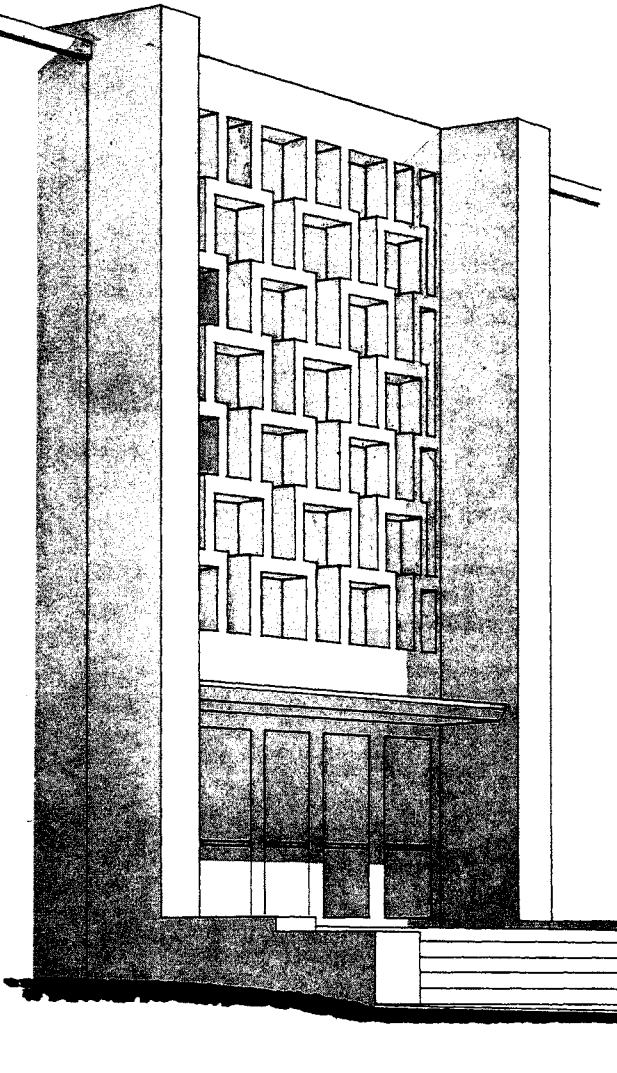

1961 SORGHUM PERFORMANCE TRIALS IN MISSOURI

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And
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INTRODUCTION

Performance trials for grain sorghum hybrids, paid for on a fee basis by seed companies, have been conducted for the four-year period 1958-1961. Five testing sites were used in 1961. These were located near Spickard (northwest), Palmyra (northeast), Columbia (central), Mt. Vernon (southwest), and Sikeston(southeast).

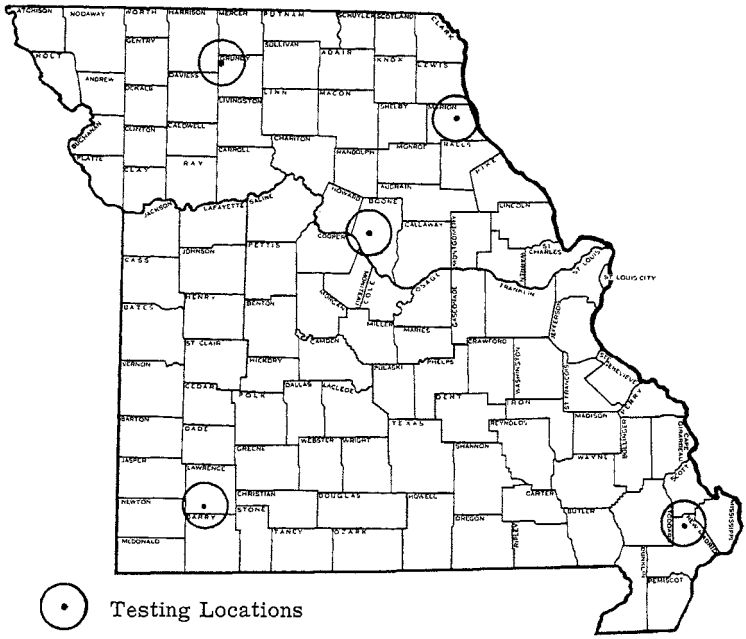

Figure 1. Outline map of Missouri showing the testing locations for the 1961 grain sorghum tests.

The 1961 estimate of harvested acres of grain sorghum was less than half of the 1960 acreage and 119,000 acres less than the 1953-1960 average (Table I). The estimated average yield of 47 bushels per acre was 15 bushels less than the estimated corn yield. Data were obtained from the Missouri Farm Census Reports.

Comparisons between the yields of corn and grain sorghum at three of the testing sites can be made since these tests were located either in the same field or in close proximity (Table 2). These comparisons are only suggestive since planting dates, and cultural factors were not the same for the two tests.

ENVIRONMENTAL CONDITIONS

The rainfall and temperature records for May 1 to September 15 at each location are reported in Tables 4 and 5. Temperatures for 1961 were below average at all locations. Total rainfall was sufficient to provide adequate moisture but in some instances was not well distributed during the growing season. This was especially evident at Sikeston where four dry periods occurred. Heavy rains with wind late in the season contributed to lodging at Columbia, Mt. Vernon, and Spickard.

