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EC97-106 Nebraska Grain Sorghum Hybrid Tests, 1997

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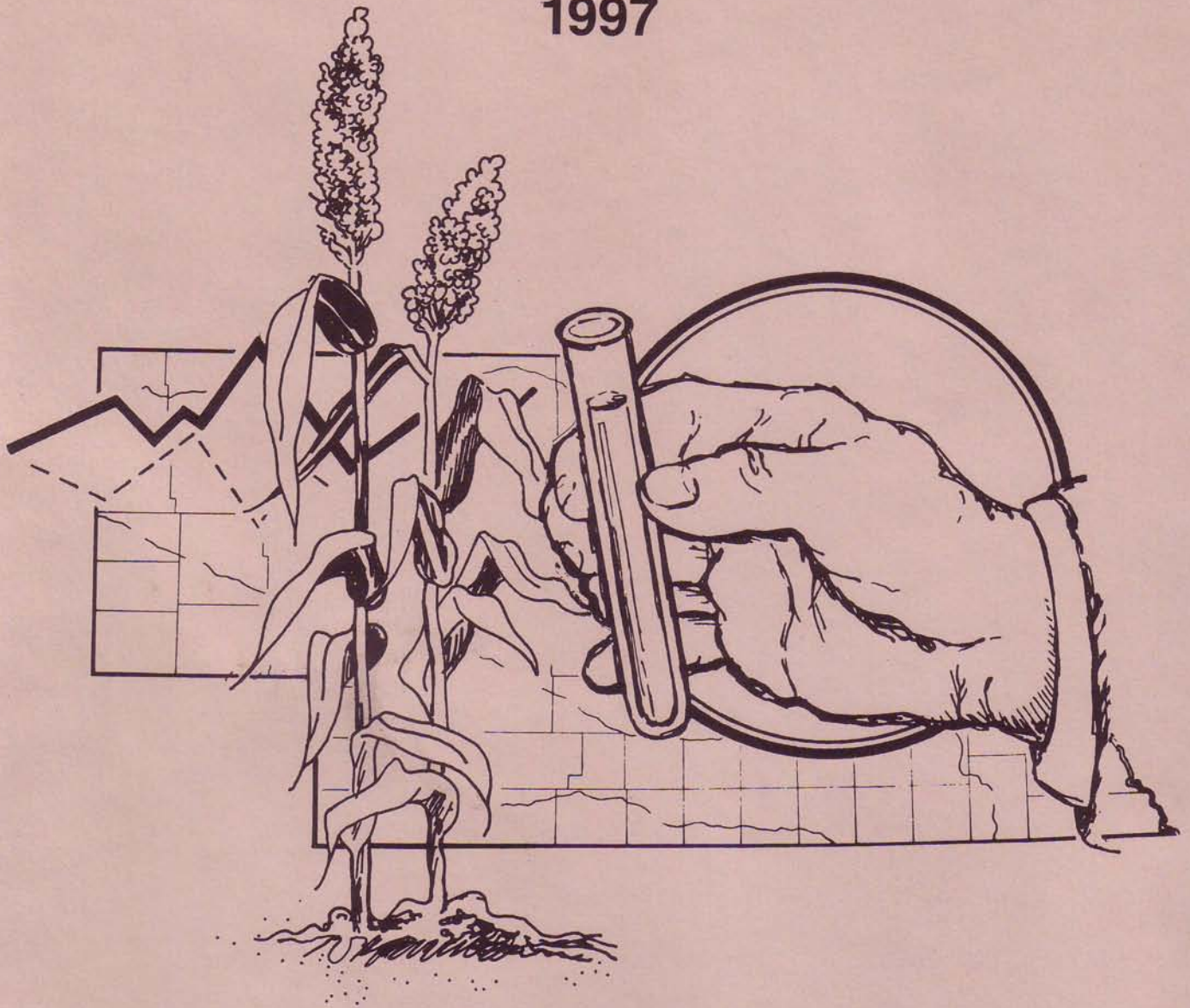
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NEBRASKA GRAIN SORGHUM HYBRID TESTS 1997



University of Nebraska–Lincoln
Institute of Agriculture and Natural Resources
Agricultural Research Division
Cooperative Extension



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EXTENSION CIRCULAR 97-106

NEBRASKA GRAIN SORGHUM HYBRID TESTS

January 1998

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ACKNOWLEDGMENTS

This circular is a progress report of grain sorghum trials conducted to obtain yield and other information for some of the hybrids being marketed. The 1997 season was the 40th year that private hybrids were included in these trials. Seed producers supported tests through fee payments.

Cooperating were the Agronomy Department and the South Central, West Central and Panhandle Research and Extension Centers. Acknowledgment is made to Extension Agents and others who assisted in these tests. Special acknowledgment is made to farmers who furnished land for the trials.

Conduct of experiments and publication of results is a joint effort of the Agricultural Research Division and the Cooperative Extension Service.

We want to acknowledge the State Climate Program at the University of Nebraska-Lincoln for providing the climate data used in this report. The reports of temperature and rainfall conditions at the various locations are found on pages 30-31.

We also wish to acknowledge the Nebraska Agricultural Statistics Service for data on crop acreages. Their data is included in the introduction on page 5.

We want to thank the people who provided technical support for this project, namely John A. Eis, Greg Dorn, Jeff Golus, George Hoffmeister, Glen Frickel, Robert Skates, and Ralph Klein.

We want to thank Z B Mayo for monitoring and reporting greenbug damage in the plots in southeast Nebraska. His ratings are included in a table on page 19.

CONTENTS

Introduction	5
Location of tests and maturity zones	9
Entrants	9
State Map with plot locations	10
Entries	11
Average performance 1997	12
Average performance over years 1993-1997	13
Grain Sorghum Characteristics	14
 Performance Data	
<u>Southeast</u>	
1997 Saline and Lancaster County	15
1993 - 1997	16
1997 Population Densities	18
1997 Greenbug ratings	19
<u>South Central</u>	
1997 Clay and Nuckolls Counties	20
1993 - 1997	22
1997 Population Densities	24
<u>Southwest</u>	
1997 Average two locations	25
1994 - 1997	26
<u>West Central</u>	
1997 Lincoln County Ecofallow	27
1996 - 1997	27
<u>West</u>	
1997 Cheyenne County Black Fallow and Ecofallow	28
1996 - 1997	28
Weather Data	30

METRIC EQUIVALENTS

1 centimeter = 0.394 inches	cm = inches x 2.54
1 hectare = 2.471 acres	ha = acres x 0.405
1 kilogram = 2.205 pounds	kg = pounds x 0.454
1 hectoliter = 2.838 bushels	hl = bushels x 0.352

Kilogram/hectoliter = lb/bu x 1.287
Kilograms/hectare = bu/A x 62.78 (56# bu)

NEBRASKA GRAIN SORGHUM HYBRID TESTS 1997

Recent grain sorghum acreage and yields for Nebraska were as follows:

	1990	1991	1992	1993	1994	1995	1996	1997
Yield bu/A	77.0	65.0	82.0	59.0	98.0	54.0	95.0	83.0
Acres Harvested(000)	1,400	1,250	1,500	1,250	1,250	980	1,030	800

Total grain sorghum planted in state was 950,000 acres. The following are the statewide growing conditions for grain sorghum. By June 1, planting had reached 77% completed compared to last year at 42% and the five year average at 55%. The crop was 32% emerged compared with 19% last year and 29% average. Wet and cool weather caused additional delays in field work. Temperatures were five to eleven degrees below normal. Precipitation amounts varied from nine-tenths of an inch in the southwest to two and half inches in the panhandle. By June 8, temperatures were near normal across the state. Drier and warmer weather conditions helped to improve planting. Planting had progressed to 94% compared with 68% last year and 73% for the five year average. Emergence was at 59% compared to 34% last year and 48% average. By July 20, sorghum conditions were 5% poor, 31% fair, 53% good, and 11% excellent. Temperatures for the week varied from one degree below normal in the Panhandle to four degrees above normals in the east central. By July 27, temperatures were one to five degrees above normals for the entire state. The crop was 10% headed, compared with 2% last year and 12% for the five-year

average. By August 24, sorghum heading was 94% complete, compared with 92% last year and 86% for the five-year average. The percent turning color was at 13%, the same as last year but behind 16% average. By September 14, the percent of acreage turning color was at 82%, compared to 72% last year and five year average of 67%. Sorghum conditions rated 4% very poor, 11% poor, 34% fair, 41% good, and 10% excellent. Grasshopper population continues to be a concern in many areas. By October 12, the crop was 3% very poor, 12% poor, 31% fair, 44% good, and 10% excellent. Sorghum was 95% mature, compared to 82% last year and average for five years of 84%. Grain harvest was 35% complete and compared with 7% last year and 18% for the five year average. October 26, harvest was 79% complete, well ahead of 26% last year and average of 49%.

