2008 Annual Report

AGRICULTURAL COMPLEX FOR ADVANCED RESEARCH AND EXTENSION SYSTEMS

(AG-CARES)

IN COOPERATION WITH

★ Lamesa Cotton Growers

★ Texas AgriLife Extension Service ★ Texas AgriLife Research

AgriLIFE RESEARCH
Texas A&M System
Improving Life Through Science and Technology.

AgriLIFE EXTENSION
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Improving Lives. Improving Texas.

Texas AgriLife Research and Extension Center at Lubbock
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Lubbock, TX 79403-6603

AG-CARES continue to showcase the ongoing cooperative efforts of Lamesa Cotton Growers and our Texas AgriLIFE agencies to develop and demonstrate the latest technology for producers in the Southern High Plains. At a breakfast meeting in the spring, Texas House Speaker, Tom Craddick from Midland was briefed on the ongoing research at AG-CARES and remarked he wanted the Texas House Agriculture Committee to see first hand how the site operated. In September 2008, a group of state legislators including Speaker Craddick, Chair of Appropriations Warren Chisum from Pampa, Chair of Energy Resources Rick Hardcastle from Vernon, Chair of State Affairs David Swinford from Amarillo, Chair of Agriculture Sid Miller from Stephenville and members Jimmie Don Aycock from Lampasas, Drew Darby from San Angelo, and Joe Heflin from Crosbyton came to Lamesa. They were given a presentation on the history of the site and then a tour with several stops where our scientists explained the purpose and impact of the research.

The overall mission of AG-CARES remains to develop cotton-based cropping systems utilizing new technologies to optimize cotton profitability for the Southern High Plains allowing our producers to compete in a world market. Here our scientists can scale up their experiments comparable to conditions 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 fourth year on the 20 acres of subsurface drip irrigation at AG-CARES. The system continues to perform well without serious maintenance problems and compliments research 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 2008, there were at least 125 cotton varieties being offered with a few more expected in the coming season. Our 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. Our results continue to indicate that all varieties do not respond equally across all irrigation levels. Producers with farms of differing irrigation capacities should carefully choose their varieties.

We continue to leverage funds provided by producers groups, commodities, state agencies, and industry to meet and address agricultural needs of producers in the area. Federal, state and county elected officials provide strong support for AG-CARES as evidenced by the very successful tour held this fall for some our state representatives who are a strong voice for agriculture in Austin.

Lamesa Cotton Growers provide great support, leadership and direction for our programs through their officers: Matt Farmer, Jerry Chapman, Kevin Pepper and John Farris. Dr. Randy Boman, Jeff Wyatt, and Tommy Doederlein, and Dr. Wayne Keeling 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

Galen Chandler
Regional Program Director -
Texas AgriLife Extension Service
Agriculture and Natural Resources

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

Americot Cotton Seed
Bayer CropScience/FiberMax
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TITLE:

Cotton variety performance as affected by low-energy precision application (LEPA) irrigation levels at AG-CARES, Lamesa, TX, 2006 - 2008.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Jacob Reed and Michael Petty; Professor, Agricultural Engineer-Irrigation, Sr. Research Associate, and Research Assistant.

MATERIALS AND METHODS:

Plot Size:	4 rows by 500 feet, 3 replications				
Planting Date:	May 3, 2006; May 15, 2007; May 7, 2008				
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 (Terminate Rye Cover)				
	Roundup PowerMax 26 oz/A POST (June 13)				
	Roundup PowerMax 26 oz/A POST (June 30)				
Fertilizer:	130-40-0 (base) N rates proportional to irrigation				
Irrigation in-season:		2006	2007	2008	Avg.
(inches)	Low	8.0	3.0	5.7	5.6
	Medium	12.6	4.0	7.6	8.1
	High	16.8	5.0	9.5	10.4
Harvest Dates:	October 30, 2006; October 26, 2007; October 29, 2008				

RESULTS AND DISCUSSION:

Four Roundup Ready Flex/Bollgard II varieties were planted under three low-energy precision application (LEPA) irrigation levels in 2006-2008. Irrigation level is based on maximum pumping capacities of 0.12”, 0.18”, and 0.24” per day. These represent a “base” irrigation amount and ±33% of the base. Irrigation inputs have varied over the three years depending on in-season rainfall, with highest amounts applied during the dry summer of 2006, much less due to timely rainfall in 2007, and an intermediate amount in 2008. Cotton was planted in early- to mid-May each year and harvested in late October. Plot weights and grab samples were collected at harvest and ginned for turnout and fiber analysis.

In 2008, cotton lint yields ranged from 748 – 1394 lbs/A. When averaged across irrigation levels, highest yields were produced with ST 4554 B2RF, DP 143 B2RF, and AM 1532 B2RF (Table 1). When varieties were averaged across irrigation treatments, yields were reduced with the low water treatment (base -33%) compared to the base level. Increasing irrigation (base +33%) did not significantly increase yield compared to the base irrigation level. Variety or irrigation level did not affect lint quality (loan value) (Table 2). Gross revenues (yield × loan value) were affected by variety and irrigation level, and related to yield (Table 3). Gross revenues were highest with the three highest yielding varieties and reduced with the low irrigation level but not increased with the high irrigation treatment.

When yields, loan values, and gross revenue were compared over the 3-year period, similar results were seen as in 2008 (Tables 4, 5, and 6). Increasing irrigation above the base level did not increase yields or gross revenues significantly (Table 4). Variety selection did influence yield, loan value, and gross revenues. AM 1532 B2RF, ST 4554 B2RF, and DP 143 B2RF produced higher yields and gross revenues than FM 9063 B2RF. Highest loan values were achieved with FM 9063 B2RF, mainly due to longer staple. Results of this 3-year study indicate that although base irrigation amount varied from year to year depending on rainfall, additional irrigation above the base level did not significantly increase cotton yields or gross revenues. At the low irrigation level, yields were reduced proportionally to the reduced irrigation amount.

Table 1. Effects of B2RF variety and LEPA irrigation levels on cotton lint yields at AG-CARES, Lamesa, TX, 2008.

	L	M	H	Avg.
Variety	-------------------------------	---lbs/A---	-------------------------------	
AMC 1532 B2RF	833 a	1191 a	1246 a	1090 AB
ST 4554 B2RF	939 a	1364 a	1394 a	1232 A
FM 9063 B2RF	748 a	961 a	1157 a	955 B
DP 143 B2RF	836 a	1280 a	1144 a	1087 AB
Avg.	839 B	1199 A	1235 A	

Table 2. Effects of B2RF variety and LEPA irrigation levels on lint value at AG-CARES, Lamesa, TX, 2008.

	L	M	H	Avg.
Variety	-------------------------------	---¢/lb---	-------------------------------	
AMC 1532 B2RF	53.35 a	53.15 a	55.36 a	53.95 A
ST 4554 B2RF	51.83 a	51.93 a	53.00 a	52.25 A
FM 9063 B2RF	52.45 a	54.70 a	53.78 a	53.64 A
DP 143 B2RF	52.80 a	54.75 a	54.28 a	53.94 A
Avg.	52.60 A	53.63 A	54.10 A	

Table 3. Effects of B2RF variety and LEPA irrigation levels on gross revenues at AG-CARES, Lamesa, TX, 2008.

	L	M	H	Avg.
Variety	-------------------------------	---$/A---	-------------------------------	
AMC 1532 B2RF	444 a	633 a	689 a	589 AB
ST 4554 B2RF	486 a	707 a	738 a	644 A
FM 9063 B2RF	395 a	525 ab	722 a	514 B
DP 143 B2RF	441 a	702 a	621 a	588 AB
Avg.	442 B	642 A	668 A	

Table 4. Effects of B2RF variety and LEPA irrigation levels on cotton lint yields at AG-CARES, Lamesa, TX, 2006 to 2008.

	L	M	H	Avg.
Variety	lbs/A			
AMC 1532 B2RF	869 ab	1238 a	1313 a	1140 A
ST 4554 B2RF	932 a	1317 a	1296 a	1181 A
FM 9063 B2RF	747 b	1009 b	1136 a	964 B
DP 143 B2RF	865 ab	1230 a	1194 a	1096 A
Avg.	853 B	1198 A	1235 A	

Table 5. Effects of B2RF variety and LEPA irrigation levels on lint value at AG-CARES, Lamesa, TX, 2006 to 2008.

	L	M	H	Avg.
Variety	¢/lb			
AMC 1532 B2RF	52.72 a	53.72 b	55.76 a	54.07 B
ST 4554 B2RF	52.23 a	52.45 b	52.05 c	52.24 C
FM 9063 B2RF	53.97 a	55.73 a	55.88 a	55.19 A
DP 143 B2RF	53.17 a	52.92 b	53.31 b	53.14 BC
Avg.	53.02 B	53.71 AB	54.25 A	

Table 6. Effects of B2RF variety and LEPA irrigation levels on gross revenues at AG-CARES, Lamesa, TX, 2006 to 2008.

	L	M	H	Avg.
Variety	$/A			
AMC 1532 B2RF	471 a	671 a	736 a	626 A
ST 4554 B2RF	496 a	692 a	681 a	623 A
FM 9063 B2RF	410 a	567 b	636 a	538 B
DP 143 B2RF	469 a	662 ab	645 a	592 AB
Avg.	461 B	648 A	675 A	

TITLE:

Cotton Variety Performance as Affected by Sub-surface Drip Irrigation (SDI) Levels at AG-CARES, Lamesa, TX, 2006-2008.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Randy Boman, , Jacob Reed and Michael Petty; Professor, Agricultural Engineer-Irrigation, Extension Agronomist-Cotton, Sr. Research Associate, and Research Assistant.

MATERIALS AND METHODS:

Plot Size:	4 rows by 400 feet, 3 replications
Planting Date:	May 11, 2006; May 15, 2007; June 5, 2008
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:

	2006	2007	2008	Avg.
Medium	14.1”	6.7”	8.0”	9.6”
High	18.1”	10.0”	11.6”	13.2”

Harvest Dates: October 31, 2008; November 4-5, 2007; November 12, 2008

RESULTS AND DISCUSSION:

Four Roundup Ready Flex/Bollgard II varieties were grown under two levels of sub-surface drip irrigation (SDI) in 2006 through 2008. Irrigation treatments were based on maximum pumping capacity of 0.17” and 0.25” per day. Total irrigation applied during the 2008 growing season was 8.0” and 11.6” for the two treatments. Cotton was planted June 5 and harvested November 12.

In 2008, lint yields ranged from 1357 to 1635 lbs/A. When averaged across irrigation treatments yields ranged from 1428 to 1527 lbs/A with AM 1532 B2RF, ST 4554 B2RF, and DP 143 B2RF producing similar yields (Table 1). When averaged across varieties, similar yields were produced with both irrigation treatments. Loan values were reduced at the higher irrigation level, with highest loan values achieved with ST 4554 B2RF and FM 9063 B2RF (Table 2). Gross revenues were similar across all varieties and irrigation treatments (Table 3).

FM 9063 B2RF and ST 4554 B2RF were planted at three populations within both irrigation treatments. Planting rates were 32, 52 and 80 thousand seeds/A. Final populations were 28, 46, and 66 thousand plants per acre or 2.1, 3.5 and 5.0 plants/foot. Plant population did not affect yield, loan value, or gross revenues for either variety in either irrigation treatment (Tables 4, 5, and 6) in 2008.

When yields were averaged across 2006, 2007, and 2008, highest yields were produced with AM 1532 B2RF, ST 4554 B2RF, and DP 143 B2RF. When averaged across varieties, yields increased only 6% with a 47% increase in irrigation amount (Table 7). Loan values were reduced with the higher irrigation treatment and differences were observed between varieties (Table 8). Gross revenue differences between irrigation treatments and varieties were similar to yield response (Table 9). Plant population did not affect yield, lint value, or gross revenue (Tables 10, 11, and 12).

Table 1. Effects of variety and SDI levels on lint yields at AG-CARES, Lamesa, TX, 2008.

Variety	M	H	Avg.
	-------------------------lbs/A------------------------------		
AMC 1532 B2RF	1560	1494	1527 ab
ST 4554 B2RF	1488	1635	1561 a
FM 9063 B2RF	1491	1357	1424 b
DP 143 B2RF	1488	1429	1458 ab
Avg.	1492 a	1487 a	

Table 2. Effects of variety and SDI levels on lint values at AG-CARES, Lamesa, TX, 2008.

Variety	M	H	Avg.
	-------------------------¢/lb------------------------------		
AMC 1532 B2RF	53.27	47.83	50.55 ab
ST 4554 B2RF	54.42	52.58	53.50 a
FM 9063 B2RF	53.40	50.86	52.13 ab
DP 143 B2RF	49.10	46.45	47.78 b
Avg.	53.23 a	50.58 b	

Table 3. Effects of variety and SDI levels on gross revenues at AG-CARES, Lamesa, TX, 2008.

Variety	M	H	Avg.
	------------------------------$/A--------------------------------		
AMC 1532 B2RF	806	720	763 a
ST 4554 B2RF	805	862	834 a
FM 9063 B2RF	791	685	738 a
DP 143 B2RF	710	684	697 a
Avg.	788 a	756 a	

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

CARES, Lamesa, TX, 2008.

Variety	32 (28K)	52 (46K)	80 (66K)
	------------------------lbs/A------------------------------		
FM 9063 B2RF Med Irrigation	1555	1566	1352
FM 9063 B2RF High Irrigation	1336	1369	1366
ST 4554 B2RF Med Irrigation	1558	1418	1486
ST 4554 B2RF High Irrigation	1733	1605	1567
Avg.	1546 a	1491 a	1443 a

Table 5. Effects of variety, population, and SDI levels on lint values at AG-CARES, Lamesa, TX, 2008.

Variety	32 (28K)	52 (46K)	80 (66K)
	------------------------¢/lb------------------------------		
FM 9063 B2RF Med Irrigation	54.33	55.15	50.73
FM 9063 B2RF High Irrigation	49.88	49.95	52.75
ST 4554 B2RF Med Irrigation	55.25	54.78	53.23
ST 4554 B2RF High Irrigation	50.93	53.63	53.20
Avg.	52.59 a	51.27 a	52.48 a

Table 6. Effects of variety, population, and SDI levels on gross revenues at AG-CARES, Lamesa, TX, 2008.

Variety	32 (28K)	52 (46K)	80 (66K)
	------------------------------$/A--------------------------------		
FM 9063 B2RF Med Irrigation	875	838	659
FM 9063 B2RF High Irrigation	693	651	710
ST 4554 B2RF Med Irrigation	870	766	779
ST 4554 B2RF High Irrigation	906	850	831
Avg.	836 a	753 a	744 a

Table 7. Effects of variety and SDI levels on lint yields at AG-CARES, Lamesa, TX, 2006-2008.

Variety	M	H	Avg.
	-------------------------lbs/A------------------------------		
AMC 1532 B2RF	1565	1675	1620 ab
ST 4554 B2RF	1566	1771	1669 a
FM 9063 B2RF	1571	1524	1548 b
DP 143 B2RF	1531	1661	1596 ab
Avg.	1558 b	1658 a	

Table 8. Effects of variety and SDI levels on lint values at AG-CARES, Lamesa, TX, 2006-2008.

Variety	M	H	Avg.
	-------------------------¢/lb------------------------------		
AMC 1532 B2RF	55.84	54.52	55.86 a
ST 4554 B2RF	55.73	55.98	55.86 a
FM 9063 B2RF	56.31	54.26	55.29 a
DP 143 B2RF	53.49	51.73	52.61 b
Avg.	55.34 a	54.12 b	

Table 9. Effects of variety and SDI levels on gross revenues at AG-CARES, Lamesa, TX, 2006-2008.

Variety	M	H	Avg.
	------------------------------$/A--------------------------------		
AMC 1532 B2RF	869	931	900 ab
ST 4554 B2RF	884	1002	943 a
FM 9063 B2RF	882	834	858 ab
DP 143 B2RF	816	881	849 b
Avg.	863 b	912 a	

Table 10. Effects of variety, population, and SDI levels on lint yields at AG-CARES, Lamesa, TX, 2006-2008.

Variety	32 (28K)	52 (46K)	80 (66K)
	-------------------------lbs/A------------------------------		
FM 9063 B2RF Med Irrigation	1510	1572	1411
FM 9063 B2RF High Irrigation	1602	1524	1594
ST 4554 B2RF Med Irrigation	1666	1566	1628
ST 4554 B2RF High Irrigation	1825	1771	1759
Avg.	1651 a	1608 a	1599 a

Table 11. Effects of variety, population, and SDI levels on lint values at AG-CARES, Lamesa, TX, 2006-2008.

Variety	32 (28K)	52 (46K)	80 (66K)
	-------------------------¢/lb------------------------------		
FM 9063 B2RF Med Irrigation	55.59	56.31	54.79
FM 9063 B2RF High Irrigation	54.07	54.26	54.43
ST 4554 B2RF Med Irrigation	55.90	55.73	56.84
ST 4554 B2RF High Irrigation	55.64	55.98	53.06
Avg.	55.30 a	55.57 a	54.78 a

Table 12. Effects of variety, population, and SDI levels on gross revenues at AG-CARES, Lamesa, TX, 2006-2008.

Variety	32 (28K)	52 (46K)	80 (66K)
	------------------------------$/A--------------------------------		
FM 9063 B2RF Med Irrigation	847	882	771
FM 9063 B2RF High Irrigation	895	834	874
ST 4554 B2RF Med Irrigation	943	884	936
ST 4554 B2RF High Irrigation	1028	1002	942
Avg.	928 a	900 a	881 a

TITLE:

Cotton Variety Performance in a Sorghum/Cotton Rotation as Affected by Low-Energy Precision Application (LEPA) Irrigation Levels at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Jacob Reed and Michael Petty; Professor, Agricultural Engineer-Irrigation, Sr. Research Associate, and Research Assistant.

MATERIALS AND METHODS:

Plot Size:	4 rows by 500 feet, 3 replications
Planting Date:	May 8
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 (April 14) Roundup WeatherMax 26 oz/A POST (May 13) Roundup PowerMax 26 oz/A POST (June 13) Roundup PowerMax 26 oz/A POST (July 18)
Fertilizer:	130-40-0

Irrigation in-season:

	Low	Medium	High
Total	5.1”	7.6”	10.1”

Harvest Date:	October 28

RESULTS AND DISCUSSION:

Four Roundup Ready Flex/Bollgard II varieties were planted following sorghum grown in 2007. The only tillage performed to the sorghum stalks was a stalk puller run prior to planting. Irrigation levels were based on 0.12”, 0.18”, and 0.24” per day maximum pumping capacities and totaled 5.1”, 7.6” and 10.1”/A during the growing season for the three irrigation levels. No cultivation was performed during the growing season.

Excellent cotton yields were produced in this trial following sorghum. When averaged across irrigation treatments, lint yields ranged from 1378 to 1715 lbs/A (Table 1). Highest yields were produced with ST 4554 B2RF, DP 143 B2RF and AM 1532 B2RF. When averaged across varieties, higher yields were produced at the medium irrigation (7.6”/A applied) compared to the low irrigation treatment (5.7”/A applied). Yields were not significantly greater with the high irrigation treatment. Irrigation level did not affect loan value, but when averaged across irrigation levels, highest loan value was achieved with AM 1532 B2RF (Table 2). Gross revenues per acre increased from low to medium irrigation, but were not significantly greater with the high irrigation level (Table 3). Similar gross revenues were produced with AMC 1532 B2RF, ST 4554 B2RF, and DP 143 B2RF varieties, which were greater than revenues produced with FM 9063 B2RF.

Table 1. Effects of B2RF variety and LEPA irrigation levels on cotton lint yields at AG-CARES, Lamesa, TX, 2008.

Variety	L	M	H	Avg.
	-----	lbs/A	-----	-----
AMC 1532 B2RF	1320 a	1656 a	1705 a	1560 AB
ST 4554 B2RF	1475 a	1818 a	1851 a	1715 A
FM 9063 B2RF	1130 a	1440 a	1564 a	1378 B
DP 143 B2RF	1381 a	1725 a	1758 a	1622 A
Avg.	1327 B	1660 A	1720 A	
% change	(-20%)	(-----)	(+4%)	

Table 2. Effects of B2RF variety and LEPA irrigation levels on lint value at AG-CARES, Lamesa, TX, 2008.

Variety	L	M	H	Avg.
	-----	¢/lb	-----	-----
AMC 1532 B2RF	55.78 a	55.65 a	56.36 a	55.93 A
ST 4554 B2RF	53.51 a	54.60 a	55.03 ab	54.38 B
FM 9063 B2RF	53.86 a	54.08 a	54.08 b	53.60 B
DP 143 B2RF	53.11 a	54.26 a	53.96 b	53.78 B
Avg.	54.07 A	54.34 A	54.86 A	

Table 3. Effects of B2RF variety and LEPA irrigation levels on gross revenues at AG-CARES, Lamesa, TX, 2008.

Variety	L	M	H	Avg.
	-----	$/A	-----	-----
AMC 1532 B2RF	735 a	922 a	961 a	873 A
ST 4554 B2RF	791 a	991 a	1018 a	934 A
FM 9063 B2RF	609 a	779 a	846 a	739 B
DP 143 B2RF	735 a	936 a	949 a	873 A
Avg.	717 B	902 A	944 A	
% change	(-21%)	(-----)	(+5%)	

TITLE:

Cotton Variety Performance as Affected by Low-Energy Precision Application (LEPA) Irrigation Levels at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Jacob Reed and Michael Petty; Professor, Agricultural Engineer-Irrigation, Sr. Research Associate, and Research Assistant.

MATERIALS AND METHODS:

Plot Size:	4 rows by 500 feet, 3 replications
Planting Date:	May 7
Varieties:	Stoneville 5458 B2RF
	FiberMax 1880 B2RF
	Delta Pine 174 RF
Herbicides:	Prowl 3 pt/A PPI
	Roundup WeatherMax 22 oz/A POST (terminate rye cover)
	Roundup PowerMax 26 oz/A POST (June 13)
	Roundup PowerMax 26 oz/A POST (June 30)
Fertilizer:	130-40-0

Irrigation in-season:		Low	Medium	High
	Total	5.1”	7.6”	10.5”

Harvest Date: October 31

RESULTS AND DISCUSSION:

Three newer Roundup Ready Flex/Bollgard varieties were evaluated under three irrigation levels. As seen in other trials conducted at AG-CARES in 2008, cotton lint yields increased from low to medium irrigation levels but no yield improvements resulted with the high irrigation level. Higher yields were produced with DP 174 RF and ST 5458 B2RF than with FM 1880 B2RF (Table 1). Variety or irrigation level had limited effect on lint quality expressed as loan value (Table 2). Gross revenues were highest with DP 174 RF and ST 5458 B2RF and were not increased with the high irrigation level (Table 3). Both of these varieties have performed well in small-plot trials under root knot nematode pressure.

Table 1. Effects of B2RF variety and LEPA irrigation levels on cotton lint yields at AG-CARES, Lamesa, TX, 2008.

	L	M	H	Avg.
Variety	-----------------	--------lbs/A--------	-----------------	-----------------
FM 1880 B2RF	802 a	1087 b	1139 a	1009 B
DP 174 RF	1061 a	1449 a	1392 a	1301 A
ST 5458 B2RF	1046 a	1321 a	1359 a	1266 A
Avg.	960 A	1286 A	1297 A	

Table 2. Effects of B2RF variety and LEPA irrigation levels on lint value at AG-CARES, Lamesa, TX, 2008.

	L	M	H	Avg.
Variety	-----------------	--------¢/lb--------	-----------------	-----------------
FM 1880 B2RF	53.20 a	53.66 a	52.33 a	53.06 A
DP 174 RF	52.45 ab	52.53 a	53.68 a	52.88 A
ST 5458 B2RF	49.07 b	52.45 a	51.55 a	51.26 A
Avg.	51.88 A	52.88 A	52.52 A	

Table 3. Effects of B2RF variety and LEPA irrigation levels on gross revenues at AG-CARES, Lamesa, TX, 2008.