EXPERIMENTAL METHODS

Seed Source

All producers and distributors of grain sorghum seed were eligible to enter the tests in 1961. No limit was placed on the number of hybrids any one company could enter. Firms entering the tests had the option of having their entries tested in either north Missouri (Spickard and Palmyra), south Missouri (Sikeston and Mt. Vernon), or all locations. Entries for both northern and southern groups were tested at Columbia (central). This gave a minimum of three testing sites for each entry (Table 3).

Field Design

Entries were planted in four plots at each location. Individual plots consisted of two rows of different lengths for the individual experiments. Rows were 25 feet long at Skieston and Spickard, 20 feet long at Mt. Vernon, 17 feet long at Palmyra and 16 feet long at Columbia. Distance between rows was 38 inches at Columbia and Sikeston, 40 inches at Mt. Vernon and Spickard, and 30 inches at Palmyra. Plots were located at random over the testing area to minimize soil and cultural differences. Row lengths of 20 feet were harvested at Sikeston and 10 feet at the other four locations.

Yield

The heads from each plot were harvested by hand and weighed. Acre yields were computed on the basis of threshed grain.

Threshing Percent

Threshing percent data determined at Columbia were used for all entries. All threshing percentages were obtained after the sorghum heads had been air-dried to a uniform moisture content.

Date of Blooming

The number of days from planting to 50 percent blooming was recorded for each replication at Columbia.

Plant Height

The average hieght of the plants, in inches, was determined for each entry.

Head Compactness and Exsertion

Compactness was graded from 1 to 5. (1 for the most compact, or tight head, and 5 for the most lax, or loose head.)

Exsertion is the relative distance that the head protrudes above the top leaf blade. Grade 1 indicates the least exsertion and grade 5 the greatest.

Off-Type Heads, Tall Plants, and Lodged Plants

Off-type heads, tall plants, and lodged plants were counted prior to harvest. No lodging occurred at Sikeston and Palmyra.

Test Weight

Test weights were determined at Columbia for all entries.

RESULTS

Results of the individual tests are reported in Tables 6, 7, 8, 9, and 10. Tables 11 and 12 summarize tests in north and south Missouri, respectively. Twenty-nine hybrids were tested at all five locations. The summary Table 13 summarizes results for these entries.

Acre yields were very high at Palmyra. This was due in part to narrow rows (30 inches). Lodging was severe at Mt. Vernon and Spickard.

Bird damage is always a serious risk at Sikeston. To obtain accurate data in 1961, each sorghum head was covered with a parchment bag. Approximately 20,000 bags were used. No bird damage was noted at the other four locations.

Eleven entries were tested in 1959, 1960, and 1961 at Columbia, Sikeston, and Mt. Vernon. Table 14 summarizes these data.

Ten entries were tested for this same three-year period in north Missouri. Table 15 gives results for these three years.

Table 16 summarizes data for the three-year period, 1959-1961 for the nine entries grown at all five locations.

PERIOD-OF-YEARS-RESULTS

The best basis for selecting a grain sorghum hybrid is on its performance record over several years (Tables 14, 15, and 16). In the event it is necessary to make a selection on the performance record for a single year, it is better to use the averages from several locations, such as those found in Table 11 (northern area), Table 12 (southern area), or Table 13 (all locations).

Table 1 The Average Number of Acres, Total Production, Average Acre Yield for Grain Sorghum, and the Average Acre Yield for Corn during the Eight-Year Period 1953 to 1960, and Estimated for 1961.

	Grain Sorghum			
Year	Acreage	Total Production Bu.	Average Acre Yield Bu.	Average Corn Yield Bu.
1953	34,000	510,000	15	34
1954	66,000	1,056,000	16	20
1955	93,000	2,325,000	25	40
1956	187,000	5,610,000	28	48
1957	590,000	25,960,000	40	44
1958	688,000	35,088,000	44	54
1959	507,000	25,350,000	45	53
1960	452,000	20,340,000	45	52
1953-60 Average	327,000	14,530,000	32	43
1961	208,000	9,776,000	47	62

Table 2 Comparative Acre Yields of Grain Sorghum and Corn at Testing Locations in Missouri in 1961.

	Grain Sorghum			Corn		
Testing Location	Average Yield Bu.	High Yield Bu.	Low Yield Bu.	Average Yield Bu.	High Yield Bu.	Low Yield Bu.
Columbia	112.9	170.0	87.5	105.5	137.6	74.5
Sikeston	93.8	111.3	78.0	98.1	113.3	74.3
Mt. Vernon	84.6	100.1	68.1	Abandoned		
Palmyra	164.8	197.2	134.3	No Comparable Test		
Spickard	95.0	122.3	75.3	109.7	137.7	83.8

Table 3 Seed Source and Names of Entries Tested in 1961.

Entries	Seed Source	Address
AMAK R14	AMAK, Inc.	Phoenix, Arizona
DeKalb C44a, C44b C45, D50, D55 E56a, F63, F70	DeKalb Agri. Assn., Inc.	Lubbock, Texas
Frontier 400C, 400F 410C, 410E, 411	Frontier Hybrids, Inc.	Scott City, Kansas
Garst and Thomas Medium Early, Medium, Pioneer 851, 881, 9455	Garst and Thomas Hybrid Corn Co.	Coon Rapids, Iowa
MFA GS8, GS9	MFA Seed Division	Marshall, Missouri
NK 140, 210, 310, X3040, X3025A	Northrup King and Co.	Minneapolis, Minnesota
Paymaster Exp. 0268, Exp. 0390	Paymaster Seed Farms	Plainview, Texas
Steckley GG R106, GG R211, GG R214	Steckley Hybrid Corn Co.	Lincoln, Nebraska
RS 608, 609, 610, 630, 650, 681, Kansas 602, 603, 701, Oklahoma 612, 613, 632, Martin	Missouri Agri. Expt. Station	Columbia, Missouri

Table 4. Total rainfall, number of days with rain, and dry periods from May 1 to September 15 at each of the testing locations.