Unseasonably early snow storm with six inches or more was recorded across the southeast half of Nebraska with ten to twenty-three inches recorded in many south central, southeastern and east central counties. The wet snow, accompanied by high winds, downed stalks in unharvested sorghum fields.

PROCEDURE

Locations of trials are shown on the map (page 10). Names of cooperators are shown in Table A. Entrants and entries are shown in Tables B and C, respectively.

Seed for testing was furnished by the

entrant. Seeding rates varied with location as shown in Table D. Seeding was accomplished with cone, belt units, or air units mounted on commonly used row planters. Two-row plots, 20 to 30 feet long were used.

Data on one-half bloom were obtained by visiting plots on alternate days during the flowering period. Grain moisture determinations were made at harvest at a time when differences between entries were relatively high. This gives an indication of relative grain drying rates.

Plant height and head exertion readings were made at harvest. Lodging readings were taken at harvest. Reported yields are based on 56 pounds per bushel and 14 percent grain moisture.

Maturity of a hybrid is an important consideration in its adaptation to a given location. Entries are listed in data tables in order of decreasing yields. Maturity of a hybrid is listed as plant bloom days or days from planting to half bloom. Variations do occur in maturity among trials and over years data. The

maturity of a hybrid is an important consideration in its adaptation to a given location. In analyzing yield evaluations, hybrids should be compared with those having similar maturities.

Variations in soil fertility, moisture conditions and other factors are found in each test area. This makes it impossible to measure yielding ability of hybrids with absolute accuracy. For this reason, small yield differences have little meaning. A statistical measure of differences required for significance is given in each table. These differences were computed at the 5 percent and 25 percent levels of significance. At the 5 percent level a difference of that magnitude would be expected once in twenty trials through chance alone. At the 25 percent level, a difference as large or larger would be expected by chance alone in one of four trials.

RESULTS

The average performance of all entries at each 1997 test location is shown in Table D. All tests were machine harvested this year. The maturity yield-correlation (r value) is an indication of the relationship between maturity (as measured by days from planting to bloom) and grain yield.

The average performance of hybrids included in trials over a five-year period is shown in Table E. This data indicates the effect of seasonal growing conditions on the characters measured. Stalk lodging data are included only for experiments where differentials among hybrids were observed.

Southeast (Pages 16 - 20)

Twenty seven entries were planted at two locations excluding farmer entry. Saline county dryland plot had a heavy rain of four inches after

planting. this caused compaction problems with poor germination, poor stand counts in some varieties. Grasshoppers were sprayed July 21 and July 28 with Sevin. Green bugs caused some damage later in season. The greenbug ratings are on page 18. Very dry conditions occurred during summer. No lodging occurred in this test. Plot was harvested with low moisture due to good dry down weather conditions. Average of all entries were 115 bu/acre. Farmer entry was Midwest Seed SG 610 @ 133 bu/a. Lancaster county dryland plot had good subsoil and adequate moisture during growing season. Good moisture in late summer helped plot to develop large heads. No lodging occurred in this test. Green bug damage did occur in test plot. The farmer entry was: NK 585 @ 135 bu/a. Average of all entries was 129 bu/a. DeKalb Genetics ST6E and NC+ Sweet was planted to check for Ergot. No Ergot was found in test. Because seed treatment plots

were included, plant populations were determined early in the season. The populations for this test are listed in the table on page 19.

South Central (Pages 20 - 21)

There were 32 entries planted including two farmer entries at Clay and Nuckolls county. Clay county was an irrigated plot, with two 30 inch rows X 24 feet long. Slot planted into soybean stubble. A seeding rate of 108,000 ppa was used for this plot. This field is part of a sorghum/soybean rotation. Harvest was interrupted by the 23, 24 October storm, with less than half of the plots harvested. Lodging after the storm varied greatly with many plots at 100% lodged. Due to the split harvest dates, lodging scores are not presented. The yields presented are adjusted using harvest date as a covariate. The average yield at Clay county was 133.2 bu/a. The farm entries were: # 1 NC+ Y363 @ 134 bu/a and #2 NK 2656 @ 119 bu/a. The Nuckolls county plot was surface planted after two diskings, into two 30 inch rows 30 feet long. The seeding rate for this dryland plot was 59,000 ppa. Heavy rain at emergence resulted in a stand loss greater than 50% in some plots. A high amount of tillering helped to compensate for the low stands. The plots having an average yield of 106 bu/a. Farmer entries #1 NC+ Y363 @ 101 bu/a and #2 NK 2656 @ 103 bu/a. Because seed treatment plots were included, plant populations were determined early in the season. The populations for this test are listed in the table on page 24.

The Nuckolls County dryland grain sorghum trial was planted in the same field as the South Central Dryland Corn Hybrid trial. Replicates of each trial were randomized to allow comparisons between corn and grain sorghum

yields. Thirty-seven corn hybrids were included. Average corn yield was 81 bu/acre with yields of individual hybrids ranging from 61 to 107 bu/acre. This compares to the 77 to 124 bu/acre yield range and 106 bu/acre average from the grain sorghum trial. See pages 34-35 in Nebraska Corn Hybrid Tests - 1997 (E.C. 97-105) to see the complete corn results.

Southwest (Pages 25 - 26)

Red Willow and Hayes county ecofallow plots with 20 entries were planted in wheat stubble from the 1996 harvest and fallow in 1995. Red Willow county test averaged 81 bu/acre. Farmer entries Pioneer 8505 @ 105 bu/a and Pioneer 8699 @ 105 bu/a. Planted at 88,000 seeds/acre. Hayes county had an average yield of 93 bu/acre. Farmer entries are DeKalb DK36 @ 104 and Pioneer 87G57 @ 112 bu/a. Planted at 88,000 seeds/acre.

West Central (Page 27)

This test plot was seeded into wheat stubble from 1996 crop. There were 12 entries tested. Lincoln county ecofallow had an average yield of 97 bu/a.

West (Page 28)

Five entries were tested at two locations. Cheyenne County planting delayed by wet weather. Above normal precipitin and heat units. Fall much longer than usual which improved maturity. One test was an ecofallow and the other was black fallow. Black fallow had a 20 month fallow following wheat while ecofallow had eight months following wheat. Black fallow average of all entries @ 35 bu/a. Ecofallow averages of all entries @ 34 bu/a.

Cultural Practices

Saline (dryland): Crop history: 1995 grain sorghum, 1996 Soybean. Fertilizer: Preplant 75 lb/a N, 37 lb P + 1 lb Zn. Herbicide: May 30, sprayed with 1 qt Lasso + 1 lb AAtrex. Insecticide: Sevin. Field cultivated. pH-5.6, Organic matter - 1.9%. Residual N 52 #/a

Lancaster (dryland): Crop history: 1995: Grain sorghum, 1996: Soybean. Preplant: 120 lb N anhydrous ammonia. Herbicide: Bicep 2 qt/a. Insecticide: None. No-till. pH - 5.7, organic matter - 2.9%. Residual N 65 #/a.

Clay (irrigated): Crop history: Grain sorghum, soybean rotation. Fertilizer: 135 lbs Nitrogen. Herbicide: 6.25 lbs/a Ramrod + 1 pt Roundup Ultra. No insecticide used.

Nuckolls (dryland): Crop history: Wheat for three years. Fertilizer: 125 lbs/a N. Herbicide: 1.8 qt/a Bicep preplant. No insecticide was used. The field was surface planted following 2 diskings.

Red Willow (ecofallow): No-till. Previous years: fallow-1995, winter wheat-1996. Fertilizer: 75 lbs/a Nitrogen. Herbicide: 2 pts/a Dual preplant. Insecticide: Lorsban 15G at 8 oz/1000 ft at planting. Plot was also hand weeded as necessary.

Hayes (ecofallow): No-till. Previous crops: 1995-fallow, 1996-winter wheat. Fertilizer preplant: 50 lb/a N + 20 lb/a P. Herbicide: Fall treatment: Gramoxone + 1.5 lb Atrazine + 2,4-D; Spring preplant: Gramoxone + 1.5 lb Atrazine + 2,4-D; Banvel at .5 post. Insecticide: Lorsban 15G at 8 oz/1000 ft of row at planting.

