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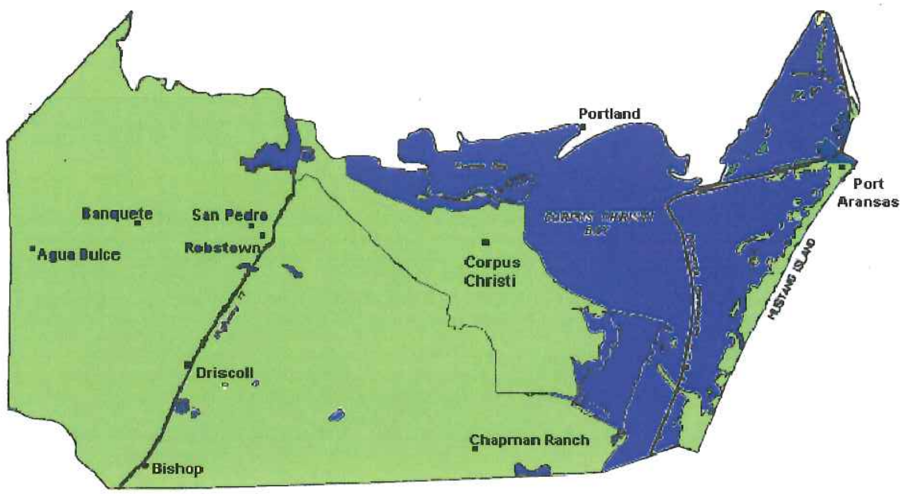
COTTON

CORN

SORGHUM

ALTERNATIVE CROPS



Nueces County

2011

RESULTS OF AGRICULTURE DEMONSTRATIONS & APPLIED RESEARCH PROJECTS

Texas AgriLife Extension Service, Dr. Edward G. Smith, Director, The Texas A&M University System, College Station, Texas

AgriLIFE EXTENSION
Texas A&M System

Office of Nueces County

FOREWORD

This publication was produced for Coastal Bend agricultural producers by the Nueces County Extension Office and contains results of demonstrations and applied research projects planned by the Agriculture and Natural Resources Committee with cooperating farmers and ranchers. The support provided by cooperators, Texas AgriLife Extension Service specialist staff and research scientists of Texas AgriLife Research and private industry was essential for the completion of this book and is greatly appreciated.

Weather is always the factor that determines the final outcome of many Agricultures related projects as was the case in 2011. We started the year out with above normal rainfall in January, but after that it just got drier and drier! Some late planted crops did not emerge due to lack of moisture. Most of the crops were made on deep soil moisture from 2010. As the year came to a close, the drought got worse. Many ranchers sold at least 50% of their cows as standing forage was gone and hay supplies were limited and expensive.

The demonstration and applied research projects were conducted to provide information to the local Ag industry on the performance of certain new agricultural technologies and management practices under Nueces County growing conditions.

Many results reported in this book are based on only one year's data. It should be remembered that different growing conditions might produce different results. Results obtained from a three too five-year period are more reliable and should be used as a bias for making a complete change from normal production or management practices.

Any references made to commercial products or trade names were made solely for educational purposes with the understanding that neither endorsement nor discrimination is implied by the Texas AgriLife Extension Service or its agents.

It is my hope that information contained within this document might be put to use to enhance the performance of agricultural enterprises in the Coastal Bend of Texas.

Jeffrey R. Stapper
County Extension Agent
Texas AgriLife Extension Service
Agriculture & Natural Resources
Nueces County

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AGRICULTURAL RESULT DEMONSTRATIONS

"Planning, Implementing and Evaluating"

For over 100 years "result demonstrations" have been one of the most effective educational methods used by County Extension Agents to encourage the adoption of research based knowledge by local farmers and ranchers. The result demonstration is a well planned trial that measures the benefits derived from the use of a given practice under local conditions. Demonstration trials are an effective means of evaluating the benefits of new crop protection chemicals, improvements in planting seed genetics and other technological advancements.

Result demonstrations are not conducted without a purpose or need. They are the basis for the County Extension educational program efforts directed at local problems and providing a stronger data base for agricultural decision making.

The citizens who serve on the various Extension program area committees are largely responsible for identifying problem areas. Committees made up of individuals involved in various phases of agriculture, willingly volunteer their time and talents. These committees are responsible for giving direction to the Extension program effort and for identifying problem areas that need to be addressed through result demonstrations or other methods.

The Nueces County Agricultural Extension Agents greatly appreciate the assistance provided by the members of the Agriculture & Natural Resources Committee, Field Crops Task Force and Livestock Task Force committees. Without their support and direction and the involvement of the cooperators, the demonstration results reported in this publication would not have been possible.

AGRICULTURE & NATURAL RESOURCES COMMITTEE MEMBERS

Jimmy Dodson	Scott Frazier	John Freeman
Ruben Garza	Jon Herrmann	Darrell Lawhon
David Mayo	Mark Miller	Sharon Zieschang

FIELD CROPS TASK FORCE MEMBERS

David Mayo	Jimmy Dodson	Russell Jungmann
Larry McNair	Jon Gwynn	Jim Massey, IV
Mark Miller	David Ocker	John Freeman
Darrell Lawhon	Scott Ordner	Sharon Zieschang

LIVESTOCK TASK FORCE MEMBERS

Jon Herrmann	Scott Frazier	Leon Little	Ruben Garza

ACKNOWLEDGEMENTS

We wish to acknowledge those who contributed products or services to the success of these demonstrations. We greatly appreciate their support. Individual cooperators are acknowledged in the introduction of each demonstration report. The support provided by the members of the Extension Leadership Advisory Board, the Field Crops Task Force, Livestock Task Force and Ag & Natural Resources committee are also appreciated. Without the support of the Nueces County Commissioners Court and the County Extension Office staff, these result demonstrations and this handbook would not have been possible. Special thanks to Perry Foundation for their support in making printing of this book possible.

NUECES COUNTY COMMISSIONER'S COURT

County Judge	Loyd Neal
Commissioner Precinct 1	Mike Pusley
Commissioner Precinct 2	Joe A. Gonzalez
Commissioner Precinct 3	Oscar Ortiz
Commissioner Precinct 4	Joe McComb

NUECES COUNTY EXTENSION LEADERSHIP ADVISORY BOARD

Laura Berry	David Mayo	Elias Vasquez	John Freeman
Jan Shannon	Felipa Lopez Wilmot	Kacy Frazier	Vickie Loessin
Frances Morrow	Jimmy Wright	Harvey Buehring	

COOPERATING SEED COMPANIES

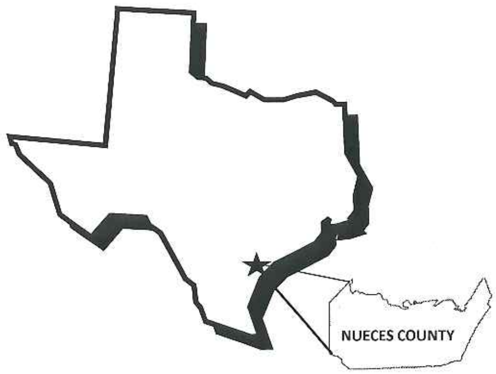
All-Tex Seed Co.	P. O. Box 1057	Levelland, TX 79336
Americot	105 Buck Lane	Georgetown, TX 78628
B-H Genetics	5933 FM 1157	Ganado, TX 77962
Bayer/Fibermax	13557 Carlos 5th Port	Corpus Christi, TX 78418
Croplan Gentics	P.O. 476	Taft, TX 78390
Dow Agro Sciences	317 West Alice	Kingsville, TX 78383
Delta & Pine Land Seed	4014 Northwood	Corpus Christi, TX 78410
Dyna-Grow Seed Company	Rt. 2 Box 211A	Caldwell, TX 77836
Foundation Seed Service	TAMU	College Station, TX 77841
Gayland Ward Seeds	1900 Pease St, Ste 305	Vernon, TX 76384
Golden Acres	905 E. Trant Dr.	Kingsville, TX 78363
Monsanto	408 Vista Cove	Victoria, TX 77904
Phytogen	832 Swynford Ln.	Collierville, TX
Pioneer International	14901 Red River	Corpus Christi, TX 78410
Seed Source Genetics	5159 FM 3354	Bishop, TX 78343
Sesaco	29865 N. Abram Rd.	Edinburg, TX 78511
Stoneville Pedigreed Seed Co.	13557 Carlos 5th Port	Corpus Christi, TX 78418
Syngenta Seeds	2292 Oliver Rd.	Victoria, TX 77904
Terral Seed	P O Box 997	El Campo, TX 77437
Triumph Seed Company Inc.	P.O. Box 1050	Ralls, TX 79357
Warner Seeds Company	1440 CR 111	Lampassas, TX 76550

COOPERATING CHEMICAL AND FERTILIZER COMPANIES

Bayer Crop Science Division	Will Elkins / Jon Mixson	Corpus Christi, TX 78418
Coastal Acres LLC.	John Miller	Robstown, TX 78380
Dow Agro Sciences	Benny Martinez / Trey Ramirez	Kingsville, TX 78363
Helena Chemical Co.	Dorian David	Corpus Christi, TX 78426
Monsanto	Daniel Gonzalez / Harvey Buehring	Orange Grove, TX 78372
Syngenta	Tony Driver	Hewitt, TX

SPECIAL ACKNOWLEDGMENTS FOR TECHNICAL SUPPORT

Mr. Rudy Alaniz	Dr. Joe Paschal	Dr. Dan Fromme
Dr. Tony Provin	Dr. Paul Baumann	James Gricher
Mr. Ted Proske	Mr. Clint Livingston	Dr. Mark McFarland
Mr. Kenneth Schaefer	Mr. Jeff Nunley	Mr. Mac Young
Dr. Gaylon Morgan	Dr. Gary Odvody	Dr. Roy Parker
Dr. Larry Falconer	Dr. Tom Isakeit	Gary Schwarzlose
	Dr. Carlos Fernandez	



NUECES COUNTY

Agricultural Statistics

County Seat—Corpus Christi, TX

Population (2010)	340,223

Land Area	Acres
Cropland/Improved Pastures	311,300
Rangeland	33,800
Industrial Sites, Recreational Facilities	
Urban Areas	93,492
Total	**438,592**

Major Agricultural Commodities	(2011)
Grain Sorghum Planted Acres	141,977
Cotton Planted Acres	130,540
Corn Planted Acres	12,400
Wheat Planted Acres	3,386
Sesame Planted Acres	481
Sunflower Planted Acres	2,201
Hay Acreage Planted Acres	10,000
Beef Cattle Cow #s	6,000

2011 Agricultural Income	$1000
Grain Sorghum	54,125
Cotton/Cottonseed	92,297
Government Programs	16,802
Crop Insurance	7,988
Cattle	4,414
Wheat	494
Corn	4,445
Other	6,083
Total	**$186,648**

Weather	Data
Average Daily High Temperature	82°F
Average Daily Low Temperature	63°F
Days above 90°F	101
Days below 32°F	7
Mean Temperature	72°F
First Freeze Date	Dec. 15
Last Freeze Date	Feb. 9
Growing Season Average Dates	303
Precipitation-Mean per Year	31.41"
Precipitation-Days/Years above 0.1"	39

History - *Nueces County was formed in 1846 and was once part of San Patricio County. The county seat is Corpus Christ, and was incorporated in 1846. Nueces County is bordered by San Patricio County (north), Jim Wells County (west), Kleberg County (south) and by Corpus Christi Bay, Laguna Madre and Redfish Bay (all east). The County was named after the Nueces River which flows through the county.*

Topography - *Nueces County comprises 847 square miles of the Coastal Prairies region. The terrain is generally flat. The elevation ranges from sea level to 180 feet above sea level. In the central part of the county the soil varies from vary dark loams to gray or black cracking clayey soils. In the west the soils varies from very dark loams to gray or black cracking clayey subsoils. In the coastal region the soils are sandy; in marsh areas the soils are also very dark with clayey subsoils.*

Climate - *The climate is humid-subtropical. Temperatures range from an average high of 93°F in July to an average low of 47°in January.*

NUECES COUNTY
1929-2011
Yearly Rainfall

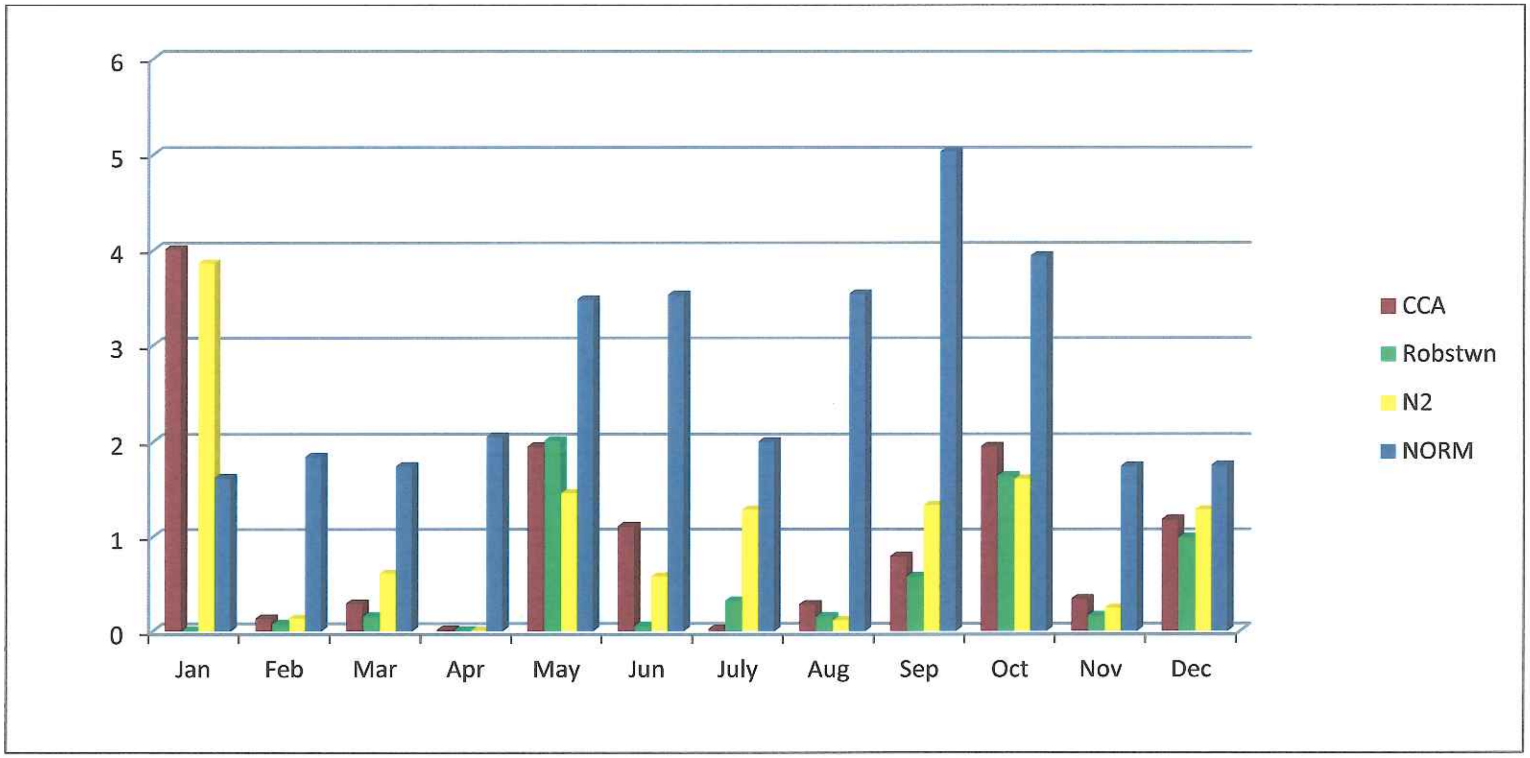
Year	Corpus Christi	Robstown	Year	Corpus Christi	Robstown	Year	Corpus Christi	Robstown
1929	25.67	26.28	1965	25.29	22.83	2001	32.25	33.52
1930	25.31	28.26	1966	29.89	28.86	2002	31.39	44.77
1931	36.86	36.66	1967	38.22	37.31	2003	28.70	35.30
1932	22.67	20.77	1968	41.53	41.45	2004	35.30	39.08
1933	23.06	27.59	1969	23.57	38.83	2005	25.31	21.72
1934	30.97	29.75	1970	39.47	36.34	2006	33.93	26.55
1935	38.99	31.97	1971	36.95	55.62	2007	40.63	49.29
1936	26.28	35.37	1972	36.41	29.23	2008	27.99	25.70
1937	24.05	23.75	1973	43.53	43.86	2009	20.61	11.78
1938	21.54	24.64	1974	24.81	28.20	2010	43.92	35.5
1939	19.74	20.33	1975	25.19	31.49	2011	12.06	6.12
1940	25.13	26.68	1976	39.39	42.37	2012		
1941	42.13	48.41	1977	26.25	24.79	2013		
1942	33.67	36.34	1978	39.14	34.02	2014		
1943	26.87	20.05	1979	39.04	29.53	2015		
1944	26.45	27.07	1980	32.69	32.50	2016		
1945	30.14	25.20	1981	44.02	41.42	2017		
1946	34.09	N/A	1982	22.47	22.71	2018		
1947	33.26	N/A	1983	36.91	32.21	2019		
1948	22.43	24.96	1984	22.24	30.82	2020		
1949	30.28	27.19	1985	36.70	49.53	2021		
1950	15.48	8.40	1986	32.15	25.46	2022		
1951	26.91	29.82	1987	30.66	33.31	2023		
1952	21.31	12.02	1988	18.91	17.76	2024		
1953	24.14	26.69	1989	19.22	17.41	2025		
1954	16.02	18.38	1990	21.10	24.19	2026		
1955	21.87	22.85	1991	48.07	41.02	2027		
1956	21.73	16.84	1992	41.42	30.31	2028		
1957	28.00	29.91	1993	32.34	30.89	2029		
1958	42.62	44.28	1994	38.96	33.37	2030		
1959	38.44	30.96	1995	36.93	33.85	2031		
1960	44.35	43.01	1996	17.32	20.48	2032		
1961	26.44	28.19	1997	36.03	39.65	2033		
1962	15.49	14.49	1998	30.62	33.38	2034		
1963	14.66	19.29	1999	29.22	28.05	2035		
1964	21.71	20.49	2000	22.08	30.89	2036		
						AVG	***29.75***	***29.76***

Data collected from the National Oceanic and Atomonspheric Administration, National Weather Service, and Nueces County Record Star. Robstown Fire Dept. 2008-2009. Robstown reporting station was closed due to World War II in 1946 and 1947

*Totals for 2004 include snowfall that has been converted into precipitation. (10" snow = 1" rain)

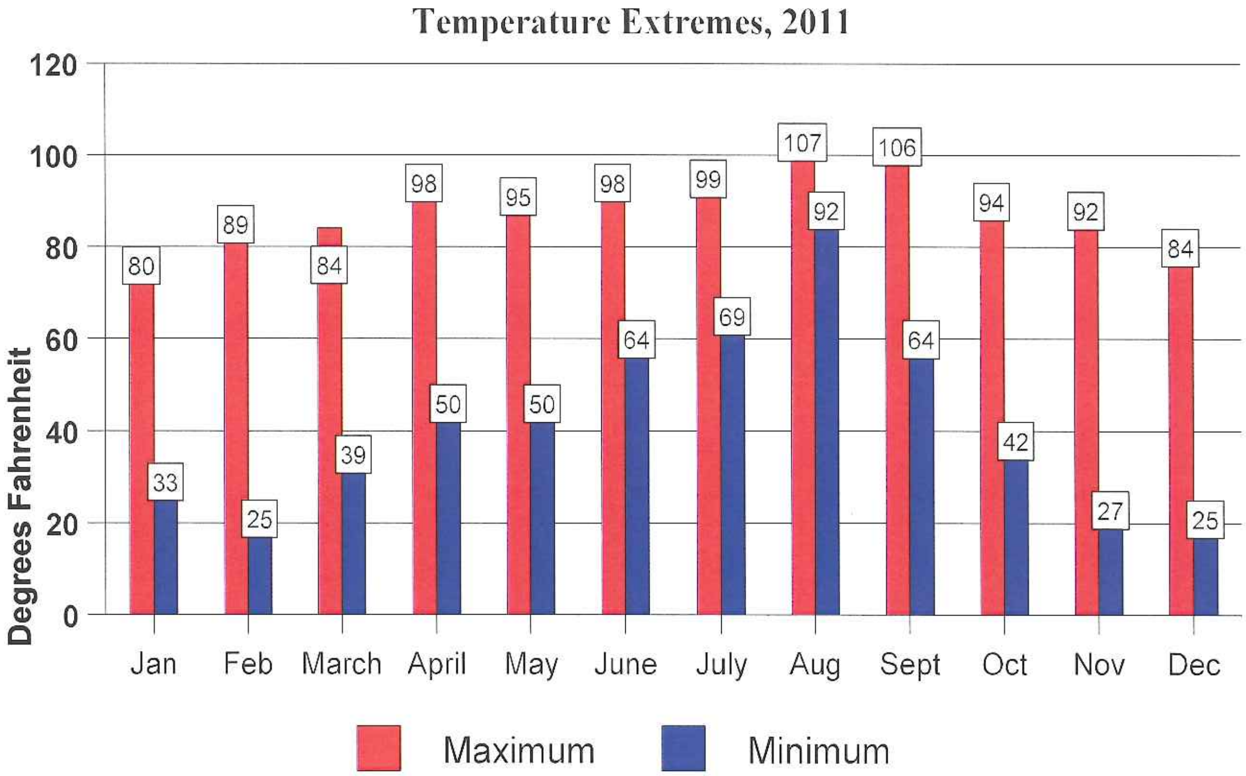
2011 Precipitation Data

Nueces County, Texas

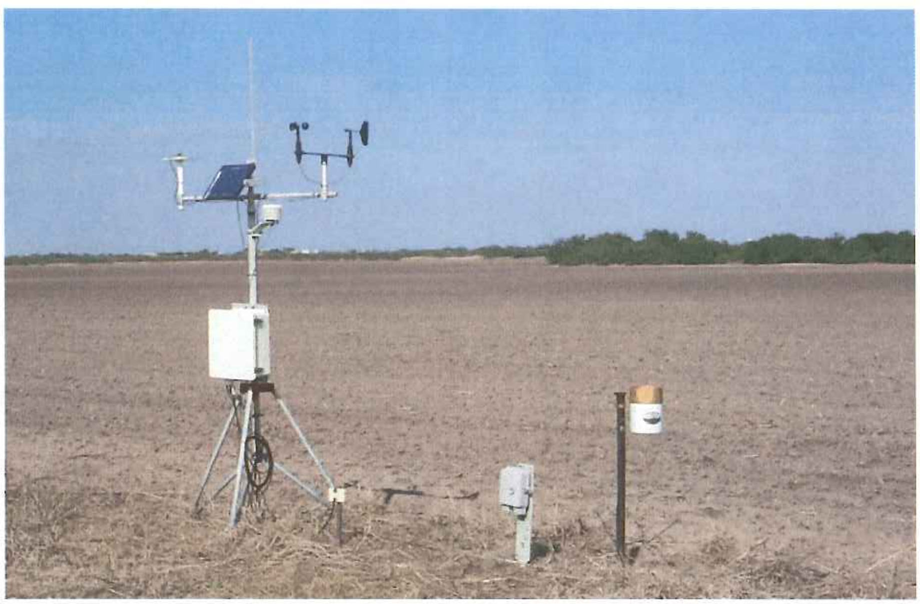


Precipitation Data Collection Site	2011 Precipitation (Inches)
N2 Perry Foundation – South of Robstown	12.49
Corpus Christi Airport	12.06
Robstown	6.12
2011 Rainfall Average	10.22
Normal*	32.26

*This normal is for the time frame 1971-2000 recorded by National Weather Service at Corpus Christi, Texas.



The temperature extremes were computed from data collected at the Clarkwood Research Center, Perry Foundation-South of Robstown, and Robstown Fire Department sites in Nueces County, Texas.



THE CROP-WEATHER PROGRAM FOR SOUTH TEXAS

The Crop-Weather Program for South Texas is an easy-to-use tool that can be accessed via the Internet at http://cwp.tamu.edu.

This program provides information about weather conditions, crop growth and development, crop water use, and soil water storage and is maintained by Dr. Carlos Fernandez of the Texas Agriculture Experiment Station in Corpus Christi, Texas.