Testing Location	Total Rainfall Inches	Days with Rain						Dry Periods **
		May	June	July	Aug	Sept. 15	Total	
Columbia	24.43	8	9	14	9	4	44	--
Sikeston	21.08	11	6	14	8	4	43	5/23-6/6, 6/16-7/2 8/7-8/23, 8/25-9/13
Mt. Vernon	29.67	15	9	11	6	6	47	7/24-8/11
Palmyra	25.59	6	6	11	5	5	33	5/19 -6/6
Spickard	28,82	6	8	10	7	4	35	5/18 -6/17

** A dry period must have at least 15 consecutive days with less that 0.25 inch of precipations.

Table 5. Average Temperature, Departure from Normal, and the Number of Days with Temperatures of 90-99° F., and 100° F. or higher, at Each of the Testing Locations from May 1, to September 15.

Testing Location	Average Fahrenheit Temperature	Departure From Normal	No. days with Temp. 90-99° F. 1961	Avg.	No. days with Temp. 100° F. or Higher - 1961
Columbia	70.7	-1.9	21	39	0
Sikeston	73.0	-1.7	39	37	1
Mt. Vernon	71.7	-2.9	29	25	0
Palmyra	70.1	-1.9	17	42	0
Spickard	68.6	-3.8	13	44	0

Table 6 1961 Performance Record for the Sorghum Test Conducted in Boone County, Near Columbia, Missouri. (Exp. S70).

Entry	Acre Yield Bu.	Lodging %	Threshing %	Test Weight Lbs.	Planting to 50% Blooming Days	Plant Height Inches	Total 80 Ft. Row Off-Type Heads No.	Tall Plants No.	Head Compactness 1-5	Head Exsertion 1-5	Plants Per 20 Ft. Row No.
NORTHRUPKING 310	170.0	6.3	73.6	56.9	78.6	59.8	1	0	3.0	2.8	110.3
OKLAHOMA 632	137.6	2.2	74.6	59.0	72.0	60.8	0	1	3.0	3.8	99.5
FRONTIER 410C	131.8	21.3	78.8	58.6	69.6	52.8	5	2	2.0	3.0	97.3
MFA GS 8	130.2	5.5	78.9	57.9	72.3	54.5	0	1	2.0	2.8	108.3
KANSAS 701	128.4	54.7	80.5	58.9	72.6	59.0	0	0	2.0	3.0	107.3
PAYMASTER EXP. 0390	123.8	1.8	78.2	58.0	72.6	54.8	0	1	2.0	3.0	95.8
KANSAS 602	123.8	13.3	76.0	58.4	72.0	55.0	0	0	2.3	3.3	101.0
GARST & THOMAS MED. EARLY	122.5	11.0	77.5	57.4	67.0	54.5	0	1	2.8	3.3	99.8
NORTHRUPKING 210	120.0	19.7	76.4	58.1	66.0	53.3	0	0	2.0	3.0	95.0
DEKALB F70	119.7	37.7	71.3	56.4	78.3	47.5	2	0	4.8	1.8	81.5
MFA GS 9	119.0	15.8	78.7	58.6	72.3	53.5	4	0	2.8	3.0	104.0
PIONEER 851	118.2	21.5	75.4	58.1	69.3	53.3	0	0	2.8	3.3	106.8
OKLAHOMA 612	118.0	0.7	73.1	58.6	70.0	50.8	0	0	3.8	3.5	100.3
FRONTIER 400F	117.8	0.0	74.1	58.1	71.6	50.0	0	3	2.5	3.3	92.5
NORTHRUPKING X3025A	117.7	0.0	75.7	58.6	65.3	50.8	4	5	4.8	3.5	89.0
DEKALB D55	117.5	55.3	76.0	56.0	69.6	56.8	0	0	3.5	3.5	97.5
STECKLEY G. G. R214	114.0	11.0	77.1	57.9	72.3	56.0	3	0	2.0	3.0	101.8
DEKALB F63	112.8	27.6	74.6	57.1	74.0	52.8	3	0	3.3	2.8	103.0
RS 681	112.6	0.2	74.9	57.6	69.3	50.5	0	1	3.0	3.3	95.3
OKLAHOMA 613	112.1	3.3	73.1	57.9	70.6	54.8	4	0	3.3	3.3	106.0
FRONTIER 400C	111.8	9.4	75.0	56.9	66.0	54.8	14	1	2.5	3.3	94.8
DEKALB C44B	110.1	3.0	72.5	55.4	66.0	50.8	3	1	4.0	2.8	98.8
RS 630	109.6	8.6	70.9	55.9	68.3	54.3	1	0	2.0	2.3	101.3
GARST & THOMAS MED.	109.3	2.9	76.6	57.8	69.0	54.5	17	3	2.3	3.3	102.5
FRONTIER 410E	109.3	0.5	73.9	57.0	70.0	49.3	0	2	2.0	3.0	100.0
RS 650	108.7	4.9	77.5	58.9	69.3	54.0	1	0	2.0	3.0	96.5
DEKALB C44A	108.4	31.6	71.8	56.9	67.0	47.5	3	0	4.8	3.0	104.3
RS 610	107.4	6.6	77.3	57.4	66.3	53.8	3	1	2.0	3.5	112.3
DEKALB D50A	107.2	45.0	76.8	57.0	66.0	57.3	0	0	4.0	3.0	100.0
NORTHRUPKING X3040	107.1	23.6	72.4	57.1	67.6	50.5	3	0	3.0	3.0	95.3
DEKALB C45	106.5	1.5	72.0	56.9	67.0	48.0	0	1	4.8	2.5	100.0
STECKLEY G. G. R211	105.7	14.9	74.9	59.1	69.6	53.3	0	0	2.5	3.0	93.8
KANSAS 603	104.7	49.6	78.1	58.6	71.3	55.3	0	2	2.5	3.3	94.8
PAYMASTER EXP. 0268	103.5	0.4	78.1	58.9	67.0	51.0	2	5	2.5	3.0	102.3
AMAK R14	103.2	3.4	73.9	56.5	66.6	53.8	0	3	4.3	4.0	94.3
STECKLEY G. G. R106	103.2	36.8	77.5	58.9	70.3	54.3	0	0	2.8	3.3	98.5
FRONTIER 411	102.9	0.5	73.9	56.8	70.3	52.5	0	0	2.0	3.0	90.8
RS 608	101.7	9.0	76.2	57.8	67.3	50.5	1	2	2.8	3.3	111.0
RS 609	100.6	2.5	72.1	55.8	67.3	56.0	4	1	3.0	3.3	97.3
NORTHRUPKING 140	100.1	8.1	74.8	57.8	65.0	52.0	1	0	2.5	3.3	107.5
DEKALB E56A	98.7	2.4	73.8	57.0	68.0	52.0	2	0	4.0	3.3	100.5
PIONEER 885	96.5	1.1	71.3	55.8	66.3	50.0	0	0	3.0	3.0	87.8
MARTIN	94.3	16.6	75.5	59.0	69.0	51.5	0	1	3.0	3.5	96.3
PIONEER 9455	87.5	0.9	76.3	58.0	65.6	52.5	0	0	2.3	3.0	104.5
Mean	112.9	13.5	75.3	57.6	69.4	53.2	2	1	2.9	3.1	99.5

