Grain Sorghum

1993 Missouri Crop Performance

Minor, Morris, Mason, Knerr, Thomas, Lankheit

Special Report 456

Agricultural Experiment Station
College of Agriculture, Food and Natural Resources
University of Missouri-Columbia

November, 1993

TABLE OF CONTENTS

THE AUTHORS

Harry C. Minor is an Associate Professor of Agronomy and State Extension Specialist, Carl G. Morris and Howard L. Mason are Senior Research Specialists, and Delbert R. Knerr, David B. Thomas and C. Stephen Lankheit are Research Specialists.

ACKNOWLEDGEMENTS

The authors recognize and express their appreciation to the following individuals for their part in making the 1993 grain sorghum performance trials possible: Fred Martz, Director North Missouri Center, Spickard; Kenny Tevis, Hughesville; Richard Primus, Martinsburg; Gilbert Wilson, Nevada; Wally Norton, Lamar; Glenn Nothdurft, Oran; and Tony Jones, New Madrid.

MISSOURI CROP PERFORMANCE

1993

GRAIN SORGHUM

This report on Research Project 363 is a contribution of the Department of Agronomy, Plant Science Unit, University of Missouri Agricultural Experiment Station. The work received significant support through fees paid by the companies submitting hybrids for evaluation.

The University of Missouri began its performance testing program for grain sorghum hybrids in 1958. The number of commercial entries in the program has increased from 40 in 1958 to 92 today.

The large number of commercial hybrids available makes selection of a superior hybrid difficult. To select intelligently, producers need a reliable, unbiased, up-to-date source of information that will permit valid comparisons among available hybrids. The objective of the University of Missouri's performance testing program is to provide this information. The tests are conducted under as uniform conditions as possible. Small plots are used to reduce the chance of soil and climatic variations occurring from one plot to another. Results obtained should aid the individual grower in judging the relative merits of many of the commercial grain sorghum hybrids available in Missouri today.

COMPARING HYBRIDS

The performance of a hybrid cannot be measured with absolute precision. Uncontrollable variability is involved in the determination of each yield average. This variability sometimes occurs because the soil is not uniform, but many other conditions may contribute to it. Because variability exists in all field experimentation, statistics are used as a tool to assist in making decisions. The statistical tool used in these trials is the test of least significant difference (L.S.D.). The L.S.D. is quite simple to apply. When two entries are compared and the difference between them is greater than the L.S.D., the entries are judged to be significantly different. Differences smaller than the L.S.D. may have occurred by chance and are judged to be not significant.

Hybrid performance may seem inconsistent from location to location and from year to year because of differences in rainfall, temperature, soil fertility, diseases, insects, and other factors. To obtain an improved estimate of relative hybrid performance, readers should consider results from more than one location or year. In this publication, the authors have tried to facilitate comparisons across years and locations.

In each trial, the "top yielding" hybrids have been identified. These hybrids are those that did not yield significantly less than the highest yielding hybrid in the test. They are denoted in the tables by an asterisk (*) next to their yields. Thus, by going down a column, readers can readily identify the highest yielding hybrids in a trial. By going across, readers can evaluate the relative performance of a hybrid during several years or at several locations. From the standpoint of yield, the most desirable hybrids will be those that are among the "top yielding" hybrids (that is, those that have an asterisk) the greatest number of times.

Although yield usually receives first consideration, other agronomic characteristics may be equally important when selecting a grain sorghum hybrid. Moisture content at harvest, stalk strength and resistance to insects and diseases are among the hybrid characteristics that deserve careful consideration. High moisture content at harvest, whether due to later maturity or slow dry-down, may indicate an increased drying requirement. Poor stalk strength or susceptibility to pests may decrease harvestable yield because of lodging or stand loss. Therefore, when selecting a hybrid, producers should also consider the data presented on agronomic characteristics other than yield.

The Missouri Agricultural Experiment Station does not recommend specific hybrids. Farmers growing a new hybrid for the first time should consider the information contained in this report and then grow a small acreage to determine adaptability. This should be the practice for all new hybrids regardless of origin.

EXPERIMENTAL PROCEDURES

Entries. All producers of hybrid seed were eligible to enter hybrids in the 1993 evaluation trials. Participation was voluntary. The testing coordinator exercised no control over which hybrid or how many hybrids were entered. However, to help finance the evaluation program, a fee of $90 per location was charged for each hybrid entered by the seed producer.

Locations. On the basis of geographical characteristics, the state is divided into regions. Grain sorghum hybrid evaluation trials are located in the north-central, southwestern and southeastern regions of the state. In 1993, the locations for these trials were the North Missouri Center near Spickard in Grundy County, the Richard Primus farm near Martinsburg in Audrain County, the Kenny Tevis farm near Hughesville in Pettis County, the Gilbert Wilson farm near Nevada in Vernon County, the Wally Norton farm near Lamar in Barton County, the Glenn Nothdurft farm near Oran in Scott County and the Tony Jones farm near New Madrid in New Madrid County. Trial locations are shown on the adjacent map.

Field Plot Design. Each test was arranged in a lattice field plot design with three replications. All plots were four rows wide and 20 feet long. The between-row spacing was 30 inches at all locations. Only the center two rows were harvested to determine yield.

Plot Management. The tests were planted and harvested with commercial equipment modified for small-plot work. Fertilizer was applied at each site at the discretion of the farmer or the station manager. Herbicides and cultivation were used for weed control and plots were hand weeded as necessary. Management details varied from location to location and are specified on individual yield tables.

Data Recorded. Agronomic characteristics were evaluated at harvest. Head compactness was scored on a scale of 1 to 5. A score of 1 indicates the most compact or tight head, while 5 indicates the most lax or loose head. Lodging was determined by counting the number of culms inclined more than 30 degrees from vertical. This value was converted to a percentage of the total number of culms in each plot. Yield was measured in number of bushels per acre at a moisture content of 14.0 percent. An electronic moisture tester was used for all moisture readings. To convert yield to pounds/acre, multiply bushels/acre by 56.

Electronic Accessibility of Data. Results of the Missouri Crop Performance Trials are now available in two forms: this printed Special Report and Missouri's Agricultural Electronic Bulletin Board (AgEBB). Variety test information is accessible from the MAIN MENU of the AgEBB under "CROP PERFORMANCE TESTING". The system number is 314/882-8289. If you need assistance in accessing the system call 314/882-4827 for the system staff's help.

SUMMARY OF RESULTS

Results for each location include data on plant height, head compactness, percent off-type heads, lodging, grain moisture at harvest, and yield adjusted to 14.0 percent moisture.

Yield results are presented for each location. Significant variation among hybrids was observed at each location. Individual hybrid performance across the three north-central, two southwestern and two southeastern locations are summarized in Table 5, 8, and 11.

Average yields and yield ranges for each trial are summarized in Table 1. Average yields in 1993 were generally below normal. The climate during 1993 had cooler than normal temperatures and above average mid-summer rainfall. Because environmental conditions influence the performance of hybrid sorghums, the reader is encouraged to give more weight to results from several locations or years than to those from a single test.

TABLE 1. 1993 YIELD SUMMARY

LOCATION	NUMBER OF ENTRIES	IRRI-GATED	YIELD (BU/ACRE) RANGE	YIELD (BU/ACRE) AVERAGE	DATA TABLE
Spickard	54	No	19-64	42	2
Hughesville	54	No	84-113	95	3
Martinsburg	54	No	70-110	88	4
Nevada	50	No	75-105	89	6
Lamar	50	No	80-121	102	7
Oran	61	Yes	101-163	133	9
New Madrid	61	No	86-126	103	10

An indication of hybrid maturity is moisture content of the grain at harvest. Because high moisture at harvest is generally a disadvantage, growers should give preference to hybrids within a yield group with the lowest moisture content.

TABLE 2. Performance of Grain Sorghum Hybrids evaluated near Spickard (Grundy County) on the North Missouri Center during 1991-93.

Planted: 19 May 1993
Harvested: 10 October 1993
Planted Population: 104,500 seeds/A.
Row Spacing: 30 inches
Soil Type: Colo Silty Clay Loam

Fertilizer: N=125; P_2O_5=0; K_2O=75
Herbicide: Ramrod + Atrazine
Insecticide: None
Previous Crop: Soybean
Soil Test: pH=5.8, OM=3.3%, P=48, K=111

Growing Season Rainfall: May=5.5, June=9.7, July=22.8, Aug.=1.3, Sept.=6.5, TOTAL=45.8"