	L	M	H	Avg.
Variety	-----------------	--------$/A--------	-----------------	-----------------
FM 1880 B2RF	427 a	583 b	594 a	535 B
DP 174 RF	556 a	762 a	748 a	689 A
ST 5458 B2RF	514 a	693 ab	703 a	652 A
Avg.	497 B	679 A	682 A	

TITLE:

Replicated LEPA Irrigated Cotton Variety Demonstration, AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Jeff Wyatt, Tommy Doederlein, Randy Boman, Mark Kelley, and Chris Ashbrook; EA-ANR Dawson County, EA-IPM Dawson/Lynn Counties, Extension Agronomist-Cotton, Extension Program Specialist-Cotton, and Extension Assistant-Cotton.

MATERIALS AND METHODS:

Varieties:	AFD 5065B2F, All-Tex Apex B2RF, Croplan Genetics 3220B2RF, Deltapine 164B2RF, Dyna-Gro 2570B2RF, FiberMax 1740B2F, NexGen 3348B2RF, PhytoGen 375WRF, and Stoneville 5458B2RF
Experimental design:	Randomized complete block with 3 replications
Seeding rate:	3.6 seeds/row-ft in solid planted 40-inch row spacing (John Deere MaxEmerge vacuum planter)
Plot size:	4 rows by variable length due to circular pivot rows (568-872 ft long)
Planting date:	8-May
Fertilization:	120 lbs/acre 32-0-0 were applied via fertigation at this location
Weed management:	Trifluralin was applied preplant incorporated at 1.3 pt/acre across all varieties on 15-April. Roundup Power Max was applied over-the-top at 30 oz/acre on 12-June, and at 26 oz/acre on 20-August with Level 7 (AMS) at 3.2 oz/acre (both application timings). Plots were cultivated and dikes installed on 27-May and an additional cultivation was performed on 11-June. Three sand fighting events took place on 29-June, 17-June and 20-June. On 17-August, plots were spot sprayed with a 1% Roundup Power Max solution.
Irrigation	9.6" inches of irrigation were applied via LEPA irrigation during the growing season.

Rainfall:

April:	2.11"	August:	0.39"
May:	2.85"	September:	5.25"
June:	1.05"	October:	2.41"
July:	0.13"		

Total rainfall: 14.19"
Total irrigation and rainfall: 23.79"

Insecticides:	This location is in an active boll weevil eradication zone, but no applications were made by the Texas Boll Weevil Eradication Program.
Harvest aids:	Harvest aids included 22 oz/acre Prep with 6 oz/acre Ginstar applied on 2-October. A sequential application of 32 oz/acre Gramoxone Inteon with 0.25% v/v NIS on 16-October.
Harvest:	Plots were harvested on 3-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 AgriLife Research and Extension Center at Lubbock to determine gin turnouts.
Fiber analysis:	Lint samples were submitted to the Fiber and Biopolymer Research Institute at Texas Tech University for HVI analysis, and USDA Commodity Credit Corporation (CCC) Loan values were determined for each variety by plot.
Ginning cost	

and seed values: Ginning costs were based on $3.00 per cwt. of bur cotton and seed value/acre was based on $200/ton. Ginning costs did not include checkoff.

Seed and technology fees: Seed costs and technology fees were determined by variety on a per acre basis using the Plains Cotton Growers Seed Cost Calculator based on 3.6 seeds/row-ft.

RESULTS AND DISCUSSION:

Significant differences were noted for lint and seed turnout but not for the remaining yield and economic parameters (Table 1). Lint turnout ranged from 31.6% for Deltapine 164B2RF to 36.7% for FiberMax 1740B2F. Lint yields varied from a low of 1045 lb/acre (NexGen 3348B2RF) to a high of 1336 lb/acre (Dyna-Gro 2570B2RF). Lint loan values ranged from a low of $0.5140/lb to a high of $0.5537/lb for NexGen 3348B2RF and Deltapine 164B2RF, respectively. After adding lint and seed value, total value/acre ranged from a low of $695.70 for NexGen 3348B2RF, to a high of $912.58 for Dyna-Gro 2570B2RF. When subtracting ginning, seed costs and technology fees, the net value/acre among varieties ranged from a high of $742.74 (Dyna-Gro 2570B2RF) to a low of $550.51 (NexGen 3348V2RF), a difference of $192.23. No significant differences were observed for micronaire, uniformity, or leaf grade at this location (Table 2). Micronaire values ranged from a low of 4.3 for Deltapine 164B2RF to a high of 4.7 for Dyna-Gro 2570B2RF and PhytoGen 375WRF. Staple length averaged 34.9 across all varieties with a low of 34.2 (FiberMax 1740B2F) and a high of 36.7 (Deltapine 164B2RF). Percent uniformity ranged from a low of 78.8 (AFD 5065B2F) to a high of 80.2 (NexGen 3348B2RF), and strength ranged from a low of 26.3 g/tex for All-Tex Apex B2RF to a high of 28.4 g/tex for Deltapine 164B2RF. Significant differences were observed among varieties for percent elongation (10.1 avg), Rd or reflectance (77.2 avg) and +b or yellowness (8.2 avg), but not for leaf (3.1 avg). These data indicate that substantial differences can be obtained in terms of net value/acre due to variety 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, AgriLife Research Associate - AG-CARES, Lamesa for his cooperation with this project.

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Table 1. Harvest results from the replicated LEPA irrigated demonstration, AGCARES Farm, Lamesa, TX, 2008.

Variety	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 --					
Dyna-Gro 2570B2RF	35.4	51.3	3771	1336	1934	0.5367	719.22	193.35	912.58	113.13	56.70	742.74
FiberMax 1740B2F	36.7	49.1	3580	1314	1758	0.5422	712.41	175.79	888.20	107.41	57.53	723.26
All-Tex Apex B2RF	33.3	51.2	3621	1204	1855	0.5492	661.36	185.49	846.85	108.64	52.00	686.22
Croplan Genetics 3220B2RF	35.2	51.9	3384	1192	1758	0.5442	651.14	175.76	826.90	101.53	56.91	668.46
Deltapine 164B2RF	31.6	49.8	3674	1162	1828	0.5537	643.40	182.85	826.25	110.22	56.06	659.97
PhytoGen 375WRF	35.5	47.2	3407	1211	1610	0.5415	654.82	160.97	815.79	102.22	55.43	658.14
Stoneville 5458B2RF	33.1	48.9	3631	1202	1776	0.5267	631.63	177.65	809.28	108.94	57.03	643.31
AFD 5065B2F	32.2	54.3	3255	1049	1768	0.5222	548.00	176.76	724.76	97.65	51.61	575.50
NexGen 3348B2RF	33.9	50.8	3080	1045	1565	0.5140	539.18	156.52	695.70	92.41	52.79	550.51
Test average	34.1	50.5	3489	1191	1761	0.5367	640.13	176.13	816.26	104.68	55.12	656.46
CV, %	1.5	2.6	10.8	10.7	10.6	3.8	12.3	10.6	11.8	10.8	--	13.0
OSL	<0.0001	0.0004	0.4392	0.1436	0.3956	0.3489	0.1336	0.3950	0.2146	0.4398	--	0.2068
LSD	0.9	2.3	NS	NS	NS	NS	NS	NS	NS	NS	--	NS

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:

$3.00/cwt ginning cost.

$200/ton for seed.

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

TITLE:

Replicated Dryland Cotton Variety Demonstration, AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Jeff Wyatt, Tommy Doederlein, Randy Boman, Mark Kelley, and Chris Ashbrook; EA-ANR Dawson County, EA-IPM Dawson/Lynn Counties, Extension Agronomist-Cotton, Extension Program Specialist-Cotton, and Extension Assistant-Cotton.

MATERIALS AND METHODS:

Varieties:	AFD 5064F, All-Tex Apex B2RF, Croplan Genetics 3020B2RF, Deltapine 174RF, FiberMax 1880B2F, NexGen 3410RF, PhytoGen 375WRF, and Stoneville 5458B2RF
Experimental design:	Randomized complete block with 3 replications
Seeding rate:	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:	2-June
Weed management:	Trifluralin was applied preplant incorporated at 1 pt/acre across all varieties on 10-April. Glyphosate was applied over-the-top in July at 32 oz/acre with 3.2 oz/acre Level 7 (AMS).

Rainfall:

April:	2.11"	August:	0.39"
May:	2.85"	September:	5.25"
June:	1.05"	October:	2.41"
July:	0.13"		
Total rainfall:	14.19"		

Insecticides:	This location is in an active boll weevil eradication zone, but no applications were made by the Texas Boll Weevil Eradication Program.
Harvest aids:	Harvest aids included 32 oz/acre Gramoxone Inteon with 0.25% v/v NIS on 13-November.
Harvest:	Plots were harvested on 25-November using a commercial John Deere 7445 with field cleaner by-passed. 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 AgriLife Research and Extension Center at Lubbock to determine gin turnouts.
Fiber analysis:	Lint samples were submitted to the Fiber and Biopolymer Research Institute at Texas Tech University for HVI analysis, and USDA Commodity Credit Corporation (CCC) Loan values were determined for each variety by plot.
Ginning cost and seed values:	Ginning costs were based on $3.00 per cwt. of bur cotton and seed value/acre was based on $200/ton. Ginning costs did not include checkoff.
Seed and technology fees:	Seed costs and technology fees were determined by variety on a per acre basis using the Plains Cotton Growers Seed Cost Calculator based on 4.0 seeds/row-ft.

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. Hot, dry conditions during and after planting resulted in significant stress on the trial. Later in September, substantial rainfall was obtained which resulted in some regrowth. Cool conditions in September and October caused some later set fruit to have lower micronaire, which resulted in highly variable micronaire readings in the trial.

Significant differences were noted for most parameters measured (Tables 1 and 2). Lint turnout ranged from 23.9% for NexGen 3410RF to 28.0% for PhytoGen 375WRF. Lint yields varied from a low of 449 lb/acre (AFD 5064F) to a high of 589 lb/acre (PhytoGen 375WRF). Lint loan values ranged from a low of \$0.5282/lb to a high of \$0.5743/lb for AFD 5064F and FiberMax 1880B2F, respectively. After adding lint and seed value, total value/acre ranged from a low of \$308.35 for AFD 5064F, to a high of \$414.82 for Stoneville 5458B2RF. When subtracting ginning, seed costs and technology fees, the net value/acre among varieties ranged from a high of \$288.92 (PhytoGen 375WRF) to a low of \$208.32 (AFD 5064F), a difference of \$80.60. Micronaire values ranged from a low of 3.7 for NexGen 3410RF to a high of 4.5 for PhytoGen 375WRF. Staple length averaged 37.1 across all varieties with a low of 35.7 (AFD 5064F) and a high of 38.6 (FiberMax 1880B2F). Percent uniformity ranged from a low of 81.2 (Stoneville 5458B2RF) to a high of 82.6 (FiberMax 1880B2F), and strength ranged from a low of 29.3 g/tex for All-Tex Apex B2RF and Deltapine 174RF to a high of 32.5 g/tex for NexGen 3410RF. Significant differences were observed among varieties for percent elongation (10.4 avg), leaf grade (2.3 avg), Rd or reflectance (80.2 avg) and +b or yellowness (7.6). These data indicate that substantial differences can be obtained in terms of net value/acre due to variety 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, AgriLife Research Associate - AG-CARES, Lamesa for his cooperation with this project.

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Table 1. Harvest results from the replicated dryland cotton variety demonstration, AGCARES Farm, Lamesa, TX, 2008.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed/ technology cost	Net value	
	-------- % --------		------------ lb/acre ------------			$/lb	-- $/acre --						
PhytoGen 375WRF	28.0	36.6	2105	589	770	0.5707	336.27	76.96	413.23	63.15	61.16	288.92	a
Stoneville 5458B2RF	25.5	42.1	2228	569	938	0.5635	321.04	93.77	414.82	66.84	62.93	285.04	a
FiberMax 1880B2F	27.4	47.0	1921	526	903	0.5743	302.21	90.30	392.50	57.63	63.48	271.39	a
Deltapine 174RF	26.0	37.9	2075	541	786	0.5565	300.60	78.63	379.23	62.24	52.72	264.27	a
All-Tex Apex B2RF	26.1	42.2	1932	504	815	0.5702	287.57	81.45	369.01	57.96	57.38	253.68	a
NexGen 3410RF	23.9	42.6	1968	470	839	0.5608	264.13	83.87	348.00	59.03	42.75	246.23	ab
Croplan Genetics 3020B2RF	24.6	42.9	2021	497	867	0.5695	282.71	86.69	369.40	60.62	62.79	245.98	ab
AFD 5064F	25.8	41.3	1740	449	718	0.5282	236.53	71.82	308.35	52.20	47.83	208.32	b
Test average	25.9	41.6	1999	518	830	0.5617	291.38	82.94	374.32	59.96	56.38	257.98	
CV, %	9.6	7.1	8.2	8.0	8.3	3.0	8.2	8.4	8.2	8.2	--	10.0	
OSL	0.5532	0.0203	0.0784†	0.0143	0.0280	0.0789†	0.0043	0.0282	0.0136	0.0785†	--	0.0377	
LSD	NS	5.1	235	73	121	0.0238	41.80	12.14	53.43	7.04	--	45.19	

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, † denotes significance at the 0.10 level, NS - not significant.

Note: some columns may not add up due to rounding error.

Assumes:

$3.00/cwt ginning cost.

$200/ton for seed.

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

TITLE:

5-Year Summary of the Replicated Dryland Cotton Seeding Rate and Planting Pattern Demonstration, Ag-CARES, Lamesa, TX, 2003-2008.

AUTHORS:

Randy Boman, Mark Kelley, and Tommy Doederlein; Extension Agronomist-Cotton, Extension Program Specialist-Cotton, and EA-IPM Dawson/Lynn Counties

MATERIALS AND METHODS:

Varieties:	2003-2005 AFD 3511R, 2006-2008 FiberMax 9058F (2006 lost due to drought)
Experimental design:	Randomized complete block with 3 replications
Seeding rates and planting patterns:	2, 4, and 6 seeds/row-ft down each row in 40-inch row spacing (John Deere MaxEmerge vacuum planter). Each seeding rate was initially 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 to appropriately establish the plant 2 and skip 1 planting pattern. Seeding rates for the plant 2 and skip 1 planting pattern were ultimately one-third less on a land-acre basis
Plot size:	16 rows by 250 ft long
Planting dates:	June 11, 2003; June 8, 2004; June 2, 2005; 2006 lost; May 23, 2007; June 2, 2008
Weed management:	Trifluralin was typically applied preplant incorporated at 1-1.25 pt/acre each year. Glyphosate was typically applied over-the-top in early June with 17 lbs/100 gallons of ammonium sulfate during years when AFD 3511RR was planted. When the planted variety was changed in 2006 to FiberMax 9058F, glyphosate was generally applied in June or July with 22 oz/acre of Class Act (ammonium sulfate based spray additive). Plots were cultivated as needed for weed escapes.
Rainfall:	April - September rainfall 2003: 10.68" — 2004: 13.96" 2005: 6.50" — 2006: lost crop 2007: 18.50" — 2008: 14.19"
Harvest aids:	Gramoxone Max (paraquat) alone or tank mixes of Prep (ethephon) and Def (tribufos) were applied each year, with rates dependent upon crop condition.
Harvest:	The center 8 rows of the 16 row plots were harvested 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 on a land-acre basis.
Gin turnout:	Grab samples were taken by plot and ginned at the Texas AgriLife Research and Extension Center at Lubbock to determine gin turnouts.
Fiber analysis:	Lint samples were submitted to the Fiber and Biopolymer Research Institute (formerly International Textile Center) at Texas Tech University for HVI analysis. Commodity Credit Corporation (CCC) Loan values were determined for each plot based on HVI results. The 2008 Loan chart was used to standardize data from all years.
Seed and technology fees:	Seed and technology fees were based on the 2, 4, and 6 seed/row-ft for the solid and the 2 x 1 skip row pattern (66.6% of solid planting rate) and reported on the land acre basis. 2008 seed and technology fee prices for

	FiberMax 9058F were assumed in the analysis. Seed and technology fee pricing was obtained from the 2008 Plains Cotton Growers Seed Cost Calculator. Land-acre basis seeding rates and seed and technology fee costs based on 2008 pricing for FiberMax 9058F were for the solid planted: 2 seed/row-ft, 26,136, $27.18; 4 seed/row-ft, 52,272, $54.36; and 6 seed/row-ft, 78,408, $81.54. For the 2x1 skip row pattern these were: 2 seed/row-ft, 17,424, $18.12; 4 seed/row-ft, 34,848, $36.24; and 6 seed/row-ft, 52,272, $54.36. The 2x1 skip row pattern was assumed to have one-third less seed on a land-acre basis.
Statistical analysis:	Gross loan values (data not presented) were calculated by multiplying lint yields by the 2008 Commodity Credit Corporation loan chart for the HVI values obtained. Seed value was set at $200/ton (data not presented). Ginning cost was set at $3/cwt of bur cotton (data not presented). Net value per land acre was determined using combined lint and seed values, minus ginning costs and 2008 seed and technology fee costs (for FiberMax 9058F). Data were combined across years using the Mixed procedure in SAS 9.1 for Windows. Cultivar, Year(Cultivar) and Replicate(Cultivar*Year) were considered random effects. Least-squares means for the five-year data set were reported.

RESULTS AND DISCUSSION:

For the duration of the project, no substantial stand losses were encountered due to environmental or mechanical attrition. Wind erosion control practices were timely and accurate. Lint turnout (mean 29.6%) differences were minor but significant at the 0.10 level for 2 vs. 4 and 6 seed/ft solid planted (Table 1). The 6 seed/ft seeding rate reduced turnout by a difference of 1.7% when compared to 2 seed/ft. Lint yield (mean 437 lb/acre) differences (on a land-acre basis) were noted at the 0.10 level when comparing 2 and 4 vs. 6 seed/ft solid planted. Lint yield was significantly lower for the 6 seed/ft solid planted, attributed to excessive plant competition under dryland conditions. Loan value (mean 0.5451 $/lb) differences were noted at the 0.10 and 0.05 probability levels, respectively, when comparing 2 vs. 4 and 6 seed/ft solid planted, and 2 vs. 6 seed/ft 2x1 skip pattern. These arise from slight differences in staple and uniformity. As seeding rate increased, net value per land acre decreased regardless of planting pattern. This was a result of higher seed and technology fee costs with higher seeding rates. When comparing similar seeding rates (52,272) on a land-acre basis (4 seed/ft solid vs. 6 seed/ft 2x1 skip), no differences were observed. Seeding rate and planting pattern had no significant effect on micronaire (mean 4.2 units) or strength (mean 29.1 g/tex). Staple (mean 35.5 32nds inch) was reduced by the highest seeding rate in the solid planting pattern when comparing 2 and 4 vs. 6 seed/ft. When comparing 4 vs. 6 seed/ft for the 2x1 skip pattern a small but significant reduction was noted. No difference in staple was observed when comparing 4 seed/ft solid vs. 6 seed/ft 2x1 skip planting patterns. Uniformity for 4 and 6 seed/ft was reduced when compared to 2 seed/ft in the solid planted treatments. No differences in uniformity were noted in the 2x1 skip row planting pattern. When comparing similar seeding rates on a land-acre basis slightly higher uniformity (mean 81.2%) was noted for the 2x1 skip row planting pattern vs. the solid planted.

CONCLUSIONS:

These data indicate that over a 5-year time period the 2x1 skip row planting pattern did not exhibit any substantial agronomic benefit in terms of net value per land acre when compared to the solid planting pattern. Seeding rates had a greater effect on yield and fiber quality for the solid planting pattern than for the 2x1 skip row pattern. This is due to excessive competition with the higher plant population arising from the 6 seed/ft seeding rate when compared to 2 and 4 seed/ft. In terms of net value, seeding rate had the greatest effect regardless of planting pattern due to higher seed and technology fee costs. We have been planting about 3.0-4.0 seed/ft in solid-planted 40-inch rows in Ag-CARES dryland projects. Based on this work, it appears that somewhat fewer than that will not adversely affect potential profitability over the long term, however, **knowing seed quality is critical**. These data can also be used to support the fact that if producers are planting conventional varieties with much less cost on a per acre basis than transgenic, then seeding rates for those should not be excessive, as 6 seed/ft in solid planted stands reduced yield and some fiber quality parameters.

ACKNOWLEDGMENTS:

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Table 1. Five-year least squares means of agronomic and economic results of the dryland seeding rate by planting pattern trials (lint yield and net value expressed on a land-acre basis), Lamesa - Ag-CARES 2003-2008.

Treatment	Lint turnout	Lint yield	Loan value	Net value††	Micronaire	Staple	Uniformity	Strength
	%	lb/acre	$/lb	$/acre	units	32nds inch	%	g/tex
Solid planting pattern								
2 seed/ft (26,136/acre with $27.18/acre cost)	30.5	441	0.5496	241.73	4.3	35.5	81.2	29.4
4 seed/ft (52,272/acre with $54.36/acre cost)	29.3	442	0.5402	210.17	4.2	35.3	80.7	29.3
6 seed/ft (78,408/acre with $81.54/acre cost)	28.8	412	0.5381	166.72	4.2	34.7	80.5	28.9
2x1 skip row planting pattern								
2 seed/ft (17,424/acre with $18.12/acre cost)	29.5	445	0.5513	254.81	4.2	35.8	81.4	28.9
4 seed/ft (34,848/acre with $36.24/acre cost)	29.7	446	0.5492	236.70	4.3	36.0	81.7	29.3
6 seed/ft (52,272/acre with $54.36/acre cost	29.9	439	0.5419	209.59	4.2	35.6	81.4	28.9
Mean	29.6	437	0.5451	219.95	4.2	35.5	81.2	29.1
Differences of least-squares means	------------------------------	------------------------------	------------------------------	------------------------------	Pr > |t|	------------------------------	------------------------------	------------------------------
2 seed/ft solid vs. 4 seed/ft solid	†	NS	†	*	NS	NS	*	NS
2 seed/ft solid vs. 6 seed/ft solid	*	†	*	*	NS	*	*	NS
4 seed/ft solid vs. 6 seed/ft solid	NS	†	NS	*	NS	*	NS	NS
2 seed/ft 2x1 skip vs. 4 seed/ft 2x1 skip	NS	NS	NS	†	NS	NS	NS	NS
2 seed/ft 2x1 skip vs. 6 seed/ft 2x1 skip	NS	NS	†	*	NS	NS	NS	NS
4 seed/ft 2x1 skip vs. 6 seed/ft 2x1 skip	NS	NS	NS	*	NS	†	NS	NS
4 seed/ft solid vs. 6 seed/ft 2x1 skip	NS	NS	NS	NS	NS	NS	*	NS

†, * indicate significance at the 0.10 and 0.05 probablility levels, respectively, NS - not signficant.

†† - Net value/land acre was calculated using combined lint and seed value minus ginning cost and 2008 seed and technology fees for FiberMax 9058F.

TITLE:

Results of the Small-Plot Replicated Cotton Variety Performance Tests under Subsurface Drip Irrigation at Lamesa, TX, AG-CARES, 2008.

