spacing.

Table 1. Summary of results from cotton grown on 40" and 80" tape lateral spacing.

| Tape Spacing | Yield (lb/ac) | Loan ($) | Return ($/ac) |
|---|---|---|---|
| 80" | 1644 a | 0.588 a | 966 a |
| 40" | 1615 a | 0.585 a | 944 a |

Total water applied through irrigation and rainfall for these zones from planting through mid-August was 17.4 inches, compared to 16.74 inches calculated crop Evapotranspiration (ET). ET estimates were obtained from the Texas High Plains ET Network, http://txhighplainset.tamu.edu, based upon meteorological data from a weather station located on site. Pre-plant rainfall was sufficient to ensure crop germination and stand establishment. With over 15 inches of in-season rainfall in addition to irrigation, applied water was never less than approximately 80% of crop ET demand. This lack of drought stress, especially early in the season, apparently negated any differences in germination and crop response to the different SDI tape lateral spacing configurations. Cumulative crop water demand (ET), rainfall, irrigation and total water applications (rainfall + irrigation) are summarized in Figure 1.

Figure 1. Cumulative crop water demand (ET), rainfall, irrigation and total water applications.



TITLE:

Application of Nematicides through Drip Irrigation for Nematode Control at AG-CARES, Lamesa, TX., 2007.

AUTHORS:

Terry Wheeler, Daniel Archer, Victor Mendoza, and Evan Arnold, Professor and technicians.

MATERIALS AND METHODS:

| | |
|---|---|
| Variety: | Fibermax 9063B2RF |
| Plot size: | 2-rows, 34.5 ft. long, with 2 border rows between plots, and 4 replications/treatment. |
| Treatments: | None; Temik 15G at 5 lbs/acre; Temik 15G at planting + Vydate CLV injected at 8.5 oz/acre at pinhead size square and again 2 wks later; Temik 15G at planting + Vydate CLV applied over the top at pinhead size square (8.5 oz/acre) + 2 wks later; fumigation before planting with Telone EC at 5 gal/acre + Temik 15G at planting at 3.5 lbs/acre. |
| Prefumigation sampling: | March 21 |
| Fumigation: | April 13 |
| Postfumigation sampling: | May 4 |
| Planting: | May 15 |
| Sampling for gall ratings: | June 19 |
| Application of Vydate: | July 3, 5, and 6 |
| Soil sampling for nematodes: | July 9 |
| Harvest: | November 7 |

RESULTS:

Before fumigation, soil samples were taken at the 6, 12, and 24-inch depths in the bed and dry furrow, and at 6 and 12 inches over the drip tape for the plots to be fumigated and plots that would later receive Temik 15G at planting (8 plots total were sampled). The average number of root-knot nematode juveniles before fumigation averaged 340/500 $cm^3$ soil in the Temik 15G plots and 760/500 $cm^3$ soil in the fumigated plots. After fumigation, the average number of root-knot juveniles in the fumigated plots was 185/500 $cm^3$ soil, which was a reduction of 76%. However, there was also a reduction in population density in the Temik 15G plots (not treated with Temik 15G at this point) of 37%. So, the number of root-knot nematodes was similar between the fumigated and nonfumigated plots after fumigation, but the decline in nematode population density was about twice as much in the fumigated plots. So fumigation was at least partially successful.

All nematicide treatments yielded better than the untreated check (Table 1) and the fumigated plots also had higher yields than plots that were treated with Vydate CLV over-the-top. There were more galls/plant in the untreated check than with any of the nematicide treatments (Table 1). There were no differences in root-knot nematode population density at midseason between any of the treatments (Table 1).

Table 1. Effect of nematicide treatments, including injection through drip, on cotton.

| Treatment | Lbs of lint per acre | Galls/ plant | Root-knot/ 500 $cm^3$ soil |
|---|---|---|---|
| None | 1,491 c | 3.55 a | 9,310 |
| Temik 15G (5 lbs/a) | 1,737 ab | 0.075 b | 3,510 |
| Temik 15G (5 lbs/a) + Vydate drip* | 1,682 ab | 0.35 b | 7,270 |
| Temik 15G (5 lbs/a) + Vydate OT* | 1,600 bc | 0.125 b | 3,720 |
| Telone EC (5 gal/a) + Temik 15G (3 lbs/a) | 1,842 a | 0.925 b | 7,740 |

*Vydate CLV was injected twice at 8.5 oz/acre through drip or over-the-top (OT).

TITLE:

Replicated Dryland Cotton Systems Variety Demonstration, AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Jeff Wyatt, Tommy Doederlein, Randy Boman, Mark Kelley, Aaron Alexander, and Rhett Overman; EA-ANR Dawson County, EA-IPM Dawson/Lynn Counties, Extension Agronomist-Cotton, Extension Program Specialist-Cotton, Graduate Student Assistant, and Extension Assistant-Cotton.

MATERIALS AND METHODS:

| | |
|---|---|
| Varieties: | Americot 4207, AFD 5064F, Deltapine 147RF, Deltapine 167RF, Deltapine 491, Deltapine 565, FiberMax 9058F, FiberMax 9068F, FiberMax 958, and Stoneville 5283RF. |
| Experimental design: | Randomized complete block with 3 replications |
| Seeding rate: | 3.4 seeds/row-ft in solid planted 40-inch row spacing (John Deere MaxEmerge vacuum planter) |
| Plot size: | 4 rows by length of field (~850 ft) |
| Planting date: | May 23 |
| Weed management: | Trifluralin was applied preplant incorporated at 1.25 pt/acre across all varieties in April. Roundup Original MAX was applied over-the-top to Roundup Ready varieties in June at 22 oz/acre with 22 oz/acre Class Act followed by a second application in August at 22 oz/acre with 22 oz/acre Class Act. All conventional varieties were cultivated one time in June and hand hoeing of conventional varieties was conducted in July followed by a spot spraying of Roundup Original Max for control of puncturevine. |

Rainfall:

| | | | |
|---|---|---|---|
| April: | 0.60" | July: | 2.40" |
| May: | 6.90" | August: | 2.30" |
| June: | 4.74" | September: | 1.50" |

Total rainfall: 18.50"

| | |
|---|---|
| Insecticides: | Temik was applied at planting at 3.5 lbs/acre. This location is in an active boll weevil eradication zone, but no applications were made by the Texas Boll Weevil Eradication Program. |
| Fertilizer management: | 30 lb/acre 32-0-0 was applied twice in April |
| Harvest aids: | Harvest aids included 1.0 pt/acre Boll'd with 1.0 pt/acre Def on 10-October followed by Gramoxone Inteon at 16 oz/acre on 20-October. |
| Harvest: | Plots were harvested on 13-November using a commercial John Deere 7445 with field cleaner. Harvested 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 University Research and Extension Center at Lubbock to determine gin turnouts. |
| Fiber analysis: | Lint samples were submitted to the International Textile Center 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 $2.45 per cwt. of bur cotton and seed value/acre was based on $150/ton. Ginning costs did not include checkoff. |
| Seed and technology fees: | Seed and technology fees were determined by variety on a per acre basis using the manufacturer's suggested retail price for seed and appropriate technology fees for Roundup Ready based on 3.4 seeds/row-ft. These costs are included in the Systems cost column in Table 1. |
| System specific costs: | System specific costs included; for conventional system, $7.50/acre for cultivation, $20.00/acre for hoeing, and $8.00/acre for spot spraying Roundup Weather Max ($35.50/acre total) and for Roundup Ready Flex system, $19.00/acre total for 2 applications of 22 oz/a Roundup Original Max with AMS (includes 2 application costs of $3.50 each). These costs are included in the Systems cost in Table 1. |

RESULTS AND DISCUSSION:

Weed pressure at this site would generally be considered light to medium and consisted mainly of silverleaf nightshade, pigweed, morningglory spp. "escapes", and puncturevine. Significant differences were noted for most parameters measured (Tables 1 and 2). Lint turnout ranged from 32.0% for Americot 4207 to 36.5% for Deltapine 491. Lint yields varied from a low of 685 lb/acre (Americot 4207) to a high of 985 lb/acre (FiberMax 9068F). Lint loan values ranged from a low of $0.5490/lb to a high of $0.5908/lb for AFD 5064F and FiberMax 9068F, respectively. After adding lint and seed value, total value/acre ranged from a low of $465.61 for AFD 5064F, to a high of $687.91 for FiberMax 9068F. When subtracting ginning costs and systems costs, the net value/acre among varieties ranged from a high of $555.04 (FiberMax 9068F) to a low of $372.78 (Americot 4207), a difference of $182.26. Micronaire values ranged from a low of 4.3 for Deltapine 147RF to a high of 4.9 for Deltapine 565. Staple length averaged 63.0 across all varieties with a low of 34.6 (AFD 5064F) and a high of 37.1 (Deltapine 167RF). No significant differences were observed among varieties for percent uniformity or strength. Percent uniformity ranged from a low of 80.8 (Americot 4207) to a high of 82.3 (Deltapine 167RF), and strength ranged from 26.5 g/tex to 30.3 g/tex for Americot 4207 and FiberMax 9068F, respectively. Significant differences were observed among varieties for percent elongation (7.9 avg), leaf grade (2.0 avg), Rd or reflectance (80.6 avg) and +b or yellowness (7.8). These data indicate that substantial differences can be obtained in terms of net value/acre due to variety and technology selection. Furthermore, as was observed at this location, varieties with Roundup Ready Flex technologies can result in similar net values/acre when compared to conventional varieties due in most part to costs associated with control of weed escapes by hoeing. It should be noted that no inclement weather was encountered at this location prior to harvest. Additional multi-site and multi-year applied research is needed to evaluate varieties across a series of environments.

ACKNOWLEDGMENTS:

Appreciation is expressed to Danny Carmichael, Research Associate - AG-CARES, Lamesa; John Everitt, Research Associate - Texas AgriLife Research, Lubbock for their assistance with this project; Dr. John Gannaway - Texas AgriLife Research, for his cooperation, and Texas Department of Agruculture - Food and Fiber Research for HVI Testing at Texas Tech University - International Textile Center.

DISCLAIMER CLAUSE:

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1. Harvest results from the replicated dryland cotton systems variety demonstration, AG-CARES, Lamesa, TX, 2007.

| Entry | Lint turnout | Seed turnout | Bur cotton yield | Lint yield | Seed yield | Lint loan value | Lint value | Seed value | Total value | Ginning cost | Systems cost | Net value | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | -------- % -------- | | ------------- lb/acre ------------- | | | $/lb | ------------------------------------------ $/acre ------------------------------------------ | | | | | | |
| FiberMax 9068F | 33.7 | 48.5 | 2919 | 985 | 1416 | 0.5908 | 581.66 | 106.25 | 687.91 | 71.52 | 61.35 | 555.04 | a |
| FiberMax 958 | 35.6 | 47.7 | 2754 | 981 | 1314 | 0.5812 | 570.21 | 98.53 | 668.74 | 67.48 | 49.81 | 551.45 | a |
| Deltapine 167RF | 32.9 | 48.8 | 2935 | 966 | 1433 | 0.5858 | 565.72 | 107.51 | 673.22 | 71.92 | 60.91 | 540.40 | ab |
| FiberMax 9058F | 34.7 | 47.2 | 2809 | 973 | 1326 | 0.5820 | 566.28 | 99.41 | 665.69 | 68.81 | 59.34 | 537.55 | ab |
| Stoneville 5283RF | 33.9 | 47.3 | 2902 | 984 | 1372 | 0.5732 | 563.80 | 102.87 | 666.68 | 71.10 | 60.57 | 535.01 | ab |
| Deltapine 147RF | 34.3 | 47.4 | 2813 | 966 | 1333 | 0.5792 | 559.73 | 99.99 | 659.72 | 68.91 | 60.91 | 529.90 | ab |
| Deltapine 491 | 36.5 | 46.4 | 2482 | 905 | 1151 | 0.5822 | 527.33 | 86.37 | 613.71 | 60.81 | 57.68 | 495.22 | bc |
| Deltapine 565 | 34.7 | 47.3 | 2533 | 878 | 1198 | 0.5690 | 498.97 | 89.85 | 588.82 | 62.04 | 57.68 | 469.09 | c |
| AFD 5064F | 33.4 | 50.3 | 2304 | 770 | 1160 | 0.5490 | 423.22 | 86.98 | 510.20 | 56.45 | 56.51 | 397.24 | d |
| Americot 4207 | 32.0 | 49.6 | 2140 | 685 | 1061 | 0.5650 | 386.01 | 79.61 | 465.61 | 52.43 | 40.40 | 372.78 | d |
| Test average | 34.2 | 48.1 | 2659 | 909 | 1276 | 0.5757 | 524.29 | 95.74 | 620.03 | 65.15 | 56.52 | 498.37 | |
| CV, % | 3.3 | 2.1 | 5.4 | 5.4 | 5.4 | 2.2 | 5.7 | 5.4 | 5.6 | 5.4 | -- | 6.3 | |
| OSL | 0.0061 | 0.0036 | <0.0001 | <0.0001 | <0.0001 | 0.0311 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | -- | <0.0001 | |
| LSD | 1.9 | 1.7 | 245 | 84 | 118 | 0.0217 | 51.08 | 8.85 | 59.33 | 6.00 | -- | 53.70 | |

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:
$2.45/cwt ginning cost.
$150/ton for seed.
Value for lint based on CCC loan value from grab samples and ITC HVI results.