MAP LEGEND

Map Number . . . . **Location**

COTTON TRIALS

1 . . . . **Conventional Cotton Variety**
Cooperator: Jungmann Farms

2 . . . . **Uniform Stacked-Gene Cotton Variety**
Cooperator: Massey Farms

3 . . . . **Liberty Link Cotton Variety**
Cooperator: Lawhon Farms

4 . . . . **Comparison of Selected Insecticides**
Cooperator: Wright Farms

5 . . . . **Cotton Harvest Aid**
Cooperator: Otahal Farms

6 . . . . **Plant Population Study**
Cooperator: Lawhon Farms

7 . . . . **Skip Row vs. Conventional**
Cooperator: Jungmann Farms

CORN TRIALS

8 . . . . **Corn Hybrid Performance**
Cooperator: Mayo Farms

9 . . . . **Aflatoxin Control Test**
Cooperator: Various Counties Farms

SORGHUM TRIALS

10 . . . . **Grain Sorghum Hybrid Performance Test**
Cooperator: Faske Farms

11 . . . . **Grain Sorghum Hybrid Performance Test**
Cooperator: Ordner Farms

12 . . . . **Grain Sorghum Hybrid Performance Test**
Cooperator: McNair Farms

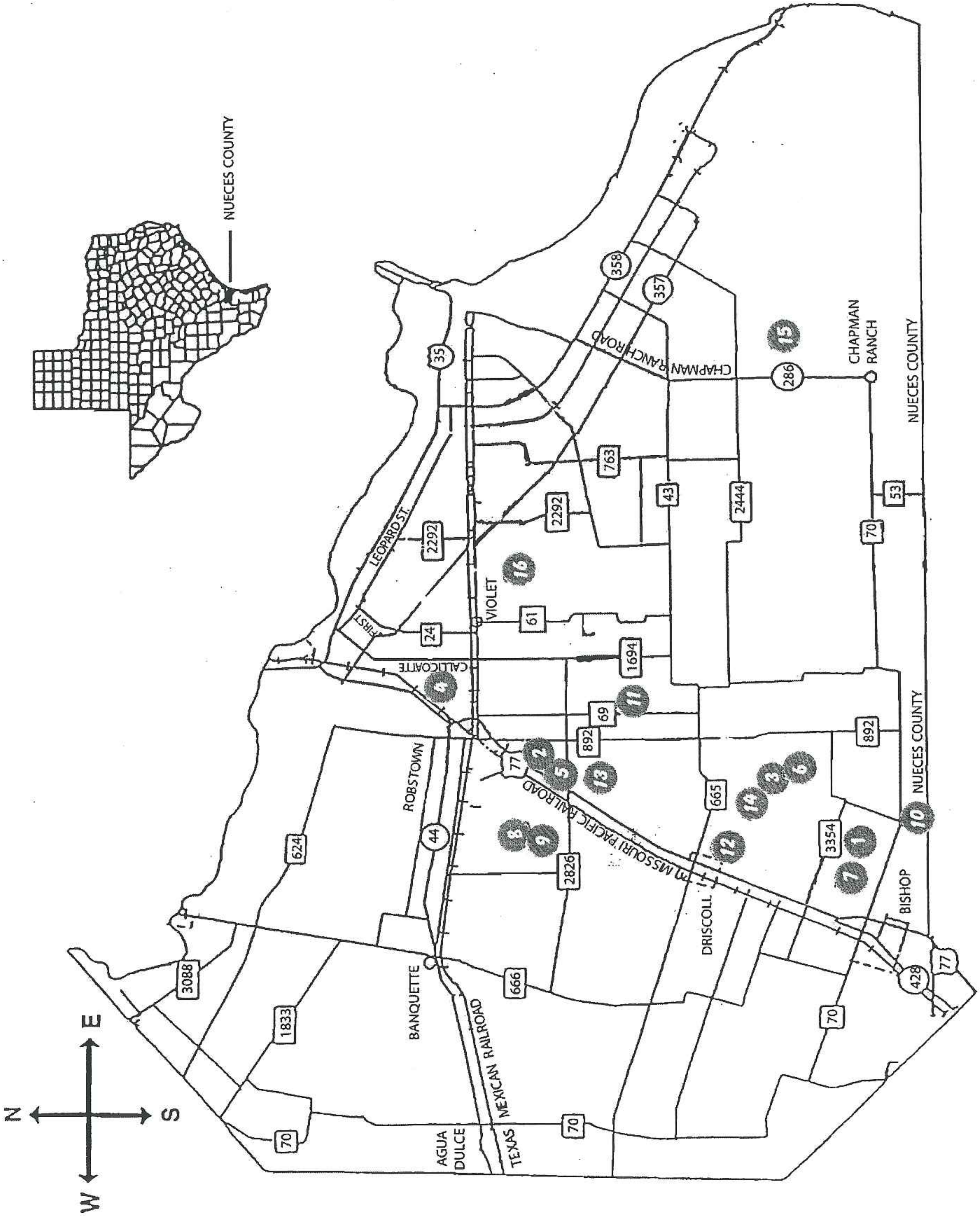
13 . . . . **Headworms & Rice Stink Bug Control w/New Insecticides**
Headworms & Rice Stink Bug Control w/Selected Insecticides
Cooperator: Mayo Farms

14 . . . . **Nitrogen & Phosphorus Test**
Cooperator: Lawhon Farms

15 . . . . **Clump vs. Conventional Planting**
Cooperator: Ocker Farms

ALTERNATIVE CROPS

16 . . . . **Sesame, Safflower, Flax, Canola and Sunflower Evaluations**
Cooperator: Texas A&M Research & Extension Center


NUECES COUNTY
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CHAPMAN RANCH ROAD
CHAPMAN RANCH
NUECES COUNTY
LEOPARD ST.
FIRST
VIOLET
CALLICOATTE
ROBSTOWN
MISSOURI PACIFIC RAILROAD
DRISCOLL
BISHOP
BANQUETTE
AGUA DULCE
TEXAS MEXICAN RAILROAD
358
357
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70
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COTTON

Page #

History of Cotton Production, Nueces County 12

Conventional Cotton Variety, *Jungmann Farms* 13

Uniform Stacked-Gene Cotton Variety, *Massey Farms* 16

Liberty Link Cotton Variety, *Lawhon Farms* 19

Comparison of Selected Insecticides, *Wright Farms* 21

Cotton Harvest Aid, *Otahal Farms* 25

Plant Population Study, *Lawhon Farms* 29

Skip Row vs. Conventional, *Jungmann Farms* 32

HISTORY OF COTTON PRODUTION
NUECES COUNTY 1929-2011

Year	Acres Harvested	Lbs /Acre	Total Bales	Year	Acres Harvested	Lbs /Acre	Total Bales	Year	Acres Harvested	Lbs /Acre	Total Bales
1929	268,000	213	129,000	1965	104,200	327	62,241	2001	117,000	570	139,000
1930	250,000	295	154,000	1966	71,300	455	64,955	2002	110,000	598	137,000
1931	242,000	178	94,900	1967	66,300	314	41,579	2003	131,300	841	230,000
1932	226,900	140	66,100	1968	87,900	306	53,758	2004	141,600	870	246,384
1933	252,300	227	83,400	1969	87,000	285	49,577	2005	142,900	552	164,200
1934	173,000	159	57,400	1970	60,800	193	23,404	2006	54,500	562	63,800
1935	186,000	232	90,200	1971	63,500	224	29,700	2007	109,600	775	173,347
1936	201,000	207	87,000	1972	74,700	295	44,000	2008	79,800	475	78,900
1937	218,000	203	92,800	1973	49,900	253	25,300	2009	4,116	360	3,087
1938	166,200	232	74,900	1974	54,900	481	52,769	2010	104,050	866	187,721
1939	152,200	254	79,300	1975	27,800	466	25,884	2011	111,527	669	155,441
1940	139,200	201	54,600	1976	48,000	436	43,583	2012			
1941	135,000	212	57,900	1777	78,000	528	85,884	2013			
1942	136,000	276	77,245	1978	77,600	447	72,422	2014			
1943	133,000	297	82,300	1979	109,900	463	105,975	2015			
1944	119,000	215	53,300	1980	100,200	326	68,600	2016			
1945	106,000	211	46,600	1981	67,400	514	71,900	2017			
1946	90,000	235	44,000	1982	53,800	523	58,900	2018			
1947	110,000	289	66,350	1983	39,400	600	49,300	2019			
1948	91,000	282	53,400	1984	56,100	614	72,020	2020			
1949	140,000	353	103,000	1985	58,800	883	107,900	2021			
1950	95,500	235	44,200	1986	59,600	754	93,600	2022			
1951	216,000	51	22,900	1987	60,000	710	85,200	2023			
1952	174,000	282	102,000	1988	86,900	498	90,200	2024			
1953	141,500	60	17,700	1989	66,100	385	53,000	2025			
1954	122,000	432	109,000	1990	86,100	326	58,400	2026			
1955	86,000	112	20,100	1991	117,100	645	157,300	2027			
1956	98,000	315	64,000	1992	77,100	485	77,900	2028			
1957	787,000	339	55,500	1993	78,800	439	72,000	2029			
1958	95,770	434	83,040	1994	87,700	560	102,400	2030			
1959	108,200	336	74,669	1995	125,200	589	153,700	2031			
1960	114,600	352	80,570	1996	75,700	337	53,100	2032			
1961	107,600	420	90,385	1997	97,900	454	92,500	2033			
1962	116,900	267	62,480	1998	85,100	446	79,000	2034			
1963	106,400	181	38,602	1999	109,100	757	172,000	2035			
1964	109,200	285	62,240	2000	118,300	771	190,000	2036			

Data secured from U.S. Department of Agriculture Statistical Reporting Service and Texas Crop Livestock Reporting Service.

Figures for the 2011 season were estimated using data obtained from the Nueces County FSA Office, and the Nueces County Extension Office

AgriLIFE EXTENSION
Texas A&M System

Agriculture and Natural Resources

CONVENTIONAL COTTON VARIETY PERFORMANCE EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Jungmann Farms

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
Dr. Dan D. Fromme, Assistant Professor and Extension Agronomist
J.R. Cantu, Ag Demonstration Assistant

Summary

This test was located on the Jungmann Farm, north of Bishop on FM 3354. Soil conditions at planting were fair. Eight commercial cotton varieties were evaluated for agronomic performance. The best numerically performing variety in this test was ARK 222-12 at 994 pounds per acre lint yield and it also generated the highest lint value at $525.32 per acre, using the loan value. Statistically the lint yield of ARK 222-12 was not different from ARK 114-53, ARK 9803-23-04, or SSG HQ210CT. The plot lint yield average for this test was 934 pounds per acre.

Objective

To evaluate commercially available conventional cotton varieties growing under Nueces County conditions in a replicated evaluation.

Materials and Methods

Cotton varieties were planted in a replicated study with three replications in a randomized complete block design. Each variety plot consisted of 6 rows, 975 feet in length. Soil moisture conditions at planting were fair at planting depth. Stand counts were taken at three areas in the field for each variety approximately one month following planting. Rainfall was below normal. The monthly rainfall received was; March=0.87 inches, April=0 inches May = 1.54 inches, June = 0.56 inches, for a total of 2.97 inches from planting through harvest. Plots were harvested on July 27, 2011 with a John Deere Stripper. Seed cotton from 0.33 acre was weighed in the field at harvest using an electronic scale equipped cotton weigh-wagon. Random grab samples were collected from each variety at weighing for lint turn-out and fiber quality analysis. Fiber analysis was conducted by the Fiber & Bio-polymer Research Institute using standard HVI classing procedures.

Table 1: Agronomic data for Conventional Cotton Variety Performance Demonstration, Jungman Farm, Bishop, (Nueces County), Texas, 2011.

Planting Date: 3/09/2011 Haevest Date: 7/27/11	Rows/Plot: 6 - with 3 replicates Plot Length 975 ft	Row Width: 30 inch
Fertility: 220# 25-5-0	Herbicide: 1.5 qt/A Trust 1 qt/A Roundup 0.10 oz/A Invoke 10 oz/A Arrow	Previous Crop: Sorghum
Planting Rate: 55,000 plants/Ac	Soil Type: Victoria clay	Insecticide: Seed treatment

Results and Discussion

The data table below provides a comparison of data on plant population and lint yield per acre.

Table 2. Comparison of cotton plant population and lint yield between varieties, Jungmann Farm, Nueces County, Texas, 2011.

Variety	Plant Population per Acre	Lint Yield (pounds/acre)
ARK 222-12	41,121	994.3 a
ARK 114-53	40,637	991.3 a
ARK 9803-23-04	37,250	963.3 ab
SSG HQ210CT	38,702	935.3 abc
SSG HQ212CT	37,734	920.7 bcd
ALL TEX LA122	37,250	919.0 bcd
SSG HQ120CT	38,702	889.7 cd
ALL TEX 7A21	35,315	860.3 d
AVERAGE	38,339	934.2

Table 3. Comparison of lint yield, lint quality, and loan value ranked by highest gross income per acre between varieties, Jungmann Farm, Nueces County, Texas, 2011.

Variety	Lint (lbs/ac)		Turnout %		Micronaire		Length (inches)		Strength (g/tex)		Uniformity		Loan Value (¢/lb)		Lint Value ($/ac)	
ARK 222-12	994	a	41.37	b	4.3	a	1.09	a	29.0	b	81.9	a	52.88	a	525.32	a
ARK 114-53	991	ab	39.5	c	4.4	a	1.05	b	28.2	bcd	81.2	ab	51.35	b	508.80	a
ARK 9803-23-04	963	ab	39.9	bc	4.2	a	1.10	a	31.1	a	81.8	a	53.47	a	515.15	a
SSG HQ210CT	935	abc	39.07	c	4.2	a	1.01	c	28.2	bcd	79.4	c	48.92	c	457.77	b
SSG HQ212CT	921	bcd	38.47	c	4.1	a	1.00	c	28.2	bcd	79.4	c	48.82	c	449.38	b
AT LA122	919	bcd	43.8	a	4.3	a	1.01	c	27.5	cd	79.8	bc	49.03	c	449.86	b
SSG HQ120CT	890	cd	39.97	bc	4.7	a	1.01	c	27.0	d	81.5	a	49.68	c	442.03	b
AT 7A21	860	d	41.17	b	4.2	a	1.06	b	28.5	bc	81.0	ab	52.43	ab	451.06	b
Mean	**934.21**		**40.4**		**4.31**		**1.04**		**28.46**		**80.75**		**50.82**		**474.92**	
P>F	0.0142		0.0002		0.1174		0.0001		0.0009		0.0106		0.0001		0.0002	
LSD P=.05)	72.22		1.645		NS		0.0224		1.416		1.566		1.36		33.67	
STD DEV	41.23		0.94		0.203		0.0128		0.809		0.894		0.7765		19.23	
CV%	4.41		2.33		4.72		1.23		2.84		1.11		1.53		4.05	

Means followed by same letter do not significantly differ (P=.05, LSD)

Conclusions

Despite below normal rainfall during the growing season, the varieties in this test performed well with lint loan values ranging from $451 to $525 per acre. There was not a statistical difference in pounds of lint produced per acre between the top four varieties as yields ranged from 935 to 994 pounds of lint per acre.

Acknowledgements

The cooperation and support of Edward and Russell Jungmann for implementing this demonstration is appreciated. Special thanks go to Bayer CropScience for making their electronic cotton weigh-wagon available during harvest in order to obtain seed cotton weights from the entire test area.

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UNIFORM STACKED-GENE COTTON VARIETY PERFORMANCE EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Jim Massey, IV

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
Dr. Dan D. Fromme, Assistant Professor and Extension Agronomist
J. R. Cantu, Demonstration Assistant

Summary
This test was located on the Jim Massey Farm, south of Robstown on CR 34. Soil moisture conditions at planting were fair. Nine commercial cotton uniform stacked-gene varieties were evaluated for agronomic performance. The best performing variety in this test was PHY 499 WRF at 857.7 pounds per acre lint yield. The lint yield average for this test was 766 pounds per acre.

Objective
To evaluate commercially available cotton varieties growing under Nueces County conditions in a replicated evaluation.

Materials and Methods
Cotton varieties were planted in a replicated study with three replications in a randomized complete block design. Each variety plot consisted of 8 rows, 1,525 feet in length and was 0.7 acre in size. Soil moisture conditions at planting were marginal at planting depth. Stand counts were taken at three areas in the field for each variety approximately one month following planting. Rainfall was below normal. The monthly rainfall received was; March= 0.03, April= 0 inch, May = 2.90 inches, June = 0.50 inches, and July = 0.25 inch for a total of 3.68 inches from planting through harvest. Plots were harvested on August 2, 2011 with a John Deere 9976 Picker. Seed cotton from 0.52 acre was weighed in the field at harvest using an electronic scale equipped cotton weigh-wagon. Random grab samples were collected from each variety at weighing for lint turn-out and fiber quality analysis. Fiber analysis was conducted by the Fiber & Bio-polymer Research Institute using standard HVI classing procedures.

Table 1: Agronomic data for Commercial Uniform Stacked-Gene Variety Performance Demonstration, Massey Farm, Robstown, (Nueces County), Texas, 2011.

Planting Date: 3/18/2011 Harvest Date: 8/2/2011	Rows/Plot: 8 row - with 3 replicates 6 rows by 1027 feet	Row Width: 30 inch
Fertility: 380# 24-8-0	Herbicide: 2 apps 20oz/ac Gylphosate	Previous Crop: Sorghum
Planting Rate: 50,000/acre	Soil Type: Victoria clay	Insecticide: Seed treatment

Results and Discussion

The data tables below provide a comparison of data on plant population, lint yield and loan value per acre.

Table 2. Comparison of cotton plant population, Seed Cotton, and lint yield between varieties, Massey Farm, Nueces County, Texas, 2011.

Cotton Variety	Plant Population (plants/acre)	Lint Yield (pounds/acre)
PHY 499 WRF	28,663	857.7 a
DP 1044 B2F	29,268	803.7 ab
AM 1550 B2RF	24,672	798.7 bc
FM 1740 B2F	21,830	796.3 bc
ST 5458B2RF	28,784	748.3 cd
PHY 367WRF	25,398	746.3 cd
FM 9160B2F	21,527	716.7 d
DP 1032B2RF	14,996	714.0 d
ATX 3039 B2F	27,454	712.7 d

Table 3. Comparison of lint yield, lint quality, and loan value ranked by highest gross income per acre between varieties, Massey Farm, Nueces County, Texas, 2011.

Variety	Lint (lbs/acre)		Turnout %		Micronaire		Length (inches)		Strength (g/tex)		Uniformity		Loan Value (¢/lb)		Lint Value ($/acre)	
PHY 499WRF	857.7	a	44.27	a	4.77	a	1.02	b	29.6	a	80.7	ab	49.85	bc	427.74	a
DP 1044B2RF	803.7	ab	41.07	cd	4.57	b	1.02	b	27.1	bc	80.1	abc	49.07	bcd	394.03	b
AM 1550B2RF	798.7	bc	41.73	bc	4.57	b	1.02	b	25.3	de	80.3	ab	48.33	cd	386.01	b
FM 1740B2RF	796.3	bc	41.63	bc	4.53	b	1.02	b	26.8	bc	79.3	bc	49.28	bc	392.58	b
ST 5458B2RF	748.3	cd	40.47	de	4.47	b	1.03	b	26.3	cd	79.8	bc	49.10	bcd	367.46	bcd
PHY 367WRF	746.3	cd	41.57	bc	4.23	c	1.02	b	26.6	bc	80.9	ab	50.20	b	374.66	bc
FM 9160B2F	716.7	d	39.93	e	4.17	c	1.08	a	27.8	b	81.4	a	52.27	a	374.10	bc
DP 1032B2RF	714	d	42.27	b	4.80	a	1.01	b	25.2	de	78.6	c	47.27	d	337.53	d
AT 3039B2RF	712.7	d	41.57	bc	4.50	b	1.04	b	24.2	e	80.2	abc	49.28	bc	351.09	cd
Mean	**766**		**41.61**		**4.51**		**1.03**		**26.5**		**80.14**		**49.41**		**378.36**	
P>F	0.0003		0.0001		0.0001		0.0225		0.0001		0.0496		0.0031		0.0006	
LSD (P=.05)	55.19		1.021		0.15		0.0378		1.285		1.555		1.8356		30.33	
STD DEV	31.88		0.59		0.087		0.0219		0.742		0.898		1.0605		17.52	
CV%	4.16		1.42		1.92		2.13		2.8		1.12		2.15		4.63	

Means followed by same letter do not significantly differ (P=.05, LSD).

Conclusions

Cotton varieties performed well in a growing season with below normal rainfall. The best performing variety in this test was PHY 499WRF with a loan value of $427 per acre. The significant differences between varieties points out the importance of variety testing and evaluating varieties under local growing conditions.

Acknowledgements

The cooperation and support of Jim Massey IV for implementing this demonstration is appreciated and the support of cooperating seed companies by providing needed seed supplies necessary to conduct this evaluation is also appreciated. Special thanks goes to Bayer CropScience for making their electronic cotton weigh-wagon available during harvest in order to obtain seed cotton weights from the entire test area.

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LIBERTY LINK COTTON VARIETY PERFORMANCE EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Darrell Lawhon

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
Dr. Dan D. Fromme, Assistant Professor and Extension Agronomist
J. R. Cantu, Demonstration Assistant

Summary
This test was located on the Darrell Lawhon Farm on CR 73B, north of Concordia. Soil moisture conditions at planting were moderate and rainfall during the growing season was below normal. Four commercial liberty link cotton varieties were evaluated for agronomic performance. The best performing variety in this test was FM 1845 LLB2 with 944 pounds per acre lint yield. The average plot lint yield for the four varieties evaluated in this test was 879 lint pounds per acre.

Objective
To evaluate commercially available liberty link cotton varieties growing under Nueces County conditions in a replicated evaluation.

Materials and Methods
Cotton varieties were planted in a replicated study with three replications. Each variety plot consisted of 6 rows, 2949 feet in length. Seed was planted using a John Deere 1770 NT planter. Soil moisture conditions at planting were marginal at planting depth. Stand counts were taken at three areas in the field for each variety approximately one month following planting. Rainfall was below normal. The monthly rainfall received was; March = 0.31, April=0 inches, May=1.75 inches, June=0.71 inch, and July= 0 inch for a total of 2.77 inches from planting through harvest. Plots were harvested on July 19, 2011 with a John Deere Picker. Fiber analysis was conducted by the Fiber & Bio-polymer Research Institute using standard HVI classing procedures.

Table 1: Agronomic data for Liberty Link Cotton Performance Evaluation, Lawhon Farm, Concordia, (Nueces County), Texas, 2011.

Planting Date: 3/11/2011	Rows/Plot: 6 -with 3 replicates	Row Width: 38 inch
Fertility: 250# 22-10-0	Herbicide: 1qt/ac Prowl pp	Previous Crop: Sorghum
Planting Rate: 45,000 plants/Ac	Soil Type: Victoria clay	Insecticide: Seed treatment

Results and Discussion

The data tables below provide comparison data on fiber quality and lint yield as well as the final plant population for each variety involved in this test.

Table 2. Comparison of cotton plant population and lint yield between varieties, Lawhon Farm, Nueces County, Texas, 2011.

Cotton Variety	Plant Population (# plts/ac)	Lint Yield (lbs/ac)	Seed Cotton (lbs/acre)
FM 1845 LL B2	39,212	944.3 a	2360.3 a
FM 835 LL B2	35,265	877.7 b	2229.0 a
FM 1773LLB2	33,101	853.0 bc	2213.7 a
FM STV 4145LLB2	34,374	840.3 c	2234.7 a

Table 3. Comparison of lint yield, lint quality, and loan value ranked by highest lint value per acre between varieties, Lawhon Farm, Nueces County, Texas, 2011

Variety	Lint (lbs/ac)		Turnout %		Micronaire		Length (inches)		Strength (g/tex)		Uniformity		Loan Value (¢/lb)		Lint Value ($/acre)	
FM 1845LLB2	944	a	40.07	a	4.4	a	1.15	a	32.4	a	83.0	ab	53.95	a	509.48	a
FM 835LLB2	878	b	39.37	a	3.8	c	1.13	b	31.2	b	83.3	a	54.12	a	474.97	b
FM 1773LLB2	853	bc	38.53	a	4.3	ab	1.12	b	30.2	c	82.4	bc	53.75	a	458.48	b
ST 4145LLB2	840	c	37.6	a	4.0	bc	1.06	c	28.9	d	81.6	c	51.50	b	432.80	c
Mean	**879**		**38.89**		**4.1**		**1.11**		**30.68**		**82.58**		**53.33**		**468.93**	
P>F	0.0014		0.1388		0.02		0.0005		0.0005		0.0061		0.0044		0.0004	
LSD (P=.05)	35.1		NS		0.307		0.0255		0.934		0.746		1.15		19.66	
STD DEV	17.55		1.123		0.154		0.0128		0.467		0.373		0.5764		9.84	
CV%	2.0		2.89		3.72		1.15		1.52		0.45		1.08		2.1	

Means followed by same letter do not significantly differ (P=.05, LSD)

Conclusions

Cotton varieties performed well in a growing season with below normal rainfall. The significant difference between varieties stresses the need to continue to evaluate performance of new varieties as they are introduced in the local area. The best performing variety in this test was FM 1845 LLB2, producing 944 pounds of lint per acre.

Acknowledgements

The cooperation and support of Darrell Lawhon for implementing this demonstration is greatly appreciated. Moreover the support provided by Bayer CropScience for providing seed for the test is also appreciated.

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COMPARISON OF SELECTED INSECTICIDES FOR CONTROL OF THE COTTON FLEAHOPPER IN COTTON

Cooperator: Bill and Randy Wright Farm
Nueces County, 2011

Authors: Roy D. Parker and Jeffrey R. Stapper
Extension Entomologist and County Extension Agent, respectively
Corpus Christi and Robstown, Texas

Summary

Centric, Carbine, Belay, and Intruder significantly reduced fleahopper number through 14 days after treatment (DAT). Centric and Belay were especially impressive in reducing nymphs. Carbine treated plots tended to have more fleahoppers than other treatments at 8 and 14 DAT. Since the treatments were applied late in the development of the cotton plant no differences were observed in lint production.

