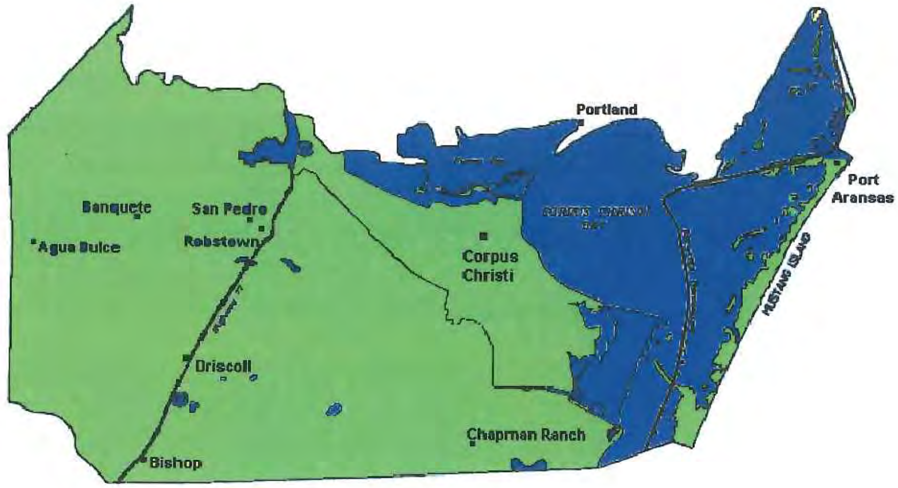
TEXAS A&M AGRILIFE EXTENSION







Nueces County

2013

RESULTS OF AGRICULTURE DEMONSTRATIONS & APPLIED RESEARCH PROJECTS

Texas A&M AgriLife Extension Service, Dr. Doug Steele, Director, The Texas A&M University System, College Station, Texas

Extension provides practical education you can trust to help people, businesses and communities solve problems, develop skills, and build a better future.

Extending Knowledge

Providing Solutions

TEXAS A&M
AGRILIFE
EXTENSION

Office of Nueces County

Texas A&M AgriLife Extension

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 A&M AgriLife Extension Service specialists, staff, research scientists of Texas A&M AgriLife Research, and private industry was essential for the completion of this book and is greatly appreciated.

Weather is always a major challenge in production agriculture; 2013 was no exception. The ear started with soil moisture profiles that had remained depleted from the 2012 crop. Rainfall remained well below average rainfall until after the end of the growing season. A significant number of cotton and grain sorghum acres failed, which lead to substantial increases in the areas of sesame, sunflower, and guar produced. Livestock production continues to face limited standing forage supplies and continue to delay restocking efforts. Due to the weather and lack of an Agriculture and Natural Resource Agent in Nueces County during the growing season, limited demonstration and applied research projects were conducted in 2013.

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 A&M 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.

Jason P. Ott

Jason P. Ott
County Extension Agent
Texas A&M 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
Daniel Jackson
David Mayo
Scott Frazier
Jon Herrmann
Mark Miller
John Freeman
Darrell Lawhon

FIELD CROPS TASK FORCE MEMBERS

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

LIVESTOCK TASK FORCE MEMBERS

Jon Herrmann
Scott Frazier
Leon Little
Daniel Jackson

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	Joe Willie Lee	John Freeman
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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
Cargill Specialty Canola Oils	2300 N Yellowstone Hwy, Suite 122	Idaho Falls, ID 83401
Croplan Genetics	P O 476	Taft, TX 78390
Dreamland Industries LTD.	126 Bacacita Farm. Rd.	Abilene, TX 79602
Dow Agro Sciences	317 West Alice	Kingsville, TX 78383
Delta & Pine Land Seed	4014 Northwood	Corpus Christi, TX 78410
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
Sorghum Partners, LLC	P O Box 189	New Deal, TX 79350
Stoneville Pedigreed Seed Co.	13557 Carlos 5th Port	Corpus Christi, TX 78418
Terral Seed	P O Box 997	El Campo, TX 77437
Triumph Seed Company Inc.	P O Box 1050	Ralls, TX 79357

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

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
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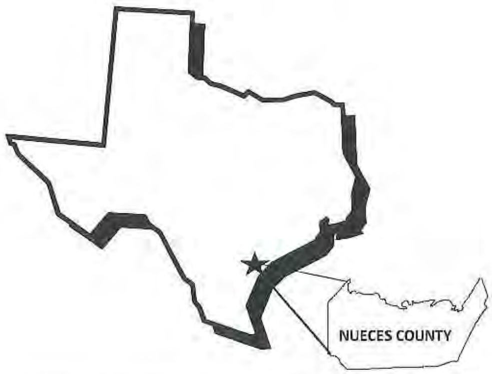
	Dr. Carlos Fernandez	



NUECES COUNTY

Agricultural Statistics

County Seat—Corpus Christi, TX

Population (2013)	347,691

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	(2013)
Grain Sorghum Planted Acres	167,868
Cotton Planted Acres	168,786
Corn Planted Acres	12,415
Wheat Planted Acres	6,112
Sesame Planted Acres	7,463
Sunflower Planted Acres	2,267
Hay Acreage Planted Acres	6,588
Beef Cattle Cow #s	3,500

2013 Agricultural Income	$1000
Grain Sorghum	19,398
Cotton/Cottonseed	710
Government Programs	5,597
Crop Insurance	105,175
Cattle	8,784
Wheat	656
Corn	1,234
Other	5,479
Total	**$147,033**

Weather	Data
Average Daily High Temperature	83°F
Average Daily Low Temperature	64°F
Days above 90°F	147
Days below 32°F	0
Mean Temperature	75°F
First Freeze Date	Dec. 21
Last Freeze Date	Jan. 3
Growing Season Average Dates	303
Precipitation-Mean per Year	31.41"
Precipitation-Days/Year above 0.1"	46

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
1929-2013
Yearly Rainfall

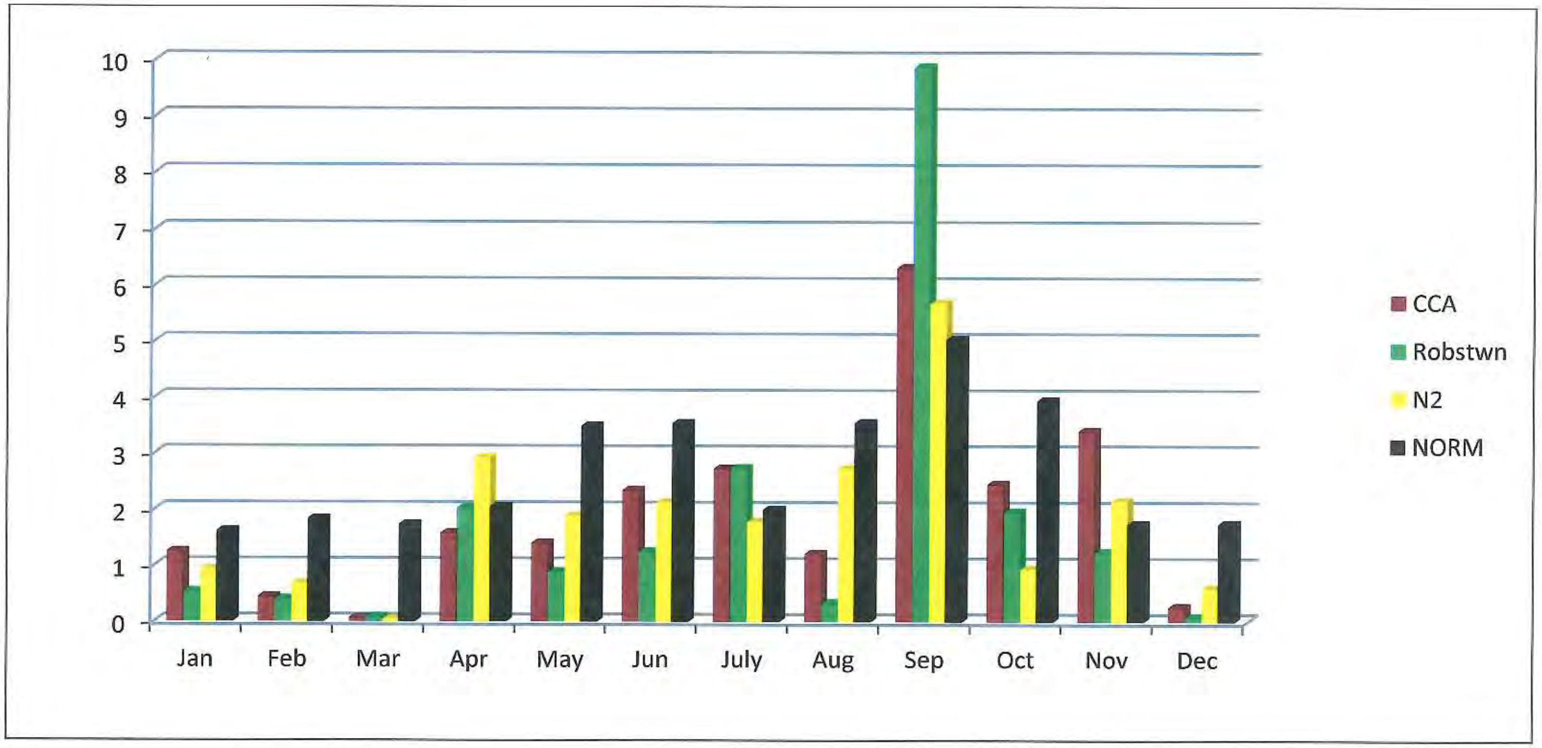
Year	Corpus Christi	Robstown	Year	Corpus Christi	Robstown	Year	Corpus Christi	Robstown
1929	25.67	26.28	1965	25.29	22.83	2001	32.25	33.52
1930	25.31	28.26	1966	29.89	28.86	2002	31.39	44.77
1931	36.86	36.66	1967	38.22	37.31	2003	28.70	35.30
1932	22.67	20.77	1968	41.53	41.45	2004	35.30	39.08
1933	23.06	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	20.63	17.23
1941	42.13	48.41	1977	26.25	24.79	2013	23.42	21.4
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	***29.57***	***29.50***

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)

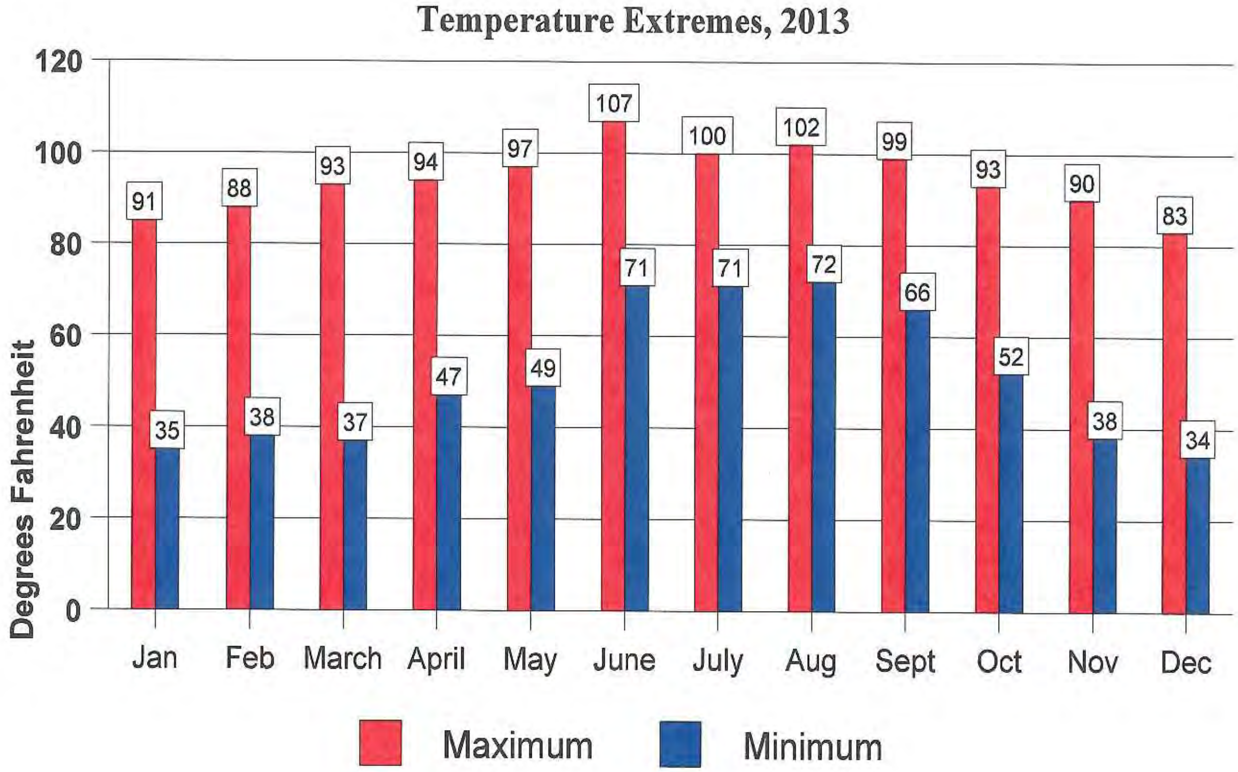
2013 Precipitation Data

Nueces County, Texas



Precipitation Data Collection Site	2013 Precipitation (Inches)
N2 Perry Foundation – South of Robstown	22.48
Corpus Christi Airport	23.42
Robstown	21.4
2013 Rainfall Average	22.43
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 A&M Agriculture Experiment Station in Corpus Christi, Texas.