Table 2. HVI fiber property results from the replicated dryland cotton systems variety demonstration, AG-CARES, Lamesa, TX, 2007

| Entry | Micronaire | Staple | Uniformity | Strength | Elongation | Leaf | Rd | +b | Color grade | |
|---|---|---|---|---|---|---|---|---|---|---|
| | units | 32nds inches | % | g/tex | % | grade | reflectance | yellowness | color 1 | color 2 |
| Americot 4207 | 4.4 | 35.2 | 80.8 | 26.5 | 8.3 | 2.7 | 80.5 | 8.1 | 2.0 | 1.0 |
| AFD 5064F | 4.7 | 34.6 | 81.6 | 27.6 | 8.3 | 3.3 | 79.7 | 7.3 | 3.0 | 1.0 |
| Deltapine 147RF | 4.3 | 36.7 | 81.1 | 26.6 | 7.3 | 2.3 | 80.1 | 7.7 | 2.3 | 1.0 |
| Deltapine 167RF | 4.6 | 37.1 | 82.3 | 27.5 | 7.9 | 1.3 | 81.3 | 7.8 | 2.3 | 1.0 |
| Deltapine 491 | 4.6 | 36.3 | 80.9 | 28.0 | 7.8 | 1.3 | 79.7 | 8.2 | 2.3 | 1.0 |
| Deltapine 565 | 4.9 | 35.7 | 81.0 | 28.1 | 8.1 | 1.3 | 80.7 | 7.8 | 2.3 | 1.0 |
| FiberMax 9058F | 4.4 | 36.5 | 81.0 | 27.0 | 7.3 | 2.0 | 80.8 | 7.5 | 2.3 | 1.0 |
| FiberMax 9068F | 4.5 | 36.8 | 81.9 | 30.3 | 7.5 | 1.3 | 81.7 | 7.7 | 2.0 | 1.0 |
| FiberMax 958 | 4.7 | 35.6 | 82.2 | 28.2 | 7.2 | 1.7 | 81.7 | 7.6 | 2.0 | 1.0 |
| Stoneville 5283RF | 4.6 | 35.2 | 82.0 | 29.0 | 8.8 | 2.3 | 79.4 | 8.5 | 2.3 | 1.0 |
| Test average | 4.6 | 36.0 | 81.5 | 27.9 | 7.9 | 2.0 | 80.6 | 7.8 | 2.3 | 1.0 |
| CV, % | 3.0 | 1.8 | 1.1 | 5.4 | 3.8 | 29.2 | 1.0 | 3.0 | -- | -- |
| OSL | 0.0030 | 0.0019 | 0.3145 | 0.1534 | <0.0001 | 0.0038 | 0.0137 | 0.0003 | -- | -- |
| LSD | 0.2 | 1.1 | NS | NS | 0.5 | 1.0 | 1.3 | 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 at the 0.05 level.

TITLE:

Replicated Dryland Cotton Seeding Rate and Planting Pattern Demonstration, AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Jeff Wyatt, Tommy Doederlein, Randy Boman, Mark Kelley, Aaron Alexander, and Rhett Overman; EA-ANR Dawson County, EA-IPM Dawson/Lynn Counties, Extension Agronomist-Cotton, Extension Program Specialist-Cotton, Graduate Student Assistant, and Extension Assistant-Cotton.

Materials and Methods:

| | |
|---|---|
| Variety: | FM9058F |
| Experimental design: | Randomized complete block with 3 replications |
| Seeding rate: | 2, 4, and 6 seeds/row-ft in 40-inch row spacing (John Deere MaxEmerge vacuum planter) |
| Planting patterns: | Each seeding rate was planted in a solid pattern and in a plant 2 rows and skip 1 pattern. For ease of planting, all plots were seeded in a solid pattern and, after seedling emergence, cultivator sweeps were used to destroy seedling plants in the skip row. |
| Plot size: | 16 rows by 260 ft long |
| Planting date: | June 23 |
| Weed management: | Trifluralin was applied preplant incorporated at 1.25 pt/acre on 20-April. Roundup Original MAX was applied over-the-top in June at 22 oz/acre with 22 oz/acre Class Act. Roundup Weather Max was spot sprayed twice (July and late August) in 5 gallon mixes. Plots were cultivated one time in July. |

| | | | | |
|---|---|---|---|---|
| Rainfall: | April: | 0.60" | July: | 2.40" |
| | May: | 6.90" | August: | 2.30" |
| | June: | 4.74" | September: | 1.50" |
| | Total rainfall: | 18.50" | | |

| | |
|---|---|
| Insecticides: | Temik was applied at planting at 3.5 lbs/acre. No other insecticides were applied at this site. This location is in an active boll weevil eradication zone, and one application was made by the Texas Boll Weevil Eradication Program. |
| Fertilizer management: | 30 lb/acre 32-0-0 was applied preplant by coulter rig in April. |
| Harvest aids: | Harvest aids included 1.0 pt/acre Boll'd with 1.0 pt/acre Def on 10-October followed by Gramoxone Inteon at 16 oz/acre on 20-October. |
| Harvest: | Plots were harvested on 12-November using a commercial John Deere 7445 with field cleaner. Harvested 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 Research and Extension Center at Lubbock to determine gin turnouts. |

| | |
|---|---|
| Fiber analysis: | Lint samples were submitted to the International Textile Center at Texas Tech University for HVI analysis and USDA loan values were determined for each plot. |
| Ginning costs and seed values: | Ginning costs were based on $2.45 per cwt. of bur cotton and seed value/acre was based on $150/ton. Ginning costs did not include checkoff. |
| Technology fees: | Seed and technology fees (Table 3) were based on the 2, 4, and 6 seed/row-ft and the 2 x 1 skip row pattern (66.6% of solid planting rate). |

RESULTS AND DISCUSSION:

No differences were observed for any of the yield or economic parameters measured with the exception of percent lint turnout (Table 1). Lint turnouts ranged from a high of 36.2% for the 2 seed/ft solid planting to a low of 33.9 for the 2 seed/ft 2x1 planting. Lint yields varied from a low of 699 lb/acre (6 seed/row-ft solid planting) to a high of 845 lb/acre (6 seed/row-ft 2x1 planting). After adding lint and seed value, total value/acre ranged from a low of $477.27 (6 seed/row-ft solid planting) to a high of $564.67 (4 seed/row-ft 2x1 planting). When subtracting ginning cost and seed and technology fees, the net value/acre ranged from a low of $367.32 (6 seed/row-ft solid planting) to a high of $482.15 (2 seed/row-ft 2x1 planting), a difference of $114.83. No significant differences were observe for most of the fiber properties measured, with the exceptions of staple and uniformity (Table 2). Staple lengths ranged from a high of 37.8 for 4 seed/row-ft 2x1 planting to a low of 35.9 for 6 seed/row-ft solid planting, with an average of 37.1 across all seeding rates and planting patterns. An average percent uniformity of 81.3 was observed with a range of 80.2 to 82.2% for 6 seed/row-ft solid to 4 seed/row-ft 2x1, respectively. These data indicate that in years where plant available moisture is abundant, the seeding rates and planting patterns included in this study have little to no effect on yield. Although not significant, a trend was observed for yield parameters with the 2, 4, and 6 seed/row-ft solid planting patterns yielding numerically less than their skip-row counterparts, this is most likely a result of higher competition for plant available moisture in the solid planting pattern. Also, no inclement weather was encountered at this location prior to harvest. Additional multi-site and multi-year applied research is needed to evaluate seeding rates and planting patterns across a series of environments.

ACKNOWLEDGMENTS:

Appreciation is expressed to Danny Carmichael, Research Associate - AG-CARES, Lamesa; John Everitt, Research Associate - Texas AgriLife Research, Lubbock for their assistance with this project; Dr. John Gannaway - Texas AgriLife Research, for his cooperation, and Texas Department of Agriculture - Food and Fiber Research for HVI Testing at Texas Tech University - International Textile Center.

DISCLAIMER CLAUSE:

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1. Harvest results from the replicated dryland cotton seeding rate and planting pattern demonstration, AG-CARES, Lamesa, TX, 2007.

| Treatment | Lint turnout | Seed turnout | Bur cotton yield | Lint yield | Seed yield | Lint loan value | Lint value | Seed value | Total value | Ginning cost | Seed-tech fee | Net value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | % | % | lb/acre* | lb/acre | lb/acre | $/lb | $/acre | $/acre | $/acre | $/acre | $/acre | $/acre |
| 2 seed/ft 2x1 | 33.9 | 48.2 | 2421 | 821 | 1167 | 0.5715 | 469.95 | 87.49 | 557.43 | 59.31 | 15.97 | 482.15 |
| 2 seed/ft solid | 36.2 | 49.7 | 1996 | 722 | 991 | 0.5832 | 421.01 | 74.33 | 495.35 | 48.90 | 23.95 | 422.50 |
| 4 seed/ft 2x1 | 35.1 | 49.2 | 2337 | 821 | 1149 | 0.5837 | 478.48 | 86.19 | 564.67 | 57.26 | 31.93 | 475.49 |
| 4 seed/ft solid | 35.8 | 48.5 | 2130 | 763 | 1032 | 0.5698 | 433.85 | 77.42 | 511.27 | 52.18 | 47.90 | 411.19 |
| 6 seed 2x1 | 35.0 | 49.1 | 2408 | 845 | 1180 | 0.5608 | 472.77 | 88.50 | 561.27 | 59.00 | 47.90 | 454.36 |
| 6 seed solid | 35.3 | 48.0 | 1979 | 699 | 950 | 0.5803 | 405.98 | 71.29 | 477.27 | 48.49 | 61.46 | 367.32 |
| Test average | 35.2 | 48.8 | 2212 | 778 | 1078 | 0.5749 | 447.01 | 80.87 | 527.88 | 54.19 | 38.19 | 435.50 |
| CV, % | 1.5 | 1.5 | 11.0 | 11.2 | 10.6 | 3.3 | 11.87 | 10.6 | 11.6 | 11.0 | -- | 12.7 |
| OSL | 0.0051 | 0.1075 | 0.1492 | 0.3029 | 0.1261 | 0.6418 | 0.4632 | 0.1263 | 0.3921 | 0.1490 | -- | 0.1893 |
| LSD 0.05 | 0.9 | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- | NS |

*All per acre values are based on land acres.

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, NS - not significant.
Note: some columns may not add up due to rounding error.

Assumes:
$2.45/cwt ginning cost.
$150/ton for seed.
Value for lint based on CCC loan value from grab samples and ITC HVI results.

Table 2. HVI fiber property results from the replicated dryland cotton seeding rate and planting pattern demonstration, AG-CARES, Lamesa, TX, 2007.

| Treatment | Micronaire | Staple | Uniformity | Strength | Elongation | Leaf | Rd | +b | Color grade | |
|---|---|---|---|---|---|---|---|---|---|---|
| | units | $32^{nds}$ inches | % | g/tex | % | grade | reflectance | yellowness | color 1 | color 2 |
| 2 seed/ft 2x1 | 4.0 | 37.5 | 81.3 | 28.7 | 7.0 | 2.0 | 78.7 | 7.6 | 3.0 | 1.0 |
| 2 seed/ft solid | 4.2 | 36.9 | 81.6 | 28.6 | 6.9 | 1.7 | 81.6 | 7.4 | 2.3 | 1.0 |
| 4 seed/ft 2x1 | 4.1 | 37.8 | 82.2 | 27.6 | 7.0 | 1.3 | 81.7 | 7.5 | 2.3 | 1.0 |
| 4 seed/ft solid | 4.2 | 36.7 | 80.7 | 27.1 | 6.9 | 2.3 | 80.0 | 7.4 | 3.0 | 1.0 |
| 6 seed 2x1 | 4.0 | 37.7 | 81.8 | 28.5 | 6.9 | 1.7 | 78.5 | 7.2 | 3.3 | 1.0 |
| 6 seed solid | 4.2 | 35.9 | 80.2 | 26.6 | 7.3 | 2.3 | 82.0 | 7.5 | 2.3 | 1.0 |
| Test average | 4.1 | 37.1 | 81.3 | 27.8 | 7.0 | 1.9 | 80.4 | 7.4 | 2.7 | 1.0 |
| CV, % | 4.6 | 1.7 | 0.6 | 4.8 | 30.6 | 33.0 | 3.2 | 3.6 | -- | -- |
| OSL | 0.6803 | 0.0347 | 0.0086 | 0.3161 | 0.2962 | 0.3534 | 0.4025 | 0.5091 | -- | -- |
| LSD 0.05 | NS | 1.1 | 1.0 | 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, NS - not significant.

Table 3. Seed and technology expenses* for the replicated dryland cotton seeding rate and planting pattern demonstration, AG-CARES, Lamesa, TX, 2007.

| Treatment | Seeding rate seed/land acre | Seed fee $/acre | Tech fee $/acre | Total seed and tech fee $/land acre |
|---|---|---|---|---|
| 2 seed/ft 2x1 | 17,425 | 5.66 | 9.02 | 14.68 |
| 2 seed/ft solid | 26,136 | 11.82 | 12.13 | 23.95 |
| 4 seed/ft 2x1 | 34,850 | 15.76 | 16.17 | 31.93 |
| 4 seed/ft solid | 52,272 | 23.64 | 24.26 | 47.90 |
| 6 seed 2x1 | 52,272 | 23.64 | 24.26 | 47.90 |
| 6 seed solid | 78,408 | 35.46 | 26.00 | 61.46 |

FiberMax 9058F
Used 2007 PCG Seed Cost Calculator based on land acre seeding rates.

seed drop on 2x1 skip uses a 0.6666 factor to calculate $/land acre

TITLE:

Peanut Tolerance to Cobra with and without Basagran at Several Application Timings at AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Peter Dotray, Lyndell Gilbert, Professor, Technician II.

MATERIALS AND METHODS:

| | |
|---|---|
| Plot Size: | 2 rows by 30 feet, 3 replications |
| Soil Type: | Amarillo fine sandy loam |
| Planting Date: | April 23 |
| Variety: | Flavorrunner 458 |
| Application Dates: | Postemergence-topical (PT) 6 leaf (LF), May 29; 2 weeks after treatment (WAT), June 11; 4 WAT, June 25 |
| Rainfall (May to Oct): | 14.67 inches |
| Digging Date: | October 12 |
| Harvest Date: | October 18 |

RESULTS AND DISCUSSION:

Cobra (lactofen) was labeled for use postemergence (POST) in peanut in 2005 for control of several annual broadleaf weeds including annual morningglory. Cobra is classified as a diphenyl ether (cell membrane disruptor). In general, herbicides classified as cell membrane disruptors (contact inhibitors) must be applied to small weeds. Peanut tolerance to Cobra is based on the plants ability to metabolize (break down) the herbicide, which often results in some leaf necrosis after application. Basagran (bentazon) has been shown to safen (reduce) peanut injury when applied in tank mixture with Gramoxone Inteon (paraquat). The objective of this research was to examine peanut response to Cobra applied alone and Cobra applied in tank mixture with Basagran at three application timings.