Objective

The field study on cotton was conducted to measure the impact of the insecticides on the cotton fleahopper.

Materials/Methods

The test was conducted on the Bill and Randy Wright Farm on County Road 44 about 0.5 miles west of FM 1694 in Nueces County. The cotton variety was FiberMax 832. Treatments were applied late in the fruiting stage with the cotton at 5 nodes above white flower (NAWF) on May 26, 2011. The test was arranged in a randomized complete block design with 4 replications of each treatment. Plots were 4 rows by 40 feet with 8 buffer rows between treatments.

Treatments were applied with a Spider Trac sprayer calibrated to deliver 5.1 gpa total volume through 4X hollow cone nozzles at 40 psi and at a speed of 4.2 mph. All treatments included a non-ionic surfactant (0.25% v/v).

Treatments were assessed by (1) counting fleahoppers on 20 plant terminals/plot before treatments were applied on May 26 followed by counts 2, 4, 8, and 14 days after treatment [DAT], and (2) harvesting the third row of each plot with an International Harvester model 120A spindle picker. Seed cotton was weighed and lint production was based on 37% of the seed cotton weight.

Agriculture Research Manager (ARM revision 6.1.13) software was used to conduct analysis of variance, and means were separated by LSD at the 0.05 probability level.

Results/Discussion

The experiment was conducted on cotton that was beyond the growth stage for which fleahopper control would be expected to have any impact on lint production; the cotton was at 5 nodes above white flower (NAWF) on May 26 when pretreatment counts were made, but the location provided opportunity to evaluate the impact of chemicals on fleahopper numbers.

Fleahopper nymphs were abundant when treatments were applied on May 26 (Table 1). All fleahopper nymph counts at 2, 4, 8, and 14 days after treatment (DAT) were significantly lower in the insecticide treatments regardless of chemical or rate used. Statistical differences were not observed among any of the insecticide treatments evaluated. However, nymphs were not detected in the Belay treated cotton at either rate evaluated on any post-treatment evaluation. Only at 14 DAT were any nymphs detected in the Centric treatment.

Adult fleahoppers generally increased in number following treatment in non-insecticide treated cotton (Table 2). Centric, Belay (both rates), and Intruder were more effective than either rate of Carbine. Fleahopper adults increased in Carbine treated cotton at 8 DAT. When nymph and adult fleahopper counts were combined (Table 3), all insecticides tested provided significant control when compared with the nontreated cotton.

No differences were observed in lint production (Table 3). Cotton was already at 5 NAWF when the test was established; it was well beyond the treatment period for cotton fleahopper (cotton is most susceptible to damage from first square to one week into bloom). These results demonstrate that nothing can be gained by treating for cotton fleahopper beyond the established growth stage for which treatments are currently recommended. It also demonstrates the effectiveness of insecticides in controlling cotton fleahopper. However, since the test was conducted at a late stage of cotton plant development little migration of fleahoppers into the cotton seemed to occur. It will be useful to conduct additional tests when treatments can be made for fleahopper control when the plants are more vulnerable to damage.

Table 1. Evaluation of insecticides for fleahopper control applied to blooming cotton under dry soil conditions, Bill and Randy Wright Farm, Nueces County, TX, 2011.

Treatment (rate)	Fleahopper **nymphs** per 100 plants					
	Pretreat	2 DAT	4 DAT	8 DAT	14 DAT	Post-treat. avg.
Centric 40WG (1.25 oz/acre)	20.0[a]	0.0[b]	0.0[b]	0.0[b]	2.5[b]	0.6[b]
Carbine 50WG (1.7 oz/acre)	31.3[a]	3.8[b]	1.3[b]	5.0[b]	3.8[b]	3.4[b]
Carbine 50WG (1.25 oz/acre)	26.3[a]	3.8[b]	3.8[b]	7.5[b]	2.5[b]	4.4[b]
Belay 2.13 SC (4.0 oz/acre)	26.3[a]	0.0[b]	0.0[b]	0.0[b]	0.0[b]	0.0[b]
Belay 2.13 SC (3.0 oz/acre)	22.5[a]	0.0[b]	0.0[b]	0.0[b]	0.0[b]	0.0[b]
Intruder 70WP (1.0 oz/acre)	30.0[a]	1.3[b]	2.5[b]	2.5[b]	2.5[b]	2.2[b]
Nontreated	23.8[a]	63.8[a]	67.5[a]	46.3[a]	38.8[a]	54.1[a]
LSD (P=0.05)	NS[1/]	12.34	11.28	8.44	14.67	9.25
P > F	.7150	.0001	.0001	.0001	.0003	.0001

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/] NS = Not Significant

Table 2. Evaluation of insecticides for fleahopper control applied to blooming cotton under dry soil conditions, Bill and Randy Wright Farm, Nueces County, TX, 2011.

Treatment (rate)	Fleahopper **adults** per 100 plants					
	Pretreat	2 DAT	4 DAT	8 DAT	14 DAT	Post-treat. avg.
Centric 40WG (1.25 oz/acre)	3.8[a]	2.5[b]	1.3[b]	6.3[cd]	7.5[c]	4.4[c]
Carbine 50WG (1.7 oz/acre)	5.0[a]	0.0[b]	1.3[b]	18.8[bc]	21.3[ab]	10.3[b]
Carbine 50WG (1.25 oz/acre)	3.8[a]	0.0[b]	5.0[ab]	28.8[b]	13.8[bc]	11.9[b]
Belay 2.13 SC (4.0 oz/acre)	7.5[a]	0.0[b]	1.3[b]	1.3[d]	2.5[c]	1.3[c]
Belay 2.13 SC (3.0 oz/acre)	3.8[a]	0.0[b]	2.5[b]	5.0[cd]	3.8[c]	2.8[c]
Intruder 70WP (1.0 oz/acre)	7.5[a]	2.5[b]	2.5[b]	10.0[cd]	10.0[bc]	6.3[bc]
Nontreated	11.3[a]	10.0[a]	10.0[a]	57.5[a]	26.3[a]	25.9[a]
LSD (P=0.05)	NS[1/]	4.68	5.50	14.81	11.93	5.64
P > F	.2955	.0024	.0327	.0001	.0039	.0001

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/] NS = Not Significant

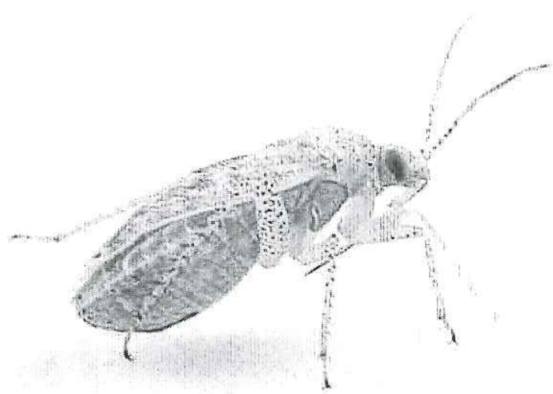
Table 3. Evaluation of insecticides for fleahopper control applied to blooming cotton under dry soil conditions, Bill and Randy Wright Farm, Nueces County, TX, 2011.

Treatment[1/] (rate)	Fleahopper **nymphs** and **adults** per 100 plants						Lint yield lb/acre
	Pretreat	2 DAT	4 DAT	8 DAT	14 DAT	Post-treat avg.	
Centric 40WG (1.25 oz/acre)	23.8[a]	2.5[b]	1.3[b]	6.3[cd]	10.0[bc]	5.0[bcd]	745[a]
Carbine 50WG (1.7 oz/acre)	36.3[a]	3.8[b]	2.5[b]	23.8[bc]	25.0[b]	13.8[bc]	703[a]
Carbine 50WG (1.25 oz/acre)	30.0[a]	3.8[b]	8.8[b]	36.3[b]	16.3[bc]	16.3[b]	675[a]
Belay 2.13 SC (4.0 oz/acre)	33.8[a]	0.0[b]	1.3[b]	1.3[d]	2.5[c]	1.3[d]	715[a]
Belay 2.13 SC (3.0 oz/acre)	26.3[a]	0.0[b]	2.5[b]	5.0[cd]	3.8[c]	2.8[cd]	726[a]
Intruder 70WP (1.0 oz/acre)	37.5[a]	3.8[b]	5.0[b]	12.5[cd]	7.5[bc]	7.2[bcd]	688[a]
Nontreated	35.0[a]	73.8[a]	77.5[a]	103.8[a]	65.0[a]	80.0[a]	714[a]
LSD (P = 0.05)	NS[1/]	15.33	12.87	19.41	19.39	11.63	NS
P > F	.7495	.0001	.0001	.0001	.0001	.0001	.9110

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/] NS = Not Significant

Acknowledgements

Thanks are extended to Bill and Randy Wright for providing the field location for conduct of the study and their interest in such work. Randy Alaniz and Clint Livingston, Demonstration Assistants, are thanked for applying treatments, and for harvest and ginning of cotton samples.



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COTTON HARVEST AID PERFORMANCE DEMONSTRATION

Cooperator: Claude Otahal
Nueces County, 2011

Authors: Jeffrey R. Stapper, Dan Fromme, and J.R. Cantu
County Extension Agent -AG/NR, Assistant Professor and Extension Agronomist, and Ag Demonstration Assistant, respectively

Summary

A total of twenty two different treatments were applied to the cotton variety FM 955 LLB2 to evaluate their leaf drop and harvest aid effectiveness in a strip test located on FM 2826, Southeast of Robstown. A six and eleven day after treatment rating were taken with treatment costs ranging from a low of $1.76/acre to a high of $16.47/acre.

Objective

To evaluate the effectiveness of selected harvest aid treatments in preparing cotton for harvest.

Materials and Methods

Treatments were established in a strip test of dryland cotton on 30-inch row spacing, with each plot 150 feet in length. Defoliation treatments were applied July 1, 2011 with a self-propelled sprayer delivering 11 gallons per acre. Treatments were applied from 9:00 A.M. to 10:00 A.M. The broadcast application was made with Turbo TeeJet 11002 nozzle tips on 20-inch spacing. The cotton variety was FM 955 LLB2, and had about 50% open bolls at time of initial treatment. Average plant height was 28 inches. Defoliation ratings were taken six and eleven DAT. A small rain event occurred on 7/10/11 with 0.16 inch.

Results and Discussion

Crop growing conditions throughout the season were good however rainfall during the season was below normal. Results are recorded in Table 1 and Table 2.

Table 1. Comparison of percent defoliation, desiccation, green leaf and price between treatments, July 7, 2011 (6 DAT), Otahal Farm, Nueces County.

Trt. No.	Treatment Name	Product Rate	Estimated Cost *	Defoliation (%)	Desiccation (%)	GrnLeaf (%)
1	Liquid Dropp	1.6 oz/A	$1.81	60	0	40
2	Liquid Dropp	2.4oz/A	$2.71	75	0	25
3	Liquid Dropp	3.2 oz/A	$3.20	85	0	15
4	Ginstar	1.0 oz/A	$1.76	50	1	49
5	Ginstar	2.0 oz/A	$3.53	85	1	14
6	Ginstar	3.0 oz/A	$5.29	70	2	28
7	Ginstar	4.0 oz/A	$7.06	78	2	20
8	Untreated			15	0	85
9	Liquid Dropp Def/Folex	1.6 oz/A 4.0 oz/A	$3.81	90	1	9
10	Liquid Dropp Aim NIS	1.6 oz/A oz/A 0.25 % v/v	$4.13	70	10	20
11	Liquid Dropp ET Crop Oil Concentrate	1.6 oz/A 1.5 oz/A 1.0 % v/v	$7.04	60	15	25
12	Liquid Dropp Ethephon/Prep	1.6 oz/A 16.0 oz/A	$5.31	88	5	7
13	Liquid Dropp Ethephon/Prep	1.6 oz/A 21.0 oz/A	$6.40	85	3	12
14	Liquid Dropp Finish 6 Pro NIS	1.6 oz/A 16.0 oz/A 0.25 % v/v	$10.49	93	5	2
15	Liquid Dropp Finish 6 Pro NIS	1.6 oz/A 21.0 oz/A 0.25 % v/v	$12.99	88	8	4
16	Ginstar Finish 6 Pro NIS	3.0 oz/A 16.0 oz/A 0.25 % v/v	$13.97	77	20	3
17	Ginstar Finish 6 Pro NIS	3.0 oz/A 21.0 oz/A 0.25 % v/v	$16.47	73	25	2
18	Liquid Dropp Ginstar Finish 6 Pro NIS	1.6 oz/A oz/A 16.0 oz/A 0.25 % v/v	$12.35	66	30	4
19	Liquid Dropp Ginstar Finish 6 Pro NIS	1.6 oz/A 2.00 oz/A 16.0 oz/A 0.25 % v/v	$14.02	68	30	2
20	Liquid Dropp Ginstar Finish 6 Pro NIS	1.6 oz/A 3.0 oz/A 16.0 oz/A 0.25 % v/v	$15.78	83	15	2
21	Liquid Dropp Def/Folex Ethephon /Prep	1.60 oz/A 4.0 oz/A 16.0 oz/A	$7.31	90	5	5
22	Liquid Dropp Def/Folex Finish 6 Pro NIS	1.6 oz/A 4.0 oz/A 16.0 oz/A 0.25 % v/v	$12.49	94	4	2

Table 2. Comparison of percent defoliation, desiccation, green leaf and price between treatments, July 12, 2011 (11 DAT), Otahal Farm, Nueces County.

Trt. No.	Treatment Name	Product Rate	Estimated Cost *	Defoliation (%)	Desiccation (%)	GrnLeaf (%)
1	Liquid Dropp	1.6 oz/A	$1.81	89	1	10
2	Liquid Dropp	2.4oz/A	$2.71	94	1	5
3	Liquid Dropp	3.2 oz/A	$3.20	94	1	5
4	Ginstar	1.0 oz/A	$1.76	79	1	20
5	Ginstar	2.0 oz/A	$3.53	85	1	14
6	Ginstar	3.0 oz/A	$5.29	87	1	12
7	Ginstar	4.0 oz/A	$7.06	91	1	8
8	Untreated			15	0	85
9	Liquid Dropp Def/Folex	1.6 oz/A 4.0 oz/A	$3.81	95	1	4
10	Liquid Dropp Aim NIS	1.6 oz/A 1.0 oz/A 0.25 % v/v	$4.13	86	2	12
11	Liquid Dropp ET Crop Oil Concentrate	1.6 oz/A 1.5 oz/A 1.0 % v/v	$7.04	86	2	12
12	Liquid Dropp Ethephon/Prep	1.6 oz/A 16.0 oz/A	$5.31	88	3	9
13	Liquid Dropp Ethephon/Prep	1.6 oz/A 21.0 oz/A	$6.40	87	1	12
14	Liquid Dropp Finish 6 Pro NIS	1.6 oz/A 16.0 oz/A 0.25 % v/v	$10.49	96	1	3
15	Liquid Dropp Finish 6 Pro NIS	1.6 oz/A 21.0 oz/A 0.25 % v/v	$12.99	95	1	4
16	Ginstar Finish 6 Pro NIS	3.0 oz/A 16.0 oz/A 0.25 % v/v	$13.97	88	10	2
17	Ginstar Finish 6 Pro NIS	3.0 oz/A 21.0 oz/A 0.25 % v/v	$16.47	91	6	3
18	Liquid Dropp Ginstar Finish 6 Pro NIS	1.6 oz/A 1.0 oz/A 16.0 oz/A 0.25 % v/v	$12.35	92	6	2
19	Liquid Dropp Ginstar Finish 6 Pro NIS	1.6 oz/A 2.00 oz/A 16.0 oz/A 0.25 % v/v	$14.02	91	8	1
20	Liquid Dropp Ginstar Finish 6 Pro NIS	1.6 oz/A 3.0 oz/A 16.0 oz/A 0.25 % v/v	$15.78	95	4	1
21	Liquid Dropp Def/Folex Ethephon /Prep	1.60 oz/A 4.0 oz/A 16.0 oz/A	$7.31	94	1	5
22	Liquid Dropp Def/Folex Finish 6 Pro NIS	1.6 oz/A 4.0 oz/A 16.0 oz/A 0.25 % v/v	$12.49	96	2	2

*Estimated cost is for educational purposes only and prices listed are not actual "carry out" prices. References to commercial products or trade names are made with the understanding that no discrimination is intended and no endorsement by the Texas AgriLife Extension Service is implied

Conclusions

In this dry year, most all treatments worked well and very inexpensive treatments worked just as well as the more expensive treatments. Each year the cotton crop responds differently to harvest aids, as environmental conditions are always different, thus the need to evaluate these products on an annual basis.

Acknowledgements

The support and cooperation of Claude Otahal for cooperating in the implementation of this demonstration is appreciated and the support and assistance provided by Gary Schwarzlose with Bayer CropScience for supplying product and application of products is also appreciated.

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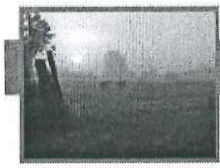


Agriculture and Natural Resources

COMPARATIVE GROWTH AND YIELD OF COTTON AT VARIOUS PLANTING DENSITIES

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Darrell Lawhon

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
Dr. Dan D. Fromme, Assistant Professor and Extension Agronomist
J. R. Cantu, Demonstration Assistant

Summary

This test was located on the Darrel Lawhon Farm, North of Concordia, CR 73B. Soil moisture conditions at planting were fair. Rainfall during the growing season was below normal. Cotton variety FM 835 LLB2 was evaluated for comparative growth and yield at various planting densities. The best performing treatment in this test was planting four seeds per foot producing 869 pounds per acre lint yield, although there was not a statistical difference in lint yield between 2, 4, or 6 seed per foot. However, the 4 seed per foot treatment shows an economic advantage of $13.20 per acre over the 2 seed per foot and $53.89 per acre over the 6 seed per foot treatment.

Objective

To evaluate performance of a commercially available cotton at various planting densities growing under Nueces County conditions.

Materials and Methods

Cotton variety FM 835 LLB2 was planted in a replicated study in a randomized complete block design with three replications. Each plot consisted of 12 rows, and seed was planted using a John Deere 1770 NT planter. Soil moisture conditions at planting were marginal at planting depth. Stand counts were taken at three areas in the field for each treatment approximately one month following planting. Rainfall was below normal. The monthly rainfall received was; March = 0.31 inch, April=0 inch, May=1.75 inches, June = 0.71 inch, and July= 0 inch for a total of 2.77 inches from planting through harvest. Plots were harvested on July 19 with a John Deere picker. Fiber analysis was conducted by the Fiber & Bio-polymer Research Institute using standard HVI classing procedures.

Table 1: Agronomic data for cotton density evaluation, Lawhon Farm, Concordia, Nueces County, Texas, 2011.

Planting Date: 3/11/2011 Harvest Date: 7/19/2011	Rows/Plot: 12- with 3 replicates	Row Width: 38 inch
Fertility: 250# 22-10-0	Herbicide: 1 qt/ A Prowl H2O pre-emerge 23 oz/ A Ignite post-emerge	Previous Crop: Grain Sorghum
Planting Rate: 2, 4, 6 plants/foot	Soil Type: Victoria clay	Insecticide: Seed treatment
Cotton Variety: FM 835 LLB2		

Results and Discussion

The data tables below provide comparisons of data on fiber quality, lint yield as well as the final plant population for each seeding rate involved in this test. Turnout percentages are somewhat higher than typical for commercial gins because samples were not processed using multi-stage lint cleaning equipment.

Table 2. Comparison of number of seed per foot, lint yield, fiber quality, number of days to cutout, loan value, and lint value per acre, Lawhon Farm, Nueces County, 2011.

Targeted Seed /Foot[1]	Actual Seed/ Foot[2]	Lint lbs/ac.	TO %	Mic	Len	Str	Unif	Days to Cutout (NAWF=5)	Loan Value (¢/lb)	Lint Value ($/ac)[3]
2	1.64 c	822 a	38.5 a	4.0 a	1.13 a	31.8 a	83.7 a	90 a	53.98 a	805.39
4	3.08 b	869 a	38.1 a	3.8 b	1.13 a	31.3 a	83.5 a	86.0 b	54.12 a	852.66
6	3.92 a	852 a	38.2 a	3.6 b	1.12 a	30.7 a	82.8 a	85.0 b	53.75 a	832.83
LSD (P=0.05)	0.3182	NS	NS	0.207	NS	NS	NS	2.07	NS	NS
P>F	0.0001	0.4997	0.8049	0.0193	0.3941	0.1282	0.0535	0.0054	0.4367	0.5180

Means followed by the same letter do not significantly differ (P=.05, LSD).

[1]Number of seed that was planted per foot of row, 2 seed=27,800, 4 seed=55,600, and 83,400 plants per acre.

[2]Number of seed per foot of row that emerged, 1.64 seed= 22,796, 3.08 seed=42,812, and 3.92 seed=54,488 plants per acre.

[3]Price based on USDA report 9/29/11 which averaged 97.95 for this test.

Table 3. Comparison of number of seed per foot, seed costs, lint yield, and income returned above seed costs, Lawhon farm, Nueces County, 2011.

Targeted Seed/Foot[1]	Actual Plants/Foot[2]	Seed Cost/Acre[3]	Lint Yield (lbs/acre)	$ Return Per Acre Above Seed Cost
2	1.64	$34.06	822	$771.33
4	3.08	$68.13	869	$784.53
6	3.92	$102.19	852	$730.64

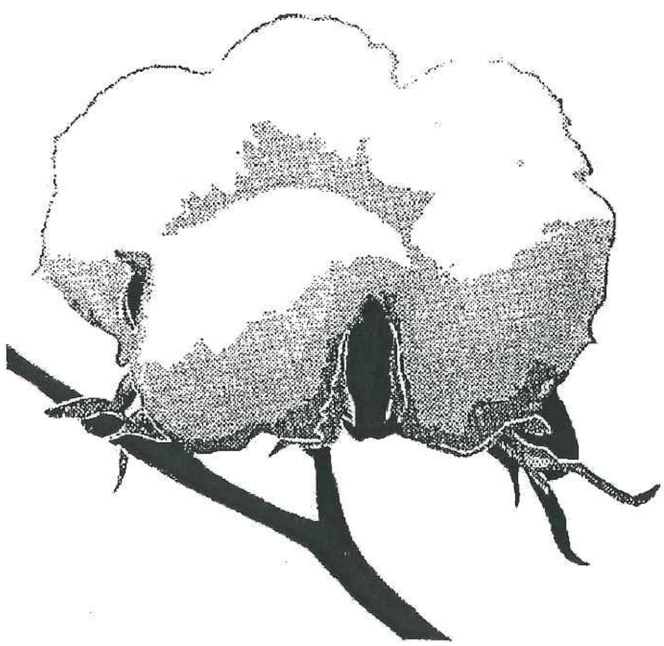
[1]Number of seed that was planted per foot of row, 2 seed=27,800, 4 seed=55,600, and 83,400 plants per acre.
[2]Number of seed per foot of row that emerged, 1.64 seed= 22,796, 3.08 seed=42,812, and 3.92 seed=54,488 plants per acre.
[3]Technolgy fees are included in the seed cost.

Conclusions

There was not a statistical difference in lint yield per acre between the three treatments. However, when seed cost per acre is considered, the 4 seed per foot treatment shows an economic advantage of $13.20 per acre over the 2 seed per foot and $53.89 per acre over the 6 seed per foot treatment. A similar trial conducted in 2010 also showed that the 4 seed per foot density was the most economical.

Acknowledgements

The cooperation and support of Darrell Lawhon for implementing this demonstration is greatly appreciated.



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SKIP ROW VS. CONVENTIONAL COTTON PERFORMANCE

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Jungmann Farms

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
Dr. Dan D. Fromme, Assistant Professor and Extension Agronomist
Dr. Larry Falconer, Professor and Extension Economist
J.R. Cantu, Ag Demonstration Assistant

Summary

This test was located on the Jungmann Farm, north of Bishop on FM 3354. Soil moisture conditions at planting were fair. Results show small differences in returns between the two treatments. There was an advantage of $7.95 per acre for the conventional row-spacing if one owns the cotton picker and a $15.92 per acre advantage for conventional spacing if one uses a custom operator to harvest. There was not a statistical difference in lint yield per acre between the solid row and skip-row systems.

Objective

To evaluate skip-row(2 rows in by one row out configuration) vs. conventional row planted cotton grown under Nueces County environmental conditions.

Materials and Methods

Cotton was planted in a replicated study with four replications in a randomized complete block design. Each plot consisted of 12 rows, 975 feet in length. Soil moisture conditions at planting were fair at planting depth. At time of fertilization, the skip or unplanted row was not fertilized. Stand counts were taken at three areas in the field for each plot approximately one month following planting. Rainfall was below normal. The monthly rainfall received was; March=0.87 inch, April=0 inch, May = 1.54 inches, June = 0.56 inch, for a total of 2.97 inches from planting through harvest. Plots were harvested on July 27, 2011 with a John Deere Cotton Stripper. Seed cotton from 0.33 acre was weighed in the field at harvest using an electronic scale equipped cotton weigh-wagon. Random grab samples were collected from each variety at weighing for lint turn-out and fiber quality analysis. Fiber analysis was conducted by the Fiber & Bio-polymer Research Institute using standard HVI classing procedures.

