# Results of the KENTUCKY GRAIN SORGHUM PERFORMANCE TESTS 19621

By J. F. SHANE and H. R. RICHARDS



PROGRESS REPORT 110

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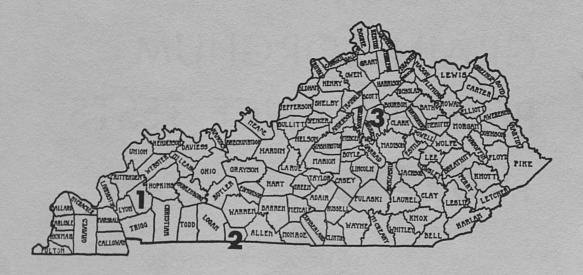
UNIVERSITY OF KENTUCKY

AGRICULTURAL EXPERIMENT STATION

DEPARTMENT OF AGRONOMY

LEXINGTON

# LOCATION OF THE 1961 GRAIN SORGHUM PERFORMANCE TESTS



	Location	Fertilizer applied	Row Spacing	Date Planted	Date <u>Harvested</u>
1.	Princeton	400 1b super- phosphate 40 1b N	42"	May 16	Sept 28
	Cooperator:	Western Ky. Substation			
2.	Franklin Cooperator:	Test not harvested Jernigan Bros.	d 28"	May 25	
3.	Lexington Cooperator:	400 1b 12-12-12 Ky. Agr. Exp. Sta	40"	May 26	Sept 23

## RESULTS OF THE KENTUCKY GRAIN SORGHUM PERFORMANCE TESTS - 1961

J. F. Shane and H. R. Richards

The objective of the Kentucky Grain Sorghum Performance Test is to provide an estimate of the relative performance of grain sorghum hybrids and varieties.

This report presents yield and other agronomic data obtained from grain sorghum plantings made at various locations in the state. The grain sorghum tests consisted of 18 hybrids and 7 varieties. Each hybrid or variety was planted in 2-row plots 10 feet long in each of 4 replications.

When tests are grown near highly populated areas, which serve as roosting places for birds, they are more subject to attack by birds than they are in open fields. The test at Lexington was harvested early to avoid damage by birds and eliminate the necessity of bagging or standing guard with a shotgun.

Only one replication of the test at Franklin was harvested because of heavy infestation of foxtail in the remainder of the test. Individual plot data indicate yields were well over the 100 bushel per acre level.

Average yields for the tests at Princeton and Lexington were 94.7 and 119.8 bushels per acre, respectively. The average yield for both locations was 107.3 bushels per acre.

The following tables present three-year and one-year summaries for Princeton and Lexington. Data for results at Franklin, Ky. are available in previous reports.

### EXPLANATION OF TERMS USED IN THIS REPORT

- 1. <u>Yield</u>. Yields of grain sorghum are reported as bushels per acre of threshed grain at 13.0 percent moisture and 56 pounds per bushel. Adjustments were made for bird damage and for significant variations in stand.
- 2. Moisture. Samples for moisture determinations were taken from the bulked grain of all replications.
- 3. Height. The distance from the base of the plant to the top of the plant is reported in inches.
- 4. Head Exsertion. The distance between the top leaf and the base of the head. This characteristic is reported as G good, F fair, and P poor. Varieties with good head exsertion are more easily combined because less plant material will be passed through the combine.
- Lodging. Plants leaning at an angle of more than 30 degrees from the vertical are considered lodged.
- 6. <u>Test Weight</u>. Test weight or weight per bushel is one of the quality factors used in determining the grade that is assigned in commercial marketing of grain. The higher the test weight, the higher the market value unless the grain is down-graded by another factor.
- 7. <u>Date Flowered</u>. The number of days after July 1 when 50 percent of the heads have flowered.
- 8. <u>L.S.D.</u> The abbreviation "L.s.d." means least significant difference. Two varieties differing in yield by less than the L.s.d. cannot be said to differ in yield in that particular test if one wishes to be correct at least 95 percent of the time.
- 9. Head Type. Heads are classed as O-open, I-intermediate or C-compact. Open type heads are more desirable since they are less likely to mold and harbor insects.