Differences in yield between any two entries of less than 21.7 bushels are not considered significant.

Table 7 1961 Performance Record for the Sorghum Test Conducted in New Madrid County, Near Sikeston, Missouri. (Exp. S71).

Entry	Acre Yield Bu.	Plant Height Inch	Total 160 Ft. Row Off-Type Heads No.	Total 160 Ft. Row Tall Plants No.	Head Compactness 1-5	Head Exsertion 1-5
DEKALB F63	111.3	46.0	0	3	2.8	2.8
KANSAS 701	110.1	49.0	0	0	2.0	3.0
MFA GS9	107.7	48.3	1	1	2.8	3.5
DEKALB D55	106.8	50.5	1	0	2.8	3.0
NORTHRUPKING X3025A	104.4	42.0	1	0	3.5	2.5
FRONTIER 410C	100.8	43.8	5	2	2.0	3.0
OKLAHOMA 612	100.7	44.5	0	0	3.3	3.5
PAYMASTER EXP. 0268	100.5	44.8	0	7	2.5	3.0
DEKALB F70	99.3	47.3	0	2	4.8	2.3
PAYMASTER EXP. 0390	98.7	44.5	0	0	2.0	2.8
RS 650	98.7	44.5	2	6	2.0	2.8
GARST & THOMAS MED.	98.2	41.3	12	2	2.0	2.5
RS 610	96.9	45.3	6	0	2.0	2.8
DEKALB C44A	96.7	43.5	2	4	4.3	2.8
NORTHRUPKING 310	96.0	48.8	0	4	2.5	3.0
FRONTIER 400F	95.9	44.0	0	1	2.3	3.5
DEKALB E56A	95.2	46.0	0	0	4.3	2.8
FRONTIER 400C	95.0	44.8	16	0	2.0	2.3
DEKALB C44B	94.3	46.5	0	0	3.3	3.3
DEKALB D50A	92.6	51.8	0	0	4.3	3.0
NORTHRUPKING X3040	91.2	44.3	6	0	2.8	3.0
GARST & THOMAS MED. EARLY	90.9	44.0	3	0	2.8	2.5
DEKALB C45	90.2	38.5	1	1	3.8	2.0
AMAK R14	89.9	46.0	0	1	4.0	3.5
MFA GS8	89.6	43.0	2	0	2.0	2.3
RS 608	89.1	42.0	0	2	3.0	2.5
RS 681	88.2	43.8	1	0	3.0	3.0
PIONEER 851	88.0	46.8	0	1	3.8	3.0
RS 630	85.2	47.3	6	0	2.0	2.5
RS 609	85.1	48.3	0	2	2.8	3.5
MARTIN	83.6	43.5	0	2	3.0	3.0
OKLAHOMA 632	82.4	50.8	0	2	3.3	3.5
PIONEER 9455	82.4	41.5	0	1	3.0	2.3
NORTHRUPKING 210	82.0	44.3	8	0	2.3	2.5
OKLAHOMA 613	80.7	46.8	0	0	4.0	3.8
NORTHRUPKING 140	78.0	46.3	1	2	2.8	2.8
Mean	93.8	45.4	2	1	2.9	2.9

Differences in yield between any two entries of less than 17.6 bushels are not considered significant.

Table 8 1961 Performance Record for the Sorghum Test Conducted in Lawrence County, Near Mt. Vernon, Missouri. (Exp. S72).