	1993									
	Mois-	Plant	Off-type	Com-	Lodg-	Yield (Bu/Acre)			Means	
Brand-Hybrid	ture (%)	Ht. (In.)	Heads (%)	pactness Score	ing (%)	1993	1992	1991	2 Yr.	3 Yr.
Triumph Two 80-D	15.8	50	0.2	1.0	0.0	64.5**	98.1*	122.8*	81.3	95.1
NC+ 7B81E	14.7	40	0.2	2.0	0.0	61.6*	94.6	132.3*	78.1	96.2
MFA GS-10	15.1	46	0.0	3.0	0.0	58.8*	102.9*	124.9*	80.9	95.5
Garrison SG-942	17.9	52	1.2	1.0	0.0	56.6*	--	--	--	--
PennGrain DR Sorghum	15.8	48	0.3	1.7	0.0	54.2*	96.4*	128.2*	75.3	92.9
Garrison SG-925	16.5	49	0.0	1.0	0.0	54.0*	--	--	--	--
Dekalb DK-51	16.4	48	0.2	2.0	0.0	52.6*	--	--	--	--
Cargill 575	13.5	50	0.0	2.3	0.0	52.5*	105.1*	123.0*	78.8	93.5
Golden Harvest H-444W	15.7	53	0.2	1.4	0.0	51.9*	101.7*	116.9	76.8	90.2
Crosbyton GW6060	14.9	44	0.0	3.0	0.0	51.2*	--	117.9	--	--
Crosbyton GW6092	18.7	44	0.0	2.0	0.0	51.2*	95.4	--	73.3	--
Crosbyton GW5960	16.2	46	0.0	1.6	0.0	50.8*	--	120.1	--	--
JMS 215G	18.0	47	0.5	1.7	0.0	47.8*	110.8*	--	79.3	--
MFA 570	15.4	48	0.3	1.3	0.0	47.7*	106.0*	117.0	76.9	90.2
Northrup King KS710	15.4	45	0.0	2.0	0.0	46.3	98.4*	133.8*	72.4	92.8
ICI 5392	17.9	51	0.0	1.7	0.0	46.3	101.4*	--	73.9	--
Pioneer Hybrid XS319	17.2	52	0.0	1.7	0.0	45.4	--	--	--	--
Asgrow A504	15.1	47	0.3	1.6	0.0	44.7	--	--	--	--
Fontanelle 5040	14.2	46	0.0	1.3	0.0	44.7	--	--	--	--
Fontanelle W-5000	14.9	52	0.0	2.3	0.0	44.2	92.6	128.8*	68.4	88.5
Triumph TR 65G	15.4	48	0.5	1.0	0.0	44.2	112.4*	--	78.3	--
Triumph TR 74CR	14.2	50	0.0	1.3	0.0	43.9	--	140.0**	--	--
Fontanelle 5590	17.6	48	0.0	1.3	0.0	43.6	112.0*	118.0	77.8	91.2
Cargill 837	16.7	50	0.0	2.0	1.0	43.3	96.0*	122.7*	69.7	87.3
Dekalb DK-56	16.1	53	0.3	1.0	0.0	43.3	93.5	125.1*	68.4	87.3
Pioneer Hybrid 8212Y	18.3	43	0.1	1.4	0.0	43.1	--	--	--	--
MFA 650	12.7	48	0.2	2.0	0.0	42.8	103.8*	120.4	73.3	89.0
Ciba 1506	16.9	55	0.2	2.0	0.0	42.2	98.3*	124.3*	70.3	88.3
Ciba 1616	17.3	48	0.2	1.0	0.0	42.2	105.2*	131.6*	73.7	93.0
HyPerformer HSC 1289C	16.5	51	0.0	1.7	0.0	42.0	--	--	--	--
Fontanelle 5588	19.3	55	0.2	1.6	0.0	41.4	107.7*	--	74.6	--
Ciba 1655	18.0	44	0.0	1.0	0.0	40.4	--	--	--	--
Garrison SG-822	14.5	48	0.2	2.0	0.0	39.4	--	128.7*	--	--
Growers 3150	17.3	47	0.1	1.0	0.0	39.3	92.6	--	65.9	--
Pioneer Hybrid 8333	15.8	45	0.0	2.0	0.0	39.2	104.8*	119.8	72.0	87.9
MFA 660	17.0	46	0.2	2.0	0.2	39.0	84.2	128.5*	61.6	83.9
Cargill X19383	15.8	44	0.0	1.0	0.0	37.8	--	--	--	--
HyPerformer HSC Cherokee	18.2	49	0.0	1.0	0.0	37.7	--	--	--	--
Pioneer Hybrid 8500	15.7	43	0.0	1.3	0.0	37.2	97.4*	112.8	67.3	82.5
ICI 5514Y	15.0	43	0.5	2.7	0.0	36.3	--	--	--	--
Growers 1310AE	14.6	45	0.0	2.0	0.0	35.8	86.9	--	61.4	--
Dekalb DK-48	16.9	47	0.0	1.0	0.0	35.3	78.8	120.5	57.1	78.2
Jacques 444E	20.5	47	0.9	2.0	0.8	33.2	91.5	--	62.4	--
NC+ 7C49	15.2	48	0.0	1.3	0.0	32.7	101.6*	130.5*	67.2	88.3
Pioneer Hybrid 8446	14.2	42	0.0	2.3	0.0	32.4	--	--	--	--
JMS 213Y	15.3	48	0.0	1.7	0.0	32.4	98.0*	124.8*	65.2	85.1
Northrup King KS714Y	16.7	44	0.3	2.0	0.0	31.0	94.1	124.1*	62.6	83.1
Cargill 857	16.6	48	0.0	1.0	0.0	30.8	69.7	121.9*	50.3	74.1
Crosbyton GW9080	19.7	48	0.0	1.7	0.0	29.2	--	--	--	--
Pioneer Hybrid 8231Y	16.4	44	0.0	1.0	0.0	27.9	89.5	--	58.7	--
Pioneer Hybrid 8310	17.8	46	0.0	1.3	0.0	26.7	--	--	--	--
Golden Harvest H-388W	14.8	43	0.0	1.3	0.0	23.5	--	--	--	--
Cargill 727	16.2	47	0.0	2.3	0.0	22.6	92.4	--	57.5	--
Dekalb DK-58	24.0	53	0.0	2.6	0.9	19.4	100.6*	--	60.0	--
TRIAL AVERAGE	16.4	48	0.1	1.7	0.1	41.8	97.5	123.5	69.6	87.6
L.S.D. AT .05	2.9	4	NS	0.7	0.6	17.0	19.7	19.3		
C.V. %	11.0	4.6		25.6		25.0	12.4	9.7		

-- Data not available.
** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 3. Performance of Grain Sorghum Hybrids evaluated near Hughesville (Pettis County) on the Kenny Tevis Farm during 1991-93.

Planted: 27 May 1993
Harvested: 25 October 1993
Planted Population: 104,500 seeds/A.
Row Spacing: 30 inches
Soil Type: Summit Silt Loam

Fertilizer: N=110; P_2O_5=40; K_2O=80
Herbicide: Ramrod + Atrazine
Insecticide: None
Previous Crop: Sunflower
Soil Test: pH=5.6, OM=2.6%, P=98, K=392

Growing Season Rainfall: May=6.3, June=8.8, July=10.6, Aug.=2.0, Sept.=14.2, TOTAL=41.9"

	1993					Yield (Bu/Acre)			Means	
Brand-Hybrid	Moisture (%)	Plant Ht. (In.)	Off-type Heads (%)	Compactness Score	Lodging (%)	1993	1992	1991	2 Yr.	3 Yr.
Pioneer Hybrid XS319	18.0	62	0.0	1.0	0.0	112.9**	--	--	--	--
Garrison SG-942	15.6	62	0.0	1.0	0.0	110.2*	--	--	--	--
Ciba 1616	13.9	63	0.0	0.9	0.0	105.2*	145.8	111.0	125.5	120.7
MFA 570	14.4	58	0.7	1.2	0.0	103.8*	164.3	105.7	134.1	124.6
Pioneer Hybrid 8333	15.3	52	0.0	2.4	0.0	103.3*	162.5	117.2*	132.9	127.7
Crosbyton GW6092	15.9	53	0.0	2.3	0.0	102.3*	161.1	--	131.7	--
MFA GS-10	14.0	52	0.6	3.8	0.0	102.0*	152.3	109.9	127.2	121.4
JMS 213Y	14.1	53	0.0	1.6	0.0	100.9*	163.1	112.0	132.0	125.3
ICI 5514Y	14.1	53	0.0	4.0	0.0	100.4*	--	--	--	--
Triumph Two 80-D	14.6	56	0.0	1.2	0.0	99.7*	183.0**	102.1	141.4	128.3
NC+ 7C49	13.5	57	0.0	1.4	0.0	99.5*	153.3	108.4	126.4	120.4
Pioneer Hybrid 8446	13.6	50	0.0	2.4	0.0	99.1*	--	--	--	--
Cargill 857	13.9	53	0.0	1.5	0.0	98.8*	163.6	108.3	131.2	123.6
Asgrow A504	15.1	52	0.0	1.7	0.0	98.7*	--	--	--	--
Fontanelle 5040	13.7	49	0.0	2.7	0.0	98.4	--	--	--	--
Fontanelle W-5000	14.1	55	0.0	2.0	0.0	97.9	151.9	112.2	124.9	120.7
Cargill 575	14.1	55	0.0	2.4	0.0	97.5	153.7	109.4	125.6	120.2
Pioneer Hybrid 8500	16.7	55	0.0	1.7	0.0	96.7	163.5	116.9*	130.1	125.7
Crosbyton GW5960	14.9	52	0.0	1.6	0.0	96.5	--	102.7	--	--
Cargill 837	15.6	57	0.0	1.7	0.0	96.2	175.3*	115.7*	135.8	129.1
Garrison SG-822	13.8	57	0.0	2.0	0.0	95.7	--	109.5	--	--
Crosbyton GW9080	15.0	54	0.0	1.0	0.0	95.4	--	--	--	--
Ciba 1506	14.9	62	0.3	1.7	0.0	94.6	153.3	110.3	124.0	119.4
Cargill X19383	15.3	52	0.0	1.4	0.0	94.4	--	--	--	--
HyPerformer HSC Cherokee	15.9	56	0.0	1.1	0.0	94.3	--	--	--	--
Triumph TR 74CR	14.2	60	0.0	1.1	0.0	94.3	--	109.9	--	--
NC+ 7B81E	14.9	48	0.6	3.1	0.0	94.2	158.6	111.2	126.4	121.3
HyPerformer HSC 1289C	14.7	55	0.0	2.2	0.0	94.1	--	--	--	--
Fontanelle 5590	14.3	54	0.0	1.0	0.0	94.0	178.6*	108.3	136.3	127.0
Pioneer Hybrid 8310	16.7	60	0.3	1.3	0.0	93.8	--	--	--	--
Golden Harvest H-388W	14.4	50	0.0	1.6	0.0	93.7	--	--	--	--
Ciba 1655	16.0	54	0.0	0.9	0.0	93.7	--	--	--	--
Dekalb DK-51	14.9	54	0.0	2.3	0.0	93.2	--	--	--	--
Northrup King KS710	14.9	50	0.0	1.8	0.0	93.1	166.8*	101.4	130.0	120.4
Dekalb DK-48	15.9	56	0.0	1.6	0.0	93.0	165.2*	119.9*	129.1	126.0
Pioneer Hybrid 8231Y	14.5	51	0.0	1.3	0.0	92.5	162.2	--	127.4	--
Crosbyton GW6060	14.2	50	0.8	2.4	0.0	91.9	--	100.3	--	--
JMS 215G	15.9	58	0.0	1.2	0.0	91.8	159.8	--	125.8	--
Pioneer Hybrid 8212Y	15.4	50	0.0	1.1	0.0	91.0	--	--	--	--
ICI 5392	14.7	56	0.6	2.1	0.0	90.8	168.0*	--	129.4	--
Garrison SG-925	17.1	53	0.0	1.4	0.0	90.2	--	--	--	--
PennGrain DR Sorghum	14.2	54	0.0	2.0	0.0	90.2	141.0	110.0	115.6	113.7
Triumph TR 65G	16.6	57	0.0	0.9	0.0	90.1	168.9*	--	129.5	--
Growers 3150	14.5	56	0.0	1.9	0.0	89.7	166.8*	--	128.3	--
Fontanelle 5588	17.0	61	1.3	1.9	0.0	89.3	158.6	--	124.0	--
MFA 660	15.9	55	0.0	3.6	0.0	89.1	164.4	126.9**	126.8	126.8
Golden Harvest H-444W	15.5	55	0.0	1.6	0.0	89.1	161.9	119.5*	125.5	123.5
Dekalb DK-56	16.6	60	0.0	2.3	0.0	88.8	151.4	122.0*	120.1	120.7
Northrup King KS714Y	14.4	52	0.0	2.6	0.0	88.5	145.7	109.8	117.1	114.7
Growers 1310AE	14.5	54	0.0	1.4	0.0	88.3	162.1	--	125.2	--
MFA 650	14.6	56	0.0	2.3	0.0	87.8	148.4	110.1	118.1	115.4
Jacques 444E	15.2	55	0.0	2.0	0.0	87.4	160.5	--	124.0	--
Cargill 727	15.0	50	0.0	2.8	0.0	85.3	173.0*	--	129.2	--
Dekalb DK-58	15.2	58	0.0	3.0	0.0	84.5	155.5	--	120.0	--
TRIAL AVERAGE	15.0	55	0.1	1.9	0.0	95.0	159.4	111.1	127.2	121.8
L.S.D. AT .05	1.4	4	NS	0.9	NS	14.4	18.0	11.5		
C.V. %	5.6	4.6		29.5		9.3	6.9	6.4		

-- Data not available.
** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 4. Performance of Grain Sorghum Hybrids evaluated near Martinsburg (Audrain County) on the Richard Primus Farm during 1993, and on the Clarence Phears farm during 1991-92.