The experiment was designed as a factorial arrangement with four Cobra rates (0, 0.0976, 0.15625, and 0.1953 lbs ai/A, or 0, 6.25 9.38, and 12.5 oz/A), 3 Basagran rates (0, 0.15625, and 0.3125 lb ai/A, or 5 and 10 oz/A) and three application timings (6-leaf, 2 weeks after 6-leaf, and 4 weeks after 6-leaf). There was no three-way or two way treatment interaction; therefore, main factors may be discussed separately.

Peanut injury following Cobra applications did increase as rate increased, but injury never exceeded 8% during the growing season (Table 1). End of season injury ranged from 2 to 3% and no treatment caused yield or grade reduction compared to the untreated control. Peanut yield ranged from 6580 to 6693 pounds per acre (lb/A) and were not different from the untreated control (6944 lb/A). Peanut injury following Basagran application did not increase as rate increased and injury did not exceed 5% during the growing season (Table 2). No yield or grade reduction was observed following any Basagran rate and yield ranged from 6585 to 6737 lb/A. When averaged over application timing, no trend towards increased injury for early or later applications was observed (Table 3). Peanut injury following applications made 2 weeks after the 6-leaf stage reached 9%, but injury was less than 4% by the end of the season. Peanut yield was reduced when applications were made at 2 weeks after the 6-leaf treatment. These results suggest that Cobra may cause visible peanut injury following application, but no adverse affects on yield or grade should be observed. These results also suggest that Basagran will not safen peanut from visible injury and application timing had no affect on Cobra injury. Time of application may be important for Cobra applications and these data suggest that applications made at the 6-leaf peanut stage will not cause peanut yield reductions.

Table 1. Peanut injury and yield as affected by Cobra Rate at AG-CARES, Lamesa, TX, 2007 [a].

| Treatment | Rate | Peanut Injury | | | | | Yield | Grade |
|---|---|---|---|---|---|---|---|---|
| | | Jun 11 | Jun 25 | Jul 9 | Jul 23 | Oct 10 | | |
| | lb ai/A | ---------------- | ---------------- | (%) | ---------------- | ---------------- | lb/A | % |
| Cobra [b] + COC | 0 + 1% | 0 | 1 | 0 | 0 | 0 | 6944 | 71 |
| Cobra + COC | 0.0976 + 1% | 2 | 5 | 5 | 3 | 2 | 6693 | 71 |
| Cobra + COC | 0.15625 + 1% | 2 | 6 | 6 | 4 | 3 | 6580 | 72 |
| Cobra + COC | 0.1953 + 1% | 3 | 8 | 8 | 5 | 3 | 6633 | 71 |
| $LSD_{(0.10)}$ | | 0.3 | 0.6 | 0.8 | 0.9 | 0.7 | NS | NS |

[a]Abbreviations: COC = crop oil concentrate

[b]Cobra at 0.0976 lb ai/A = 6.25 fluid ounces/acre; 0.15625 lb ai/A = 10 fluid ounces/acre; and 0.1953 lb ai/A = 12.5 fluid ounces/acre

Table 2. Peanut injury and yield as affected by Basagran Rate at AG-CARES, Lamesa, TX, 2007.

| Treatment | Rate | Peanut Injury | | | | | Yield | Grade |
|---|---|---|---|---|---|---|---|---|
| | | Jun 11 | Jun 25 | Jul 9 | Jul 23 | Oct 10 | | |
| | lb ai/A | ---------------- | ---------------- | (%) | ---------------- | ---------------- | lb/A | % |
| Basagran [a] | 0 | 1 | 5 | 4 | 3 | 2 | 6815 | 71 |
| Basagran | 0.15625 | 1 | 5 | 4 | 3 | 2 | 6585 | 71 |
| Basagran | 0.3125 | 1 | 5 | 5 | 3 | 2 | 6737 | 71 |
| $LSD_{(0.10)}$ | | NS | NS | 0.7 | NS | NS | NS | NS |

[a]Basagran at 0.15625 lb ai/A = 5 fluid ounces/acre; 0.3125 lb ai/A = 10 fluid ounces/acre

Table 3. Peanut injury and yield as affected by Timing of Cobra with Basagran at AG-CARES, Lamesa, TX, 2007 [a].

| Treatment | Timing | Peanut Injury | | | | | Yield | Grade |
|---|---|---|---|---|---|---|---|---|
| | | Jun 11 | Jun 25 | Jul 9 | Jul 23 | Oct 10 | | |
| | | ---------------- | ---------------- | (%) | ---------------- | ---------------- | lb/A | % |
| 6 LF | 6 LF | 4 | 6 | 1 | 0 | 0 | 6765 | 71 |
| 2 WAT | 2 WAT | | 9 | 8 | 5 | 3 | 6467 | 72 |
| 4 WAT | 4 WAT | | | 6 | 4 | 2 | 6905 | 71 |
| $LSD_{(0.10)}$ | | 0.3 | 0.6 | 0.7 | 0.7 | 0.6 | 252 | 0.6 |

[a]Abbreviations: 6 LF = 6 leaf; WAT = weeks after treatment

TITLE:

Peanut tolerance to Gramoxone Inteon and Dual Magnum applied in tank mixture at several application timings at AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Peter Dotray, Lyndell Gilbert, Professor, Technician II.

MATERIALS AND METHODS:

| | |
|---|---|
| Plot Size: | 2 rows by 30 feet, 3 replications |
| Soil Type: | Amarillo fine sandy loam |
| Planting Date: | April 23 |
| Variety: | Flavorrunner 458 |
| Application Dates: | At-crack (AC), May 7; 7 days after crack (DAC), May 14; 14 DAC, May 21; 21 DAC, May 29; 28 DAC, June 5. |
| Rainfall (May to Oct): | 14.67 inches |
| Digging Date: | October 12 |
| Harvest Date: | October 18 |

RESULTS AND DISCUSSION:

Gramoxone Inteon is the newest formulation of paraquat dichloride. It contains 2 pounds of paraquat active ingredient per gallon compared to the Gramoxone Max formulation which contains 3 pounds per gallon. In addition to the reduced concentration of the new formulation, Gramoxone Inteon reduces oral toxicity while maintaining the key benefits of paraquat (good weed control, rapid activity, cost effective, easy to use). Gramoxone Inteon may be applied from 8 to 16 ounces per acre from ground-crack to 28 days after ground-crack, and up to 2 applications may be made per year. For ground-crack use, Gramoxone Inteon may be tank mixed with Dual Magnum for residual weed control. The objective of this research was to examine peanut response to Gramoxone Inteon plus Dual Magnum in tank mix combinations when applied at ground crack (AC) and up to 28 days after crack (DAC).

Gramoxone Inteon alone and combinations with Dual Magnum caused up to 5% visible injury 7 days after the AC applications (Table 1). Applications made 7 DAC injured peanut up to 16% 7 days after treatment (DAT). The 16 ounce rate of Gramoxone Inteon (0.25 lbs ai/A) plus Dual Magnum at 16 or 24 oz caused the greatest peanut injury. Peanut injury following applications made 14 DAC was no more injurious to peanut than applications made 7 DAC. Applications made at 21 DAC injured peanut up to 20%, and the greatest injury was again observed following the 16 ounce rate of Gramoxone Inteon plus Dual Magnum. Peanut injury following the 28 DAC applications ranged from 12 to 17%, and the addition of Dual Magnum did not increase injury at each Gramoxone Inteon rate. The addition of Dual Magnum to Gramoxone Inteon (16 ounces) increased peanut injury at three of five application timings (7, 14, and 21 DAC) compared to the injury caused by Gramoxone Inteon (16 ounces) applied alone. These results are similar to what we observed in 2006. The elimination of nonionic surfactant (NIS) in 2007 seemed to lessen the peanut injury observed following the 16 oz rates of these herbicides. The addition of NIS to Gramoxone Inteon at 8 ounces plus Dual Magnum at 16 ounces did not increase peanut injury compared to the same tank mixture without NIS. End of season peanut injury was up to 4% regardless of application timing.

Visual injury did not correlate with peanut yield. Peanut yield following herbicide applications ranged from 4599 to 7042 lb/A. This data suggests that Gramoxone Inteon plus Dual Magnum tank mixtures may cause visible peanut injury when applied AC to 28 DAC. Greatest visible injury was observed following tank mix combinations of Gramoxone Inteon plus Dual Magnum (both at 16 ounces), and least injury was observed following AC applications. Although significant peanut leaf burn (necrosis) and stunting were observed following applications made between 7 to 28 days after crack, no yield loss was observed.

Table 1. Peanut injury and yield as affected by Gramoxone Inteon and Dual Magnum tank mix timings at AG-CARES, Lamesa, TX, 2007 [a].

| Treatment | Timing | Prod. | Rate | Peanut Injury | | | | | | | | | Yield | Grade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | May 14 | May 21 | May 29 | Jun 5 | Jun 11 | Jun 18 | Jun 25 | Jul 2 | Oct 10 | | |
| | | oz/A | lb ai/A | % | | | | | | | | | lb/A | % |
| Gram Inteon + NIS | AC | 8 | 0.125 + 0.25% | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5249 | 72 |
| Gram Inteon + NIS | AC | 16 | 0.25 + 0.25% | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 6195 | 68 |
| Gram Inteon + Dual Mag + NIS | AC | 8+16 | 0.125 + 0.95 + 0.25% | 3 | 0 | 0 | 0 | 0 | 2 | 5 | 6 | 1 | 6124 | 70 |
| Gram Inteon + Dual Mag + NIS | AC | 16+16 | 0.25 + 0.95 + 0.25% | 4 | 0 | 0 | 0 | 0 | 3 | 5 | 5 | 0 | 6014 | 70 |
| Gram Inteon + Dual Mag | AC | 8+16 | 0.125 + 0.95 | 3 | 0 | 0 | 0 | 0 | 3 | 7 | 8 | 2 | 5859 | 68 |
| Gram Inteon + Dual Mag | AC | 16+16 | 0.25 + 0.95 | 3 | 1 | 3 | 0 | 2 | 3 | 7 | 8 | 1 | 5727 | 70 |
| Gram Inteon + Dual Mag | AC | 8+24 | 0.125 + 1.43 | 4 | 3 | 4 | 3 | 10 | 7 | 9 | 8 | 2 | 6790 | 69 |
| Gram Inteon + Dual Mag | AC | 16+24 | 0.25 + 1.43 | 5 | 2 | 6 | 7 | 11 | 7 | 8 | 8 | 3 | 6377 | 68 |
| Gram Inteon + NIS | 7 DAC | 8 | 0.125 + 0.25% | --- | 7 | 0 | 2 | 2 | 3 | 0 | 0 | 0 | 5916 | 68 |
| Gram Inteon + NIS | 7 DAC | 16 | 0.25 + 0.25% | --- | 9 | 0 | 0 | 0 | 3 | 8 | 7 | 1 | 5615 | 71 |
| Gram Inteon + Dual Mag + NIS | 7 DAC | 8+16 | 0.125 + 0.95 + 0.25% | --- | 7 | 0 | 0 | 0 | 2 | 2 | 2 | 0 | 6099 | 69 |
| Gram Inteon + Dual Mag + NIS | 7 DAC | 16+16 | 0.25 + 0.95 + 0.25% | --- | 14 | 0 | 0 | 6 | 5 | 7 | 8 | 2 | 7042 | 69 |
| Gram Inteon + Dual Mag | 7 DAC | 8+16 | 0.125 + 0.95 | --- | 7 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 6867 | 69 |
| Gram Inteon + Dual Mag | 7 DAC | 16+16 | 0.25 + 0.95 | --- | 15 | 2 | 3 | 6 | 7 | 8 | 10 | 1 | 6799 | 70 |
| Gram Inteon + Dual Mag | 7 DAC | 8+24 | 0.125 + 1.43 | --- | 11 | 6 | 0 | 5 | 7 | 9 | 7 | 3 | 5893 | 70 |
| Gram Inteon + Dual Mag | 7 DAC | 16+24 | 0.25 + 1.43 | --- | 16 | 7 | 5 | 7 | 7 | 10 | 8 | 4 | 5795 | 71 |
| Gram Inteon + NIS | 14 DAC | 8 | 0.125 + 0.25% | --- | --- | 7 | 2 | 6 | 9 | 7 | 8 | 2 | 5272 | 69 |
| Gram Inteon + NIS | 14 DAC | 16 | 0.25 + 0.25% | --- | --- | 9 | 0 | 10 | 9 | 9 | 8 | 3 | 6502 | 71 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gram Inteon + Dual Mag + NIS | 14 DAC | 8+16 | 0.125 + 0.95 + 0.25% | --- | --- | 8 | 5 | 6 | 10 | 10 | 7 | 1 | 5984 | 69 |
| Gram Inteon + Dual Mag + NIS | 14 DAC | 16+16 | 0.25 + 0.95 + 0.25% | --- | --- | 11 | 8 | 12 | 13 | 12 | 11 | 2 | 6089 | 69 |
| Gram Inteon + Dual Mag | 14 DAC | 8+16 | 0.125 + 0.95 | --- | --- | 6 | 5 | 7 | 7 | 5 | 6 | 1 | 5733 | 67 |
| Gram Inteon + Dual Mag | 14 DAC | 16+16 | 0.25 + 0.95 | --- | --- | 10 | 8 | 14 | 12 | 12 | 12 | 5 | 5242 | 69 |
| Gram Inteon + Dual Mag | 14 DAC | 8+24 | 0.125 + 1.43 | --- | --- | 9 | 0 | 10 | 11 | 9 | 10 | 2 | 5901 | 70 |
| Gram Inteon + Dual Mag | 14 DAC | 16+24 | 0.25 + 1.43 | --- | --- | 9 | 0 | 10 | 11 | 11 | 11 | 3 | 5979 | 70 |
| Gram Inteon + NIS | 21 DAC | 8 | 0.125 + 0.25% | --- | --- | --- | 5 | 7 | 7 | 9 | 9 | 1 | 6279 | 70 |
| Gram Inteon + NIS | 21 DAC | 16 | 0.25 + 0.25% | --- | --- | --- | 17 | 14 | 14 | 13 | 14 | 2 | 5657 | 67 |
| Gram Inteon + Dual Mag + NIS | 21 DAC | 8+16 | 0.125 + 0.95 + 0.25% | --- | --- | --- | 9 | 10 | 12 | 15 | 15 | 3 | 5616 | 68 |
| Gram Inteon + Dual Mag + NIS | 21 DAC | 16+16 | 0.25 + 0.95 + 0.25% | --- | --- | --- | 20 | 15 | 18 | 16 | 14 | 4 | 5622 | 69 |
| Gram Inteon + Dual Mag | 21 DAC | 8+16 | 0.125 + 0.95 | --- | --- | --- | 5 | 10 | 15 | 11 | 11 | 4 | 5837 | 71 |
| Gram Inteon + Dual Mag | 21 DAC | 16+16 | 0.25 + 0.95 | --- | --- | --- | 15 | 14 | 18 | 14 | 12 | 3 | 5671 | 70 |
| Gram Inteon + Dual Mag | 21 DAC | 8+24 | 0.125 + 1.43 | --- | --- | --- | 6 | 12 | 12 | 9 | 8 | 3 | 6040 | 68 |
| Gram Inteon + Dual Mag | 21 DAC | 16+24 | 0.25 + 1.43 | --- | --- | --- | 18 | 14 | 17 | 15 | 15 | 4 | 4599 | 71 |
| Gram Inteon + NIS | 28 DAC | 8 | 0.125 + 0.25% | --- | --- | --- | --- | 13 | 12 | 8 | 10 | 3 | 5704 | 69 |
| Gram Inteon + NIS | 28 DAC | 16 | 0.25 + 0.25% | --- | --- | --- | --- | 14 | 17 | 11 | 12 | 4 | 5733 | 69 |
| Gram Inteon + Dual Mag + NIS | 28 DAC | 8+16 | 0.125 + 0.95 + 0.25% | --- | --- | --- | --- | 13 | 12 | 9 | 10 | 3 | 5075 | 69 |
| Gram Inteon + Dual Mag + NIS | 28 DAC | 16+16 | 0.25 + 0.95 + 0.25% | --- | --- | --- | --- | 15 | 18 | 13 | 12 | 4 | 5292 | 70 |
| Gram Inteon + Dual Mag | 28 DAC | 8+16 | 0.125 + 0.95 | --- | --- | --- | --- | 13 | 12 | 9 | 10 | 2 | 5894 | 69 |
| Gram Inteon + Dual Mag | 28 DAC | 16+16 | 0.25 + 0.95 | --- | --- | --- | --- | 15 | 18 | 15 | 13 | 4 | 5684 | 69 |
| Gram Inteon + Dual Mag | 28 DAC | 8+24 | 0.125 + 1.43 | --- | --- | --- | --- | 12 | 11 | 12 | 12 | 4 | 5174 | 69 |
| Gram Inteon + Dual Mag | 28 DAC | 16+24 | 0.25 + 1.43 | --- | --- | --- | --- | 17 | 20 | 14 | 15 | 5 | 6272 | 72 |
| Untreated | --- | | --- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6195 | 71 |
| CV | | | | | | | | | | | | | | 2.89 |
| $LSD_{(0.10)}$ | | | | 0.37 | 1.26 | 1.52 | 2.84 | 2.23 | 3.63 | 2.44 | 3.2 | 1.96 | 881 | NS |