AUTHORS:

Jane K. Dever, Lyndon Schoenhals, Casey Hardin and Valerie Morgan, Associate Professor, Senior Research Associate, Research Associate and Research Assistant

MATERIALS AND METHODS:

Test:	Uniform Cotton Variety, drip-irrigated
Planting Date:	May 30
Design:	Randomized Complete Block
Plot Size:	2-row plots, 25 ft
Row Spacing:	40-in
Planting Pattern:	Solid
Herbicide:	Caparol @ 1.8pt/A applied pre-plant
	Dual @ 1.25pt/A June 18
Fertilizer:	10-34-0 120lbs/A applied pre-plant
	32-0-0 30 lbs/A applied April 30 (fertigation)
	32-0-0 30 lbs/A applied June 29 (fertigation)
	32-0-0 30 lbs/A applied July 16 (fertigation)
	32-0-0 30 lbs/A applied July 24 (fertigation)
Irrigations:	6.06 acre-in applied pre-plant
	8.63 acre-in applied June-August
Insecticide:	Temik @ 3.5 lbs/A at planting
Growth Regulator:	Pix 6oz/A July 24
Harvest Aid:	paraquat 32oz/A October 16
Harvest Date:	November 18

RESULTS AND DISCUSSION:

Texas AgriLife Research, in conjunction with the AG-CARES location in Lamesa, provide an important service to seed companies and producers through a fee-based testing system that can evaluate a relatively large number of commercial and pre-commercial varieties in small-plot replicated performance trials. This service allows varieties from different sources to be tested together by an independent source. The small-plot replicated trials are intended to evaluate the genetic performance of lines independent of biotechnology traits, so the tests are managed as conventional varieties as opposed to herbicide or insecticide systems. Every effort is made to minimize the effects of insect and weed pressure.

Lint yield is determined by the stripper-harvested plot weight and a lint percentage determined from a ~600 gram grab sample collected after the plot is weighed. Boll size and pulled lint percent are determined from a 50 boll sample obtained from 2 replications of each entry. Maturity and storm resistance ratings are a visual assessment of percent open bolls and a 1 (very loose, considerable storm loss) to 9 (very tight boll, no storm loss) storm resistance rating.

Fifty-one commercially-available cotton varieties from 7 seed companies and one variety developed at Texas Tech University were submitted for variety testing at 5 locations, including the drip-irrigated location at AG-CARES in Lamesa. The location proved to be a very good one in 2008 to evaluate performance of cotton varieties with a test coefficient of variation of 10.9% and an average lint yield of 1.577 pounds of lint per acre. The highest yielding variety was PHY 370WR, and the top 13 varieties (25%) in the test were not significantly different than the highest yielding variety (Table 1). Among the top-yielding varieties, FM 9058F was the earliest maturing variety with the most storm-proof boll, a 6 out of 9 rating. CG 3035RF and CG 3220B2RF had the next highest storm-proof rating among the highest yielders with a 5. Maturity based on a visual assessment of percent open bolls on a given date ranged from 74% for DP 555 BG/RR to 99% for NG 1572 RF.

Fiber quality evaluations are not available at the time of the 2008 Annual Report publication, and will be added to the website when they do become available.

Table 1. Results of the Uniform Cotton Variety Test drip irrigated, Lamesa AG-CARES, 2008

Variety	Yield	% Turnout Lint	% Turnout Seed	Agronomic Properties: % Lint Picked	% Lint Pulled	Boll Size	Seed Index	Lint Index	Seed Per Boll	Maturity	Storm Resistance	Height
PhytoGen PHY 370 WR	1929	27.8	40.4	41.2	31.4	5.5	11.4	8.5	26.9	85	4	37
Deltapine DP 121 RF	1867	27.4	40.2	39.9	30.7	5.0	10.2	7.2	28.0	89	3	34
All-Tex AT Epic RF	1825	27.9	41.3	42.0	31.2	5.4	9.8	7.5	30.1	86	4	35
Stoneville ST 5458B2RF	1824	27.1	42.1	38.7	30.2	5.8	11.3	7.5	29.8	88	4	36
NexGen NG 3331 B2RF	1784	26.7	42.8	39.5	26.5	5.0	10.5	6.6	24.3	85	4	37
FiberMax FM 9058F	1782	27.7	43.4	39.2	29.1	5.2	11.0	7.4	27.6	95	6	31
All-Tex AT Apex B2RF	1766	26.1	41.5	38.4	27.6	4.4	9.9	6.4	26.5	85	4	35
Croplan Genetics CG 3035RF	1757	27.1	39.6	40.7	29.5	5.0	10.4	7.5	27.1	84	5	36
Stoneville ST 4498B2RF	1743	25.8	42.6	36.7	27.4	5.7	10.9	6.8	30.9	85	4	34
PhytoGen PHY 315 RF	1742	26.8	40.2	40.2	29.3	4.8	10.2	7.2	26.5	86	4	34
Deltapine DP 174 RF	1739	25.7	38.5	41.4	31.1	5.8	10.3	7.8	30.6	84	4	36
PhytoGen PHY 375 WRF	1729	25.7	37.4	40.9	30.7	4.9	9.8	7.1	28.1	85	4	35
Croplan Genetics CG 3220B2RF	1727	25.3	40.3	39.3	30.2	5.5	11.0	7.4	29.4	86	5	34
FiberMax FM 1880B2F	1722	27.4	44.2	39.7	32.1	6.1	10.6	7.1	34.0	81	4	38
PhytoGen PHY 425 RF	1722	24.6	43.1	35.9	25.4	3.7	11.0	6.5	20.7	84	3	38
Croplan Genetics CG 3020B2RF	1709	25.7	42.4	36.9	27.9	5.2	11.1	6.8	28.1	88	4	31
Deltapine DP 104 B2RF	1703	25.5	45.3	38.7	29.8	5.6	10.6	6.9	31.3	90	5	32
Stoneville ST 5327B2RF	1694	27.0	40.2	39.9	30.7	5.5	10.2	7.3	30.0	85	4	35
FiberMax FM 1740B2F	1670	27.8	39.6	41.1	31.9	5.4	10.9	8.1	27.4	90	4	31
Americot AM 1532 B2RF	1660	24.0	41.6	38.3	28.6	5.3	10.3	6.7	30.1	85	4	36
FiberMax 9160B2F	1645	26.6	39.6	38.4	30.3	5.3	10.6	7.0	29.0	94	4	34
NexGen NG 4377 B2RF	1638	24.8	39.7	39.6	30.2	5.2	10.4	7.2	28.9	86	4	37
NexGen NG 2448 R	1632	26.4	43.8	36.8	29.2	6.0	11.7	7.1	30.6	94	5	35
Deltapine DP 147 RF	1602	26.9	44.2	38.8	29.7	5.6	10.5	7.0	31.0	85	4	35
All-Tex AT Summit B2F	1590	24.6	41.8	37.7	28.0	5.3	11.2	7.2	27.7	90	4	32
Croplan Genetics CG 4020B2RF	1581	23.9	40.4	38.5	27.5	5.2	10.4	6.9	29.3	84	5	36

PhytoGen PHY 485 WRF	1577	23.9	40.9	39.3	31.4	5.2	10.3	6.9	29.2	85	3	36
PhytoGen PHY 72	1576	26.8	42.1	39.4	30.7	6.0	10.4	7.1	33.2	81	2	34
Stoneville ST 4554B2RF	1574	25.3	42.4	38.9	30.0	5.6	10.7	7.2	30.2	85	4	35
Croplan Genetics CG 3520B2RF	1569	24.4	41.4	38.3	28.6	5.0	10.3	6.7	28.6	88	4	33
FiberMax FM 9063B2F	1563	26.4	42.7	38.1	29.0	6.1	11.8	7.8	30.1	94	5	32
NexGen NG 3410 RF	1530	26.5	43.6	36.4	28.8	6.1	12.3	7.5	29.8	90	5	31
Deltapine DP 143 B2RF	1525	24.1	43.2	37.0	28.7	5.1	10.2	6.4	29.8	85	4	34
Deltapine DP 164 B2RF	1508	24.2	43.4	37.4	29.3	5.2	10.2	6.5	30.2	83	5	38
NexGen NG 4370 B2RF	1506	24.5	41.3	39.3	29.9	5.2	10.0	6.9	29.9	89	5	36
FiberMax FM 9180 B2F	1492	24.8	40.8	38.5	29.1	5.8	11.4	7.5	29.8	96	5	29
AFD 5064F	1486	25.8	44.5	35.4	27.6	4.9	11.5	6.7	26.0	98	5	30
Deltapine DP 555 BG/RR	1481	25.8	40.8	39.7	31.3	4.6	8.5	5.9	30.9	74	4	41
Stoneville ST 4427B2F	1459	23.3	40.0	39.0	27.8	5.0	10.5	7.2	27.2	85	4	34
FiberMax FM 958LL	1447	26.2	40.8	39.3	29.7	5.6	11.5	7.9	28.2	94	5	30
Deltapine DP 141 B2RF	1407	23.6	41.7	35.6	29.7	5.9	10.0	5.9	35.8	80	4	39
NexGen NG 3348 B2RF	1390	24.6	41.6	37.6	29.2	5.9	11.8	7.6	28.9	89	5	32
Seed Tec Genetics CT 210	1381	25.0	41.9	38.6	29.7	5.2	9.6	6.3	31.8	84	4	32
All-Tex AT Patriot RF	1373	24.2	42.9	36.5	27.0	5.7	11.0	6.6	31.5	89	4	32
NexGen NG 1572 RF	1366	25.2	45.5	36.5	28.5	5.3	10.7	6.5	29.9	99	7	31
FiberMax FM 955LLB2	1354	23.3	43.0	37.4	30.1	6.3	11.8	7.4	31.5	91	5	31
Texas Tech Raider 276	1351	22.4	45.1	33.4	24.8	5.9	12.7	6.6	29.7	90	6	34
FiberMax FM 958	1327	25.8	40.0	40.5	30.0	5.5	10.7	7.5	29.4	96	5	28
AFD 5065B2F	1323	23.8	45.2	34.2	25.8	5.0	11.1	6.1	27.8	96	6	29
Deltapine DP 161 B2RF	1315	22.7	43.1	35.8	28.0	5.2	9.9	5.9	31.9	76	5	39
FiberMax FM 1735LLB2	1212	24.8	41.2	38.9	28.8	5.0	10.3	7.0	27.6	81	6	34
All-Tex AT Atlas RR	1123	25.2	44.2	34.6	26.2	5.7	12.0	6.8	28.6	98	7	32
Mean	1577	25.5	41.9	38.3	29.1	5.4	10.7	7.0	29.2	88	4	34
c.v.%	10.9	6.3	4.9	2.5	3.6	7.4	4.5	4.8	8.1	3.9	14.8	6.6
LSD 0.05	202	1.9	2.4	1.6	1.8	0.7	0.8	0.6	3.9	4	1	3

TITLE:

Results of the Dryland Small-Plot Replicated Cotton Variety Performance Tests at Lamesa, TX, AG-CARES, 2008

AUTHORS:

Jane K. Dever, Lyndon Schoenhals, Casey Hardin and Valerie Morgan, Associate Professor, Senior Research Associate, Research Associate and Research Assistant

MATERIALS AND METHODS:

Test:	Uniform Cotton Variety, dryland
Planting Date:	May 30
Design:	Randomized Complete Block
Plot Size:	2-row plots, 30 ft
Row Spacing:	40in
Planting Pattern:	Solid
Herbicide:	Dual @ 1.25pt/A June 18
Fertilizer:	none
Irrigations:	15.92 inches of rainfall (April-November)
Insecticide:	Temik @ 3.5lbs/A at planting
Harvest Aids:	paraquat @32 oz/A November 13
Harvest Date:	November 17

RESULTS AND DISCUSSION:

The AG-CARES facility provides an excellent opportunity to evaluate varieties in small-plot replicated trials under both irrigated and dryland conditions. Testing varieties in dryland conditions presents some of the same challenges of dryland cotton production, such as waiting for a planting rain which may favor early maturing varieties if it comes late, and trying to plant after a rain before the soil dries. The dryland location at Lamesa AG-CARES is one of the official locations included in the National Cotton Variety Testing Program, so data are reported even under difficult conditions. The dryland location also allows growers to evaluate variety performance in unpredictable situations, but other parameters, such as maturity, storm resistance and plant height are also important in assessing overall performance when yield may be influenced as much by field conditions as variety genetic response.

Fifty-one commercially-available cotton varieties from 7 seed companies and one variety developed at Texas Tech University were submitted for variety testing at 5 locations, including a dryland location at AG-CARES in Lamesa. The test was planted following a rain event in extremely dry and hot ambient conditions. Germination was inconsistent across the field, and a second wave of germination occurred after a rainfall following planting resulting in a fairly high coefficient of variation for the test at 18.5%, with an average yield of 452 pounds of lint per acre. The top 17 varieties were not significantly different from the highest yielding variety, ST 4498B2RF (Table 2). Due to dry conditions, maturities of the varieties were similar, ranging from 85% for DP 555 BG/RR and FM 1880 B2F to 99% for All-Tex Atlas RR and averaging 90% for the test. Storm resistance averaged 4 on a scale of 1-9 and ranged from 2 to 6.

Plant height ranged from 17 inches for Seed-Tec 210 to 25 inches for FM 1880 B2F, DP 161 B2RF and NG 4377 B2RF.

Table 2. Results of the Uniform Cotton Variety Test dryland, Lamesa AG-CARES, 2008

		Agronomic Properties											
		% Turnout		% Lint		Boll	Seed	Lint	Seed Per		Storm	
Variety	Yield	Lint	Seed	Picked	Pulled	Size	Index	Index	Boll	Maturity	Resistance	Height
Stoneville ST 4498B2RF	583	26.7	42.1	39.4	28.5	4.9	10.3	7.1	27.2	89	4	20
Deltapine DP 164 B2RF	581	27.8	44.2	39.7	30.4	4.6	9.5	6.4	28.7	90	4	22
PhytoGen PHY 425 RF	570	27.8	45.3	38.2	27.9	4.7	10.6	7.0	25.5	91	4	21
Americot AM 1532 B2RF	558	24.2	40.0	38.5	28.3	5.1	10.7	7.0	28.0	89	4	23
All-Tex AT Epic RF	555	27.3	40.0	41.9	34.6	5.9	10.2	7.6	32.3	89	5	23
All-Tex AT Apex B2RF	541	24.4	39.4	40.7	29.1	4.8	10.1	7.2	27.2	90	5	22
FiberMax FM 1740B2F	537	28.8	41.3	41.6	30.8	5.4	10.7	7.9	28.4	91	4	19
Stoneville ST 5458B2RF	536	25.9	41.0	38.7	29.4	5.4	10.8	7.4	27.7	89	5	19
PhytoGen PHY 375 WRF	527	26.1	37.9	41.5	28.9	4.4	9.9	7.4	24.6	89	4	23
PhytoGen PHY 315 RF	522	27.7	39.3	41.6	30.4	4.7	9.8	7.3	26.8	89	4	22
Deltapine DP 121 RF	513	25.7	35.8	43.0	31.5	4.8	10.0	7.8	26.6	90	4	21
Stoneville ST 4427B2F	512	23.7	40.7	38.3	27.7	4.6	10.4	6.8	25.6	93	3	21
Croplan Genetics CG 3035RF	500	26.5	39.4	42.0	29.7	5.1	10.6	8.0	26.9	89	4	24
Deltapine DP 161 B2RF	492	23.9	42.4	39.3	29.5	5.0	9.3	6.3	31.1	86	5	25
NexGen NG 4377 B2RF	491	25.1	39.6	40.1	--	4.2	11.3	7.9	26.3	91	4	25
NexGen NG 3331 B2RF	487	27.4	41.1	41.0	30.4	4.7	9.4	6.9	27.7	90	4	20
Croplan Genetics CG 3220B2RF	486	26.2	42.0	39.1	28.4	5.1	10.6	7.1	28.1	90	5	21
PhytoGen PHY 485 WRF	484	23.3	40.2	37.3	27.3	4.7	10.4	6.6	26.8	90	3	22
Stoneville ST 4554B2RF	479	23.6	38.6	39.6	30.7	5.5	11.3	7.8	27.8	90	4	22
Stoneville ST 5327B2RF	478	26.1	38.4	41.6	31.0	4.9	9.6	7.3	28.1	90	4	21
Deltapine DP 174 RF	472	27.3	39.1	42.5	31.1	5.6	10.3	8.0	29.3	88	5	21
All-Tex AT Summit B2F	465	24.1	40.9	37.0	44.3	6.3	10.4	6.6	35.4	89	4	19
PhytoGen PHY 370 WR	458	27.0	39.5	42.4	31.7	5.0	9.8	7.5	28.0	88	5	22
All-Tex AT Patriot RF	456	24.0	41.9	37.1	27.0	5.3	10.5	6.5	30.3	91	4	21
Croplan Genetics CG 3520B2RF	455	24.3	39.3	38.7	27.7	4.5	10.3	6.8	25.3	90	4	22

NexGen NG 4370 B2RF	440	26.1	40.2	40.3	29.9	5.1	9.6	6.7	30.2	89	5	23
Croplan Genetics CG 3020B2RF	437	23.1	40.6	38.0	26.5	5.1	10.5	6.7	28.6	88	5	21
Croplan Genetics CG 4020B2RF	435	24.6	39.6	38.6	29.8	5.1	10.4	6.8	28.9	88	4	23
FiberMax FM 958	433	25.8	38.8	41.2	30.7	5.1	11.5	8.2	25.6	95	5	20
All-Tex AT Atlas RR	431	24.7	44.1	35.7	26.1	5.3	11.6	6.8	28.0	99	6	19
FiberMax FM 9180 B2F	428	25.3	41.6	38.7	28.6	5.5	11.3	7.5	28.5	91	5	18
Texas Tech Raider 276	423	23.0	43.1	42.9	31.6	5.7	12.3	8.4	28.7	93	6	22
Deltapine DP 141 B2RF	422	24.8	42.3	38.7	28.9	5.0	9.2	6.1	32.1	91	4	25
NexGen NG 3410 RF	422	25.6	43.1	37.6	27.8	5.3	11.3	7.1	28.4	89	5	20
FiberMax FM 1880B2F	420	24.1	41.6	38.7	29.9	5.3	10.1	6.6	30.9	85	5	25
Deltapine DP 147 RF	419	26.3	42.0	38.9	28.9	5.4	10.3	6.8	31.0	89	4	24
FiberMax FM 9058F	**414**	**26.3**	**40.3**	**39.7**	**30.2**	**5.3**	**11.1**	**7.6**	**27.7**	**95**	**5**	**20**
Deltapine DP 104 B2RF	413	24.1	42.2	37.5	37.0	6.5	11.3	7.1	34.4	91	5	20
FiberMax FM 9063B2F	412	25.9	42.0	38.9	28.3	5.6	11.1	7.4	29.9	95	5	20
Deltapine DP 555 BG/RR	406	23.6	37.7	40.4	31.3	4.5	8.6	6.1	29.9	85	5	24
NexGen NG 1572 RF	406	25.7	41.8	39.6	29.8	4.7	10.4	7.0	26.9	94	6	21
Seed Tec Genetics CT 210	405	24.5	41.4	35.9	27.4	4.7	9.0	5.8	30.5	89	5	17
FiberMax 9160B2F	404	26.3	40.5	41.3	31.8	5.3	10.1	7.3	29.7	91	5	23
AFD 5064F	401	26.2	44.3	37.1	26.9	5.0	10.8	6.7	27.4	95	5	18
PhytoGen PHY 72	386	23.5	38.5	39.8	29.0	5.2	11.0	7.4	27.4	89	2	20
FiberMax FM 958LL	386	24.7	39.6	39.3	28.7	5.5	11.6	7.8	28.0	94	5	20
FiberMax FM 1735LLB2	377	23.9	41.1	38.8	27.0	4.4	10.6	7.0	24.7	88	6	21
NexGen NG 2448 R	362	25.6	41.2	37.4	28.7	5.8	11.5	7.4	29.7	90	6	22
NexGen NG 3348 B2RF	362	24.8	43.3	37.8	28.0	5.2	11.6	7.5	26.3	88	5	22
Deltapine DP 143 B2RF	348	23.4	42.5	37.8	29.3	5.2	9.9	6.3	31.4	89	5	21
FiberMax FM 955LLB2	348	23.7	42.6	37.8	27.7	5.8	12.2	7.7	28.4	94	6	20
AFD 5065B2F	247	23.8	44.4	35.5	26.9	5.5	11.2	6.7	29.8	94	5	18
Mean	452	25.3	40.9	39.3	29.6	5.1	10.5	7.1	28.5	90	4	21
c.v.%	18.5	10.6	7.1	4.7	5.7	9.6	5.3	7.0	9.9	3.2	14.9	12.8
LSD 0.05	98	3.1	3.4	3.1	2.8	0.8	0.9	0.8	4.7	3	1	3

TITLE:

Results of the Small-Plot Replicated Pima Cotton Variety Performance Tests under LEPA Irrigation at Lamesa, TX, AG-CARES, 2008

AUTHORS:

Jane K. Dever, Lyndon Schoenhals, Casey Hardin and Valerie Morgan, Associate Professor, Senior Research Associate, Research Associate and Research Assistant

MATERIALS AND METHODS:

Test:	Pima Cotton Variety, center-pivot irrigated		
Planting Date:	May 9		
Design:	Randomized Complete Block		
Plot Size:	2-row plots, 34.5 ft		
Row Spacing:	40in		
Planting Pattern:	Solid		
Herbicide:	Prowl @ 3 pt/A applied pre-plant		
	Dual @ 1.25pt/A June 17		
Fertilizer:	10-34-0 120 lbs/A applied pre-plant		
Irrigations:	.75 acre-in on April 13	.4 acre-in on July 3	.4 acre-in on Aug 2
	.75 acre-in on April 28	.4 acre-in on July 5	.4 acre-in on Aug 5
	.3 acre-in on May 10	.4 acre-in on July 8	.4 acre-in on Aug 9
	.3 acre-in on May 14	.4 acre-in on July 11	.4 acre-in on Aug 21
	.3 acre-in on May 16	.4 acre-in on July 15	.4 acre-in on Aug 24
	.3 acre-in on May 19	.4 acre-in on July 18	.4 acre-in on Aug 27
	.3 acre-in on May 21	.4 acre-in on July 21	9.6 acre-in
	.5 acre-in on May 24	.4 acre-in on July 23	
	.4 acre-in on June 27	.4 acre-in on July 26	
	.4 acre in on June 30	.4 acre-in on July 28	
			.4 acre-in on July 31

Insecticide:	Temik @3.5 lbs/A at planting
Harvest Aids:	Prep 22 oz/A Ginstar 6 oz/A October 2
	Paraquat 32 oz/A October 16
Harvest Date:	October 27

RESULTS AND DISCUSSION:

In addition to providing yield-testing for commercial and pre-commercial cotton varieties available for production in the Southern High Plains, Texas AgriLife Research tests new and novel products that may have some utility in future licensing or contracting strategies. One novel product is a hybrid that has more appropriate production profiles for the Southern High Plains that offers fiber properties similar to Pima varieties.

Two *Gossypium barbadense* X *Gossypium hirsutum* hybrids most closely resembling the Pima background were submitted for testing by an Israeli seed company, Hazera, and were tested with 4 commercially available Pima varieties in a center-pivot irrigated location at AG-CARES in Lamesa. The two interspecific hybrids had significantly higher yield than the Pima varieties and averaged 50% mature at the same time the Pima varieties ranged from 1% to 15% mature (Table 3). Storm resistance for the hybrids was 2, and for the Pima varieties 2 or 3 on a scale of 1-9. The hybrids were taller than the Pima varieties, and had more seed per boll and larger bolls based on seed cotton weight. Test coefficient of variation was medium at 14.1%, and yield ranged from 523 to 1356, averaging 861 pounds of lint per acre.