Planted: 26 May 1993
Harvested: 26 October 1993
Planted Population: 104,500 seeds/A.
Row Spacing: 30 inches
Soil Type: Mexico Silt Loam

Fertilizer: N=100; P_2O_5=60; K_2O=80
Herbicide: Ramrod + Atrazine
Insecticide: None
Previous Crop: Clover
Soil Test: pH=6.5, OM=2.8%, P=32, K=133

Growing Season Rainfall: May=3.6, June=4.3, July=11.0, Aug.=5.2, Sept.=17.9, TOTAL=42.0"

	1993					Yield (Bu/Acre)			Means	
Brand-Hybrid	Moisture (%)	Plant Ht. (In.)	Off-type Heads (%)	Compactness Score	Lodging (%)	1993	1992	1991	2 Yr.	3 Yr.
Fontanelle 5040	14.5	55	0.0	2.0	1.1	110.2**	--	--	--	--
Golden Harvest H-388W	14.9	54	0.0	2.0	0.0	107.0*	--	--	--	--
Fontanelle 5590	16.3	58	0.0	1.0	2.0	104.3*	179.3*	124.8	141.8	136.1
Triumph TR 65G	15.8	58	0.0	1.0	0.0	104.2*	172.4	--	138.3	--
Cargill X19383	15.2	55	0.0	1.0	0.0	101.2*	--	--	--	--
Garrison SG-925	16.8	60	0.0	1.0	1.6	100.9*	--	--	--	--
Crosbyton GW6060	13.8	53	0.4	3.0	0.4	99.3*	--	127.9	--	--
MFA GS-10	14.5	52	0.0	3.3	1.0	98.2*	172.6	131.5*	135.4	134.1
Dekalb DK-58	16.3	63	0.0	3.0	4.7	96.6*	176.3*	--	136.5	--
JMS 213Y	14.7	61	0.0	1.7	1.6	96.4*	167.1	129.2	131.8	130.9
HyPerformer HSC Cherokee	16.2	59	0.0	1.0	1.6	95.8*	--	--	--	--
Northrup King KS714Y	14.8	55	0.0	2.7	1.1	93.3*	167.1	123.0	130.2	127.8
MFA 570	15.2	58	0.0	1.0	1.0	92.0*	174.2	130.7*	133.1	132.3
Growers 3150	14.5	60	0.0	1.7	1.0	91.7*	176.7*	--	134.2	--
Garrison SG-822	14.1	60	0.6	2.0	1.8	91.6*	--	124.7	--	--
Crosbyton GW5960	15.2	54	0.0	2.3	3.2	91.3*	--	134.4*	--	--
Ciba 1616	14.7	62	0.0	1.0	0.0	91.3*	176.0*	137.8*	133.7	135.0
Pioneer Hybrid 8500	15.5	55	0.0	2.0	0.0	90.8*	168.7	137.3*	129.8	132.3
Pioneer Hybrid XS319	17.8	61	0.0	1.7	2.9	90.7*	--	--	--	--
NC+ 7C49	14.3	62	0.0	1.0	1.3	90.6*	172.8	126.5	131.7	130.0
Ciba 1655	17.1	57	0.0	1.0	1.2	90.0*	--	--	--	--
Triumph TR 74CR	15.1	62	0.0	1.0	9.9	90.0*	--	128.3	--	--
Asgrow A504	15.6	55	0.0	1.0	3.8	89.0	--	--	--	--
Crosbyton GW6092	15.8	52	0.0	2.0	0.0	89.0	174.2	--	131.6	--
Golden Harvest H-444W	14.5	62	0.0	1.0	2.2	88.0	167.3	131.7*	127.7	129.0
ICI 5514Y	14.0	56	0.0	3.0	0.0	87.1	--	--	--	--
Pioneer Hybrid 8333	16.8	55	0.0	3.0	1.1	87.0	181.1*	128.5	134.1	132.2
ICI 5392	15.5	58	0.0	1.7	0.0	86.3	175.0*	--	130.7	--
NC+ 7B81E	15.7	46	0.0	3.0	0.0	85.4	165.4	137.0*	125.4	129.3
Dekalb DK-48	16.7	58	0.0	1.0	10.5	85.2	188.8*	120.7	137.0	131.6
Growers 1310AE	14.3	52	0.0	2.0	0.0	85.0	172.9	--	129.0	--
Cargill 575	14.5	61	0.0	2.3	10.1	84.4	155.8	135.3*	120.1	125.2
Dekalb DK-51	15.6	53	0.0	2.3	1.2	84.4	--	--	--	--
Pioneer Hybrid 8310	16.2	60	0.0	1.0	0.3	83.5	--	--	--	--
Pioneer Hybrid 8212Y	16.7	55	0.0	1.0	0.6	83.5	--	--	--	--
Fontanelle W-5000	14.6	60	0.0	2.0	12.2	83.4	171.5	136.1*	127.5	130.3
Triumph Two 80-D	15.3	58	0.0	1.0	1.2	83.1	184.9*	132.7*	134.0	133.6
Dekalb DK-56	16.5	61	0.0	1.7	1.1	83.0	176.0*	124.2	129.5	127.7
MFA 650	14.9	61	0.0	1.7	11.0	82.7	161.7	130.7*	122.2	125.0
Cargill 857	16.0	54	0.0	1.0	0.0	82.4	175.2*	129.4	128.8	129.0
PennGrain DR Sorghum	15.1	54	0.0	1.3	0.6	81.5	147.1	133.0*	114.3	120.5
Cargill 727	14.3	54	0.0	3.3	8.7	81.3	172.5	--	126.9	--
Garrison SG-942	17.8	62	0.0	1.0	11.6	80.9	--	--	--	--
JMS 215G	15.7	58	0.0	1.0	4.2	80.7	179.6*	--	130.2	--
Crosbyton GW9080	17.2	57	0.0	2.0	2.2	80.6	--	--	--	--
Fontanelle 5588	17.1	62	0.0	1.0	0.0	80.5	181.7*	--	131.1	--
Ciba 1506	15.1	64	0.0	1.0	0.0	79.5	163.6	125.5	121.6	122.9
Jacques 444E	16.7	56	0.0	2.3	0.0	78.6	178.6*	--	128.6	--
HyPerformer HSC 1289C	14.8	62	0.0	2.0	6.2	77.6	--	--	--	--
Cargill 837	16.1	58	0.0	1.0	1.0	77.5	182.6*	134.9*	130.1	131.7
Pioneer Hybrid 8446	15.1	50	0.0	2.3	0.0	76.3	--	--	--	--
Northrup King KS710	15.2	49	0.0	2.3	0.0	75.4	167.8	116.4	121.6	119.9
MFA 660	17.1	61	0.0	3.0	1.0	73.5	176.6*	116.3	125.1	122.1
Pioneer Hybrid 8231Y	17.5	55	0.0	1.0	5.0	70.4	187.5*	--	129.0	--
TRIAL AVERAGE	15.6	57	0.0	1.7	2.5	87.9	172.6	128.4	130.2	129.6
L.S.D. AT .05	1.7	3	NS	0.9	NS	20.7	17.3	15.5		
C.V. %	6.5	3.4		31.0		14.4	6.2	7.5		

-- Data not available.
** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 5. Performance record of Grain Sorghum Hybrids evaluated at three North-Central Missouri locations (Spickard, Hughesville, and Martinsburg) during 1993.

Spickard	Hughesville	Martinsburg
Planted: 19 May 1993	Planted: 27 May 1993	Planted: 26 May 1993
Harvested: 10 October 1993	Harvested: 25 October 1993	Harvested: 26 October 1993
Planted Pop.: 104,500 seeds/A.	Planted Pop.: 104,500 seeds/A.	Planted Pop.: 104,500 seeds/A.
Row Spacing: 30 inches	Row Spacing: 30 inches	Row Spacing: 30 inches
Soil Type: Colo Silty Clay Loam	Soil Type: Summit Silt Loam	Soil Type: Mexico Silt Loam
Growing Season Moisture:45.8"	Growing Season Moisture:41.9"	Growing Season Moisture:42.0"

	Lodging (%)				Yield (Bu/Acre)			
Brand-Hybrid	Spickard	Hughsvle	Martnsbg	Mean	Spickard	Hughesville	Martinsburg	Mean
MFA GS-10	0.0	0.0	1.0	0.3	58.8*	102.0*	98.2*	86.3**
Fontanelle 5040	0.0	0.0	1.1	0.4	44.7	98.4	110.2**	84.4*
Pioneer Hybrid XS319	0.0	0.0	2.9	1.0	45.4	112.9**	90.7*	83.0*
Garrison SG-942	0.0	0.0	11.6	3.9	56.6*	110.2*	80.9	82.6*
Triumph Two 80-D	0.0	0.0	1.2	0.4	64.5**	99.7*	83.1	82.4*
Garrison SG-925	0.0	0.0	1.6	0.5	54.0*	90.2	100.9*	81.7*
MFA 570	0.0	0.0	1.0	0.3	47.7*	103.8*	92.0*	81.2*
Crosbyton GW6060	0.0	0.0	0.4	0.1	51.2*	91.9	99.3*	80.8*
Crosbyton GW6092	0.0	0.0	0.0	0.0	51.2*	102.3*	89.0	80.8*
Fontanelle 5590	0.0	0.0	2.0	0.7	43.6	94.0	104.3*	80.6*
NC+ 7B81E	0.0	0.0	0.0	0.0	61.6*	94.2	85.4	80.4*
Ciba 1616	0.0	0.0	0.0	0.0	42.2	105.2*	91.3*	79.6*
Triumph TR 65G	0.0	0.0	0.0	0.0	44.2	90.1	104.2*	79.5*
Crosbyton GW5960	0.0	0.0	3.2	1.1	50.8*	96.5	91.3*	79.5*
Cargill 575	0.0	0.0	10.1	3.4	52.5*	97.5	84.4	78.1*
Cargill X19383	0.0	0.0	0.0	0.0	37.8	94.4	101.2*	77.8*
Asgrow A504	0.0	0.0	3.8	1.3	44.7	98.7*	89.0	77.5*
Dekalb DK-51	0.0	0.0	1.2	0.4	52.6*	93.2	84.4	76.7*
JMS 213Y	0.0	0.0	1.6	0.5	32.4	100.9*	96.4*	76.6*
Pioneer Hybrid 8333	0.0	0.0	1.1	0.4	39.2	103.3*	87.0	76.5*
Golden Harvest H-444W	0.0	0.0	2.2	0.7	51.9*	89.1	88.0	76.3
Triumph TR 74CR	0.0	0.0	9.9	3.3	43.9	94.3	90.0*	76.1
HyPerformer HSC Cherokee	0.0	0.0	1.6	0.5	37.7	94.3	95.8*	75.9
Garrison SG-822	0.0	0.0	1.8	0.6	39.4	95.7	91.6*	75.6
PennGrain DR Sorghum	0.0	0.0	0.6	0.2	54.2*	90.2	81.5	75.3
Fontanelle W-5000	0.0	0.0	12.2	4.1	44.2	97.9	83.4	75.2
Pioneer Hybrid 8500	0.0	0.0	0.0	0.0	37.2	96.7	90.8*	74.9
Golden Harvest H-388W	0.0	0.0	0.0	0.0	23.5	93.7	107.0*	74.7
Ciba 1655	0.0	0.0	1.2	0.4	40.4	93.7	90.0*	74.7
ICI 5514Y	0.0	0.0	0.0	0.0	36.3	100.4*	87.1	74.6
ICI 5392	0.0	0.0	0.0	0.0	46.3	90.8	86.3	74.5
NC+ 7C49	0.0	0.0	1.3	0.4	32.7	99.5*	90.6*	74.3
Growers 3150	0.0	0.0	1.0	0.3	39.3	89.7	91.7*	73.6
JMS 215G	0.0	0.0	4.2	1.4	47.8*	91.8	80.7	73.4
Pioneer Hybrid 8212Y	0.0	0.0	0.6	0.2	43.1	91.0	83.5	72.5
Cargill 837	1.0	0.0	1.0	0.7	43.3	96.2	77.5	72.3
Ciba 1506	0.0	0.0	0.0	0.0	42.2	94.6	79.5	72.1
Dekalb DK-56	0.0	0.0	1.1	0.4	43.3	88.8	83.0	71.7
Northrup King KS710	0.0	0.0	0.0	0.0	46.3	93.1	75.4	71.6
Dekalb DK-48	0.0	0.0	10.5	3.5	35.3	93.0	85.2	71.2
HyPerformer HSC 1289C	0.0	0.0	6.2	2.1	42.0	94.1	77.6	71.2
MFA 650	0.0	0.0	11.0	3.7	42.8	87.8	82.7	71.1
Northrup King KS714Y	0.0	0.0	1.1	0.4	31.0	88.5	93.3*	70.9
Cargill 857	0.0	0.0	0.0	0.0	30.8	98.8*	82.4	70.7
Fontanelle 5588	0.0	0.0	0.0	0.0	41.4	89.3	80.5	70.4
Growers 1310AE	0.0	0.0	0.0	0.0	35.8	88.3	85.0	69.7
Pioneer Hybrid 8446	0.0	0.0	0.0	0.0	32.4	99.1*	76.3	69.3
Crosbyton GW9080	0.0	0.0	2.2	0.7	29.2	95.4	80.6	68.4
Pioneer Hybrid 8310	0.0	0.0	0.3	0.1	26.7	93.8	83.5	68.0
MFA 660	0.2	0.0	1.0	0.4	39.0	89.1	73.5	67.2
Dekalb DK-58	0.9	0.0	4.7	1.9	19.4	84.5	96.6*	66.8
Jacques 444E	0.8	0.0	0.0	0.3	33.2	87.4	78.6	66.4
Pioneer Hybrid 8231Y	0.0	0.0	5.0	1.7	27.9	92.5	70.4	63.6
Cargill 727	0.0	0.0	8.7	2.9	22.6	85.3	81.3	63.1
TRIAL AVERAGE	0.1	0.0	2.5	0.8	41.8	95.0	87.9	74.9
L.S.D. AT .05	0.6	NS	8.0	2.5	17.0	14.4	20.7	9.8
C.V. %					25.0	9.3	14.4	14.2

** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 6. Performance of Grain Sorghum Hybrids evaluated near Nevada (Vernon County) on the Gilbert Wilson Farm during 1991-93.

Planted: 29 May 1993
Harvested: 12 October 1993
Planted Population: 104,500 seeds/A.
Row Spacing: 30 inches
Soil Type: Parsons Silt Loam
Soil Test: pH=5.6, OM=3.2%, P=28, K=145

Fertilizer: N=90; P_2O_5=45; K_2O=60
Herbicide: Ramrod + Atrazine
Insecticide: None
Irrigation: 0.00 inches
Previous Crop: Soybean

Growing Season Rainfall: May=10.0, June=7.5, July=16.8, Aug.=1.8, Sept.=17.0, TOTAL=53.1"

	1993					Yield (Bu/Acre)			Means	
Brand-Hybrid	Moisture (%)	Plant Ht. (In.)	Off-type Heads (%)	Compactness Score	Lodging (%)	1993	1992	1991	2 Yr.	3 Yr.
MFA 570	16.3	60	0.0	1.7	0.0	105.0**	144.2*	9.5	124.6	86.2
Pioneer Hybrid XS319	17.4	61	0.0	1.0	0.0	101.5*	--	--	--	--
NC+ 7C49	14.8	59	0.0	1.7	0.0	101.4*	124.5	--	113.0	--
Pioneer Hybrid 8500	17.1	58	0.0	2.0	0.0	100.0*	130.7	12.1	115.4	80.9
Crosbyton GW6060	14.8	53	0.0	3.7	0.0	99.8*	--	8.0	--	--
MFA 650	16.2	59	0.0	2.3	0.0	97.1*	128.2	14.1	112.7	79.8
Pioneer Hybrid 8310	18.8	60	0.0	1.0	0.0	95.8*	--	--	--	--
Golden Acres T-E 77E	16.7	64	0.0	1.3	0.0	95.8*	146.0*	13.9	120.9	85.2
Garrison SG-942	18.8	63	1.4	1.0	0.0	94.9*	--	--	--	--
Cargill X19383	15.0	53	0.0	1.0	0.0	94.7*	--	--	--	--
Northrup King KS714Y	15.7	54	0.0	3.0	0.0	93.2*	119.6	10.2	106.4	74.3
HyPerformer HSC 1289C	16.3	62	0.0	1.7	0.0	93.2*	--	--	--	--
Golden Acres T-E Sonora	15.6	56	0.0	3.0	0.0	93.0*	--	--	--	--
Asgrow Topaz	16.6	56	0.0	2.7	0.0	92.7*	133.7	10.2	113.2	78.9
Jacques 444E	14.9	54	0.0	3.0	0.0	92.6*	--	--	--	--
Pioneer Hybrid 8231Y	16.2	57	0.0	1.0	0.0	92.5*	151.9*	--	122.2	--
Cargill 727	17.4	53	0.0	3.0	0.0	92.4*	124.1	--	108.3	--
NC+ 7B90	16.3	58	0.0	1.0	0.0	92.1*	138.8*	--	115.5	--
Garrison SG-822	16.5	60	0.0	2.0	0.0	92.0*	140.9*	--	116.5	--
Cargill 837	15.2	56	0.0	3.0	0.0	92.0*	134.8*	26.8**	113.4	84.5
Crosbyton GW9080	16.6	57	0.0	1.0	0.0	90.9*	--	--	--	--
Crosbyton GW5960	15.3	55	0.0	2.0	0.0	90.9*	--	9.7	--	--
Asgrow A504	16.3	57	0.0	2.0	0.0	90.8*	--	12.4	--	--
Golden Acres T-E Y-75	16.4	57	0.0	1.3	0.0	89.9*	131.0	18.0*	110.5	79.6
Cargill 797	17.1	51	0.0	1.7	0.0	88.9*	129.4	--	109.2	--
Golden Harvest H-444W	16.1	63	0.0	1.0	0.0	88.9*	116.1	7.4	102.5	70.8
Ciba 1616	17.5	66	0.0	1.0	0.0	88.8*	140.2*	13.6	114.5	80.9
Triumph TR 65G	17.2	56	0.0	1.3	0.0	87.9	124.1	--	106.0	--
Oro Amigo	17.9	57	0.0	1.3	0.0	87.6	130.3	14.6	109.0	77.5
PennGrain DR Sorghum	15.5	57	0.0	1.7	0.0	87.5	--	--	--	--
HyPerformer HSC Cherokee	17.4	56	0.0	1.7	0.0	87.3	--	--	--	--
Cargill 857	17.6	53	0.0	1.3	0.0	85.6	139.4*	10.8	112.5	78.6
ICI 5514Y	15.6	51	0.0	3.0	0.0	85.5	--	--	--	--
Cargill 575	16.0	59	0.0	2.3	0.0	85.2	121.5	9.6	103.4	72.1
Dekalb DK-58	15.6	60	0.0	2.7	0.0	84.1	132.1	--	108.1	--
Pioneer Hybrid 8212Y	16.9	54	0.0	1.3	0.0	83.9	--	--	--	--
Northrup King KS710	16.4	49	0.0	3.0	0.0	83.8	119.7	6.4	101.8	70.0
Garrison SG-925	17.5	58	0.0	1.7	0.0	83.7	134.6*	--	109.2	--
Dekalb DK-56	20.2	62	0.0	1.7	0.0	83.6	128.8	10.9	106.2	74.4
Pioneer Hybrid 8446	16.2	51	0.0	2.3	0.0	81.9	--	--	--	--
Jacques 611E	17.3	60	0.0	2.3	0.0	81.8	137.0*	--	109.4	--
Ciba 1655	20.2	54	0.0	1.0	0.0	81.2	--	--	--	--
ICI 5503	16.3	58	0.0	2.3	0.0	81.0	124.1	--	102.6	--
MFA GS-10	15.9	52	0.0	3.7	0.0	80.6	130.5	6.0	105.6	72.4
Crosbyton GW6092	17.4	53	0.0	1.7	0.0	78.9	122.8	--	100.9	--
Pioneer Hybrid 8333	17.0	51	0.0	3.0	0.0	78.5	142.2*	16.4*	110.4	79.0
Golden Harvest H-505BW	16.8	58	0.0	2.0	0.0	77.8	116.6	--	97.2	--
Ciba 1506	19.0	71	0.0	1.3	0.0	77.2	139.1*	20.3*	108.2	78.9
MFA 660	19.7	61	0.0	3.0	0.0	75.6	140.9*	19.6*	108.3	78.7
Dekalb DK-54	22.1	63	0.0	1.0	0.0	74.8	139.7*	--	107.3	--
TRIAL AVERAGE	16.9	57	0.0	1.9	0.0	88.7	129.0	13.3	108.8	77.0
L.S.D. AT .05	2.1	5	0.5	0.9	NS	16.7	21.6	11.8		
C.V. %	7.8	4.9		28.6		11.5	10.3	54.9		

-- Data not available.
** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 7. Performance of Grain Sorghum Hybrids evaluated near Lamar (Barton County) on the Wally Norton Farm during 1991-93.

Planted: 5 May 1993
Harvested: 22 September 1993
Planted Population: 104,500 seeds/A.
Row Spacing: 30 inches
Soil Type: Parsons Silt Loam
Soil Test: pH=6.4, OM=1.8%, P=38, K=113

Fertilizer: N=80; P_2O_5=40; K_2O=80
Herbicide: Ramrod + Atrazine
Insecticide: None
Irrigation: 0.00 inches
Previous Crop: Soybean

Growing Season Rainfall: May=6.1, June=4.5, July=5.0, Aug.=2.3, Sept.=16.0, TOTAL=33.9"