Entry	Yield Bu.	Lodging %	Plant Height Inch	Total 160 Ft. Row Off-Type Heads No.	Tall Plants No.	Head Compactness 1-5	Head Exsertion 1-5	Plants Per 40 Ft. Row No.
KANSAS 701	100.1	67.3	48.0	0	0	2.0	2.5	173.8
OKLAHOMA 632	98.7	67.0	49.0	0	0	3.3	3.5	189.8
FRONTIER 410C	95.2	19.6	45.5	2	0	2.0	2.8	184.3
OKLAHOMA 612	94.7	17.9	47.0	1	0	3.5	3.5	158.8
NORTHRUPKING X3025A	93.4	22.3	45.5	3	0	4.0	3.5	167.0
MFA GS8	93.2	48.1	44.3	4	0	2.0	3.0	158.0
RS 610	90.9	74.0	44.8	3	0	2.5	3.0	139.5
DEKALB C45	90.5	54.7	43.0	1	0	4.5	2.8	144.3
FRONTIER 400F	88.1	18.2	45.5	4	0	2.0	3.3	140.8
MFA GS9	87.9	41.4	46.3	0	0	2.0	2.8	158.0
RS 630	87.7	83.8	45.3	8	0	2.3	2.5	107.0
FRONTIER 400C	86.9	70.8	46.3	9	0	2.5	3.3	146.8
RS 650	86.0	45.5	45.0	4	0	2.0	3.0	139.0
RS 681	86.0	46.6	44.0	3	0	3.3	3.0	126.5
PIONEER 9455	85.7	48.0	43.5	0	0	4.0	3.5	157.5
AMAK R14	85.4	28.8	47.3	1	2	5.0	4.5	159.5
OKLAHOMA 613	85.3	36.7	46.0	2	0	3.8	3.5	149.8
NORTHRUPKING X3040	84.7	63.7	44.3	6	0	3.3	3.0	198.8
DEKALB F63	84.2	38.1	43.5	0	0	2.5	3.0	153.5
RS 608	84.2	60.5	43.3	0	0	4.3	3.0	147.0
GARST & THOMAS MED. EARLY	83.4	60.5	44.0	5	0	2.5	3.0	163.0
RS 609	82.9	58.7	46.5	0	0	3.0	3.3	168.0
GARST & THOMAS MED.	82.7	44.4	44.0	11	0	2.0	3.0	177.3
DEKALB C44B	82.5	40.7	44.3	0	0	3.5	3.0	156.0
NORTHRUPKING 210	82.2	62.7	45.3	5	0	2.3	3.5	151.8
PAYMASTER EXP. 0268	82.0	38.9	44.0	1	0	2.5	3.3	131.5
DEKALB D55	80.3	82.0	49.3	5	0	2.5	3.3	166.0
PAYMASTER EXP. 0390	80.3	54.8	44.8	5	0	2.0	3.0	90.8
PIONEER 851	79.6	66.1	46.3	0	0	4.3	3.3	142.5
NORTHRUPKING 140	78.8	88.6	43.8	1	0	2.8	3.3	195.3
DEKALB F70	77.6	68.7	41.5	4	0	3.5	2.3	126.5
MARTIN	75.3	66.6	44.5	0	0	4.5	3.5	174.5
DEKALB D50A	75.0	80.4	45.8	0	0	3.5	3.5	136.8
DEKALB E56A	73.6	64.7	43.5	0	2	4.5	3.0	147.0
NORTHRUPKING 310	72.4	30.4	46.8	0	1	2.0	3.0	144.5
DEKALB C44A	68.1	73.2	42.8	3	0	4.5	2.8	150.5
Mean	84.6	53.7	45.1	3	0	3.1	3.1	153.4

Differences in yield between any two entries of less than 16.4 bushels are not considered significant.

Table 9 1961 Performance Record for the Sorghum Test Conducted in Marion County, Near Palmyra, Missouri. (Exp. S73).