Table 3. Results of the Pima variety test pivot irrigated, Lamesa AG-CARES, 2008

				Agronomic Properties								
		% Turnout		% Lint		Boll	Seed	Lint	Seed Per		Storm	
Variety	Yield	Lint	Seed	Picked	Pulled	Size	Index	Index	Boll	Maturity	Resistance	Height
Hazera YD-1198	1356	26.1	44.2	35.0	27.5	4.7	10.9	6.4	25.6	55	2	33
Hazera YD-1199	1106	21.9	42.1	33.6	26.2	4.9	11.3	6.1	26.6	45	2	37
FiberMax Cobalt	747	23.8	43.1	36.5	25.9	3.0	10.1	6.2	17.4	15	3	28
PhytoGen PHY 800	730	24.0	41.5	37.1	27.0	3.2	11.2	7.0	16.9	1	2	31
PhytoGen PHY 830	707	23.6	38.6	40.4	27.4	2.6	10.5	6.6	17.6	9	3	31
Deltapine DP 744	523	24.3	41.9	40.0	30.4	3.6	10.5	6.9	21.0	6	2	30
Mean	861	23.9	41.9	37.1	27.4	3.6	10.7	6.5	20.7	22	2	32
c.v.%	14.1	6.7	6.0	1.4	6.1	12.4	12.1	10.1	14.2	36.8	17.7	9.1
LSD 0.05	152	2.0	3.1	1.0	3.9	0.9	2.6	1.4	6.3	10	1	4

TITLE:

Results of the Small-Plot Replicated Pima Cotton Variety Performance Tests under Subsurface Drip Irrigation at Lamesa, TX, AG-CARES, 2008.

AUTHORS:

Jane K. Dever, Lyndon Schoenhals, Casey Hardin and Valerie Morgan, Associate Professor, Senior Research Associate, Research Associate and Research Assistant

MATERIALS AND METHODS:

Test:	Pima Cotton Variety, drip-irrigated
Planting Date:	May 30
Design:	Randomized Complete Block
Plot Size:	2-row plots, 25 ft
Row Spacing:	40-in
Planting Pattern:	Solid
Herbicide:	Caparol @ 1.8pt/A applied pre-plant
	Dual @ 1.25pt/A June 18
Fertilizer:	10-34-0 120lbs/A applied pre-plant
	32-0-0 30 lbs/A applied April 30 (fertigation)
	32-0-0 30 lbs/A applied June 29 (fertigation)
	32-0-0 30 lbs/A applied July 16 (fertigation)
	32-0-0 30 lbs/A applied July 24 (fertigation)
Irrigations:	6.06 acre-in applied pre-plant
	8.63 acre-in applied June-August
Insecticide:	Temik @ 3.5 lbs/A at planting
Growth Regulator:	Pix 6oz/A July 24
Harvest Aid:	paraquat 32oz/A October 16
Harvest Date:	November 18

RESULTS AND DISCUSSION:

Two *Gossypium barbadense* X *Gossypium hirsutum* hybrids most closely resembling the Pima background were submitted for testing by an Israeli seed company, Hazera, and were tested with 4 commercially available Pima varieties in a drip-irrigated location at AG-CARES in Lamesa. The two interspecific hybrids had significantly higher yield than the Pima varieties and averaged 82.5% mature at the same time the Pima varieties ranged from 38% to 68% mature. Test coefficient of variation was excellent at 10.5% and the average yield was 1138 pounds of lint per acre. The earliest maturing Pima variety, FiberMax Cobalt, was also the highest yielding Pima variety at 1,126 pounds of lint per acre. Storm resistance of all the lines tested was low, 2 and 3 on a scale of 1-9. The hybrids were taller than the Pima varieties and had more seed per boll and larger bolls as measured by seed cotton weight.

Results of the Pima Variety Test drip irrigated, Lamesa AG-CARES, 2008

		Agronomic Properties										
		%Turnout		% Lint		Boll	Seed	Lint	Seed Per		Storm	
Variety	Yield	Lint	Seed	Picked	Pulled	Size	Index	Index	Boll	Maturity	Resistance	Height
Hazera YD-1198	1659	22.7	42.7	36.6	29.2	4.8	11.9	7.3	24.4	81	2	47
Hazera YD-1199	1425	19.8	45.3	32.6	25.7	4.7	10.1	5.4	29.0	84	2	47
FiberMax Cobalt	1126	20.9	43.1	35.5	25.9	3.2	11.0	6.5	17.3	68	3	36
PhytoGen PHY 830	940	19.1	38.3	37.7	26.9	3.2	11.3	7.2	17.1	54	2	41
Deltapine DP 744	853	19.0	37.4	36.4	27.0	4.1	12.9	7.8	19.4	38	3	37
PhytoGen PHY 800	824	17.5	36.4	35.7	26.3	3.7	13.3	7.8	16.7	43	2	41
Mean	1138	19.8	40.5	35.7	26.8	3.9	11.7	7.0	20.6	61	2	42
c.v.%	10.5	7.1	5.8	2.1	2.0	3.7	9.6	7.0	9.8	10.0	21.5	5.8
LSD 0.05	147	1.8	2.9	1.5	1.1	0.3	2.3	1.0	4.1	8	1	3

TITLE:

Summary of Texas AgriLife Breeding Strains Testing at AG-CARES, Lamesa, TX, 2008

AUTHORS:

Jane K. Dever, Lyndon Schoenhals, Casey Hardin and Valerie Morgan, Associate Professor, Senior Research Associate, Research Associate and Research Assistant

MATERIALS AND METHODS:

Test:	Irrigated Breeding Strains Tests		
Planting Date:	May 9		
Design:	Randomized Complete Block		
Plot Size:	2-row plots, 30.5 ft		
Row Spacing:	40in		
Planting Pattern:	Solid		
Herbicide:	Prowl @ 3 pt/A applied pre-plant		
	Dual @ 1.25pt/A June 17		
Fertilizer:	10-34-0 120 lbs/A applied pre-plant		
Irrigations:	.75 acre-in on April 13	.4 acre-in on July 3	.4 acre-in on Aug 2
	.75 acre-in on April 28	.4 acre-in on July 5	.4 acre-in on Aug 5
	.3 acre-in on May 10	.4 acre-in on July 8	.4 acre-in on Aug 9
	.3 acre-in on May 14	.4 acre-in on July 11	.4 acre-in on Aug 21
	.3 acre-in on May 16	.4 acre-in on July 15	.4 acre-in on Aug 24
	.3 acre-in on May 19	.4 acre-in on July 18	.4 acre-in on Aug 27
	.3 acre-in on May 21	.4 acre-in on July 21	9.6 acre-in
	.5 acre-in on May 24	.4 acre-in on July 23	
	.4 acre-in on June 27	.4 acre-in on July 26	
	.4 acre in on June 30	.4 acre-in on July 28	
		.4 acre-in on July 31	
Insecticide:	Temik @3.5 lbs/A at planting		
Harvest Aids:	Prep 22 oz/A Ginstar 6 oz/A October 2		
	Paraquat 32 oz/A October 16		
Harvest Date:	October 27		

RESULTS AND DISCUSSION:

The facility at AG-CARES provides an opportunity for the Texas AgriLife Research breeding program to evaluate experimental strains from a number of nurseries in production conditions in the Southern High Plains area near Lamesa. The ability to test experimental strains in different locations, environments and production systems is crucial to the success of the breeding program. Data from the strains trials is not available at the time of the Annual Report publication and will be added to the website when the analysis is complete.

Two Preliminary Strains trials, representing first year of yield testing from nursery progeny row selection; 1 Intermediate Strains trial, representing lines in second year of yield testing; and 1 Advanced Strains trial, representing lines that had been yield-tested for more than 2 years, were planted in a center-pivot irrigated field at AG-CARES in Lamesa. All of the strains tests included the same 6 standard conventional commercial check varieties: FM 989, FM 958, DP 491, AT Atlas, ST 474 and PM 145.

Preliminary Strains #1 had 29 experimental lines and Raider 271. Preliminary Strains #2 had 30 experimental lines, and the Intermediate Strains had 17 experimental lines and Raider 271. The Advanced Strains test included 23 experimental lines and FM 9058. The test entries and their primary selection criteria for strains testing are represented in Table 1. The same tests were planted under dryland conditions at AG-CARES in Lamesa in 2008, but were not harvested because inconsistent germination due to varying moisture levels in the soil at planting.

Table 1. Number of Breeding Lines Tested at AG-CARES in 2008 under center-pivot irrigation and their primary selection criteria.

Criteria	Yield Component	Drought (Lubbock)	Drought (Pecos)	Fiber Quality	Cold Tolerance	Bacterial Blight	Verticillium
Advanced	11	3	3	6			
Intermediate	3	5	5	4			
Preliminary #1		2			14	1	12
Preliminary #2	13			17			

Table 2. Results of the Advanced Cotton Breeding Strains Test pivot irrigated, Lamesa AG-CARES

		% Turnout		% Lint		Agronomic Properties						
Variety	Yield	Lint	Seed	Picked	Pulled	Boll Size	Seed Index	Lint Index	Seeds Per Boll	Maturity	Storm Resistance	Height
FiberMax FM 989	1389	29.3	44.6	38.3	30.2	5.8	10.7	6.9	32.1	**65**	**5**	29
Deltapine DP 491	1273	29.9	43.3	39.9	31.4	5.3	9.2	6.5	32.4	66	5	27
FiberMax FM 9058F	1239	29.2	43.6	40.1	31.6	5.3	10.5	7.4	28.5	56	7	27
06-5-2707-SFHL	1234	26.2	44.1	37.3	28.0	6.2	13.6	8.4	27.3	51	6	30
06-21-519-FQ	1227	28.2	44.4	38.4	30.0	6.0	12.7	8.5	27.2	58	6	28
03-51-407-P	1185	25.8	45.9	33.6	25.0	5.4	11.6	6.4	28.2	56	5	29
06-3-1409-HL	1180	26.5	45.0	36.1	27.4	6.4	14.5	8.8	26.2	48	6	29
01-7-110-HL	1170	28.7	46.0	38.0	29.5	6.7	13.5	8.9	28.7	54	6	28
05-9-4222-HL	1144	28.1	47.0	37.7	28.5	5.1	11.6	7.3	26.2	58	6	28
01-7-310-HL	1123	26.9	46.2	35.2	27.3	5.6	12.8	7.5	26.0	54	6	28
05-47-802-D	1122	26.6	44.9	35.4	27.8	5.1	9.8	5.9	30.4	56	6	28
06-24-1231-FQ	1108	27.0	46.9	38.2	30.0	5.4	11.5	7.3	28.0	53	6	29
Per04-22-405-D	1107	27.1	46.5	35.5	27.3	5.3	11.6	6.9	27.2	60	6	27
FiberMax FM 958	1103	29.3	43.9	39.4	31.4	5.0	10.3	7.3	27.1	58	6	26
03-50-1005-P	1097	26.1	46.0	35.5	27.3	5.2	11.5	7.2	25.7	54	6	29
06-3-1407-HL	1087	28.3	46.7	37.0	28.5	5.9	11.9	7.4	29.4	55	6	28
06-3-1222-HL	1075	27.6	45.9	36.2	27.6	6.0	13.2	8.1	26.6	59	7	27
05-7-330-HLLS	1069	25.8	44.8	45.0	34.2	5.5	12.4	9.5	25.9	59	7	27
Stoneville ST 474	1048	29.0	41.6	39.2	28.9	5.1	10.4	7.4	27.3	63	5	27
05-11-5019-SFHL	1023	24.9	46.0	36.3	28.1	5.8	12.4	7.3	28.7	56	6	28
04-22-810-D	1012	25.1	46.9	35.1	27.2	5.3	11.6	6.8	27.5	63	6	28
All-Tex Atlas	1011	26.9	47.9	33.9	26.4	5.4	11.3	6.3	29.2	51	6	28
06-3-1131-HL	990	25.7	46.8	34.4	25.1	5.3	13.1	7.3	25.1	60	6	27
04-51-1501-P	988	25.0	48.2	35.7	27.2	5.4	11.6	6.6	29.2	56	5	30
05-12-5628-SFE	984	24.1	46.6	35.5	26.8	5.7	13.2	7.7	26.2	56	6	27
06-3-1308-HL	967	30.3	43.9	38.5	30.2	6.0	12.0	8.0	28.6	71	7	25
03-10-827-SF	918	24.9	49.9	34.6	27.6	5.3	12.3	7.1	25.8	43	7	27
06-7-2822-E	909	22.8	48.4	30.8	23.3	5.8	13.8	6.6	27.2	61	6	28
Paymaster PM HS 26	900	26.2	45.2	33.8	26.6	6.1	11.3	6.3	32.6	71	7	28
06-24-407-FQ	858	21.7	48.2	31.1	23.2	5.7	14.0	7.1	24.8	44	6	29
Mean	*1085*	*26.8*	*45.8*	*36.5*	*28.1*	*5.6*	*12.0*	*7.3*	*27.8*	*57*	*6*	*27*
C.V. %	11.3	5.0	2.5	6.7	7.2	5.9	2.5	7.0	7.0	12.1	10.3	4.9
LSD 0.05	144	1.6	1.3	4.2	3.4	0.6	0.5	0.9	3.3	8	1	2

Table 3. Results of the Intermediate Cotton Breeding Strains Test pivot irrigated, Lamesa AG-CARES

		Agronomic Properties										
		% Turnout		% Lint		Boll	Seed	Lint	Seeds Per		Storm	
Variety	Yield	Lint	Seed	Picked	Pulled	Size	Index	Index	Boll	Maturity	*Resistance*	Height
FiberMax FM 989	1290	28.5	44.1	38.7	29.9	5.6	11.0	7.3	29.9	61	4	29
06-21-404-FQ	1179	27.2	47.8	36.2	28.6	6.2	13.0	7.8	28.8	56	5	28
06-46-155-P	1177	24.4	47.1	32.7	24.6	5.7	11.8	6.1	30.6	60	5	33
06-46-226-P	1174	25.4	46.1	37.0	28.1	5.4	11.8	7.4	26.8	61	4	31
06-3-1224-HLPS	1142	26.0	46.4	36.3	28.5	5.6	12.6	7.6	26.4	50	4	30
06-46-153-P	1125	24.6	49.0	33.1	25.8	6.1	13.2	6.9	29.4	70	4	31
FiberMax FM 958	1125	29.3	44.0	39.6	30.4	4.9	10.8	7.5	26.0	61	5	28
06-45-304-D	1103	25.7	46.0	36.3	27.3	4.9	10.7	6.5	27.3	70	4	32
06-45-1104-D	1097	24.3	42.8	34.9	26.2	5.5	12.0	6.8	28.2	64	4	33
06-46-147-P	1075	24.0	47.9	34.1	25.5	5.8	12.8	7.1	28.2	56	5	31
06-45-208-D	1074	23.7	49.4	31.9	24.7	4.8	10.3	5.1	29.9	51	5	35
Stoneville ST 474	1071	28.2	43.7	34.1	27.0	5.6	12.0	7.1	26.9	63	4	30
06-45-802-D	1070	26.4	47.1	35.3	27.6	5.6	11.8	6.9	28.6	60	5	30
06-21-405-FQ	1060	27.4	47.0	39.2	30.1	5.8	13.0	8.8	25.8	63	5	30
06-3-2517-HLPS	1058	25.9	45.5	35.9	25.4	6.9	14.1	8.4	29.5	61	4	29
Delapine DP 491	1055	28.5	47.1	40.3	30.8	5.3	9.5	6.8	31.2	61	4	29
06-45-911-D	1045	25.2	46.3	35.2	27.0	5.9	12.1	7.0	30.1	63	4	32
06-21-821-FQ	1028	26.7	47.9	37.9	29.3	5.6	12.3	7.7	27.3	60	4	30
All-Tex Atlas	1010	25.3	47.1	32.5	24.8	5.8	12.3	6.4	29.2	63	5	31
Paymaster PM HS26	992	25.5	45.8	35.8	26.6	6.3	13.2	7.7	29.1	68	5	29
06-3-1302-HLPS	971	26.6	45.1	35.3	26.3	6.2	12.1	7.0	31.2	60	4	28
06-46-149-P	937	22.2	47.4	32.4	24.2	5.2	12.9	6.6	25.4	54	5	31
06-21-817-FQ	905	26.9	46.0	35.5	25.9	5.9	13.1	7.6	27.3	59	4	29
Raider 271	886	25.1	49.0	35.6	27.3	5.3	11.2	6.5	28.9	60	5	30
Mean	1069	25.9	46.5	35.6	27.1	5.6	12.0	7.1	28.4	61	4	30
C.V.%	12.4	4.6	5.3	4.5	5.8	8.3	4.9	6.0	9.2	16.1	12.1	6.9
LSD 0.05	157	1.4	2.9	2.7	2.7	0.8	1.0	0.7	4.5	11	1	2

TITLE:

Results of the Nematode Variety Test and Nursery at AG-CARES, Lamesa, TX, 2008

AUTHORS:

Terry A. Wheeler, Jane K. Dever, Lyndon Schoenhals and Valerie Morgan, Professor, Associate Professor, Senior Research Associate and Research Assistant

MATERIALS AND METHODS:

Test:	Nematode Resistance Cotton Variety Trial
Planting Date:	May 9
Design:	Randomized Complete Block
Plot Size:	2-row plots, 30.5 ft
Row Spacing:	40in
Planting Pattern:	Solid
Herbicide:	Prowl @ 3 pt/A applied pre-plant Dual @ 1.25pt/A June 17
Fertilizer:	10-34-0 120 lbs/A applied pre-plant

Irrigations:			
	.75 acre-in on April 13	.4 acre-in on July 3	.4 acre-in on Aug 2
	.75 acre-in on April 28	.4 acre-in on July 5	.4 acre-in on Aug 5
	.3 acre-in on May 10	.4 acre-in on July 8	.4 acre-in on Aug 9
	.3 acre-in on May 14	.4 acre-in on July 11	.4 acre-in on Aug 21
	.3 acre-in on May 16	.4 acre-in on July 15	.4 acre-in on Aug 24
	.3 acre-in on May 19	.4 acre-in on July 18	.4 acre-in on Aug 27
	.3 acre-in on May 21	.4 acre-in on July 21	9.6 acre-in
	.5 acre-in on May 24	.4 acre-in on July 23	
	.4 acre-in on June 27	.4 acre-in on July 26	
	.4 acre in on June 30	.4 acre-in on July 28	
		.4 acre-in on July 31	

Insecticide:	Temik @3.5 lbs/A at planting
Harvest Aids:	Prep 22 oz/A Ginstar 6 oz/A October 2 Paraquat 32 oz/A October 16
Harvest Date:	October 27

RESULTS AND DISCUSSION:

Some locations at the AG-CARES facility provide an excellent opportunity to evaluate a number of commercial, pre-commercial and breeding strains in small-plot replicated trials under root-knot nematode pressure. Texas AgriLife Research provides a fee-based testing service for seed companies to evaluate their products in the same test with other varieties, and allows producers access to independently-generated performance data in production situations that may resemble their own. In addition, the AgriLife Research cotton breeding program at Lubbock utilizes the same location to select progeny from breeding populations with nematode-tolerant parent and advance promising lines for yield testing.

Twenty cotton varieties and experimental strains were submitted for variety testing in a field where root-knot nematodes were known to have been present. Two conventional check varieties, ST LA887, which exhibits tolerance to root-knot nematode, and DP 491 were included as well as 2 experimental strains from the Texas AgriLife Research breeding program in Lubbock. The highest-yielding variety was ST 5458B2RF, at 1,450 pounds of lint per acre followed by a new variety from Deltapine, DP 0935B2RF and FM 1740B2F (Table 1). Erratic emergence, early competition from volunteer cotton and inconsistent nematode pressure contributed to a high test coefficient of variation and there were no significant differences in yield among the top 19 varieties tested. The entry that allowed the lowest level of nematode reproduction was Bayer BCSX0704B2RF, at 120 root-knot nematodes/500 cc of soil, ranked 10^{th} in yield. The entry that allowed the second lowest nematode reproduction was one of the Texas AgriLife Research breeding lines that also the produced the lowest yield.

Sixty-four progeny rows from individual plant selections made in 2007 at AG-CARES from populations including a nematode-tolerant parent were planted in the center pivot next to the variety trial. A total of 42 individual plant selections were made for further progeny row evaluation in 2009. Relatively low nematode pressure in 2008 resulted in further progeny row testing instead of selection of lines for yield testing.

Table 1. Results of the Nematode Cotton Variety Test pivot irrigated, Lamesa AG-CARES, 2008

		Agronomic Properties												
		% Turnout		% Lint					Seeds					
Variety	Yield	Lint	Seed	Picked	Pulled	Boll Size	Seed Index	Lint Index	Per Boll	Maturity	Storm Resistance	Height	Nematode Rating
Stoneville ST 5458B2RF	1450	28.6	44.9	39.1	29.2	5.2	10.4	7.0	29.3	41	6	30	1820a
Deltapine DP 0935 B2RF	1446	29.4	42.0	39.4	28.4	5.3	11.0	7.5	28.0	26	6	32	850a
FiberMax FM 1740B2F	1437	30.2	42.4	39.7	29.7	5.3	10.8	7.5	28.0	43	6	31	1870a
Deltapine DP 174 RF	1417	29.5	42.5	41.1	31.2	6.1	9.6	7.2	34.8	50	5	27	625a
Bayer BCSX 0727B2F	1408	29.3	44.3	38.2	29.0	4.6	8.9	5.8	30.0	70	5	32	1440a
FiberMax FM 9160B2F	1379	29.9	44.7	37.3	28.9	5.4	9.9	6.2	32.6	54	6	30	1450a
Deltapine DP 0924 B2RF	1367	29.4	44.9	38.7	29.0	5.0	10.0	6.6	29.0	68	5	30	2070a
Americot AM 1532 B3RF	1277	27.6	43.9	37.7	29.6	5.3	10.1	6.5	30.9	46	6	32	915a
NexGen NG 4377 B2RF	1276	28.9	45.1	37.4	29.2	5.1	10.0	6.3	30.3	50	6	32	1460ab
Bayer BCSX 0704B2F	1263	27.7	45.5	38.0	28.6	5.3	10.0	6.5	31.1	48	6	31	120c
NexGen NG 3331 B2RF	1209	29.6	45.8	38.3	29.5	5.4	10.9	7.2	28.7	65	5	30	1265a
Stoneville ST 4498B2RF	1196	27.8	44.2	36.9	28.1	5.4	11.0	6.8	29.3	56	5	32	605a
Monsanto 07X440 DF	1192	30.8	42.0	41.3	31.0	4.6	8.7	6.5	28.9	66	6	30	1380a
Delatpine DP 0912 B2RF	1187	26.9	43.9	37.4	28.7	5.0	10.3	6.7	28.0	55	5	29	1440a
Stoneville LA 887	1183	25.4	42.3	37.1	27.2	5.6	10.7	7.6	28.3	48	6	30	1560a
Bayer BCSX 0721B2F	1176	28.8	42.0	39.3	30.1	4.8	9.2	6.4	29.2	58	6	33	1410a
Deltapine DP 164 B2RF	1133	27.0	46.6	38.4	29.0	4.6	9.9	6.2	28.3	43	6	32	1860a
NexGen NG 4370 B2RF	1104	26.5	42.5	38.2	30.6	5.2	10.2	6.6	29.6	51	5	32	1125a
FiberMax FM 1880B2F	1094	29.5	47.0	37.3	29.2	5.3	10.3	6.5	30.2	60	6	33	3030a
07-18-302-N	1069	22.2	47.0	32.5	23.5	5.6	11.0	5.6	32.3	25	6	30	870a
Deltapine DP 491	1069	29.5	43.4	37.5	29.2	5.1	9.3	6.0	31.9	44	6	30	1175a
NexGen NG 3348 B2RF	1049	27.9	45.0	37.3	28.6	5.3	10.3	6.4	31.3	53	5	31	1985a
NexGen NG 3410 RF	996	28.0	46.5	36.7	27.9	5.4	11.2	6.8	29.1	30	7	31	2880a
07-17-105-N	987	22.2	50.3	29.6	20.4	5.9	12.1	5.4	32.5	39	6	28	165bc
Mean	1224	28.0	44.5	37.7	28.6	5.2	10.2	6.5	30.0	49	6	31	
c.v.%	25.0	5.7	3.8	3.8	3.4	8.4	7.6	7.0	10.1	31.0	15.0	7.8	
LSD 0.05	363	1.9	2.0	2.4	1.7	0.7	1.3	0.8	5.2	18	1	3	

Nematode counts: Means were significantly different at P= 0.05, based on the Waller-Duncan k ratio t-test, when letters are different.