Brand-Hybrid	1993 Moisture (%)	1993 Plant Ht. (In.)	1993 Off-type Heads (%)	1993 Compactness Score	1993 Lodging (%)	Yield (Bu/Acre) 1993	Yield (Bu/Acre) 1992	Yield (Bu/Acre) 1991	Means 2 Yr.	Means 3 Yr.
Ciba 1616	14.5	57	0.0	1.7	0.0	121.3**	103.6*	53.2*	112.5	92.7
Pioneer Hybrid 8212Y	16.5	48	0.4	2.3	0.5	120.1*	--	--	--	--
Golden Acres T-E 77E	18.3	52	0.1	1.9	0.0	117.6*	117.0**	56.8*	117.3	97.1
Cargill X19383	13.5	49	0.0	2.0	0.0	115.6*	--	--	--	--
ICI 5503	18.5	54	0.0	2.0	0.1	115.3*	104.3*	--	109.8	--
Jacques 611E	16.3	57	0.4	2.0	0.0	112.4*	116.2*	--	114.3	--
Cargill 837	18.6	52	0.2	2.7	0.8	112.0*	100.7*	61.1*	106.4	91.3
Triumph TR 65G	16.8	51	0.0	2.0	0.0	111.4*	88.0	--	99.7	--
Crosbyton GW6060	12.8	48	0.0	3.0	0.0	110.2*	--	47.3*	--	--
MFA GS-10	14.6	45	0.1	3.1	0.0	109.6*	107.9*	46.1*	108.8	87.9
Ciba 1506	19.4	62	0.0	2.6	0.3	109.1*	104.0*	37.0	106.6	83.4
Golden Acres T-E Sonora	17.1	49	1.0	2.6	0.0	108.9*	--	--	--	--
Golden Acres T-E Y-75	17.7	52	0.3	2.0	0.0	108.2*	108.7*	31.3	108.5	82.7
Golden Harvest H-444W	15.6	52	0.4	2.0	0.0	108.1*	81.6	51.6*	94.9	80.4
Pioneer Hybrid 8310	16.4	54	0.0	2.0	0.1	107.7*	--	--	--	--
NC+ 7B90	17.0	52	0.5	2.0	0.1	106.4*	97.2*	--	101.8	--
NC+ 7C49	16.1	52	0.1	2.0	0.1	106.3*	97.4*	--	101.9	--
Asgrow Topaz	18.5	46	0.2	2.0	0.0	106.0*	101.8*	39.3	103.9	82.4
Dekalb DK-58	18.0	52	0.1	3.6	0.5	105.3*	116.7*	--	111.0	--
MFA 570	19.3	54	0.1	2.0	0.0	104.3*	110.0*	46.0*	107.2	86.8
Jacques 444E	15.9	49	0.9	3.1	0.0	103.3*	--	--	--	--
Garrison SG-942	18.9	56	0.0	2.0	0.0	102.7*	--	--	--	--
HyPerformer HSC Cherokee	18.8	51	0.0	2.0	0.0	101.2	--	--	--	--
Crosbyton GW6092	17.3	48	0.5	2.0	0.0	100.8	114.4*	--	107.6	--
Oro Amigo	15.9	53	0.1	2.3	0.0	100.7	115.1*	50.1*	107.9	88.6
PennGrain DR Sorghum	14.5	48	0.0	2.7	0.4	100.3	--	--	--	--
Cargill 727	16.7	46	0.0	3.0	0.0	100.2	106.2*	--	103.2	--
Garrison SG-925	18.5	51	2.5	2.0	0.0	99.8	101.3*	--	100.6	--
HyPerformer HSC 1289C	14.8	50	0.1	2.7	0.0	99.5	--	--	--	--
Dekalb DK-54	22.9	53	0.0	2.0	0.1	99.4	92.0*	--	95.7	--
Garrison SG-822	14.2	50	0.9	3.0	0.3	99.4	100.3*	--	99.9	--
Pioneer Hybrid 8500	17.0	49	0.2	2.3	0.0	98.9	91.3*	56.9*	95.1	82.4
Crosbyton GW5960	13.5	50	0.0	2.7	0.0	98.2	--	56.8*	--	--
MFA 660	19.4	53	1.9	2.3	0.0	97.7	84.0	41.6	90.9	74.4
Ciba 1655	17.5	50	2.7	2.0	0.0	97.3	--	--	--	--
Cargill 575	13.9	51	0.0	2.6	0.0	96.3	84.8	52.0*	90.6	77.7
Cargill 857	17.9	48	0.0	2.3	0.0	95.6	89.1	54.1*	92.4	79.6
Asgrow A504	14.6	50	0.3	2.0	0.0	95.2	--	47.2*	--	--
Northrup King KS710	16.4	43	0.1	2.3	0.0	94.8	97.6*	60.6*	96.2	84.3
Pioneer Hybrid 8333	16.9	47	0.1	3.0	1.1	94.6	79.3	43.5*	86.9	72.5
Pioneer Hybrid XS319	22.8	56	0.0	2.0	0.5	93.8	--	--	--	--
Cargill 797	15.8	47	0.0	1.9	0.0	92.9	92.4*	--	92.7	--
Crosbyton GW9080	18.0	50	0.1	2.0	0.0	92.6	--	--	--	--
Dekalb DK-56	19.7	53	0.2	2.6	0.1	92.0	116.8*	29.9	104.4	79.6
Pioneer Hybrid 8231Y	16.5	48	0.0	2.0	0.5	91.2	113.1*	--	102.2	--
Golden Harvest H-505BW	14.5	52	0.0	3.0	0.0	90.6	95.2*	--	92.9	--
Pioneer Hybrid 8446	15.2	44	0.1	3.4	0.1	86.2	--	--	--	--
ICI 5514Y	15.1	46	0.0	4.3	0.0	86.1	--	--	--	--
MFA 650	14.0	54	0.0	2.7	0.0	85.8	101.4*	54.3*	93.6	80.5
Northrup King KS714Y	14.5	46	0.0	4.0	0.5	80.2	101.8*	63.0**	91.0	81.7
TRIAL AVERAGE	16.7	51	0.3	2.4	0.1	101.7	98.8	47.6	100.2	82.7
L.S.D. AT .05	3.4	3	1.2	0.7	NS	19.6	26.8	20.5		
C.V. %	12.4	4.0		17.0		11.9	16.7	25.8		

-- Data not available.
** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 8. Performance record of Grain Sorghum Hybrids evaluated at two Southwest Missouri locations (Nevada and Lamar) during 1993.

Nevada	Lamar
Planted: 29 May 1993	Planted: 5 May 1993
Harvested: 12 October 1993	Harvested: 22 September 1993
Planted Pop.: 104,500 seeds/A.	Planted Pop.: 104,500 seeds/A.
Row Spacing: 30 inches	Row Spacing: 30 inches
Soil Type: Parsons Silt Loam	Soil Type: Parsons Silt Loam
Growing Season Moisture: 53.1"	Growing Season Moisture: 33.9"

	Lodging (%)			Yield (Bu/Acre)		
Brand-Hybrid	Nevada	Lamar	Mean	Nevada	Lamar	Mean
Golden Acres T-E 77E	0.0	0.0	0.0	95.8*	117.6*	106.7**
Cargill X19383	0.0	0.0	0.0	94.7*	115.6*	105.2*
Crosbyton GW6060	0.0	0.0	0.0	99.8*	110.2*	105.0*
Ciba 1616	0.0	0.0	0.0	88.8*	121.3**	105.0*
MFA 570	0.0	0.0	0.0	105.0**	104.3*	104.6*
NC+ 7C49	0.0	0.1	0.0	101.4*	106.3*	103.8*
Cargill 837	0.0	0.8	0.4	92.0*	112.0*	102.0*
Pioneer Hybrid 8212Y	0.0	0.5	0.2	83.9	120.1*	102.0*
Pioneer Hybrid 8310	0.0	0.1	0.0	95.8*	107.7*	101.8*
Golden Acres T-E Sonora	0.0	0.0	0.0	93.0*	108.9*	101.0*
Triumph TR 65G	0.0	0.0	0.0	87.9	111.4*	99.6*
Pioneer Hybrid 8500	0.0	0.0	0.0	100.0*	98.9	99.4*
Asgrow Topaz	0.0	0.0	0.0	92.7*	106.0*	99.4*
NC+ 7B90	0.0	0.1	0.0	92.1*	106.4*	99.2*
Golden Acres T-E Y-75	0.0	0.0	0.0	89.9*	108.2*	99.0*
Garrison SG-942	0.0	0.0	0.0	94.9*	102.7*	98.8*
Golden Harvest H-444W	0.0	0.0	0.0	88.9*	108.1*	98.5*
ICI 5503	0.0	0.1	0.0	81.0	115.3*	98.2*
Jacques 444E	0.0	0.0	0.0	92.6*	103.3*	98.0*
Pioneer Hybrid XS319	0.0	0.5	0.2	101.5*	93.8	97.6*
Jacques 611E	0.0	0.0	0.0	81.8	112.4*	97.1*
HyPerformer HSC 1289C	0.0	0.0	0.0	93.2*	99.5	96.4*
Cargill 727	0.0	0.0	0.0	92.4*	100.2	96.3*
Garrison SG-822	0.0	0.3	0.2	92.0*	99.4	95.7*
MFA GS-10	0.0	0.0	0.0	80.6	109.6*	95.1*
Dekalb DK-58	0.0	0.5	0.2	84.1	105.3*	94.7*
Crosbyton GW5960	0.0	0.0	0.0	90.9*	98.2	94.6*
Oro Amigo	0.0	0.0	0.0	87.6	100.7	94.2*
HyPerformer HSC Cherokee	0.0	0.0	0.0	87.3	101.2	94.2*
PennGrain DR Sorghum	0.0	0.4	0.2	87.5	100.3	93.9
Ciba 1506	0.0	0.3	0.2	77.2	109.1*	93.2
Asgrow A504	0.0	0.0	0.0	90.8*	95.2	93.0
Crosbyton GW9080	0.0	0.0	0.0	90.9*	92.6	91.8
Pioneer Hybrid 8231Y	0.0	0.5	0.2	92.5*	91.2	91.8
Garrison SG-925	0.0	0.0	0.0	83.7	99.8	91.8
MFA 650	0.0	0.0	0.0	97.1*	85.8	91.4
Cargill 797	0.0	0.0	0.0	88.9*	92.9	90.9
Cargill 575	0.0	0.0	0.0	85.2	96.3	90.8
Cargill 857	0.0	0.0	0.0	85.6	95.6	90.6
Crosbyton GW6092	0.0	0.0	0.0	78.9	100.8	89.8
Northrup King KS710	0.0	0.0	0.0	83.8	94.8	89.3
Ciba 1655	0.0	0.0	0.0	81.2	97.3	89.2
Dekalb DK-56	0.0	0.1	0.0	83.6	92.0	87.8
Dekalb DK-54	0.0	0.1	0.0	74.8	99.4	87.1
Northrup King KS714Y	0.0	0.5	0.2	93.2*	80.2	86.7
Pioneer Hybrid 8333	0.0	1.1	0.6	78.5	94.6	86.6
MFA 660	0.0	0.0	0.0	75.6	97.7	86.6
ICI 5514Y	0.0	0.0	0.0	85.5	86.1	85.8
Golden Harvest H-505BW	0.0	0.0	0.0	77.8	90.6	84.2
Pioneer Hybrid 8446	0.0	0.1	0.0	81.9	86.2	84.0
TRIAL AVERAGE	0.0	0.1	0.1	88.7	101.7	95.2
L.S.D. AT .05	NS	NS	NS	16.7	19.6	12.6
C.V. %				11.5	11.9	11.7

** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 9. Performance of Grain Sorghum Hybrids evaluated near Oran (Scott County) on the Glenn Nothdurft Farm during 1991-93.