MAP LEGEND

Map Number .... Location

COTTON TRIALS

1 .... **RACE Trial**
Cooperator: TAMU Research & Extension Center

1 .... **Insecticide Treatment for Control of Fleahopper**
Cooperator: TAMU Research & Extension Center

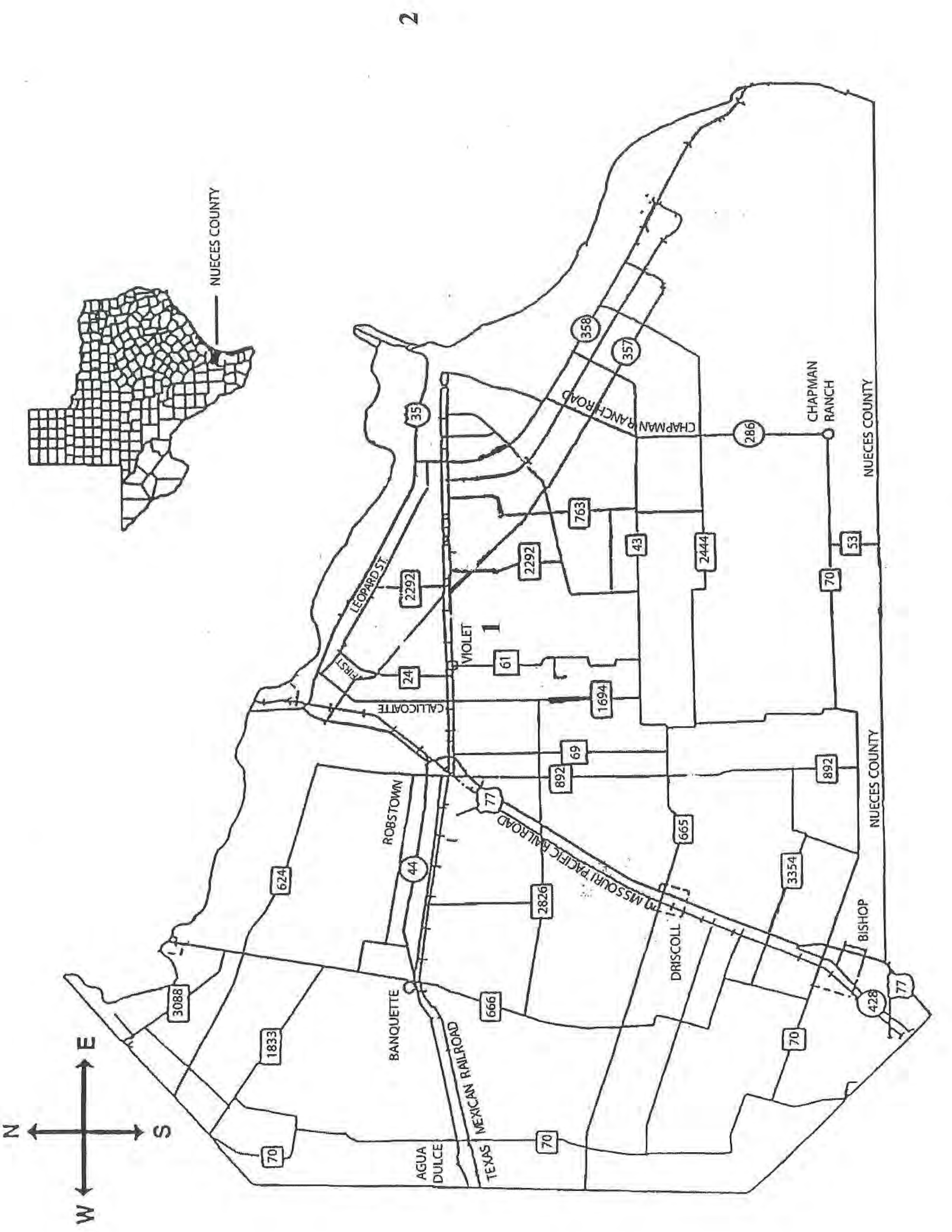
1 .... **Various Insecticides for Effect on Cotton**
Cooperator: TAMU Research & Extension Center

1 .... **Boll/Tobacco Budworm Trap**
Cooperator: TAMU Research & Extension Center

SORGHUM TRIALS

2 .... **Grain Sorghum Performance Test**
.... Cooperator: Allan Hunt Farms, Gregory, Texas

1 .... **Insecticides for Control of Insects Pests in Stored Grain**
Cooperator: TAMU Research & Extension Center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1
NUECES COUNTY
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S
E
W
CHAPMAN RANCH ROAD
CHAPMAN RANCH
NUECES COUNTY
LEOPARD ST.
FIRST
CALLICOATTE
VIOLET
ROBSTOWN
MISSOURI PACIFIC RAILROAD
DRISCOLL
BISHOP
BANQUETTE
TEXAS MEXICAN RAILROAD
AGUA DULCE
35
358
357
286
763
43
2444
53
70
2292
24
61
1694
69
892
77
665
624
44
2826
3354
428
3088
666
1833

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COTTON

Page #

HISTORY OF COTTON PRODUTION
NUECES COUNTY 1929-2013

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	30,200	370	23,300
1941	135,000	212	57,900	1777	78,000	528	85,884	2013	2,055	350	1,498
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 2013 season were estimated using data obtained from the Nueces County FSA Office, and the Nueces County Extension Office

Table 9. Corpus Christi Research Center RACE Trial, 2013[1]
Texas A&M AgriLife Research and Extension Center
Corpus Christi, Texas
Dr. Dan D. Fromme, Assistant Professor and Extension Agronomist
Rudy Alaniz, Technician and Clinton Livingston, Technician

Variety	Lint (lbs/acre)		Turnout %		Micronaire		Length (inches)		Strength (g/tex)		Uniformity		Loan Value (¢/lb)		Lint Value ($/acre)[2]	
CG 3787B2RF	766	a	40.2	a	4.1	ab	1.12	de	31.9	a	83.7	cd	53.81	ab	412	a
DP 1044B2F	748	a	37.5	bc	4.2	ab	1.10	e	31.6	a	83.1	d	53.51	bc	400	a
PHY 499WRF	735	a	39.9	a	4.2	ab	1.10	e	32.0	a	84.3	bc	53.31	cd	392	a
NG 1511B2RF	726	a	39.8	a	4.2	ab	1.09	e	34.2	a	83.1	d	53.16	d	386	a
DP 1219B2F	706	a	37.8	b	4.1	ab	1.13	cd	32.7	a	83.5	cd	53.91	a	381	a
AT Nitro	692	a	37.2	bcd	3.8	cd	1.19	a	32.3	a	85.1	ab	54.01	a	374	a
PHY 575WRF	691	a	36.2	d	3.8	d	1.17	ab	31.0	a	84.3	bc	53.89	a	372	a
ST 6448GLB2	649	a	38.0	b	4.0	bc	1.15	bc	32.3	a	83.1	d	53.88	a	350	a
FM 1944GLB2	598	a	36.3	d	4.1	b	1.14	cd	31.9	a	83.2	d	53.90	a	322	a
FM 8270GLB2	553	a	36.5	cd	4.3	a	1.17	ab	30.5	a	85.2	a	53.93	a	298	a
Mean	**686**		**37.9**		**4.1**		**1.14**		**32.0**		**83.8**		**53.73**		**369**	
P>F	0.0965		0.0001		0.0022		0.0001		0.4632		0.0001		0.0001		0.1184	
LSD (P=.05)	NS		1.029		0.249		0.0276		2.909		0.852		NS		NS	
STD DEV	99.03		0.71		0.17		0.02		2.01		0.59		0.24		53.49	
CV%	14.43		1.87		4.20		1.67		6.26		0.70		0.45		14.51	

[1] Indicates the location was irrigated with subsurface drip tape.
[2] Lint values were calculated using the 2012 Upland Cotton Loan Valuation Model from Cotton Incorporated.
AT =AllTex, CG=Croplan Genetics, DP=DeltaPine, FM=FiberMax, NG=NexGen, PHY=Phytogen, ST= Stoneville.

EVALUATION OF INSECTICIDES FOR CONTROL OF COTTON FLEAHOPPER

Texas A&M AgriLife Research and Extension Center, Nueces County, 2013

Roy D. Parker
Extension Entomologist
Corpus Christi, Texas

SUMMARY: All insecticides provided effective control of the cotton fleahopper. Test conditions due to the drought were not favorable for a good evaluation since plants began to cutout and wilt. Fleahopper numbers declined even in the untreated cotton as recruitment to the field evidently ceased and fleahoppers may have even moved out of the field.

OBJECITVES: Determine the efficacy of insecticides for control of cotton fleahopper.

MATERIALS/METHODS: The fleahopper insecticide evaluation was conducted on the Texas A&M AgriLife Research and Extension Center, Meaney Annex (latitude 27.779253° longitude -97.572566°). A single insecticide application of the treatments was made on Phytogen 499 variety cotton on June 26, 2013 with a Spider Trac sprayer traveling at 4 mph equipped with 4X hollow cone nozzles (2/row) in a total spray volume of 5 gpa and at 40 psi. Plots were 8 rows wide on 39-inch row centers and 40 feet long. The center 4 rows of the 8 row plots were treated to minimize drift into adjacent plots. Treatments were arranged in a randomized complete block experimental design with 4 replications of each treatment.

Treatments were assessed by counting fleahoppers on 20 plants in each plot before treatments were applied on 6/26 followed by counts 3, 6, 9, and 16 DAT (days after treatment). Nymph and adult counts were kept separate. For table presentation the counts were adjusted to the number/100 plants to match the cotton control guide suggested treatment levels. Cotton aphid numbers were so low that counts were not made.

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

RESULTS/DISCUSSION: The cotton fleahopper insecticide evaluation was conducted on cotton that was near bloom before the insecticides were applied, and very dry conditions limited plant growth and possibly recruitment of additional fleahoppers. Dry conditions and poor plant growth resulted in somewhat unfavorable conditions for the study. However, the evaluation of insecticides based on fleahopper counts did result in usable data.

Three days after the first treatment fleahopper nymphs had been dramatically reduced by all insecticide treatments (Table 1). For some unexplained reason, numerically higher number of the nymphs were detected in the higher rate Intruder treated plots at 3 DAT (days after treatment). But, at 6 and 9 DAT all insecticides and rates were shown to perform equally and significantly more fleahopper nymphs were present in the untreated cotton. At 16 DAT plant condition had deteriorated to the point evidentally of not being favorable for fleahopper nymphs as none were found in any of the plots.

Adult fleahopper numbers 3, 6, and 9 DAT were significantly fewer in the insecticide treated cotton with no differences among the insecticides (Table 2). At 16 DAT fewer fleahoppers were found in the untreated cotton and no significant differences were found; the fleahopper population basically declined probably due to growing conditions of drought stressed cotton and lack of new terminal growth.

The combination of nymph and adult numbers of fleahopper did not reveal any new information (Table 3). It was not possible to measure the effects of the insecticides under normal growing conditions favorable for recruitment into the field or even reproduction. The only conclusion that could be reached was that all insecticides were effective in controlling the fleahopper.

ACKNOWLEDGMENTS: Thanks are extended to the Gowan USA and to AMVAC Chemical Corporation for their support of the study. Rudy Alaniz and Clint Livingston, Demonstration Assistants, are thanked for their help in conduct of the study. Cotton Incorporated is thanked for their overall support of all of our cotton projects.

Table 1. Fleahopper nymphs in cotton treated with various insecticides, Texas A&M AgriLife Research and Extension Center, Nueces County Texas, 2013.