[a]Abbreviations: AC = at ground crack; DAC = days after ground crack; NIS = non-ionic surfactant

TITLE:

Peanut Tolerance to Prowl $H_2O$ Applied Preemergence, at Ground-crack, and Postemergence at AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Peter Dotray, Wayne Keeling, Lyndell Gilbert, Professor, Professor, Technician II.

MATERIALS AND METHODS:

| | |
|---|---|
| Plot Size: | 2 rows by 30 feet, 3 replications |
| Soil Type: | Amarillo fine sandy loam |
| Planting Date: | April 23 |
| Variety: | Flavorrunner 458 |
| Application Dates: | Preemergence application on April 23; at-crack (AC), May 7; 21 days after crack (DAC), May 29; at Pegging, June 25 |
| Rainfall (May to Oct): | 14.67 inches |
| Digging Date: | October 12 |
| Harvest Date: | October 17 |

RESULTS AND DISCUSSION:

Prowl $H_2O$ is a relatively new formulation of pendimethalin that is registered for use in cotton preplant incorporated (PPI), preplant surface, preemergence (PRE), early postemergence, at lay-by, and in chemigation systems. In peanut, Prowl $H_2O$ may be applied PPI and PRE only (if an overhead irrigation system is used). Although not currently labeled, it is possible that a POST application followed by irrigation will provide good in-season weed control. The most vulnerable POST application may be near pegging since the peanut pegs could be affected by the herbicide. The objective of this research was to examine peanut response to Prowl $H_2O$ applied at three peanut growth stages from preemergence to pegging.

Little (up to 2%) visual peanut injury was observed following Prowl $H_2O$ at 2 pints regardless of application timing, but no injury was apparent at harvest. No differences in peanut yield or grade were observed at harvest. Peanut yield ranged from 5997 to 7012 pounds per acre (lb/A), which were not different from the non-treated control (5665 pounds/A). This data suggests the peanut tolerance to Prowl $H_2O$ was not affected by application timing when applied as late as pegging, although only PPI and PRE applications are currently labeled in peanut production.

Table 1. Peanut injury and yield as affected by Prowl $H_2O$ applied preemergence, at ground-crack, and postemergence in peanut at AG-CARES, Lamesa, TX, 2007 [a].

| Treatment | Timing | Rate | Peanut Injury | | | | | | | Yield | Grade |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | May 14 | May 21 | May 29 | Jun 25 | Jul 2 | Jul 23 | Oct 10 | | |
| | | prod./A | % | | | | | | | lb/A | % |
| Non-treated | --- | --- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5665 | 72 |
| Prowl $H_2O$ | PRE | 2 pints | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 5997 | 72 |
| Prowl $H_2O$ | AC | 2 pints | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6333 | 73 |
| Prowl $H_2O$ | 21 DAC | 2 pints | | | | 0 | 0 | 0 | 0 | 6807 | 74 |
| Prowl $H_2O$ | PEGGING | 2 pints | | | | | 0 | 2 | 0 | 7012 | 73 |
| LSD (0.10) | | | NS | NS | NS | NS | NS | NS | NS | NS | NS |

[a]Abbreviations: PRE = preemergence; AC = at ground crack; DAC = days after ground crack

TITLE:

Virginia and Runner peanut tolerance to Gramoxone Inteon and Dual Magnum applied alone or in tank mixture at several application timings at AG-CARES, Lamesa, TX, 2007.

AUTHORS:

Peter Dotray, Lyndell Gilbert, Professor, Technician II.

MATERIALS AND METHODS:

| | |
|---|---|
| Plot Size: | 2 rows by 30 feet, 3 replications |
| Soil Type: | Amarillo fine sandy loam |
| Planting Date: | April 23 |
| Varieties: | NC-7, Flavorrunner 458 |
| Application Dates: | 7 days after crack (DAC), May 14; 14 DAC, May 21; 21 DAC, May 29; 28 DAC, June 5 |
| Rainfall (May to Oct): | 14.67 inches |
| Digging Date: | NC-7, October 5; Flavorrunner 458, October 12 |
| Harvest Date: | NC-7, October 11; Flavorrunner 458, October 17 |

RESULTS AND DISCUSSION:

Gramoxone Inteon may be applied from 8 to 16 ounces per acre from ground-crack to 28 days after ground-crack, and up to 2 applications may be made per year. For ground-crack use only, Gramoxone Inteon may be tank mixed with Dual Magnum for residual weed control. Previous research has shown that peanut varieties (and peanut market types) may have tolerance levels that are different to specific peanut herbicides. The objective of this research was to examine peanut respone to Gramoxone Inteon plus Dual Magnum in tank mix combinations when applied at 7, 14, 21, and28 days after crack (DAC) in two peanut market types.

Peanut injury in a Virginia market type (NC-7) rated 7 days after Gramoxone Inteon was applied at 7, 14, 21, and 28 days after ground crack (DAC) ranged from 5 to 13% (Table 1). Injury caused by Dual Magnum following these same application timings ranged from 0 to 2%. When Dual Magnum was tank-mixed with Gramoxone Inteon, injury was greater than that caused by Gramoxone Inteon in two of the four application timings (12% at 14 DAC and 11% at 21 DAC). Injury from all Gramoxone Inteon and Gramoxone Inteon plus Dual Magnum treatments decreased over time and no more than 10% visual injury was still observed at harvest. No reduction in yield nor grade was observed following any treatment and yield ranged from 4443 to 4939 pounds per acre. The untreated check produced 4731 pounds per acre.

Peanut injury in a runner market type (Flavorrunner 458) was similar to injury in the Virginia market type. When rated 7 days after each treatment, peanut injury following Gramoxone Inteon applied alone ranged from 8 to 15%, while injury following Dual Magnum ranged from 0 to 4% (Table 2). Gramoxone Inteon plus Dual Magnum tank-mix combinations increased injury in two of four application timings (13% at 14 DAC and 10% at 21 DAC) when compared to the injury caused by Gramoxone Inteon applied alone (9% at 14 DAC and 8% at 21 DAC). Injury at this early observation was as great as 16% following a tank-mix combination applied at 28 DAC. At the end of the season, peanut injury did not exceed 5% from any treatment. No reduction in yield nor grade was observed following any treatment and yield ranged from 5616 to 6565 pounds per acre. The untreated check produced 5451 pounds per acre.

These results suggest that although Dual Magnum may increase visible injury when applied in a tank mix with Gramoxone Inteon 2compared to Gramoxone Inteon applied alone, no reduction in yield nor grade should be observed at harvest in both NC-& (a Virginia market type) and Flavorrunner 458 (a Runner peanut market type).

Table 1. Virginia peanut injury and yield as affected by Gramoxone Inteon and Dual Magnum alone or in tank mixture at AG-CARES, Lamesa, TX, 2007 [a].

| Treatment | Timing | Prod. | Rate | Virginia Peanut Injury | | | | | | | | Yield | Grade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | May 21 | May 29 | Jun 5 | Jun 11 | Jun 18 | Jun 25 | Jul 2 | Oct 1 | | |
| | | oz/A | lb ai/A | % | | | | | | | | lb/A | % |
| Non-treated | --- | --- | --- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4731 | 63 |
| Dual Mag | 7 DAC | 24 | 1.43 | 2 | 0 | 2 | 3 | 5 | 7 | 8 | 5 | 4504 | 63 |
| Gram Inteon + NIS | 7 DAC | 8 | 0.125 + 0.25% | 13 | 2 | 0 | 3 | 2 | 3 | 3 | 3 | 4939 | 64 |
| Dual Mag + Gram Inteon | 7 DAC | 24+8 | 1.43 + 0.125 | 14 | 5 | 0 | 9 | 8 | 11 | 10 | 5 | 4834 | 66 |
| Dual Mag | 14 DAC | 24 | 1.43 | | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 4613 | 64 |
| Gram Inteon + NIS | 14 DAC | 8 | 0.125 + 0.25% | | 8 | 6 | 8 | 7 | 11 | 8 | 6 | 4443 | 64 |
| Dual Mag + Gram Inteon | 14 DAC | 24+8 | 1.43 + 0.125 | | 12 | 6 | 10 | 10 | 8 | 8 | 6 | 4523 | 61 |
| Dual Mag | 21 DAC | 24 | 1.43 | | | 0 | 4 | 0 | 0 | 0 | 0 | 4809 | 65 |
| Gram Inteon + NIS | 21 DAC | 8 | 0.125 + 0.25% | | | 5 | 4 | 6 | 6 | 7 | 3 | 4737 | 62 |
| Dual Mag + Gram Inteon | 21DAC | 24+8 | 1.43 + 0.125 | | | 11 | 9 | 10 | 11 | 10 | 10 | 4701 | 64 |
| Dual Mag | 28 DAC | 24 | 1.43 | | | | 0 | 2 | 0 | 0 | 0 | 4677 | 66 |
| Gram Inteon + NIS | 28 DAC | 8 | 0.125 + 0.25% | | | | 13 | 8 | 10 | 9 | 5 | 4598 | 64 |
| Dual Mag + Gram Inteon | 28 DAC | 24+8 | 1.43 + 0.125 | | | | 15 | 12 | 10 | 9 | 5 | 4506 | 64 |
| CV | | | | | | | | | | | | | |
| LSD $_{(0.10)}$ | | | | 1.10 | 0.59 | 1.49 | 1.76 | 2.79 | 2.01 | 2.30 | 2.05 | NS | NS |

[a]Abbreviations: DAC = days after ground crack; NIS = non-ionic surfactant

Table 2. Runner peanut injury and yield as affected by Gramoxone Inteon and Dual Magnum alone or in tank mix at AG-CARES, Lamesa, TX, 2007 [a].

| Treatment | Timing | Prod. | Rate | Runner Peanut Injury | | | | | | | | Yield | Grade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | May 21 | May 29 | Jun 5 | Jun 11 | Jun 18 | Jun 25 | Jul 2 | Oct 10 | | |
| | | oz/A | lb ai/A | ---------------------------------- % ---------------------------------- | | | | | | | | lb/A | % |
| Non-treated | --- | --- | --- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5451 | 72 |
| Dual Mag | 7 DAC | 24 | 1.43 | 2 | 6 | 5 | 8 | 4 | 6 | 6 | 3 | 5616 | 70 |
| Gram Inteon + NIS | 7 DAC | 8 | 0.125 + 0.25% | 13 | 2 | 0 | 7 | 2 | 3 | 5 | 1 | 6429 | 71 |
| Dual Mag + Gram Inteon | 7 DAC | 24+8 | 1.43 + 0.125 | 12 | 8 | 6 | 12 | 7 | 10 | 10 | 5 | 6046 | 72 |
| Dual Mag | 14 DAC | 24 | 1.43 | | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 6264 | 72 |
| Gram Inteon + NIS | 14 DAC | 8 | 0.125 + 0.25% | | 9 | 6 | 12 | 12 | 10 | 10 | 4 | 5970 | 71 |
| Dual Mag + Gram Inteon | 14 DAC | 24+8 | 1.43 + 0.125 | | 13 | 8 | 9 | 9 | 8 | 8 | 4 | 5842 | 69 |
| Dual Mag | 21 DAC | 24 | 1.43 | | | 0 | 6 | 2 | 2 | 2 | 0 | 6373 | 72 |
| Gram Inteon + NIS | 21 DAC | 8 | 0.125 + 0.25% | | | 8 | 10 | 7 | 9 | 8 | 4 | 6114 | 71 |
| Dual Mag + Gram Inteon | 21DAC | 24+8 | 1.43 + 0.125 | | | 10 | 13 | 12 | 11 | 10 | 2 | 6565 | 71 |
| Dual Mag | 28 DAC | 24 | 1.43 | | | | 4 | 0 | 0 | 0 | 0 | 6469 | 70 |
| Gram Inteon + NIS | 28 DAC | 8 | 0.125 + 0.25% | | | | 15 | 10 | 11 | 10 | 4 | 6252 | 70 |
| Dual Mag + Gram Inteon | 28 DAC | 24+8 | 1.43 + 0.125 | | | | 16 | 12 | 15 | 12 | 3 | 6524 | 71 |
| CV | | | | | | | | | | | | | |
| LSD $_{(0.10)}$ | | | | 1.65 | 1.40 | 1.66 | 2.15 | 3.51 | 2.45 | 2.90 | 1.74 | NS | NS |