Table 1: Agronomic data for Conventional Cotton Variety Performance Demonstration, Jungmann Farm, Bishop, (Nueces County), Texas, 2011.

Planting Date: 3/09/2011 Harvest: Date: 7/27/11	Rows/Plot: 12 - with 4 replicates Plot Length 975 ft	Row Width: 30 inch
Fertility: 220# 25-5-0	Herbicide: 1.5 qt/A Trust 1 qt/A Roundup 0.10 oz/A Invoke 10 oz/A Arrow	Previous Crop: Sorghum
Planting Rate: 55,000 plants/Ac	Soil Type: Victoria clay	Cotton Variety: PHY 375 W

Results and Discussion

Poor soil moisture helped reduced the final plant stand as skip row treatments averaged 20,621 plants/acre while the solid row or conventional treatments averaged 30,175 plants/acre.

When comparing the two planting configurations, there were no significant differences in lint yield and gin turnout. Also, micronaire, length, strength, and uniformity values were not significantly different. Differences in loan value and dollar return per acre were not observed.

Table 2. Comparison of number of days to cutout (NAWF=5) lint yield, lint quality, loan value, and lint value per acre between treatments, Jungmann Farm, Nueces County, Texas, 2011.

Treatment	NAWF = 5	Lint (lbs/ac)		Turnout (%)		Mic		Length (inches)		Strength (g/tex)		Unif		Loan Value (¢/lb)		Lint Value ($/acre)*	
Skip Row	95.8 a	729.3	a	39.6	a	4.25	a	1.03	a	27.55	a	81.10	a	50.61	a	**689.71**	**a**
Solid Row	90.8 b	803.3	a	38.6	a	4.05	a	1.01	a	27.20	a	80.45	a	49.46	a	**750.48**	**a**
LSD (P=0.05	3.18	NS		NS		NS		NS		NS		NS		NS		**NS**	
P>F	0.0154	0.0789		0.2969		1.0000		0.2191		0.5521		.3427		0.2824		**0.0789**	

Means in column followed by the same letter are not significantly different by ANOVA.
**** Price based on USDA 9/29/11 report***

The harvest cost estimates for the two treatments were made using the Mississippi State Budget Generator based on the following assumptions:

The harvest machine was assumed to be a six row picker/module with an initial investment of $570,000, with lifetime repair and maintenance costs estimated at 25% of the initial value and a 30% salvage value. The costs were estimated for a machine that would harvest 2,000 acres per year.

Conventional (solid rows) was assumed to be 6-30 inch rows, with the machine width of 15 feet, with a harvest speed of 5 mi./hr. and a field efficiency of 70%. This results in a calculated harvest rate of 6.4 ac./hr,
resulting in 312 hours of annual use, calculated over five years resulting in total use of 1560 hours. These assumptions result in a harvest cost of $82.10 per acre for the conventional planting pattern.

Skip-row machine width was assumed to be 20 feet, with a harvest speed of 5 mi./hr. and a field efficiency of 70%. This results in a calculated harvest rate of 8.5 ac./hr, resulting in 250 hours of annual use, calculated over six years resulting in total use of 1500 hours. These assumptions result in a harvest cost of $65.25 per acre for the skip-row planting pattern.

A charge of five dollars per acre was added to both systems for staging the bales.

Table 3. Conventional vs. Skip Row Economical Analysis

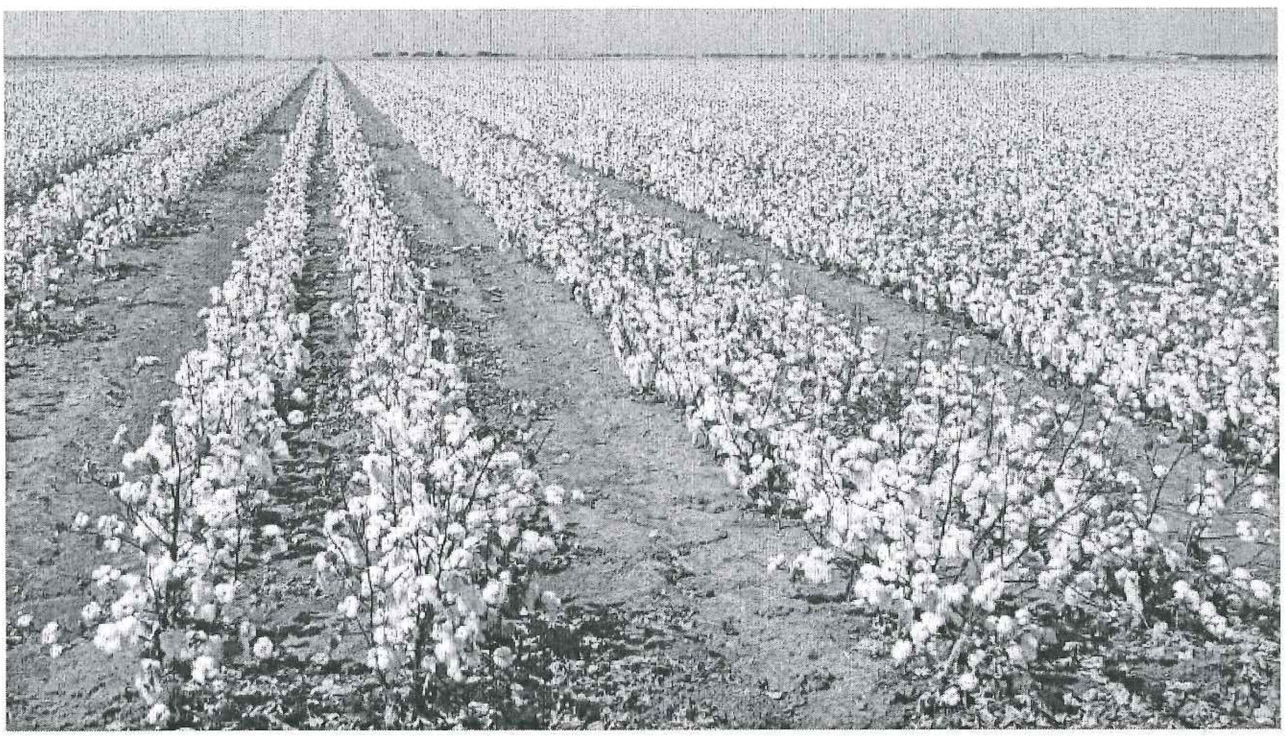
	Conventional	Skip Row	Difference ($)
Yield (lint pounds/acre)	803	729	
Turnout	38.60%	39.60%	
Cotton seed yield (lbs per acre-lint * 1.414)	1,135	1,031	
Market Value (cents per pound @ 41 color 4 leaf grade)	$ 93.46	$ 94.61	
Lint value per acre at loan	$ 750.48	$ 689.71	$ 60.77
Cotton seed value per acre @ $320/ton	$ 181.60	$ 164.96	$ 16.64
Seeding Rate per Acre	55,000	36,667	
Seed Cost per Bag	$ 350.00	$ 350.00	
Technology Fee ($ per Bag)	$ -	$ -	
Insecticide Seed Treatment ($ per Bag)	$ -	$ -	
Seed cost $/Acre	$ 86.69	$ 55.79	$ (30.90)
Technology fee ($ per acre)	$ -	$ -	$ -
Insecticide seed treatment cost ($ per acre)	$ -	$ -	$ -
Fertilizer ($370/ton 25-5-0)	$ 40.70	$ 27.13	$ (13.57)
Picking and Moduling ($0.12 per lint pound) - custom	$ 96.36	$ 87.48	$ (8.88)
Ginning cost per acre ($0.11 per lint pound)	$ 88.33	$ 80.19	$ (8.14)
Advantage for conventional spacing per acre			$ 15.92
Picking and Moduling - owned	$ 87.10	$ 70.25	$ (16.85)
Advantage for conventional spacing per acre			$ 7.95

Conclusions

Based on the economic analysis done in this study, there is an advantage of $7.95 per acre for the conventional row-spacing if one owns the cotton picker and a $15.92 per acre advantage for conventional spacing if one uses a custom operator to harvest.

Acknowledgements

The cooperation and support of Edward and Russell Jungmann for implementing this demonstration is appreciated. Special thanks go to Bayer CropScience for making their electronic cotton weigh-wagon available during harvest in order to obtain seed cotton weights from the entire test area.



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CORN

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Aflatoxin Control Test, *Various Counties Farms*	41

HISTORY OF CORN PRODUTION
NUECES COUNTY 1975-2011

Year	Total Acres Planted	Total Acres Harvested	Bushels /Acre	Total Production (Bushels)	Year	Total Acres Planted	Total Acres Harvested	Bushels /Acre	Total Production (Bushels)
1975	1,600	1,200	28	34,000	2007	10,300	10,000	86	855,000
1976	900	800	53	42,200	2008	5,500	5,400	41	220,000
1977	500	400	53	21,000	2009	9,309	2,312	25	57,800
1978	1,300	1,200	63	75,800	2010	9,866	9,866	97	957,022
1979	6,000	5,800	71	409,700	2011	12,400	12,400	58	719,200
1980	8,200	7,700	42	322,000	2012				
1981	8,300	8,200	90	735,900	2013				
1982	10,200	10,100	60	607,500	2014				
1983	6,900	6,500	49	319,400	2015				
1984	52,200	50,200	43	2,163,900	2016				
1985	42,500	41,600	81	3,355,500	2017				
1986	31,500	30,200	73	2,200,000	2018				
1987	64,800	63,800	84	5,330,100	2019				
1988	69,900	66,400	40	2,656,000	2020				
1989	43,400	33,400	32	1,068,800	2021				
1990	25,000	21,500	24	517,200	2022				
1991	13,200	12,900	70	903,000	2023				
1992	20,000	19,500	80	1,560,000	2024				
1993	41,400	40,900	96	3,926,400	2025				
1994	44,603	44,584	73	3,254,632	2026				
1995	52,818	25,548	55	1,405,140	2027				
1996	17,334	11,000	22	242,000	2028				
1997	18,965	18,695	98	1,862,363	2029				
1998	55,000	45,000	40	1,800,000	2030				
1999	28,997	28,845	81	1,615,000	2031				
2000	29,400	28,000	54	1,497,000	2032				
2001	2,500	19,400	57	1,109,000	2033				
2002	3,200	25,100	42	1,042,000	2034				
2003	1,500	1,300	60	681,000	2035				
2004	8,000	7,800	91	708,000	2036				
2005	7,700	7,600	51	385,000	2037				
2006	3,700	1,700	69	17,000	2038				

Data secured from U.S. Department of Agriculture Statistical Reporting Service and Texas Crop Livestock Reporting Service.

Figures for the 2011 season were estimated using data obtained from the Nueces County FSA Office, and the Nueces County Extension Office

AgriLIFE EXTENSION
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CORN HYBRID PERFORMANCE EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Mayo Farms

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
J.R. Cantu, Ag Demonstration Assistant

Summary

This test was located on the Mayo Farm just south of Robstown on CR 77. Soil moisture conditions at planting were marginal. Rainfall was below normal during the growing season. Ten corn hybrids were evaluated for agronomic performance. The best performing hybrid numerically in this test was DeKalb DKC 64-69 at 3,361.7 pounds per acre, although there was not a statistical difference between it and Warner W4777, B-H 8928, and Syngenta N77P311, while the test average was 2,915.2 pounds per acre.

Objective

To evaluate commercially available corn hybrids growing under Nueces County conditions in a replicated evaluation.

Materials and Methods

Corn hybrids were planted in a replicated test. Each plot consisted of 6 rows with three replicates. Seed was planted using a John Deere Max-emerge 12-row planter. Soil moisture conditions at planting were good at planting depth. Rainfall in the season was below normal and rainfall occurred as follows; February = 0.02, March = 0.59 inch, April = 0 inch, May = 2.97 inches, and June = 0.56 inches for a total of 4.14 inches during the growing season.

Table 1: Agronomic data for corn hybrid demonstration, Mayo Farms, Nueces County, Texas, 2011.

Planting Date: 2/22/2011 **Harvest Date:** 7/8 & 13/2011	**Soil Type:** Victoria clay	**Row Width:** 38 inch **Rows/Plot:** 6
Fertility: 300# 25-5-0	**Herbicide:** Roundup 1qt/A	**Previous Crop:** Grain Sorghum
Planting Rate: 18,500 plants/Ac		**Insecticide:** Seed Treatment

Results and Discussion

Plots of 0.26 acre were machine harvested on July 8 and 13, 2011 and weighed with an electronic weigh wagon in the field.

Table 2. Comparison of plant population, percent moisture, bushel weight, and yield per acre between hybrids, Mayo Farm, Nueces County, Robstown, TX, 2011.

Company	Hybrid	Plt Population per Acre	Moisture (%)		Bu. Wt. (lbs.)		Bu/Ac		Yield/Ac[1] (lbs.)
DeKalb	DKC 64-69 GENVT3P	20,242	13.7	a	58.0	ab	59.6	a	3,361.7
Warner	W4777VT3 Pro	18,205	13.8	a	58.3	a	55.8	ab	3,145.0
B-H Genetics	8928 VTTP	19,606	13.8	a	58.7	a	55.6	ab	3,133.4
Syngenta	N77P3111	20,560	13.6	a	57.3	bc	53.8	abc	3,032.8
Dyna-Gro	56VP69	19,988	13.9	a	57.3	bc	52.0	bcd	2,931.8
Croplan	851 VT3P	18,651	13.7	a	57.0	c	51.0	bcd	2,876.5
Golden Acres	27V01	18,587	13.6	a	56.7	c	50.1	bcd	2,826.2
Pioneer	33F85	16,168	13.8	a	58.0	ab	49.5	cd	2,787.8
Terral	REV 28HR20	18,142	13.7	a	58.0	ab	47.0	de	2,646.7
Triumph	7514H	19,288	13.7	a	57.3	bc	42.8	e	2,410.1
Mean	---		13.75		57.67		51.7		
P>F	---		0.2404		0.0085		0.0007		
LSD (P=.05)	---		NS		.097		5.94		
Std Deviation	---		0.150		0.56		3.46		
CV%	---		1.09		0.98		6.69		

[1]Yield per acre is reported in pounds per acre and adjusted to 15% moisture. Means followed by same letter do not significantly differ (P=.05, LSD)

Conclusions

Using the market price at harvest ($6.10 per Bu), the top yielding hybrid had a gross value of $366/acre, while the least productive hybrid was valued at $262.30 per acre, a difference of $103.70 per acre. This significant difference between hybrids illustrates the need to continue to evaluate hybrids for their production performance under local conditions

Acknowledgements

The cooperation and support of David Mayo and the staff at Mayo Farms for implementing this demonstration is appreciated. The support of seed companies by providing seed is also appreciated. Moreover the support of Monsanto by providing a weigh wagon at harvest is also appreciated. The support provided by Dr. Dan Fromme, Extension Agronomist, for statistical analysis is also appreciated.

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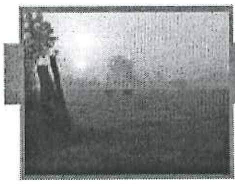
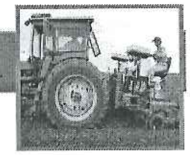


Agriculture and Natural Resources



EVALUATION OF ATOXIGENIC STRAINS OF *ASPERGILLLUS FLAVUS* FOR AFLATOXIN CONTROL IN CORN ON COMMERCIAL FARMS IN TEXAS - 2011

Authors: Thomas Isakeit, Professor & Extension Plant Pathologist, College Station
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Glen C. Moore, IPM Extension Agent, Navarro/Ellis Counties
W. Mark Arnold, County Extension Agent – AG/NR, Ellis County

Summary

Two products, Afla-Guard and AF 36, are labeled for aflatoxin control on corn in Texas. Both consist of strains of *Aspergillus flavus* that do not produce aflatoxin (i.e. they are atoxigenic) and they prevent aflatoxin production by out-competing native, toxin-producing strains for space during the colonization of developing corn seed during the growing season. These products were evaluated for their effectiveness to reduce aflatoxin contamination in corn in four replicated, randomized experiments on non-irrigated farms in different corn production areas of Texas. The experimental replicates (8 rows by 100 feet long) were small enough to allow precise application of the atoxigenic strains by hand, but large enough to harvest with the grower's combine, and were separated by a distance of 100 feet. Rainfall was substantially below normal during the growing season, providing sub-optimal conditions for activation of these products. At the Ellis county farm, Afla-Guard treatment significantly (P=0.05) reduced the average aflatoxin levels to 37% of the control, which was 340 parts per billion (ppb). At the Hill county farm, aflatoxin levels with the AF 36 and Afla-Guard treatments (including an Afla-Guard treatment at V5-V6) were 35-42% of the control, which was 161 ppb. However, this reduction was not uniform among replicates, nor was it statistically significant (P=0.05). On farms in Colorado and Nueces counties, the levels of aflatoxin in the untreated portions were probably not high enough (4 and 31 ppb, respectively) to economically justify treatment, particularly in the Nueces county field that yielded 40 bu/A. At the Nueces county farm, aflatoxin was significantly (P=0.05) reduced with Afla-Guard, but not AF 36. The proportions of harvested seed colonized by *A. flavus* following atoxigenic strain treatments in the experiments ranged from 1-13%, which were 2.5× to 4× higher than that of the controls. Our experimental approach can be used to evaluate timing of application of atoxigenic strains or other factors that can affect aflatoxin management.

Objective

The objective of these experiments was to evaluate two products, AF 36 and Afla-Guard, to control aflatoxin in corn in replicated, randomized experiments in commercial fields in different corn production areas of Texas (Fig. 2). The specific objectives were: (1) to compare an application earlier than V7 with the recommended application timing, V7 to R1; (2) to compare the effectiveness of AF 36 and Afla-Guard in the same field.

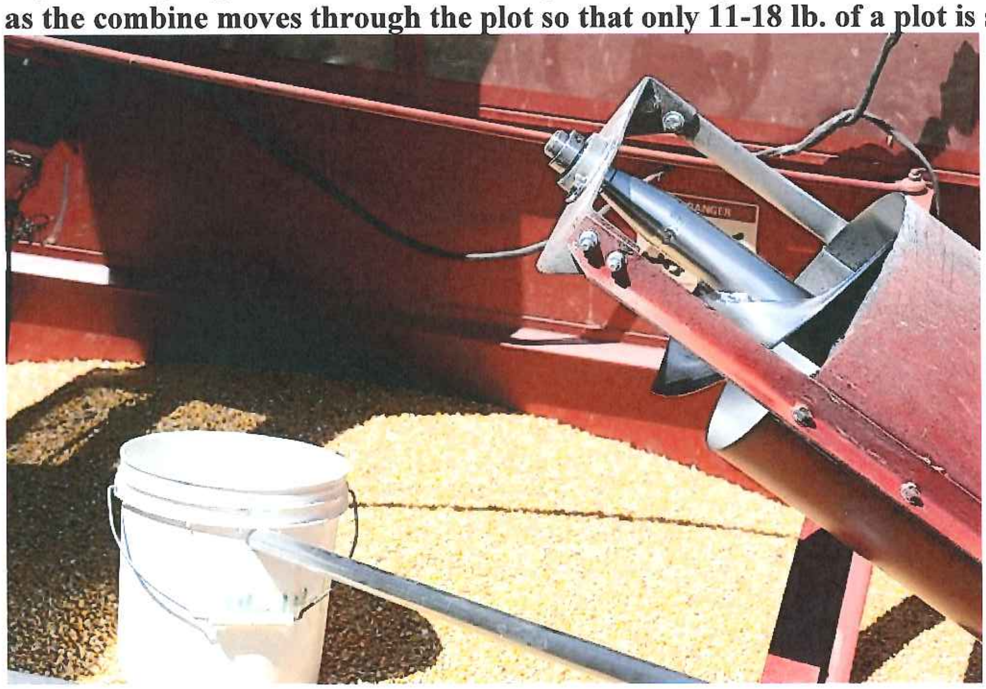
Materials and Methods

Experimental Design: Each treatment was replicated four times in a randomized complete block design and each replicate consisted of 8, 100-ft rows. Replicates were separated from each other by a distance of 100 ft. The specific treatments are listed in the sections for each county. In all experiments, the atoxigenic strains were applied at 10 lb/A by hand to the tops of rows.

The replicates were harvested with the grower's combine. Samples were obtained by holding a bucket over the auger that moves the corn from the concave to the combine's grain bin (Fig. 1). To reduce the possibility of cross-contamination, incoming grain was not collected for the first 30 seconds. Thereafter, only a portion of the harvest was continuously collected, allowing for sampling of the whole replicate (i.e. stream sampling). The amount of corn collected per plot ranged from 11-18 lb. Prior to grinding with a Romer mill, the samples were split in half with a Boerner divider. Total aflatoxin was quantified from 50-g subsamples using the Vicam Aflatest USDA FGIS procedure.

After harvest, the proportion of intact corn kernels colonized by *A. flavus* was determined as follows. Kernels were surface-disinfested in 10% bleach for two min, rinsed twice with sterile water and incubated 4 days on moist, sterile paper towels in 8 in.× 8 in. aluminum trays sealed in Zip-loc plastic bags. Two hundred kernels were evaluated for each replicate.

Fig. 1. Sampling corn for aflatoxin analysis in the experiments. The bucket is held under the auger as the combine moves through the plot so that only 11-18 lb. of a plot is sampled.



Nueces county: The experiment consisted of the following treatments: AF 36 applied on Mar. 30, when corn was "knee high" (V4-V5); AF 36 applied on Apr. 20, when corn was at V10; Afla-Guard applied on Apr. 20; and a control.

The hybrid 'Pioneer 33F85' was planted Feb. 22 on a Victoria clay (fine, montmorillonitic, hyperthermic, Udic Pellusterts) at a population of 18,046 plants per acre, using a 38 in. row spacing. The fertilizer applied was 300 lb/A 25-5-0 and 1 qt/A Roundup was used for weed control. Corn was at VT on Apr. 25. Rain occurred in Feb. (0.02 in.), Mar. (0.59 in.), May (2.97 in.), and Jun. (0.56 in.). Details of weather conditions, from the second atoxigenic application to harvest, are shown in Fig. 3. On Jul. 8, the treatments were harvested, but only 6 of the 8 rows were harvested using the grower's 6-row combine. The grower's yield for this field was 45 bu/A with a level of 15 ppb aflatoxin.

Hill county: The experiment consisted of the following treatments: Afla-Guard applied on Apr. 26, when corn was "knee high" (V5-V6); Afla-Guard applied on May 10, when the corn was at V9-V10; AF 36 applied on May 10; and a control.

The hybrids ('DK 69-43' and 'DK 69-40') were planted Mar. 19 in Houston black clay (fine, montmorillonitic, thermic Udic Pellusterts) at a seeding rate of 22,900/A and a 30 in. row spacing. The fertilizers applied were 120 lb/A NH_3 and 7 gal/A 11-37-0. The herbicide used was Roundup. Rain occurred May 2 (0.8 in.), May 11 (1.4 in.), May 20 (0.06 in.), May 21 (trace), and Jun. 21 (0.5 in.). Details of weather conditions, from the second atoxigenic application to harvest, are shown in Fig. 4. On Jul. 20, the treatments were harvested. The grower's yield in this field was 30 bu/A.

Colorado county: The experiment consisted of the following treatments: AF 36 applied May 5, when corn was 50% was either at VT or R1; Afla-Guard applied May 5; and a control.

The hybrid 'DK66-05' was planted March 26 in Mohat loam (coarse-silty, mixed, superactive, calcareous, hyperthermic Typic Udifluvents), using a 36 in. row spacing. Details of weather conditions, from the application of the atoxigenics to harvest, are shown in Fig. 5. The field was harvested Jul. 22. The grower's yield in this field was 89 bu/A.

Ellis county: The experiment consisted of Afla-Guard applied on May 10, when corn was at V6-V9, and a control.

The hybrids ('DK69-40' and 'P1498 HR') were planted Mar. 10 in Burleson clay (Fine, montmorillonitic, thermic Udic Pellusterts), using a 36" row spacing. The treatments were harvested Jul. 29. The grower's yield was 40 bu/A.

Results

Nueces county: The average level of aflatoxin in the control plots was 31 ppb (range: 22-50 ppb) (Table 1). The average level of aflatoxin with the Afla-Guard treatment at V10 growth stage was 2 ppb (range: 0-4.5 ppb), which was significantly less (P=0.05) than that of the control. This is a reduction to 6% of the control. In contrast, neither of the AF 36 treatments significantly reduced aflatoxin levels in comparison with the control (Table 1).

Table 1. Comparison of aflatoxin among treatments, Mayo Farm, Nueces county, Robstown, TX.

Treatment	Aflatoxin (PPB)*	Range of Aflatoxin (PPB)	% Colonization of kernels by *A. flavus**
AF 36 on 3/30/11 (V4-V5)	27 a	5 - 67	7 a
AF 36 on 4/20/11 (V10)	30 a	1 - 65	10 a
Afla-Guard on 4/20/11 (V10)	2 b	0 - 4	7 a
Control	31 a	22 - 50	2 b

*Mean of four replicates. Log-transformed aflatoxin data was analyzed. Numbers within a column followed by different letters are significantly (P=0.05) different using Fisher's protected LSD.