Treatment (rate)	Fleahopper nymphs per 100 plants					
	Pretreat	3 DAT[3/]	6 DAT	9 DAT	16 DAT	Post-treat avg.
Centric 40 WG (1.25 oz/acre)	23.8[a]	0.0[c]	3.8[b]	0.0[b]	0.0[a]	0.9[b]
Belay 2.13 SC (4.0 oz/acre)	13.8[a]	0.0[c]	2.5[b]	0.0[b]	0.0[a]	0.6[b]
Intruder 70 WP+MSO 0.25% V/V[1/] (0.80 oz/acre)	20.0[a]	2.5[bc]	2.5[b]	0.0[b]	0.0[a]	1.3[c]
Intruder 70 WP+MSO 0.25% V/V (1.10 oz/acre)	15.0[a]	6.3[b]	2.5[b]	0.0[b]	0.0[a]	2.2[c]
Bidrin 8 E (3.20 oz/acre)	22.5[a]	0.0[c]	2.5[b]	2.5[b]	2.5[a]	1.3[c]
Acephate 97 (4.00 oz/acre)	16.3[a]	0.0[c]	0.0[b]	0.0[b]	0.0[a]	0.0[b]
Untreated	16.3[a]	16.3[a]	16.3[a]	10.0[a]	10.0[a]	10.6[a]
LSD (P = 0.05)	NS[2/]	6.05	7.44	5.38	NS	2.61
P > F	.3473	.0001	.0051	.0075	1.0000	.0001

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]MSO @ 0.25 V/V added to mixture.
[2/]NS = Not Significant.
[3/]DAT = Days After Treatment.

Table 2. Fleahopper adults in cotton treated with various insecticides, Texas A&M AgriLife Research and Extension Center, Nueces County Texas, 2013.

Treatment (rate)	Fleahopper adults per 100 plants					
	Pretreat	3 DAT[3/]	6 DAT	9 DAT	16 DAT	Post-treat avg.
Centric 40 WG (1.25 oz/acre)	13.8[a]	3.8[b]	2.0[b]	2.5[b]	3.8[a]	5.0[b]
Belay 2.13 SC (4.0 oz/acre)	18.8[a]	0.0[b]	2.0[b]	0.0[b]	0.0[a]	2.5[b]
Intruder 70 WP+MSO 0.25% V/V[1/] (0.80 oz/acre)	15.0[a]	6.3[b]	1.3[b]	5.0[b]	2.5[a]	5.0[b]
Intruder 70 WP+MSO 0.25% V/V (1.10 oz/acre)	15.0[a]	5.0[b]	3.0[b]	7.5[b]	2.5[a]	7.5[b]
Bidrin 8 E (3.20 oz/acre)	21.3[a]	3.8[b]	4.5[b]	5.0[b]	2.5[a]	8.4[b]
Acephate 97 (4.00 oz/acre)	16.3[a]	0.0[b]	2.3[b]	0.0[b]	2.5[a]	3.4[b]
Untreated	15.0[a]	33.8[a]	9.3[a]	22.5[a]	2.5[a]	26.3[a]
LSD (P = 0.05)	NS[2/]	12.80	3.99	10.83	NS	7.33
P > F	.3193	.0004	.0082	.0058	.9502	.0001

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]MSO @ 0.25 V/V added to mixture.
[2/]NS = Not Significant.
[3/]DAT = Days After Treatment.

Table 3. Fleahopper nymphs and adults in cotton treated with various insecticides, Texas A&M AgriLife Research and Extension Center, Nueces County Texas, 2013.

Treatment (rate)	Fleahopper nymphs and adults per 100 plants					
	Pretreat	3 DAT[3/]	6 DAT	9 DAT	16 DAT	Post-treat avg.
Centric 40 WG (1.25 oz/acre)	37.5^{a}	3.8^{b}	13.8^{b}	2.5^{b}	3.8^{a}	5.9^{b}
Belay 2.13 SC (4.0 oz/acre)	32.5^{a}	0.0^{b}	12.5^{b}	0.0^{b}	0.0^{a}	3.1^{b}
Intruder 70 WP+MSO 0.25% V/V[1/] (0.80 oz/acre)	35.0^{a}	8.8^{b}	8.8^{b}	5.0^{b}	2.5^{a}	6.3^{b}
Intruder 70 WP+MSO 0.25% V/V (1.10 oz/acre)	30.0^{a}	11.3^{b}	$17.5^{`b}$	7.5^{b}	2.5^{a}	9.7^{b}
Bidrin 8 E (3.20 oz/acre)	43.8^{a}	3.8^{b}	25.0^{b}	7.5^{b}	2.5^{a}	9.7^{b}
Acephate 97 (4.00 oz/acre)	32.5^{a}	0.0^{b}	11.3^{b}	0.0^{b}	2.5^{a}	3.4^{b}
Untreated	31.3^{a}	50.0^{a}	62.5^{a}	32.5^{a}	2.5^{a}	36.9^{a}
LSD (P = 0.05)	NS[2/]	12.73	20.93	9.99	NS	7.43
P > F	.2778	.0001	.0005	.0001	.9502	.0001

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]MSO @ 0.25 V/V added to mixture.
[2/]NS = Not Significant.
[3/]DAT = Days After Treatment.

COMPARISON OF VARIOUS INSECTICIDES FOR EFFECT ON COTTON FLEAHOPPER

Texas A&M AgriLife Research and Extension Center, Nueces County, 2013

Roy D. Parker
Extension Entomologist
Corpus Christi, Texas

SUMMARY: Poor plant growing conditions limited the scope of the study; for example, there was no need to take yield data due to the very low yield prospect. However, there were some key findings. All insecticides reduced fleahopper numbers soon after treatments were applied. The most effective insecticides were Centric, Transform, and Brigadier which were overall (post-treatment average of nymphs and adults) significantly better than either of the two Carbine rates evaluated. It is not known if results would have been different under more favorable growing conditions, i.e. terminal growth and squaring following treatment.

OBJECTIVES: Insecticides were evaluated for effectiveness in controlling cotton fleahopper on cotton.

MATERIALS/METHODS: The fleahopper insecticide evaluation was conducted on the Texas A&M AgriLife Research and Extension Center, Meaney Annex (latitude 27.779253° longitude -97.572566°). A single insecticide application of the treatments was made on Phytogen 499 variety cotton on June 26, 2013 with a Spider Trac sprayer traveling at 4 mph equipped with 4X hollow cone nozzles (2/row) in a total spray volume of 5 gpa and at 40 psi. Plots were 8 rows wide on 38-inch row centers and 40 feet long. The center 4 rows of the 8 row plots were treated to minimize drift into adjacent plots. Treatments were arranged in a randomized complete block experimental design with 4 replications of each treatment.

Treatments were assessed by counting fleahoppers on 20 plants in each plot before treatments were applied on 6/26 followed by counts 3, 6, 9, and 16 DAT (days after treatment). Nymph and adult counts were kept separate. For table presentation the counts were adjusted to the number/100 plants to match the cotton control guide suggested treatment language. Cotton aphid numbers were so low that counts were not made.

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

RESULTS/DISCUSSION: Extreme drought and wilting of the cotton soon after the insecticide treatments were applied limited the scope of what could be learned in the study. However, there was basic information obtained for an insect that has been relatively easy to control with a wide assortment of insecticides. The effects of the tested insecticides on fleahopper nymphs were quick and sustained (Table 1) in that all products reduced their numbers dramatically. At 9 DAT unfavorable growing conditions resulted in loss of fleahopper nymphs even from the untreated cotton.

A somewhat different picture as far as effectiveness of the insecticides on fleahoppers was observed in the study (Table 2). All insecticides did significantly reduce adult numbers at 3 DAT; however, by 6 DAT differences among the insecticides became apparent. Adult fleahopper numbers were higher in the Carbine treatment (especially at the lower rate) than in cotton treated with some of the other insecticides. Numerically at 6 DAT the most effective insecticides were Centric and Brigdier, but it must be pointed out that only Carbine treated cotton at the low rate contained adult fleahoppers at a statistically higher level than these two insecticides. By 9 DAT due to declining numbers overall no significant differences were found, but at 16 DAT the weakness of the low rate of Carbine was again noted. The post-treatment average counts confirm the same trends.

Nymph and adult fleahoppers are combined in Table 3. The general trends found for nymph and adult control remained the same at 3, 6, 9, and 16 DAT. The post-treatment averages across all the inspection dates show that all insecticides significantly reduced fleahopper numbers; that Centric, Transform, and Brigadier performed equally; and that Carbine did not perform to the level of the other insecticides. It is not known whether results would have been different if growing condition had been favorable for new terminal growth following application of the treatments. There was little to no terminal growth.

ACKNOWLEDGMENTS: Thanks are extended to the FMC Corporation and to Dow AgroSciences for their support of the study. Rudy Alaniz and Clint Livingston, Demonstration Assistants, are thanked for their help in conduct of the study. Cotton Incorporated is thanked for their overall support of all of our cotton projects.

Table 1. Fleahopper nymphs in cotton treated with various insecticides, Texas A&M AgriLife Research and Extension Center, Nueces County Texas, 2013.

Treatment (rate)	Fleahopper nymphs per 100 plants					
	Pretreat	3 DAT[2/]	6 DAT	9 DAT	16 DAT	Post-treat avg.
Centric 40 WG (1.25 oz/acre)	20.0[a]	2.5[b]	0.0[b]	0.0[a]	0.0[a]	0.6[b]
Transform 50 WG (0.75 oz/acre)	22.5[a]	0.0[b]	0.0[b]	0.0[a]	0.0[a]	0.0[b]
Transform 50 WG (1.00 oz/acre)	20.0[a]	0.0[b]	0.0[b]	0.0[a]	0.0[a]	0.0[b]
Carbine 50 WG (1.70 oz/acre)	22.5[a]	0.0[b]	0.0[b]	2.5[a]	0.0[a]	0.6[b]
Carbine 50 WG (2.80 oz/acre)	17.5[a]	1.3[b]	5.0[b]	2.5[a]	0.0[a]	2.2[b]
Brigadier 2.0 (7.70 oz/acre)	18.8[a]	0.0[b]	2.5[b]	0.0[a]	0.0[a]	0.6[b]
Untreated	12.5[a]	47.5[a]	21.3[a]	7.5[a]	0.0[a]	19.1[a]
LSD (P = 0.05)	NS[1/]	12.21	8.92	NS	NS	2.54
P > F	.5525	.0001	.0007	.2158	1.000	.0001

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 2. Fleahopper adults in cotton treated with various insecticides, Texas A&M AgriLife Research and Extension Center, Nueces County Texas, 2013.

Treatment (rate)	Fleahopper adults per 100 plants					
	Pretreat	3 DAT[2/]	6 DAT	9 DAT	16 DAT	Post-treat avg.
Centric 40 WG (1.25 oz/acre)	15.0[a]	6.3[b]	15.0[c]	10.0[a]	0.0[c]	7.8[d]
Transform 50 WG (0.75 oz/acre)	17.5[a]	1.3[b]	17.5[bc]	2.5[a]	2.5[bc]	5.9[d]
Transform 50 WG (1.00 oz/acre)	13.8[a]	3.8[b]	21.3[bc]	10.0[a]	1.3[c]	9.1[cd]
Carbine 50 WG (1.70 oz/acre)	18.8[a]	12.5[b]	35.0[ab]	20.0[a]	8.8[ab]	19.1[b]
Carbine 50 WG (2.80 oz/acre)	17.5[a]	23.8[b]	31.3[bc]	7.5[a]	2.5[bc]	16.3[bc]
Brigadier 2.0 (7.70 oz/acre)	17.5[a]	7.5[b]	15.0[c]	10.0[a]	0.0[c]	8.1[cd]
Untreated	12.5[a]	47.5[a]	50.0[a]	30.0[a]	10.0[a]	34.4[a]
LSD (P = 0.05)	NS[1/]	22.76	18.04	NS	6.63	8.35
P > F	.7432	.0059	.0053	.1254	.0205	.0001

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. Fleahopper nymphs and adults in cotton treated with various insecticides, Texas A&M AgriLife Research and Extension Center, Nueces County Texas, 2013.