Lincoln (ecofallow): Crop history: 1995-fallow, 1996-winter wheat. Fertilizer, preplant: 60 lb of N. Herbicides: Atrazine 4L and Paraquat on the wheat stubble in the fall and Landmaster prior to planting. Insecticide: None.

Cheyenne (black fallow): Crop history: 1995-Wheat, 1996-Fallow. Herbicides: 3/4 lb Atrazine + 3 qt Ramrod. Fertilizer: Preplant: 70 lb N. At planting: 10 lb N + 24 lb P + 7 lb S + 3/4 lb Zn. No insecticide was used.

Cheyenne (ecofallow): 1995-Fallow, 1996-winter wheat. Herbicides: 3 qt Ramrod + 3/4 lb Atrazine. Fertilizer: Preplant 70 lbs N. At planting 10 lb N + 24 lb P + 7 lb S + 3/4 lb Zn. No insecticide treatment was needed.

**Table A. Location and cooperators. 1997
Nebraska Grain Sorghum Performance Tests.**



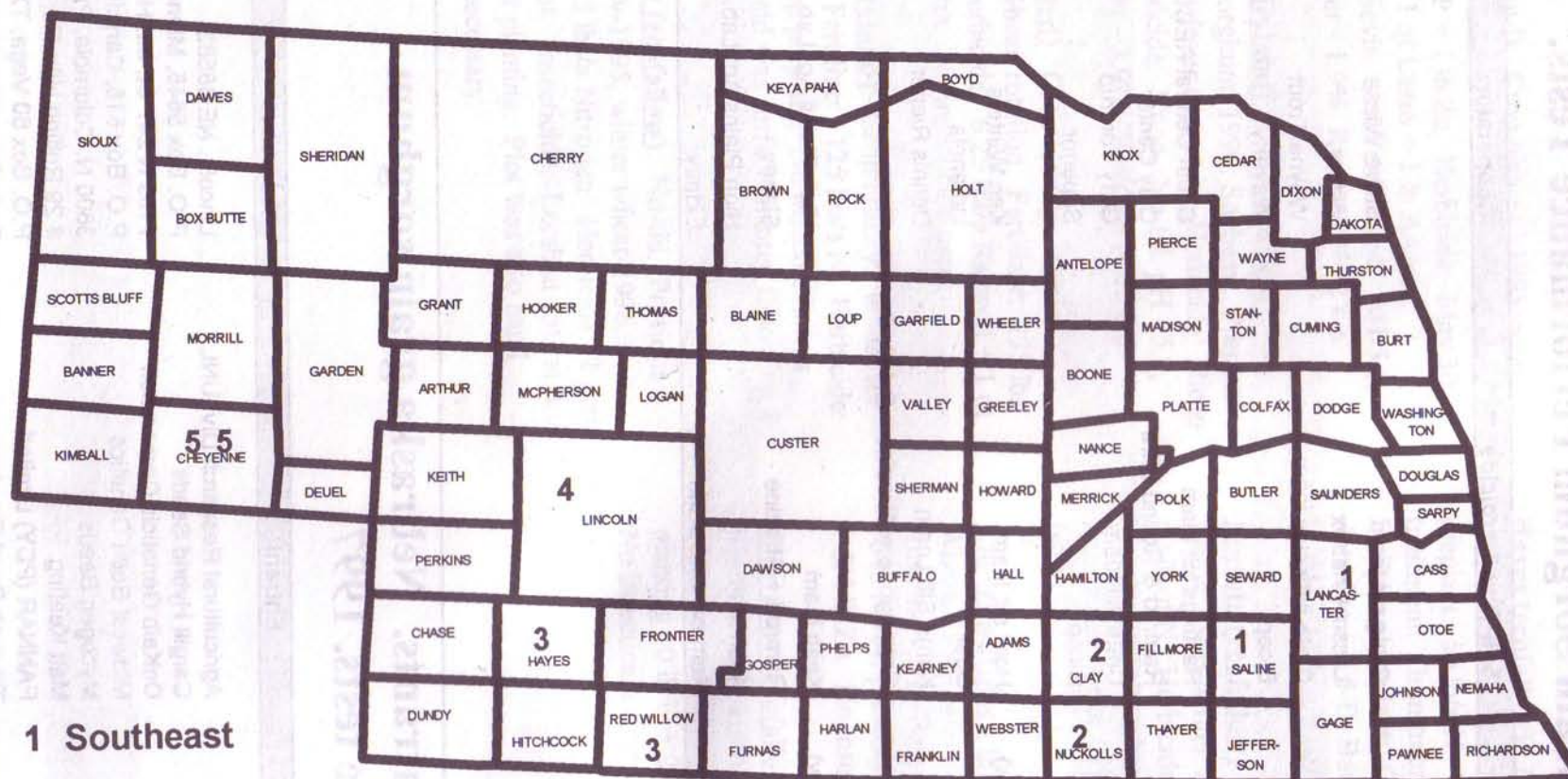
Location	Soil Type/Herbicide	Cooperator
Southeast		
Saline (dryland)	Crete silt loam Lasso + Aatrex	Steve Wiese Wilber
Lancaster (dryland)	Crete silty clay loam Bicep	Wayne Trout Waverly
South Central		
Clay (irrigated)	Hastings silt loam Ramrod & Round Ultra	South Central REC Clay Center
Nuckolls (dryland)	Crete silt loam Bicep	Gary Tordrup Superior
Southwest		
Red Willow (ecofallow)	Hord silt loam Dual	Ken Winters Indianola
Hayes (ecofallow)	Kuma Silt Loam Gramoxone + Atrazine + 2,4-D, Banvel	Dennis Riener Palisade
West		
Cheyenne (black fallow)	Keith loam Ramrod + Atrazine	High Plains Ag. Lab. Sidney
Cheyenne (ecofallow)	Keith loam Ramrod + Atrazine	High Plains Ag. Lab. Sidney

**Table B. Entrants. Nebraska grain sorghum
performance tests. 1997**



Brand	Entrant	Address
-----	Agricultural Research Div., UNL	Lincoln, NE 68583
Cargill	Cargill Hybrid Seeds	P.O. Box 5645, Minneapolis, MN 55440
DeKalb	DeKalb Geneticis Corporation	7159 N 247 St, Mt. Hope, Kansas 67108
Midwest Seed	Midwest Seed Genetics	P.O. Box 518, Carroll, IA 51401
Mycogen	Mycogen Seeds	3600 N. Columbia, Plainview, TX 79072
Norartis Seed	Matt Keating	# 29 Rolling Hills Rd, Kearney, Ne 68847
PANNAR	PANNAR (PCY) Limited	P.O. Box 60 Vega, TX 79092
Triumph	Triumph Seed Co., Inc.	P. O. Box 1050, Ralls, TX 79357

Locations of 1997 Grain Sorghum Tests



- 1 Southeast
- 2 South Central
- 3 Southwest
- 4 West Central
- 5 West

Table C. Grain Sorghum entries and zones entered in 1997



Brand	Hybrid	Zone *					Brand	Hybrid	Zone *				
-----	530A X TX2737	A	I	.	.	.	MYCOGEN	T-E HARDY	.	.	B	.	.
-----	9044A X TX2737	A	I	.	.	.	MYCOGEN	3800	A	I	.	.	.
-----	N123A X 681R	.	.	B	C	D	MYCOGEN	3776	A	I	.	.	.
-----	144-3A X 681R	.	.	B	C	D	MYCOGEN	3747	A	I	.	.	.
-----	493A X TX2737	A	I	.	.	.	MYCOGEN	X9656	A	I	.	.	.
-----	38153AX 681R	.	.	B	C	.	MYCOGEN	444E	A	I	.	.	.
-----	38084A X 681R	.	.	B	C	D	NOVARTIS	MAX/AXL	A	I	B	.	.
CARGILL	577	.	.	.	C	.	MOVARTIS	CAPTAN	A	I	B	.	.
CARGILL	737	A	.	.	.	.	PANNAR	PAN16943	.	I	B	.	.
CARGILL	627	A	I	B	C	.	PANNAR	PAN50977	A	I	B	.	.
CARGILL	647	.	I	B	C	D	PANNAR	PAN40977	A	I	B	.	.
CARGILL	X12027	A	I	.	.	.	PANNAR	PAN47977	A	I	B	.	.
CARGILL	770Y	A	I	.	.	.	PANNAR	PAN42943	A	I	.	.	.
CARGILL	730	A	I	B	.	.	TRIUMPH	TR 65-G	A	I	.	.	.
CARGILL	576	.	.	B	C	D	TRIUMPH	TR459	.	I	B	.	.
DEKALB GENETICS	DK-44	.	I	B	.	.	TRIUMPH	TR481	A	I	.	.	.
DEKALB GENETICS	DK-47	A	I	.	C	.	TRIUMPH	TR462	A	I	.	.	.
DEKALB GENETICS	DK-54	A	I	.	.	.	TRIUMPH	TR445	.	.	B	.	.
DEKALB GENETICS	DK-55	A	.	.	.	.			
DEKALB GENETICS	DK-58	A	I	.	.	.							
DEKALB GENETICS	DK-43A	.	I	B	C	.							
DEKALB GENETICS	DK-38Y	.	.	.	C	.							
DEKALB GENETICS	DK-35	.	.	B	C	.							
DEKALB GENETICS	DK-45	.	I	.	.	.							
MIDWEST-SEED	G571	A	I	.	.	.							