[a]Abbreviations: DAC = days after ground crack; NIS = non-ionic surfactant

TITLE:

Guar Variety Trial at AG-CARES, Lamesa, TX, 2007

AUTHORS:

Calvin Trostle, Texas AgriLife Extension Service—Lubbock, ctrostle@ag.tamu.edu, (806) 746-6101; Danny Carmichael, Texas AgriLife Research—Lubbock

METHODS AND PROCEDURES:

| | |
|---|---|
| Soil Type: | Amarillo fine sandy loam |
| Planting: | Guar, June 22, 200 on 40" rows |
| Previous Crop: | Cotton |
| Seeding Rate: | Guar, 76,000 seeds/acre with vacuum planter (~6 lbs./A) |
| Plot Set-up: | Four replicated plots per variety 4 rows X 30' |
| Harvest Area: | 2 rows X 22' |
| Fertilizer: | None |
| Herbicide: | 1.5 pt Treflan |
| Insecticide: | None |
| Rainfall: | See summary in AGCARES report |
| Date Harvested: | November 29, 2007 (hand harvest, stationary thresher) |

RESULTS AND DISCUSSION:

Trial notes: Excellent growth was achieved. This is the highest yields achieved to date at the AGCARES facility at Lamesa. Some stems remained green in Matador up until near Thanksgiving then trial was harvested after about 6" of snow fell on 22 Nov 2007. Plants were pulled from the ground and bagged, placed in a dryer, then threshed with a thresher. No shattering or dropped pods were observed in the field, and little to no disease development on Monument or any other variety. This was an excellent trial.

Historical yields: Across several dryland trials since 2004 at Lubbock, AGCARES, and Terry Co. Lewis has slightly outyielded Kinman. Lewis tends to be shorter and does not branch as much. Matador and Monument are Texas Tech University releases by Dr. Ellen Peffley. Matador yields have been consistent with Kinman. Monument, a non-branching variety with exceptional podding on the mainstem, can be severely diseased in some years especially if planted late. No major disease symptoms, however, were observed in this trial. Among other locations Monument does yield less.

| Variety | Average Height (inches) | Average Plants/ acre | Average Test Wt. (lbs./bu) | Average Yield (lbs./A) |
|---|---|---|---|---|
| Matador | 35 | 55,000 | 62.3 | 1,149 |
| Monument | 33 | 64,000 | 64.4 | 789 |
| Kinman | 32 | 49,000 | 63.2 | 1,092 |
| Lewis | 29 | 42,000 | 64.0 | 1,238 |
| *Average* | 32 | 59,300 | 63.5 | 1,067 |
| *P-Value†* | 0.0295 | 0.0446 | 0.221 | 0.0002 |
| *Fisher's PLSD (90%)* | 2.8 | 11,200 | NS | 146 |
| *Coeff. of Variation (%CV)* | 8.9 | 18.6 | 2.4 | 15.3 |

†Means in same column that differ > PLSD are significantly different at the 90% confidence level (alpha = 0.10)

For more information about guar contact Calvin Trostle, or the Texas A&M AgriLife Research & Extension Center's Lubbock website at http://lubbock.tamu.edu/other crops.

# APPENDIX

**Detailed Growing Season Climate Data at AG-CARES, Lamesa, TX, 2007**

| Date | | Max Temp | Min Temp | Max RH | Min RH | Avg. Wind Speed | ET | Rain | Heat Units | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | °F | °F | % | % | mil/hr | (in.) | (in.) | Cotton | Peanut | Sorghum |
| **May** | 1 | 79.1 | 57.7 | 98.6 | 41.1 | 3.1 | 0.18 | 0 | 8 | 13 | 18 |
| | 2 | 68.3 | 53.9 | 95.6 | 54.4 | 7.8 | 0.09 | 0.7 | 1 | 7 | 11 |
| | 3 | 81 | 51.8 | 95.8 | 28.5 | 4.8 | 0.21 | 0 | 6 | 13 | 16 |
| | 4 | 86.8 | 60.5 | 97.9 | 25.7 | 9.9 | 0.27 | 0 | 14 | 19 | 24 |
| | 5 | 86.8 | 68.3 | 92.1 | 13.5 | 11.8 | 0.3 | 0 | 18 | 23 | 28 |
| | 6 | 83.2 | 60.3 | 90.6 | 17.5 | 7.7 | 0.27 | 0 | 12 | 17 | 22 |
| | 7 | 76.9 | 55.2 | 90 | 20.3 | 9.3 | 0.23 | 0.3 | 6 | 11 | 16 |
| | 8 | 62.3 | 53.1 | 98.1 | 78.2 | 11.4 | 0.05 | 1.79 | 0 | 4 | 8 |
| | 9 | 62.1 | 53.2 | 98.4 | 70.9 | 4.4 | 0.05 | 1.5 | 0 | 4 | 8 |
| | 10 | 75.7 | 52.7 | 97.4 | 43.8 | 5.2 | 0.17 | 0 | 4 | 10 | 14 |
| | 11 | 77.6 | 54.9 | 96.8 | 39 | 6.1 | 0.2 | 0 | 6 | 11 | 16 |
| | 12 | 77.7 | 56.8 | 96.9 | 43 | 4.2 | 0.18 | 0.3 | 7 | 12 | 17 |
| | 13 | 80.6 | 57.9 | 97 | 32.4 | 4.1 | 0.2 | 0 | 9 | 14 | 19 |
| | 14 | 84 | 59.8 | 92.7 | 26.2 | 7.3 | 0.24 | 0 | 12 | 17 | 22 |
| | 15 | 75 | 60.2 | 84 | 56.6 | 9.7 | 0.17 | 0 | 8 | 13 | 18 |
| | 16 | 60.4 | 50 | 93.1 | 66.3 | 6.2 | 0.07 | 0.52 | 0 | 3 | 5 |
| | 17 | 57.8 | 53 | 94.9 | 76.9 | 6.3 | 0.06 | 0.38 | 0 | 1 | 5 |
| | 18 | 60.4 | 53.2 | 97.5 | 79.2 | 7.1 | 0.04 | 0.28 | 0 | 3 | 7 |
| | 19 | 64.3 | 54.6 | 98.5 | 80.3 | 5.6 | 0.06 | 0 | 0 | 5 | 9 |
| | 20 | 74.5 | 59.2 | 97.4 | 58.9 | 7.5 | 0.14 | 0 | 7 | 12 | 17 |
| | 21 | 79.4 | 60.7 | 98.1 | 45.3 | 10.4 | 0.2 | 0 | 10 | 15 | 20 |
| | 22 | 88.3 | 57.7 | 95.1 | 12.3 | 8.5 | 0.29 | 0 | 13 | 18 | 23 |
| | 23 | 86.3 | 67.6 | 86.6 | 37.2 | 13 | 0.27 | 0 | 17 | 22 | 27 |
| | 24 | 70.4 | 57.9 | 95.2 | 57.2 | 13.1 | 0.12 | 0.2 | 4 | 9 | 14 |
| | 25 | 74.5 | 58.8 | 97.3 | 51.3 | 8.8 | 0.16 | 0.71 | 7 | 12 | 17 |
| | 26 | 76.7 | 56.5 | 98.6 | 44.9 | 4.1 | 0.15 | 0 | 7 | 12 | 17 |
| | 27 | 78.3 | 58.5 | 91.8 | 36.6 | 4.2 | 0.16 | 0.5 | 8 | 13 | 18 |
| | 28 | 84.1 | 56.2 | 94.4 | 29.6 | 6.7 | 0.22 | 0 | 10 | 15 | 20 |
| | 29 | 89.7 | 59.2 | 90.5 | 17.5 | 8 | 0.28 | 0 | 14 | 19 | 24 |
| | 30 | 82.4 | 61.8 | 95.6 | 39.9 | 9.7 | 0.23 | 0 | 12 | 17 | 22 |
| | 31 | 90.9 | 61.4 | 98.5 | 28.6 | 10.1 | 0.27 | 0 | 16 | 21 | 26 |
| **June** | 1 | 87.8 | 64.5 | 90.7 | 25.3 | 11.7 | 0.25 | 0 | 16 | 21 | 26 |
| | 2 | 83.7 | 61.5 | 90.1 | 49.5 | 6.7 | 0.19 | 0 | 13 | 18 | 23 |
| | 3 | 78.9 | 59 | 98.6 | 32.4 | 7.9 | 0.18 | 1.3 | 9 | 14 | 19 |
| | 4 | 82.5 | 58.6 | 94.5 | 31.8 | 4.9 | 0.22 | 0 | 11 | 16 | 21 |
| | 5 | 86 | 60.7 | 96.1 | 26.8 | 5.9 | 0.25 | 0 | 13 | 18 | 23 |
| | 6 | 91.8 | 66.5 | 91.8 | 25.9 | 12.5 | 0.3 | 0 | 19 | 24 | 29 |
| | 7 | 91.9 | 69.4 | 94.5 | 13 | 8.6 | 0.34 | 0 | 21 | 26 | 31 |
| | 8 | 75.8 | 57.3 | 64.1 | 33.3 | 12.3 | 0.24 | 0 | 7 | 12 | 17 |
| | 9 | 90.7 | 67.9 | 87.3 | 33.6 | 11 | 0.27 | 0 | 19 | 24 | 29 |
| | 10 | 84 | 61.4 | 97.6 | 46.7 | 6.8 | 0.17 | 1.62 | 13 | 18 | 23 |
| | 11 | 84.5 | 69.4 | 93.4 | 52.4 | 7.4 | 0.18 | 0 | 17 | 22 | 27 |
| | 12 | 82.9 | 64.7 | 97 | 41.3 | 6.5 | 0.18 | 0.5 | 14 | 19 | 24 |
| | 13 | 87.2 | 65.3 | 96.3 | 27.8 | 6.6 | 0.26 | 0 | 16 | 21 | 26 |
| | 14 | 86.4 | 61.3 | 83.2 | 23.7 | 6.4 | 0.27 | 0 | 14 | 19 | 24 |
| | 15 | 84 | 62.5 | 90.7 | 38.6 | 6.1 | 0.21 | 0.4 | 13 | 18 | 23 |
| | 16 | 81 | 63.2 | 95.8 | 47 | 7.6 | 0.2 | 0 | 12 | 17 | 22 |
| | 17 | 83.8 | 64.1 | 93.4 | 41.9 | 5.5 | 0.22 | 0 | 14 | 19 | 24 |
| | 18 | 100.7 | 69.9 | 91.5 | 10.3 | 7.7 | 0.34 | 0 | 25 | 27 | 35 |
| | 19 | 98.4 | 67.1 | 94.3 | 21.5 | 8.1 | 0.31 | 0 | 23 | 26 | 33 |