Entry	Acre Yield Bu.	Plant Height Inch	Total 136 Ft. Row Off-Type Heads No.	Tall Plants No.	Head Compact-ness 1-5	Head Exser-tion 1-5	Plants Per 34 Ft. Row No.
NORTHRUPKING 310	197.2	63.8	6	1	2.5	3.0	210.8
PAYMASTER EXP. 0390	194.8	60.3	0	1	2.0	3.3	145.5
KANSAS 701	184.7	64.0	0	0	2.0	3.3	193.5
OKLAHOMA 632	180.9	61.5	2	2	3.0	4.0	182.3
RS 610	180.5	57.3	6	2	2.0	3.3	193.3
DEKALB D50A	180.4	60.0	0	0	4.3	3.3	182.0
STECKLEY G. G. R106	179.8	59.5	0	0	2.3	3.5	191.3
DEKALB F63	178.9	57.8	4	2	2.5	3.5	149.3
FRONTIER 400C	175.5	56.8	2	12	2.0	3.0	204.8
NORTHRUPKING 210	175.4	57.5	2	1	2.0	3.0	180.8
STECKLEY G. G. R214	175.0	58.5	0	0	2.0	3.0	153.5
RS 650	174.6	57.5	1	0	2.0	3.0	167.3
RS 681	174.1	54.3	0	0	2.3	3.3	133.5
PIONEER 851	170.4	59.0	1	1	2.8	3.5	174.8
GARST & THOMAS MED. EARLY	169.7	58.0	2	4	2.3	3.3	199.3
RS 608	169.6	56.8	0	0	3.0	3.8	183.5
DEKALB D55	168.8	59.5	0	2	2.3	3.0	178.3
GARST & THOMAS MED.	167.6	54.8	0	10	2.0	3.0	167.8
DEKALB F70	165.0	52.0	3	0	3.5	2.0	98.5
FRONTIER 410E	163.2	47.5	1	1	2.0	2.8	159.5
STECKLEY G. G. R211	163.1	58.8	1	0	2.5	3.0	174.3
FRONTIER 400F	162.5	53.3	0	1	2.3	3.0	149.8
PAYMASTER EXP. 0268	161.9	54.8	8	0	2.3	3.3	171.3
DEKALB E56A	160.0	57.0	0	0	4.3	3.8	153.5
NORTHRUPKING X3040	159.8	52.8	0	0	2.5	3.0	192.5
RS 609	157.4	58.8	2	0	2.0	3.3	182.3
NORTHRUPKING X3025A	155.0	50.0	1	1	3.5	3.0	205.8
AMAK R14	154.6	55.5	5	1	4.3	3.8	191.0
DEKALB C44B	145.6	54.8	0	2	3.0	3.0	172.8
RS 630	144.3	55.3	0	9	2.0	3.0	155.8
DEKALB C45	143.4	49.5	0	0	3.8	3.3	187.5
NORTHRUPKING 140	143.4	57.3	0	1	3.5	3.8	194.0
DEKALB C44A	143.1	51.8	0	3	4.3	3.0	159.8
FRONTIER 411	140.2	49.5	0	0	2.3	3.0	152.5
PIONEER 885	138.9	52.5	1	3	3.3	3.5	195.3
MARTIN	134.3	56.5	1	0	3.3	3.8	211.5
Mean	164.8	56.2	1	2	2.7	3.2	175.0

Differences in yield between any two entries of less than 16.8 bushels are not considered significant.

Table 10 1961 Performance Record for the Sorghum Test Conducted in Grundy County, Near Spickard, Missouri. (Exp. S74).

Entry	Acre Yield Bu.	Lodging %	Plant Height Inch	Total 80 Ft. Row Off-Type Heads No.	Total 80 Ft. Row Tall Plants No.	Head Compactness 1-5	Head Exsertion 1-5	Plants Per 20 Ft. Row No.
DEKALB D50A	122.3	66.7	53.0	0	1	4.5	3.5	81.3
KANSAS 701	115.6	81.5	51.3	0	2	2.5	3.3	81.3
OKLAHOMA 632	115.6	61.7	51.3	1	2	4.8	4.3	85.0
STECKLEY G. G. R214	110.7	47.5	51.3	1	0	3.0	3.3	77.8
GARST & THOMAS MED. EARLY	110.1	67.6	47.3	5	2	3.3	3.3	81.3
NORTHRUPKING 310	106.7	62.8	50.0	4	0	3.3	3.3	83.5
PAYMASTER EXP. 0268	106.2	43.5	50.3	1	4	2.5	3.5	79.3
DEKALB F63	104.9	70.1	49.3	2	3	3.3	3.5	83.8
RS 609	104.7	53.8	53.0	0	0	4.3	3.8	81.3
DEKALB D55	100.4	82.3	51.0	0	0	3.5	3.5	85.0
NORTHRUPKING X3025A	99.8	18.2	50.0	0	0	5.0	3.8	79.5
DEKALB C44B	99.4	23.3	50.5	2	3	5.0	3.3	79.3
STECKLEY G. G. R106	99.3	86.6	48.0	0	0	2.8	3.3	75.0
AMAK R14	98.5	18.8	52.0	0	0	5.0	5.0	86.0
FRONTIER 400C	98.4	85.2	48.8	5	1	3.0	3.3	84.5
RS 650	98.2	68.7	47.3	0	1	2.3	3.0	80.0
RS 610	95.2	90.3	48.5	2	2	2.5	3.0	80.0
RS 608	93.1	72.3	44.8	0	0	3.8	3.0	81.3
DEKALB C44A	92.2	29.8	48.8	1	0	5.0	3.5	79.5
DEKALB F70	91.9	31.3	48.3	0	0	4.8	2.5	67.0
NORTHRUPKING 210	91.1	77.6	49.3	2	0	2.8	3.0	85.0
STECKLEY G. G. R211	91.1	53.9	50.0	2	2	3.0	4.0	81.5
RS 681	90.8	37.0	49.0	1	3	4.5	3.5	77.5
RS 630	90.6	59.3	50.0	1	0	2.8	3.5	76.3
DEKALB E56A	90.0	30.6	50.3	1	1	5.0	3.5	80.0
DEKALB C45	89.1	33.8	47.0	0	0	5.0	3.0	77.5
FRONTIER 411	88.0	74.1	44.8	3	2	3.0	3.0	80.3
NORTHRUPKING X3040	86.8	56.3	47.8	1	0	3.3	3.5	85.3
GARST & THOMAS MED.	84.7	47.6	47.0	5	0	2.5	3.0	78.8
FRONTIER 410E	84.1	42.1	44.8	1	1	3.3	4.5	80.0
PAYMASTER EXP. 0390	80.8	69.5	46.8	0	0	2.5	3.0	74.0
PIONEER 885	79.7	15.5	49.0	0	0	5.0	4.0	80.5
NORTHRUPKING 140	79.4	52.8	49.5	1	0	3.0	4.0	79.5
PIONEER 851	79.4	52.4	51.8	0	0	4.0	4.0	76.3
MARTIN	76.0	58.4	47.3	0	0	4.3	3.5	78.8
FRONTIER 400F	75.3	43.6	46.5	2	1	2.8	3.0	83.0
Mean	95.0	54.6	49.0	1	1	3.6	3.5	80.2

Differences in yield between any two entries of less than 23.8 bushels are not considered significant.