The levels of harvested kernels colonized by *A. flavus* ranged from 7-10% with the atoxigenic strain treatments, which was significantly (P=0.05) greater than that of the control, 2% (Table 1).

Hill county: The mean aflatoxin levels were 35-42% of the control with AF 36 and Afla-Guard treatments (Table 2). However, because of the variability among replicates within treatments, these differences were not statistically significant (P=0.05) using an analysis of variance. Friedman's test, a nonparametric ranking test, also did not show any statistical difference (χ_r^2=3.3, 3 df).

The proportion of harvested kernels colonized by A. flavus ranged from 9-13% with the Afla-Guard strain treatments, which was significantly (P=0.05) greater than that of the control, 3% (Table 2). Kernels from the AF 36 treatment had a higher proportion of colonization (6%) than that of the control, but this difference was not statistically significant (*P*=0.05).

Table 2. Comparison of aflatoxin among treatments, Hejl Farm, Hill county, Hillsboro, TX.

Treatment	Aflatoxin (PPB)*	Range of Aflatoxin (PPB)	% Colonization of kernels by *A. flavus**
Afla-Guard on 4/26/11 (V5-V6)	60 a	7 - 140	13 a
Afla-Guard on 5/10/11 (V9-V10)	67 a	6 - 120	9 ab
AF 36 on 5/10/11 (V9-V10)	56 a	34 - 96	6 bc
Control	161 a	64 - 270	3 c

*Mean of four replicates. Log-transformed aflatoxin data was analyzed. Numbers within a column followed by different letters are significantly (*P*=0.05) different using Fisher's protected LSD.

Colorado county: The levels of aflatoxin in the treatments and the control were all very low; the highest level was 12 ppb in one replicate (Table 3). The proportion of harvested kernels colonized by A. flavus was low at this site compared with the other three sites in the study, but there was a significantly (*P*=0.05) higher level of *A. flavus* colonization with the Afla-Guard treatment than the AF 36 or control (Table 3).

Table 3. Comparison of aflatoxin among treatments, Mahalitc Farm, Colorado county, Eldridge, TX.

Treatment	Aflatoxin (PPB)*	Range of Aflatoxin (PPB)	% Colonization of kernels by *A. flavus**
Afla-Guard on 5/5/11 (VT-R1)	0 a	0	3 a
AF 36 on 5/5/11 (VT-R1)	0 a	0	1 b
Control	4 a	0 - 12	1 b

*Mean of four replicates. Numbers within a column followed by different letters are significantly (*P*=0.05) different using Fisher's protected LSD.

Ellis county: The Afla-Guard treatment applied at V6-V9 significantly (*P*=0.05) reduced aflatoxin to 126 ppb, which was 37% of the control, 340 ppb (Table 4). The proportion of harvested kernels colonized by *A. flavus* was significantly (*P*=0.05) higher with the Afla-Guard treatment, as compared with the control.

Table 4. Comparison of aflatoxin between treatments, Wilson Farm, Ellis county, Avalon, TX.

Treatment	Aflatoxin (PPB)*	Range of Aflatoxin (PPB)	% Colonization of kernels by *A. flavus**
Afla-Guard on 5/10/11 (V6-V9)	126 a	86 - 150	10 a
Control	340 b	180 - 630	4 a

*Mean of four replicates. Log-transformed aflatoxin data was analyzed. Numbers within a column followed by different letters are significantly (*P*=0.05) different using an analysis of variance.

Discussion

The replicated experiments conducted on non-irrigated farms showed that the benefits of applying atoxigenic strains under the conditions of the extreme drought of 2011 were not consistent. On two of the farms, in Nueces and Ellis counties, the application of Afla-Guard significantly (P=0.05) reduced aflatoxin contamination, in comparison with the controls. At the Nueces county farm, the level of aflatoxin in the control was relatively low and unless the corn was intended for food or dairy feed, it is questionable whether there would have been an economic benefit from application of an atoxigenic strain. At the Hill county location, there were reductions in aflatoxin with Afla-Guard and AF 36 treatments that were not statistically different from the control. At the Colorado county location, the level of aflatoxin the control was too low to warrant application of atoxigenic strains. So, out of the four experiments, just the one in Ellis county showed a clear benefit in applying an atoxigenic strain.

One of our hypotheses was that the two atoxigenic strains have similar activity. In the Nueces county experiment, there was a significant reduction in aflatoxin with Afla-Guard, but not AF 36. In contrast, in Hill county, the trend of reduction with AF 36 was similar to that of the Afla-Guard treatment. The reason for this discrepancy is not known. Based on preliminary experiments showing differences in sporulation of the two strains over different relative humidities (B. Hassett, unpublished), our hypothesis to explain this discrepancy is that the atoxigenic formulations may differ in their ability to sporulate under extremely dry conditions. The experiments done to date are insufficient to know whether the strains will have similar activity; more experiments are needed.

We also hypothesized that an early application (i.e. earlier than V9) would be advantageous in a drought year, as the material may have more opportunity to sporulate, especially following an early-season rain. For example, with the Hill county experiment, the Afla-Guard applied V5-V6 was exposed to one more rain shower than Afla-guard applied at V9-V10. In lab tests, both atoxigenic strains sporulate, but not profusely, between 84% and 100% relative humidity (B. Hassett, unpublished). Such conditions occurred for 5-10 hr on almost a daily basis at the Nueces county location (Fig. 3). A longer exposure to conditions favoring sporulation will allow for more spore production. Additional experiments are needed to determine optimal timing.

There were significantly higher levels of colonization by *A. flavus* in harvested, non-symptomatic corn kernels from atoxigenic-treated plots, as compared with the control. However, no further testing was done to determine toxigenicity of the *A. flavus* colonies. A 2009 study found a higher incidence of visible *A. flavus* on ears of drought-stressed corn treated with an atoxigenic strain and most of these isolates were atoxigenic (T. Isakeit *et al.*, Can. J. Plant Pathol., 32:407-408, 2010, Abstract). Monitoring *A. flavus* colonization of harvested kernels can provide additional information on the effectiveness of atoxigenic strain treatment.

This research shows that it is possible to measure the effects of atoxigenic strains using plot sizes that are large enough to harvest with the grower's combine, but small enough to treat by hand. Treating by hand allows for precise placement of the atoxigenic formulations. The 100-ft separation of replicates is large enough to minimize cross-contamination. Previous studies have shown a gradient of movement which is negligible at 30-42 ft. from a point source (Olanya *et al.*, Plant Disease 81:576, 1997; B. Hassett, unpublished). Yet, the separation is small enough to have replicates close enough to minimize variability in aflatoxin indirectly affected by variations in soil type, fertility, or drainage. With our experimental approach, it is possible to evaluate timing and dosage of atoxigenic strains in experimental designs that will take into account the variation of aflatoxin levels that occur naturally within fields. With experiments done over several years, we anticipate generating information that will allow growers in different areas of Texas to have an understanding of when they will benefit from an atoxigenic treatment.

Acknowledgements

We appreciate the cooperation and support of the growers, Joe Wilson, Stephen Mahalitc, Edwin Hejl, and David Mayo, and the technical assistance of J.R. Cantu, Robert Kwiatkowski, and Brandon Hassett.

Fig. 2. Locations of the experiments. Counties indicated by first initial.

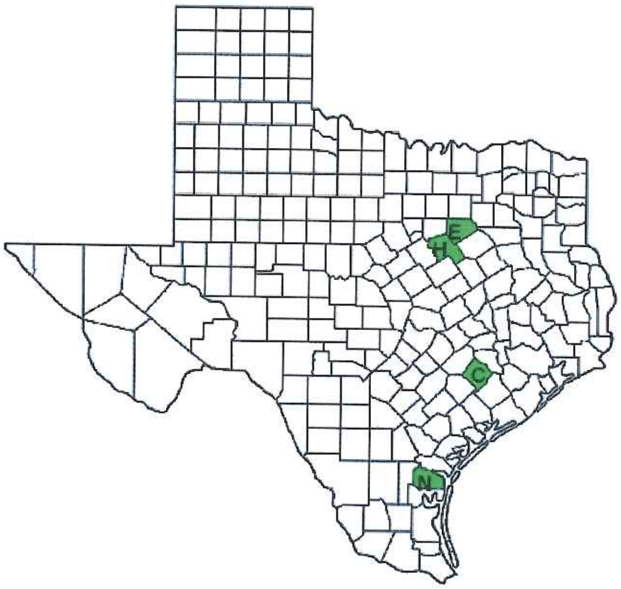


Fig. 3. Daily weather conditions during the experiment in Nueces county. Green bars indicate the number of hours per day that the relative humidity exceeds 84%.

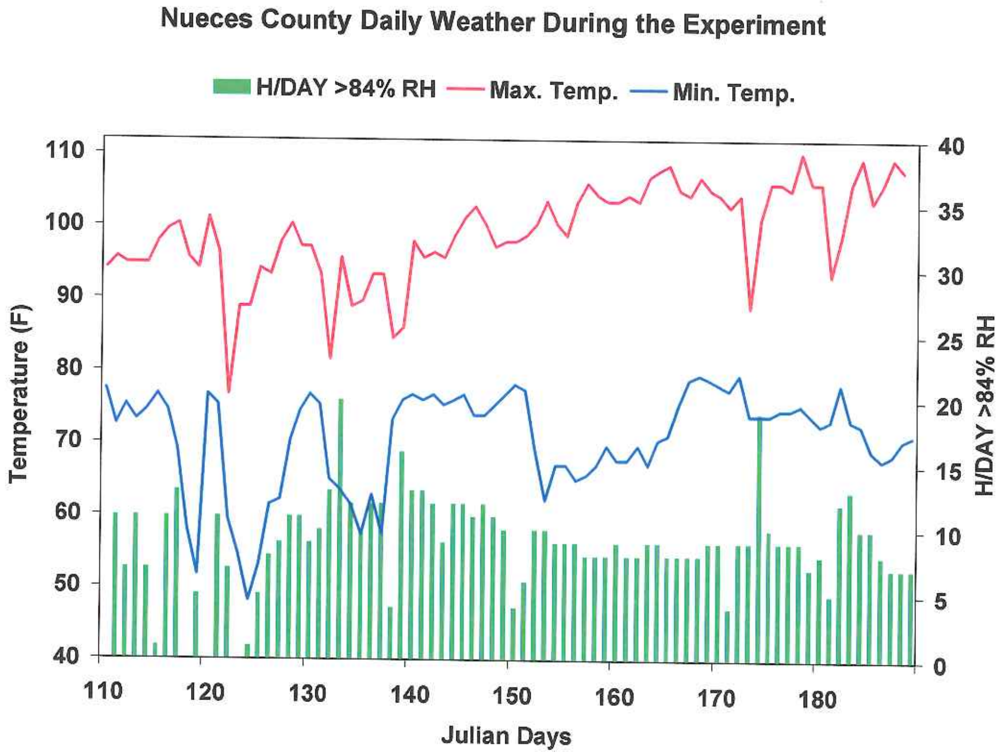


Fig. 4. Daily weather conditions during the experiment in Hill county. Green bars indicate the number of hours per day that leaf wetness exceeds 10, on a scale of 0-14.

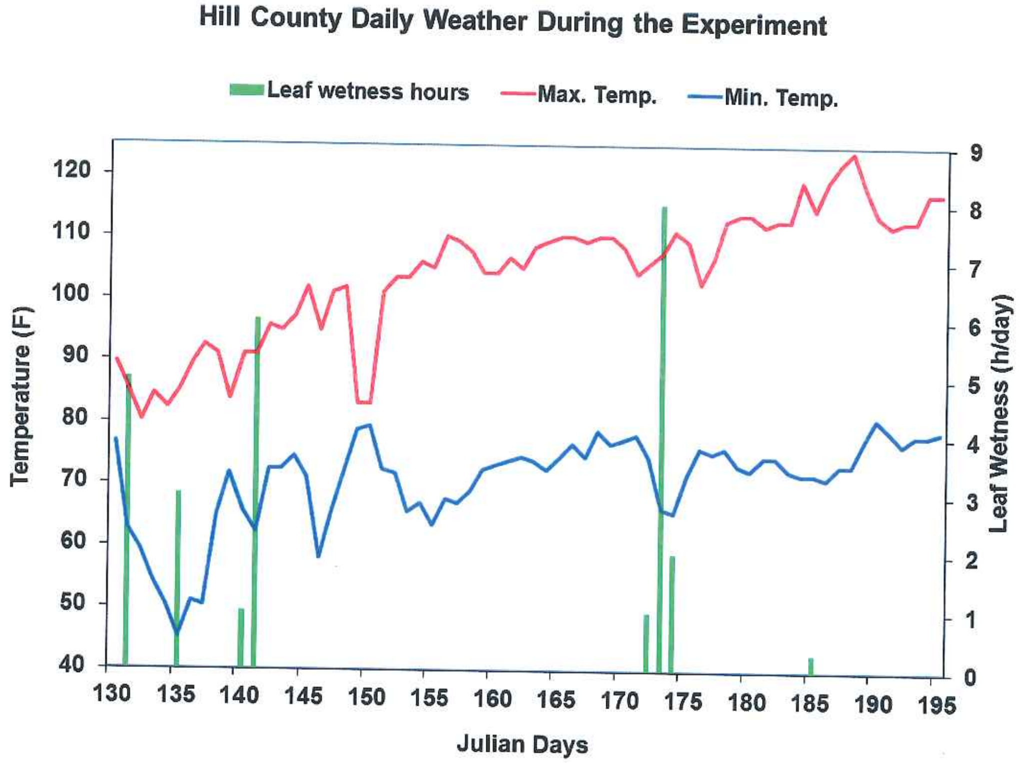
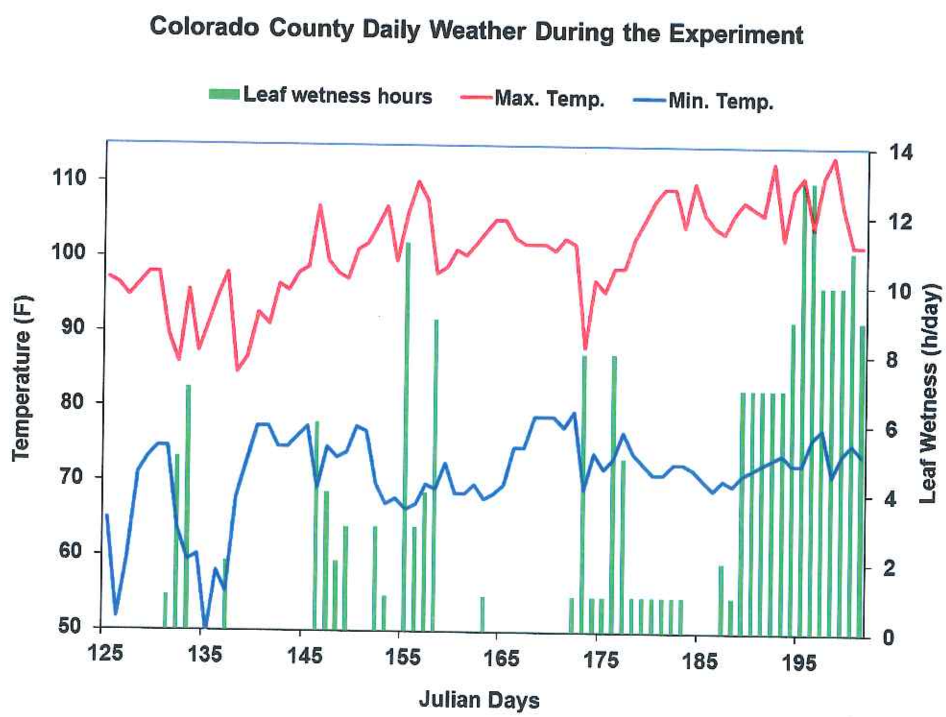


Fig. 5. Daily weather conditions during the experiment in Colorado county. Green bars indicate the number of hours per day that leaf wetness exceeds 10, on a scale of 0-14.



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SORGHUM

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HISTORY OF SORGHUM PRODUTION
NUECES COUNTY 1961-2011

Year	Total Acres Harvested	CWT /Acre	Total (1000 CWT) Production	Year	Total Acres Harvested	CWT /Acre	Total (1000 CWT) Production
1961	179,000	21.28	3,809	1997	204,606	47.00	9,619
1962	141,000	14.00	1,974	1998	190,832	30.00	5,725
1963	191,000	17.02	3,255	1999	184,306	44.00	8,110
1964	296,400	21.34	4,190	2000	177,200	34.00	6,025
1965	204,200	40.21	8,251	2001	122,600	44.00	5,395
1966	223,000	28.73	6,404	2002	187,000	35.00	6,545
1967	250,000	24.53	6,132	2003	179,800	49.00	8,810
1968	223,800	28.01	6,269	2004	163,500	46.00	7,521
1969	228,700	28.56	6,530	2005	157,300	33.46	5,264
1970	238,900	32.33	7,724	2006	92,400	15.68	1,437
1971	213,900	23.86	5,104	2007	184,000	38.64	7,110
1972	188,200	30.74	5,785	2008	188,900	36.96	6,982
1973	280,000	27.50	7,700	2009	49,800	22.40	1,115
1974	299,900	31.86	9,452	2010	183,430	47.30	8,676
1975	294,400	28.00	8,243	2011	141,867	38.00	5,390
1976	275,000	28.00	7,700	2012			
1977	260,000	26.88	6,978	2013			
1978	227,000	27.33	6,204	2014			
1979	240,300	32.24	7,747	2015			
1980	243,000	28.71	6,978	2016			
1981	279,600	37.34	10,440	2017			
1982	270,000	36.43	9,837	2018			
1983	149,000	31.13	4,639	2019			
1984	267,200	31.93	8,532	2020			
1985	189,500	41.23	7,813	2021			
1986	154,400	36.05	5,566	2022			
1987	115,000	41.09	4,725	2023			
1988	114,800	32.18	3,694	2024			
1989	175,700	31.00	5,447	2025			
1990	184,622	26.00	4,987	2026			
1991	177,500	35.00	6,212	2027			
1992	185,000	32.00	5,920	2028			
1993	147,590	44.00	6,418	2029			
1994	155,654	32.00	4,981	2030			
1995	101,805	43.00	4,378	2031			
1996	175,000	17.00	2,975	2032			

Data secured from U.S. Department of Agriculture Statistical Reporting Service and Texas Crop Livestock Reporting Service.

Figures for the 2011 season were estimated using data obtained from the Nueces County FSA Office, and the Nueces County Extension Office

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GRAIN SORGHUM HYBRID PERFORMANCE EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011
Cooperator: Jerry Faske Farm

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
J.R. Cantu, Demonstration Assistant- Nueces County

Summary

This test was located on the Faske Farm east of Bishop on CR 6. Soil conditions at planting were marginal. Rainfall was below normal in the growing season. Sorghum hybrids were evaluated for agronomic performance. The best performing hybrid in this test was Golden Acres 737 at 3,864 pounds per acre, while the test average was 2,615 pounds per acre.

Objective

To evaluate commercially available and experimental grain sorghum hybrids growing under Nueces County conditions in a side-by-side evaluation.

Materials and Methods

Grain sorghum hybrids were planted in a side-by-side comparison with a tester hybrid Garst 5401 planted throughout the test to account for field variability. Each plot consisted of 8 rows 700 feet in length. Seed was planted using a IH Model 92 Cyclo-Air Planter. Rainfall in the season was below normal and rainfall occurred as follows; March = 0.43 inch, April = 0 inch, May = 1.55 inches, and June = 1.06 inches for a total of 3.04 inches during growing season. The plots were machine harvested on June 28, 2011 and weights obtained from an electronic weigh wagon.

Table 1: Agronomic data for grain sorghum hybrid demonstration, Faske Farm, Nueces County, Texas, 2011.

Planting Date: 3/11/2011	**Rows/Plot:** 8	**Row Width:** 36 inch
Fertility: 250# 25-5-0 + 1qt Humate 1 gal/ac Medina Soil activator and Molasses	**Herbicide:** None	**Previous Crop:** Grain Sorghum
Planting Rate: 62,500 plants/Ac	**Soil Type:** Victoria clay	**Insecticide:** Seed treatment

Results and Discussion

Table 2. Comparison of plant population per acre, percent moisture, bushel weight, and yield per acre between hybrids, Faske Farm, Nueces County, TX, 2011.

Sorghum Hybrid	Plt Pop per Ac	Moisture %	Bu. Wt. (Lbs.)	Yield/Acre[1] (Lbs.)
Golden Acres 737	38,719	16.3	58.0	3,864
Golden Acres 3464	42,349	15.7	56.0	3,788
DeKalb DKS 37-07	37,207	16.3	59.0	3,534
B-H Genetics 5350	41,745	16.3	56.0	3,516
Triumph TRX85131	40,837	17.9	54.0	3,002
Pioneer 83G19	34,182	16.1	58.0	2,920
Pioneer 83P99	35,089	19.1	58.0	2,897
Pioneer 84P74	35,997	17.2	57.0	2,811
Golden Acres 5401	39,572	17.0	58.0	2,796
DeKalb DKS 53-67	36,300	17.7	53.0	2,795
DeKalb DKS 44-20	36,904	16.3	59.0	2,738
Golden Acres 3696	39,324	16.3	57.0	2,578
Pioneer 82P75	37,207	18.0	57.0	2,554
Golden Acres 5308	39,930	16.5	59.0	2,533
Golden Acres x2060	27,829	18.5	57.0	2,531
DeKalb DKS 49-45	39,022	17.0	50.0	2,501
Pioneer 84G62	37,812	20.9	57.0	2,364
Golden Acres 3552	37,812	16.8	56.0	2,316
Golden Acres 3545	40,837	16.9	55.0	2,295
Golden Acres 486	42,350	16.0	56.0	2,258
Golden Acres x2052	40,837	17.6	53.0	2,257
Gayland Ward 9417	33,879	16.9	57.0	2,231
Golden Acres 5464	40,534	16.8	55.0	2,179
Warner W-965-E	35,089	17.9	58.0	1,786
Golden Acres x2100	36,602	20.9	51.0	1,721
Terral-TV 96H81	41,442	16.9	57.0	1,235
AVERAGE	38,054	17.3	56.0	2,615

[1]*Yield per acre is reported in pounds per acre and adjusted to 14% moisture. The yields are also adjusted using accuracy testing to account for field variations.*

Conclusions

Using the market price at harvest ($10.00 per cwt), the top yielding hybrid had a value of $386.40/acre, while the least productive hybrid was valued at $123.50 per acre, a difference of $262.90 per acre. This significant difference between hybrids illustrates the need to continue to evaluate hybrids for their production performance under local conditions.

Acknowledgements

The cooperation and support of Jerry Faske, James Faske, Sharon Zieschang and Cathy Zieschang and the staff at Faske Farms for implementing this demonstration is appreciated and the support of seed companies by providing seed is also appreciated. The support of Harvey Buehring, representing Monsanto, for providing a weigh wagon and collecting data at harvest is also greatly appreciated.

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GRAIN SORGHUM HYBRID PERFORMANCE EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Ordner Farms

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
J.R. Cantu, Ag Demonstration Assistant

Summary

This test was located on the Ordner Farm in Petronilla on CR 69. Soil moisture conditions at planting were marginal. Rainfall was below normal during the growing season. Nine sorghum hybrids were evaluated for agronomic performance. The best performing hybrid numerically in this test was DeKalb DKS 53-67 at 5,569 pounds per acre, although there was not a statistical difference between it and Pioneer 83G19, while the test average was 5,021 pounds per acre.

Objective

To evaluate commercially available grain sorghum hybrids growing under Nueces County conditions in a replicated evaluation.

Materials and Methods

Grain sorghum hybrids were planted in a replicated test. Each plot consisted of 12 rows with three replicates. Seed was planted using a John Deere Max-emerge II 24-row planter. Soil moisture conditions at planting were good at planting depth. Rainfall in the season was below normal and rainfall occurred as follows; March = 0.34 inch, April = 0 inch, May = 1.75 inches, and June = .47 inches for a total of 2.56 inches during the growing season. Plant populations were determined on March 28, 2011 and percent bloom was determined on May 11, 2011.

Table 1: Agronomic data for grain sorghum hybrid demonstration, Ordner Farms, Nueces County, Texas, 2011.

Planting Date: 3/3/2011 **Harvest Date:** 6/28/2011	**Soil Type:** Victoria clay	**Row Width:** 30 inch **Rows/Plot:** 12
Fertility: 300# 30-0-0 3S	**Herbicide:** Aatrex@ 1qt/A	**Previous Crop:** Cotton
Planting Rate: 57,000 plants/Ac		**Insecticide:** Seed Treatment

Results and Discussion

Plots were machine harvested on June 28, 2011 and weighed with an electronic weigh wagon in the field.

Table 2. Comparison of plant population, percent bloom, percent moisture, bushel weight, and yield per acre between hybrids, Ordner Farm, Nueces County, Petronilla, TX, 2011.