TITLE:

Large plot Nematicide Treatments at AG-CARES, Lamesa, TX, 2008

AUTHORS:

T. A. Wheeler, E. Arnold, and D. Carmichael

MATERIALS AND METHODS:

Planting date:	6 May
Variety:	Fibermax 9058RF
Plot dimensions:	4 rows wide (0.11 to 0.23 acres/plot), 4 replications, RCBD
Stand counts:	2 June (2, 35-ft. long areas counted/plot)
Gall ratings:	12 June (40 plants/plot)
Pinhead size liquid applications:	23 June (ProAct, Vydate CLV, and Stimupro)
Pinhead size Temik sidedress:	26 June
Second set of liquid applications:	17 July
Soil sampling:	17 July
Harvest:	1 November

RESULTS:

Plant stand was significantly higher when seed was treated with N-Hibit, and plots were treated with Temik 15G at planting, than in plots where there were no nematicide treatment (None), Aeris alone, Aeris + Temik 15G at plant, and SC27N at plant (Table 1). Plants galling caused by root-knot nematode were worse for the untreated check than for N-Hibit + Temik 15G, and Temik 15G at plant (gall ratings were taken before Vydate applications). There were no differences between treatments in root-knot nematode population density at midseason, and no yield differences (Table 1).

Table 1. Affect of nematicide treatments for a large plot test in Lamesa, TX

Treatment[a]	Stand Plants/ ft row	Galls/ Plant	Root-knot Nematodes/ 500 cc soil	Lbs of Lint/acre
None	3.2 b	8.9 a	3.155	1,219
Aeris	3.2 b	6.4 abc	2,220	1,228
Temik 15G (at plant [AP])	3.4 ab	4.4 abc	1,815	1,285
Aeris+Temik 15G (AP)	3.2 b	5.3 abc	4,495	1,214
Aeris+Temik 15G (sidedress)	3.4 ab	5.4 abc	1,580	1,248
N-Hibit+Temik 15G (AP) + ProAct	3.7 a	1.9 c	2,510	1,139
SC27N (biological)	3.3 b	8.8 ab	2,695	1,271
Temik 15G (AP)+Vydate CLV	3.5 ab	2.8 c	1,025	1,216
Temik 15G (AP) + Vydate CLV+ Stimupro	3.5 ab	3.5 bc	2,905	1,227

[a]Temik 15G was applied at 3.5 lbs/acre at plant, and 5 lbs/acre as a sidedress treatment. N-Hibit was applied at 3 oz./100 lbs of seed. ProAct was applied at pinhead size square and a second application several weeks later, both at 1 oz/acre. Vydate CLV was applied once at pinhead size square at 17 oz/acre. Stimupro was applied twice at 10 oz/acre, at pinhead size square and several weeks later.

[b]J2 were second-stage juveniles, Pm was either eggs or J2, which ever was higher on a plot basis.

TITLE:

Tillage effects on cotton stand and yield at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Jacob Reed and Michael Petty; Professor, Agricultural Engineer-Irrigation, Sr. Research Associate, and Research Assistant.

MATERIALS AND METHODS:

Plot Size:	8 rows by 300 feet, 3 replications
Planting Date:	May 15
Variety:	Americot 1532 B2RF
Herbicides:	Prowl 3 pt/A PPI
	Roundup WeatherMax 22 oz/A POST
	Roundup WeatherMax 22 oz/A POST
Fertilizer:	130-40-0
Irrigation in-season:	7.6”
Harvest Date:	October 26

RESULTS AND DISCUSSION:

This trial was designed to compare tillage methods for managing sorghum residue in a sorghum-cotton rotation. Four tillage treatments were compared including: 1) conventional tillage [shred stalks, disc, incorporate herbicide and relist] 2) no-till [plant directly into standing stalks] 3) stalk puller 4) stalk cutter [prior to planting]. Roundup was applied after planting and during the growing season for weed and volunteer sorghum control. Good cotton stands were achieved in all tillage treatments (Table 1). Better early-season cotton growth was observed in the no-till and reduced tillage treatments compared to the conventional tillage system. Similar yields were produced in all tillage treatments (Table 1) although some harvest problems were noted due to sorghum stalks in the no-tillage treatment. Both the stalk-puller and stalk-cutter treatments left residue on the surface that prevented blowing but did not interfere with harvest.

Table 1. Tillage effects on cotton at AG-CARES, Lamesa, TX, 2008.

System	Cotton Plant Stand (plts/6ft)	Cotton Lint Yield (lbs/A)
No Tillage	25 a	1293 a
Conventional	22 b	1203 a
Stalk-Puller	25 a	1284 a
Stalk-Cutter	27 a	1233 a

TITLE:

Effect of Cover crop and Nitrogen Fertigation Rate in Subsurface Drip Irrigated Cotton at AG-CARES, Lamesa, TX, 2008

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
Irrigation:	6 inches pre-plant, 9 inches in-season
Duration of fertigation:	21 days from first bloom
Planting Date:	June 1
Harvest Date:	November 7

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 the winter/spring and nutrient management in SDI systems has not received as much attention as water management. The rate of N fertilizer injection in SDI cotton need optimizing in order to prevent N loss through leaching and denitrification.

A rye cover crop was planted in the experimental field immediately after cotton harvest in half of the plot area (8 rows), leaving the other half in conventional tillage. Fine-tuning the timing of N fertigation can result in improved N use efficiency and profit in cotton. Three rates of N fertilizer (50, 100, and 150 lb N/ac) were injected over a 21 day period, starting at first bloom.

Pre-plant soil test NO_3 was low, but greater in conventional –till than conservation tillage (Table 1). Nitrogen uptake by the rye cover crop in conservation tillage explains this trend. An N fertilizer response was observed in conservation-till but not in conventional till (Table 2).
On average, however, yields between the two tillage systems did not differ.

Table 1. Pre-plant Soil Profile Nitrate-Nitrogen as affected by Tillage and Winter Cover Crop. In SDI, Lamesa, TX 2008

Depth	Conven. till	Cover crop with conserv-till
feet	-------- lb NO_3-N/ac ---------	
0 - 2	19 a	9 b
0 - 3	23 a	11 b
0 – 4	26 a	14 b
0 – 5	27 a	16 b

Means in a row followed by the same letter are not significantly different at P = 0.05

Table 2. Lint yields as affected by tillage and Winter cover crop and Nitrogen fertigation rate, in SDI, Lamesa, TX 2008

	Nitrogen fertigation rate (lb N/ac)		
	50	100	150
Conventional tillage	1224	1393	1503
Cover crop with Conservation tillage	1245	1293	1352

TITLE:

Effect of Cover Crop on Arthropod Population Dynamics in Subsurface Drip Irrigated Cotton at AGCARES, Lamesa, TX, 2008

AUTHORS:

Megha Parajulee, Bo Kesey, Stanley Carroll, 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
Irrigation:	6 inches pre-plant, 9 inches in-season
N fertilizer rate:	100 lbs/ac during the season as fertigation
Duration of fertigation:	21 days from first bloom
Planting date:	June 5
Harvest date:	November 7

A small grain cover crop was planted in the experimental field immediately after cotton harvest in 2007 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 100 row-ft section per plot. Samples were processed in the laboratory. When plants were at about 5-6 leaf stage (July 2), 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 2008 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. Also, total leaf area per plant was similar between conventional and conservation tillage plots (Table 1). We would have expected 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 2009 will address this issue with more data.

Arthropod pest densities, mostly including cotton fleahoppers and Lygus bugs, were also low throughout the season, with no significant difference in pest activities between the two cropping systems (Table 2). Arthropod predator densities were consistently higher in conventional tillage plots compared with that in conservation tillage plots throughout the 7-week sampling period

(Table 3). Average predator abundance in conventional tillage plots was 1.5 times higher than that in conservation tillage plots.

Table 1. Leaf area (cm^2/plant) and plant height (inch) of pre-flower cotton in conventional and conservation tillage plots, Lamesa, TX, July 2, 2008.

Treatment	Leaf area (sq. cm)	Plant height (inches)
Conventional tillage	101.8 a	11.0 a
Cover crop with Conservation tillage	107.2 a	10.9 a

Table 2. Average cotton pest densities (all pests combined, numbers/100 row-ft cotton foliage sampled by a KIS sampler) in conventional and conservation tillage plots, Lamesa, TX, 2008.

Treatment	Jul 2	Jul 9	Jul 15	Jul 23	Jul 30	Aug 6	Aug 12	Avg.
Conventional tillage	0.0	0.0	0.3	0.5	0.7	2.3	3.3	1.0 a
Cover crop with Conservation tillage	0.2	0.0	0.2	1.5	0.7	1.7	2.7	1.0 a

Table 3. Average arthropod predators (all predators combined/100 row-ft cotton foliage sampling by a KIS sampler) in conventional and conservation tillage plots, Lamesa, TX, 2008.

Treatment	Jul 2	Jul 9	Jul 15	Jul 23	Jul 30	Aug 6	Aug 12	Avg.
Conventional tillage	1.8	5.8	16.5	25.0	24.3	31.0	21.2	18.0 a
Cover crop with Conservation tillage	0.5	2.3	12.0	13.5	19.5	20.8	16.5	12.2 b

TITLE:

Effects of irrigation and plant density on yield, quality and yield components at AG-CARES in Lamesa, TX, 2008.

AUTHORS:

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

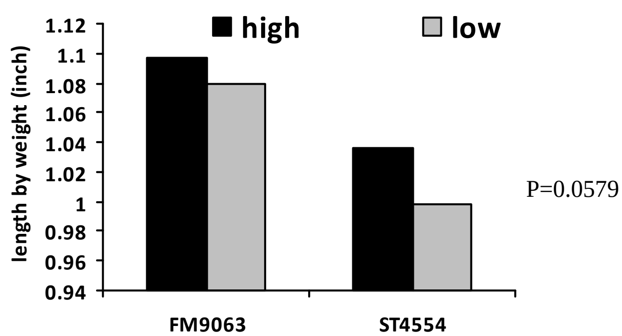
OBJECTIVES:

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.

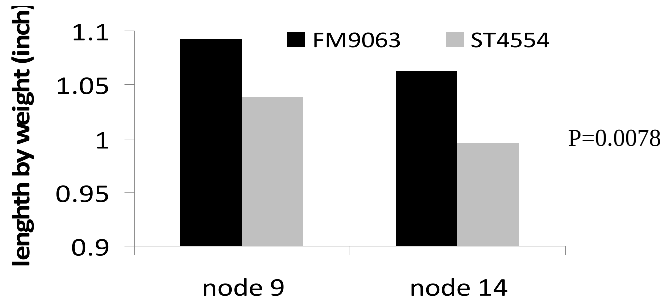
MATERIALS AND METHODS:

Studies were conducted in 2006 and 2007. 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.

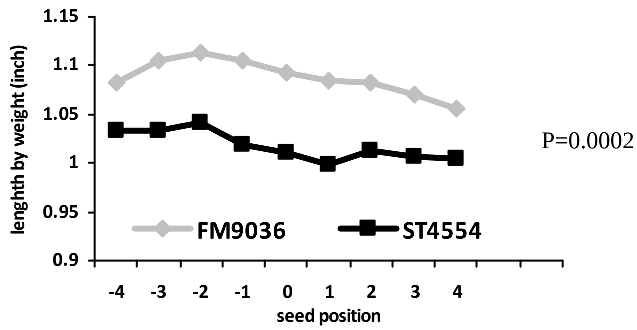
RESULTS:



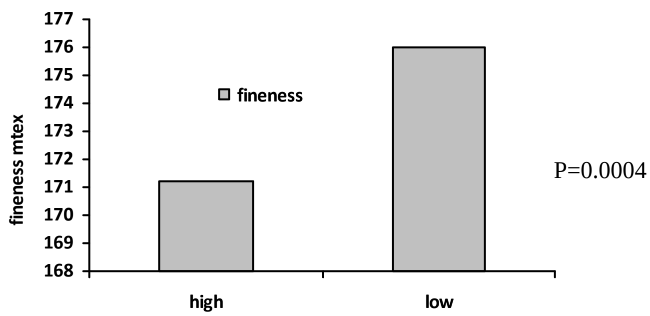
Increased irrigation resulted in longer fiber length for both varieties and the variety of ST4554 was more sensitive to irrigation.



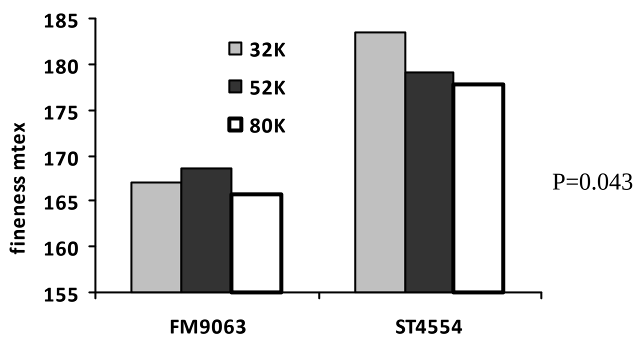
Fiber length from node 9 is longer than that from node 14.



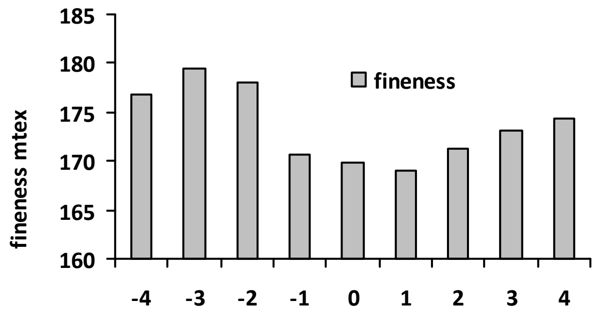
In the locule, fiber length associated with seed position tends to bear longer fiber near the pedicel.



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

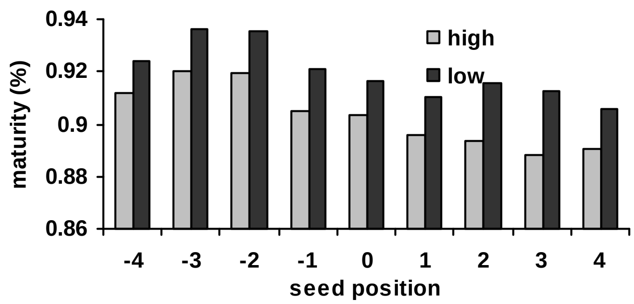


Plant density influenced fiber fineness but was dependent on cotton variety.



P<0.0001

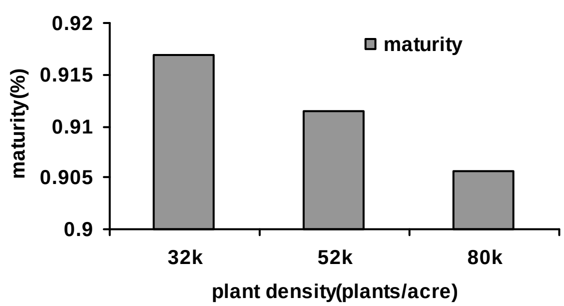
Fiber fineness in a locule varied with seed position. The central part of the locule resulted in finer fiber.



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:

Evaluation of foliar applications of Headline and Quadris on cotton under moderate irrigation at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Jason Woodward, Randy Boman, Mitchell Ratliff, and Ira Yates, Extension Plant Pathologist, Extension Agronomist, Technician, and Technician

MATERIALS AND METHODS:

Plot size:	4-rows by 50 feet with four to five replications
Planting date:	2-May
Variety:	Americot 1532B2RF (harvested 2 middle rows)
Harvest date:	1-Nov

RESULTS AND DISCUSSION:

No foliar diseases were observed in either of these trials. For Trial 1, foliar applications of fungicides had no effect on seed cotton, gin turnout, or lint yields (Table 1). Seed cotton weights ranged from 3057 to 3300 lb/A with an average turnout of 24.4%. Lint yields were variable among replications and ranged from 727 to 830 lb/A. Similar results were observed in Trial 2 (Table 2). Seed cotton yields ranged from 3402 to 3881 with an average turnout of 23.9%. Yields were similar for all treatments and ranged from 823 to 913 lb/A. In addition, the application of fungicides had no effect of fiber quality in Trial 2 (Table 3). Micronaire ranged from 4.70 to 4.85 units. Length (inches), uniformity (%), and strength (g/tex) averaged 1.13, 79.4, and 28.2, respectively. These results indicate that there was no apparent benefit to applying Headline or Quadris to cotton under moderate irrigation levels. This is consistent with other studies where fungicides were applied (under varying levels of irrigation and in non-irrigated trials). Additional studies in the Southern High Plains are needed to better define the role of these products in cotton production.

Table 1. Performance of the fungicides Headline and Quadris applied to cotton at AG-CARES, 2008 (Trial 1)

Treatment[a]	**Seed cotton (lb/A)**	**Turnout (% lint)**	**Lint yield (lb/A)**
1. Non-treated control	3099	23.4	727
2. Headline 6 fl oz/A FB	3057	24.2	740
3. Headline 9 fl oz/A FB	3282	25.2	830
4. Headline 9 fl oz/A FB + 14	3300	24.8	819
5. Quadris 6 fl oz/A FB	3060	24.3	745
(LSD ≤ 0.05; n=4)[b]	ns	ns	ns

[a] FB refers to first bloom and + 14 indicates a sequential application was made 14 days later.
[d] ns indicates means within a column are not significantly different according to Fisher's protected LSD. There were a total of four replications in this trial.

Table 2. Performance of the fungicides Headline and Quadris applied to cotton at AG-CARES, 2008 (Trial 2)

Treatment[a]	Seed cotton (lb/A)	Turnout (% lint)	Lint yield (lb/A)
1. Non-treated control (I)	3402	24.2	824
2. Quadris 12 fl oz/A FB	3518	23.1	810
3. Quadris 6 fl oz/A FB Quadris 6 fl oz/A + 14	3521	24.3	852
4. Quadris 6 fl oz/A FB Quadris 12 fl oz/A + 14	3713	24.6	913
2. Headline 12 fl oz/A FB	3881	23.0	885
3. Headline 6 fl oz/A FB Headline 6 fl oz/A + 14	3557	24.1	850
4. Headline 6 fl oz/A FB Headline 12 fl oz/A + 14	4059	23.6	951
8. Non-treated control (II)	3439	23.9	823
(LSD ≤ 0.05; n=5)[b]	ns	ns	ns

[a] FB refers to first bloom and + 14 indicates a sequential application was made 14 days later.

[b] ns indicates means within a column are not significantly different according to Fisher's protected LSD. There were a total of five replications in this trial.

Table 2. Fiber properties of Headline and Quadris fungicide treatments from AG-CARES, 2008 (Trial 2)

Treatment[a]	Micronaire (units)	Length (inches)	Uniformity (%)	Strength (g/tex)	Elongation (%)	Rd (%)	+b (%)	Leaf grade
1. Non-treated control (I)	4.80	1.14	79.0	28.1	10.5	75.9	8.6	2.75
2. Quadris 12 fl oz/A FB	4.75	1.11	79.8	28.0	10.6	74.8	8.9	2.25
3. Quadris 6 fl oz/A FB Quadris 6 fl oz/A + 14	4.70	1.14	79.5	28.2	10.5	75.9	8.8	2.75
4. Quadris 6 fl oz/A FB Quadris 12 fl oz/A + 14	4.80	1.13	79.8	28.2	10.6	75.2	8.5	2.75
2. Headline 12 fl oz/A FB	4.85	1.13	79.7	28.5	10.5	75.6	8.8	2.75
3. Headline 6 fl oz/A FB Headline 6 fl oz/A + 14	4.70	1.13	78.8	28.6	10.6	75.4	8.8	2.50
4. Headline 6 fl oz/A FB Headline 12 fl oz/A + 14	4.80	1.13	79.9	28.0	10.8	75.0	8.7	2.75
8. Non-treated control (II)	4.78	1.12	79.0	28.1	10.5	75.8	8.7	2.50
(LSD ≤ 0.05; n=5)	ns	ns	ns	ns	ns	ns	ns	ns

52

[a] FB refers to first bloom and + 14 indicates a sequential application was made 14 days later. [b] ns indicates means within a column are not significantly different according to Fisher's protected LSD. There were a total of five replications in this trial.

IRRIGATED BOLLGARD II / ROUNDUP READY FLEX STACKED COTTON VARIETY DEMONSTRATION
Dawson County, Texas, 2008.

COOPERATOR
Terry and Jay Coleman

INVESTIGATORS
Jeff Wyatt
AgriLife Dawson County Extension Agent
Dawson County

and

Tommy Doederlein
AgriLife Extension Agent - Integrated Pest Management
Dawson/Lynn Counties

Disclaimer:

This study should be used for information only and should not be used as a "stand alone" basis for selecting one variety over another as results from one experiment do not represent conclusive evidence that the same results would occur in other locations where conditions may very.

Objective:

To evaluate Bollgard II / Roundup Ready Flex stacked cotton varieties in a irrigated production system.

Materials and Methods:

Varieties:	All-Tex TitanB2RF
	Deltapine 141B2RF
	Deltapine 161B2RF
	FiberMax 9180B2F
	NexGen 2549B2RF
	NexGen 3273B2RF
	NexGen 3348B2RF
	Phytogen 375WRF
	Phytogen 745WR

Stoneville 4498B2RF
Stoneville 5327B2RF

Experimental Design:	Randomized complete block with three replications.
Plot Size:	6 rows by 2,316 feet (0.96 acres)
Planting Date:	May 14
Planting Pattern:	Solid 30"
Harvest:	November 10 - 6 row stripper with burr extractor
Gin Turnout:	Grab samples were taken from each plot and ginned at the Texas Agricultural Experiment Station in Lubbock on November 25.
Fiber Analysis:	Lint samples from each plot were submitted to the International Textile Center at Texas Tech University for HVI analysis.

Results and Discussion:

The seed and technology fee values were obtained from the Plains Cotton Growers seed cost calculator.

Net value does not account for labor, diesel, fertilizer, herbicides, insecticides, harvest aides or harvest costs; these costs are equal across all treatments.

Acknowledgments:

Appreciation is expressed to Terry Cole and Jay Coleman for the use of his land, equipment and labor and all the seed companies for suppling the seed necessary for conducting this trial.

TITLE:

Sorghum variety performance as affected by low-energy precision application (LEPA) irrigation levels at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Wayne Keeling, Jim Bordovsky, Jacob Reed and Michael Petty; Professor, Agricultural Engineer-Irrigation, Sr. Research Associate, and Research Assistant.

MATERIALS AND METHODS:

Plot Size:	8 rows by 500 feet, 3 replications
Planting Date:	May 22
Varieties:	Pioneer 85G62
	NC+ 7R83
Herbicides:	Milo Pro 1qt/A PRE
Fertilizer:	130-40-0
Irrigation in-season:	

	Low	Medium	High
Total	5.1”	7.6”	10.1”

Harvest Date:	October 1

RESULTS AND DISCUSSION:

Two sorghum varieties were planted under three irrigation levels (base, base +33%, and base -33%) as part of an on-going cotton-sorghum rotation. Higher yields were produced with the medium late maturing Pioneer variety compared to the medium maturity NC+ variety (Table 1). Overall yields were correlated to irrigation level, with yields increasing from 5500 lbs/A to 6400 lbs/A as irrigation level increased. Compared to the base irrigation, yields increased only 7% with the addition of 33% more irrigation. Yield was reduced only 7% in the low irrigation (base -33%) treatment. This area will be planted to cotton in 2009.