Treatment (rate)	Fleahopper nymphs and adults per 100 plants					
	Pretreat	3 DAT[2/]	6 DAT	9 DAT	16 DAT	Post-treat avg.
Centric 40 WG (1.25 oz/acre)	35.0[a]	8.8[bc]	15.0[d]	10.0[bc]	0.0[c]	8.4[c]
Transform 50 WG (0.75 oz/acre)	40.0[a]	1.3[c]	17.5[cd]	2.5[c]	2.5[bc]	5.9[c]
Transform 50 WG (1.00 oz/acre)	33.8[a]	3.8[c]	21.3[bcd]	10.0[bc]	1.3[c]	9.1[c]
Carbine 50 WG (1.70 oz/acre)	41.3[a]	12.5[bc]	35.0[bc]	22.5[ab]	8.8[ab]	19.7[b]
Carbine 50 WG (2.80 oz/acre)	35.0[a]	25.0[b]	36.3[b]	10.0[bc]	2.5[bc]	18.4[b]
Brigadier 2.0 (7.70 oz/acre)	36.3[a]	7.5[c]	17.5[cd]	10.0[bc]	0.0[c]	8.8[c]
Untreated	25.0[a]	95.0[a]	71.3[a]	37.5[a]	10.0[a]	53.4[a]
LSD (P = 0.05)	NS[1/]	16.99	18.61	19.13	6.63	7.65
P > F	.3160	.0001	.0001	.0231	.0205	.0001

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

BOLLWORM/TOBACCO BUDWORM PHEROMONE TRAP CAPTURES IN NUECES COUNTY DURING 2013

Texas A&M Agrilife Research and Extension Center, Nueces County, 2013

Roy D. Parker
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SUMMARY: Bollworm moth catch in traps was lower in 2013 compared with any previous year including 2012 in which low numbers were also detected. Not a single tobacco budworm moth was captured during the trapping period from March through the end of August. The peak catch for bollworm moths did exceed the 2012 catch for the final 3 weeks in June and July, but the July catch was very low in both years. One reason for the low catch this season may have been the low acreage of nearby host crops due to the drought conditions.

OBJECTIVES: Trap catch data is collected to monitor relative abundance of the bollworm and tobacco budworm in the current season compared with previous years.

MATERIALS/METHODS: Moth-ZV 30-inch screen wire cone traps (Hartstack) deployed on March 7 were baited with pheromone for the bollworm and tobacco budworm at the Texas A&M AgriLife Research and Extension Center at Corpus Christi, Texas. Two traps were deployed for each species. These traps were monitored for 25 weeks. Moth numbers were recorded daily or every few days, and each 7-day catch total was divided by 7 to obtain the average daily catch for the corresponding period. Pheromone was changed monthly.

RESULTS/DISCUSSION: Bollworm moth trap captures were generally lower in April and May in 2013 compared to 2012 (Fig. 1). See the 2012 report for comparison. The peak number of moths captured in 2013 occurred in the second week of June similar to 2012. Overall, bollworm moth trap captures were subsequently low and similar to the captures in 2012. The lower catch during the past 3-year period may have been associated with the extended drought periods experienced. Similar data were obtained in 2009, another drought period.

Not a single tobacco budworm moth was captured this season (Fig. 2). There has generally been a steady decline in tobacco budworm moths in the pheromone traps since 2004.

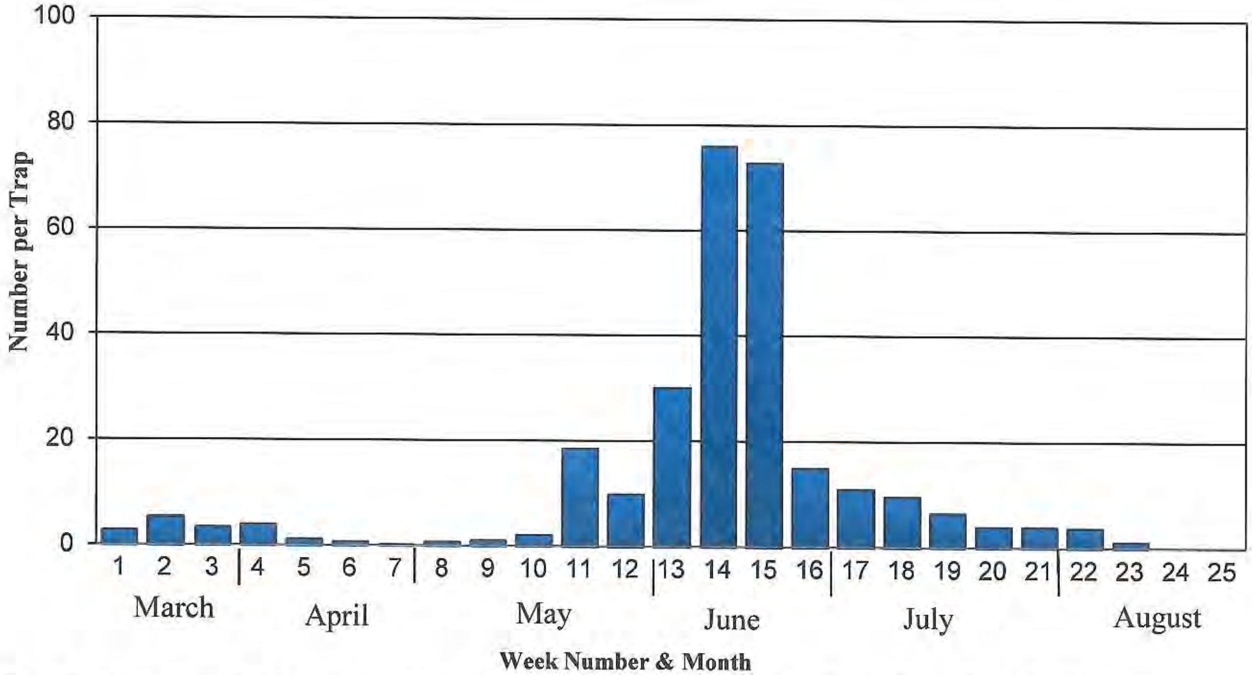

Fig. 1. Bollworm moths captured in pheromone traps per day for the indicated week, Nueces County, TX, 2013.

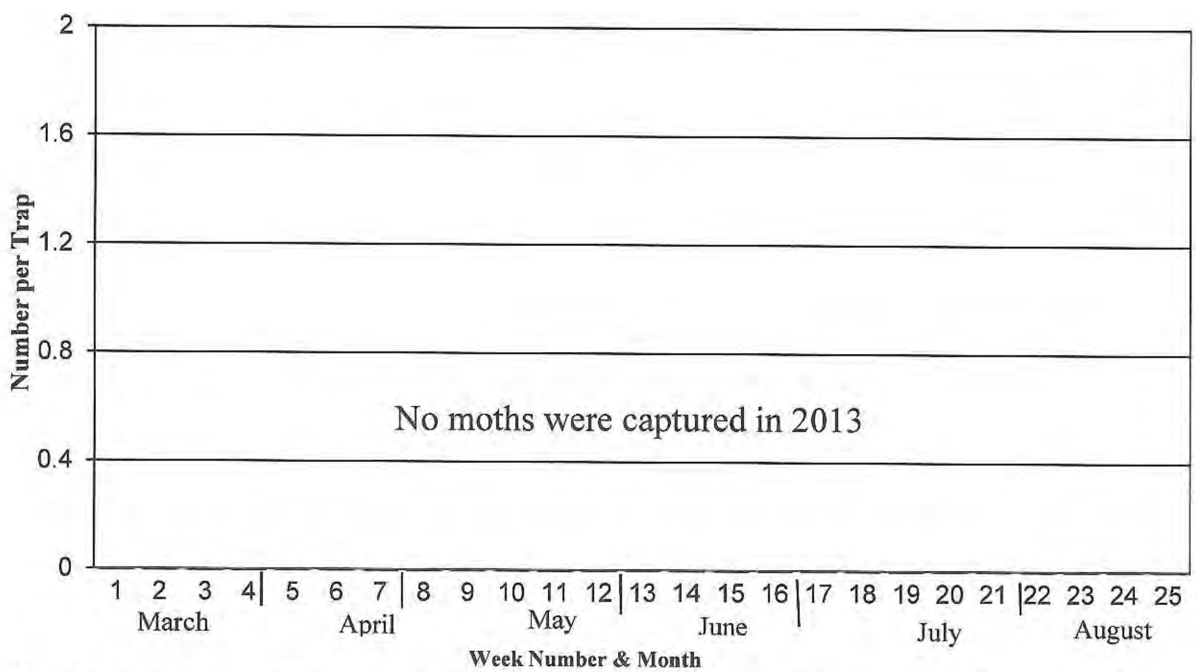

Fig. 2. Tobacco budworm moths captured in pheromone traps per day for the indicated week, Nueces County, TX, 2013.

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CORN

Page #

HISTORY OF CORN PRODUTION
NUECES COUNTY 1975-2013

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	12,500	10,000	45	448,000
1980	8,200	7,700	42	322,000	2012	3,167	1,529	30	45,870
1981	8,300	8,200	90	735,900	2013	12,415	6,186	30	185,580
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 2012 season were estimated using data obtained from the Nueces County FSA Office, and the Nueces County Extension Office

SORGHUM

Page #

HISTORY OF SORGHUM PRODUTION
NUECES COUNTY 1961-2013

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	140,100	33.70	4,721
1977	260,000	26.88	6,978	2013	105,168	17.36	1,826
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 2013 season were estimated using data obtained from the Nueces County FSA Office, and the Nueces County Extension Office

TEXAS A&M AGRILIFE RESEARCH

AGRONOMIC AND TEST INFORMATION: GREGORY

TEST:	2013 Dryland Grain Sorghum Performance Test
LOCATION:	Allan Hunt Farm, Gregory, Texas
COOPERATORS:	Allan Hunt
SOIL TYPE:	Raymondville clay loam, 0-1% slope
ROW WIDTH:	38"
PREVIOUS CROP:	Grain Sorghum
LAND PREPARATION:	Full Conventional Till; shred stalks, deep plowed, disked, field cultivated, and planted flat
DATE PLANTED:	2-28-13, planted flat with cones mounted on an Almaco planter using JD Max-Emerge II units.
PLANT POPULATION:	Seeds were packaged to obtain a final population of approximately 75,000-80,000 plants/A
PLOT LENGTH:	2 rows 26'
FERTILIZER:	Broadcast 250 lb/A of 32+0+0 + 2 gal/A of ACCUGro Black Label Phosphate + trace minerals; pre-plant
HERBICIDE:	Applied and incorporated with a field cultivator 13 oz/A of Outlook + .75 lb/A Atrazine along with fertilizer
RAINFALL:	Rainfall was not recorded at the test block, however the cooperator indicated he had approximately 3.0" during the growing season with most of the rain occurring late in the growing season.
DATE HARVESTED:	7-15-13 with JD 3300 plot combine equipped with Grain Gauge
SIZE HARVESTED PLOT:	2 rows, 26' long
TEST DESIGN:	Randomized complete block
NUMBER ENTRIES:	50
NUMBER REPLICATIONS:	4

NUMBER ROWS/PLOT:	2
TEST MEAN:	4,444 lb/A; yields corrected to 14% moisture
TEST C.V.:	15.15%

COMMENTS:

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For further information about this report, contact Mr. Dennis Pietsch, Crop Testing Director, Texas A&M AgriLife Research, College Station, TX
(979) 845-8505, dpietsch@ag.tamu.edu
Please visit the Crop Testing web page at http://varietytesting.tamu.edu