## Detailed Growing Season Climate Data at AG-CARES, Lamesa, TX, 2007

| Date | | Max Temp °F | Min Temp °F | Max RH % | Min RH % | Avg. Wind Speed mil/hr | ET (in.) | Rain (in.) | Heat Units Cotton | Heat Units Peanut | Heat Units Sorghum |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 20 | 91 | 63.2 | 93.7 | 26.5 | 7.9 | 0.26 | 0 | 17 | 22 | 27 |
| | 21 | 90.3 | 65.8 | 95.3 | 31.3 | 8.2 | 0.29 | 0 | 18 | 23 | 28 |
| | 22 | 89 | 67.2 | 88.2 | 32.4 | 9.7 | 0.29 | 0 | 18 | 23 | 28 |
| | 23 | 89.2 | 65.2 | 94.4 | 31.1 | 4.6 | 0.22 | 0.5 | 17 | 22 | 27 |
| | 24 | 89.1 | 64.5 | 89.3 | 33.5 | 7 | 0.27 | 0 | 17 | 22 | 27 |
| | 25 | 91.9 | 68.2 | 90.5 | 27 | 7.5 | 0.26 | 0 | 20 | 25 | 30 |
| | 26 | 92.8 | 63.3 | 96.8 | 33.4 | 10.4 | 0.27 | 0.35 | 18 | 23 | 28 |
| | 27 | 82.8 | 64.6 | 92 | 49.3 | 7.1 | 0.19 | 0.3 | 14 | 19 | 24 |
| | 28 | 84.3 | 65.5 | 91 | 36.6 | 11.8 | 0.25 | 0 | 15 | 20 | 25 |
| | 29 | 87.1 | 60.9 | 90.1 | 19.1 | 8 | 0.28 | 0 | 14 | 19 | 24 |
| | 30 | 88.7 | 62.6 | 97.3 | 31.5 | 4 | 0.24 | 0 | 16 | 21 | 26 |
| **July** | 1 | 92.2 | 67.2 | 90 | 29.8 | 5.5 | 0.26 | 0 | 20 | 25 | 30 |
| | 2 | 88.8 | 66.8 | 85.5 | 41.1 | 6.5 | 0.24 | 0 | 18 | 23 | 28 |
| | 3 | 89.8 | 67.6 | 90.6 | 37.4 | 6.8 | 0.24 | 0 | 19 | 24 | 29 |
| | 4 | 87.6 | 67.8 | 93.7 | 37.3 | 5.9 | 0.23 | 0 | 18 | 23 | 28 |
| | 5 | 86.2 | 66.1 | 93.9 | 43 | 5.6 | 0.18 | 0.48 | 16 | 21 | 26 |
| | 6 | 86.3 | 66.9 | 96.6 | 37.8 | 5.4 | 0.2 | 0 | 17 | 22 | 27 |
| | 7 | 90.3 | 65.6 | 95.1 | 30.1 | 2.7 | 0.22 | 0 | 18 | 23 | 28 |
| | 8 | 95.2 | 68.6 | 90.4 | 22.4 | 5.3 | 0.28 | 0 | 22 | 27 | 32 |
| | 9 | 97.6 | 69.3 | 89.2 | 20.2 | 8.5 | 0.32 | 0 | 23 | 27 | 33 |
| | 10 | 93.1 | 68.2 | 89.5 | 29 | 6.5 | 0.26 | 0 | 21 | 26 | 31 |
| | 11 | 91 | 70.5 | 92 | 29.5 | 6.2 | 0.24 | 0.5 | 21 | 26 | 31 |
| | 12 | 91 | 68.9 | 88.7 | 34.5 | 5.6 | 0.22 | 0 | 20 | 25 | 30 |
| | 13 | 81.8 | 67.8 | 91.9 | 60.6 | 7 | 0.17 | 0 | 15 | 20 | 25 |
| | 14 | 90.6 | 64.4 | 98.3 | 23.1 | 3.4 | 0.24 | 0 | 17 | 22 | 27 |
| | 15 | 92.9 | 64.6 | 90.4 | 26 | 3.4 | 0.24 | 0 | 19 | 24 | 29 |
| | 16 | 92.1 | 65.9 | 85.8 | 26.9 | 4.6 | 0.26 | 0 | 19 | 24 | 29 |
| | 17 | 90.7 | 66.7 | 75.3 | 26.9 | 6.2 | 0.27 | 0 | 19 | 24 | 29 |
| | 18 | 87.9 | 66.6 | 86.8 | 34.6 | 8.2 | 0.27 | 0 | 17 | 22 | 27 |
| | 19 | 86.2 | 64.3 | 91.3 | 39 | 8.1 | 0.22 | 0 | 15 | 20 | 25 |
| | 20 | 84.6 | 67.9 | 87.6 | 48.7 | 5 | 0.16 | 0 | 16 | 21 | 26 |
| | 21 | 79.8 | 68.6 | 97 | 69.6 | 4 | 0.1 | 0 | 14 | 19 | 24 |
| | 22 | 85.3 | 66.2 | 97.8 | 44.6 | 3.5 | 0.16 | 0.6 | 16 | 21 | 26 |
| | 23 | 90.7 | 65 | 96.1 | 29.7 | 3 | 0.2 | 0 | 18 | 23 | 28 |
| | 24 | 85.1 | 67.9 | 94.6 | 41.8 | 6.9 | 0.19 | 0 | 16 | 21 | 26 |
| | 25 | 84.8 | 63.3 | 96.6 | 35.1 | 4.9 | 0.22 | 0 | 14 | 19 | 24 |
| | 26 | 85.5 | 65 | 93.5 | 40 | 5.6 | 0.22 | 0 | 15 | 20 | 25 |
| | 27 | 85.8 | 63.7 | 97 | 39.4 | 4.3 | 0.17 | 0 | 15 | 20 | 25 |
| | 28 | 88.5 | 62.3 | 95.9 | 36.2 | 3.4 | 0.2 | 0.5 | 15 | 20 | 25 |
| | 29 | 85.4 | 67.5 | 95.9 | 46.3 | 3.2 | 0.19 | | 16 | 21 | 26 |
| | 30 | 85.7 | 66.9 | 97.3 | 46.9 | 4.3 | 0.19 | 0 | 16 | 21 | 26 |
| | 31 | 85.5 | 67.9 | 94.8 | 55.6 | 4.4 | 0.13 | 0.3 | 17 | 22 | 27 |
| **August** | 1 | 88.7 | 69.4 | 97 | 46.5 | 6 | 0.2 | 0.56 | 19 | 24 | 29 |
| | 2 | 81.2 | 69.1 | 96.3 | 57.6 | 4.5 | 0.16 | 0.3 | 15 | 20 | 25 |
| | 3 | 80.8 | 68.8 | 96.9 | 67.5 | 3.6 | 0.11 | 0.5 | 15 | 20 | 25 |
| | 4 | 85.1 | 67.9 | 97 | 50.5 | 5.8 | 0.2 | 0 | 16 | 22 | 27 |
| | 5 | 89.5 | 67.6 | 92.6 | 44.1 | 7.7 | 0.24 | 0 | 19 | 24 | 29 |
| | 6 | 93.1 | 69 | 93.6 | 37.7 | 8.6 | 0.27 | 0 | 21 | 26 | 31 |
| | 7 | 93.4 | 71.4 | 80.4 | 38.1 | 8.7 | 0.27 | 0 | 22 | 27 | 32 |
| | 8 | 94.3 | 70.8 | 88.9 | 39.7 | 8.4 | 0.27 | 0 | 23 | 28 | 33 |

## Detailed Growing Season Climate Data at AG-CARES, Lamesa, TX, 2007

| Date | | Max Temp (°F) | Min Temp (°F) | Max RH (%) | Min RH (%) | Avg. Wind Speed (mil/hr) | ET (in.) | Rain (in.) | Heat Units Cotton | Heat Units Peanut | Heat Units Sorghum |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 91.8 | 66.5 | 90.5 | 29.1 | 6 | 0.25 | 0 | 19 | 24 | 29 |
| | 10 | 90.9 | 67 | 86.9 | 26.5 | 5.4 | 0.25 | 0 | 19 | 24 | 29 |
| | 11 | 92.8 | 65.2 | 88.4 | 27 | 4.8 | 0.24 | 0 | 19 | 24 | 29 |
| | 12 | 91.3 | 65.8 | 91 | 33 | 4.1 | 0.22 | 0 | 19 | 24 | 29 |
| | 13 | 92 | 66.3 | 86 | 28.4 | 2.4 | 0.21 | 0 | 19 | 24 | 29 |
| | 14 | 93.1 | 66.7 | 86.4 | 22.3 | 3.4 | 0.23 | 0 | 20 | 25 | 30 |
| | 15 | 91.7 | 64.6 | 85.7 | 27 | 2.9 | 0.2 | 0 | 18 | 23 | 28 |
| | 16 | 90.7 | 68.1 | 82 | 31.4 | 3.1 | 0.2 | 0 | 19 | 24 | 29 |
| | 17 | 79.5 | 68.8 | 95.5 | 64.7 | 9.6 | 0.13 | 0.3 | 14 | 19 | 24 |
| | 18 | 89.6 | 68.4 | 96.6 | 40.8 | 8.8 | 0.2 | 0.22 | 19 | 24 | 29 |
| | 19 | 93 | 70.6 | 86.5 | 43.1 | 10.3 | 0.26 | 0 | 22 | 27 | 32 |
| | 20 | 92.7 | 69.4 | 88.2 | 43.6 | 9.7 | 0.26 | 0 | 21 | 26 | 31 |
| | 21 | 84.9 | 69.9 | 92.9 | 52 | 10 | 0.21 | 0 | 17 | 22 | 27 |
| | 22 | 88 | 68 | 94.1 | 40.5 | 11.7 | 0.24 | 0 | 18 | 23 | 28 |
| | 23 | 92.2 | 68.1 | 91.7 | 34.1 | 12.5 | 0.29 | 0 | 20 | 25 | 30 |
| | 24 | 93.5 | 70.9 | 84.6 | 36.9 | 9.3 | 0.26 | 0 | 22 | 27 | 32 |
| | 25 | 87.7 | 69.5 | 86.8 | 41.4 | 5.3 | 0.19 | 0 | 19 | 24 | 29 |
| | 26 | 87.8 | 64.6 | 92.8 | 32.5 | 4.3 | 0.19 | 0 | 16 | 21 | 26 |
| | 27 | 88.1 | 65.8 | 94.1 | 39.1 | 5.9 | 0.21 | 0 | 17 | 22 | 27 |
| | 28 | 88.2 | 64.1 | 93.6 | 34.9 | 5.5 | 0.22 | 0 | 16 | 21 | 26 |
| | 29 | 88.1 | 60.3 | 92.1 | 34.4 | 3.9 | 0.2 | 0 | 14 | 19 | 24 |
| | 30 | 81.1 | 65 | 95.7 | 57.6 | 4.6 | 0.13 | 0.42 | 13 | 18 | 23 |
| | 31 | 85.3 | 63.7 | 97.2 | 41.2 | 4.2 | 0.18 | 0 | 14 | 19 | 24 |
| **September** | 1 | 87.1 | 63.6 | 95.7 | 36.9 | 3.4 | 0.19 | 0 | 15 | 20 | 25 |
| | 2 | 87.1 | 62.2 | 91.9 | 27.6 | 3.3 | 0.19 | 0 | 15 | 20 | 25 |
| | 3 | 84.6 | 58.5 | 93.8 | 36.6 | 3.2 | 0.18 | 0 | 12 | 17 | 22 |
| | 4 | 81 | 63 | 96.1 | 48.1 | 5.1 | 0.13 | 0 | 12 | 17 | 22 |
| | 5 | 93.7 | 65.3 | 93.6 | 27.2 | 7.8 | 0.23 | 0 | 19 | 24 | 29 |
| | 6 | 96 | 72.5 | 87.5 | 25.2 | 9.1 | 0.26 | 0 | 24 | 29 | 34 |
| | 7 | 91 | 65 | 96.7 | 39.5 | 7.4 | 0.19 | 0.49 | 18 | 23 | 28 |
| | 8 | 85.1 | 65.3 | 97.3 | 51.4 | 4.4 | 0.15 | 1.02 | 15 | 20 | 25 |
| | 9 | 82.8 | 65 | 95.3 | 53.3 | 5.9 | 0.14 | 0 | 14 | 19 | 24 |
| | 10 | 82.6 | 64 | 97.6 | 55.6 | 4.3 | 0.13 | 0 | 13 | 18 | 23 |
| | 11 | 74.5 | 58.3 | 94 | 50 | 5.6 | 0.13 | 0 | 6 | 11 | 16 |
| | 12 | 77.9 | 61.1 | 95.1 | 55.8 | 3.3 | 0.13 | 0 | 9 | 14 | 19 |
| | 13 | 85.1 | 58.3 | 91.9 | 42.6 | 5.2 | 0.18 | 0 | 12 | 17 | 22 |
| | 14 | 86 | 61.8 | 96.2 | 38.9 | 4.5 | 0.18 | 0 | 14 | 19 | 24 |
| | 15 | 84.8 | 62.4 | 93.4 | 41.7 | 5.5 | 0.17 | 0 | 14 | 19 | 24 |
| | 16 | 85.4 | 61.3 | 93.7 | 32.6 | 7.4 | 0.19 | 0 | 13 | 18 | 23 |
| | 17 | 82.6 | 64.1 | 93.7 | 51.8 | 9.3 | 0.15 | 0 | 13 | 18 | 23 |
| | 18 | 89.2 | 65.9 | 95.1 | 38.1 | 7.8 | 0.21 | 0 | 18 | 23 | 28 |
| | 19 | 86.1 | 66.7 | 95.8 | 45.6 | 7.2 | 0.18 | 0 | 16 | 21 | 26 |
| | 20 | 83.8 | 65 | 96.2 | 47.2 | 6.8 | 0.16 | 0 | 14 | 19 | 24 |
| | 21 | 88 | 64 | 90.7 | 35.5 | 4.6 | 0.18 | 0 | 16 | 21 | 26 |
| | 22 | 88.2 | 61.9 | 95 | 38.1 | 4.3 | 0.17 | 0 | 15 | 20 | 25 |
| | 23 | 86 | 61.9 | 94.2 | 39.2 | 6.5 | 0.18 | 0 | 14 | 19 | 24 |
| | 24 | 87.7 | 65.7 | 88.5 | 34.1 | 6.6 | 0.19 | 0 | 17 | 22 | 27 |
| | 25 | 83.1 | 62.5 | 92.4 | 32.8 | 4.9 | 0.16 | 0 | 13 | 18 | 23 |
| | 26 | 86.1 | 58.9 | 93.9 | 37.4 | 3.8 | 0.15 | 0 | 13 | 18 | 23 |
| | 27 | 90.7 | 59.6 | 93.3 | 19.4 | 3.7 | 0.18 | 0 | 15 | 20 | 25 |
| | 28 | 87 | 60.7 | 93.6 | 30.4 | 7.5 | 0.2 | 0 | 14 | 19 | 24 |