Sorghum Hybrid	Plt Population per Acre	Bloom (%) 5/11/11	Moisture (%)	Bu. Wt. (lbs.)	Yield/Acre[1] (lbs.)
DeKalb DKS 53-67	49,103	91	15.7 a	59.7 a	5,569 a
Pioneer 83G19	39,508	100	15.1 a	59.3 a	5,369 ab
Terral TV 96H81	49,184	100	15.2 a	61.0 a	5,112 bc
Triumph TRX85131	41,121	75	15.0 a	58.0 bc	5,067 cd
Golden Acres 5308	42,088	100	15.0 a	59.3 ab	4,962 cd
Golden Acres 3696	48,055	100	14.9 a	59.7 ab	4,945 cd
B-H Genetics 5350	44,346	100	15.0 a	57.3 c	4,829 cde
Gayland Ward 9417	42,572	100	15.0 a	60.0 a	4,794 de
Warner W-965-E	37,895	1	15.5 a	58.0 bc	4,546 e
LSD (P=.05)			0.726	1.69	283.60
CV			2.77	1.65	3.22
Grand Mean			15.15	59.15	5,021.48

[1]Yield per acre is reported in pounds per acre and adjusted to 14% moisture. Means followed by same letter do not significantly differ (P=.05, LSD)

Conclusions

Using the market price at harvest ($10.00 per cwt), the top yielding hybrid had a gross value of $556.90/acre, while the least productive hybrid was valued at $454.60 per acre, a difference of $102.30 per acre. This significant difference between hybrids illustrates the need to continue to evaluate hybrids for their production performance under local conditions.

Acknowledgements

The cooperation and support of Bill Ordner, Scott Ordner, Shane Suggs and the staff at Ordner Farms for implementing this demonstration is appreciated. The support of seed companies by providing seed is also appreciated. Moreover the support of Monsanto by providing a weigh wagon at harvest is also appreciated. The support provided by Dr. Dan Fromme, Extension Agronomist, for statistical analysis is also appreciated.

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GRAIN SORGHUM HYBRID PERFORMANCE EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperators: Larry & Donnie McNair

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
J.R. Cantu, Ag Demonstration Assistant

Summary
This test was located on the McNair Farm in Driscoll on CR 79. Soil moisture conditions at planting were good. Rainfall was below normal during the growing season. Twelve sorghum hybrids were evaluated for agronomic performance. The best performing hybrid numerically in this test was Pioneer 83G19 at 5,401 pounds per acre, although there was not a statistical difference between it and Pioneer 84G62, Pioneer 83P99, and DeKalb DKS 53-67, while the test average was 4,914 pounds per acre.

Objective
To evaluate commercially available grain sorghum hybrids growing under Nueces County conditions in a replicated evaluation.

Materials and Methods
Grain sorghum hybrids were planted in a replicated test. Each plot consisted of 6 rows with three replicates. Seed was planted using a John Deere Max-emerge II 32-row planter. Soil moisture conditions at planting were good at planting depth. Rainfall in the season was below normal and rainfall occurred as follows; March = 0.90 inch, April = 0 inch, May = 2.3 inches, and June = .34 inches for a total of 3.54 inches during the growing season. Plant populations were determined on March 28, 2011 and percent bloom was determined on May 4, 2011.

Table 1: Agronomic data for grain sorghum hybrid demonstration, McNair Farm, Nueces County, Texas, 2011.

Planting Date: 3/1/2011 **Harvest Date:** 6/24/2011	**Soil Type:** Victoria clay	**Row Width:** 30 inch **Rows/Plot:** 6
Fertility: 240# 25-5-0- 3S 0.7 gal/A Hydra-Hume	**Herbicide:** Aatrex@ 1qt/A 10 oz/A Outlook Peak @ 0.23 oz/A	**Previous Crop:** Grain Sorghum
Planting Rate: 56,000 plants/Ac		**Insecticide:** Seed Treatment

Results and Discussion

Plots were machine harvested on June 24, 2011 and weighed with an electronic weigh wagon in the field.

Table 2. Comparison of plant population, percent bloom, percent moisture, bushel weight, and yield per acre between hybrids, McNair Farm, Nueces County, Driscoll, TX, 2011.

Sorghum Hybrid	Plt Population per Acre	Bloom (%) 5/4/11	Moisture (%)	Bu. Wt. (lbs.)	Yield/Acre[1] (lbs.)
Pioneer 83G19	36,767	18	17.3 a	59.7 a	5,401 a
Pioneer 84G62	45,958	3	17.3 a	59.7 a	5,261 ab
Pioneer 83P99	41,121	1	17.3 a	59.0 a	5,208 ab
DeKalb DKS 53-67	47,700	8	16.8 a	59.3 a	5,123 abc
Triumph TRX85131	45,958	4	17.1 a	58.3 ab	5,031 bcd
Pioneer 84P74	48,377	36	17.1 a	59.7 a	4,975 bcd
Terral TV 96H81	48,861	30	16.9 a	59.0 a	4,834 cde
B-H Genetics 5350	47,894	50	16.9 a	56.3 c	4,808 cde
Gayland Ward 9417	43,781	38	16.7 a	59.0 a	4,703 def
Golden Acres 3696	47,893	50	16.6 a	58.7 a	4,617 ef
Golden Acres 5308	43,540	46	17.1 a	58.3 ab	4,617 ef
Warner W-965-E	44,023	1	17.6 a	56.7 bc	4,398 f
LSD (P=.05)			0.551	1.86	338.33
CV			1.91	1.88	4.07
Grand Mean			17.06	58.64	4,914.66

[1]Yield per acre is reported in pounds per acre and adjusted to 14% moisture. Means followed by same letter do not significantly differ (P=.05, LSD)

Conclusions

Using the market price at harvest ($10.00 per cwt), the top yielding hybrid had a gross value of $540.10/acre, while the least productive hybrid was valued at $439.80 per acre, a difference of $100.30 per acre. This significant difference between hybrids illustrates the need to continue to evaluate hybrids for their production performance under local conditions.

Acknowledgements

The cooperation and support of the staff at McNair Farms for implementing this demonstration is appreciated and the support of seed companies by providing seed is also appreciated. The support provided by Monsanto by providing a weigh wagon at harvest is also appreciated. The support provided by Dr. Dan Fromme, Extension Agronomist, for statistical analysis is also appreciated.

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GRAIN SORGHUM CLUMP PLANTING VS. CONVENTIONAL PLANTING

Texas AgriLife Extension Service
Nueces County

Cooperator: David Ocker

Authors: Jeffrey R. Stapper, County Extension Agent – Ag/NR
J.R. Cantu, Demonstration Assistant-Nueces County

Summary

This test was located on the Ocker Farm south of Corpus Christi off CR 18. Rainfall during the growing season was below normal. There was not a significant difference between the clump vs. conventional planting methods, although there was a numeric difference as the clump sorghum yield was 3,683 pounds per acre while the conventional sorghum yield was 3,545 pounds per acre.

Objective

To evaluate planting of grain sorghum in clumps vs. conventional seed drop method, while at the same time keeping the same plant population per acre.

Materials and Methods

Traditional sorghum seeding plates were altered by closing holes so that seed would be dropped in clumps rather than traditional even spacing. Grain sorghum was planted in clumps (5 to 6 plants per clump, with clumps spaced about 23 inches apart) within rows and conventionally in a randomized complete block design. Seed was planted with a 24-row planter in which half of the planter (12-rows) planted clumps and the other half planted seed the traditional method, with seed spaced uniformly. Seeding rates in both cases was 61,256 seed per acre. Row space was 30-inches.

Table 1: Agronomic data for grain sorghum clump/conventional planting, Ocker Farm, Nueces County, Texas, 2011.

Planting Date: 3/1/2011	**Rows/Plot:** 12 -5 replicates	**Row Width:** 30 inch
Fertility: 241.6# 24-8-0 2S 1 gal/ac Penngreen	**Herbicide:** 13.5 oz/ac Outlook	**Sorghum Hybrid:** Pioneer 84G62
Planting Rate: 61,256 plt/ac	**Soil Type:** Victoria clay	**Previous Crop:** Grain Sorghum
Rainfall: March = 0, April = 0, May = 1.63, June = 0.59		

Results and Discussion

Plots were machine harvested on July 5, 2011 and weighed with an electronic weigh-wagon. Results from each plot are recorded in Table 2.

Table 2, Comparison of plant population, % moisture, and yield per acre between treatments, Ocker Farm, Nueces County, 2011.

Treatment	Plant Population/Ac	% Moisture	Yield/Acre[1]
Clump	45,765 a	13.2	3,683 a
Solid/Conventional	46,999 a	13.2	3,545 a

[1]Yield per acre is reported in pounds per acre and adjusted to 14% moisture. Means followed by same letter do not significantly differ (P=.05, LSD).

Conclusions

Results from this study suggest that there was not a real difference between treatments (i.e. clump planting vs. conventional planting) as the clump planting average yield was 3,683 pounds per acre, while the yield for the conventional planting was 3,545 pounds per acre. Rainfall during the growing season was below normal.

Acknowledgements

The cooperation and support of David Ocker for implementing this trial is appreciated and the support of Pioneer Seeds for providing an electric weigh wagon is appreciated. The support of Dr. Dan Fromme, Extension Agronomist, for trial design, statistical analysis, and consultation is also appreciated.

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GRAIN SORGHUM YIELD RESPONSE TO RESIDUAL NITROGEN AND PHOSPHORUS IN NUECES COUNTY

Texas AgriLife Extension Service
Nueces County

Cooperator: Darrell Lawhon

Authors: Jeffrey R. Stapper, County Extension Agent-AG/NR
Dennis Coker, Extension Program Specialist- Soil Fertility
J.R. Cantu Demonstration Assistant

Summary

This test was located on the Darrel Lawhon Farm, North of Concordia, CR 73B. Soil conditions at planting were fair. There was not a statistical difference between the treatments in which no additional nitrogen (N) or phosphorus (P) were applied as compared to treatments were additional units were applied.

Objective

To determine yield response of grain sorghum to residual nitrogen found in the soil profile and also evaluate yield response to different phosphorus rates.

Materials and Methods

Soil samples were taken down to a depth of 4 feet on February 23, 2011. Soil test recommendations were based on a 5,000 pound per acre crop yield goal. According to soil tests, cumulative residual NO_3-N to a depth of 48 inches was 101 lb/acre. Amounts of residual NO_3-N present in increments of soil depth were: 0-6 inches (7 lb/A); 6-12 inches (10 lb/A); 12-24 inches (16 lb/A); 24-36 inches (40 lb/A); 36-48 inches (28 lb/A). Rates of N applied (treatments) were then based on credit toward the amount of residual NO_3-N in increments of soil depth. Fertilizer applications were made in a band application to a depth of 4-6 inches on March 24, 2011. Five randomized complete blocks were established with the following treatments:

1. No additional N; soil test P_2O_5 recommended is 50 lb/A
2. 67 lb N/A and 50 lb P_2O_5/A
3. 83 lb N/A and 50 lb P_2O_5/A
4. 100 lb N/A and 50 lb P_2O_5/A
5. N based on yield goal: 100 lb/A and 50 lb P_2O_5/A + AVAIL (0.5% v/v)
6. N based on yield goal: 100 lb/A and 25 lb P_2O_5/A
7. N based on yield goal: 100 lb/A and 0 lb P_2O_5/A

Grain sorghum was planted in 19-inch rows on March1, 2011. Sorghum plant stand counts were taken on June 27, 2011 with average plant population being 51,000 plants per acre.

Rainfall during the growing season was below normal totaling 2.77 inches and occurred as follows; March=0.31 April = 0 inches, May= 1.75 inches, June=0.71 inches.

Ten feet from each of four yield rows per plot were hand harvested on June 23, 2011.

Results and Discussion

In Table 1, one can see that there was not a statistical difference between any of the five N treatments, meaning that the control (0-50-0), was the cheapest and best option under these field conditions.

Table 1. Comparison of test weight, yield, and treatment cost as it relates to fertilizer nitrogen treatments applied on Darrell Lawhon Farm, Nueces County, Texas, 2011.

Treatment	Sorghum Test Wt. (lb/bu)	Sorghum Yield† (lb/A)	Treatment Cost ($/A)
1. 0-50-0	53.1	4,578	45.94
2. 67-50-0	52.7	4,101	78.52
3. 83-50-0	53.8	4,723	88.52
4. 100-50-0	52.7	4,376	99.14
Pr>F	0.6335	0.4594	
$LSD_{0.05}$	ns	ns	
CV	2.36	12.05	
Grand Mean	53.1	4,440	

†Yields corrected to 14% moisture.

As with the N treatments, there was no statistical difference between P treatments (Table 2). Thus, additional P applied alone or in combination with AVAIL was not needed by the crop. According to soil test results, most of the available phosphorus from 0 to 48 inches was present in the top 12 inches.

Table 2. Comparison of test weight, yield, and treatment cost as it relates to fertilizer phosphorus treatments applied on Darrell Lawhon Farm, Nueces County, Texas, 2011.

Treatment	Sorghum TestWt. (lb/bu)	Sorghum Yield† (lb/A)	Treatment Cost ($/A)
4. 100-50-0	52.7	4,376	99.14
5. 100-50-0 + AVAIL	53.5	4,478	~104.14
6. 100-25-0	53.0	4,427	80.83
7. 100-0-0	53.6	4,567	62.50
Pr>F	0.4401	0.9670	
$LSD_{0.05}$	ns	ns	
CV	1.74	14.03	
Grand Mean	53.2	4,462	

†Yields corrected to 14% moisture.

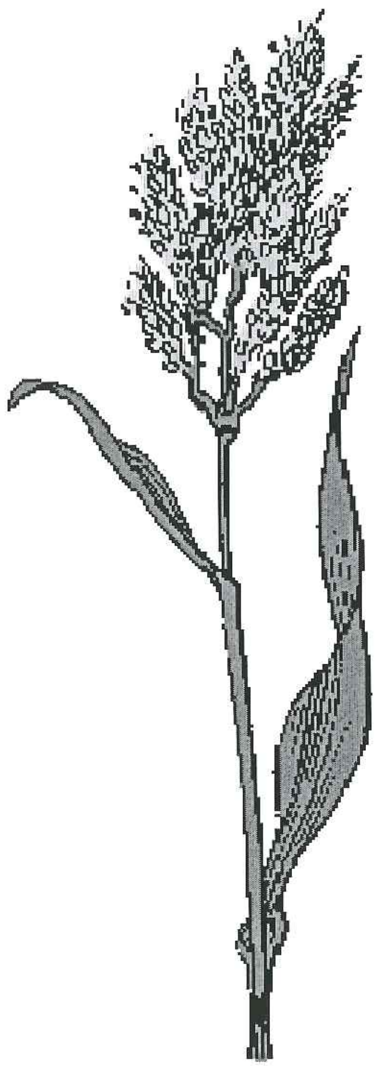
Conclusions

In this study, grain sorghum did an excellent job at using residual N and P in the soil profile that was carried over from the previous cropping season. As seen in the results, there was not a statistical difference between treatments in which no additional N or P was applied as compared to treatments where additional units were applied. With mean grain sorghum yield at 500 pounds less than the yield goal target, very dry growing conditions likely impacted the response of grain sorghum to fertilizer application in this study.

It is important to note, that soil test recommendations for fertilizer are made assuming a broadcast application. If the nutrients are applied in a subsurface band, P rates could be reduced up to 50%.

Acknowledgements

The support and cooperation of Darrell Lawhon for establishing this study is appreciated.



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COMPARISON OF NEW INSECTICIDES AND RATES FOR CONTROL OF HEADWORMS AND RICE STINK BUG ON SORGHUM

Cooperator: David Mayo Farm
Nueces County, 2011

Authors: Roy D. Parker and Jeffrey R. Stapper
Extension Entomologist and County Extension Agent, respectively
Corpus Christi and Robstown, Texas

Summary

All insecticides and rates tested provided effective control of headworms (nearly all corn earworm with a few fall armyworm). A higher level of control was not detected with increasing Prevathon rates. Rice stink bug numbers were not significantly reduced, but there was a fairly strong trend for fewer in any plots treated with pyrethroid insecticide (especially Baythroid). Yield was not enhanced by reduction in headworm numbers which may have resulted from a rapid decline in their numbers possibly due to attack by natural enemies before they reached the last larval instar.

Objective

The study was conducted to evaluate new insecticides for headworm control on sorghum and to measure their effects on secondary insect pests such as rice stink bug.

Materials/Methods

The test insecticides were applied to Pioneer 83G19 hybrid sorghum planted March 9, 2011 on County Road 30 about 0.75 miles west of the intersection with FM 892 on the David Mayo Farm. Some of the seed was already in soft dough when the insecticides were applied. Treatments were applied to 4 rows of 40 foot plots, and 3 nontreated rows were maintained on the side of each plot to prevent drift to evaluated rows. Treatments were arranged in a randomized complete block design with 4 replications of each treatment. Plots to which treatments were applied in each replication were established down the field rows so that each treatment in each replication was on the same set of rows. This arrangement was also used to limit the width of the test to allow the grower an easier way to skip over the test when applying treatment to the remainder of the field.

Insecticides were applied on 6/1 with a Spider Trac sprayer calibrated to deliver 5.1 gpa total volume through 4X hollow cone nozzles at 40 psi and at a speed of 4.2 mph.

Treatments were assessed by (1) shaking 10 heads exhibiting headworm damage into a 2.5 gallon bucket to count corn earworm, fall armyworm and rice stink bug on 5/31 [pretreatment], 6/3 [2 DAT], and 6/5 [4 DAT] from a different row section on each field visit; and (2) harvesting 13.75 feet row from one of the center rows in plots on 6/30. Sorghum samples were threshed on a laboratory machine, grain moisture and bushel weights were obtained for each plot, and grain yields were converted to 14% moisture.

Agriculture Research Manager (ARM revision 6.1.13) software was used to conduct analysis of variance and means were separated by LSD.

Results/Discussion

All tested insecticides and rates provided control of headworms in late milk and early soft dough sorghum at 2 and 4 days after treatment (DAT) compared with numbers found in the nontreated sorghum (Table 1). There were no statistical differences in headworm numbers among the insecticides nor was there a numerical response observed with increasing rates of Prevathon. By 4 DAT headworm numbers had begun to decline in the nontreated sorghum. Post-treatment averages did not reveal any insights other than the fact that all insecticides reduced headworm numbers.

These insecticides did not significantly reduce rice stink bug numbers, but there appeared to be a trend in the pyrethroid insecticide treated sorghum (Asana and Baythroid) for fewer rice stink bugs (Table 2). In fact, following treatment no rice stink bugs were found in any treatment containing Baythroid. Overall, rice stink bug numbers were not sufficiently high enough to obtain meaningful data.

Headworm numbers were near the established economic treatment threshold level, but no differences were detected in the yield level among the treatments (Table 3). There were also no differences in grain moisture or bushel weight. The headworm population was not sustained long enough to cause the amount of damage expected even at the relatively low populations encountered. Similar results were observed in a 2010 field experiment indicating that more focused studies need to be undertaken to find out why the headworms reach a certain size and then begin to slowly decline before entering the pupal stage.

Table 1. Effectiveness of insecticides on headworms on sorghum heads, David Mayo Farm, Nueces County, TX, 2011.

Treatment (rate)	Headworms /10 heads[2/]			
	Pretreat	2 DAT[3/]	4 DAT	Post-treat. average
Prevathon 0.43SC (9.8 oz/acre)	2.3[a]	0.8[b]	0.3[b]	0.5[b]
Prevathon 0.43SC (13.3 oz/acre)	2.0[a]	1.3[b]	0.0[b]	0.6[b]
Prevathon 0.43SC (19.9 oz/acre)	3.0[a]	1.3[b]	0.3[b]	0.8[b]
Prevathon 0.43SC + Asana XL 0.66EC (9.8 oz/acre + 5.82 oz/acre)	2.5[a]	0.0[b]	0.0[b]	0.0[b]
Belt 4SC (3.0 oz/acre)	2.8[a]	0.5[b]	0.8[b]	0.6[b]
Baythroid XL 1EC (2.8 oz/acre)	4.5[a]	0.8[b]	0.0[b]	0.4[b]
Belt 4SC + Baythroid XL 1EC (2.0 oz/acre + 1.3 oz/acre)	4.0[a]	0.0[b]	0.5[b]	0.3[b]
Nontreated	3.5[a]	3.5[a]	2.8[a]	3.1[a]
LSD (P = 0.05)	NS[1/]	1.44	0.84	0.87
P > F	.7958	.0015	.0001	.0001

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]NS = Not Significant
[2/]96% headworms were corn earworm
[3/]DAT = Days After Treatment

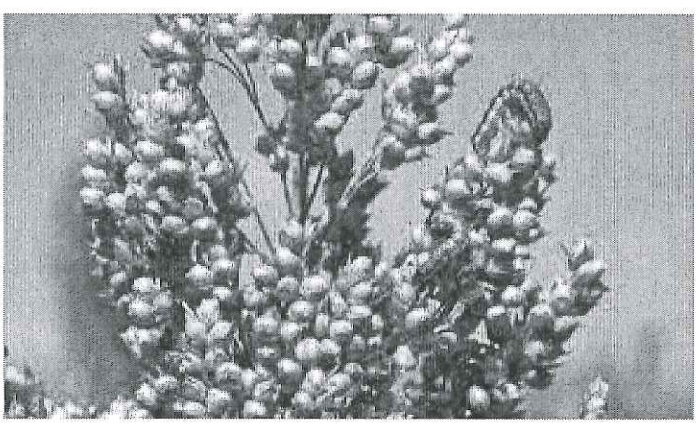

Table 2. Effectiveness of insecticides on rice stink bug on sorghum heads, David Mayo Farm, Nueces County, TX, 2011.

	Rice stink bugs/10 heads			
Treatment (rate)	Pretreat	2 DAT[2/]	4 DAT	Post-treat. average
Prevathon 0.43SC (9.8 oz/acre)		1.0[a]	0.5[a]	0.8[a]
Prevathon 0.43SC (13.3 oz/acre)	1.0[a]	1.8[a]	2.5[a]	2.1[a]
Prevathon 0.43SC (19.9 oz/acre)	1.5[a]	0.8[a]	0.8[a]	0.8[a]
Prevathon 0.43SC + Asana XL 0.66EC (9.8 oz/acre + 5.82 oz/acre)	0.5[a]	0.0[a]	0.5[a]	0.3[a]
Belt 4SC (3.0 oz/acre)	0.8[a]	1.0[a]	2.3[a]	1.6[a]
Baythroid XL 1EC (2.8 oz/acre)	0.3[a]	0.0[a]	0.0[a]	0.0[a]
Belt 4SC + Baythroid XL 1EC (2.0 oz/acre + 1.3 oz/acre)	4.0[a]	0.0[a]	0.0[a]	0.0[a]
Nontreated	2.5[a]	1.5[a]	4.5[a]	3.0[a]
LSD (P = 0.05)	NS[1/]	NS	NS	NS
P > F	.3453	.2305	.0835	.0891

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]NS = Not Significant
[2/]DAT = Days After Treatment

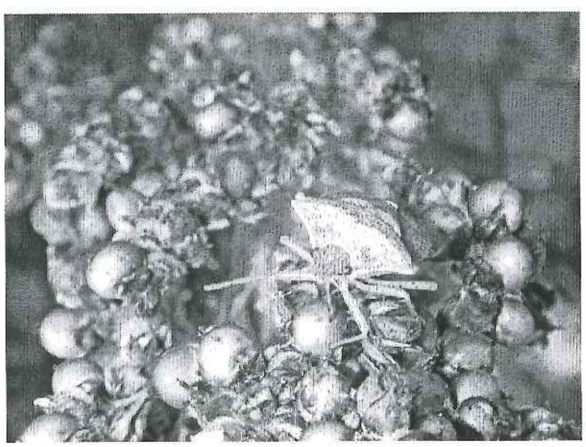

Table 3. Sorghum grain moisture, bushel weight and yield from plots treated with various insecticides, David Mayo Farm, Nueces County, TX, 2011.

Treatment (rate)	Grain moisture %	Bushel weight lb	Yield[2/] lb/acre
Prevathon 0.43SC (9.8 oz/acre)	9.7[a]	55.0[a]	3784[a]
Prevathon 0.43SC (13.3 oz/acre)	9.7[a]	55.1[a]	4071[a]
Prevathon 0.43SC (19.9 oz/acre)	9.7[a]	55.0[a]	4029[a]
Prevathon 0.43SC + Asana XL 0.66EC (9.8 oz/acre + 5.82 oz/acre)	9.7[a]	55.3[a]	4409[a]
Belt 4SC (3.0 oz/acre)	9.5[a]	54.8[a]	3847[a]
Baythroid XL 1EC (2.8 oz/acre)	9.4[a]	54.8[a]	4052[a]
Belt 4SC + Baythroid XL 1EC (2.0 oz/acre + 1.3 oz/acre)	9.4[a]	55.1[a]	3910[a]
Nontreated	9.6[a]	55.3[a]	4131[a]
LSD (P = 0.05)	NS[1/]	NS	NS
P > F	.2869	.9645	.1899

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]NS = Not Significant
[2/]Yield at 14% moisture sorghum.

Acknowledgements

David Mayo is thanked for providing the field site for the study. Rudy Alaniz and Clint Livingston, Demonstration Assistants, provided support by applying treatments, harvesting the sorghum, and processing samples. DuPont and Bayer companies are thanked for providing insecticides and grant support for the test

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HEADWORM AND RICE STINK BUG CONTROL ON SORGHUM HEADS WITH SELECTED INSECTICIDES

Cooperator: David Mayo Farm
Nueces County, 2011

Authors: Roy D. Parker and Jeffrey R. Stapper
Extension Entomologist and County Extension Agent, respectively
Corpus Christi and Robstown, Texas

Summary

Declare, Lannate, Cobalt Advanced, Stallion, and Mustang Max effectively reduced headworms in sorghum, but as expected, Dimethoate was the least effective tested insecticide on headworms. All products tested reduced rice stink bug, but there numbers overall were low at the test site. No yield effects were observed in the relatively low headworm infestation.