TEXAS A&M AGRILIFE RESEARCH

2013 Grain Sorghum Performance Test, Allan Hunt Farm, Gregory, Texas.

Hybrid (1)	Company or Brand Name	Maturity Class (2)	Grain Color (3)	Plant Color (4)	Days to 50% Flower	Plant Height Inches	Head Exser-tion In.	% Lodge	% Moisture	Test Weight lb/bu	Yield lb/A (5)
DeKalb DKS51-01	Monsanto Company	ML	BZ	P	84	52	7	0.0	12.2	60.3	5,562
3545	Golden Acres Genetics	M	BZ	P	83	49	8	0.0	11.3	59.8	5,431
DeKalb DKS49-45	Monsanto Company	M	BZ	P	85	47	6	0.0	12.3	60.2	5,313
REV® RV9924™	Terral Seed Inc.	L	R	P	84	46	3	0.0	10.7	59.3	5,263
84P80	DuPont Pioneer	ML	R	R	84	44	3	0.0	11.8	60.4	4,978
AG3201	Advanta US Inc	ML	BZ	R	82	46	5	0.0	12.6	59.6	4,970
NK8416	Sorghum Partners, LLC	L	BZ	P	85	54	6	0.0	11.6	60.8	4,954
SP6929	Sorghum Partners, LLC	ML	BZ	P	83	48	8	0.0	12.5	60.3	4,875
83G19	DuPont Pioneer	ML	BZ	R	83	45	4	2.5	11.0	60.3	4,868
Fill		ML	R	R	84	45	3	0.0	11.7	60.3	4,844
83P99	DuPont Pioneer	ML	BZ	R	87	42	2	0.0	11.9	60.7	4,746
GW 9417	Gayland Ward Seed Co.	M	R	P	83	52	5	10.0	12.1	60.8	4,710
REV® RV9823™	Terral Seed Inc.	ML	BZ	P	84	45	4	0.0	11.7	61.0	4,661
Integra 3670	Wilbur-Ellis Company/Integra	ML	BZ	P	82	45	5	2.5	12.0	60.2	4,648
REV® RV9782™	Terral Seed Inc.	ML	R	P	83	45	4	3.8	11.4	61.0	4,585
TRX15401	Triumph Seed Co. Inc.	*	*	*	86	48	3	0.0	11.8	60.1	4,579
REV® RV9562™	Terral Seed Inc.	ME	R	P	83	42	4	0.0	11.2	60.8	4,567
5556	Golden Acres Genetics	ME	R	P	82	41	8	0.0	11.2	60.9	4,529
Integra 3650	Wilbur-Ellis Company/Integra	M	R	P	81	43	6	0.0	10.5	56.6	4,515
5613	Golden Acres Genetics	M	BZ	P	83	44	7	0.0	11.6	60.6	4,488
REV® RV9883™	Terral Seed Inc.	ML	R	P	85	48	4	0.0	11.3	59.6	4,448
XG1213	Advanta US Inc	ME	BZ	R	84	43	5	0.0	11.5	59.9	4,440
DeKalb DKS53-67	Monsanto Company	ML	BZ	P	86	45	4	0.0	13.0	61.8	4,431
84G62	DuPont Pioneer	ML	BZ	R	86	42	2	0.0	11.5	60.7	4,397
ATx378 x RTx430	Texas A&M AgriLife Research	ML	BZ	P	84	54	6	0.0	11.8	59.2	4,360

Hybrid (1)	Company or Brand Name	Maturity Class (2)	Grain Color (3)	Plant Color (4)	Days to 50% Flower	Plant Height Inches	Head Exser-tion In.	% Lodge	% Moisture	Test Weight lb/bu	Yield lb/A (5)
TR4941	Triumph Seed Co. Inc.	*	*	*	82	43	5	0.0	11.4	60.1	4,356
REV® RV9973™	Terral Seed Inc.	L	R	P	87	43	2	0.0	11.6	60.1	4,346
AG2103	Advanta US Inc	ME	R	R	83	41	8	2.5	11.7	61.0	4,340
Exp 9059	Gayland Ward Seed Co.	ME	BZ	P	83	46	8	0.0	12.7	57.0	4,243
Integra 3660	Wilbur-Ellis Company/Integra	M	R	P	82	42	7	3.8	11.6	60.6	4,201
AG2101	Advanta US Inc	M	R	R	83	45	5	0.0	11.3	59.4	4,183
REV® RV9803™	Terral Seed Inc.	ML	R	P	84	41	4	0.0	11.8	60.4	4,120
KS735	Sorghum Partners, LLC	ML	BZ	P	83	45	5	2.5	11.3	60.1	4,079
SP7868	Sorghum Partners, LLC	ML	BZ	P	84	50	9	5.0	12.4	61.9	4,064
REV® RV9794™	Terral Seed Inc.	M	R	P	85	46	4	1.3	11.1	59.6	4,029
NK8831	Sorghum Partners, LLC	ML	BZ	P	84	47	5	12.5	11.2	60.6	4,024
GW 9480	Gayland Ward Seed Co.	M	R	P	86	51	4	16.3	12.2	61.9	3,907
ATx645 x RTx437	Texas A&M AgriLife Research	M	R	R	84	50	5	5.0	12.4	59.5	3,813
Exp 9061	Gayland Ward Seed Co.	M	BZ	P	83	45	6	0.0	13.2	57.2	3,801
ATx2752 x RTx430	Texas A&M AgriLife Research	ML	BZ	P	83	43	5	5.0	11.8	60.5	3,782
TR457	Triumph Seed Co. Inc.	*	*	*	82	42	7	10.0	11.5	60.2	3,594
ATx645 x RTx2783	Texas A&M AgriLife Research	ML	R	R	86	51	4	7.5	13.1	60.8	3,576
ATx399 x RTx430	Texas A&M AgriLife Research	ML	BZ	P	83	44	6	16.3	12.2	59.9	3,532
ATx631 x RTx436	Texas A&M AgriLife Research	ML	W	T	84	46	4	10.0	11.5	60.4	3,459
TRX24871	Triumph Seed Co. Inc.	*	*	*	88	43	4	0.0	12.2	60.2	3,398
Mean					83.9	45.5	4.8	2.3	11.8	60.2	4,444
C.V.					0.92	4.98	20.46	294.55	8.32	1.20	15.15
L.S.D. .05					1.10	3.22	1.39	9.73	NS	1.02	957

Note 1: All data was analyzed using REMLTOOL. L.S.D.'s are given for traits that were significantly different at P<.05.

Note 2: Those hybrids entered by Texas A&M AgriLife Research are being tested as experimental check hybrids

(1) Dupont Pioneer brand 84P80 was used as a fill plot six times. Fill entries were analyzed separately,but combined as one entry in the table. This hybrid was entered at our discretion and is intended to be used for comparison purposes only.

Hybrid (1)	Company or Brand Name	Maturity Class (2)	Grain Color (3)	Plant Color (4)	Days to 50% Flower	Plant Height Inches	Head Exser-tion In.	% Lodge	% Moisture	Test Weight lb/bu	Yield lb/A (5)

(2) Maturity classification designated by respective seed companies: E=Early, M=Medium, ML=Medium Late, L=Late. Those hybrids with an asterisk (*) indicates company did not submit maturity.

(3) Grain color designated by respective seed companies: R=Red, Bz=Bronze, W=White, Cm=Cream, Y=Yellow. Those hybrids with an asterisk (*) indicates company did not submit grain color.

(4) Plant color designated by respective seed companies: T=Tan, R=Red, P=Purple. Those hybrids with an asterisk (*) indicates company did not submit plant color.

(5) Yields corrected to 14% moisture

For further information about this report, contact Mr. Dennis Pietsch, Crop Testing Director, Texas A&M AgriLife Research, College Station, TX (979) 845-8505, DPietsch@ag.tamu.edu
Please visit the Crop Testing webpage at http://varietytesting.tamu.edu

COMPARISON OF STORED GRAIN INSECTICIDES FOR CONTROL OF INSECT PESTS

Texas A&M AgriLife Research and Extension Center, Nueces County, 2013

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SUMMARY: Grain moisture was relatively constant, and grain temperature generally reflected the seasonal weather through the 11 month storage period. In storage months 4 and 5 increased temperature was detected in the untreated sorghum; following those readings through the 11th month significant differences in storage temperature were not observed. During the last 3 storage months rusty grain beetles began to increase in non-insecticide treated grain, but all grain protectants kept their numbers at low levels. Red flour beetles generally declined or remained static after the 5th storage month. Rice weevils began to increase in the non-insecticide treated grain in months 10 and 11. Lesser grain borer numbers remained low for most of the storage months with fewer found in the later months than during the early months. Other insect pests detected included corn sap beetle and Angoumois grain moth. Two parasitoids were detected during the test period.

A better picture of the effects of the stored grain protectant could be seen when all the pest insect species were combined. The only month that the untreated sorghum did not exceed that number at which fumigation would be recommended for the secondary damaging insects (5 per quart sample) was in the first month. Furthermore, the untreated grain contained statistically significant more total storage pest insects in all months except in month 7. The Centynal + Diacon treated grain did not differ from the untreated grain in storage month 1. There was a general trend for higher numbers of insects in the Centynal treatments throughout the testing period especially in the early months. It was found in analysis of grain samples for presence of the insecticides that Centynal treated grain did not have sufficient amounts present possibly due to mistake in treating the grain although the reason for the error could not be found/explained. All other treatments that were evaluated for insecticide presence on the grain had adequate amounts in all replications.

A bioassay was set up to compare effects of Storcide II with untreated grain. Sixty-three days after the bioassay was established the Storcide II treatment contained 0.3 insects per quart sample whereas the untreated grain contained 85.0 insects per quart sample. This analysis was conducted as a quick check on the effectiveness of the treatment since the infestation in the main test had not increased as expected.

The general rate of increase of insect pests in the stored grain protectant evaluation was lower than in past studies conducted using the same methods. Through the first 11 months of storage insect numbers in the untreated grain were significantly higher than the insecticide treatments but not yet high enough to cause enough damage to affect grain quality.

OBJECTIVES: Grain protectant insecticides were evaluated to determine length of control of stored grain insects and to measure the impact of the addition of Diacon (insect growth regulator) to the other insecticides.

MATERIALS/METHODS: Sorghum harvested in 2012 was held at the Bee County Cooperative, Tynan, Texas for about 2 months before it was treated with insecticides for stored grain insects. The grain was measured in 100 lb increments and treated on September 13, 2012 in a concrete mixer by applying equivalent to 5 gallons of spray volume/60,000 lb. Two 100 lb samples of each treatment were placed in 30 gallon drums for a total of 200 lb/drum. Each drum was weighed to determine exact starting weight of the sorghum, and bushel weight was determined. Each treatment was replicated 4 times and later arranged in randomized complete block experimental design on the floor of the shop building at the Texas A&M AgriLife Research and Extension Center at Corpus Christi. Drums were covered with 0.5-inch hardware cloth to keep out birds, rodents and other unwanted animals. Four species of insects (rusty grain beetle, red flour beetle, rice weevil, lesser grain borer) were obtained from Oklahoma State University and 20 live specimens of each species were added to the storage drums. Initial samples taken in October revealed that fumigation to remove insects from the grain other than those added had not been successful; therefore, all drums were fumigated again with Phostoxin (2 pellets/drum) on October 19-22. Following aeration to remove the fumigant, the drums were inoculated again with the four pest species listed above. Subsequently, the start date of the test was determined to be late October 2012. Insects from surrounding natural infestations from inside and outside the building had access to the experimental grain.

Treatments were assessed monthly by (1) measuring grain temperature with a 12-inch thermometer pushed into the center of the grain mass approximately 11.0 inches, (2) using a grain probe at 5 locations in each drum to obtain quart samples of grain for insect counts and moisture determination, (3) separating insects from the grain using a Seedburo Equipment Company sieve [8/64-inch triangle holes] and counting them under a Circline magnifier lamp, (4) sending 22 ounce grain samples to Central Life Sciences to determine ppm active ingredient of all treatments [except Sensat alone] on the grain, and (5) setting up a bioassay test comparing Storcide II with non-insecticide treated grain with counts made 14, 36, and 63 days following inoculation of the samples with 20 specimens each of rusty grain beetle, red flour beetle, rice weevil and lesser grain borer.

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

RESULTS/DISCUSSION: Grain moistures were fairly consistent over the 11 month storage period with no differences attributed to treatment detected (Table 1). In past tests when insect numbers increased to relatively high numbers so did moisture levels. The insect numbers in the current study did not increase to high enough levels even in the untreated sorghum to affect grain moisture readings.

Temperature in the stored sorghum generally reflected the change in seasons with initial readings about 78° F in November 2012 followed by a decline through January and then increasing temperatures until September (Table 2). Differences in temperature among the treatments occurred in February and March (months 4 and 5 of storage). In both months the highest temperature was detected in the untreated sorghum. The increase was about 1 and 2° F in February and March, respectively. During the next 6 months of storage there were no differences or trends in temperature among the store grain treatments.

Even though rusty grain beetles were introduced to each treatment following fumigation, this species was not detected in the insecticide treatments during the first months sampling, but by the second month they were found in the untreated grain (Table 3). In storage months 2-4, rusty grain beetle was only detected in the untreated sorghum but not at high enough level to be statistically different from the insecticide treatments. In the 5th storage month their numbers were significantly higher in the untreated grain but averaged only 0.5 per quart sample. Again, no statistical differences were noted in storage months 6-8, but at that point rusty grain beetles began to increase and by storage month 11 had reached 119.3 per quart sample in the untreated sorghum, significantly higher numbers than any of the other treatments.

Even though red flour beetles had been added following fumigation, their numbers remained low with no statistical differences until the 5th storage month at which time the untreated sorghum contained 3.3 per quart sample (Table 4). However, for the remaining months (6-11) their numbers did not increase nor were differences observed among any of the treatments. In fact, their numbers generally declined or remained static after the 5th storage month.