* Zone A = Southeast, Zone I = South Central, Zone B = Southwest
Zone C = West Central, Zone D = West Dryland

Table D. Grain Sorghum. Average performance at each test location. 1997

Location	Planted	Harvested	Grain yield bu/A	Planting to bloom days	Plant height inches	Head exertion inches	Test weight lb/bu	Maturity yield correlation 1
Southeast (27 entries)								
Saline (dryland)	May 23	Oct. 1	115	70	48	6	57.3	.16NS
Lancaster (dryland)	May 20	Oct. 2	129	73	48	5	58.6	.45*
Average 2 test	---	---	122	72	48	6	58.0	---
South Central (30 entries)								
Clay (irrigated)	May 22	Oct. 23, Nov. 3	133	---	53	4	58.5	-.35NS
Nuckolls (dryland)	May 22	Oct. 22	107	---	44	2	60.0	---
Average 2 tests	---	---	120	---	49	3	59.3	---
Southwest (20 entries)								
Red Willow (ecofallow)	May 19	Oct. 9	81	---	43	---	59.8	---
Hayes (ecofallow)	May 21	Oct. 9	93	---	43	---	---	---
Average 2 tests	---	---	87	---	43	---	59.8	---
West Central (12 entries)								
Lincoln (ecofallow)	June 10	Oct. 17	97	72	---	---	---	---
West (5 entries)								
Cheyenne (blackfallow)	June 8	Oct. 19	35	85	38	---	52.4	.96**
Cheyenne (ecofallow)	June 7	Oct. 19	34	86	38	---	52.5	.85NS
Average 2 tests	---	---	34	85	38	---	52.4	---

1 Correlation of average days to bloom for zone with acre grain yield. Higher r values indicate closer agreement. * significant (5% level). ** highly significant (1% level). Negative values indicate that later flowering was accompanied by lower yield.

Table E. Sorghum performance. Average for common entries over years within tests. Five years. 1993 - 1997.



Test	Year	Grain yield bu/a	Planting to bloom days	Plant height inches	Head exsertion inches	Early-grain moisture %	Stalk lodging %	Test weight lbs/bu
Southeast (2 entries)								
	1993	84	84	53	7	18.0	0	54.1
	1994	164	76	55	7	15.5	1	58.9
	1995	104	73	53	7	13.0	0	57.9
	1996	132	75	55	7	21.0	15	54.9
	1997	135	73	52	7	15.0	0	57.1
South Central (3 entries)								
	1993	128	79	50	9	14.3	--	59.9
	1994	163	76	49	6	13.7	1	59.7
	1995	85	73	53	8	12.0	21	56.8
	1996	138	--	50	8	17.0	--	58.4
	1997	129	70	49	4	16.7	27	59.6
Southwest (2 entries)								
	1993	--	--	--	--	--	--	--
	1994	133	--	44	--	14.0	0	57.7
	1995	42	--	39	--	14.0	2	52.7
	1996	113	--	47	--	16.0	--	54.1
	1997	97	--	44	--	16.0	2	58.6

Grain Sorghum Characteristics 1997



Brand	Variety	Mat Rel To RS626	Grain Color	Height RS626=Med	Greenbug Resistance		
					C	E	I
----	N123A X 681	Early	Wht	V Short	-	-	-
----	493A X TX2737	Med	Wht	Med Tall	-	-	-
----	38084A X 681	---	---	---	-	-	-
----	38153A X 681	Early	Wht	Short	-	-	-
----	9044A X TX2737	Late	Red	Med Tall	-	-	-
----	144-3A X 681R	---	---	---	-	-	-
----	530A X TX2737	Med	Crm	Med	-	-	-
CARGILL	576	Erly	Brnz	Med	C	E	I
CARGILL	X12027	Med	Brnz	Med	C	E	I
CARGILL	737	Med	Brnz	Med	C	E	-
CARGILL	730	Med	Brnz	Med	C	E	I
CARGILL	627	Erly	Brnz	Med	C	E	I
CARGILL	577	Erly	Brnz	Med	C	E	-
CARGILL	647	Erly	Brnz	Med	C	E	-
CARGILL	770Y	Med	Crm	Med	C	E	-
DEKALB Genetics	DK-44	Med	Red	Med	C	E	-
DEKALB Genetics	DK-47	Med	Red	Med	C	E	-
DEKALB Genetics	DK-54	Late	Red	Tall	C	E	-
DEKALB Genetics	DK-55	Late	Red	Tall	C	E	-
DEKALB Genetics	DK-58	Late	Red	Tall	C	E	-
DEKALB Genetics	DK-43A	Med	Red	Sh Med	C	E	-
DEKALB Genetics	DK-38Y	Erly	Yel	Sh Med	C	E	-
DEKALB Genetics	DK-35	Erly	Red	Sh Med	C	E	-
DEKALB Genetics	DK-45	Med	Red	Tall	C	E	-
MIDWEST SEED	G571	Med	Brnz	Med	C	E	-
MYCOGEN	3800	Late	---	Med	-	E	-
MYCOGEN	3776	Late	---	TALL	-	E	-
MYCOGEN	3747	Late	---	Med	-	E	I
MYCOGEN	X9656	---	---	---	-	-	-
MYCOGEN	444E	Late	Brnz	Med	-	E	-
MYCOGEN	T-E Hardy	Med	Crm	Shrt	-	E	-
NC+	371 (CAPTAN)	Med	Crm	Med	C	-	-
NC+	371 (MAX/AXL)	Med	Crm	Med	C	-	-
PANNAR	PAN16943	---	---	---	-	-	-
PANNAR	PAN42943	---	---	---	-	-	-
PANNAR	PAN40977	---	---	---	-	-	-
PANNAR	PAN47977	---	---	---	-	-	-
PANNAR	PAN50977	---	---	---	-	-	-
TRIUMPH	TR445	Erly/Med	Crm	Med	C	E	-
TRIUMPH	TR459	Med	Brnz	Short	C	E	-
TRIUMPH	TR481	Med/Lat	Red	Med	C	E	-
TRIUMPH	TR462	Med	Red	Short	C	E	-
TRIUMPH	TR65-G	Med	Red	Med	C	E	-

Blank spaces indicate information not provided

Grain Color: Brn=Brown, Brnz=Bronze, Crm=Cream, DRed=Dark Red,
Wht=White, Yel=Yellow

Southeast Dryland Grain Sorghum Hybrid Tests Lancaster and Saline Counties - 1997