Objective

The insecticide evaluation was conducted on sorghum to measure the impact of products on headworms and rice stink bug and to determine if there was any effect of the treatments on production factors.

Materials/Methods

Treatments were applied to Pioneer 83G19 hybrid sorghum planted March 9, 2011 on County Road 30 about 0.75 miles west of the intersection with FM 892 on the David Mayo Farm. Some of the seed was already in soft dough when insecticides were applied. Treatments were applied to 4 rows of 40-foot plots, and 3 nontreated rows were maintained on the side of each plot to prevent drift to evaluated rows. Treatments were arranged in a randomized complete block design with 4 replications of each treatment. Plots to which treatments were applied in each replication were established down the field rows so that each treatment in each replication was on the same set of rows. This arrangement was also used to limit the width of the test to allow the grower an easier way to skip over the test when applying treatment to the remainder of the field.

Insecticides were applied on 6/1 with a Spider Trac sprayer calibrated to deliver 5.1 gpa total volume through 4X hollow cone nozzles at 40 psi and at a speed of 4.2 mph.

Treatments were assessed by (1) shaking 10 heads exhibiting headworm damage into a 2.5 gallon bucket to count corn earworm, fall armyworm and rice stink bug on 5/31 [pretreatment], 6/3 [2 DAT], and 6/5 [4 DAT] from a different row section on each field visit on the outside treated rows; and (2) harvesting 13.75 feet row from one of the center rows in plots on 6/30. Sorghum samples were threshed on a laboratory machine, grain moisture and bushel weights were obtained for each plot, and grain yields were converted to 14% moisture.

Agriculture Research Manager (ARM revision 6.1.13) software was used to conduct analysis of variance and means were separated by LSD.

Results/Discussion

All but one insecticide tested provided effective control of headworms (96% corn earworm) by 2 DAT (Table 1). Dimethoate was ineffective, as expected, in providing significant headworm control. Declare (gamma-cyhalothrin), Lannate (methomyl), Cobalt (chlorpyrifos + gamma-cyhalothrin), Stallion (zeta-cypermethrin), and Mustang Max (zeta-cypermethrin) all provided excellent control of the headworms.

Rice stink bugs were reduced significantly by all insecticides even though several have been found not to provide the level of control needed in commercial sorghum fields (Table 2). The low number of rice stink bugs encountered at the test site probably did not create enough pressure to show the insecticide weakness. Dimethoate in previous studies has provided a high degree of rice stink bug control.

No differences were observed in grain moisture, bushel weight, or yield in any of the treatments (Table 3). Rapid crop maturity, decline in headworm numbers as they were about to reach the last instar, and a relatively low level infestation likely contributed to the lack of yield response with the insecticide treatments.

Table 1. Effect of insecticides on headworm numbers on sorghum heads, David Mayo Farm, Nueces County, TX, 2011.

Treatment (rate)	Headworms / 10 heads [2/]			
	Pretreat	2 DAT[3/]	4 DAT	Post-treatment Average
Declare 1.25 SC (1.54 oz/acre)	3.0[a]	0.0[c]	0.0[d]	0.0[c]
Dimethoate 4E (8.0 oz/acre)	5.0[a]	1.5[b]	2.0[ab]	1.8[b]
Declare + Dimethoate (1.54 oz/acre + 8.0 oz/acre)	3.0[a]	0.0[c]	0.0[d]	0.0[c]
Lannate 2.4 LV (24.0 oz/acre)	3.5[a]	0.0[c]	0.5[cd]	0.3[c]
Cobalt Advance 2.628EW (13.0 oz/acre)	2.8[a]	0.0[c]	1.3[bc]	0.6[c]
Stallion 3EC (11.7 oz/acre)	1.8[a]	0.3[c]	0.0[d]	0.1[c]
Mustang Max 0.8EC (4.0 oz/acre)	3.3[a]	0.0[c]	0.0[d]	0.0[c]
Nontreated	3.5[a]	3.5[a]	2.8[a]	3.1[a]
LSD (P=0.05)	NS[1/]	0.97	0.84	0.77
P > f	.6019	.0001	.0001	.0001

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]NS = Not Significant
[2/]96% headworms were corn earworm
[3/]DAT = Days After Treatment

Table 2. Effect of insecticides on rice stink bug on sorghum heads, David May Farm, Nueces County, TX, 2011.

Treatment (rate)	Rice stink bugs/10 heads			
	Pretreat	2 DAT[2/]	4 DAT	Post-treatment Average
Declare 1.25 SC (1.54 oz/acre)	0.8[a]	0.0[b]	0.5[b]	0.3[b]
Dimethoate 4E (8.0 oz/acre)	0.3[a]	0.3[b]	0.3[b]	0.3[b]
Declare + Dimethoate (1.54 oz/acre + 8.0 oz/acre)	0.0[a]	0.0[b]	0.5[b]	0.3[b]
Lannate 2.4 LV (24.0 oz/acre)	0.3[a]	0.0[b]	0.0[b]	0.0[b]
Cobalt Advance 2.628EW (13.0 oz/acre)	0.5[a]	0.5[b]	0.3[b]	0.4[b]
Stallion 3EC (11.7 oz/acre)	0.5[a]	0.3[b]	0.5[b]	0.4[b]
Mustang Max 0.8EC (4.0 oz/acre)	2.5[a]	0.0[b]	0.0[b]	0.0[b]
Nontreated	0.8[a]	1.5[a]	4.5[a]	3.0[a]
LSD (P=0.05)	NS[1/]	0.67	2.11	1.25
P > f	.6609	.0017	.0039	.0010

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]NS = Not Significant
[2/] DAT = Days After Treatment

Table 3. Effect of insecticides on production factors on sorghum, David Mayo Farm, Nueces County, TX, 2011.

Treatment [1/] (rate)	Grain moisture %	Bushel Weight lb.	Yield [2/] lb/acre
Declare 1.25 SC (1.54 oz/acre)	9.6[a]	55.0[a]	4166[a]
Dimethoate 4E (8.0 oz/acre)	9.8[a]	54.9[a]	4272[a]
Declare + Dimethoate (1.54 oz/acre + 8.0 oz/acre)	9.8[a]	55.0[a]	4156[a]
Lannate 2.4 LV (24.0 oz/acre)	9.6[a]	54.5[a]	3983[a]
Cobalt Advance 2.628EW (13.0 oz/acre)	9.8[a]	55.8[a]	4134[a]
Stallion 3EC (11.7 oz/acre)	9.6[a]	55.5[a]	4143[a]
Mustang Max 0.8EC (4.0 oz/acre)	9.6[a]	55.3[a]	3994[a]
Nontreated	9.6[a]	55.3[a]	4131[a]
LDS (P – 0.05)	NS[1/]	NS	NS
P > F	.8071	.5665	.8568

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]NS = Not Significant
[2/]Yield at 14% moisture sorghum.

Acknowledgements

David Mayo is thanked for providing the field site for the study. Rudy Alaniz and Clint Livingston, Demonstration Assistants, provided support by applying treatments, harvesting sorghum, and processing samples. Cheminova, FMC Corporation, and Dow AgroSciences companies are thanked for providing insecticides and grant support for the test.

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AgriLIFE EXTENSION
Texas A&M System

Agriculture and Natural Resources

SESAME VARIETY EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Texas AgriLife Research & Extension Center

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
J. R. Cantu, Demonstration Assistant - Nueces County

Summary
This test was located on the Research & Extension Center on HWY 44. Rainfall during the growing season was very low and totaled less than one inch. Yields ranged from a low of 225 pounds per acre to a high of 284 pounds per acre. Under normal rainfall conditions one would expect yields to be three times what was produced this year.

Objective
To evaluate sesame varieties for yield and production in South Texas and determine the economics of producing this crop and potential risks associated with production.

Materials and Methods
Sesame was planted on May 17, 2011, at Clarkwood on the Texas AgriLife Research & Extension Center in a randomized complete replicated block with four replications. Rainfall from planting to harvest was May=0 inch, June=0.51 inch, July=0.11 inch, August=0.26 inch, September=0 inch, for a total of 0.88 inch. The sesame was planted with a John Deere MaxEmerge2 Planter (setting Driver 24: Driven 26) Vacuum @ 4 PSI using 45 hole sorghum plates to a seeding depth of 1.25 inches following an early May rainfall event. Plots were hand harvested on September 13, 2011.

Table 1: Agronomic data for Sesame Variety Test, AgriLife Research & Extension Center Nueces County, Texas, 2011.

Planting Date: May,17 2011	**Plot Size:** 4 rows plots	**Row Width:** 38-inch
Fertility: 11/16/10 100-40-0	**Soil Type:** Clareville loam	**Previous Crop:** Canola
Planting Rate: 2.5 lbs/acre	**Herbicide:** 1.3pts Dual II Magnum	**Harvest:** 9/13/11

Results and Discussion

The below normal rainfall certainly hurt yields and the stress related to lack of soil moisture attributed to the onset of the disease of charcoal rot that was noted in the plots.

Table 2. Comparison of plant density, plant height, disease incidence, and yield per acre between varieties, AgriLife Research & Extension Center, Nueces County, Texas, 2011.

Variety	Plt/Ft	Plt/Ht[1] (inches)	Charcoal Rot Rating[2]	Ht 1st Capsule (ft)	Node/Plt	Yield/Ac (lbs.)
S 33	6.1	25.7	3.5	1.2	13	284
S 32	4.7	29.8	3.7	1.2	14	282
X22 K	4.9	27.0	3.3	1.0	16	270
S 26	3.7	27.3	3.7	1.2	14	241
S 70	3.6	21.3	4.3	0.7	16	228
S 28	3.8	25.8	3.5	1.2	14	225

[1]Plant height measured 9/7/11 [2]Charcoal Rot rating on 8/24/11 (1 being little evidence of disease and 5 being majority of plants showing disease symptoms.)

Conclusions

Although sesame is a very drought tolerant crop, adequate moisture is needed to produce good yields, as peak water demand for the crop occurs during flowering. Assuming a contract price of $0.40 per pound (most sesame in Coastal Bend in 2011 received at least this), gross income in this test plot ranged from a low of $90/acre to a high of $113/acre. Below normal rainfall had a dramatic impact on production as one would expect yields to be three times what was produced in this test plot. So in a somewhat average year gross income could have been as high as $340 per acre.

Acknowledgements

The support and cooperation provided by staff of Texas AgriLife Research, including James Grichar and Kenneth Schaefer and staff of SESACO in the implementation of this test is appreciated. The assistance of Dr. Gary Odvody, Research Plant Pathologist in disease evaluations is also appreciated.

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SAFFLOWER VARIETY EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Texas AgriLife Research & Extension Center

Authors: Jeffrey R. Stapper, County Extension Agent -AG/NR
J. R. Cantu, Demonstration Assistant - Nueces County

Summary

This test was located at the Research & Extension Center on Hwy 44. Rainfall during the growing season was below normal and temperatures in early February were below normal. Yields ranged from a low of 796 pounds per acre to a high of 1,830 pounds per acre.

Objective

To evaluate safflower varieties for yield and production in South Texas and determine the economics of producing these crops and potential risks associated with production.

Materials and Methods

Safflower was planted on November 18, 2010, at Texas AgriLife Research & Extension Center on Clarkwood Road in a randomized complete replicated block with four replications. The soil at seeding depth was 1.0 inch and was planted in 9-inch rows. Soil test indicated a pH of 8.0 with a fertilizer recommendation of 85-40-0 for 2,000 pound canola yield potential. This was used since a canola test was also planted in the same field. Fertilizer of 100-40-0 was applied on November 16, 2010 and incorporated. Treflan at 1.5 pt/ac was incorporated on November 16, 2010. Rainfall recorded during the growing season was as follows; November- 0.03 inches, December-0.78 inches, January -3.79 inches, February 0.2 inches, March 0.43 inches, April 0 inches, May 1.71 inches for a total of 6.94 inches. The safflower varieties were hand harvested on May 23, 2011 and were thrashed in a portable thrashing machine, and weighed.

Table 1: Agronomic data for Safflower Variety Demonstration, AgriLife Research & Extension Center Nueces County, Texas, 2010-2011

Planting Date: November 18, 2010	**Plot Size:** 4' x 20' replicated 4 times	**Row Width:** 9 inch
Fertility: 11/18/11 100-40-0	**Soil Type:** Clareville loam	**Previous Crop:** Canola
Planting Rate: 25 lbs./acre	**Herbicide:** Treflan @ 1.5 pt/A	**Harvest:** 5/23/11

<u>**Results and Discussion**</u>

Very cold temperatures were measured February 2 and 3, as the average temperature on February 3 was only 28 degrees F, while the low temperature was 24 degrees F. Freeze damage was seen in both the S-345 and 99 OL varieties.

Harvest of safflower usually occurs when most of the leaves have turned brown and the flower bracts show only a green tint. Seed should have a moisture content of 8 percent or less for safe storage. Harvest of the safflower occurred on May 23, 2011.

Table 2: Comparison of plant height, and yield per acre from hand harvest, of safflower variety test, AgriLife Research & Extension Center, Nueces County, Texas, 2011.

Safflower Variety	Bloom (%) 4/15/11	Plant Height 4/19/11	Yield (lbs./acre)	Value/Acre[1]
PI 406002	15	39 a	1,830 a	$311.10
PI 544006	84	34 a	1,678 a	$285.26
PI 405984	9	41 a	1,360 ab	$231.20
99 OL	75	28 c	820 b	$139.40
S-345	54	28 c	796 b	$135.32
Mean	47	34	1,297	
LSD (P=.05)		3.5	565.3	
Standard Deviation		2.3	366.9	
CV		6.64	28.29	

Means followed by same letter do not significantly differ (P=.05, LSD)

[1]*Value per acre assumes a price of $0.17 per pound.*

Conclusions

Very cold temperatures in early February certainly hurt the yields of spring varieties S-345 and 99OL. These temperatures were well below normal and not seen in the Coastal Bend of Texas very often.

Today there is renewed interest in safflower seed for its oil and food use. Before the 1960's in the U.S., the oil was used mostly as a base for paints, and is still used for that today. However, it is also being used in infant formulas, cosmetics, and salad and cooking oils. Safflower meal is about 24 percent protein and high in fiber and is used as a protein supplement for livestock and poultry feed. Whole safflower seeds are used in the birdseed industry.

Safflower is a deep tap rooted plant that can draw nutrients from depths of 6 to 8 feet however, unless you have good soil moisture at planting in the seed bed, this advantage of a deep tap root will not be realized.

Acknowledgements

The cooperation and support of James Grichar and Kenneth Schaefer and the staff of Texas AgriLife Research for helping implement this demonstration is appreciated. The support of seed companies by providing seed is also appreciated. The support of Rob Duncan for assistance in securing seed and consultation is also appreciated.

AgriLIFE EXTENSION
Texas A&M System

FLAX VARIETY EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Texas AgriLife Research & Extension Center

Author: Jeffrey R. Stapper, County Extension Agent -AG/NR
J.R. Cantu, Demonstration Assistant

Summary
This test was located on the Research & Extension Center on Hwy 44. Rainfall during the growing season was below normal. There was not a statistical difference between any of the varieties evaluated in this test. Numerically the best performing flax variety in this test was OMEGA at 419 pounds of seed per acre, while the test average was 361 pounds per acre.

Objective
To determine the best flax varieties for yield and production in South Texas and determine the economics of producing these crops and potential risks associated with production.

Materials and Methods
Flax was planted on November 18, 2010 at Texas AgriLife Research & Extension Center on Clarkwood Road in a randomized complete replicated block with four replications. Soil test indicated a pH of 8.0 with a fertilizer recommendation of 85-40-0 for 2,000 canola yield potential. This was used since a canola test was also planted in the same field. Fertilizer of 100-40-0 was applied on November 16, 2010 and incorporated. Treflan @ 1.5 pt/ac was incorporated on November 16, 2010. Rainfall recorded during the growing season was as follows; November- 0.03 inches,December-0.78 inches, January -3.79 inches, February- 0.2 inches, March- 0.43 inches, April- 0 inches, May -1.71 inches for a total of 6.94 inches.

The flax varieties were hand harvested on April 21, 2011 and samples were then thrashed in a portable thrashing machine, and weighed.

Table 1: Agronomic data for Flax Variety demonstration, AgriLife Research & Extension Center Nueces County, Texas, 2010-2011.

Planting Date: November 18, 2010	**Plot Size:** 5' x 20' replicated four times	**Row Width:** 9 inch
Fertility: 11/16/11 100-40-0	**Soil Type:** Clareville loam	**Previous Crop:** Canola
Planting Rate: 30 lbs./acre	**Herbicide:** Treflan @ 1.5 pt/A	**Harvest:** 4/21/11

Results and Discussion

Harvest of flax usually occurs when 90-95% of seed bolls are tan or brown. Harvest of plots occurred on 4/21/11.

Table 2: Comparison of plant height, and yield per acre, Flax Variety Test, AgriLife Research & Extension Center, Nueces County, Texas 2011.

Flax Variety	Plant Height (inches)	Yield[1] (lbs./acre)	Value/Acre[2]
OMEGA	21 ab	419 a	$112.23
YORK	21 ab	393 a	$105.27
CARTER	18 c	385 a	$103.12
PEMBINA	22 ab	381 a	$102.05
T. THUNDER	20 b	367 a	$98.30
AC LINURA	22 a	219 a	$58.66
MEAN	21	361	
LSD (P=.05)	1.8	238.8	
Standard Deviation	1.2	158.5	
CV	5.89	43.93	

[1]Yield is adjusted to 10% moisture. [2]Price = $15.00/BU @ 56 lbs/bu.

Means followed by same letter do not significantly differ (P=.05, LSD)

Conclusions

Although there was not a statistical difference between flax varieties evaluated in this test, there was a numeric difference. Yields were disappointing and might be attributed to very warm temperatures in early spring with very dry growing conditions.

Today there is renewed interest in flax seed for its oil and food use. Flax seed is crushed to produce linseed oil and linseed meal. Linseed oil has many industrial uses and the meal is used for livestock feed. Human consumption of flax seed is increasing for its high dietary fiber, its omega-3 oils and anti-carcinogenic lignans. Hens fed flax seed produce "omega eggs," which are sold for their high omega-3 oil content. Research is ongoing to determine the health benefits of human consumption of flax seed products.

Acknowledgements

The cooperation and support of James Grichar and Kenneth Schaefer and the staff of Texas AgriLife Research for helping implement this demonstration is appreciated. The support of seed companies by providing seed is also appreciated. The support of Rob Duncan for assistance in securing seed and consultation is also appreciated.

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CANOLA OILSEED CROP EVALUATION

Texas AgriLife Extension Service
Nueces County, 2011

Cooperator: Texas AgriLife Research & Extension Center

Author: Jeffrey R. Stapper, County Extension Agent -AG/NR
J.R. Cantu, Ag Demonstration Assistant

Summary
This test was located at the Research & Extension Center on Hwy 44. Soil moisture conditions at planting were marginal. Although there was not a statistical difference between varieties, numerically the best performing Canola variety in this test was DKL 72-55 at 808 pounds of seed per acre. A lack of soil moisture late in the growing season hurt yields.

Objective
To determine the best Canola varieties for yield and production in South Texas and determine the economics of producing these crops and potential risks associated with production.

Materials and Methods
Canola was planted November 18, 2010, at Texas AgriLife Research & Extension Center on Clarkwood Road. The soil at seeding depth was 1.0 inch and soil moisture was marginal. A drill placed seed in 9-inch rows. Soil test indicated a pH of 8.0 with a fertilizer recommendation of 85-40-0 for 2,000 canola yield potential. Fertilizer of 100-40-0 was applied on November 16, 2010 and incorporated. Treflan @ 1.5 pt/ac was incorporated on November 16, 2010.

Very cold temperatures were measured February 2nd and 3rd, as the average temperature on February 3rd was only 28 degrees F, while the low temperature was 24 degrees F. Freeze damage was not seen on canola.

Cultivars were hand harvested on April 19, 2011. Samples were then thrashed in a portable thrashing machine, and weighed.

Table 1: Agronomic data for Cool Season Oilseed Variety demonstration, Research & Extension Center Nueces County, Texas, 2011.

Planting Date: November 18, 2010	**Plot Size:** 4' x 20' replicated four times	**Row Width:** 9 inch
Fertility: 11/16 100-40-0	**Soil Type:** Clareville loam	**Previous Crop:** Cotton
Planting Rate: 4.5 lbs/ac	**Herbicide:** Treflan @ 1.5 pt/A	**Harvest:** 4/19/2011 Hand Harvest

Results and Discussion

Rainfall recorded during the growing season was as follows; November = 0.03, December = 0.78, January = 3.79, February = 0.20, March =0.43, April =0.0, for a total of 5.23 inches.

Dry conditions certainly hurt yields, especially later in the growing season at pod fill time. Temperatures in March and April were above normal as well.

From a bio-diesel perspective (assuming 20 pounds of canola can be converted to 1 gallon of bio-diesel) the average production of this test (419 pounds per acre) would result in producing more than 20 gallons of bio-diesel per acre.

Table 2: Comparison of lodging, plant height, bloom date, and yield per acre from hand harvest, Research & Extension Center, Nueces County, Texas, 2011

Spring Canola Variety	Lodging (0-5) 5=Extreme	Plant Height (Inches) 4/19/11	Bloom (%) 3/7/11	Yield[1] (lbs./acre)
DKL 72-55	0	36	60	808 a
RUBWCS1	0.75	31	60	615 a
CARGILL V-1040	0	33	10	536 a
DKL 30-42	0.25	32	50	526 a
RUBWCS2	0.25	32	50	487 a
CARGILL IMC 205	0	27	2	458 a
UISC 00.3.1.17	0	30	89	451 a
DKL 72-40	0	33	90	436 a
RUBWCS4	0.25	37	10	424 a
CLEARWATER	1	37	75	391 a
RUBWCS6	1.5	40	2	363 a
CARGILL V-1037	0	34	1	355 a
DKL 51-45	0	32	80	350 a
RUBWCS3	0.25	31	50	331 a
ARRIBA	0	30	85	289 a
RUBWCS7	0	36	5	157 a
RUBWCS5	1	39	1	140 a
LSD (P=.05)				*444.2*
CV				*76.92*
MEAN	*0.3*	*34*	*42*	*419*

[1]Yield is adjusted to 10% moisture. Lodging: 0= none, 5 = extreme

Conclusions

Using the market price at harvest ($22 per cwt), the top yielding variety had a gross value of $177/acre, while the least productive hybrid was valued at $31 per acre, a difference of $146 per acre. This significant difference between hybrids illustrates the need to continue to evaluate hybrids for their production performance under local conditions. Yields were reduced due to lack of moisture late in the growing season.

Acknowledgements

The cooperation and support of James Grichar and Kenneth Schaffer and the staff of Texas AgriLife Research for implementing this demonstration is appreciated. The support of seed companies by providing seed is also appreciated. The support of Rob Duncan for assistance in securing seed and consultation is also appreciated.

Agronomic & Test Information:

Corpus Christi, TX Oilseed Hybrid Sunflower Trial, 2011

TEST:	**2011 Rainfed Oilseed Sunflower Hybrid Trial**
LOCATION:	Texas AgriLife Research & Extension Center, Corpus Christi, TX
TEST COORDINATORS:	Mr. Dennis Pietsch, Texas AgriLife Research Crop Testing Program, College Station; Mr. Kenneth Schaefer, Texas AgriLife Research senior research associate, Corpus Christi; Mr. Darwin Anderson, Texas AgriLife Research entomologist, Corpus Christi; Dr. Calvin Trostle, Texas AgriLife Extension Service agronomist, Lubbock
SOIL TYPE:	Orelia sandy clay loam
ROW WIDTH:	38"
PREVIOUS CROP:	Grain Sorghum
LAND PREPARATION:	Disked twice, then bedded
DATE PLANTED:	March 1, 2011
SEEDING RATE:	Overplanted at ~27,000 seeds/A then targeted for thinning at 1 plant per 9" (~18,500 seeds/A); due to skips in initial stand (doubles and triples), stands were thinner but relatively uniform though emergence was very erratic due to limited moisture at planting
PLANTED AREA:	4 rows x 35'
FERTILIZER:	Applied 300 lbs/Acre 25-6-0-0.16Zn (75-18-0-0.48Zn) on December 23, 2010
HERBICIDE:	Broadcast Prowl H_2O (2 pints/A) on March 5, 2011
INSECTICIDE:	Applied 1.9 oz./Acre Karate w/ Zeon on: April 29, May 4, 10, 16, 20, and 24, 2011
RAINFALL:	January, 3.8"; February, 0.2"; March, 0.4 "; April, 0"; May, 1.7"; June, 0.3 "; Total, 6.4"
IRRIGATION:	None
DATE HARVESTED:	June 23, 2011
SIZE HARVESTED PLOT:	Two 38-inch rows X 13' 8"

TEST DESIGN: Randomized block (by rep)

NUMBER ENTRIES: 11

NUMBER REPLICATIONS: 4

TEST MEAN: 1,571 lbs./A yield (corrected to 10% moisture) with crop value of $486/A when adjusted for oil content. Yield and test weights were determined based on Reps 2 to 4 due to low yield on the front Rep. Yield range was 1,065 to 1,878 lbs./A.