The most perplexing situation occurred with the rice weevil in that their numbers did not increase rapidly as in tests conducted using the same methods in past years (Table 5). None were found in the treatments until the 4th storage month at which time they were found in the untreated grain with a significant difference between insecticide-treated and untreated grain. Even though rice weevil numbers were numerically much higher (above treatment threshold) in the untreated sorghum in storage months 6-9, there were no statistical difference in any of the treatments. By storage months 10 and 11 the untreated grain again had statistically higher numbers of rice weevils. The reason for rice weevil numbers to remain relatively low, although above the fumigation treatment threshold, is not known.

Another insect that was expected to increase in the untreated sorghum was the lesser grain borer. None were detected until storage month 4 (Table 6). It was expected at the time that lesser grain borer numbers would then rapidly increase, but in fact, their numbers declined over the next 7 months. In storage month 11 the Storcide treatment did contain 2 lesser grain borer per quart sample when 6 were found in one of the replications of the 8 total in all four replications with none in the untreated sorghum. The lack of general increase in lesser grain borer cannot be explained.

Even though the corn sap beetle was not added to the grain following fumigation, their numbers were significantly higher in the untreated sorghum when month 1 counts were made in November (Table 7). They remained significantly higher in the untreated grain through storage month 6. At that point they generally declined, except in storage month 8 when more were found in the Sensat treated sorghum, but in that treatment no more were detected through month 11. Based on earlier observations with corn sap beetles the rapid increase may have been due to heavy migration into the storage drums from the surrounding area. The general decline was probably due to the dry storage conditions not being favorable for this insect.

The Angoumois grain moth was found in storage months 3-6 in some of the treatments in low numbers (Table 8). They were observed from time to time on the grain surface, but not in excessive numbers.

The total number of stored grain insects (rusty grain beetle, red flour beetle, rice weevil, lesser grain borer, corn sap beetle, and Angoumois grain moth) for each of the storage months is provided in Table 9. The only month that the untreated sorghum did not exceed that number at which fumigation would be recommended for the secondary damaging insects (5 per quart sample) was storage month 1. Furthermore, the untreated grain contained significantly more total grain storage pest insects in all months except in month 7. The Centynal + Diacon treated grain did not differ from the untreated grain in storage month 1. There was a general trend for higher numbers of insects in the Centynal treatments throughout the testing period especially in the early months. As will be seen later, the increased numbers in the Centynal treatment was probably due to an inadequate amount of the product applied to the grain.

The two parasitoids detected during the test period included *Anisopteramalus calandrae* and *Theocolax elegans* (Tables 10 and 11). The first species was found in low numbers only in storage months 5 and 6. *Theocolax elegans* was the primary parasitoid species detected throughout the test period in 8 out of the 11 storage months. In 3 of those months statistically higher numbers were found in the non-insecticide treatment as would be expected (months 8, 9, and 11). Lower, but consistent numbers were observed in the Centynal + Diacon treated grain. As mentioned above the amount of Centynal in that treatment was far below the target amount.

A few months following application of the stored grain protectants a chemical analysis of the sorghum was conducted to determine the amount of active ingredient present on all but where Sensat was used alone. The results of the analysis are shown in Table 12. The measurements show adequate residual of all products tested except for Centynal and Centynal + Diacon. All mixing calculations and mixing equipment was examined for errors, but none could be found. The reason for the very low rate on the Centynal treated grain cannot be explained. The insect data for these two treatments is therefore suspect, i.e. the full effectiveness of the Centynal treatment cannot be measured in the study. However, the control level achieved with the Centynal through 11 months was surprising.

The bioassay set up to determine effectiveness of the Storcide treatment resulted in excellent control of the four species added to the sorghum (Table 12). Sixty-three days following addition of the insects the Storcide treatment averaged 0.3 and the untreated grain averaged 85.0 insects per quart sample.

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Table 1. Moisture in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	13.3^{a}	13.1^{a}	12.3^{a}	12.8^{a}	12.8^{a}	13.0^{a}	13.1^{a}	13.2^{a}	13.2^{a}	13.3^{a}	13.4^{a}
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	13.4^{a}	13.2^{a}	12.6^{a}	12.9^{a}	12.8^{a}	13.1^{a}	13.1^{a}	13.3^{a}	13.3^{a}	13.3^{a}	13.4^{a}
Storcide II (11.6 oz/60,000 lb)	13.4^{a}	13.2^{a}	12.5^{a}	12.8^{a}	12.9^{a}	13.1^{a}	13.1^{a}	13.3^{a}	13.4^{a}	13.4^{a}	13.4^{a}
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	13.3^{a}	13.2^{a}	12.5^{a}	12.9^{a}	12.9^{a}	13.1^{a}	13.1^{a}	13.3^{a}	13.4^{a}	13.3^{a}	13.4^{a}
Sensat (9.8 oz/60,000 lb)	13.3^{a}	13.3^{a}	12.6^{a}	12.8^{a}	12.7^{a}	13.0^{a}	13.1^{a}	13.2^{a}	13.4^{a}	13.4^{a}	13.4^{a}
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	13.4^{a}	13.2^{a}	12.7^{a}	12.9^{a}	12.8^{a}	12.9^{a}	13.1^{a}	13.2^{a}	13.2^{a}	13.3^{a}	13.4^{a}
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	13.3^{a}	13.2^{a}	12.6^{a}	12.8^{a}	12.8^{a}	13.1^{a}	13.2^{a}	13.2^{a}	13.3^{a}	13.3^{a}	13.4^{a}
Untreated	13.3^{a}	13.1^{a}	12.5^{a}	12.9^{a}	12.9^{a}	13.1^{a}	13.1^{a}	13.2^{a}	13.3^{a}	13.3^{a}	13.4^{a}
LSD (P = 0.05)	NS[1/]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
P > F	.2924	.0875	.0611	.6399	.5187	.1873	.6414	.1160	.1143	.4124	.8531

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

Table 2. Grain temperature in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	78.8^{a}	74.0^{a}	65.3^{a}	68.3^{bc}	66.5^{b}	74.0^{a}	74.0^{a}	87.5^{a}	88.8^{a}	87.8^{a}	84.8^{a}
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	78.8^{a}	74.0^{a}	65.0^{a}	68.3^{bc}	66.8^{b}	73.3^{a}	74.5^{a}	87.5^{a}	89.3^{a}	88.0^{a}	85.3^{a}
Storcide II (11.6 oz/60,000 lb)	78.3^{a}	73.8^{a}	64.8^{a}	68.3^{bc}	66.5^{b}	73.8^{a}	74.3^{a}	87.5^{a}	89.0^{a}	88.0^{a}	85.3^{a}
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	78.3^{a}	74.0^{a}	64.8^{a}	67.8^{c}	66.3^{b}	73.8^{a}	75.3^{a}	87.3^{a}	89.3^{a}	88.0^{a}	85.3^{a}
Sensat (9.8 oz/60,000 lb)	78.5^{a}	73.8^{a}	64.8^{a}	68.0^{bc}	66.8^{b}	73.8^{a}	74.8^{a}	87.3^{a}	89.3^{a}	88.3^{a}	85.3^{a}
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	78.5^{a}	74.3^{a}	64.8^{a}	68.5^{ab}	66.8^{b}	73.8^{a}	75.0^{a}	87.3^{a}	89.3^{a}	88.3^{a}	85.3^{a}
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	78.8^{a}	73.8^{a}	65.0^{a}	68.3^{bc}	66.5^{b}	73.8^{a}	74.8^{a}	87.3^{a}	89.3^{a}	88.3^{a}	85.5^{a}
Untreated	78.3^{a}	74.5^{a}	65.3^{a}	69.0^{a}	68.0^{a}	73.8^{a}	74.8^{a}	87.3^{a}	89.0^{a}	88.0^{a}	86.0^{a}
LSD (P = 0.05)	NS[1/]	NS	NS	0.65	0.98	NS	NS	NS	NS	NS	NS
P > F	.4926	.1901	.4586	.0375	.0428	.7537	.1255	.9578	.7247	.7957	.1754

Means in a column followed by the same letter are not significantly different by ANOVA.

[1/]NS = Not Significant.

Table 3. Rusty grain beetle per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.0^b	0.0^b	1.0^b
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.0^b	0.3^b	0.3^b
Storcide II (11.6 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.0^b	0.0^b	0.0^b
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.0^b	0.0^b	0.0^b
Sensat (9.8 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.3^b	3.3^b	10.5^b
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.0^b	0.0^b	0.0^b
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.0^b	0.0^b	0.0^b
Untreated	0.0^a	0.3^a	0.8^a	0.5^a	0.5^a	1.3^a	0.3^a	0.0^a	2.0^a	25.5^a	119.3^a
LSD (P = 0.05)	NS[1/]	NS	NS	NS	0.30	NS	NS	NS	0.81	5.44	11.10
P > F	1.000	.4586	.0525	.4586	.0239	.4586	.4586	1.000	.0004	.0001	.0001

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

Table 4. Red flour beetle per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.3[a]	0.5[b]	0.3[a]	0.0[a]	0.3[a]	0.8[a]	0.3[a]	0.8[a]
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.3[a]	1.0[b]	0.3[a]	0.3[a]	0.0[a]	0.3[a]	0.0[a]	0.0[a]
Storcide II (11.6 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.3[a]	0.0[a]
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.3[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]
Sensat (9.8 oz/60,000 lb)	0.3[a]	0.3[a]	0.0[a]	1.0[a]	0.3[b]	0.8[a]	0.3[a]	1.0[a]	0.0[a]	0.0[a]	0.0[a]
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0[a]	0.8[a]	0.0[a]	0.3[a]	1.8[ab]	0.8[a]	0.3[a]	0.3[a]	0.0[a]	0.0[a]	0.0[a]
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.3[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]
Untreated	0.0[a]	0.0[a]	0.0[a]	0.8[a]	3.3[a]	0.8[a]	0.3[a]	1.0[a]	0.5[a]	1.8[a]	0.8[a]
LSD (P = 0.05)	NS[1/]	NS	NS	NS	1.80	NS	NS	NS	NS	NS	NS
P > F	.4586	.0788	1.000	.6453	.0115	.6349	.7490	.0964	.1821	.2696	.3229

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

Table 5. Rice weevil per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.3^a	0.0^a	0.0^a	0.0^b	0.0^b
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^b	0.5^a	0.0^a	1.0^a	1.5^a	2.3^a	0.0^b	0.5^b
Storcide II (11.6 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.5^a	0.0^a	0.0^b	0.0^b
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^b
Sensat (9.8 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^b
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.3^a	0.0^a	0.0^a	0.0^a	0.0^b	0.0^b
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^b	0.0^a	0.0^a	0.0^a	0.3^a	0.0^a	0.0^b	0.3^b
Untreated	0.0^a	0.0^a	0.0^a	0.5^a	0.3^a	3.3^a	4.5^a	6.5^a	3.8^a	2.8^a	1.5^a
LSD (P = 0.05)	NS[1/]	NS	NS	0.30	NS	NS	NS	NS	NS	1.30	0.76
P > F	1.000	1.000	1.000	.0239	.1503	.0511	.1966	.0529	.0673	.0022	.0056

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

Table 6. Lesser grain borer per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]
Storcide II (11.6 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.5[a]	2.0[a]
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]
Sensat (9.8 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0[a]	0.0[a]	0.0[a]	0.0[b]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]	0.0[a]
Untreated	0.0[a]	0.0[a]	0.0[a]	1.5[a]	0.3[a]	0.0[a]	0.3[a]	0.0[a]	0.0[a]	0.5[a]	0.0[a]
LSD ($P = 0.05$)	NS[1/]	NS	NS	0.67	NS	NS	NS	NS	NS	NS	NS
$P > F$	1.000	1.000	1.000	.0012	.4586	1.000	.4586	1.000	1.000	.3454	.1036