Brand	Hybrid	Average Yield bu/a	Lancaster Yield bu/a	Saline Yield bu/a	Plant Bloom days	Plant Height inches	Head Exsert inches	Grain H2O pct	Bushel Weight lb/bu	Seeds per pound
MYCOGEN	3776	147	153*	141**	75	53	5	15	60.1	20200
DEKALB Genetics	DK-54	145	158**	131*	72	53	7	15	57.9	16300
TRIUMPH	TR 65-G	140	143	137*	71	48	4	14	59.5	17700
PANNAR	PAN50977	131	138	123	71	48	5	14	57.5	19100
DEKALB Genetics	DK-47	131	142	120	70	47	4	14	59.4	18400
MYCOGEN	3800	130	143	116	75	50	4	15	58.4	21200
MYCOGEN	444E	130	132	128*	71	46	5	14	58.4	16000
CARGILL	770Y	130	140	120	71	46	5	14	56.8	17000
TRIUMPH	TR 481	129	135	123	74	53	7	15	59.4	16700
DEKALB Genetics	DK-55	128	142	114	75	53	5	14	55.4	21000
PANNAR	PAN42943	127	133	120	76	52	6	15	59.8	20700
CARGILL	737	127	129	124*	70	44	4	14	57.9	16500
DEKALB Genetics	DK-58	126	137	115	74	51	6	15	56.3	17600
PANNAR	PAN40977	125	129	121	73	52	7	14	57.5	18100
MYCOGEN	3747	122	124	120	74	47	5	14	56.2	18400
-----	9044A X TX2737	119	131	107	71	48	6	14	57.3	19300
PANNAR	PAN47977	117	118	116	69	48	6	13	58.1	18700
TRIUMPH	TR 462	116	122	109	71	47	5	14	59.5	18900
MIDWEST SEED G	G 571	116	119	112	70	49	7	15	59.4	16300
CARGILL	730	115	121	109	73	47	6	14	58.1	17300
-----	493A X TX2737	114	117	110	72	51	7	13	56.8	20700
NOVARTIS MAX/AXL	NC+ 371	111	126	95	72	44	5	13	56.9	20800
NOVARTIS CAPTAN	NC+ 371	110	119	101	71	45	5	13	58.6	19900
MYCOGEN	X9656	110	113	107	71	43	4	13	56.1	21000
CARGILL	627	109	115	103	70	46	9	14	58.0	19300
CARGILL	X12027	101	114	88	70	44	5	13	56.1	20100
-----	530A X TX2737	93	106	80	72	46	5	13	55.7	21800
Average all entries		122	129	115	72	48	5	14	57.7	18831
Dif. Req. for Sig.	5%	13	12	17	1	2	1	1	1.4	2366
	25%	7	7	10	1	1	1	1	0.8	1351

** denotes top yielding hybrid at each location

* denotes hybrids not significantly different than top yielding hybrid at each location

Southeast Dryland Grain Sorghum Hybrid Tests

1993 - 1997



Brand	Hybrid	Average Yield bu/a	Plant Bloom days	Plant Height inches	Head exsert inches	Grain H2O pct	Plant Lodge pct	Bushel weight lb/bu	Seeds per pound
2 YEAR AVERAGES									
DEKALB Genetics	DK-54	139	74	55	7	18	9	56.5	14400
MYCOGEN	3776	136	75	54	5	19	16	58.8	17800
TRIUMPH	TR 65-G	129	73	50	5	18	28	57.3	16000
DEKALB Genetics	DK-55	129	76	54	6	18	29	53.2	18100
DEKALB Genetics	DK-58	128	74	52	7	18	6	55.5	15100
DEKALB Genetics	DK-47	126	72	49	4	17	4	58.8	16400
MYCOGEN	444E	124	73	48	5	18	8	56.6	13900
MYCOGEN	3800	123	77	51	4	18	13	57.1	17900
TRIUMPH	TR 481	119	77	54	7	18	13	57.4	15300
CARGILL	737	118	72	46	6	17	3	56.9	14000
MYCOGEN	3747	118	75	48	5	17	4	55.2	16300
-----	9044A X TX2737	117	73	49	6	18	8	56.7	16700
-----	493A X TX2737	116	73	52	7	17	12	56.0	18000
TRIUMPH	TR 462	114	72	49	6	18	39	57.7	16100
CARGILL	730	113	73	48	6	17	7	57.0	15200
CARGILL	X12027	108	72	45	6	17	2	54.8	17100
CARGILL	627	105	71	48	9	17	3	57.1	16500
-----	530A X TX2737	101	73	47	5	17	8	54.8	18400
Average All Entries		120	73	50	6	17.0	12	56.5	16274
Dif. Req. for Sig.	5%	6	1	1	1	NS	NS	0.5	785
	25%	3	1	1	1	1	NS	0.3	443
3 YEAR AVERAGES									
DEKALB Genetics	DK-54	128	74	54	7	16	6	56.9	16600
TRIUMPH	TR 65-G	125	71	49	5	16	19	58.3	17500
DEKALB Genetics	DK-55	122	75	54	6	16	19	54.6	19600
DEKALB Genetics	DK-58	119	74	52	6	16	4	56.3	16400

Continued on page 2

Southeast Dryland Grain Sorghum Hybrid Tests

1993 - 1997 Page 2



Brand	Hybrid	Average Yield bu/a	Plant Bloom days	Plant Height inches	Head exert inches	Grain H2O pct	Plant Lodge pct	Bushel weight lb/bu	Seeds per pound
3 YEAR AVERAGES (Continued)									
CARGILL	737	118	70	45	5	15	2	57.6	14900
MYCOGEN	444E	118	72	48	6	16	6	57.3	14700
CARGILL	730	116	73	47	6	15	4	57.5	15700
TRIUMPH	TR 481	114	75	53	7	17	8	58.2	16300
-----	9044A X TX2737	112	72	48	6	16	5	57.3	18100
-----	530A X TX2737	96	72	46	5	15	7	56.1	20400
Average All Entries		117	73	50	6	16	8	57.0	17023
Dif. Req. for Sig.									
5%		6	1	1	1	1	NS	0.5	678
25%		3	1	1	1	1	NS	0.3	384
4 YEAR AVERAGES									
DEKALB Genetics	DK-54	138	74	55	7	16	5	57.6	16300
TRIUMPH	TR 65-G	133	72	49	5	16	15	58.7	17700
DEKALB Genetics	DK-55	132	76	54	6	16	15	55.1	19300
DEKALB Genetics	DK-58	129	74	52	6	16	3	56.8	16300
TRIUMPH	TR 481	127	76	54	7	16	7	58.8	16000
CARGILL	737	124	70	46	6	15	2	57.9	15100
Average All Entries		130	74	52	6	16	8	57.5	16790
Dif. Req. for Sig.									
5%		NS	1	1	1	1	NS	0.4	503
25%		NS	1	1	1	1	NS	0.2	281
5 YEAR AVERAGES									
DEKALB Genetics	DK-54	128	76	54	8	17	4	57.3	16600
DEKALB Genetics	DK-58	119	76	52	6	16	2	55.9	17000
Average All Entries		124	76	53	7	17	3	56.6	16775
Dif. Req. for Sig.									
5%		4	NS	1	1	NS	NS	NS	NS
25%		1	NS	1	1	NS	NS	0.3	NS

Southeast District Grain Sorghum population densities

BRAND	HYBRID	Plant Population Plants / acre		
		Average	Saline	Lancaster
NOVARTIS CAPTAN	NC+ 371	51300	55400	47200
NOVARTIS MAX/AXL	NC+ 371	47300	47800	46800
TRIUMPH	TR 65-G	46100	46900	45300
DEKALB Genetics	DK-58	44100	43400	44700
CARGILL	627	43300	41400	45200
CARGILL	737	43100	40800	45300
TRIUMPH	TR 462	42700	45900	39400
CARGILL	X12027	42500	41200	43700
DEKALB Genetics	DK-54	42300	39400	45200
TRIUMPH	TR 481	42000	39600	44300
MYCOGEN	X9656	42000	42100	41800
MYCOGEN	3776	41900	37900	45900
CARGILL	770Y	41300	35400	47200
DEKALB Genetics	DK-47	40300	35700	44900
DEKALB Genetics	DK-55	40300	37300	43300
CARGILL	730	40100	36300	43900
PANNAR	PAN47977	39800	38200	41400
PANNAR	PAN50977	38300	31300	45300
MIDWEST SEED G	G 571	37500	29600	45300
PANNAR	PAN40977	37100	34800	39400
MYCOGEN	3800	36800	33900	39700
AA---	9044A X TX2737	36000	28900	43000
MYCOGEN	3747	35800	28700	42800
MYCOGEN	444E	35800	32600	38900
AA---	493A X TX2737	34500	31500	37500
PANNAR	PAN42943	30600	27100	34100
AA---	530A X TX2737	29600	25400	33700
AVERAGE ALL ENTRIES		40700	38400	43200
DIF. REQ. FOR SIG. 5%		11400	11300	7100
25%		6600	6600	4200