Table 11 1961 Summary of the Grain Sorghum Tests Conducted Near Columbia, Palmyra, and Spickard, Missouri. (Exp. S70, S73, and S74).

Entry	Acre Yield Bu.	Lodging %	Plant Height Inch	Head	
				Compactness 1-5	Exsertion 1-5
NORTHRUPKING 310	158.0	23.0	57.9	2.9	3.0
OKLAHOMA 632	144.7	21.3	57.9	3.6	4.0
KANSAS 701	142.9	45.4	58.1	2.2	3.2
DEKALB D50A	136.6	37.2	56.8	4.3	3.3
GARST & THOMAS MED. EARLY	134.1	26.2	53.3	2.8	3.3
STECKLEY G. G. R214	133.2	19.5	55.3	2.3	3.1
PAYMASTER EXP. 0390	133.1	23.8	54.0	2.2	3.1
DEKALB F63	132.2	32.6	53.3	3.0	3.3
DEKALB D55	128.9	45.9	55.8	3.1	3.3
NORTHRUPKING 210	128.8	32.4	53.4	2.3	3.0
FRONTIER 400C	128.6	31.5	53.5	2.5	3.2
RS 610	127.7	32.3	53.2	2.2	3.3
STECKLEY G. G. R106	127.4	41.1	53.9	2.6	3.4
RS 650	127.2	24.5	52.9	2.1	3.0
RS 68U	125.8	12.4	51.3	3.3	3.4
DEKALB F70	125.5	23.0	49.3	4.4	2.1
NORTHRUPKING X3025A	124.2	6.1	50.3	4.4	3.4
PAYMASTER EXP. 0268	123.9	14.6	52.0	2.4	3.3
PIONEER 851	122.7	24.6	54.7	3.2	3.6
RS 608	121.5	27.1	50.7	3.2	3.4
RS 609	120.9	18.8	55.9	3.1	3.5
GARST & THOMAS MED.	120.5	16.8	52.1	2.3	3.1
STECKLEY G. G. R211	120.0	22.9	54.0	2.7	3.3
FRONTIER 410E	118.9	14.2	47.2	2.4	3.4
AMAK R14	118.8	7.4	53.8	4.5	4.3
FRONTIER 400F	118.5	14.5	49.9	2.5	3.1
DEKALB C44B	118.4	8.8	52.0	4.0	3.0
NORTHRUPKING X3040	117.9	26.6	50.4	2.9	3.2
DEKALB E56A	116.2	11.0	53.1	4.4	3.5
RS 630	114.8	22.6	53.2	2.3	2.9
DEKALB C44A	114.6	20.5	49.4	4.7	3.2
DEKALB C45	113.0	11.8	48.2	4.5	2.9
FRONTIER 411	110.4	24.9	48.9	2.4	3.0
NORTHRUPKING 140	107.6	20.3	52.9	3.0	3.7
PIONEER 885	105.0	5.5	50.5	3.8	3.5
MARTIN	101.5	25.0	51.8	3.5	3.6
Mean	124.0	22.7	52.8	3.1	3.3

Table 12 1961 Summary of the Grain Sorghum Tests Conducted Near Columbia, Sikeston, and Mt. Vernon, Missouri. (Exp. S70, S71, S72).

Entry	Acre Yield Bu.	Lodging %	Plant Height Inch	Head	
				Compactness 1-5	Exsertion 1-5
KANSAS 701	112.9	40.7	52.0	2.0	2.8
NORTHRUPKING 310	112.8	12.2	51.8	2.5	2.9
FRONTIER 410C	109.3	13.6	47.4	2.0	2.9
OKLAHOMA 632	106.2	23.1	53.5	3.2	3.6
NORTHRUPKING X3025A	105.2	7.4	46.1	4.1	3.2
MFA GS9	104.9	19.1	49.4	2.5	3.1
OKLAHOMA 612	104.5	6.2	47.4	3.5	3.5
MFA GS8	104.3	17.9	47.3	2.0	2.7
DEKALB F63	102.8	21.9	47.4	2.9	2.9
DEKALB D55	101.5	45.8	52.2	2.9	3.3
PAYMASTER EXP. 0390	100.9	18.9	48.0	2.0	2.9
FRONTIER 400F	100.6	6.1	46.5	2.3	3.4
DEKALB F70	98.9	35.5	45.4	4.4	2.1
GARST & THOMAS MED. EARLY	98.9	23.8	47.5	2.7	2.9
RS 610	98.4	26.9	48.0	2.2	3.1
FRONTIER 400C	97.9	26.7	48.6	2.3	3.0
RS 650	97.8	16.8	47.8	2.0	2.9
GARST & THOMAS MED.	96.7	15.8	46.6	2.1	2.9
DEKALB C45	95.7	18.7	43.2	4.4	2.4
DEKALB C44B	95.6	14.6	47.2	3.6	3.0
RS 681	95.6	15.6	46.1	3.1	3.1
PAYMASTER EXP. 0268	95.3	13.1	46.6	2.5	3.1
PIONEER 851	95.3	29.2	48.8	3.6	3.2
NORTHRUPKING 210	94.7	27.5	47.6	2.2	3.0
NORTHRUPKING X3040	94.3	29.1	46.4	3.0	3.0
RS 630	94.2	30.8	49.0	2.1	2.4
AMAK R14	92.8	10.7	49.0	4.4	4.0
OKLAHOMA 613	92.7	13.3	49.2	3.7	3.5
RS 608	91.7	23.2	45.3	3.4	2.9
DEKALB D50A	91.6	41.8	51.6	3.9	3.2
DEKALB C44A	91.1	34.9	44.6	4.5	2.9
RS 609	89.5	20.4	50.3	2.9	3.4
DEKALB E56A	89.2	22.4	47.2	4.3	3.0
NORTHRUPKING 140	85.6	32.2	47.4	2.7	3.1
PIONEER 9455	85.2	16.3	45.8	3.1	2.9
MARTIN	84.4	27.7	46.5	3.5	3.3
Mean	97.5	22.2	47.9	3.0	3.0