### VARIETIES AND HYBRIDS TESTED

### Varieties

Martin Redbine 58 Plainsman Midland Combine Shallu Caprock Westland

### Hybrids

P.A.G.515

### Source of Hybrids

Pfister Associated Growers, Inc., Aurora, Ill. and Huntsville, Ala.

Texas 601 Texas 611 Texas 620 Texas Agricultural Exp. Substation Lubbock

Texas 620 RS 501

Nebraska Agricultural Experiment Station, Lincoln.

RS 590 RS 608 RS 610 RS 650

> DeKalb Agricultural A'ssn, DeKalb, Ill.

C-44a C-45 D-50a D-55

E-56a F-63

Frontier 400C Frontier 400F Frontier 410C Frontier Hybrids, Inc. Scott City, Kansas

Table 1. Three-year summary of performance of grain sorghum grown at Princeton, Ky. 1959-61

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515 56.7 <sub>1</sub> / 446 C 56 58 501 60 4 <sup>1</sup> / 4ries 501 501 60 4 <sup>1</sup> / 4ries 501 501 501 501 501 501 608 80.1 46 C 57 500 80.1 46 C 57 500 80.1 47 C 57 501 601 84.7 47 C 57 601 84.7 48 C 57 601 82.4 48 C 57 620 82.4 48 C 57 620 82.4 48 C 57 620 82.4 48 C 62 C 62 62 62 62 62 62 62 62 62 62 62 62 62	HYBRID		P			
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590 75.6 air 46 6 6 50 55 60 80.1 air 42 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	501	/ <del>+</del> 7 09		50	SC	58.31/
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610 82.7 and 650 650 76.8 and 1950 46 6 76.8 601 84.7 6.8 601 82.4 67 6 75.8 620 82.4 68 620 620 82.4 68 620 620 620 620 620 620 620 620 620 620	809	80.1		42	) U	56.0
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id Av. 75.8 ha		82.4		84	O	57.8
.8 Heads wer th before th 6.0 c 5.1 4.8 0 c 5.9 c 5.0	Hybrid Av.			97		57.3
k 76.8 dd 40 C 55 e Shallu 62.1 H b 48 0 59 75.0 43 SC 59	ARIETY					
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	mbine Shallu			43	0 SC	PRODUCTION CONTRACTOR

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rvested before 1959 and	lried	air-de	pue
60.1 67.4 72.4 54.5	6.99	71.9	r data
Midland Plainsman Redbine 58 Westland	Variety Av.	Average	$\frac{1}{1}$ Two-year data

56.1 56.2 58.3 56.7

00000

57.4

57.3

Table 2. Three-year summary of performance of grain sorghum grown at Lexington, Ky. 1959-61

Hybrid or Variety	Yield Bu/acre	% Mois	Plant height inches	Date Flowered	Test weight 1b/bu-/
HYBRID					
P.A.G. 515	114.7	22.6	51, ,	37	57.8
	98.8 <u>1</u> /	20.2	62 <u>-</u> 7/	28	:
RS 590	101.1,	22.9	52	34	57.4
RS 608	$103.5\frac{1}{2}$	21.5	84	32	58.6
RS 610	$118.1\frac{1}{2}$	20.2	51	32	57.7
RS 650	75.4	19.8	84	35	55.3
Texas 601	92.0	22.4	53	35	59.4
Texas 611	100.6,	23.6	26	36	59.2
Texas 620	105.41/	21.8	54	34	58.2
Hybrid Av.	101.1	21.7	53	34	58.0
VARIETY					
Caprock	81.2	24.8	97	38	56.1
Combine Shallu Martin	86.1 <sub>1</sub> /85.4 <u>1</u> /	24.0 18.5	56 48	33	60.7 57.9

Midland Plainsman Redbine 58 Westland	76.9 <u>1</u> / 80.7 82.4 70.8	17.4 24.6 20.5 18.2	45 45 50 43	33 33 33	56.4 54.8 58.7 57.4
Variety Av.	80.5	21.1	84	35	57.4
Average	92.1	21.4	51	34	57.75
1/ Two year data					