Table 1. Effects of sorghum variety and LEPA irrigation levels on sorghum yields at AG-CARES, Lamesa, TX, 2008.

	L	M	H	Avg.
Variety	----------	----------	lbs/A ----------	----------
Pioneer 85G62	5980	6711	7120	6604 a
NC+ 7R83	5121	5283	5703	5369 b
Avg.	5551 c	5997 b	6412 a	
% change	(-7%)	-----	(+7%)	

TITLE:

Irrigated Grain Sorghum Seeding Rate Test, AG-CARES, Lamesa, TX 2008

AUTHORS:

Calvin Trostle, Texas AgriLife Extension Service, Lubbock, ctrostle@ag.tamu.edu, 806.746.6101; Danny Carmichael, Texas AgriLife Research, Lubbock

METHODS & PROCEDURES:

Soil Type	Amarillo fine sandy loam
Planting:	May 22, 2008 on 40" rows
Previous Crop:	Cotton
Seeding Rate:	See test notes below
Plot Set-up:	6 replicated plots per each of two hybrids, 4 rows X 60'
Harvest Area:	4 rows X 15'
Fertilizer:	130-40-0
Herbicide:	Propazine- 1 qt/A
Insecticide:	None
Rainfall:	See summary in AG-CARES report
Irrigation Level:	2.0"- stand establishment 7.8"- in season
Date Harvested:	October 10, 2008

OBJECTIVE:

Test seeding density effects on grain yield for tillering (medium-long Pioneer 84G62) and non-tillering (medium DeKalb Monsanto DK-44) grain sorghum hybrids.

HOW THIS TRIAL WAS CONDUCTED:

Targeted seed counts ranged from 2.0 to 8.0 seeds per foot of row (26,000 to 104,000) seeds per acre were determined to create a range of seeding rates for irrigated grain sorghum. Because tillering response governs grain sorghum growth, tillering and non-tillering hybrids were planted using a John Deere Maxi-Emerge air vacuum planter in which the planter book was used to select appropriate seeding rates for each hybrid at the targeted level.
Difficulty was encountered in getting the DK-44 established, and the field was cultivated twice to throw soil up around the base of the plant. Due to sporadic stands in DK-44 this hybrid was deleted from the study.

Plant density was measured in the harvest area. Plant establishment—the percentage of seeds that became plants ranged from a high of 97% at the lowest seeding rate decreasing to 52% at the highest seeding rate. Plants at the lower seed rate clearly tillered more for 84G62 at low plant populations.

The plant population had no effect on grain test weight. Furthermore, there was no significant difference in yield (trial average 5,401 lbs./A) among any of the seeding rate densities for this tillering hybrid. Extension recommendations for the expected range of irrigation applied to this test are in the range of 50,000 seeds per acre. In the results of this first-study, we note that higher seeding rates were not necessary to achieve significant grain yields.

This study was duplicated at the Texas AgriLife Research farm at Halfway, TX (Hale Co.), and it will be repeated in 2009 at AG-CARES.

Table 1. Planting seed density for tillering grain sorghum hybrid Pioneer 84G62 did not affect yield, AG-CARES, Lamesa, TX, 2008.

Seeding density treatment	Targeted seeds/foot (40" row)	Targeted seeds per acre	Plants per acre	Plants/A as % of seeds/A	Test weight (Lbs./bu)	Yield per acre @ 13% H_2O (Lbs./A)
1	2.0	26,000	25,400	97%	60.6	5,157
2	3.0	39,000	35,500	91%	60.6	5,647
3	4.0	52,000	36,800	70%	60.6	5,636
4	5.0	65,000	40,700	62%	60.8	5,376
5	6.0	48,000	46,000	59%	60.7	5,126
6	7.0	91,000	51,600	56%	60.4	5,545
7	8.0	104,000	54,300	52%	60.4	5,601
		Average	41,300		60.6	5,401
		P-Value, Seed Rate	<0.0001		0.332	0.437
		Fisher's Least Sig. Difference (0.10)	4,500		NS†	NS
		P-Value, Range	0.823		0.002	0.013
		Coefficient of Variation (%CV)	22.7%		0.5%	11.4%

†Not significant at the 90% confidence level.

TITLE:

2008 Dryland Grain Sorghum Performance Test at AG-Cares, Lamesa, 2008

AUTHORS:

Calvin Trostle, Texas AgriLife Extension Service Agronomist, Lubbock, ctrostle@ag.tamu.edu, 806.746.6101;Jim Barber, Texas AgriLife Extension Service; Danny Carmichael, Texas AgriLife Research, Lubbock.

METHODS & PROCEDURES:

Soil Type	Amarillo fine sandy loam
Row Width:	40”
Previous Crop:	Cotton
Land Preparation:	Rolling stalk cutter, lister
Date Planted:	6-24-08 with cones mounted on a JD Max-Emerge planter
Plant Population:	Seeds were to drop 2.5 seeds per foot of 40” row
Plot Length:	4 rows X 25’
Fertilizer:	None
Herbicide:	None
Insecticide:	None
Rainfall:	May, 2.8” (accumulating soil moisture); June, 1.1”; July, 0.1”, August, 0.4”; September, 5.3”; October 1-10, 0.7” (available to longer maturity hybrids)—Seasonal rainfall, May-September, 9.7”.
Irrifations:	None
Date Harvested:	10/27-30/08
Size Haravested Plot:	2 rows X 22’
Test Design:	Randomized complete block
Number Entries:	33
Number Replications:	4
Number Rows/Plot:	4
Test Mean:	1,848 lbs./A; yield corrected to 14% moisture
Test C.V.:	25.6%--Significant yield differences were observed from the south side of the test to the north side. When statistically analyzed using blocking of south, middle, and north plots, the test became highly significant, but the test variability led to high CV.

RESULTS AND DISCUSSION:

In spite of dry conditions modest yields were obtained. Late season rainfall Sept. 10-12 came in time to help medium-long and some medium maturity hybrids increase yields. In general, early maturity hybrids lacked for moisture and yields in general were low. Seeds were packaged to obtain a seed drop of ~32,000 seeds/acre, or 2.5 seeds per foot.

Establishment was fair though some individual planter rows in some plots were poor hence harvest rows were moved to the side 1 row if needed, and in some cases an early maturity hybrid was planted in thin rows to ensure adequate competition from neighboring rows. in warm, moist conditions. An excellent seed bed was available for the June 26 planting date. Temperatures were normal for most of the growing season until Sept. 9 when cool to abnormally cool conditions prevailed for 12 days.

Most hybrids that had significant upper node tillering, mostly early maturity hybrids, again had significantly higher late season tillering. These late-season tillers arising from the upper nodes, particularly in dryland, can often delay harvest due to excessive green grain and herbage interfering with threshing and obtaining a mature grain sample.

The test was harvested by hand over 4 days then threshed through a stationary thresher after grain samples had dried considerably. Moisture of several samples indicated 7.1-8.0% moisture, averaging 7.5% which was used for all remaining samples.

2008 Lamesa Dryland Grain Sorghum Performance Test, AG-CARES, Lamesa, Texas.

Entry No.	Hybrid	Company or Brand Name	Maturity Class .(1)	Grain Color .(2)	Plant Color .(3)	Days to 50% Flower	Plant Height Inches	Sucker Head Rating (4)	Plants/ Acre	Test Weight (Lbs./bu)	Yield (Lbs./A)
24	NK7829	Sorghum Partners, Inc.	ML	BZ	P	62	43	1.8	24,100	57	2,598
10	NC+ 7C22	NC+ Hybrids Inc.	M	CM	P	54	39	1.8	23,100	57	2,452
22	NK6638	Sorghum Partners, Inc.	M	BZ	P	60	41	2.3	24,700	58	2,429
33	ATx631 x RTx436	Texas AgriLife Research	ML	W	T	63	43	2.0	21,900	57	2,198
30	ATx399 x RTx430	Texas AgriLife Research	ML	BZ	P	60	36	2.3	25,100	57	2,195
32	ATx2752 x RTx430	Texas AgriLife Research	ML	BZ	P	64	38	2.3	23,600	55	2,180
31	ATx378 x RTx430	Texas AgriLife Research	ML	BZ	P	62	41	2.3	18,900	57	2,090
28	TR463	Triumph Seed Co., Inc.	M	R	P	61	40	1.3	24,500	57	2,075
1	DG 762B	DynaGro Seed	M	BZ	P	54	40	1.8	22,300	58	2,067
25	TR459	Triumph Seed Co., Inc.	M	BZ	P	60	36	2.0	19,500	57	2,062
20	NK5418	Sorghum Partners, Inc.	M	BZ	P	55	35	2.5	27,200	57	2,041
23	NK7633	Sorghum Partners, Inc.	ML	BZ	P	60	40	1.8	20,400	58	1,951
3	DG 754B	DynaGro Seed	M	BZ	P	57	38	1.5	20,300	57	1,943
29	TRX02783	Triumph Seed Co., Inc.	M	R	P	60	40	1.5	20,100	56	1,894
6	DeKalb DKS37-07	Monsanto	ME	BZ	P	55	36	2.0	24,600	57	1,865
2	DG 758B	DynaGro Seed	M	BZ	P	59	39	2.0	22,400	57	1,841
27	TR458	Triumph Seed Co., Inc.	M	R	P	60	39	1.5	20,000	55	1,836
5	Asgrow Pulsar	Monsanto	E	BZ	P	54	35	1.5	25,500	57	1,812
36	Sprint II	Richardson (Check)	E	R	P	54	41	2.3	25,400	55	1,782
8	DeKalb DK39Y	Monsanto	E	BZ	P	49	32	2.3	23,500	57	1,767
21	KS585	Sorghum Partners, Inc.	M	BZ	P	52	34	2.0	27,700	59	1,743
7	DeKalb DK44	Monsanto	M	BZ	P	57	38	2.3	22,300	57	1,702
18	SP3303	Sorghum Partners, Inc.	ME	CM	T	54	36	2.0	20,800	56	1,670
19	NK4420	Sorghum Partners, Inc.	ME	BZ	P	54	37	2.5	24,400	58	1,666
11	NC+ 5B89	NC+ Hybrids Inc.	E	BZ	P	52	34	2.5	25,500	59	1,644
12	NC+ 6B50	NC+ Hybrids Inc.	ME	BZ	P	53	37	2.0	23,300	56	1,636
9	DeKalb DK28E	Monsanto	ME	Y	P	53	30	3.5	29,600	57	1,583
15	85G46	Pioneer Hi-Bred Int., Inc	M	R	R	58	38	2.0	20,600	58	1,554
26	TR438	Triumph Seed Co., Inc.	ME	BZ	P	59	41	2.0	21,800	58	1,548

14	86G32	Pioneer Hi-Bred Int., Inc	ME	R	R	60	37	2.8	25,500	58	1,453
13	NC+ 5B37	NC+ Hybrids Inc.	E	BZ	P	51	35	3.0	27,300	56	1,405
16	85G03	Pioneer Hi-Bred Int., Inc	ME	R	R	52	36	3.0	29,500	56	1,386
4	DeKalb DKS29-28	Monsanto	E	BZ	P	51	31	3.5	29,400	55	1,328
17	KS310	Sorghum Partners, Inc.	E	BZ	P	50	31	4.0	27,900	56	1,258
MEAN						56	37	2.2	23,900	57	1,848
P-Value (Hybrid)						<0.0001	<0.0001	<0.0001	<0.0001	0.0284	<0.0001
Fisher's Protected Least Significant Difference (0.05)						2	3	0.9	4,700	2	354
Coefficient of Variation, CV (%)						7.8	10.3	37.4	17.3	2.8	25.6

Note 1: All data were analyzed using StatView. L.S.D.'s are given for traits that were significantly different at P < 0 05, e.g. numbers in the same column that do not differ by more than the LSD are not significantly different at the 95% confidence level.

Note 2: Hybrid names starting or ending with an "X" denotes a commercial experimental. Those hybrids entered by the Texas AgriLife Research are being tested as experimental check hybrids. Contact respective seed companies for the availability of planting seed for the upcoming crop year.

(1) Maturity classification designated by respective seed companies: E=Early, M=Medium, ML=Medium Late, L=Late.

(2) Grain color designated by respective seed companies: R=Red, Bz=Bronze, W=White, Cm=Cream, Y=Yellow.

(3) Plant color from respective seed companies: T=Tan, R=Red, P=Purple. Hybrids with asterisk (*) indicate company did not submit plant color.

(4) Sucker head tiller ratings are for problem tillers that emerge late in the season from upper nodes. These sucker head tillers often delay harvest.
(0=none, 1=few, 2=some, 3=moderate, 4=high, 5=very high)

AgriLIFE EXTENSION
Texas A&M System

Dawson Irrigated Sorghum Hybrid Trial, 2008, Dawson Co.

Clint Flandermeyer Farm, South of Loop, TX

Jeff Wyatt/Tommy Doederlein/Calvin Trostle
(806) 872-3444, jwyatt@ag.tamu.edu

Plot Size = 3 replications of 8 rows, 40" spacing, 8 varieties safened with Concep
192 Rows @ 2,270 feet - 33.35 acres - 1.38 ac/dump
Plant Date - June 23, 2008
Harvest Date - November 25, 2008

Company	Hybrid	Maturity	# of strip plots	Yield (lbs./A)	Signif? *	Test Wt. (lbs./bu)
NC+	8R18	Long	2	5,406	a	
Monsanto Asgrow	A571	Medium-long	2	5,266	a	
NC+	7R83	Medium-long	3	5,160	ab	
Crosbyton	1114 X R89	Long	3	4,672	b	
DynaGro	DB 780B	Long	3	3,999	c	
Monsanto Dekalb	DKS 54-00	Long	3	3,992	c	
Sorghum Partners	NK 7829	Medium-long	2	3,849	c	
Richardson	9300	Long	3	2,772	d	

Average yield	4,325
Statistical significance, P-Value	<0.0001
Fisher's Protected Least Significant Difference*	523
Coefficient of Variation, CV (%)	20.8

*Means that differ by more than the PLSD are significantly different at the 90% confidence interval.

Test weights appear to be low, and will be added soon.

Trial notes: In the 2008 trial season cool days in August, and a particularly cool September 8-19 slowed development and maturation. Extension's last recommended planting date for a medium-long maturity hybrid is June 30 in Dawson Co., and June 25 for long maturity hybrids. These last recommended planting dates are intentionally conservative, but with the significant loss of heat unit accumulation and the freeze on Oct. 23 (32°F) in Lamesa, much grain sorghum in area did not mature, as noted by the low test weights.

TITLE:

Peanut Tolerance to Valor Herbicide Applied Preemergence at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Peter Dotray, Lyndell Gilbert, Professor, Technician II
Texas AgriLife Research and Extension Service, Lubbock

MATERIALS AND METHODS:

Plot Size:	8 rows by 100 feet, 3 replications
Soil Type:	Amarillo fine sandy loam
Planting Date:	April 30
Variety:	Flavorrunner 458
Application Date:	Preemergence, May 1
Rainfall (May to Oct.):	15.92 inches
Irrigation (May to Oct.):	12.4 inches
Digging Date:	October 27
Harvest Date:	November 5

RESULTS AND DISCUSSION:

Valor SX was registered for use in peanut in 2001. According to the Valor SX label, weeds controlled include kochia, common lambsquarter, several pigweed species including Palmer amaranth, golden crownbeard, and several annual morningglory species including ivyleaf morningglory. Valor SX may be applied prior to planting or preemergence. Preemergence applications must be made within 48 hours after planting and prior to peanut emergence. Applications made after plants have begun to crack or after they have emerged may result in severe injury. Splashing from heavy rains or cool conditions at or near emergence may also result in injury and even delayed maturity and yield loss. In 2008, several studies were conducted in grower fields across the High Plains to gain experience and confidence with this relatively new peanut herbicide. At this research facility in Dawson County, Flavorrunner 458 was planted on April 30 and Valor at 3 ounces was applied on May 1 (within 24 hours). On May 2, 0.5 inches of irrigation was used to activate the herbicide. Peanut stand was recorded on May 25 and no difference was observed when the Valor-treated plots were compared to the untreated plots (Table 1). Peanut injury was evaluated on May 25, June 12, July 8, and September 26. With the exception of July 8, where up to 3% injury was noted, no visual injury was observed. Peanut canopy width was recorded on these evaluation dates and no differences were observed between the treated and non-treated plots. Peanuts were dug on October 27 and harvested on November 5. Yield ranged from 4656 to 4710 lb/A and no differences were noted between the treated and untreated plots. Results from this study and several others across the High Plains demonstrate that Valor is a safe option to peanut producers in our region. Although peanut injury has been observed in other states and in the High Plains when rates exceeded labeled recommendations, we feel that this herbicide, when used according to label requirements, is a good option for peanut growers for early-season weed control (4 to 6 weeks of soil residual activity). Consult the Valor label, Valent Corporation, or Texas AgriLife Research and Extension personnel for more information regarding this herbicide.

Table 1. Peanut injury and yield as affected by Valor herbicide applied preemergence at AG-CARES, Lamesa, TX, 2008[a].

Treatment	Rate	Prod.	Timing	Stand	Peanut Injury				Peanut Canopy Width			Yield
				May 25	May 25	Jun 12	Jul 8	Sep 26	May 25	Jul 8	Sep 26	
	lb ai/A	oz/A		Plants/3ft.	--------------------%--------------------				---------------in.-------------			lb/A
Non-treated	---	---	---	12.3	0	0	0	0	3.3	23.6	36.7	4656
Valor SX	0.096	3	PRE	12.7	0	0	3.3	0	3.3	23.5	36.3	4710
CV				8.64	0.0	0.0	122.47	0.0	10.61	4.55	1.12	11.76
pValue				0.7418	1.0000	1.0000	0.1835	1.0000	1.0000	0.8935	0.4226	0.9148
LSD $_{(0.10)}$				NS	NS	NS	NS	NS	NS	NS	NS	NS

[a]Abbreviations: PRE, preemergence

TITLE:

Peanut Tolerance to Postemergence Grass Herbicide-Fungicide Tank Mix Combinations in Peanut at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Peter Dotray, Lyndell Gilbert, James Grichar, Jason Woodward
Texas AgriLife Research and Extension Service, Lubbock

MATERIALS AND METHODS:

Plot Size:	4 rows by 30 feet, 3 replications
Soil Type:	Amarillo fine sandy loam
Planting Date:	April 30
Variety:	Flavorrunner 458
Application Date:	Postemergence, June 10
Rainfall (May to Oct.):	15.92 inches
Irrigation (May to Oct.):	12.4 inches
Digging Date:	October 27
Harvest Date:	November 4

RESULTS AND DISCUSSION:

Postemergence weed control and foliar and/or soil-borne disease control are major issues for peanut growers across the state. Requests for information by peanut growers about the possibility of mixing a postemergence herbicide with a foliar fungicide seem to increase each year because of the need to reduce field operations in order reduce diesel costs. Also, many growers are asking about increasing herbicide rates to offset the possibility of antagonism. Earlier work in different peanut growing regions has shown some antagonism with respect to weed control when a herbicide has been tank-mixed with a fungicide and it has been suggested that herbicide and fungicide sprays be separated by approximately 2 to 3 days. Increased trips through the field mean an increase in operation costs as well as an increase in time requirements during a busy part of the growing season. Little to no work has been done on tank-mixing newer fungicides that have come on the market in the past few years with various postemergence herbicides that are presently on the market. Most labels do not contain adequate information on tank mix partners because of the extensive herbicide/fungicide possibilities and suggest that users perform jar tests for physical compatibility only. This type of testing does not provide the necessary information on weed control or disease antagonism (chemical antagonism). Our initial tests examined likely tank mix partners using common herbicides and fungicides in peanut. Several tests were conducted throughout the state in 2008. Some of these tests looked at weed control while others including this one looked at crop response. The objective of this research was to evaluate peanut injury following tank mix combinations of several fungicides and postemergence grass herbicides. No peanut injury was observed following Select, Poast Plus, Headline, Folicur, or Provost when applied alone (Table 1). When Select was tank mixed with either Folicur or Provost or when Poast Plus was applied in tank mixture with Headline, Folicur, or Provost, initial injury (2 weeks after application) ranged from 5 to 7%. No injury was observed on July 8 (4 weeks after application), and only the Select plus Provost combination caused up to 3% injury later in the growing season (September 26). Leaf canopy width was recorded on July 8 and Sep 26 and no width reduction was noted when compared to the non-treated control plot. Leaf spot was evaluated on October 15. No differences were noted relative to the non-treated control. Though a minor leaf spot epidemic occurred late season, well after the application, the fungicide residuals were exhausted. Peanut yield ranged from 5284 to 5503 lb/A, but no differences were observed when compared to the non-treated control (5393 lb/A). This study suggests that Headline, Folicur, and Provost mixed with postemergence grass herbicides may cause initial injury up to 7%, but no injury greater than 3% was observed late season. Additional tests will be conducted in 2009 to increase observations that these tank mixes are safe to use from a crop response and weed control standpoint.

Table 1. Peanut injury and yield as affected by herbicide-fungicide tank mix combinations for grass control in peanut at AG-CARES, Lamesa, TX, 2008[a].