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

Table 7. Corn sap beetle per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.3^{b}	0.3^{c}	0.8^{c}	0.8^{b}	0.5^{b}	0.3^{b}	0.3^{a}	0.0^{b}	0.0^{a}	0.0^{a}	0.0^{a}
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	2.8^{a}	11.0^{b}	8.0^{b}	1.0^{b}	0.5^{b}	0.3^{b}	0.0^{a}	0.5^{b}	0.3^{a}	0.0^{a}	0.0^{a}
Storcide II (11.6 oz/60,000 lb)	0.0^{b}	0.0^{c}	0.0^{c}	0.0^{b}	0.0^{b}	0.0^{b}	0.0^{a}	0.0^{b}	0.0^{a}	0.0^{a}	0.0^{a}
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0^{b}	0.0^{c}	0.0^{c}	0.0^{b}	0.0^{b}	0.0^{b}	0.0^{a}	0.0^{b}	0.0^{a}	0.0^{a}	0.0^{a}
Sensat (9.8 oz/60,000 lb)	0.5^{b}	0.3^{c}	0.5^{c}	0.5^{b}	0.0^{b}	0.0^{b}	0.0^{a}	1.0^{ab}	0.0^{a}	0.0^{a}	0.0^{a}
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0^{b}	2.0^{c}	1.0^{c}	0.3^{b}	0.5^{b}	0.3^{b}	0.0^{a}	1.8^{a}	0.0^{a}	0.0^{a}	0.0^{a}
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0^{b}	0.0^{c}	0.0^{c}	0.0^{b}	0.0^{b}	0.0^{b}	0.0^{a}	0.3^{b}	0.0^{a}	0.0^{a}	0.0^{a}
Untreated	4.3^{a}	24.5^{a}	15.8^{a}	25.5^{a}	9.5^{a}	3.8^{a}	0.0^{a}	0.0^{b}	0.8^{a}	0.0^{a}	0.0^{a}
LSD (P = 0.05)	1.76	4.80	3.66	2.45	2.09	2.06	NS[1/]	1.08	NS	NS	NS
P > F	.0002	.0001	.0001	.0001	.0001	.0138	.4586	.0239	.1308	1.000	1.000

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

Table 8. Angoumois grain moth per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.3^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a
Storcide II (11.6 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.3^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a
Sensat (9.8 oz/60,000 lb)	0.0^a	0.0^a	0.3^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.3^a	0.0^a	0.3^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a
Untreated	0.0^a	0.0^a	0.0^a	0.3^a	0.0^a	1.0^a	0.0^a	0.0^a	0.0^a	0.0^a	0.0^a
LSD (P = 0.05)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
P > F	1.000	1.000	.6430	.5828	.4586	.4586	1.000	1.000	1.000	1.000	1.000

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

Table 9. Total insects per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.3^{b}	0.3^{c}	0.8^{c}	1.0^{b}	1.0^{bc}	0.5^{b}	0.5^{a}	0.3^{b}	0.8^{bc}	0.3^{b}	1.8^{b}
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	2.8^{a}	11.0^{b}	8.0^{b}	1.5^{b}	2.0^{bc}	0.5^{b}	1.3^{a}	2.0^{b}	2.8^{b}	0.3^{b}	0.8^{b}
Storcide II (11.6 oz/60,000 lb)	0.0^{b}	0.0^{c}	0.0^{c}	0.0^{b}	0.0^{c}	0.0^{b}	0.0^{a}	0.5^{b}	0.0^{c}	0.8^{b}	2.0^{b}
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0^{b}	0.0^{c}	0.3^{c}	0.3^{b}	0.0^{c}	0.0^{b}	0.0^{a}	0.0^{b}	0.0^{c}	0.0^{b}	0.0^{b}
Sensat (9.8 oz/60,000 lb)	0.8^{b}	0.5^{c}	0.8^{c}	1.5^{b}	0.3^{bc}	0.8^{b}	0.3^{a}	2.0^{b}	0.3^{bc}	3.3^{b}	10.5^{b}
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0^{b}	2.8^{c}	1.3^{c}	0.5^{b}	2.5^{b}	1.3^{b}	0.3^{a}	2.0^{b}	0.0^{c}	0.0^{b}	0.0^{b}
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0^{b}	0.0^{c}	0.0^{c}	0.3^{b}	0.0^{c}	0.0^{b}	0.0^{a}	0.5^{b}	0.0^{c}	0.0^{b}	0.3^{b}
Untreated	4.3^{a}	24.8^{a}	16.5^{a}	29.0^{a}	13.8^{a}	10.0^{a}	5.3^{a}	7.5^{a}	7.0^{a}	30.5^{a}	121.5^{a}
LSD (P = 0.05)	1.88	4.85	3.77	3.03	2.30	5.09	NS[1/]	4.25	2.66	4.88	11.11
P > F	.0004	.0001	.0001	.0001	.0001	.0072	.0629	.0295	.0002	.0001	.0001

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

Table 10. *Anisopteramalus calandrae* (parasitoid) per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}
Storcide II (11.6 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}
Sensat (9.8 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}
Untreated	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.8^{a}	2.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}
LSD (P = 0.05)	NS[1/]	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
P > F	1.000	1.000	1.000	1.000	.4586	.4586	1.000	1.000	1.000	1.000	1.000

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

Table 11. *Theocolax elegans* (parasitoid) per quart sample in stored sorghum following treatment with grain protectants, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment (rate)	Storage month number post-treatment and calendar month										
	1 Nov	2 Dec	3 Jan	4 Feb	5 Mar	6 Apr	7 May	8 June	9 July	10 Aug	11 Sept
Centynal (8.53 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.3^{a}	0.0^{b}	0.0^{b}	0.0^{a}	0.0^{b}
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.3^{a}	0.3^{a}	0.3^{b}	0.5^{b}	0.5^{a}	0.3^{b}
Storcide II (11.6 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{b}	0.0^{b}	0.0^{a}	0.0^{b}
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{b}	0.0^{b}	0.0^{a}	0.0^{b}
Sensat (9.8 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{b}	0.0^{b}	0.0^{a}	0.0^{b}
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{b}	0.0^{b}	0.0^{a}	0.0^{b}
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{a}	0.0^{b}	0.0^{b}	0.0^{a}	0.0^{b}
Untreated	0.0^{a}	0.0^{a}	0.0^{a}	0.5^{a}	0.3^{a}	0.0^{a}	0.5^{a}	1.3^{a}	2.3^{a}	0.5^{a}	1.3^{a}
LSD (P = 0.05)	NS[1/]	NS	NS	NS	NS	NS	NS	0.54	1.04	NS	0.71
P > F	1.000	1.000	1.000	.4586	.4586	.4586	.6673	.0009	.0018	.3454	.0156

Means in a column followed by the same letter are not significantly different by ANOVA.

[1/]NS = Not Significant.

Table 12. Residual insecticide active ingredient (ppm) in stored sorghum and results of insect bioassay on Storcide II, Texas A&M AgriLife Research and Extension Center, Nueces County, TX, 2012 - 2013.

Treatment	Parts/million		Bioassay (total insects/quart at days following added insects)[4/]		
(rate)	Target	Actual	14	36	63
Centynal (8.53 oz/60,000 lb)	0.5	0.01[2/]	-	-	-
Centynal + Diacon (8.53 + 3.5 oz/60,000 lb)	0.5+1.36	0.1+.68[1/]	-	-	-
Storcide II (11.6 oz/60,000 lb)	3.5	1.5[2/]	0.8	0.3	0.3
Storcide II + Diacon (11.6 + 3.5 oz/60,000 lb)	3.5+1.36	1.8+.77[1/]	-	-	-
Sensat (9.8 oz/60,000 lb)	1.0	- [3/]	-	-	-
Sensat + Diacon (9.8 + 3.5 oz/60,000 lb)	1.0+1.36	1.0+1.0[1/]	-	-	-
Actellic + Diacon (12.3 + 3.5 oz/60,000 lb)	8.0+1.36	6.4+0.9[1/]	-	-	-
Untreated			62.0	40.3	85.0

Means in a column followed by the same letter are not significantly different by ANOVA.
[1/]Samples for analysis were taken in March 2013.
[2/]Samples for analysis were taken in April 2013.
[3/]Sensat (alone) sample were not measured.
[4/]The bioassay test was setup on April 19, 2013 (storage month 9).

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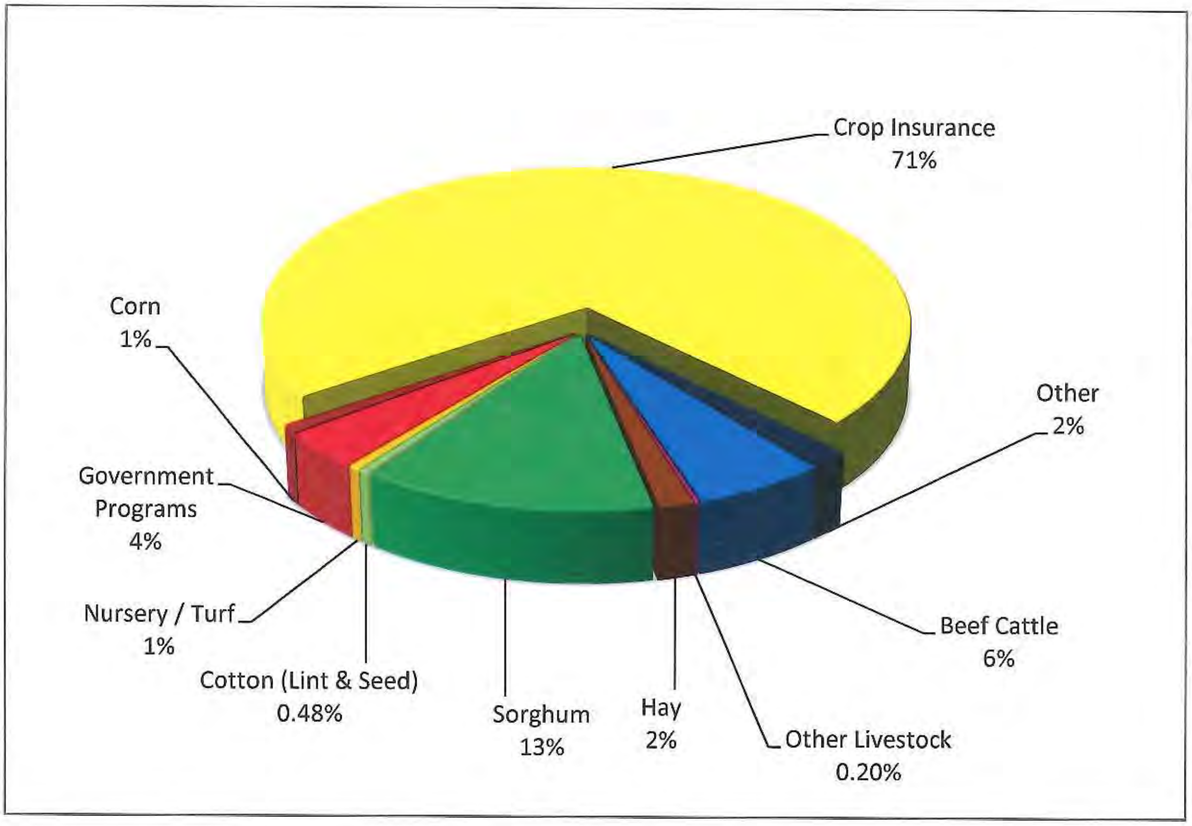
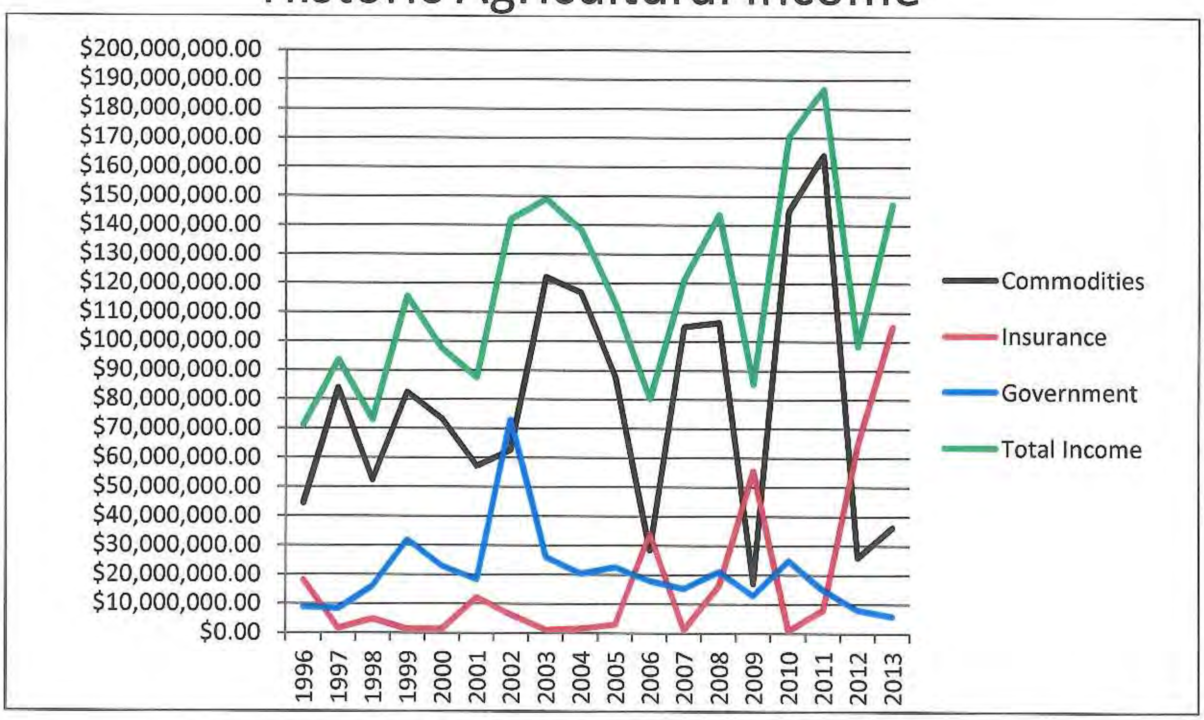
APPENDIX