Table 13 1961 Summary of the Grain Sorghum Tests Conducted Near Columbia, Sikeston, Mt. Vernon, Palmyra, and Spickard, Missouri. (Exp. S70, S71, S72, S73, and S74).

Entry	Acre Yield Bu.	Lodging %	Plant Height Inch	Head	
				Compactness 1-5	Exsertion 1-5
NORTHRUPKING 310	128.5	19.9	53.8	2.7	3.0
KANSAS 701	127.8	40.7	54.3	2.1	3.0
OKLAHOMA 632	123.0	39.0	54.5	3.5	3.6
DEKALB F63	118.4	27.2	49.9	2.9	3.1
PAYMASTER EXP. 0390	115.7	25.2	50.2	2.1	3.0
DEKALB D50A	115.5	38.4	53.6	4.1	3.3
GARST & THOMAS MED. EARLY	115.3	27.8	49.6	2.7	3.1
DEKALB D55	114.8	43.9	53.4	2.9	3.3
RS 610	114.2	34.2	49.9	2.2	3.1
NORTHRUPKING X3025A	114.1	8.1	47.7	4.2	3.3
FRONTIER 400C	113.5	33.1	50.3	2.4	3.0
RS 650	113.2	23.8	49.7	2.1	3.0
PAYMASTER EXP. 0268	110.8	16.6	49.0	2.5	3.2
DEKALB F70	110.7	27.5	47.3	4.3	2.2
RS 681	110.3	16.8	48.3	3.2	3.2
NORTHRUPKING 210	110.1	32.0	49.9	2.3	3.0
GARST & THOMAS MED.	108.5	19.0	48.3	2.2	3.0
FRONTIER 400F	107.9	12.4	47.9	2.4	3.2
RS 608	107.5	28.4	47.5	3.4	3.1
PIONEER 851	107.1	28.0	51.4	3.5	3.4
DEKALB C44B	106.4	13.4	49.4	3.8	3.1
AMAK R14	106.3	10.2	50.9	4.5	4.2
RS 609	106.1	23.0	52.5	3.0	3.4
NORTHRUPKING X3040	105.9	28.7	47.9	3.0	3.1
DEKALB C45	103.9	18.0	45.2	4.4	2.7
DEKALB E56A	103.5	19.5	49.8	4.4	3.3
RS 630	103.5	30.3	50.4	2.2	2.8
DEKALB C44A	101.7	26.9	46.9	4.6	3.0
NORTHRUPKING 140	95.9	29.9	49.8	2.9	3.4
MARTIN	92.7	28.3	48.7	3.6	3.5
	110.4	25.7	49.9	3.1	3.2

Table 14 Three-Year Average (1959-1961) for the Sorghum Tests Conducted in South Missouri Near Columbia, Sikeston, and Mt. Vernon. (Exp. S70, S71, S72).

Entry	Acre Yield Bu.	Lodging %
Kansas 701	85.3	39.3
RS 610	82.4	43.4
DeKalb D55	81.5	54.6
NorthrupKing 210	81.1	41.8
RS 650	79.8	39.6
DeKalb F63	78.1	33.9
RS 608	73.1	38.3
DeKalb C44a	72.6	48.6
DeKalb E56a	69.7	44.8
NorthrupKing 140	66.6	48.3
Martin	61.1	44.1
Mean	75.6	43.3

Table 15 Three-Year Average for the Sorghum Tests Conducted in North Missouri Near Columbia, Palmyra, and Spickard. (Exp. S70, S73, S74).

Entry	Acre Yield Bu.	Lodging %
Kansas 701	108.0	43.1
RS 610	106.0	34.7
DeKalb D55	105.9	41.4
DeKalb F63	105.8	30.7
Steckley G.G. R106	105.1	36.7
RS 650	104.1	26.6
DeKalb E56a	99.0	21.5
RS 608	98.1	25.7
DeKalb C44a	92.7	27.7
Martin	81.4	26.8
Mean	100.6	31.5

Table 16 Three-Year Average (1959-1961) for the Sorghum Tests Conducted at all Locations in Missouri. (Exp. S70, S71, S72, S73, S74.)

Entry	Acre Yield Bu.	Lodging %
Kansas 701	98.2	34.6
DeKalb D55	92.9	39.4
RS 610	92.4	33.7
DeKalb F63	91.6	28.1
RS 650	90.9	27.2
RS 608	85.0	27.4
DeKalb E56a	83.1	29.3
DeKalb C44a	81.4	30.6
Martin	69.4	30.9
Mean	87.2	31.2