Treatment	Rate	Prod.	Timing	Peanut Injury			Peanut Canopy Width		Leaf Spot[b]	Yield
				Jun 24	Jul 8	Sep 26	Jul 8	Sep 26	Oct 15	
	lb ai/A	oz/A		----------%----------			--------in.--------			lb/A
Non-treated	---	---	---	0	0	0	24.9	35.7	3.0	5393
Select + COC	0.125 + 1.0%	8 + 12.8	POST	0	0	0	24.7	36.0	3.0	5461
Headline + Select + COC	0.245 + 0.125 + 1.0%	15 + 8 + 12.8	POST	2	0	0	24.5	36.0	2.6	5486
Folicur + Select + COC	0.203 + 0.125 + 1.0%	7.2 + 8 + 12.8	POST	7	0	0	24.4	36.7	2.8	5370
Provost + Select + COC	27 + 0.125 + 1.0%	8 + 8 + 12.8	POST	5	0	3	24.1	36.0	2.9	5197
Poast Plus + COC	0.185 + 1.0%	23.7 + 12.8	POST	0	0	0	23.7	36.0	2.4	5418
Headline + Poast Plus + COC	0.245 + 0.185 + 1.0%	15 + 23.7 + 12.8	POST	5	0	0	24.1	36.7	2.4	5352
Folicur + Poast Plus + COC	0.203 + 0.185 + 1.0%	7.2 + 23.7 + 12.8	POST	5	0	0	24.0	37.0	2.9	5503
Provost + Poast Plus + COC	27 + 0.185 + 1.0%	8 + 23.7 + 12.8	POST	5	0	1	24.0	35.3	2.8	5371
Headline + COC	0.245 + 1.0%	15 + 12.8	POST	0	0	0	24.3	37.3	3.0	5284
Folicur + COC	0.203 + 1.0%	7.2 + 12.8	POST	0	0	0	24.7	36.3	3.1	5357
Provost + COC	27 + 1.0%	8 + 12.8	POST	0	0	0	23.9	37.3	2.8	5493
CV				77.47	0.0	278.61	3.7	1.97	12.48	8.41
pValue				0.0001	1.0000	0.0257	0.8842	0.0375	0.3151	0.9996
$LSD_{(0.10)}$				2.56	NS	1.19	NS	1.00	NS	NS

[a]Abbreviations: COC, crop oil concentrate; POST, post emergence topical

[b]Scale of 1 to 10: 1=no disease; 2=very few lesions; 3=few lesions; 4=<5% defoliation; 5=~20% defoliation

TITLE:

Peanut Tolerance to Postemergence Broadleaf Herbicide-Fungicide Tank Mix Combinations in Peanut at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Peter Dotray, Lyndell Gilbert, James Grichar, Jason Woodward
Texas AgriLife Research and Extension Service, Lubbock

MATERIALS AND METHODS:

Plot Size:	4 rows by 30 feet, 3 replications
Soil Type:	Amarillo fine sandy loam
Planting Date:	April 30
Variety:	Flavorrunner 458
Application Date:	Postemergence, June 12
Rainfall (May to Oct.):	15.92 inches
Irrigation (May to Oct.):	12.4 inches
Digging Date:	October 27
Harvest Date:	November 5

RESULTS AND DISCUSSION:

With the increasing costs involved in peanut production, any input cost savings might be the difference between a profit and a loss. Combining a fungicide and herbicide in tank mixture and making one application rather than two may be a way to reduce input costs. It is nearly impossible for pesticide labels to warn against all potential physical and chemical pesticide antagonisms. The objective of this research was to evaluate peanut injury following tank mix combinations of several postemergence broadleaf herbicides and foliar fungicides. At the initial observation 12 days after application, Cobra applied alone injured peanut 10%. When Folicur was applied in tank mixture with Cobra, injury increased slightly (12%). Ultra Blazer or 2,4-DB applied alone injured peanut 5%. When Ultra Blazer was tank mixed with Folicur or Provost, injury increased to 9%. No fungicide increased peanut injury when applied in tank mixture with 2,4-DB. No injury was observed when Pursuit or Cadre was applied alone. When Provost was added in tank mixture with Pursuit, injury increased to 4%. When Folicur or Provost was mixed with Cadre, peanut injury increased to 10%. On July 8, only Provost mixed with Pursuit or Headline or Provost mixed with 2,4-DB caused greater peanut injury compared with either herbicide applied alone. On Sept 26, no fungicide increased peanut injury when compared to any herbicide when applied alone. Peanut canopy width was measured on July 8 and September 26 and no differences were observed when each herbicide was applied alone compared to any fungicide applied in tank mixture. Leaf spot was evaluated on October 15. No differences were noted relative to the non-treated control. Though a minor leaf spot epidemic occurred late season, well after the application, the fungicide residuals were exhausted. Peanut yield ranged from 4907 to 5793 lb/A, but were not different to the untreated control (5724 lb/A). Results from this test suggest that although some fungicides may cause a slight increase in visible peanut injury when added in tank mixture with some postemergence broadleaf herbicides, canopy closure and yield were not affected by any of these herbicide/fungicide tank mix combinations. Future experiments will be conducted to observe peanut response and weed control following herbicide/fungicide tank mix combinations.

Table 1. Peanut injury and yield as affected by herbicide-fungicide tank mix combinations for broadleaf weed control in peanut at AG-CARES, Lamesa, TX, 2008[a].

Treatment	Rate	Prod.	Timing	Peanut Injury			Peanut Canopy Width		Leaf Spot[b]	Yield
				Jun 24	Jul 8	Sep 26	Jul 8	Sep 26	Oct 15	
	lb ai/A	oz/A		----------%----------			-------in.-------			lb/A
Non-treated	---	---	---	0	0	0	25.6	37.0	2.8	5724
Cobra + COC	0.2 + 1.0%	12.8 + 12.8	POST	10	3	7	23.9	33.3	2.6	4983
Headline + Cobra + COC	0.245 + 0.2 + 1.0%	15 + 12.8 + 12.8	POST	4	2	3	23.7	35.3	2.3	5202
Folicur + Cobra + COC	0.203 + 0.2 + 1.0%	7.2 + 12.8 + 12.8	POST	12	3	3	23.7	36.0	3.1	4936
Provost + Cobra + COC	27 + 0.2 + 1.0%	8 + 12.8 + 12.8	POST	10	2	5	24.3	35.7	2.7	5255
Ultra Blazer + COC	0.375 + 1.0%	24 + 12.8	POST	5	2	4	24.1	34.3	2.8	5175
Headline + Ultra Blazer + COC	0.245 + 0.375 + 1.0%	15 + 24 + 12.8	POST	5	2	3	24.0	35.0	2.5	4907
Folicur + Ultra Blazer + COC	0.203 + 0.375 + 1.0%	7.2 + 24 + 12.8	POST	9	2	3	22.7	34.0	2.8	5249
Provost + Ultra Blazer + COC	27 + 0.375 + 1.0%	8 + 24 + 12.8	POST	9	2	3	23.6	34.3	3.3	5140
Pursuit + COC	0.063 + 1.0%	4 + 12.8	POST	0	0	1	24.8	35.7	3.0	5367
Headline + Pursuit + COC	0.245 + 0.063 + 1.0%	15 + 4 + 12.8	POST	0	0	2	23.4	35.0	3.1	5507
Folicur + Pursuit + COC	0.203 + 0.063 + 1.0%	7.2 + 4 + 12.8	POST	0	0	0	25.2	36.7	3.0	5186
Provost + Pursuit + COC	27 + 0.063 + 1.0%	8 + 4 + 12.8	POST	4	3	1	23.5	36.3	2.8	5358
Cadre + COC	0.063 + 1.0%	4 + 12.8	POST	0	2	2	23.8	35.0	2.6	5089
Headline + Cadre + COC	0.245 + 0.063 + 1.0%	15 + 4 + 12.8	POST	0	2	2	24.4	36.0	2.2	5613
Folicur + Cadre + COC	0.203 + 0.063 + 1.0%	7.2 + 4 + 12.8	POST	10	3	2	23.2	35.0	2.9	5247
Provost + Cadre + COC	27 + 0.063 + 1.0%	8 + 4 + 12.8	POST	10	2	5	22.8	34.0	2.3	4875
2,4-DB + COC	0.4 + 1.0%	25.6 + 12.8	POST	5	2	2	24.7	35.3	3.3	5267
Headline + 2,4-DB + COC	0.245 + 0.4 + 1.0%	15 + 25.6 + 12.8	POST	12	5	4	23.7	34.0	2.9	5629
Folicur + 2,4-DB + COC	0.203 + 0.4 + 1.0%	7.2 + 25.6 + 12.8	POST	6	3	3	21.6	34.0	2.6	5114
Provost + 2,4-DB + COC	27 + 0.4 + 1.0%	8 + 25.6 + 12.8	POST	12	5	4	24.4	35.3	2.4	5199
Headline + COC	0.245 + 1.0%	15 + 12.8	POST	0	0	1	24.9	36.7	2.8	5597
Folicur + COC	0.203 + 1.0%	7.2 + 12.8	POST	0	0	0	25.3	36.3	3.0	5769
Provost + COC	27 + 1.0%	8 + 12.8	POST	1	0	0	25.6	36.7	3.3	5793
CV				13.21	68.52	94.18	6.67	4.35	16.71	8.41
pValue				0.0001	0.0001	0.0928	0.4119	0.1808	0.1232	0.3550
$LSD_{(0.10)}$				0.93	1.77	3.31	NS	NS	NS	NS

[a]Abbreviations: COC, crop oil concentrate; POST, post emergence topical

[b] Scale of 1 to 10: 1=no disease; 2=very few lesions; 3=few lesions; 4=<5% defoliation; 5=~20% defoliation

TITLE:

Runner peanut tolerance to Gramoxone Inteon and Dual Magnum applied alone or in tank mixture at several application timings at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Peter Dotray, Lyndell Gilbert, Professor, Technician II
Texas AgriLife Research and Extension Service, Lubbock

MATERIALS AND METHODS:

Plot Size:	4 rows by 30 feet, 3 replications
Soil Type:	Amarillo fine sandy loam
Planting Date:	April 30
Variety:	Flavorrunner 458
Application Dates:	7 days after crack (DAC), May 20; 14 DAC, May 27; 21 DAC, June 3; 28 DAC, June 10
Rainfall (May to Oct.):	15.92 inches
Irrigation (May to Oct.):	12.4 inches
Digging Date:	October 27
Harvest Date:	November 4

RESULTS AND DISCUSSION:

Gramoxone Inteon may be applied from 8 to 16 ounces per acre (oz/A) from ground-crack to 28 days after ground-crack, and up to 2 applications may be made per year. Gramoxone Inteon may be tank mixed with Dual Magnum for residual weed control when applied at ground-crack only. Previous research has shown that peanut varieties (and market types) may have differential tolerance levels to specific herbicides. The objective of this research was to examine peanut response to Gramoxone Inteon plus Dual Magnum in tank mix combinations when applied at 7, 14, 21, and 28 days after crack (DAC) in a runner market type. When Dual Magnum plus Gramoxone Inteon was applied at 7 days after ground crack (DAC) and evaluated 7 days later, Flavorrunner 458 was injured 7%. Less injury was observed following either herbicide applied alone (Table 1a). All subsequent evaluations following this tank mixture applied at 7 DAC suggest that this combination increases visible peanut injury; however, no injury exceeded 7%. When this tank mix was applied at 14 and 21 DAC, a trend towards enhanced peanut injury was observed when compared to either herbicide applied alone. No enhanced injury was noted when this tank mix combination was made at 28 DAC. No application timing by herbicide treatment interaction was observed for peanut yield; therefore, application timing data was pooled within herbicide treatment and herbicide treatment was pooled within application timing. There was no difference in peanut yield following the different application timings (Table 1b). Peanut yield ranged from 5351 to 5533 lb/A. When application timing was pooled within herbicide treatment, yield was reduced following the tank mixture of Dual Magnum plus Gramoxone Inteon (5148 lb/A) when compared to Dual Magnum (5556 lb/A) or Gramoxone Inteon (5640 lb/A) applied alone. This research suggests that the tank mix application of Dual Magnum plus Gramoxone Inteon may reduce yield if applications are made from 7 to 28 DAC. The current Gramoxone Inteon label states that this tank mix may be applied at ground-crack only. Previous research has shown that an at-crack application had no adverse affect on peanut yield.

Table 1a. Runner peanut injury as affected by Gramoxone Inteon and Dual Magnum alone or in tank mix combination by application timing at AG-CARES, Lamesa, TX, 2008[a].

Treatment	Timing	Rate	Prod.	Runner Peanut Injury					
				May 27	Jun 3	Jun 10	Jun 24	Jul 15	Sep 26
		lb ai/A	oz/A	------------------------------- % -------------------------------					
Dual Magnum	7 DAC	1.43	24	0	0	0	0	1	0
Gramoxone Inteon + NIS	7 DAC	0.125 + 0.25%	8	4	3	3	5	0	0
Dual Magnum + Gramoxone Inteon	7 DAC	1.43 + 0.125	24+8	7	4	4	7	5	3
Dual Magnum	14 DAC	1.43	24		5	0	0	0	0
Gramoxone Inteon + NIS	14 DAC	0.125 + 0.25%	8		9	8	8	0	0
Dual Magnum + Gramoxone Inteon	14 DAC	1.43 + 0.125	24+8		13	9	8	5	0
Dual Magnum	21 DAC	1.43	24			0	1	0	0
Gramoxone Inteon + NIS	21 DAC	0.125 + 0.25%	8			15	11	7	2
Dual Magnum + Gramoxone Inteon	21DAC	1.43 + 0.125	24+8			17	14	9	7
Dual Magnum	28 DAC	1.43	24				0	0	0
Gramoxone Inteon + NIS	28 DAC	0.125 + 0.25%	8				16	10	5
Dual Magnum + Gramoxone Inteon	28 DAC	1.43 + 0.125	24+8				15	7	7
pValue				0.0001	0.0001	0.0001	0.0003	0.0001	0.0951
$LSD_{(0.10)}$				1	1	1	2	2	3

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

Table 1b. Runner peanut yield as affected by application timing at AG-CARES, Lamesa, TX, 2008[a].

Timing	Yield
	lb/A
7 DAC	5351
14 DAC	5533
21 DAC	5471
28 DAC	5437
pValue	0.6950
LSD $_{(0.10)}$	NS

[a]Abbreviations: DAC = days after ground crack

Table 1c. Runner peanut yield as affected by Gramoxone Inteon and Dual Magnum alone or in tank mix combination at AG-CARES, Lamesa, TX, 2008[a].

Treatment	Rate	Prod.	Yield
	lb ai/A	oz/A	lb/A
Dual Magnum	1.43	24	5556
Gramoxone Inteon + NIS	0.125 + 0.25%	8	5640
Dual Magnum + Gramoxone Inteon	1.43 + 0.125	24+8	5148
pValue			0.0028
LSD $_{(0.10)}$			230

[a]Abbreviations: NIS = non-ionic surfactant

TITLE:

Virginia peanut tolerance to Gramoxone Inteon and Dual Magnum applied alone or in tank mixture at several application timings at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Peter Dotray, Lyndell Gilbert, Professor, Technician II
Texas AgriLife Research and Extension Service, Lubbock

MATERIALS AND METHODS:

Plot Size:	4 rows by 30 feet, 3 replications
Soil Type:	Amarillo fine sandy loam
Planting Date:	April 30
Variety:	Gregory
Application Dates:	7 days after crack (DAC), May 20; 14 DAC, May 27; 21 DAC, June 3; 28 DAC, June 10
Rainfall (May to Oct.):	15.92 inches
Irrigation (May to Oct.):	12.4 inches
Digging Date:	October 27
Harvest Date:	November 4

RESULTS AND DISCUSSION:

Gramoxone Inteon may be applied from 8 to 16 ounces per acre (oz/A) 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 response to Gramoxone Inteon plus Dual Magnum in tank mix combinations when applied at 7, 14, 21, and 28 days after crack (DAC) in a Virginia market type (Gregory). Peanut was injured 7% following the tank mix combination of Dual Magnum plus Gramoxone Inteon when evaluated 7 days after the 7 DAC application (Table 1a). This injury was greater than the injury observed following Dual Magnum (0%) or Gramoxone Inteon (4%) applied alone. This trend continued when plots were evaluated on June 3, June 10, and June 24. When this tank mix combination was applied at 14, 21, or 28 DAC, it was generally more efficacious than both herbicides applied alone and always more injurious than Dual Magnum applied alone. An application timing by herbicide treatment interaction was not observed for peanut injury on July 15 nor for peanut yield; therefore, application timing data was pooled within herbicide treatment and herbicide treatment data was pooled within application timing. Peanut injury was greatest following the 28 DAC applications and injury decreased as applications were made earlier in the season (Table 1b). This result is likely due to the increased leaf area and subsequent herbicide uptake with peanut age. Peanut was injured 9% on July 15 following Dual Magnum plus Gramoxone Inteon (Table 1c). This injury was similar to the Gramoxone Inteon application, but greater than the Dual Magnum treatment. Yield ranged from 5132 to 5433 lb/A and was similar when averaged over treatment at each application timing. Yield ranged from 5167 to 5496 lb/A and was similar when averaged over herbicide treatment. This research suggests that the tank mix application of Dual Magnum plus Gramoxone Inteon may increase peanut injury compared to Gramoxone Inteon applied alone. The current Gramoxone Inteon label states that this tank mix may be applied at ground-crack only. Previous research has shown that an at-crack application had no adverse affect on peanut yield.

Table 1a. Virginia peanut injury as affected by Gramoxone Inteon and Dual Magnum alone or in tank mix combination by application timing at AG-CARES, Lamesa, TX, 2008[a].

Treatment	Timing	Rate	Prod.	Virginia Peanut Injury			
				May 27	Jun 3	Jun 10	Jun 24
		lb ai/A	oz/A	%			
Dual Magnum	7 DAC	1.43	24	0	0	0	0
Gramoxone Inteon + NIS	7 DAC	0.125 + 0.25%	8	4	4	0	6
Dual Magnum + Gramoxone Inteon	7 DAC	1.43 + 0.125	24+8	7	5	5	9
Dual Magnum	14 DAC	1.43	24		0	1	0
Gramoxone Inteon + NIS	14 DAC	0.125 + 0.25%	8		10	8	6
Dual Magnum + Gramoxone Inteon	14 DAC	1.43 + 0.125	24+8		12	8	10
Dual Magnum	21 DAC	1.43	24			0	0
Gramoxone Inteon + NIS	21 DAC	0.125 + 0.25%	8			14	10
Dual Magnum + Gramoxone Inteon	21DAC	1.43 + 0.125	24+8			18	12
Dual Magnum	28 DAC	1.43	24				0
Gramoxone Inteon + NIS	28 DAC	0.125 + 0.25%	8				15
Dual Magnum + Gramoxone Inteon	28 DAC	1.43 + 0.125	24+8				15
pValue				0.0001	0.0001	0.0001	0.0002
$LSD_{(0.10)}$				1	1	1	2

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

Table 1b. Virginia peanut injury and yield as affected by application timing at AG-CARES, Lamesa, TX, 2008[a].

Timing	Virginia Peanut Injury Jul 15	Yield
	%	lb/A
7 DAC	5	5132
14 DAC	8	5420
21 DAC	9	5433
28 DAC	11	5384
pValue	0.0030	0.3570
$LSD_{(0.10)}$	2	NS

[a]Abbreviations: DAC = days after ground crack

Table 1c. Virginia peanut injury and yield as affected by Gramoxone Inteon and Dual Magnum alone or in tank mix combination at AG-CARES, Lamesa, TX, 2008[a].

Treatment	Rate	Prod.	Virginia Peanut Injury Jul 15	Yield
	lb ai/A	oz/A	%	lb/A
Dual Magnum	1.43	24	7	5364
Gramoxone Inteon + NIS	0.125 + 0.25%	8	9	5167
Dual Magnum + Gramoxone Inteon	1.43 + 0.125	24+8	9	5496
pValue			0.0943	0.1512
$LSD_{(0.10)}$			2	NS

[a]Abbreviations: NIS = non-ionic surfactant

TITLE:

Evaluation of fungicides for peanut early leaf spot control at AG-CARES, Lamesa, TX, 2008.

AUTHORS:

Jason Woodward, Mitchell Ratliff, and Ira Yates, Extension Plant Pathologist, Technician, and Technician

MATERIALS AND METHODS:

Plot size:	2-rows by 50 feet, four replications
Soil type:	Amarillo fine sandy loam
Planting date:	2-May
Cultivars:	Flavorunner 458 (Runner), and Gregory (Virginia)
Digging date:	27-Oct
Harvest date:	5-Nov
Treatments:	A detailed list of the fungicide programs evaluated is given in Table 1.

RESULTS AND DISCUSSION:

Provost trial. Dry and hot conditions dominated early in the season; however, abundant rainfall and cool temperatures were experienced during late-August and throughout September. Disease pressure was low; however, appreciable levels of leaf spot were observed late in the season. Leaf spot control was similar for the two Provost rates, with both being superior to the untreated control (Table 2). Yields were increased by 1343 and 1277 lb/A over the control for the 8.0 and 10.7 fl oz/A rate, respectively. No differences in grade were observed among treatments.

Miscellaneous fungicide trial I and II. All fungicide treated plots had lower leaf spot intensity ratings than non-treated control plots (Tables 3 and 4). The Abound, Folicur, Provost, Tebuzol + Topsin and Evito programs consistently provided the best level of leaf spot control by the end of the season, and had the lowest AUDPC values. Despite the harsh growing conditions experienced early in the season, yields were exceptionally high, ranging from 4029 to 5887 lb/A, and 4884 to 6118 lb/A for the Runner and Virginia trial, respectively. Significant differences in yield were only observed for the Runner trial, where Evito, Convoy, Tebuzol and Artisan provided the highest yields. The application of fungicides did not improve grades over the non-treated control.

These results indicate that several fungicides are available to producers for leaf spot control in west Texas. Additional studies evaluating these products under higher disease pressure or in combination with soilborne diseases such as pod rot are warranted.

Table 1. Fungicide programs evaluated in the miscellaneous and Provost fungicide trials in 2008[a]

Trial, treatment	Rate	Application code	Date of applications
Miscellaneous trials			
1. UTC	- - - - -	- - - - -	- - - - -
2. Bravo Weatherstik	24 fl oz/A	A, B, and C	1-Jul, 16-Jul and 15-Aug
3. Bravo Weatherstik Abound	24 fl oz/A 24.6 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
4. Headline Folicur	9 fl oz/A 7.2 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
5. Bravo Weatherstik Folicur	24 fl oz/A 7.2 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
6. Bravo Weatherstik Provost	24 fl oz/A 10.7 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
7. Bravo Weatherstik Artisan	24 fl oz/A 32 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
8. Bravo Weatherstik Convoy	24 fl oz/A 32 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
9. Bravo Weatherstik Tebuzol	24 fl oz/A 7.2 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
10. Bravo Weatherstik Tebuzol + Topsin	24 fl oz/A 7.2 fl oz/A + 5 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
11. Bravo Weatherstik Bravo + Topsin	24 fl oz/A 12 fl oz/A + 5 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
12. Bravo Weatherstik Evito	24 fl oz/A 5.7 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
Provost trial			
1. UTC	- - - - -	- - - - -	- - - - -
2. Bravo Weatherstik Provost	24 fl oz/A 8.0 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug
3. Bravo Weatherstik Provost	24 fl oz/A 10.7 fl oz/A	A B and C	1-Jul 16-Jul and 15-Aug

[a] The treatments listed in the miscellaneous trials were evaluated on a Flavorrunner 458 (Runner-type) and Gregory (Virginia-type), whereas, the Provost trial was only conducted on Flavorrunner 458.

Table 2. Provost fungicide test at AG-CARES, 2008 (Lamesa, TX; Runner market-type)

Treatment[a]	Leaf spot (1-10 scale)[b]			AUDPC[c]	Yield (lb/A)	Grade (%smk+ss)
	1-Jul	16-Jul	15-Aug			
1. UTC	1.1 a[d]	4.3 a[d]	4.5 a[d]	95.1 a[d]	4049 b[d]	75.0
2. Provost (8.0 fl oz/A)	1.0 b	1.3 b	1.9 b	40.1 b	5392 a	75.1
3. Provost (10.7 fl oz/A)	1.0 b	1.3 b	1.3 c	39.9 b	5326 a	75.0
LSD ($P \leq 0.05$)	0.0	0.6	0.4	9.8	795	ns

[a] See Table 1 for a description of treatments. [b] From the Florida 1-10 scale, where 1 = no disease and 10 = dead plants.
[c] AUPDC = Area Under the Disease Progress Curve. [d] Means within a column followed by the same letter are not different according to Fisher's protected LSD.

Table 3. Miscellaneous fungicide test I AG-CARES, 2008 (Runner market-type)

Treatment[a]	Leaf spot (1-10 scale)[b]			AUDPC[c]	Yield (lb/A)	Grade (%smk+ss)
	1-Jul	16-Jul	15-Aug			
1. UTC	1.0	2.5 a[d]	3.4 a[d]	62.6 a[d]	4029 c[d]	74.2
2. Bravo	1.0	1.6 b	1.1 d	46.7 b	4448 bc	75.4
3. Abound	1.0	1.3 bc	1.5 cd	40.0 bc	4759 bc	75.3
4. Headline	1.0	1.1 c	1.3 cd	37.7 c	4910 b	74.4
5. Folicur	1.0	1.0 c	1.5 cd	35.5 c	4415 bc	75.1
6. Provost	1.0	1.3 bc	1.4 cd	40.0 bc	4637 bc	74.8
7. Artisan	1.0	1.4 bc	1.4 cd	42.2 bc	5075 ab	74.6
8. Convoy	1.0	2.6 a	2.3 b	64.7 a	5141 ab	74.9
9. Tebuzol	1.0	1.1 c	1.7 c	37.8 c	5059 ab	75.1
10. Tebuzol + Topsin	1.0	1.1 c	1.4 cd	37.7 c	4303 bc	73.8
11. Bravo + Topsin	1.0	1.1 c	1.3 cd	37.7 c	4986 b	75.3
12. Evito	1.0	1.0 c	1.8 bc	35.6 c	5887 a	75.1
LSD ($P \leq 0.05$)	ns	0.4	0.3	7.4	856	ns

[a] See Table 1 for a description of treatments. [b] From the Florida 1-10 scale, where 1 = no disease and 10 = dead plants.
[c] AUPDC = Area Under the Disease Progress Curve. [d] Means within a column followed by the same letter are not different according to Fisher's protected LSD.