1997 Greenbug Damage ratings



Brand	Hybrid	No. of greenbug damaged leaves		Greenbug Resistance (when known)
		Saline Co.	Lancaster Co.	
PANNAR	PAN42943	2.0	0.6	
TRIUMPH	TR 481	2.1	0.8	C,E&I Res
CARGILL	730	2.2	1.1	C&E Res
TRIUMPH	TR 65-G	2.3	1.5	C&E Res
MYCOGEN	X9656	2.4	1.8	
CARGILL	770Y	2.4	2.3	
MYCOGEN	3747	2.5	1.6	
MIDWEST SEED G	G 571	2.5	1.5	
PANNAR	PAN50977	2.7	1.6	
MYCOGEN	3776	2.8	1.8	
MYCOGEN	3800	2.9	1.5	
CARGILL	737	3.1	0.9	Susceptible
PANNAR	PAN47977	3.1	1.8	
CARGILL	627	3.2	1.6	C,E&I Res
PANNAR	PAN40977	3.2	1.8	
TRIUMPH	TR 462	3.2	1.0	
DEKALB Genetics	DK-54	---	2.3	C&E Res
CARGILL	X12027	3.3	2.8	
MYCOGEN	444E	3.4	2.7	C&E Res
DEKALB Genetics	DK-55	3.5	1.2	C&E Res
DEKALB Genetics	DK-58	3.9	2.2	C&E Res
-----	9044A X Tx2337	4.2	2.5	
-----	493A X Tx2737	4.4	3.3	
-----	530A X Tx2737	4.9	3.7	

Readings taken by ZB Mayo, Dept. of Entomology

South Central Grain Sorghum Hybrid Tests

Clay and Nuckolls Counties - 1997



Brand	Hybrid	Average Yield bu/a	Clay Yield bu/a	Nuckolls Yield bu/a	Plant Bloom days	Plant Height inches	Head Exsert inches	Grain H2O pct	Stalk Lodge pct	Bushel Weight lb/bu	Seeds per pound
CARGILL	770Y	133	141	124**	70	47	3	14	7	58.6	17400
TRIUMPH	TR 65-G	132	146*	118*	70	49	3	15	27	59.4	18700
MYCOGEN	3776	132	161**	103	70	52	1	18	49	59.3	19600
DEKALB Genetics	DK-54	132	143*	120*	69	54	5	18	50	59.3	17300
TRIUMPH	TR 481	130	152*	107*	69	52	5	19	50	60.7	16700
MYCOGEN	3800	130	153*	106*	70	50	1	18	39	59.3	19700
DEKALB Genetics	DK-47	129	137	121*	70	50	2	15	48	61.1	18600
MIDWEST SEED G	G 571	128	142	113*	70	50	5	16	12	60.2	16000
MYCOGEN	444E	127	133	121*	69	48	3	16	0	59.2	16600
TRIUMPH	TR 462	126	146*	106*	69	48	4	17	43	60.3	18400
PANNAR	PAN50977	126	134	118*	69	50	3	16	15	58.3	19000
MYCOGEN	X9656	126	129	123*	69	44	2	15	10	58.1	20700
CARGILL	X12027	126	148*	104*	70	44	3	15	7	58.9	18500
CARGILL	647	126	134	117*	69	49	6	16	38	61.0	18300
TRIUMPH	TR 459	123	131	115*	70	45	5	17	4	60.2	19000
CARGILL	730	122	134	110*	70	48	3	15	8	58.6	16900
PANNAR	PAN40977	121	126	116*	70	53	4	14	25	58.7	18500
DEKALB Genetics	DK-45	121	133	108*	69	52	3	16	48	59.2	17400
PANNAR	PAN16943	120	137	103	70	52	3	16	62	59.0	20500
DEKALB Genetics	DK-58	120	138	101	70	52	4	16	43	57.9	18100
MYCOGEN	3747	118	133	103	70	48	1	15	31	58.0	17200
DEKALB Genetics	DK-44	115	123	107*	69	47	3	16	0	59.4	18300
PANNAR	PAN47977	114	125	102	70	50	4	15	12	58.4	18200
-----	9044A X TX2737	108	125	90	69	48	3	16	53	59.0	19000
DEKALB Genetics	DK-43A	108	128	88	69	44	3	15	10	59.6	19300
NOVARTIS	CAPTAN (NC+ 371	107	115	99	70	46	4	15	9	60.1	19400
CARGILL	627	106	111	101	69	47	6	16	0	59.0	18800
-----	530A X TX2737	102	110	93	69	47	3	15	47	58.3	19900
NOVARTIS	MAX/AXL (NC+ 371	102	127	77	70	46	4	15	17	59.6	19100
-----	493A X TX2737	101	112	89	70	50	4	15	46	59.3	21300
Average all entries		120	133	106	69	48	3	15	16	59.3	18449
Dif. Req. for Sig.	5%	19	18	20	1	3	1	1	NS	1.0	1708
	25%	11	11	11	1	2	1	1	NS	0.6	975

** denotes top yielding hybrid at each location

* denotes hybrids not significantly different than top yielding hybrid at each location

South Central Grain Sorghum Hybrid Tests 1993 - 1997



Brand	Hybrid	Average Yield bu/a	Plant Bloom days	Plant Height inches	Head exsert inches	Grain H2O pct	Plant Lodge pct	Bushel weight lb/bu	Seeds per pound
2 YEAR AVERAGES									
TRIUMPH	TR 65-G	137	70	50	5	15	27	59.2	18600
DEKALB Genetics	DK-47	136	70	51	4	16	48	60.5	17800
MYCOGEN	3776	135	70	53	3	18	49	58.8	19100
DEKALB Genetics	DK-54	134	69	54	7	18	50	57.9	16800
TRIUMPH	TR 481	133	69	54	7	18	50	59.8	16900
MYCOGEN	3800	133	70	51	3	18	39	58.7	19300
CARGILL	X12027	132	70	45	5	16	7	58.5	17900
MYCOGEN	444E	131	69	49	5	16	0	58.9	15800
TRIUMPH	TR 459	129	70	45	6	18	4	59.9	19300
CARGILL	647	129	69	50	7	16	38	60.6	17500
CARGILL	730	127	70	48	4	16	8	58.0	16900
TRIUMPH	TR 462	125	69	49	6	17	43	59.9	17700
DEKALB Genetics	DK-58	123	70	53	5	17	43	56.9	17000
DEKALB Genetics	DK-45	123	69	53	6	17	48	58.5	16700
MYCOGEN	3747	122	70	50	3	16	31	57.2	17400
-----	9044A X TX2737	118	69	49	5	17	53	58.8	18000
DEKALB Genetics	DK-44	117	69	48	5	16	0	59.3	17600
CARGILL	627	112	69	47	7	17	0	58.5	18400
-----	493A X TX2737	108	70	52	6	16	46	59.2	20100
-----	530A X TX2737	103	69	48	4	16	47	58.5	19400
Average All Entries		125	70	50	5	17	32	58.9	17904
Dif. Req. for Sig.	5%	3	1	1	1	1	NS	0.4	429
	25%	2	1	1	1	1	NS	0.2	241

Continued on page 2

South Central Grain Sorghum Hybrid Tests

1993 - 1997 Page 2



Brand	Hybrid	Average Yield bu/a	Plant Bloom days	Plant Height inches	Head exert inches	Grain H2O pct	Plant Lodge pct	Bushel weight lb/bu	Seeds per pound
3 YEAR AVERAGES									
TRIUMPH	TR 65-G	121	72	50	5	14	28	58.8	19500
MYCOGEN	444E	118	72	49	5	15	11	58.6	16600
CARGILL	730	118	73	49	5	14	4	57.7	17800
TRIUMPH	TR 481	116	72	54	8	16	33	59.2	19100
TRIUMPH	TR 459	116	71	46	7	16	2	59.4	20300
DEKALB Genetics	DK-54	114	72	56	8	16	43	56.7	18800
DEKALB Genetics	DK-58	112	73	53	6	15	38	56.6	17900
DEKALB Genetics	DK-45	110	70	53	6	15	47	58.2	17700
AA---	9044A X TX2737	107	73	50	6	15	27	57.5	19600
AA---	530A X TX2737	93	71	48	5	14	29	57.6	21800
Average All Entries		112	72	51	6	15	26	58.0	18898
Dif. Req. for Sig.	5%	4	NS	1	1	NS	NS	0.5	703
	25%	2	NS	1	1	1	6	0.3	398
4 YEAR AVERAGES									
TRIUMPH	TR 65-G	131	73	50	5	14	19	59.0	19700
DEKALB Genetics	DK-54	129	74	55	7	16	29	57.5	18100
TRIUMPH	TR 481	128	74	54	8	16	22	59.4	18400
MYCOGEN	444E	128	73	49	5	15	8	58.7	16500
TRIUMPH	TR 459	127	72	46	7	15	2	59.4	20300
Average All Entries		128	73	51	6	15	16	58.8	18603
Dif. Req. for Sig.	5%	NS	NS	1	1	NS	NS	NS	711
	25%	NS	NS	1	1	1	4	0.3	391
5 YEAR AVERAGES									
DEKALB Genetics	DK-54	131	76	55	8	15	29	57.9	17600
TRIUMPH	TR 65-G	129	74	49	5	14	19	59.2	19500
TRIUMPH	TR 459	125	73	46	8	15	2	59.5	20300
Average All Entries		129	74	50	7	15	17	58.9	19113
Dif. Req. for Sig.	5%	NS	NS	1	1	NS	NS	NS	635
	25%	NS	1	1	1	1	4	0.3	341