Planted: 17 May 1993
Harvested: 29 September 1993
Planted Population: 104,500 seeds/A.
Row Spacing: 30 inches
Soil Type: Commerce Silt Loam
Soil Test: pH=5.9, OM=2.0%, P=100, K=386

Fertilizer: N=140; P_2O_5=46; K_2O=60
Herbicide: Ramrod + Atrazine
Insecticide: None
Irrigation: 3.00 inches
Previous Crop: Soybean

Growing Season Rainfall: May=5.0, June=5.4, July=2.4, Aug.=2.1, Sept.=6.4, TOTAL=21.3"

	1993					Yield (Bu/Acre)			Means	
Brand-Hybrid	Moisture (%)	Plant Ht. (In.)	Off-type Heads (%)	Compactness Score	Lodging (%)	1993	1992	1991	2 Yr.	3 Yr.
Deltapine 1552	13.1	53	0.0	3.5	0.0	163.4**	163.4*	109.5*	163.4	145.4
AgraTech 802G	12.3	52	0.1	2.0	0.0	162.7*	158.9	94.4	160.8	138.7
HyPerformer 1225DR	11.3	50	0.0	2.6	0.0	158.5*	162.1*	116.3*	160.3	145.6
Pioneer Hybrid 8333	13.2	46	0.0	2.8	0.0	152.1*	168.3*	102.3*	160.2	140.9
Growers 3150	11.9	42	0.1	2.5	0.0	151.6*	176.5*	--	164.1	--
Asgrow Topaz	13.0	50	0.0	2.1	0.0	150.3*	157.4	108.1*	153.9	138.6
Capehart Challanger	12.7	53	0.0	2.2	0.0	150.2*	--	111.3*	--	--
Pioneer Hybrid 8310	13.7	51	0.2	2.0	0.0	150.1*	--	--	--	--
HyPerformer HY 1320	13.2	54	0.0	2.1	0.0	147.8*	180.6*	--	164.2	--
PennGrain DR Sorghum	12.5	48	0.1	2.1	0.0	147.4*	--	--	--	--
Pioneer Hybrid 8313	13.2	50	0.2	2.7	0.0	147.3*	173.2*	--	160.3	--
ICI 5392	11.3	50	0.1	2.1	0.0	146.7*	--	--	--	--
Triumph Two 80-D	11.4	53	0.6	2.0	0.0	145.6*	159.4	102.6*	152.5	135.9
Asgrow XP5702	12.0	51	0.0	2.1	0.0	145.0*	--	--	--	--
MFA GS-10	13.3	48	0.2	3.5	0.0	144.0*	176.0*	104.5*	160.0	141.5
MFA 660	13.0	56	0.0	3.5	0.0	142.2*	162.2*	114.4*	152.2	139.6
Northrup King KS710	12.0	43	0.0	2.0	0.0	137.9*	156.5	88.3	147.2	127.6
Dekalb DK-66	13.9	54	0.1	2.3	0.0	137.3*	162.0*	119.2**	149.7	139.5
Deltapine G-522DR	11.2	51	0.0	2.5	0.0	136.8*	153.2	96.2	145.0	128.7
Dekalb DK-40y	10.9	45	0.1	1.9	0.0	136.6*	--	--	--	--
Jacques 611E	11.5	47	0.3	2.4	0.0	136.5*	135.1	--	135.8	--
Dekalb DK-54	13.2	57	0.3	2.0	0.0	136.2*	--	111.1*	--	--
Capehart Contender	11.0	50	0.1	2.4	0.0	134.8*	--	88.0	--	--
Deltapine G-1616	11.8	54	0.0	2.1	0.0	134.1	166.6*	113.3*	150.4	138.0
Crosbyton GW5960	10.8	47	0.3	2.2	0.0	134.0	--	101.8*	--	--
Jacques 444E	13.5	50	0.0	3.8	0.0	133.8	163.1*	--	148.5	--
Crosbyton GW6060	11.9	43	0.0	2.2	0.0	133.7	--	109.1*	--	--
Capehart Exp.93-2	13.9	55	0.3	2.1	0.0	133.4	--	--	--	--
Cargill 837	12.9	51	0.1	2.5	0.0	133.0	160.3	114.2*	146.7	135.8
Oro Quest	13.6	46	0.2	2.4	0.0	132.0	--	--	--	--
Pioneer Hybrid XS319	13.3	53	0.0	2.3	0.0	131.4	--	--	--	--
Pioneer Hybrid 8118	14.6	54	0.1	2.0	0.0	130.9	154.2	--	142.6	--
HyPerformer HSC Honcho	12.0	43	0.0	2.3	0.0	130.8	--	--	--	--
Pioneer Hybrid 8601	12.9	44	0.3	2.0	0.0	130.6	161.7*	--	146.1	--
AgraTech 712G	11.7	49	0.0	2.5	0.0	129.5	153.5	97.1	141.5	126.7
HyPerformer HSC Cherokee	12.2	47	0.3	2.0	0.0	129.4	160.0	116.9*	144.7	135.4
Triumph TR 65G	11.4	50	0.3	1.7	0.0	129.3	184.5**	101.8*	156.9	138.5
Growers 1310AE	11.7	46	0.0	2.3	0.0	128.2	146.5	116.5*	137.4	130.4
Pioneer Hybrid 8446	11.2	46	0.0	2.4	0.0	127.8	168.9*	--	148.4	--
HyPerformer HSC Wings	11.3	47	0.0	2.0	0.0	126.9	160.4	117.2*	143.7	134.8
Capehart Cream	10.2	55	0.1	2.1	0.0	126.4	--	106.0*	--	--
Cargill X19383	12.0	47	0.2	2.3	0.0	126.2	--	--	--	--
AgraTech 805WG	13.3	49	0.0	3.0	0.0	125.4	167.7*	96.4	146.6	129.8
Northrup King KS714Y	13.2	45	0.2	2.1	0.0	123.6	184.5**	100.2	154.1	136.1
Pioneer Hybrid 8212Y	12.5	46	0.3	2.4	0.0	123.2	165.7*	--	144.5	--
Asgrow A504	13.0	43	0.1	2.4	0.0	123.2	156.7	101.9*	140.0	127.3
Terral TVX 9734	13.0	54	0.2	2.3	0.0	122.8	--	--	--	--
HyPerformer 1330DR	12.3	55	0.2	2.3	0.0	122.5	157.8	114.9*	140.2	131.7
Crosbyton GW6092	12.7	47	0.0	2.3	0.0	122.2	156.9	--	139.6	--
Cargill 857	14.9	46	0.1	2.1	0.0	121.6	169.8*	89.5	145.7	127.0
Crosbyton GW9080	13.4	49	0.4	2.4	0.0	121.0	--	--	--	--
Dekalb DK-56	13.9	54	0.1	2.0	0.0	120.7	171.4*	103.8*	146.1	132.0

TABLE 9. Continued.

Brand-Hybrid	1993 Moisture (%)	1993 Plant Ht. (In.)	1993 Off-type Heads (%)	1993 Compactness Score	1993 Lodging (%)	Yield (Bu/Acre) 1993	1992	1991	Means 2 Yr.	3 Yr.
MFA 570	14.7	47	0.4	2.1	0.0	120.2	174.3*	98.4	147.3	131.0
MFA 650	12.9	51	0.1	2.8	0.0	120.0	154.7	96.4	137.4	123.7
Cargill 575	13.4	48	0.1	2.0	0.0	117.6	144.1	109.0*	130.9	123.6
Terral TV 1050	12.1	49	0.2	2.5	0.0	116.9	--	--	--	--
HyPerformer HSC 1289C	13.6	51	0.0	2.0	0.0	116.2	173.5*	118.3*	144.9	136.0
ICI 5319	12.7	52	0.0	2.0	0.0	112.8	165.4*	100.2	139.1	126.1
Triumph TR 82G	13.9	51	0.0	2.5	0.0	109.6	177.9*	--	143.8	--
Oro Amigo	12.6	46	0.5	2.0	0.0	105.9	161.4	91.5	133.7	119.6
Capehart Champion	13.2	58	0.1	2.2	0.0	101.0	--	113.1*	--	--
TRIAL AVERAGE	12.6	50	0.1	2.3	0.0	132.6	162.1	103.9	147.4	132.9
L.S.D. AT .05	NS	6	NS	0.2	NS	28.7	23.0	17.9		
C.V. %	12.5	7.9		6.3		13.4	8.8	10.7		

-- Data not available.
** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 10. Performance of Grain Sorghum Hybrids evaluated near New Madrid (New Madrid County) on the Tony Jones Farm during 1993, and the Henry Retz Farm near Catron during 1991-92.

Planted: 14 May 1993
Harvested: 23 September 1993
Planted Population: 104,500 seeds/A.
Row Spacing: 30 inches
Soil Type: Dubbs Silt Loam
Soil Test: pH=6.5, OM=1.6%, P=29, K=147

Fertilizer: N=115; P_2O_5=20; K_2O=20
Herbicide: Ramrod + Atrazine
Insecticide: None
Irrigation: 0.00 inches
Previous Crop: Soybean

Growing Season Rainfall: May=1.3, June=3.4, July=2.5, Aug.=1.3, Sept.=4.7, TOTAL=13.2"