TEST YIELD C.V.: 18.2%--This statistical measure indicates excessive variability in the data. Though high in this test it does not preclude using the data for comparisons among hybrids.

TEST %OIL MEAN: 44.2% (range 40.3 to 46.4%; C.V. = 4.8%)

COMMENTS: Moisture conditions were poor leading into the planting season. This trial was delayed at least two weeks from target planting due to dry soil. Approximately 0.5" of rain fell in late February, and the decision was made to attempt planting. Emergence was inconsistent due to marginal moisture, e.g., there was a great range in emergence thought not nearly as much as a neighboring confectionary sunflower hybrid trial. (Confectionary seed must imbibe more water than oilseed sunflower in order to germinate. Due to lack of uniformity in bloom, plots were sprayed six times though we still had difficulty with moth control.

Oilseed was priced at $28.50/cwt. An adjacent 2011 confectionary sunflower hybrid test yielded 1,147 lbs./A with a crop value of $349/A.

The 2010 oilseed sunflower hybrid trial at the same site yielded about 300 lbs./A more, but had about 8" more inches of rainfall. We are very pleased with the yields in this current trial in spite of the lack of rainfall.

***

For further info about this test or the Texas AgriLife Research Crop Testing Program, contact Mr. Dennis Pietsch, Crop Testing director, Texas AgriLife Research, College Station, TX, (979) 845-8505, dpietsch@ag.tamu.edu

For sunflower production information in South Texas consult Dr. Dan Fromme, Extension agronomist, Texas AgriLife Extension Service, Corpus Christi, (361) 265-9203, dfromme@ag.tamu.edu

Please visit the Texas AgriLife Crop Testing Program webpage for sunflower as well as hybrid testing information for corn, grain sorghum, and forage at http://varietytesting.tamu.edu

For further information about sunflower production across Texas, contact state sunflower Extension specialist Dr. Calvin Trostle, Lubbock, (806) 746-6101, ctrostle@ag.tamu.edu or visit http://lubbock.tamu.edu/sunflower

AgriLIFE RESEARCH
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2011 Oilseed Sunflower Hybrid Trial
Corpus Christi, Texas (Coastal Bend Region)

AgriLIFE EXTENSION
Texas A&M System

Planted March 1, 2011 on limited moisture; harvested June 23, 2010; January-June rainfall, 6.4".

Company or Brand	Hybrid	Oil Type†	Days to Half Bloom	Plant Height (inches)	Avg. Plants/ acre	Lodg-ing %	Test Weight (lbs./bu)	Seed Yield ,@10% H2O (lbs./A)	% Oil Con-tent	Oil Yield (lbs./A)	Crop Value‡ ($/Acre)
Seeds 2000	Torino	Nu, CL	78	50	16,300	34	35.2	1,612	44.8	721	503
Seeds 2000	Durango	Nu, EX	81	46	16,800	1	32.6	1,593	44.0	701	491
Seeds 2000	Daytona	HO, CL	77	51	18,000	14	34.8	1,707	43.2	738	518
Syngenta	3845 HO	HO	73	45	15,800	10	32.4	1,515	46.4	705	488
Syngenta	4596 HO/DM	HO	73	53	19,500	4	35.3	1,710	45.5	778	541
Syngenta	4651 NS/DM	Nu	74	50	16,300	16	32.2	1,538	44.2	682	476
Syngenta	3875 NS	Nu	73	46	16,800	25	32.7	1,878	44.1	829	580
Triumph Seed	s668	Nu, SS	81	37	16,900	6	32.8	1,607	45.4	728	506
Triumph Seed	s870HCL	HO, SS, CL	81	34	14,000	0	32.5	1,413	46.4	657	455
Triumph Seed	859HCL	HO, CL	82	50	16,800	2	30.4	1,065	40.3	430	306
Dahlgren	4421	Nu	67	44	17,100	9	30.3	1,645	41.5	679	481
		Average	*76*	*46*	*16,800*	*11*	*32.8*	*1,571*	*44.2*	*695*	*486*
		P-Value (Hybrid)	<0.0001	<0.0001	0.0942	<0.0001	<0.0001	0.0184	<0.0001	0.0111	0.0124
		Fisher's Protected LSD (0.05)¶	4	4	NS¶	12.3	0.8	343	1.7	161	111
		Coefficient of Variation, CV (%)	13.9	6.6	12.8	116	5.5	18.2	4.8	19.2	19.0

†Nu = NuSun mid-oleic, HO = high oleic, EX = Express herbicide tolerant, SS = short stature, CL = Clearfield herbicide tolerant.

‡Typical market pricing in 2011 for Texas Coastal Bend oilseed is $28.50/cwt., with 2-for-1 pricing based on oilseed content at 40.0% oil.

¶Numbers in the same column that vary by more than the least significant difference (LSD) are significantly different at the 95% confidence level.

Trial Notes: Soil moisture was scarce at planting time, and the trial was planted on ~0.5" of late February rain, which led to some spotty emergence. This led to a wider range of bloom than normal, which is an issue with targeting sunflower head moth sprays (six sprays here). The target date for planting was about 2 weeks earlier than achieved.

An adjacent confectionary sunflower hybrid trial yielded 1,147 lbs./A with an average crop value of $349/acre.

For further information about this test or the Texas AgriLife Crop Testing Program, contact Mr. Dennis Pietsch, Crop Testing director, Texas AgriLife Research, College Station, TX, (979) 845-8505, dpietsch@ag.tamu.edu

Please visit the Crop Testing webpage at http://varietytesting.tamu.edu for sunflower and other crop hybrid information.

For additional sunflower production resources for Texas contact Extension agronomist Dr. Calvin Trostle, Lubbock, Texas AgriLife Extension Service, Lubbock, (806) 746-6101, ctrostle@ag.tamu.edu, or visit http://lubbock.tamu.edu/sunflower

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APPENDIX

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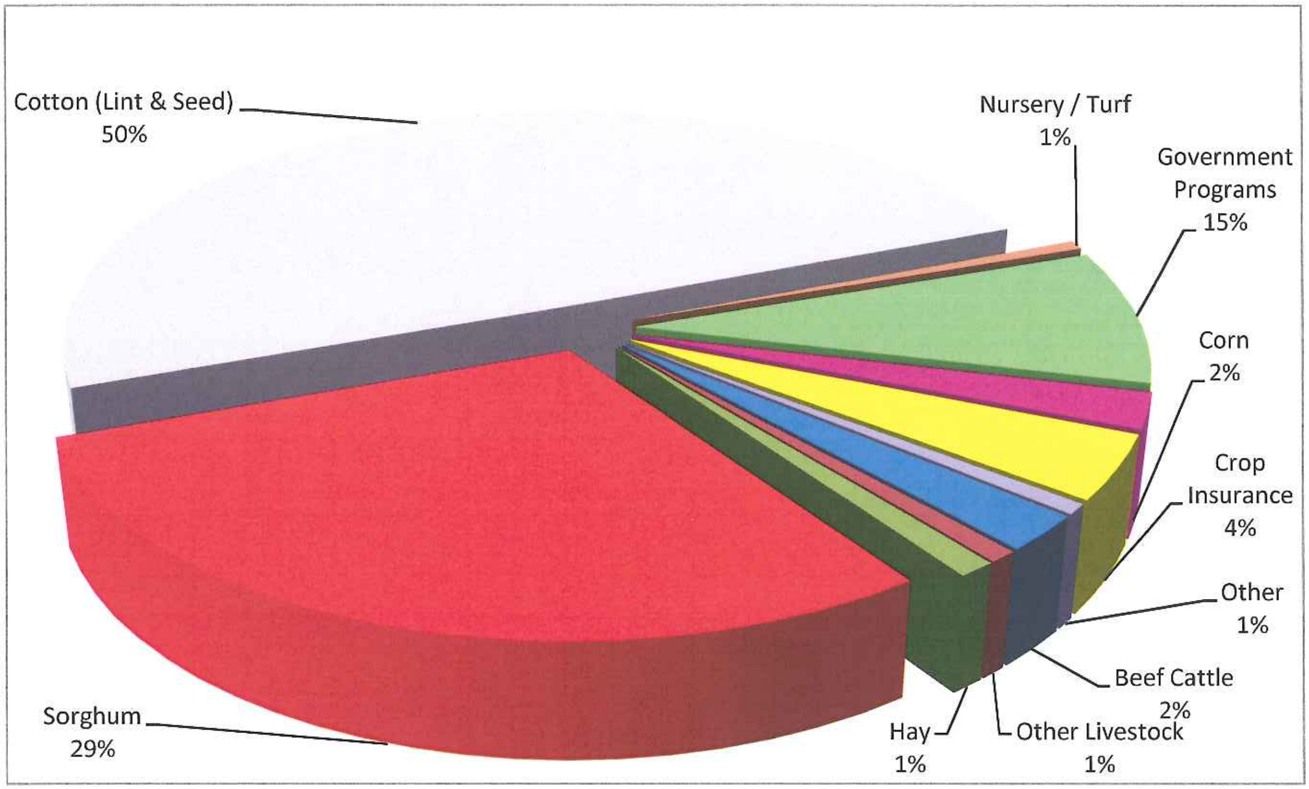
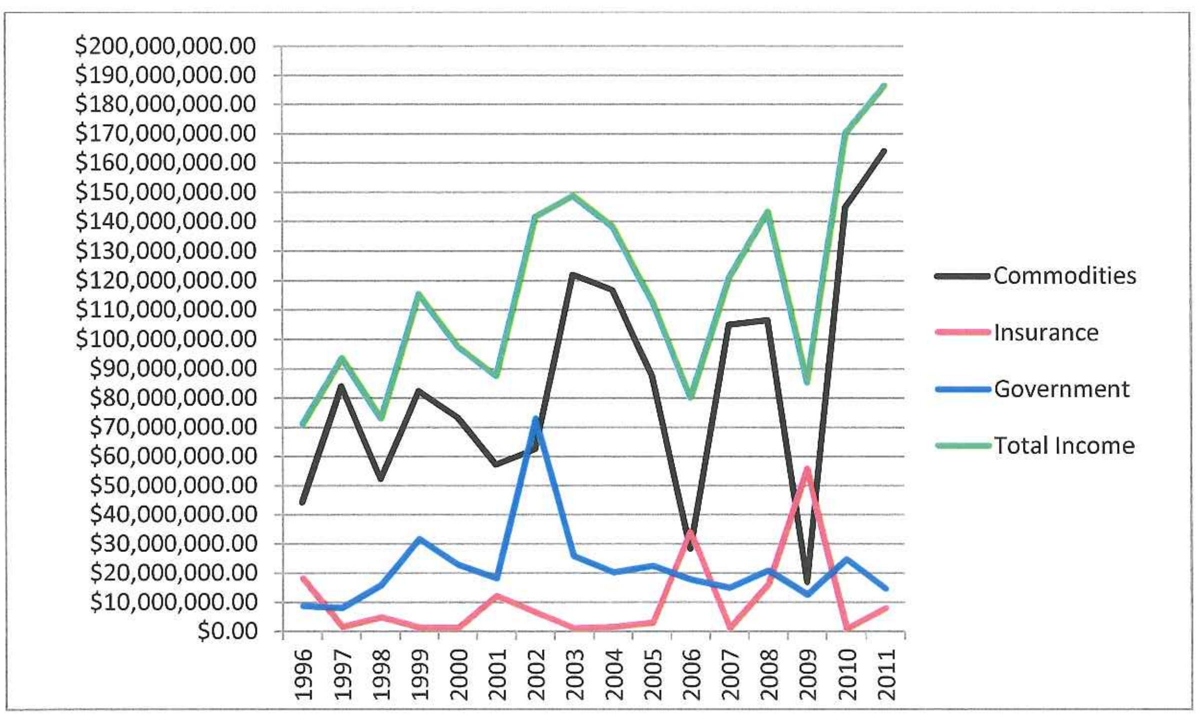
2011 Nueces County Agricultural Income

Total Income = $186,648,545



Historic Agricultural Income*

Nueces County, Texas



*This estimated income includes commodity sales, government subsidies and crop insurance.

NUECES COUNTY
ANNUAL AGRICULTURAL INCREMENT REPORT

Compiled By:
Jeffrey R. Stapper - County Extension Agent-Ag/NR

{Estimated County Cash Receipts in $1,000's}

Commodity	2006	2007	2008	2009	2010	2011
Wheat	0.00	744.70	1596.60	718.30	1366.70	494.20
Corn	5.10	3208.50	900.00	237.60	3828.40	4444.60
Hay	1767.00	5580.00	1065.50	568.80	6875.00	1960.00
Sorghum	3240.00	39103.70	61178.20	6468.10	48181.70	54125.10
Cotton	12152.00	44168.80	26645.30	725.90	66679.40	76103.70
Cottonseed	1989.10	8154.20	8966.30	216.90	11507.90	16193.70
Sunflowers	0.00	55.60	468.70	178.20	223.10	460.00
Sesame				734.20	269.00	73.90
Foodcorn	0.00	0.00	0.00	243.60	0.00	0.00
Vegetables	1.50	2.00	5.60	2.00	5.00	5.00
Nursery	2750.00	1010.00	1435.00	1148.00	1400.00	1200.00
Other Ag Related	0.00	53.50	371.20	0.20	0.00	367.80
Poultry	1.50	5.30	15.50	154.30	151.50	180.90
Milk Total	0.00	0.00	0.00	0.00	0.00	0.00
Milk Cows	0.00	0.00	0.00	0.00	0.00	0.00
Beef Cattle	5793.00	2016.00	2732.80	3696.50	2209.50	4414.00
Goats	103.50	82.50	67.40	421.50	413.00	448.00
Hogs	137.50	106.80	67.80	634.40	691.70	660.80
Sheep	32.50	31.00	13.50	156.80	184.20	177.00
Aquiculture	120.00	200.00	200.00	200.00	200.00	120.00
Horses	150.00	360.00	300.00	300.00	300.00	300.00
Hunting	65.00	130.00	130.00	130.00	130.00	130.00
TOTAL	**28307.70**	**105012.60**	**106159.40**	**16935.30**	**144616.10**	**161858.70**

NUECES COUNTY ROW CROP PRODUCTION - 10-YEAR OVERVIEW

GRAIN SORGHUM

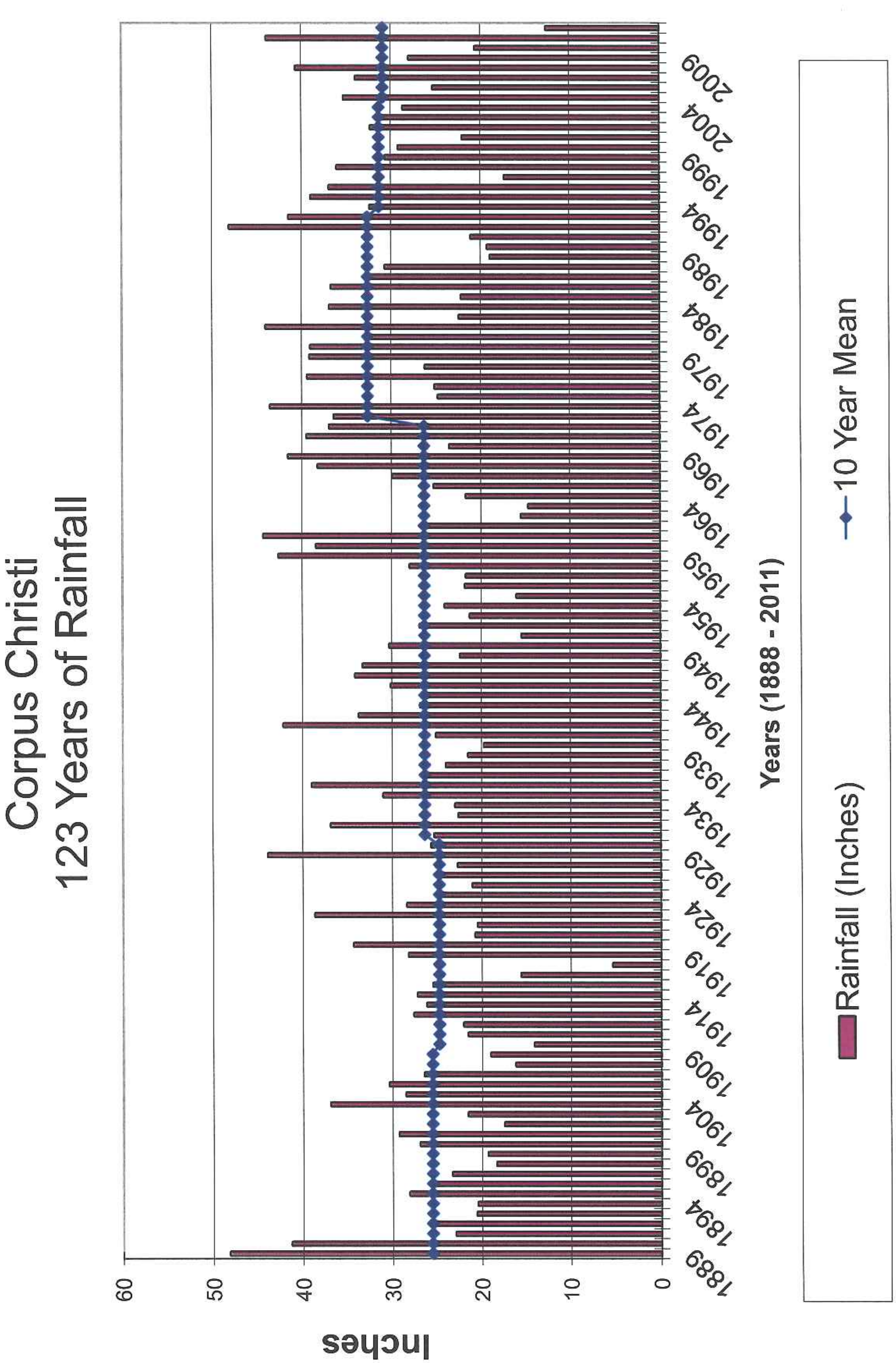
YEAR	PLANTED	ACRES HARVESTED	POUNDS/ACRE	TOTAL (CWT)
2002	187,000	187,000	3,500	6,545,000
2003	181,300	179,800	3,670	6,598,660
2004	165,066	163,500	4,600	7,521,000
2005	160,000	157,300	3,350	5,264,000
2006	158,700	92,400	1,568	1,473,000
2007	187,000	186,100	4,200	7,816,200
2008	198,850	197,880	3,797	7,513,504
2009	168,211	49,800	2,240	1,115,520
2010	183,430	183,430	4,730	8,676,239
2011	141,867	141,867	3,800	5,390,946
10-Yr Avg	**173,142**	**153,908**	**3,546**	**5,791,407**

COTTON

YEAR	PLANTED	ACRES HARVESTED	POUNDS/ACRE	TOTAL (Bales)
2002	123,000	123,000	565	138,990
2003	132,800	132,600	1,050	278,460
2004	142,970	141,600	870	246,384
2005	145,100	142,900	552	157,762
2006	175,900	54,500	562	61,258
2007	110,300	109,900	917	201,557
2008	111,649	81,649	518	84,588
2009	125,790	4,116	360	2,963
2010	104,050	104,050	866	187,721
2011	130,840	111,527	669	155,441
10-Yr Avg	**130,240**	**100,584**	**693**	**151,076**

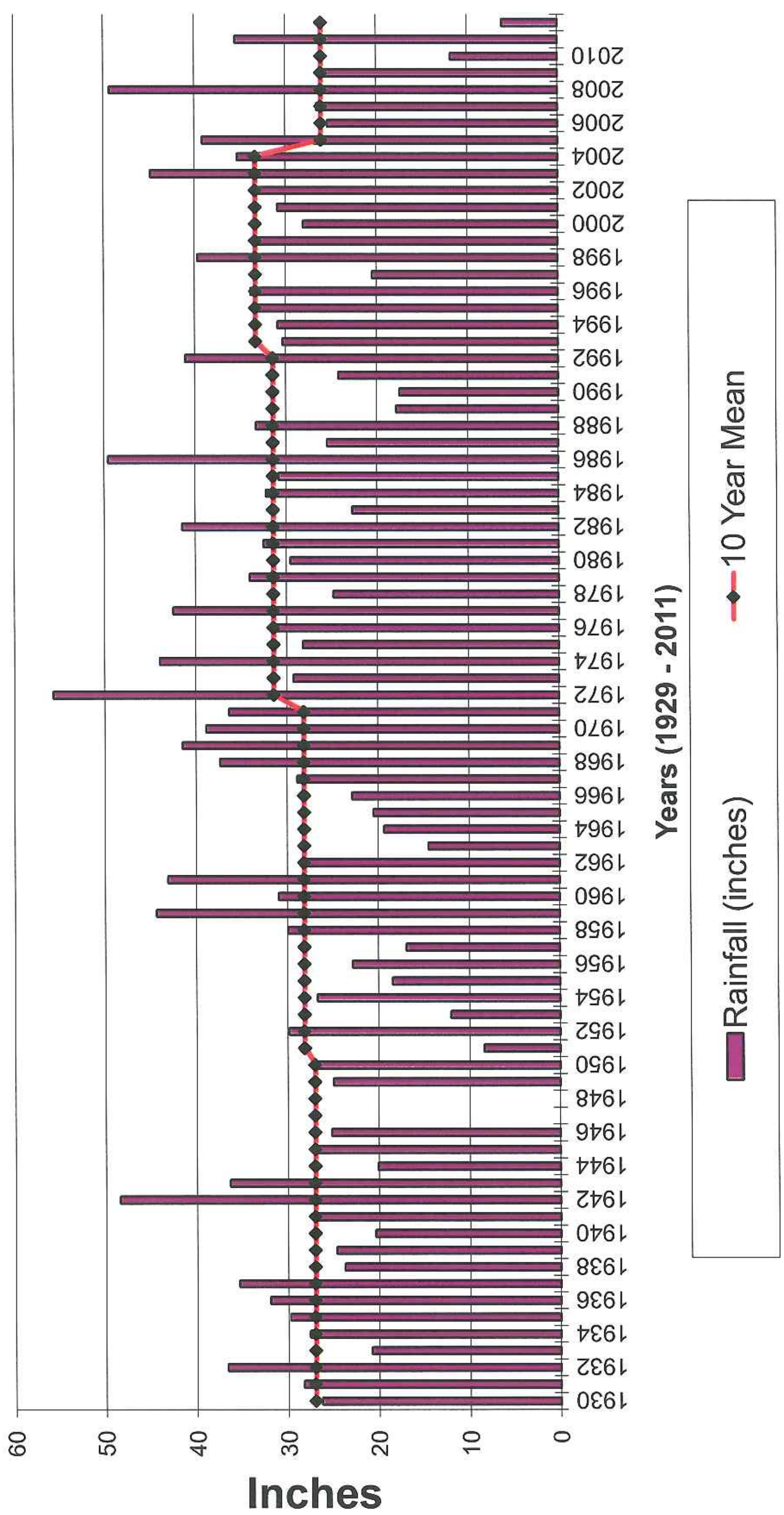
CORN

YEAR	PLANTED	ACRES HARVESTED	BUSHELS/ACRE	TOTAL (Bu)
2002	2,400	1,400	25	35,000
2003	12,800	12,000	64	768,000
2004	7,513	7,450	105	782,250
2005	7,700	7,600	51	387,600
2006	3,700	1,700	69	117,300
2007	10,300	10,000	86	860,000
2008	5,500	5,383	50	269,150
2009	9,309	2,313	25	57,825
2010	9,867	9,867	97	957,022
2011	12,400	12,400	58	719,200
10-Yr Avg	**8,149**	**7,011**	**63**	**470,461**



Corpus Christi
123 Years of Rainfall
Inches
Years (1888 - 2011)
Rainfall (Inches)
10 Year Mean

Robstown
82 Year of Rainfall



AGRICULTURAL INFORMATION SOURCES

Nueces County Extension Agents Agriculture/Natural Resources
710 E. Main, Suite 1; Robstown, TX 78380
Phone: 361/767-5223 Fax: 361/767-5248
Web Address: http://nueces-co.tamu.edu/
E-mail: nueces-tx@tamu.edu

Texas AgriLife Research and Extension Center
Corpus Christi A&M Research and Extension Center
10345 State Hwy 44; Corpus Christi, TX 78406-9704
Physical Location: Hwy 44, 4 miles West of CC Airport

Farm Service Agency
548 S. Hwy 77, Suite A; Robstown, TX 78380
361/387-2533

Natural Resources Conservation Service
548 S. Hwy 77, Suite B; Robstown, TX 78380
361/387-2533

Cotton Classing Office/USDA AMS - Corpus Christi
3545 Twin river Boulevard; Corpus Christi, TX 78410
Phone: 361.241.4001 Fax: 361.241.0133

Texas Department of Agriculture - Austin
Pesticide Applicator Certification Division
(regulatory information and pesticide enforcement)
PO Box 12847; Austin, TX 78711
512-475-1675 TELL-TDA 1-800-835-5832

AgriLIFE EXTENSION

Texas A&M System