Table 4. Miscellaneous fungicide test II at AG-CARES, 2008 (Virginia market-type)

Treatment[a]	Leaf spot (1-10 scale)[b]			AUDPC[c]	Yield (lb/A)	Grade (%smk+ss)
	1-Jul	16-Jul	15-Aug			
1. UTC	1.0	2.4 a[d]	4.1 a[d]	60.5 a[d]	5953	65.9
2. Bravo	1.0	1.3 ef	1.8 d	40.0 efg	5973	66.8
3. Abound	1.0	1.1 f	1.9 cd	37.9 fg	4884	66.7
4. Headline	1.0	2.0 abc	2.3 c	53.4 abc	6118	68.6
5. Folicur	1.0	1.1 f	1.8 d	37.8 g	5233	65.7
6. Provost	1.0	1.3 ef	2.0 cd	40.1 efg	5683	65.3
7. Artisan	1.0	1.8 bcd	2.0 cd	49.0 bcd	5518	67.8
8. Convoy	1.0	2.1 ab	3.4 b	55.9 ab	5016	67.7
9. Tebuzol	1.0	1.6 cde	2.0 cd	46.7 cde	6085	67.7
10. Tebuzol + Topsin	1.0	1.5 def	1.8 d	44.5 defg	5689	67.5
11. Bravo + Topsin	1.0	1.6 cde	1.8 d	46.7 cdef	5108	67.8
12. Evito	1.0	1.5 def	1.9 cd	44.5 defg	5551	68.6
LSD ($P \leq 0.05$)	ns	0.5	0.5	8.8	ns	ns

[a] See Table 1 for a description of treatments. [b] From the Florida 1-10 scale, where 1 = no disease and 10 = dead plants.
[c] AUPDC = Area Under the Disease Progress Curve. [d] Means within a column followed by the same letter are not different according to Fisher's protected LSD.

APPENDIX

Detailed Growing Season Climate Data at AG-CARES, Lamesa, TX 2008

Date		Max Temp F°	Min Temp F°	Max RH %	Min RH %	Average Wind speed mil/hr	ET (in.)	Rainfall (in.)	Heat Units Cotton	Heat Units Peanut	Heat Units Sorghum
April	1	63.2	40.5	73.7	19.5	12	0.21	0	0	0	0
	2	63.6	47.1	84.6	47.4	9.2	0.13	0	0	0	0
	3	86.6	53	90.1	6.5	11.5	0.33	0	0	0	0
	4	68.4	42.6	78.2	20.6	8.6	0.2	0	0	0	0
	5	78.8	41	60.4	11	10	0.27	0	0	0	0
	6	80.8	42.2	67.3	10.3	7.2	0.25	0	0	0	0
	7	86.8	43.1	72	7.6	9.2	0.31	0	0	0	0
	8	75.6	44.1	61.2	13.2	11	0.26	0	0	0	0
	9	61.4	47.8	97.3	58.7	12.1	0.1	0.02	0	0	0
	10	72.4	43.3	98	8.9	15.5	0.29	0	0	0	0
	11	72.2	32.2	78.8	7	8.4	0.23	0	0	0	0
	12	63.5	38.1	82.9	14.3	6.6	0.19	0	0	0	0
	13	67.4	35.2	62.8	15.5	6.7	0.2	0	0	0	0
	14	77.5	37.6	57	10.2	6.9	0.25	0	0	0	0
	15	86.1	49	43.8	13.9	14.5	0.36	0	0	16	0
	16	90.8	56.5	70.8	4.6	14.5	0.4	0	0	19	0
	17	70.8	41.5	80.1	21.5	13.6	0.22	0	0	8	0
	18	76.1	30.4	90	9	6	0.22	0	0	11	0
	19	88.3	43.5	40.5	4.8	7.5	0.3	0	0	17	0
	20	90.1	58.2	41.4	3.7	10	0.36	0	0	19	0
	21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
	22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
	23	68.1	56.8	97.4	58.6	10	0.06	2.08	0	7	0
	24	90	58.7	98.3	7.4	6.9	0.27	0.01	0	19	0
	25	76.2	51.5	58.5	15.1	7.5	0.25	0	0	11	0
	26	83.9	44.5	90.8	19.4	8.6	0.25	0	0	14	0
	27	66.8	43.3	69.6	12.6	16.1	0.26	0	0	6	0
	28	79.4	38.7	70.8	7.4	7.2	0.27	0	0	12	0
	29	85.6	49.3	33.1	7	10.7	0.35	0	0	15	0
	30	92.9	56.1	46.5	5.2	13.4	0.43	0	0	19	0
May	1	89	61.1	53.8	5.6	12.2	0.4	0	15	20	25
	2	79.1	41.7	54.8	6.6	9.9	0.31	0	0	12	15
	3	68.2	37.8	57.4	16.4	8.3	0.23	0	0	7	9
	4	79.3	46.5	66.9	28.4	10.2	0.24	0	3	12	15
	5	80.4	64.5	89.4	51.8	11.2	0.18	0	12	17	22
	6	88.4	56.1	95.6	26.6	12.8	0.25	0.03	12	17	22
	7	81.5	53.4	96	14.6	12.3	0.27	0	7	13	17
	8	91.2	46	93.7	8.2	5.6	0.28	0	9	18	21
	9	87.5	51.5	81.3	13	7.5	0.29	0	10	16	20
	10	92.8	58.2	66.9	4.5	11.1	0.39	0	15	20	25
	11	74.9	46.4	52.3	12.4	7.8	0.26	0	1	10	12
	12	93.6	53.2	62.7	8.1	10.2	0.35	0	13	19	23
	13	92.3	65.7	91.7	5.9	8.9	0.32	0	19	24	29
	14	72	50.6	89.4	45.2	11.9	0.15	0	1	9	11
	15	72.5	48.5	93.4	35	7.7	0.19	0	1	9	11
	16	76.9	52.8	81.9	16.9	7	0.24	0	5	11	15
	17	75.9	51.7	87.7	24	5.7	0.16	0.08	4	10	14
	18	88.9	50.3	90.3	10.8	5	0.27	0	10	17	20
	19	99.2	57.6	53.3	7.5	7.5	0.36	0	18	21	28
	20	95.3	56.2	58.3	15.1	10.5	0.37	0	16	21	26
	21	100.7	60.6	72.6	8.7	14.2	0.45	0	21	23	30
	22	96.6	71.5	78.7	7.2	14.8	0.47	0	24	28	34
	23	98.2	64.8	61	5.3	11	0.43	0	21	25	31
	24	92.7	58.3	66.4	13.1	8.1	0.34	0	15	21	26

Detailed Growing Season Climate Data at AG-CARES, Lamesa, TX 2008

Date		Max Temp F°	Min Temp F°	Max RH %	Min RH %	Average Wind speed mil/hr	ET (in.)	Rainfall (in.)	Heat Units Cotton	Heat Units Peanut	Heat Units Sorghum
May	25	93.2	67.7	90.5	15	16.9	0.38	0	20	25	30
	26	95	72.2	74.4	23.3	12.9	0.36	0	24	29	34
	27	95.1	63.1	91	27.4	8.1	0.27	2.74	19	24	29
	28	81.4	62	93.8	52.9	12	0.2	0	12	17	22
	29	91.6	65.2	78	20.3	12.8	0.35	0	18	23	28
	30	99.5	67.5	66.1	14.2	8	0.36	0	23	26	34
	31	104.7	66.2	70	5.7	6.9	0.36	0	25	26	33
June	1	105	68.8	73.9	7.9	9.7	0.42	0	27	27	34
	2	102.2	71	49.6	8.1	11.9	0.47	0	27	28	35
	3	102.8	71.3	61.1	7.4	8.2	0.39	0	27	28	36
	4	102.9	74	55	7.1	14.7	0.51	0	28	29	37
	5	98.1	66.7	72.6	8.7	16.2	0.48	0	22	26	32
	6	94.7	58.1	59.2	11.8	7.4	0.33	0	16	21	26
	7	95.1	73.9	79.5	27.9	17.5	0.4	0	24	29	34
	8	97.2	72.9	75.5	25.7	17.1	0.42	0	25	29	35
	9	89.6	68.3	76.9	33.5	10	0.28	0	19	24	29
	10	98	63.7	88.4	17.9	13.2	0.39	0	21	24	31
	11	103	74.2	59.8	14	15.4	0.49	0	29	30	37
	12	100	74.3	65.7	13.1	8.7	0.38	0	27	30	37
	13	98.8	73.5	66.8	17.8	7.4	0.35	0	26	29	36
	14	99	67.4	77.6	13.2	8.3	0.35	0	23	26	33
	15	102.9	70	68.8	12.5	10.8	0.42	0.01	26	28	35
	16	104.2	71.4	75.8	13.8	11.8	0.44	0.03	28	28	36
	17	91.1	63.6	94.7	37.2	13	0.31	0	17	22	27
	18	88.3	65.4	89.7	34.5	7.6	0.26	0.03	17	22	27
	19	98.5	62.2	97.2	22.6	15.6	0.38	0.07	20	24	30
	20	87.6	64.2	94.4	30	9.1	0.26	0.02	16	21	26
	21	88.3	68.5	86.5	21.9	7.8	0.26	0	18	23	28
	22	93.2	66.4	90.1	15.5	5.2	0.28	0	20	25	30
	23	95.9	66.3	77.3	16.6	9.2	0.35	0.08	21	26	31
	24	95	65.5	87.5	19.7	11.9	0.35	0	20	25	30
	25	95.3	66.6	76.1	23.5	9.8	0.33	0	21	26	31
	26	97.5	70.5	58.9	20	9.9	0.37	0	24	28	34
	27	99.3	72.8	51.7	17.4	9.5	0.38	0	26	29	36
	28	97.3	69.4	88.6	15.1	7.4	0.3	0.63	23	27	33
	29	77.2	66.3	91.9	59.6	5.2	0.11	0.18	12	17	22
	30	83	64.8	90.1	38.8	5.9	0.21	0	14	19	24
July	1	89.3	65.1	90.6	30.1	7.7	0.27	0	17	22	27
	2	87.8	64.3	88.5	36.1	8.5	0.26	0	16	21	26
	3	88.5	66.8	89.7	32.8	6.4	0.23	0	18	23	28
	4	91.2	69.9	78.8	25.6	6.4	0.26	0	21	26	31
	5	90.5	67.5	82.9	28.8	8.6	0.3	0	19	24	29
	6	87.3	65	88	36.6	12	0.26	0	16	21	26
	7	87.1	66.2	83.2	37.5	12.2	0.24	0	17	22	27
	8	86.7	64.4	91	39.8	9.9	0.2	0.02	16	21	26
	9	86.1	66.3	93.1	35.4	10.4	0.22	0	16	21	26
	10	91	70.1	82.6	29.4	10.3	0.3	0	21	26	31
	11	97.4	66.7	78.8	23.2	10.1	0.35	0	22	26	32
	12	99.8	67.1	91.3	23.6	6.6	0.26	0.01	23	26	33
	13	84.2	65.2	92.3	47.6	5.7	0.19	0.01	15	20	25
	14	90.1	66.2	94.7	37.6	6.9	0.21	0.09	18	23	28
	15	94.4	68.3	89.8	20.5	8.1	0.26	0	21	26	31
	16	88.3	71.3	84.9	26.2	7.3	0.2	0	20	25	30
	17	92.2	72.5	65.3	24.7	8.2	0.3	0	22	27	32

Detailed Growing Season Climate Data at AG-CARES, Lamesa, TX 2008

Date		Max Temp F°	Min Temp F°	Max RH %	Min RH %	Average Wind speed mil/hr	ET (in.)	Rainfall (in.)	Heat Units Cotton	Heat Units Peanut	Heat Units Sorghum
July	18	92.6	70.9	67	24.8	7.5	0.3	0	22	27	32
	19	92.2	68.5	64.7	21.6	8	0.31	0	20	25	30
	20	93.3	70.2	63.8	15.1	7.7	0.31	0	22	27	32
	21	95.1	68.5	65.4	18.5	7.1	0.32	0	22	27	32
	22	96.4	65.9	65.8	17.5	6.6	0.31	0	21	25	31
	23	95	67.3	63.3	19.1	5.7	0.29	0	21	26	31
	24	92.7	68.8	76.6	27.9	7.2	0.29	0	21	26	31
	25	90.5	68.2	89.2	33.8	8.2	0.25	0	19	24	29
	26	92.4	68.9	85	30.6	6.2	0.24	0	21	26	31
	27	96.9	70.7	73.1	22.4	7.1	0.29	0	24	28	34
	28	100.4	74.1	67.8	22	8.6	0.34	0	27	30	37
	29	98.4	71.4	78.5	24.9	6.1	0.28	0	25	28	35
	30	99	68.2	84.8	15.2	4.7	0.26	0	24	27	34
	31	101	66.8	82.6	10.7	4.2	0.28	0	24	26	33
August	1	99.5	65.7	72.4	14.7	5.5	0.29	0	23	25	33
	2	94.2	65.5	79.1	22.9	5.4	0.26	0	20	25	30
	3	98.5	69.9	70.3	14.7	7.9	0.34	0	24	27	34
	4	98.3	64.8	65.7	17.3	5.7	0.3	0	22	25	32
	5	99.4	66.8	68.6	14.1	4.2	0.27	0	23	26	33
	6	93.8	68.3	62.8	24.5	6.6	0.28	0	21	26	31
	7	82.7	68.8	95.7	51	4.3	0.12	0	16	21	26
	8	92.9	70	86	21.9	5.1	0.26	0	21	26	31
	9	97.6	67.7	77	22.4	6.3	0.29	0	23	26	33
	10	99.6	67.5	93.8	24.2	6.5	0.28	0	24	26	34
	11	86.5	68.1	95.1	47.3	4.5	0.18	0	17	22	27
	12	91.1	71	94.8	31.1	3.7	0.22	0	21	26	31
	13	92.6	68	91.3	19	5.9	0.26	0	20	25	30
	14	94.3	68	89.4	21.6	6.7	0.27	0	21	26	31
	15	81.5	63.4	94.9	52.3	7.6	0.15	0	12	17	22
	16	74.5	62.4	96.2	67.8	6.9	0.1	0.01	8	13	18
	17	71.1	64.5	95.7	78.1	6.4	0.08	0.02	8	13	18
	18	80.8	63.9	97.9	46.8	4.1	0.15	0.01	12	17	22
	19	79.5	61.8	96.4	42.3	6.5	0.18	0	11	16	21
	20	82	60.8	94.3	39.5	3.5	0.18	0.04	11	16	21
	21	90.7	64.7	92.3	31.1	6.2	0.23	0	18	23	28
	22	91.9	65.8	79.6	29.1	8.1	0.27	0	19	24	29
	23	85.4	66	96.1	43.7	3.9	0.15	0	16	21	26
	24	89.2	67.7	94.9	33.8	3.2	0.19	0.18	18	23	28
	25	87.3	63.8	92.8	37	3.5	0.19	0	16	21	26
	26	90.1	63.6	93.1	29.5	3.7	0.21	0	17	22	27
	27	89.2	67.2	86.1	32.5	5.7	0.21	0	18	23	28
	28	87.4	69.4	87.9	41.9	4.7	0.18	0	18	23	28
	29	86.2	66.1	93.8	41.1	3.6	0.16	0	16	21	26
	30	79.2	64.4	94.5	54.7	5.3	0.12	0.13	12	17	22
	31	84.4	64.9	95.9	46.7	4.8	0.17	0	15	20	25
September	1	87.9	61.5	94.6	28.2	4.1	0.2	0	15	20	25
	2	91.6	66.1	89.2	32.2	5	0.2	0.01	19	24	29
	3	78.9	62.3	86.3	49.2	7.4	0.16	0	11	16	21
	4	85.6	54.6	94.4	33.4	2.3	0.17	0	10	15	20
	5	90.9	61	90.2	24.5	4.9	0.22	0	16	21	26
	6	91.3	65.2	85.8	21.3	7	0.26	0	18	23	28
	7	82.7	59.4	88.4	33	6.2	0.17	0	11	16	21
	8	78.7	62.7	95.5	49.8	6.8	0.13	0.15	11	16	21

Detailed Growing Season Climate Data at AG-CARES, Lamesa, TX 2008

Date		Max Temp F°	Min Temp F°	Max RH %	Min RH %	Average Wind speed mil/hr	ET (in.)	Rainfall (in.)	Heat Units: Cotton	Heat Units: Peanut	Heat Units: Sorghum
September	9	64.2	58.1	95.9	83.2	6.6	0.04	0	1	6	11
	10	70.2	60.4	97.5	87.1	4.8	0.05	1.94	5	10	15
	11	76.3	66.2	96.8	77.5	6.5	0.07	0.68	11	16	21
	12	84	65.7	97.8	50.2	1.9	0.12	2.43	15	20	25
	13	82.6	64.7	98	52.5	4.2	0.15	0.03	14	19	24
	14	74.7	61.1	92.5	46.3	7.1	0.16	0.01	8	13	18
	15	74	56.4	86.1	39.3	3.2	0.15	0	5	10	15
	16	76.4	52.5	95.2	35.3	0.6	0.13	0	4	11	14
	17	78.1	52	92.8	25.5	1.4	0.14	0	5	12	15
	18	78.4	52.3	87.2	23.4	1.3	0.14	0	5	12	15
	19	78.9	51.4	93.5	30	2.1	0.14	0	5	12	15
	20	81.4	57.3	88.6	29.8	1.3	0.14	0	9	14	19
	21	82	54.9	90.5	31.4	2.6	0.15	0	8	13	18
	22	82.7	57.4	91.2	32	4.9	0.17	0	10	15	20
	23	83.8	55.3	93	33.2	3.1	0.16	0	10	15	20
	24	83.2	58.7	92.4	37.2	1.2	0.12	0	11	16	21
	25	80.1	55.2	90.8	26.2	1	0.12	0	8	13	18
	26	81.9	52.4	90.3	27.8	0.1	0.11	0	7	13	17
	27	82.5	53.5	88.8	28.2	0.1	0.11	0	8	14	18
	28	82	52.8	86.2	28.3	0.1	0.1	0	7	13	17
	29	83.1	50.8	86.5	22	0.4	0.11	0	7	14	17
	30	84.9	54.5	92.3	25.7	0.5	0.12	0	10	15	20
October	1	90.2	50.5	79.7	13.6	2.3	0.15	0	10	18	20
	2	87.8	49.3	85.5	16.9	1.6	0.13	0	9	16	19
	3	89.3	50.8	77.3	12.2	4.8	0.2	0	10	17	20
	4	85.2	62.2	74.2	26.5	11	0.26	0	14	19	24
	5	71.8	57.4	96.5	46.5	8.4	0.09	0.74	5	10	15
	6	74.6	54.1	96.3	43.1	6.2	0.13	0	4	10	14
	7	74.4	49.7	95.7	27.7	3	0.12	0	2	10	12
	8	81	49.5	88.5	23.2	5.9	0.17	0	5	13	15
	9	81.9	52.5	85.1	26.7	8.1	0.19	0	7	13	17
	10	86.7	52.5	81.4	26.5	7	0.19	0	10	16	20
	11	78.9	62.7	88.1	56.7	9.8	0.14	0	11	16	21
	12	69	66	96.4	74.1	10.5	0.04	0.2	8	13	18
	13	78.9	53.7	97.8	66.5	8.6	0.08	0.01	6	12	16
	14	57.3	47.9	97.8	94.1	7.7	0.02	0.91	0	1	4
	15	64.2	46.4	96.6	59.4	6.8	0.09	0.55	0	5	7
	16	65	46.8	96.2	51.6	3.5	0.08	0	0	0	7
	17	77.6	42.7	97.5	30	1.4	0.1	0	0	0	14
	18	75.1	48.1	96.7	30.9	3.2	0.11	0	2	0	13
	19	80.8	43.2	96.6	21.3	5.6	0.15	0	2	0	15
	20	79.7	48.7	92.7	28.4	3.8	0.12	0	4	0	15
	21	73.3	55.4	93.2	44.6	7.1	0.11	0	4	0	14
	22	60.6	36.1	92.7	28.9	10.4	0.11	0	0	0	5
	23	64.5	31.5	93.6	10.9	4.7	0.12	0	0	0	7
	24	78	33.1	88.9	12.1	3.3	0.13	0	0	0	14
	25	77.8	42.6	81.4	20.8	4.2	0.13	0	0	0	14
	26	77.1	40.9	91.7	21	9.3	0.19	0	0	0	14
	27	61.7	34.6	75.6	19.2	5.4	0.12	0	0	0	6
	28	73.4	39.2	67.3	24.8	6.6	0.15	0	0	0	12
	29	77.1	39.9	85.4	25.6	3.9	0.12	0	0	0	14
	30	81.6	45.2	86.5	22.6	7.3	0.16	0	3	0	16
	31	80.8	44.4	97.5	21.9	3.7	0.11	0	3	0	15

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Soil & Water Conservation District
Peggy Hughes

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.

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WEATHER INFORMATION

2008 was a trying year for producers in Dawson County. Despite receiving over twenty-one inches of rainfall for the year, drought plagued most of the crops. Close to fifteen inches of the total rainfall for the year was received in four months, with approximately ten inches of that coming in September and October. This meant that crops were unable to realize the full effect of the amount of rainfall received. Early storms proved to be very damaging to the cotton crop. Close to 185,000 acres of cotton was failed in Dawson County in 2008 due to severe weather conditions. As a result, nearly 150,000 acres of sorghum was planted.

The fall rains did assist in finishing out the irrigated crops in 2008, however all dry land crops were virtually non-existent.

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, 1998 and 2001 with 10 inchesor less. 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. 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 3rd and the first occurrence of 32 degrees in the fall Nov 5th is approximately 216 days.

Lamesa’s Freeze Dates for the Past 59 Years

LAST FREEZE YEAR	FIRST FREEZE IN SPRING	LENGTH OF IN THE FALL	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
2008	April 18	October 23	198 days
AVERAGE	April 3	November 5	216 days

Dawson County 77-Year Rainfall Record* 1932-2008

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
2008	0	.01	1.18	2	2.51	2.73	.08	3.5	6.4	2.98	0	.3	21.69
AVERAGE	0.64	0.68	0.93	0.97	2.29	2.74	1.93	1.80	3.11	1.97	0.89	0.71	18.52

*From: Lamesa Reporting Station

DAWSON COUNTY FIRST BALE WINNERS
1947-2008

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
Benny & Kay White	October 20, 2008

Cotton Production – 70 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	271,600
1942	74,260	126,000	1977	230,000	290,000
1943	51,950	129,000	1978	920,00	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	393,000	275,600
1973	315,300	268,500	2008	144,000 (est.)	114,250

*70 Year Average: **Production Bales**: 140,470 / **Acres**: 203,733 / **Yield per acre**: 345 lbs.

SOME FACTS ABOUT DAWSON COUNTY

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

There are 368,959 acres in crop land, 104,498 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 650 center pivot systems and 75,000 total irrigated acres.

Projected estimated gross agricultural income for 2008 is $126,119,500

The county should produce around 144,000 bales of cotton for 2008.

ESTIMATED CROP ACREAGE FOR 2008	HARVESTED ACRES
Cotton - Irrigated	46,665
Cotton - Dryland	67,429
Grain Sorghum - Irrigated & Dryland	147,282
Peanut - Irrigated	9,988
Haygrazer	7,146
Wheat - Irrigated & Dryland	14,643
Alfalfa - Irrigated	1,363
Grapes - Irrigated	107
Sunflower	5,461