	1993					Yield (Bu/Acre)			Means	
Brand-Hybrid	Moisture (%)	Plant Ht. (In.)	Off-type Heads (%)	Compactness Score	Lodging (%)	1993	1992	1991	2 Yr.	3 Yr.
Cargill X19383	16.4	38	0.1	2.4	0.0	126.3**	--	--	--	--
Dekalb DK-40y	12.5	42	0.1	1.9	0.0	126.1*	--	--	--	--
Jacques 444E	12.2	41	0.0	3.8	0.5	125.0*	116.8	--	120.9	--
Pioneer Hybrid 8212Y	16.2	43	0.4	2.3	0.1	121.4*	109.7	--	115.6	--
Crosbyton GW6060	12.5	44	0.2	2.2	0.9	120.6*	--	57.4	--	--
Capehart Champion	14.0	52	0.2	2.4	2.4	117.8*	--	53.4	--	--
ICI 5392	14.6	44	0.1	2.0	1.6	113.4*	--	--	--	--
Crosbyton GW6092	15.0	40	0.0	2.3	1.4	112.3*	114.9	--	113.6	--
Cargill 575	14.6	45	0.0	2.0	0.0	112.3*	109.0	66.4	110.7	95.9
AgraTech 802G	13.4	40	0.0	2.0	2.0	111.8*	158.1*	46.1	135.0	105.3
HyPerformer HSC Honcho	11.0	47	0.0	2.4	0.2	111.4*	--	--	--	--
ICI 5319	15.6	50	0.1	2.0	2.2	110.6*	136.8*	65.1	123.7	104.2
Capehart Challanger	10.6	46	0.0	2.2	0.8	109.7*	--	53.3	--	--
Growers 3150	14.9	43	0.0	2.5	0.2	109.6*	147.7*	--	128.6	--
Cargill 857	13.2	44	0.1	2.2	1.0	108.4*	144.7*	47.0	126.6	100.0
Growers 1310AE	13.5	40	0.1	2.4	0.6	107.5	130.0*	81.0	118.8	106.2
MFA 660	15.5	49	0.1	3.1	0.0	107.1	130.8*	50.2	119.0	96.0
Pioneer Hybrid 8601	13.2	39	0.1	2.0	0.1	106.2	137.6*	--	121.9	--
Dekalb DK-56	15.7	47	0.0	2.0	0.6	106.0	115.9	51.5	111.0	91.1
Northrup King KS714Y	14.3	42	0.0	2.0	2.3	105.8	138.5*	52.3	122.2	98.9
Triumph TR 82G	13.3	47	0.0	2.5	0.5	105.0	136.1*	--	120.6	--
Pioneer Hybrid 8333	13.6	39	0.0	2.7	1.7	104.6	101.2	67.5	102.9	91.1
Pioneer Hybrid 8118	16.0	53	0.0	2.0	0.8	104.0	150.1*	--	127.1	--
Capehart Exp.93-2	16.3	50	0.3	2.0	5.1	103.6	--	--	--	--
HyPerformer HY 1320	13.3	47	0.0	2.1	1.9	103.4	156.6*	--	130.0	--
HyPerformer HSC 1289C	15.0	46	0.2	2.0	2.7	102.9	135.5*	62.5	119.2	100.3
Northrup King KS710	13.1	38	0.1	1.9	1.1	102.9	158.2*	69.8	130.6	110.3
Deltapine G-522DR	13.6	44	0.1	2.6	1.9	102.7	100.5	63.3	101.6	88.8
Dekalb DK-54	16.0	47	0.1	2.0	5.0	102.6	--	67.0	--	--
Pioneer Hybrid 8446	14.2	41	0.0	2.3	0.0	102.6	107.8	--	105.2	--
Oro Quest	14.8	42	0.0	2.5	2.3	101.9	--	--	--	--
AgraTech 712G	11.0	37	0.0	2.4	0.6	101.4	125.9*	48.9	113.7	92.1
Jacques 611E	13.9	47	0.1	2.4	0.4	101.3	159.0**	--	130.2	--
HyPerformer 1330DR	14.6	54	0.0	2.3	1.6	100.7	126.4*	55.9	113.6	94.3
Capehart Cream	13.9	46	0.1	2.3	0.4	100.1	--	66.6	--	--
Terral TVX 9734	15.9	50	0.1	2.4	1.3	100.0	--	--	--	--
Triumph Two 80-D	13.2	54	0.2	2.0	2.2	99.8	140.4*	56.0	120.1	98.7
Deltapine G-1616	15.9	54	0.2	2.2	1.1	99.8	139.5*	48.2	119.7	95.8
Dekalb DK-66	14.6	55	0.0	2.4	5.0	99.6	135.8*	59.3	117.7	98.2
Oro Amigo	12.9	46	0.1	2.0	1.7	99.5	108.7	56.3	104.1	88.2
Pioneer Hybrid XS319	14.6	47	0.0	2.2	0.4	99.4	--	--	--	--
Pioneer Hybrid 8313	14.5	44	0.2	2.8	0.0	98.8	133.3*	--	116.1	--
HyPerformer HSC Cherokee	12.2	47	0.0	1.9	3.9	98.7	137.4*	59.4	118.1	98.5
PennGrain DR Sorghum	12.3	42	0.1	2.4	2.5	98.4	--	--	--	--
Terral TV 1050	15.8	44	0.1	2.5	0.0	97.1	--	--	--	--
MFA 650	15.1	55	0.0	2.8	0.0	96.8	131.0*	54.7	113.9	94.2
HyPerformer HSC Wings	12.9	46	0.1	2.0	3.1	96.7	101.5	67.6	99.1	88.6
Pioneer Hybrid 8310	12.4	43	0.1	2.0	0.5	96.3	--	--	--	--
Triumph TR 65G	13.3	42	0.0	1.7	3.0	95.9	112.8	62.7	104.4	90.5
HyPerformer 1225DR	14.2	44	0.1	2.6	2.4	95.2	143.7*	72.6	119.5	103.8
AgraTech 805WG	14.2	46	0.1	3.0	0.0	94.6	108.9	50.0	101.8	84.5
MFA 570	14.4	42	0.1	2.1	0.8	94.0	149.0*	53.6	121.5	98.9

TABLE 10. Continued.

Brand-Hybrid	1993 Moisture (%)	1993 Plant Ht. (In.)	1993 Off-type Heads (%)	1993 Compactness Score	1993 Lodging (%)	Yield (Bu/Acre) 1993	Yield (Bu/Acre) 1992	Yield (Bu/Acre) 1991	Means 2 Yr.	Means 3 Yr.
Crosbyton GW9080	13.2	47	0.1	2.5	2.2	93.9	--	--	--	--
MFA GS-10	12.7	39	0.1	3.6	5.7	93.2	100.8	68.2	97.0	87.4
Asgrow Topaz	14.2	44	0.0	2.1	2.3	93.1	146.4*	42.7	119.8	94.1
Cargill 837	13.9	45	0.0	2.5	0.1	92.5	139.8*	62.2	116.2	98.2
Crosbyton GW5960	13.0	46	0.2	2.1	1.7	90.1	--	56.5	--	--
Capehart Contender	13.8	41	0.0	2.4	0.0	89.6	--	44.8	--	--
Deltapine 1552	11.0	51	0.0	3.2	0.1	88.3	129.2*	69.6	108.8	95.7
Asgrow XP5702	14.7	47	0.1	2.2	0.0	86.3	--	--	--	--
Asgrow A504	13.5	44	0.2	2.4	3.2	85.7	124.7*	68.9	105.2	93.1
TRIAL AVERAGE	13.9	45	0.1	2.3	1.4	103.0	127.9	59.2	115.4	96.7
L.S.D. AT .05	NS	7	NS	0.2	NS	18.4	38.2	NS		
C.V. %	15.8	9.8		6.5		11.0	18.4	25.0		

-- Data not available.
** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 11. Performance record of Grain Sorghum Hybrids evaluated at two Southeast Missouri locations (Oran and New Madrid) during 1993.

Oran	New Madrid
Planted: 17 May 1993	Planted: 14 May 1993
Harvested: 29 September 1993	Harvested: 23 September 1993
Planted Pop.: 104,500 seeds/A.	Planted Pop.: 104,500 seeds/A.
Row Spacing: 30 inches	Row Spacing: 30 inches
Soil Type: Commerce Silt Loam	Soil Type: Dubbs Silt Loam
Growing Season Moisture: 24.3"	Growing Season Moisture: 13.2"

	Lodging (%)			Yield (Bu/Acre)		
Brand-Hybrid	Oran	New Madrid	Mean	Oran	New Madrid	Mean
AgraTech 802G	0.0	2.0	1.0	162.7*	111.8*	137.2**
Dekalb DK-40y	0.0	0.0	0.0	136.6*	126.1*	131.4*
Growers 3150	0.0	0.2	0.1	151.6*	109.6*	130.6*
Capehart Challanger	0.0	0.8	0.4	150.2*	109.7*	130.0*
ICI 5392	0.0	1.6	0.8	146.7*	113.4*	130.0*
Jacques 444E	0.0	0.5	0.2	133.8	125.0*	129.4*
Pioneer Hybrid 8333	0.0	1.7	0.8	152.1*	104.6	128.4*
Crosbyton GW6060	0.0	0.9	0.4	133.7	120.6*	127.2*
HyPerformer 1225DR	0.0	2.4	1.2	158.5*	95.2	126.8*
Cargill X19383	0.0	0.0	0.0	126.2	126.3**	126.2*
Deltapine 1552	0.0	0.1	0.0	163.4**	88.3	125.8*
HyPerformer HY 1320	0.0	1.9	1.0	147.8*	103.4	125.6*
MFA 660	0.0	0.0	0.0	142.2*	107.1	124.6*
Pioneer Hybrid 8310	0.0	0.5	0.2	150.1*	96.3	123.2*
Pioneer Hybrid 8313	0.0	0.0	0.0	147.3*	98.8	123.0*
PennGrain DR Sorghum	0.0	2.5	1.2	147.4*	98.4	122.9*
Triumph Two 80-D	0.0	2.2	1.1	145.6*	99.8	122.7*
Pioneer Hybrid 8212Y	0.0	0.1	0.0	123.2	121.4*	122.3*
Asgrow Topaz	0.0	2.3	1.2	150.3*	93.1	121.7*
HyPerformer HSC Honcho	0.0	0.2	0.1	130.8	111.4*	121.1*
Northrup King KS710	0.0	1.1	0.6	137.9*	102.9	120.4*
Deltapine G-522DR	0.0	1.9	1.0	136.8*	102.7	119.8
Dekalb DK-54	0.0	5.0	2.5	136.2*	102.6	119.4
Jacques 611E	0.0	0.4	0.2	136.5*	101.3	118.9
MFA GS-10	0.0	5.7	2.8	144.0*	93.2	118.6
Capehart Exp.93-2	0.0	5.1	2.6	133.4	103.6	118.5
Pioneer Hybrid 8601	0.0	0.1	0.0	130.6	106.2	118.4
Dekalb DK-66	0.0	5.0	2.5	137.3*	99.6	118.4
Growers 1310AE	0.0	0.6	0.3	128.2	107.5	117.8
Pioneer Hybrid 8118	0.0	0.8	0.4	130.9	104.0	117.4
Crosbyton GW6092	0.0	1.4	0.7	122.2	112.3*	117.2
Deltapine G-1616	0.0	1.1	0.6	134.1	99.8	117.0
Oro Quest	0.0	2.3	1.2	132.0	101.9	117.0
Asgrow XP5702	0.0	0.0	0.0	145.0*	86.3	115.6
Pioneer Hybrid XS319	0.0	0.4	0.2	131.4	99.4	115.4
AgraTech 712G	0.0	0.6	0.3	129.5	101.4	115.4
Pioneer Hybrid 8446	0.0	0.0	0.0	127.8	102.6	115.2
Cargill 575	0.0	0.0	0.0	117.6	112.3*	115.0
Cargill 857	0.0	1.0	0.5	121.6	108.4*	115.0
Northrup King KS714Y	0.0	2.3	1.2	123.6	105.8	114.7
HyPerformer HSC Cherokee	0.0	3.9	2.0	129.4	98.7	114.0
Dekalb DK-56	0.0	0.6	0.3	120.7	106.0	113.4
Capehart Cream	0.0	0.4	0.2	126.4	100.1	113.2
Cargill 837	0.0	0.1	0.0	133.0	92.5	112.8
Triumph TR 65G	0.0	3.0	1.5	129.3	95.9	112.6
Capehart Contender	0.0	0.0	0.0	134.8*	89.6	112.2
Crosbyton GW5960	0.0	1.7	0.8	134.0	90.1	112.0
HyPerformer HSC Wings	0.0	3.1	1.6	126.9	96.7	111.8
ICI 5319	0.0	2.2	1.1	112.8	110.6*	111.7
HyPerformer 1330DR	0.0	1.6	0.8	122.5	100.7	111.6
Terral TVX 9734	0.0	1.3	0.6	122.8	100.0	111.4
AgraTech 805WG	0.0	0.0	0.0	125.4	94.6	110.0

TABLE 11. Continued.

Brand-Hybrid	Lodging (%)			Yield (Bu/Acre)		
	Oran	New Madrid	Mean	Oran	New Madrid	Mean
HyPerformer HSC 1289C	0.0	2.7	1.4	116.2	102.9	109.6
Capehart Champion	0.0	2.4	1.2	101.0	117.8*	109.4
MFA 650	0.0	0.0	0.0	120.0	96.8	108.4
Crosbyton GW9080	0.0	2.2	1.1	121.0	93.9	107.4
Triumph TR 82G	0.0	0.5	0.2	109.6	105.0	107.3
MFA 570	0.0	0.8	0.4	120.2	94.0	107.1
Terral TV 1050	0.0	0.0	0.0	116.9	97.1	107.0
Asgrow A504	0.0	3.2	1.6	123.2	85.7	104.4
Oro Amigo	0.0	1.7	0.8	105.9	99.5	102.7
TRIAL AVERAGE	0.0	1.4	0.7	132.6	103.0	117.8
L.S.D. AT .05	NS	NS	NS	28.7	18.4	16.9
C.V. %				13.4	11.0	12.7

** Highest yielding hybrid in the test.
* Hybrid which did not yield significantly less than the highest yielding hybrid in the test.
NS Not significant.