## Detailed Growing Season Climate Data at AG-CARES, Lamesa, TX, 2007

| Date | | Max Temp | Min Temp | Max RH | Min RH | Avg. Wind Speed | ET | Rain | Heat Units | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | °F | °F | % | % | mil/hr | (in.) | (in.) | Cotton | Peanut | Sorghum |
| | 29 | 84.4 | 63.5 | 87.1 | 43.1 | 9.9 | 0.19 | 0 | 14 | 19 | 24 |
| | 30 | 91.6 | 67.1 | 93.3 | 30.7 | 5.3 | 0.19 | 0 | 19 | 24 | 29 |
| **October** | 1 | 87.7 | 61.6 | 87.1 | 40.6 | 4.7 | 0.16 | 0 | 15 | 20 | 25 |
| | 2 | 91.4 | 66.1 | 92.6 | 32.3 | 5.3 | 0.19 | 0 | 19 | 24 | 29 |
| | 3 | 91 | 56 | 89.7 | 20.4 | 1.4 | 0.13 | 0 | 14 | 19 | 24 |
| | 4 | 92.3 | 65.5 | 94.5 | 31.2 | 7.5 | 0.21 | 0 | 19 | 24 | 29 |
| | 5 | 88.7 | 62.9 | 89.5 | 31.4 | 6.1 | 0.19 | 0 | 16 | 21 | 26 |
| | 6 | 86.8 | 61.2 | 89.2 | 33.1 | 7.6 | 0.2 | 0 | 14 | 19 | 24 |
| | 7 | 86.3 | 62.5 | 90.6 | 37 | 5.3 | 0.16 | 0 | 14 | 19 | 24 |
| | 8 | 82.5 | 52.9 | 87.3 | 29 | 4.5 | 0.17 | 0 | 8 | 14 | 18 |
| | 9 | 82.2 | 56.1 | 68.6 | 23.3 | 3.4 | 0.15 | 0 | 9 | 14 | 19 |
| | 10 | 83.7 | 53.5 | 80.4 | 40.4 | 2.2 | 0.12 | 0 | 9 | 14 | 19 |
| | 11 | 86.9 | 60.6 | 94.7 | 34.8 | 5.2 | 0.16 | 0 | 14 | 19 | 24 |
| | 12 | 88.5 | 61.6 | 95.3 | 31.8 | 7.9 | 0.19 | 0 | 15 | 20 | 25 |
| | 13 | 90.1 | 59.5 | 88 | 28.7 | 9.6 | 0.23 | 0 | 15 | 20 | 25 |
| | 14 | 83.8 | 49.4 | 89.1 | 12.2 | 4.3 | 0.17 | 0 | 7 | 14 | 17 |
| | 15 | 74.3 | 48.1 | 84.8 | 30.5 | 2.3 | 0.11 | 0 | 1 | 10 | 12 |
| | 16 | 79.9 | 44.8 | 96.7 | 35.9 | 6.6 | 0.14 | 0 | 2 | 0 | 15 |
| | 17 | 79.2 | 54.8 | 91.7 | 11.6 | 11.4 | 0.24 | 0 | 7 | 0 | 17 |
| | 18 | 74.9 | 43.9 | 57.4 | 11.1 | 7 | 0.19 | 0 | 0 | 0 | 12 |
| | 19 | 84.7 | 39 | 51 | 10.1 | 3.5 | 0.15 | 0 | 2 | 0 | 17 |
| | 20 | 92.4 | 47.9 | 70.2 | 9.4 | 8.6 | 0.26 | 0 | 10 | 0 | 21 |
| | 21 | 89.6 | 47.1 | 77.4 | 10.1 | 12.2 | 0.28 | 0 | 8 | 0 | 20 |
| | 22 | 59.8 | 35.5 | 75.9 | 15.1 | 10.9 | 0.16 | 0 | 0 | 0 | 5 |
| | 23 | 73.5 | 33.7 | 59.7 | 12.7 | 5.5 | 0.15 | 0 | 0 | 0 | 12 |
| | 24 | 77.6 | 46.3 | 63.9 | 20 | 4.3 | 0.14 | 0 | 2 | 0 | 14 |
| | 25 | 74.3 | 35.5 | 82.8 | 23 | 0.3 | 0.07 | 0 | 0 | 0 | 12 |
| | 26 | 77.2 | 40.7 | 59.9 | 17.7 | 3.8 | 0.13 | 0 | 0 | 0 | 14 |
| | 27 | 73.7 | 43.2 | 64.6 | 24.6 | 5 | 0.14 | 0 | 0 | 0 | 12 |
| | 29 | 76.5 | 37 | 82.1 | 19.9 | 3.8 | 0.12 | 0 | 0 | 0 | 13 |
| | 30 | 80.9 | 40.8 | 79.6 | 11.5 | 6.8 | 0.18 | 0 | 1 | 0 | 15 |
| | 31 | 69.4 | 41.6 | 84.1 | 26.7 | 6.8 | 0.14 | 0 | 0 | 0 | 10 |

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Alton Cook
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Clint Flandermeyer

## Dawson County Commissioners Court

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**Natural Resources Conservation Service**
Chad Reed, District Conservationist
**Soil & Water Conservation District**
Denise Stribling

Although most yields were obtained in the best possible way, chances for yield differences still exist, due to variations in irrigation, rainfall, land uniformity, and other factors. For this reason, the results of these field trials should not be interpreted too closely. Small differences in yield or other data should probably be regarded as insignificant. Occasionally, results occur in demonstrations that cannot be readily explained. Keep in mind that, even in replicated research tests, relatively large yield differences between varieties can occur without being statistically significant.

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names in made with the understanding that no discrimination is intended and no endorsement by the Texas Cooperative Extension is implied. Readers should realize that results from one experiment, or one year, do not represent conclusive evidence that the same response would occur where conditions vary.

# WEATHER INFORMATION

2007 was a challenging year to say the least. High rainfall in April and May limited the number of days available to plant crops, thus, creating later than normal crop emergence across the county. The Patricia area was hit the hardest with bad weather during the planting season and crop yields in that area reflected such. A dry Summer threatened to douse any hope of a crop at all in 2007. But, a near perfect Fall allowed most Dawson County producers to enjoy record breaking yields.

Dryland producers reported cotton yields over three bales per acre and some irrigated cotton farmers reported five bales per acre production. All grades were excellent. Sorghum and peanut yields were up as well. The record cotton crop of over four hundred thousand bales means that some cotton gins will be ginning until mid to late March of 2008.

## Climate of Lamesa, Texas and Dawson County

Lamesa is located on the high, level South Plains region of Northwest Texas, at an elevation of 2,965 feet. It is near the center of Dawson County, and about eleven miles west of the Caprock Escarpment. Sulfur Springs Draw is oriented northwest to southeast across Dawson County, and runs through Lamesa. Fertile loam to sandy loam soils cover most of the Plains area of the county with some sandy lands in the western part. Lamesa is the center of a rich crop-livestock area.

The climate of Lamesa is semi-arid. It is characterized by extreme variability both in rainfall amounts and temperatures. Sunshine is abundant, with the infrequent cloudy weather occurring mostly during the winter and early spring months.

The average rainfall is 17.74 inches, but this value may be misleading because of the large differences from one year to the next. Extremely dry years were 1934, 1946, 1951, 1952, 1953, 1965 and 1998 (10.12), with less than 10 inches. Only 7.06 inches fell in 1956. The wettest year on record was 1941 with 39.07 inches (233% of normal). More than 27 inches fell in 1932, 1935, 1986, and 2004 (29.69). Seventy-five percent of the average annual rainfall occurs during the warmer half of the year, May through October. Most of this warm season rainfall is the result of thunderstorm activity, which helps to account for the extreme variability in amounts from year to year, and from one location to another.

Snow falls occasionally during the winter months, but is generally light, and remains on the ground only a short time. Infrequently, deep low pressure centers will develop over the South Plains during late January or February that will produce heavy snows in the region, but these excessive amounts are rare.

Temperatures, like rainfall, vary over a wide range. Winters are characterized by frequent cold periods followed by rapid warming. This produces frequent and pronounced temperature changes. Summers are hot and usually dry except for small thundershowers. Low humidity and adequate wind circulation, resulting in rapid evaporation help to moderate the effect of the heat. Evaporative coolers are quite efficient in the area.

The prevailing wind is from the south from about May through October, and from the southwest, November through April. The strongest winds occur during the severe thunderstorms of late spring and early summer, but these are gusts or squalls of short duration. The strongest continuous winds occur during March and April as a result of intense low pressure centers that originate on the High Plains region just to the east of the Rocky Mountains. These winds often produce severe dust storms in the region during drought years.

Humidity is rather low, with the highest values occurring during the early morning hours, and the lowest during the afternoons. Early morning values may be expected to average about 75 percent, while afternoon values will average between 40 and 45 percent. As would be expected, evaporation is high in this semi-arid region. Average annual lake evaporation is estimated at 72 inches per year.

Hail may accompany thunderstorms anytime they occur; however, the most damaging hailstorms are usually associated with the severe thunderstorms of the late spring or early summer.

The growing season is short when compared to Central or South Texas, but sufficiently long for cotton. The average freeze free period [the number of days between the last occurrence of 32 degrees F in the spring April 2$^{nd}$ and the first occurrence of 32 degrees in the fall Nov 4$^{th}$ is approximately 216 days.

# Lamesa's Freeze Dates for the Past 59 Years

| YEAR | LAST FREEZE IN SPRING | FIRST FREEZE IN THE FALL | LENGTH OF GROWING SEASON |
|---|---|---|---|
| 1949 | April 5 | October 31 | 209 days |
| 1950 | April 6 | November 4 | 212 days |
| 1951 | April 14 | November 2 | 202 days |
| 1952 | April 11 | November 10 | 213 days |
| 1953 | Missing | November 9 | |
| 1954 | April 2 | October 31 | 212 days |
| 1955 | March 29 | October 25 | 210 days |
| 1956 | April 11 | November 5 | 208 days |
| 1957 | April 14 | October 27 | 196 days |
| 1958 | March 20 | November 1 | 226 days |
| 1959 | April 15 | October 28 | 196 days |
| 1960 | April 4 | October 31 | 210 days |
| 1961 | April 17 | November 3 | 200 days |
| 1962 | April 2 | Missing | |
| 1963 | March 20 | November 23 | 248 days |
| 1964 | April 10 | November 20 | 224 days |
| 1965 | March 27 | November 27 | 245 days |
| 1966 | March 25 | November 2 | 222 days |
| 1967 | March 16 | November 4 | 243 days |
| 1968 | April 4 | November 11 | 221 days |
| 1969 | March 27 | October 31 | 200 days |
| 1970 | April 3 | October 10 | 190 days |
| 1971 | April 7 | November 18 | 225 days |
| 1972 | March 31 | October 31 | 214 days |
| 1973 | April 11 | November 22 | 225 days |
| 1974 | April 5 | November 25 | 234 days |
| 1975 | April 4 | November 13 | 223 days |
| 1976 | March 31 | October 9 | 192 days |
| 1977 | April 5 | November 2 | 211 days |
| 1978 | April 11 | November 7 | 210 days |
| 1979 | April 4 | November 1 | 211 days |
| 1980 | April 14 | October 29 | 198 days |
| 1981 | March 23 | November 10 | 233 days |
| 1982 | March 8 | November 4 | 242 days |
| 1983 | April 8 | November 28 | 234 days |
| 1984 | April 5 | November 27 | 235 days |
| 1985 | March 5 | November 20 | 258 days |
| 1986 | March 22 | November 11 | 222 days |
| 1987 | April 3 | November 10 | 221 days |
| 1988 | March 20 | November 16 | 241 days |
| 1989 | April 11 | October 19 | 192 days |
| 1990 | March 26 | October 22 | 211 days |
| 1991 | April 1 | October 30 | 213 days |
| 1992 | April 4 | October 8 | 188 days |
| 1993 | April 9 | October 30 | 204 days |
| 1994 | April 12 | November 16 | 218 days |
| 1995 | April 24 | November 3 | 192 days |
| 1996 | April 6 | October 22 | 199 days |
| 1997 | April 15 | October 27 | 197 days |
| 1998 | March 21 | November 11 | 236 days |
| 1999 | April 17 | November 3 | 201 days |
| 2000 | April 5 | November 7 | 207 days |
| 2001 | March 28 | October 16 | 202 days |
| 2002 | March 27 | November 19 | 241 days |
| 2003 | April 10 | November 19 | 222 days |
| 2004 | April 14 | November 3 | 203 days |
| 2005 | March 28 | November 14 | 230 days |
| 2006 | March 24 | November 2 | 223 days |
| 2007 | April 9 | November 7 | 212 days |
| AVERAGE | April 2 | November 4 | 216 days |

# Dawson County 75-Year Rainfall Record* 1932-2007

| YEAR | ANNUAL | YEAR | ANNUAL | YEAR | ANNUAL | YEAR | ANNUAL |
|---|---|---|---|---|---|---|---|
| 1932 | 33.36 | 1939 | 13.73 | 1946 | 9.93 | 1953 | 8.08 |
| 1933 | 12.28 | 1940 | 12.46 | 1947 | 13.48 | 1954 | 14.32 |
| 1934 | 8.91 | 1941 | 39.07 | 1948 | 12.5 | 1955 | 18.98 |
| 1935 | 27.62 | 1942 | 19.83 | 1949 | 18.9 | 1956 | 7.06 |
| 1936 | 19.66 | 1943 | 13.42 | 1950 | 17.8 | 1957 | 20.86 |
| 1937 | 19.7 | 1944 | 21.12 | 1951 | 9.80 | 1958 | 17.23 |
| 1938 | 15.81 | 1945 | 18.24 | 1952 | 9.63 | 1959 | 19.36 |