South Central Grain Sorghum population densities

BRAND	HYBRID	Plant Population Plants / acre		
		Average	Clay	Nuckolls
NOVARTIS CAPTAN	NC+ 371	60700	79000	42400
CARGILL	647	55300	73200	37400
TRIUMPH	TR 65-G	53300	70300	36300
NOVARTIS MAX/AXL	NC+ 371	53100	70500	35600
MYCOGEN	444E	52100	69100	35000
DEKALB Genetics	DK-47	51000	72100	29800
MYCOGEN	X9656	50600	67300	33800
PANNAR	PAN47977	49800	63200	36400
DEKALB Genetics	DK-45	48800	61400	36100
CARGILL	770Y	48600	61400	35800
TRIUMPH	TR 462	48500	68700	28300
MYCOGEN	3747	48200	62000	34400
DEKALB Genetics	DK-43A	47500	62000	32900
DEKALB Genetics	DK-58	46700	60600	32700
TRIUMPH	TR 481	46700	62000	31400
CARGILL	X12027	46300	61200	31300
DEKALB Genetics	DK-54	45600	59500	31600
CARGILL	730	44000	53500	34500
TRIUMPH	TR 459	44000	58300	29600
MYCOGEN	3776	43500	54500	32400
CARGILL	627	43200	56500	29900
PANNAR	PAN50977	43000	56500	29400
AA---	9044A X TX2737	42300	55500	29000
MYCOGEN	3800	41500	57000	25900
PANNAR	PAN40977	41500	59100	23900
MIDWEST SEED G	G 571	40400	52500	28300
DEKALB Genetics	DK-44	39700	52300	27100
AA---	493A X TX2737	39600	49500	29600
PANNAR	PAN16943	36700	47000	26400
AA---	530A X TX2737	35300	47100	23400
AVERAGE ALL ENTRIES		46100	60700	31400
DIF. REQ. FOR SIG. 5%		12900	11300	7000
25%		7600	6600	4100

Southwest Ecofallow Grain Sorghum Hybrid Tests Red Willow and Hayes Counties - 1997



Brand	Hybrid	Average Yield bu/a	Red Willow bu/a	Hayes Yield bu/a	Plant Height inches	Grain H2O pct	Stalk Lodge pct	Bushel Weight lb/bu
CARGILL	647	105	95 *	115 **	47	15	3	61.8
DEKALB Genetics	DK-35	102	97 *	107 *	43	15	8	61.1
MYCOGEN	T-E HARDY	100	101 **	99 *	45	15	3	58.9
CARGILL	627	98	89 *	106 *	46	15	3	59.6
DEKALB Genetics	DK-43A	96	88 *	104 *	41	15	10	59.8
TRIUMPH	TR 459	94	79	109 *	42	16	0	58.2
PANNAR	PAN50977	94	87 *	101 *	47	15	18	56.2
NOVARTIS CAPTAN	NC+ 371	93	77	109 *	43	15	1	59.5
DEKALB Genetics	DK-44	92	81 *	102 *	43	16	6	59.5
CARGILL	576	91	96 *	85 *	38	14	1	61.7
PANNAR	PAN47977	90	89 *	90 *	47	15	14	57.2
PANNAR	PAN40977	88	69	107 *	48	16	12	57.2
TRIUMPH	TR 445	86	82 *	89 *	47	15	33	60.6
NOVARTIS MAX/AXL	NC+ 371	84	71	97 *	43	16	2	57.5
CARGILL	730	75	53	96 *	45	17	3	56.5
-----	38084A X 681	74	72	75	37	15	26	58.8
-----	144-3A X 681R	70	78	61	33	14	16	61.2
PANNAR	PAN16943	62	42	81 *	50	17	18	57.3
-----	38153A X 681R	60	64	56	35	14	25	57.7
-----	N123A X 681R	59	66	51	37	14	18	58.3
Average all entries		86	81	93	43	15	11	58.9
Dif. Req. for Sig.	5%	27	24	37	4	2	NS	2.7
	25%	15	14	21	2	1	12	1.5

** denotes top yielding hybrid at each location

* denotes hybrids not significantly different than top yielding hybrid at each location

Southwest Ecofallow Grain Sorghum Hybrid Tests 1994 - 1997



Brand	Hybrid	Average Yield bu/a	Plant Height inches	Grain H2O pct	Plant Lodge pct	Bushel weight lb/bu
2 YEAR AVERAGES						
CARGILL	647	112	49	16	3	58.1
TRIUMPH	TR 459	106	45	16	0	55.9
MYCOGEN	T-E HARDY	105	46	15	3	56.7
DEKALB Genetics	DK-35	101	45	16	8	58.0
TRIUMPH	TR 445	93	48	16	33	57.3
CARGILL	627	92	47	17	3	55.1
DEKALB Genetics	DK-44	86	45	16	6	56.0
CARGILL	730	81	47	18	3	53.7
Average All Entries		97	46	16	7	56.3
Dif. Req. for Sig.	5%	NS	1	NS	NS	NS
	25%	4	1	1	NS	0.5
3 YEAR AVERAGES						
CARGILL	647	91	46	15	1	56.5
TRIUMPH	TR 459	85	43	15	1	55.3
MYCOGEN	T-E HARDY	82	44	15	2	54.9
CARGILL	627	78	45	16	2	54.4
DEKALB Genetics	DK-44	68	43	15	3	54.5
CARGILL	730	59	45	16	2	52.3
Average All Entries		77	44	15	2	54.7
Dif. Req. for Sig.	5%	6	1	NS	NS	0.8
	25%	3	1	NS	NS	0.5
4 YEAR AVERAGES						
TRIUMPH	TR 459	98	43	15	1	55.8
MYCOGEN	T-E HARDY	95	44	15	1	55.7
Average All Entries		96	43	15	1	55.7
Dif. Req. for Sig.	5%	NS	NS	NS	NS	NS
	25%	NS	NS	NS	NS	NS

West Central Ecofallow Grain Sorghum Hybrid Test Lincoln County - 1997



Brand	Hybrid	Average Yield bu/a	Plant Bloom days	Grain H2O pct	Stalk Lodge pct
-----	N123A X 681R	108	74	14	53
-----	38084A X 681	108	71	14	55
CARGILL	647	107	75	14	2
CARGILL	576	104	75	14	47
-----	38153A X 681R	103	74	14	51
-----	144-3A X 681R	103	75	14	3
CARGILL	577	97	70	14	17
CARGILL	627	96	71	14	1
DEKALB Genetics	DK-38Y	87	69	14	0
DEKALB Genetics	DK-35	86	70	14	0
DEKALB Genetics	DK-47	86	67	14	0
DEKALB Genetics	DK-43A	81	68	14	1
Average all entries		97	72	14	19
Dif. Req. for Sig. 5%		14	1	1	13
25%		8	1	1	8

West Central Ecofallow Grain Sorghum Hybrid Tests 1996 - 1997

Brand	Hybrid	Average Yield bu/a	Plant Bloom days	Plant Height inches	Grain H2O pct	Plant Lodge pct	Bushel weight lb/bu
2 YEAR AVERAGES							
CARGILL	647	82	74	48	14	8	55.1
CARGILL	627	80	71	45	14	10	55.0
DEKALB Genetics	DK-38Y	68	71	40	14	4	51.6
Average All Entries		76	72	44	14.0	7	53.9
Dif. Req. for Sig. 5%		NS	NS	NS	NS	NS	NS
25%		NS	NS	NS	NS	NS	NS