TABLE 12. CHARACTERISTICS* OF GRAIN SORGHUM HYBRIDS.

Brand-Hybrid	Bird Resistant	Maturity Group	Color		Endosperm Type	Biotype E Gr. Bug Response
			Seed Coat	Endosperm		
AgraTech 712G	NO	2	BZ	Y	N	T
AgraTech 802G	NO	3	BZ	Y	N	T
AgraTech 805WG	NO	3	W	Y	N	T
Asgrow A504	NO	3	W	W	N	S
Asgrow Topaz	NO	3	BZ	Y	N	S
Asgrow XP5702	NO	3	BZ	HY	N	S
Capehart Cream	NO	3	W	Y	N	R
Capehart Contender	NO	2	BZ	HY	N	S
Capehart Challenger	NO	3	BZ	HY	N	R
Capehart Champion	NO	3	BZ	HY	N	S
Capehart EXP 93-2	NO	3	BZ	HY	--	--
Cargill 575	NO	3	Y	HY	N	S
Cargill 727	NO	2	BZ	HY	N	R
Cargill 797	NO	3	BZ	HY	N	R
Cargill 837	NO	3	BZ	HY	N	T
Cargill 857	NO	3	BZ	HY	N	S
Cargill X19383	NO	3	BZ	HY	N	T
Ciba 1506	NO	2	R	HY	N	R
Ciba 1616	NO	2	BZ	HY	N	R
Ciba 1655	NO	2	BZ	HY	N	R
Crosbyton GW5960	NO	2	BZ	Y	N	R
Crosbyton GW6060	NO	2	BZ	Y	N	S
Crosbyton GW6092	NO	3	R	Y	N	R
Crosbyton GW9080	NO	3	BZ	Y	N	S
Dekalb DK-40y	NO	2	Y	Y	N	R
Dekalb DK-48	NO	2	BZ	HY	N	R
Dekalb DK-51	NO	2	BZ	HY	N	R
Dekalb DK-54	NO	3	BZ	HY	N	R
Dekalb DK-56	NO	3	R	HY	N	R
Dekalb DK-58	NO	4	BZ	HY	N	R
Dekalb DK-66	NO	4	BZ	HY	N	R
Deltapine 1552	NO	2	R	HY	N	S
Deltapine G-522DR	NO	2	BZ	HY	N	S
Deltapine G-1616	NO	2	BZ	HY	N	R
Fontanelle W-5000	NO	2	Y	HY	N	S
Fontanelle 5040	NO	2	BZ	HY	N	S
Fontanelle 5588	NO	2	BZ	HY	N	S
Fontanelle 5590	NO	2	BZ	HY	N	S
Garrison SG-822	NO	1	-	HY	N	S
Garrison SG-925	NO	2	R	HY	N	R
Garrison SG-942	NO	2	R	HY	N	R
Golden Acres T-E Sonora	NO	3	BZ	HY	N	R
Golden Acres T-E 77E	NO	3	BZ	HY	N	R
Golden Acres T-E Y-75	NO	3	BZ	HY	N	R
Golden Harvest H-388W	NO	1	W	HY	N	S
Golden Harvest H-444W	NO	2	W	HY	N	S
Golden Harvest H-505BW	NO	3	W	HY	N	S
Growers 1310AE	NO	2	BZ	HY	HW	R
Growers 3150	NO	3	BZ	HY	HW	R
Hyperformer 1225DR	NO	2	BZ	HY	N	S
Hyperformer 1330DR	NO	3	BZ	HY	N	S
Hyperformer HSC 1289C	NO	2	W	HY	N	S
Hyperformer HSC Cherokee	NO	2	R	HY	N	R
Hyperformer HSC Honcho	NO	1	BZ	HY	N	S
Hyperformer HSC Wings	NO	3	BZ	HY	N	S
Hyperformer HY 1320	NO	3	BZ	HY	N	R

TABLE 12. Continued.

Brand-Hybrid	Bird Resistant	Maturity Group	Color		Endosperm Type	Biotype E Gr. Bug Response
			Seed Coat	Endosperm		
ICI 5319	NO	3	BZ	HY	N	S
ICI 5392	NO	2	BZ	HY	N	R
ICI 5503	NO	2	R	HY	N	R
ICI 5514Y	NO	2	HY	Y	N	S
Jacques 444E	NO	2	BZ	HY	N	R
Jacques 611E	NO	3	R	HY	N	R
JMS 213Y	NO	2	Y	Y	N	T
JMS 215G	NO	2	Y	Y	N	T
MFA 570	NO	2	BZ	Y	N	R
MFA 650	NO	3	Y	Y	N	T
MFA 660	NO	2	R	Y	N	S
MFA GS-10	NO	2	R	Y	N	S
NC+ 7B81E	NO	3	BZ	Y	N	S
NC+ 7B90	NO	3	BZ	Y	N	S
NC+ 7C49	NO	3	W	Y	N	S
Northrup King KS710	NO	3	BZ	HY	N	R
Northrup King KS714Y	NO	3	Y	HY	N	R
Oro Amigo	NO	4	BZ	HY	N	R
Oro Quest	NO	4	BZ	HY	N	R
PennGrain DR Sorghum	NO	3	-	-	-	-
Pioneer Hybrid 8118	NO	3	BZ	Y	HW	R
Pioneer Hybrid 8212Y	NO	3	Y	Y	HW	S
Pioneer Hybrid 8231Y	NO	3	Y	Y	HW	T
Pioneer Hybrid 8310	NO	3	R	W	HW	R
Pioneer Hybrid 8313	NO	3	BZ	Y	HW	T
Pioneer Hybrid 8333	NO	3	BZ	Y	HW	S
Pioneer Hybrid 8446	NO	2	BZ	Y	HW	R
Pioneer Hybrid 8500	NO	2	R	W	HW	S
Pioneer Hybrid 8601	NO	2	BZ	Y	HW	R
Pioneer Hybrid XS319	NO	3	R	W	HW	S
Terral TV 1050	NO	1	BZ	Y	N	R
Terral TVX9734	NO	2	BZ	Y	N	R
Triumph TR 65G	NO	2	R	W	N	R
Triumph TR 74CR	NO	2	W	W	N	S
Triumph TR 82G	NO	3	R	W	N	R
Triumph Two 80-D	NO	3	BZ	W	N	S

* Descriptions for Commercial Hybrids were provided by the companies submitting them for evaluation.
- Data not provided by the companies.

Color Codes		
HY	-	Heteroyellow
W	-	White
Y	-	Yellow
R	-	Red
BZ	-	Bronze

Endosperm Type Code		
HW	-	Heterowaxy
N	-	Nonwaxy
W	-	Waxy

Disease Reaction Code		
S	-	Susceptible
T	-	Tolerant
R	-	Resistant

TABLE 13. GRAIN SORGHUM SEED COMPANY ADDRESSES.

BRAND	HYBRID	SEED SOURCE
Agratech	712 G, 802 G, 805 WG	Agratech Seeds, Inc., 5559 N. 500 W., McCordsville, IN 46055 (317-335-3333)
Asgrow	A504, XP5702, Topaz	Asgrow Seed Co., PO Box 578, Matthews, MO 63867 (800-548-5641)
Capehart	Cream, Contender, Challenger, Champion, EXP93-2	Capehart Seed Service, Box 10, Hwy. 61 S., Holland, MO 63853 (314-695-4447)
Cargill	575, 727, 797, 837, 857, X19383	Cargill Hybrid Seeds, Box 5645, Minneapolis, MN 55440 (612-475-6727)
Ciba	1506, 1616, 1655	Ciba Seed, Box 18300, 1500 Pine Croft, Greensboro, NC 27419 (919-547-1000)
Crosbyton	GW5960, GW6060, GW6092, GW9080	Crosbyton Seed Co., Box 429, 306 E. Main, Crosbyton, TX 79322 (806-675-2308)
Dekalb	DK-40y, DK-48, DK-51, DK-54, DK-56, DK-58, DK-66	Dekalb Plant Genetics, Rt. 2, Box 56, Lubbock, TX 79415 (806-763-3336)
Deltapine	G-522DR, 1552, G-1616	Delta and Pine Land Co., Box 157, Scott, MS 38772 (601-742-3351)
Fontanelle	W-5000, 5040, 5588, 5590	Fontanelle Hybrids, Rt. 1, Box 18, Nickerson, NE 68044 (402-721-1410)
Garrison	SG-822, SG-925, SG-942	Garrison & Townsend Seed Co., Inc., Drawer 2420, Hereford, TX 79045 (806-364-3103)
Golden Acres	T-E Y-75, T-E 77E, T-E Sonora	Mycogen Plant Sciences, Box 68, Tulia, TX 79088 (806-995-4111)
Golden Harvest	H-388W, H-444W, H-505BW	The J.C. Robinson Seed Co., 100 J.C. Robinson Blvd., Waterloo, NE 68069-0301 (402-779-2531)
Growers	1310AE, 3150	Mycogen Plant Sciences, PO Box 1656, Lubbock, TX 79408 (806-747-6823)
Hyperformer	1225DR, 1330DR, HSC 1289C, HSC Wings, HSC Honcho, HY 1320, HSC Cherokee	Hyperformer Seed Co., 6075 Poplar, Suite 500, Memphis, TN 38119 (901-761-0050)
Hyperformer	HSC Cherokee, HSC 1289C	Hyperformer Seed Co., PO Box 155, Romney, IN 47981 (317-538-2887)
ICI	5319, 5392	Zeneca Inc., 101 Tamara Lane, Searcy, AR 72143 (501-268-3088)
ICI	5392, 5503, 5514Y	ICI Seed, Rt. 2, Box 142, Bowling Green, MO 63334 (314-324-5932)
Jacques	444E, 611E	Mycogen Plant Science, 720 Saint Croix St., Prescott, WI 54021 (715-262-3223)
JMS	213Y, 215G	J.M. Schultz Seed Co., 105 Pine St., Dieterich, IL 62424 (217-925-5212)
MFA	GS-10, 570, 650, 660	MFA Inc., 615 Locust, Columbia, MO 65201 (314-876-5345)
NC+	7C49, 7B81E, 7B90	NC+ Hybrids, 3820 N. 56th St., Box 4408, Lincoln, NE 68504 (402-467-2517)
Northrup King	KS710, KS714Y	Northrup King Co., 1708 Broeking Rd., Rt. 6, Marion, IL 62959 (618-993-3947)
Oro	Amigo, Quest	Mycogen Plant Sciences, 624 27th St., Lubbock, TX 79404 (806-744-1408)
PennGrain	DR Sorghum	Seed Production, Inc., Box 290, Madison, GA 30650 (706-342-1234)

TABLE 13. Continued.

BRAND	HYBRID	SEED SOURCE
Pioneer Hybrid	8118, 8212Y, 8231Y, 8310, 8313, 8333, 8446, 8500, 8601, XS319	Pioneer Hi-Bred Int., Inc., 1000 W. Jefferson, Tipton, IN 46072 (317-675-2101)
Terral	TV1050, TVX9734	Terral-Norris Seed Co., 604 Bount St., PO Box 826, Lake Providence, LA 71254 (318-559-2840)
Triumph	Two 80-D, TR65G, TR74CR, TR82G	Triumph Seed Co., Inc., Box 1050, Ralls, TX 79357 (806-253-2584)