Page #

2013 Nueces County Agricultural Income
Total Income = $147,033,000.00



Historic Agricultural Income*



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

NUECES COUNTY
ANNUAL AGRICULTURAL INCREMENT REPORT

Compiled By:

Jason P. Ott - County Extension Agent-Ag/NR

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

Commodity	2008	2009	2010	2011	2012	2013
Wheat	1596.60	718.30	1366.70	494.20	194.60	656.09
Corn	900.00	237.60	3828.40	4444.60	321.00	1234.11
Hay	1065.50	568.80	6875.00	1960.00	2520.00	2416.95
Sorghum	61178.20	6468.10	48181.70	54125.10	11264.00	19398.24
Cotton	26645.30	725.90	66679.40	76103.70	3386.00	503.48
Cottonseed	8966.30	216.90	11507.90	16193.70	1335.00	207.14
Sunflowers	468.70	178.20	223.10	460.00	271.00	216.54
Sesame		734.20	269.00	73.90	146.00	935.99
Guar						340.83
Foodcorn	0.00	243.60	0.00	0.00	0.00	0.00
Vegetables	5.60	2.00	5.00	5.00	5.00	5.00
Nursery	1435.00	1148.00	1400.00	1200.00	1000.00	865.00
Poultry	15.50	154.30	151.50	180.90	199.30	0.00
Beef Cattle	2732.80	3696.50	2209.50	4414.00	2766.80	8783.85
Goats	67.40	421.50	413.00	448.00	473.60	0.00
Hogs	67.80	634.40	691.70	660.80	770.00	0.00
Sheep	13.50	156.80	184.20	177.00	219.80	0.00
Aquaculture	200.00	200.00	200.00	120.00	200.00	200.00
Horses	300.00	300.00	300.00	300.00	300.00	300.00
Hunting	130.00	130.00	130.00	130.00	130.00	130.00
Other Ag Related	371.20	0.20	0.00	367.80	387.50	68.19
TOTAL	**106159.40**	**16935.30**	**144616.10**	**161858.70**	**25889.60**	**36261.41**

NUECES COUNTY ROW CROP PRODUCTION - 10-YEAR OVERVIEW

GRAIN SORGHUM

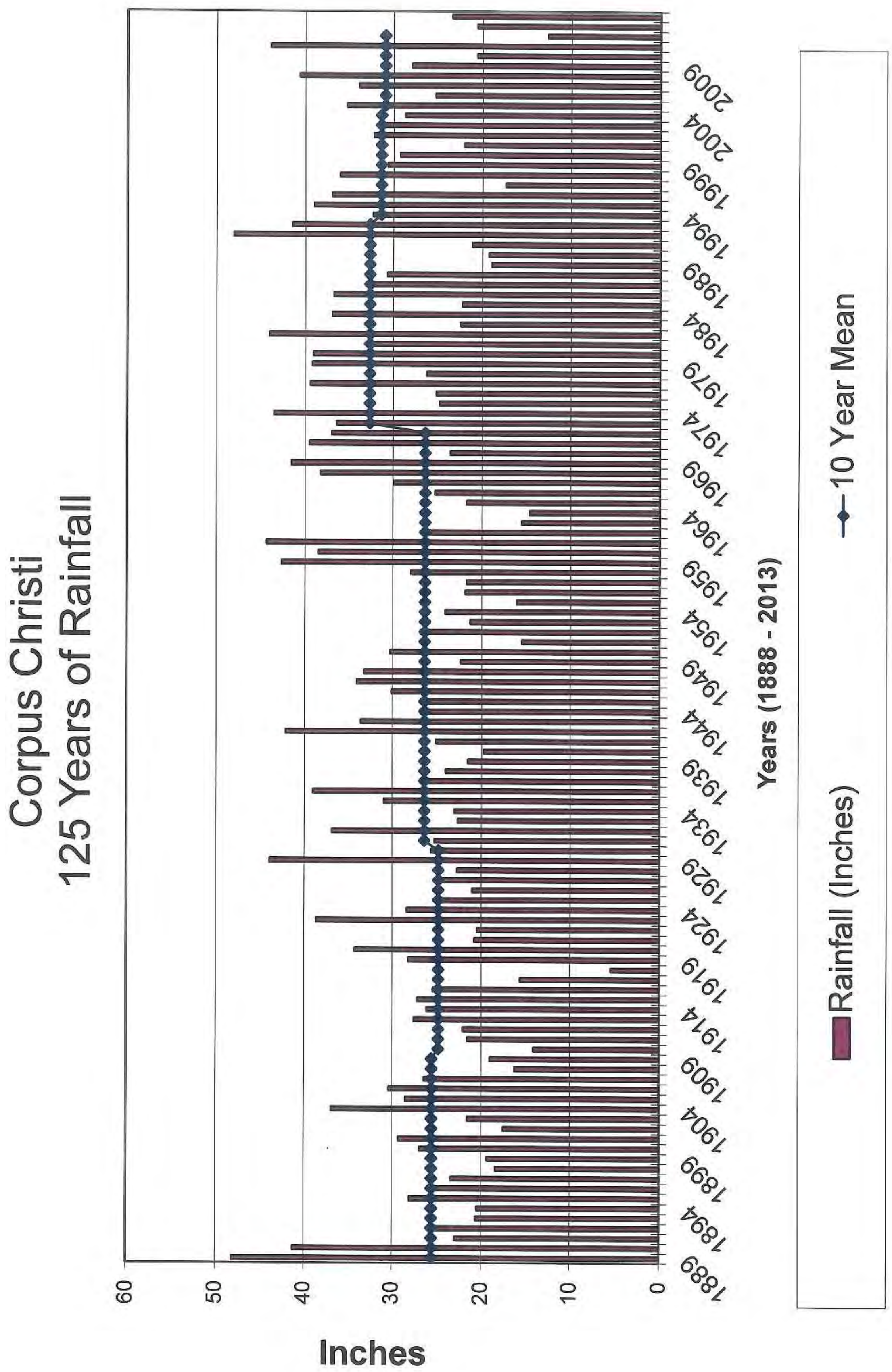
YEAR	PLANTED	ACRES HARVESTED	POUNDS/ACRE	TOTAL (CWT)
2004	165,066	163,500	4,600	7,521,000
2005	160,000	157,300	3,350	5,264,000
2006	158,700	92,400	1,568	1,473,000
2007	187,000	186,100	4,200	7,816,200
2008	198,850	197,880	3,797	7,513,504
2009	168,211	49,800	2,240	1,115,520
2010	183,430	183,430	4,730	8,676,239
2011	141,867	141,867	4,730	5,390,946
2012	187,196	140,100	3,370	4,721,370
2013	167,868	105,168	1,736	1,825,716
10-Yr Avg	**171,819**	**141,755**	**3,432**	**5,131,750**

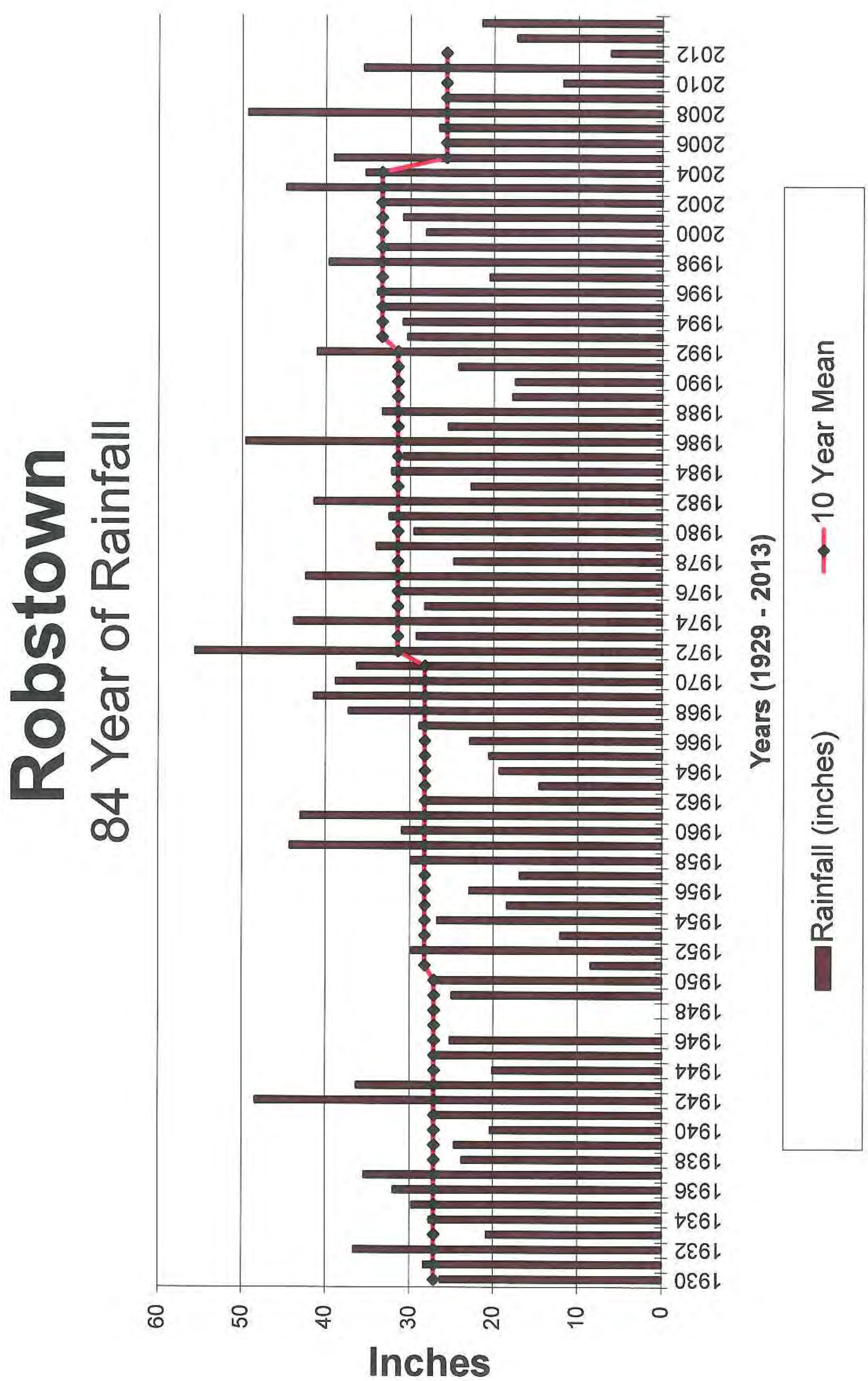
COTTON

YEAR	PLANTED	ACRES HARVESTED	POUNDS/ACRE	TOTAL (Bales)
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
2012	112,793	12,820	372	9,935
2013	168,786	2,055	350	1,498
10-Yr Avg	**132,818**	**76,512**	**604**	**110,911**

CORN

YEAR	PLANTED	ACRES HARVESTED	BUSHELS/ACRE	TOTAL (Bu)
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
2012	3,167	1,529	30	45,870
2013	12,415	6,186	30	185,580
10-Yr Avg	**8,187**	**6,443**	**60**	**438,180**


Corpus Christi
125 Years of Rainfall
Inches
0
10
20
30
40
50
60
Years (1888 - 2013)
1889
1894
1899
1904
1909
1914
1919
1924
1929
1934
1939
1944
1949
1954
1959
1964
1969
1974
1979
1984
1989
1994
1999
2004
2009
Rainfall (Inches)
10 Year Mean


Robstown
84 Year of Rainfall
Inches
60
50
40
30
20
10
0
1930
1932
1934
1936
1938
1940
1942
1944
1946
1948
1950
1952
1954
1956
1958
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1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
Years (1929 - 2013)
Rainfall (inches)
10 Year Mean

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.agrilife.org/
E-mail: nueces-tx@tamu.edu

Texas A&M 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

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