West Black Fallow & Ecofallow Grain Sorghum Hybrid Tests Cheyenne County - 1997

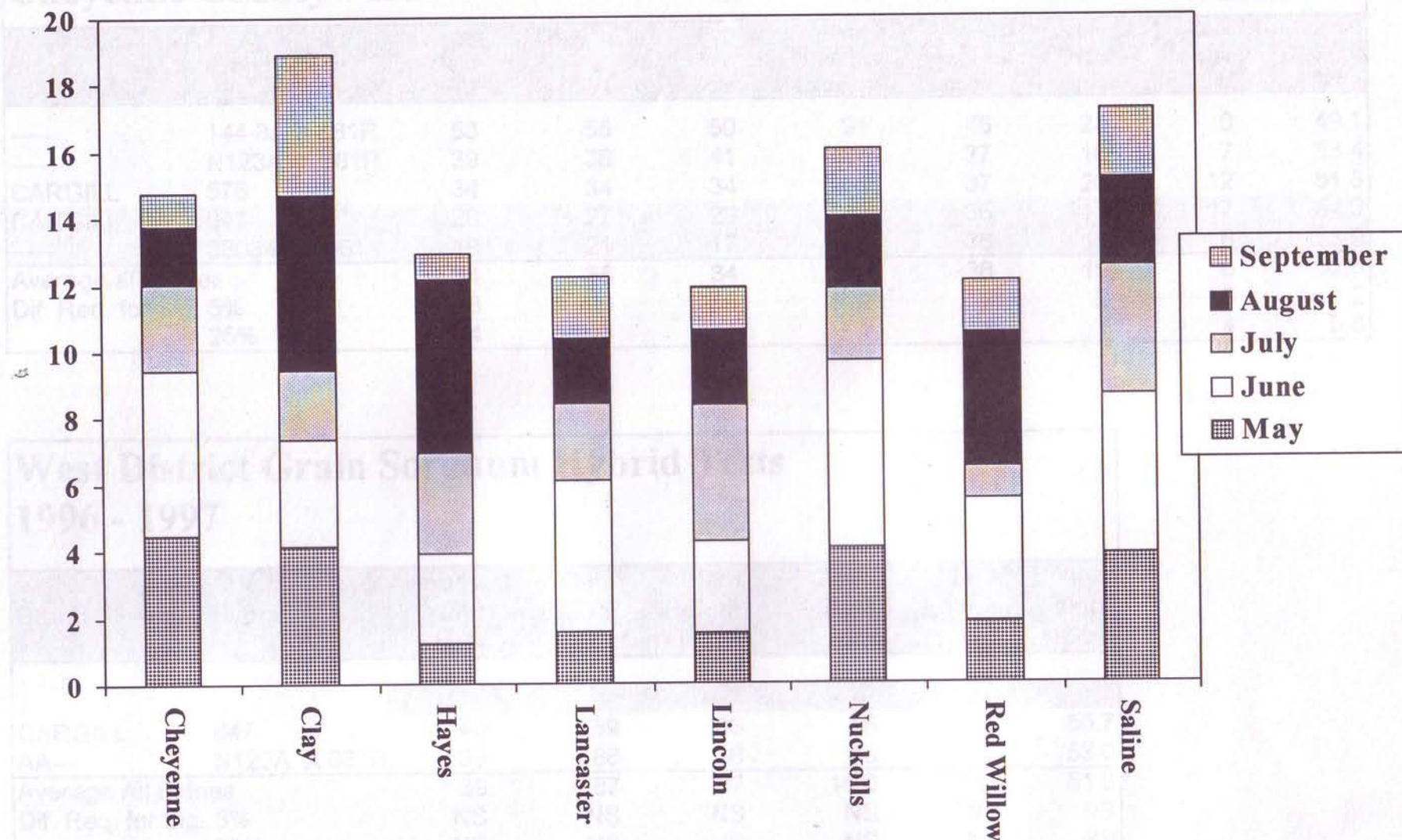


Brand	Hybrid	Average Yield bu/a	Black Yield bu/a	Eco Yield bu/a	Plant Bloom days	Plant Height inches	Grain H2O pct	Stalk Lodge pct	Bushel Weight lb/bu
----	144-3A X 681R	53	55	50	91	46	23	0	49.1
----	N123A X 681R	39	36	41	86	37	18	7	53.4
CARGILL	576	34	34	34	85	37	20	12	51.8
CARGILL	647	28	27	29	83	36	17	17	54.3
----	38084A X 681	19	21	17	84	36	17	6	53.9
Average all entries		34	35	34	85	38	19	8	52.5
Dif. Req. for Sig. 5%		8	6	8	2	2	2	9	1.2
25%		4	3	4	1	1	1	4	0.6

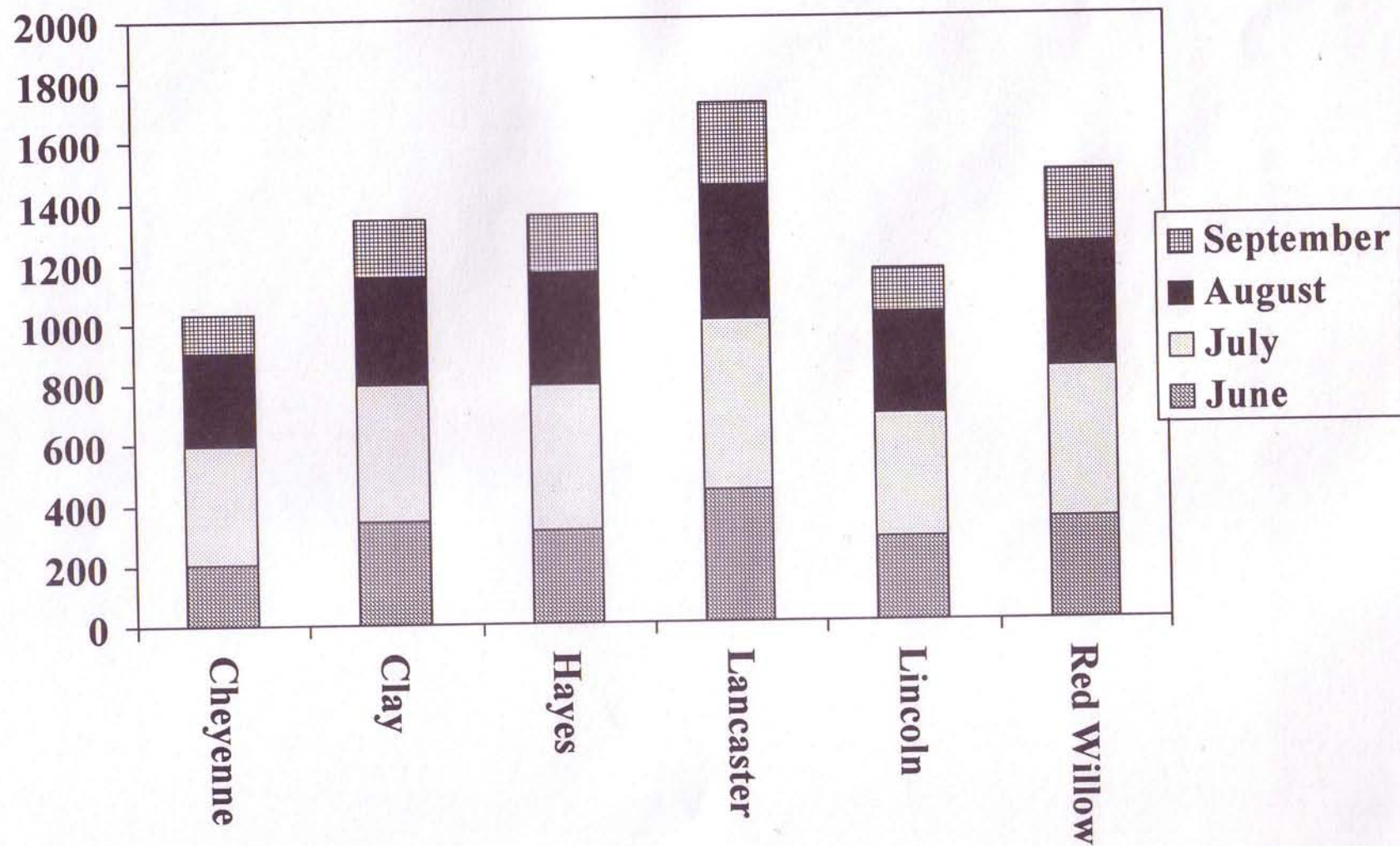
West District Grain Sorghum Hybrid Tests 1996 - 1997

Brand	Hybrid	Average Yield bu/a	Plant Bloom days	Plant Height inches	Grain H2O pct	Plant Lodge pct	Bushel weight lb/bu
2 YEAR AVERAGES							
CARGILL	647	40	89	38	16	17	50.7
AA---	N123A X 681R	39	86	36	16	7	53.0
Average All Entries		39	87	37	16.0	12	51.8
Dif. Req. for Sig. 5%		NS	NS	NS	NS	NS	NS
25%		NS	NS	NS	NS	NS	NS

Rainfall in inches from counties in Grain Sorghum hybrid test-1997



Growing Unit accumulations above 60 degrees F





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