| YEAR | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | ANNUAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 | 1.00 | .76 | .15 | .30 | 1.20 | .15 | 3.91 | .64 | .30 | 4.44 | 0 | 1.48 | 14.33 |
| 1961 | 1.61 | .40 | 1.30 | 0 | .64 | 2.58 | 3.79 | .65 | 1.25 | .47 | .87 | .26 | 13.82 |
| 1962 | T | 0 | .05 | 1.46 | .21 | 2.40 | 1.58 | .60 | 4.86 | 1.69 | .24 | .59 | 13.64 |
| 1963 | .02 | .21 | 0 | .39 | 5.22 | 4.41 | 1.21 | .69 | 4.31 | 2.98 | .74 | .46 | 29.64 |
| 1964 | .80 | .31 | .46 | 0 | 1.90 | 1.67 | .29 | .99 | 2.58 | .81 | .30 | .23 | 10.34 |
| 1965 | .26 | T | .06 | 1.30 | 1.82 | 1.77 | .35 | 1.26 | .55 | 0 | 0 | .21 | 7.58 |
| 1966 | .60 | .10 | .75 | 2.55 | 1.07 | 2.59 | .83 | 4.21 | 3.67 | 0 | 0 | .03 | 16.40 |
| 1967 | 0 | .02 | 1.26 | .25 | .01 | 5.69 | 3.09 | 0 | 1.09 | .53 | .77 | .75 | 13.46 |
| 1968 | 1.68 | 1.20 | 3.39 | 1.54 | 1.02 | 2.04 | 1.28 | 2.99 | .52 | .16 | 2.67 | .28 | 18.77 |
| 1969 | .27 | .98 | 1.74 | 1.82 | 7.65 | 2.50 | 2.22 | .47 | 5.66 | 3.95 | 1.34 | .20 | 28.80 |
| 1970 | T | .07 | 3.12 | .20 | 1.52 | 1.95 | .22 | .26 | 3.08 | 2.54 | 0 | .15 | 13.11 |
| 1971 | 0 | 0 | 0 | 1.01 | 2.02 | 2.45 | 2.41 | 4.80 | 4.20 | .79 | .06 | .23 | 17.97 |
| 1972 | .25 | 0 | .15 | .10 | 2.67 | .90 | 4.96 | 6.06 | 1.18 | 3.47 | .57 | 0 | 20.31 |
| 1973 | 2.55 | 1.11 | 1.64 | .70 | 1.46 | 1.51 | 4.40 | 1.01 | 2.06 | 1.25 | .02 | 0 | 17.71 |
| 1974 | .08 | .02 | .54 | .72 | .50 | .11 | .35 | 3.18 | 6.83 | 5.73 | .52 | .17 | 18.75 |
| 1975 | .50 | 2.32 | 0 | .41 | 3.22 | 4.49 | 4.67 | .80 | 4.17 | .10 | 1.10 | .38 | 22.16 |
| 1976 | T | .03 | .06 | 4.24 | 1.47 | 1.31 | 7.92 | .92 | 4.80 | 2.45 | .55 | .48 | 24.23 |
| 1977 | .94 | .25 | .84 | 1.27 | 1.45 | 4.09 | .65 | 2.34 | .03 | .74 | T | .03 | 12.63 |
| 1978 | .42 | .59 | .75 | .54 | 4.10 | 2.93 | .13 | 1.03 | 5.81 | 1.78 | 1.32 | .03 | 19.43 |
| 1979 | .72 | .37 | .69 | .30 | 1.35 | 5.32 | 3.63 | 2.77 | 0 | T | .45 | 2.25 | 17.85 |
| 1980 | .61 | .18 | .01 | .82 | 3.33 | 1.68 | .09 | 2.10 | 9.00 | .02 | 1.15 | 1.16 | 20.15 |
| 1981 | .27 | 1.65 | .34 | 2.29 | 1.24 | 2.48 | 1.66 | 4.12 | 4.33 | 4.36 | .13 | .36 | 23.23 |
| 1982 | .68 | .38 | 1.03 | .85 | 2.98 | 4.17 | 1.46 | .09 | .99 | .60 | 1.01 | 1.68 | 15.92 |
| 1983 | 2.43 | .08 | .49 | 1.14 | .55 | .04 | 0 | .42 | .38 | 5.83 | 1.74 | .51 | 13.60 |
| 1984 | .24 | T | .05 | T | 1.05 | 5.30 | 4.65 | 5.24 | 1.38 | 4.35 | 2.50 | 1.61 | 26.37 |
| 1985 | .34 | .44 | 1.14 | 2.32 | 4.28 | 3.56 | 1.12 | .14 | 2.37 | 7.89 | .4 | .05 | 23.79 |
| 1986 | T | .29 | .33 | .46 | 2.60 | 6.69 | 1.38 | 1.70 | 7.11 | 2.38 | 1.99 | 5.53 | 27.46 |
| 1987 | .20 | 2.51 | .20 | .13 | 8.53 | 3.00 | 1.08 | 2.35 | 5.18 | .17 | .08 | .29 | 23.72 |
| 1988 | .12 | 1.02 | .85 | 1.36 | 2.87 | 1.95 | 6.55 | 1.33 | 6.76 | 0 | .01 | .32 | 23.14 |
| 1989 | .43 | 1.09 | .12 | .49 | 2.05 | 3.26 | .79 | 1.34 | 4.57 | .10 | T | .27 | 14.51 |
| 1990 | .23 | 2.22 | 2.06 | 2.18 | .56 | 2.00 | 1.58 | 3.80 | 4.67 | 1.31 | 1.48 | .75 | 22.84 |
| 1991 | 1.75 | .24 | 1.18 | 0 | 1.36 | 1.41 | 4.97 | 2.57 | 5.87 | .67 | 2.62 | 4.34 | 26.98 |
| 1992 | 1.67 | 2.41 | 1.55 | .71 | 6.17 | 5.60 | 1.59 | 2.64 | 2.28 | T | 2.02 | .26 | 26.90 |
| 1993 | 1.09 | 2.49 | .91 | 1.46 | 4.39 | 1.54 | 1.30 | 2.05 | .74 | 1.15 | 1.10 | .68 | 18.90 |
| 1994 | .33 | .15 | .02 | .73 | 3.20 | .75 | 1.73 | 0 | 6.81 | .85 | 1.14 | .43 | 15.42 |
| 1995 | .64 | .47 | .07 | .98 | 3.92 | 3.21 | .27 | 1.71 | 5.09 | .75 | .16 | .01 | 17.28 |
| 1996 | .15 | 0 | .05 | .56 | .16 | 1.81 | 1.25 | 2.76 | 1.88 | .41 | 1.0 | .01 | 10.04 |
| 1997 | .03 | 1.87 | 0 | 1.41 | 1.38 | 3.12 | 2.33 | 2.50 | 2.33 | .93 | .28 | 2.36 | 18.54 |
| 1998 | .28 | .91 | 1.98 | .007 | .31 | 1.84 | .56 | 1.47 | .64 | .79 | .89 | .44 | 10.12 |
| 1999 | .43 | 0 | 2.24 | .37 | 2.79 | 5.46 | 1.33 | 1.15 | .27 | .21 | 0 | .07 | 14.30 |
| 2000 | .23 | .15 | 1.34 | .13 | .73 | 5.02 | .08 | .12 | 0 | 5.39 | 1.73 | .62 | 15.54 |
| 2001 | 1.06 | .5 | 1.46 | .08 | 1.95 | 1.17 | 0 | .84 | 1.61 | .24 | 1.25 | .03 | 10.19 |
| 2002 | .75 | .96 | 3.29 | .98 | .65 | 1.01 | 2.59 | .24 | .71 | 4.41 | .40 | 1.57 | 17.56 |
| 2003 | 0 | .43 | .64 | .16 | 2.79 | 4.78 | .02 | .50 | .98 | .46 | .36 | 0 | 11.12 |
| 2004 | .98 | 1.33 | 1.57 | 1.55 | .19 | 3.72 | 2.56 | 1.65 | 4.81 | 4.74 | 5.96 | .63 | 29.69 |
| 2005 | .53 | .87 | .51 | .19 | 1.47 | 2.1 | 2.64 | 2.03 | 0 | 3.68 | 0 | .05 | 14.07 |
| 2006 | .04 | .22 | 1.25 | 1.28 | 1.16 | .43 | .19 | 3.05 | 4.03 | 4.11 | .15 | 1.43 | 17.34 |
| 2007 | 1.37 | .20 | 2.52 | 2.68 | 6.37 | 3.77 | 2.63 | 1.02 | 4.18 | 0 | .75 | .65 | 26.14 |
| AVERAGE | 0.65 | 0.69 | 0.92 | 0.95 | 2.28 | 2.74 | 1.96 | 1.76 | 3.04 | 1.95 | 0.91 | 0.72 | 18.45 |

*From: Lamesa Reporting Station

# DAWSON COUNTY FIRST BALE WINNERS
# 1947-2007

| PRODUCER | DATE |
|---|---|
| Glenn Allen, Jr. | August 29, 1947 |
| P.A. Robinett | September 13, 1948 |
| E.L. Beckmeyer | August 18, 1949 |
| Jack Grigg | August 24, 1950 |
| Allen J. Adams | August 18, 1951 |
| George Barkowsky | August 18, 1952 |
| Frank Barkowsky | August 25, 1953 |
| F.M. McLendon & Art Ayres | August 12, 1954 |
| C.T. McKeown | August 25, 1955 |
| R.L. Holder | August 11, 1956 |
| S.R. Barron | August 31, 1957 |
| E.E. Stringer | August 18, 1958 |
| A.G. Limmer | August 20, 1959 |
| Richard Woodward | August 26, 1960 |
| W.G. Bennett | August 16, 1961 |
| C.R. Foster | August 10, 1962 |
| R.D. Gibson | August 15, 1963 |
| Leo Burkett | August 08, 1964 |
| J.W. Dennis | August 26, 1965 |
| Lewis Wise | September 07, 1966 |
| Henry Vogler | August 28, 1967 |
| Delmar Moore | August 27, 1968 |
| Jack Grigg | August 19, 1969 |
| W.G. "Bill" Bennett | August 27, 1970 |
| Carl Garrett | September 03, 1971 |
| Charlie King | September 07, 1972 |
| Earl Hatchett | September 01, 1973 |
| George Lopez | August 22, 1974 |
| Bud Hale | September 15, 1975 |
| Gonzell Hogg | September 18, 1976 |
| Leroy Holladay | August 15, 1977 |
| Marshall Cohorn | August 28, 1978 |
| Bob Hawkins | September 08, 1979 |
| Gonzell Hogg | September 08, 1980 |
| Craig Woodward | August 28, 1981 |
| Andy Bratcher | September 14, 1982 |
| Charlie King, Jr. | September 03, 1983 |
| Ronnie Meador | September 18, 1984 |
| Bob Kilgore | August 27, 1985 |
| Glen Phipps | September 24, 1986 |
| Lewis Wise | September 26, 1987 |
| Rocky Free | September 09, 1988 |
| Carroll Bennett | September 04, 1989 |
| Wade Bennett | August 27, 1990 |
| Johnny Todd | September 04, 1991 |
| Wade Bennett | September 14, 1992 |
| Bob Kilgore | August 18, 1993 |
| E. Lee Harris | August 28, 1994 |
| Lloyd Cline | September 02, 1995 |
| Donald Vogler | September 16, 1996 |
| Brent Hendon | September 3, 1997 |
| Tommy Merritt | September 6, 1998 |
| Foy O'Brien | August 23, 1999 |
| Theresa Estes | September 7, 2000 |
| Kent Youngblood | August 23, 2001 |
| Johnny Montgomery | August 31, 2002 |
| Lonnie Wright | September 9, 2003 |
| Lonnie Wright | September 7, 2004 |
| Theresa Estes | October 4, 2005 |
| Benny & Kay White | September 30, 2006 |
| Ricky Schneider | October 8, 2007 |

## COTTON PRODUCTION - 68 YEAR RECORD*

| YEAR | PRODUCTION BALES | ACRES | YEAR | PRODUCTION BALES | ACRES |
|---|---|---|---|---|---|
| 1939 | 41,500 | 94,100 | 1974 | 38,800 | 72,900 |
| 1940 | 39,100 | 127,400 | 1975 | 123,400 | 237,600 |
| 1941 | 57,900 | 130,200 | 1976 | 244,200 | 271,400 |
| 1942 | 74,260 | 126,000 | 1977 | 230,000 | 290,000 |
| 1943 | 51,950 | 129,000 | 1978 | 92,000 | 271,000 |
| 1944 | 55,800 | 121,000 | 1979 | 243,800 | 275,000 |
| 1945 | 7,150 | 44,800 | 1980 | 88,000 | 293,900 |
| 1946 | 27,100 | 111,000 | 1981 | 270,600 | 316,500 |
| 1947 | 102,000 | 266,000 | 1982 | 153,400 | 251,200 |
| 1948 | 60,400 | 267,000 | 1983 | 57,800 | 103,400 |
| 1949 | 193,000 | 318,000 | 1984 | 129,900 | 225,500 |
| 1950 | 96,000 | 225,000 | 1985 | 147,200 | 220,000 |
| 1951 | 67,000 | 319,000 | 1986 | 39,000 | 220,700 |
| 1952 | 50,000 | 361,000 | 1987 | 120,000 | 227,000 |
| 1953 | 12,300 | 45,000 | 1988 | 204,168 | 245,244 |
| 1954 | 81,164 | 213,000 | 1989 | 85,515 | 199,750 |
| 1955 | 85,000 | 185,000 | 1990 | 220,800 | 221,500 |
| 1956 | 82,057 | 202,000 | 1991 | 99,300 | 153,500 |
| 1957 | 129,000 | 201,000 | 1992 | 156,800 | 178,800 |
| 1958 | 143,000 | 202,000 | 1993 | 226,500 | 237,062 |
| 1959 | 152,767 | 192,084 | 1994 | 140,100 | 221,900 |
| 1960 | 176,756 | 205,073 | 1995 | 171,700 | 266,900 |
| 1961 | 213,217 | 221,393 | 1996 | 108,100 | 112,500 |
| 1962 | 145,648 | 212,330 | 1997 | 213,900 | 251,800 |
| 1963 | 160,483 | 196,489 | 1998 | 80,800 | 86,500 |
| 1964 | 93,944 | 156,000 | 1999 | 209,100 | 258,900 |
| 1965 | 153,000 | 186,354 | 2000 | 81,500 | 102,700 |
| 1966 | 130,000 | 196,009 | 2001 | 82,000 | 84,500 |
| 1967 | 76,317 | 113,553 | 2002 | 190,000 | 216,500 |
| 1968 | 182,096 | 168,554 | 2003 | 191,500 | 238,000 |
| 1969 | 140,159 | 214,138 | 2004 | 330,200 | 251,700 |
| 1970 | 169,300 | 221,700 | 2005 | 400,000 | 293,500 |
| 1971 | 169,300 | 221,700 | 2006 | 161,000 | 297,500 |
| 1972 | 234,400 | 215,200 | 2007 | 440,000 (est.) | 275,000 (est.) |
| 1973 | 315,300 | 268,500 | | | |

* 68 Year Average: **Production Bales**: 141,151 / **Acres**: 205,021 / **Yield per acre**: 344 lbs.

# SOME FACTS ABOUT DAWSON COUNTY

The land area in Dawson County is 577,920 acres.

There are 363,339 acres in crop land, 110,118 acres in the Conservation Reserve Program, 87,207 acres in rangeland and pasture and 17,256 acres in roads, town sites, etc.

The county has approximately 600 center pivot systems and 75,000 total irrigated acres.

Projected estimated gross agricultural income for 2007 is $197,624,800

The county should produce around 440,000 bales of cotton for 2007.

| ESTIMATED CROP ACREAGE FOR 2007 | HARVESTED ACRES |
|---|---|
| Cotton - Irrigated | 57,698 |
| Cotton - Dryland | 217,962 |
| Grain Sorghum - Irrigated & Dryland | 18,000 |
| Peanut - Irrigated | 5,637 |
| Haygrazer | 28,900 |
| Wheat - Irrigated & Dryland | 3,600 |
| Alfalfa - Irrigated | 1,468 |
| Grapes - Irrigated | 97 |
| Sunflower | 963 |