Table 3. Performance of grain sorghum at Princeton, Ky. 1961

Variety Bu  HYBRID  DeKalb: C-44a C-45 D-50a D-55 E-56a F-63 Frontier 400-C Frontier 400-F P.A.G. 515 RS 501 RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620  Hybrid Av.	108.0 86.8 131.0 128.2 104.2 110.0 97.0 77.6	12.5 12.4 14.2 10.7 14.2 15.3 13.8 12.0	50 48 56 60 53 57 52 51	SC SC SC SC SC C	F G O G F F	57.6 58.5 59.6 59.4 57.2 59.1 58.6 57.8
C-44a C-45 D-50a D-55 E-56a F-63 Frontier	86.8 131.0 128.2 104.2 110.0 97.0 77.6 97.1	12.4 14.2 10.7 14.2 15.3 13.8 12.0	48 56 60 53 57 52 51 49	SC SC C SC SC C	F G O G F F	58.5 59.6 59.4 57.2 59.1 58.6
C-44a C-45 D-50a D-55 E-56a F-63 Frontier	86.8 131.0 128.2 104.2 110.0 97.0 77.6 97.1	12.4 14.2 10.7 14.2 15.3 13.8 12.0	48 56 60 53 57 52 51 49	SC SC C SC SC C	F G O G F F	58.5 59.6 59.4 57.2 59.1 58.6
C-45 D-50a D-55 E-56a F-63 Frontier	86.8 131.0 128.2 104.2 110.0 97.0 77.6 97.1	12.4 14.2 10.7 14.2 15.3 13.8 12.0	48 56 60 53 57 52 51 49	SC C SC SC C	G O G F F	59.6 59.4 57.2 59.1 58.6
D-50a D-55 E-56a F-63 Frontier	131.0 128.2 104.2 110.0 97.0 77.6 97.1	14.2 10.7 14.2 15.3 13.8 12.0	56 60 53 57 52 51 49	SC C SC SC C	0 G F F	59.4 57.2 59.1 58.6 57.8
D-55 E-56a F-63 Frontier	128.2 104.2 110.0 97.0 77.6 97.1 111.1	10.7 14.2 15.3 13.8 12.0	60 53 57 52 51 49	C SC SC C	G F F	57.2 59.1 58.6 57.8
E-56a F-63 Frontier	104.2 110.0 97.0 77.6 97.1 111.1	14.2 15.3 13.8 12.0 14.2	53 57 52 51 49	SC C	F F	59.1 58.6 57.8
F-63 Frontier 400-C Frontier 410-C Frontier 400-F P.A.G. 515 RS 501 RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620	110.0 97.0 77.6 97.1 111.1	15.3 13.8 12.0 14.2	57 52 51 49	SC C	F	58.6 57.8
Frontier	97.0 77.6 97.1 111.1	13.8 12.0 14.2	52 51 49	C C	F	57.8
400-C Frontier 410-C Frontier 400-F P.A.G. 515 RS 501 RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620	77.6 97.1 111.1	14.2	49			
410-C Frontier 400-F P.A.G. 515 RS 501 RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620	97.1	14.2	49			
Frontier 400-F P.A.G. 515 RS 501 RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620	111.1			С	F	58.9
400-F P.A.G. 515 RS 501 RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620	111.1			·	r	50.5
P.A.G. 515 RS 501 RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620		12.2				
RS 501 RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620			52	С	F	58.3
RS 590 RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620	82.0	13.2	57	SC	G	59.6
RS 608 RS 610 RS 650 Texas 601 Texas 611 Texas 620	96.5	14.0	54	С	F	60.0
RS 610 RS 650 Texas 601 Texas 611 Texas 620	97.4	11.5	51	C	F	58.6
RS 650 Texas 601 Texas 611 Texas 620	94.7	11.9	52	C	F	58.6
Texas 601 Texas 611 Texas 620	82.1	13.2	47	C	F	58.7
Texas 611 Texas 620	103.0	12.7	54	C	G	59.3
Texas 620	107.8	14.3	60	C	F	60.9
Hybrid Av.	100.2	13.7	52	C	G	59.2
	100.8	13.1	53			58.9
VARIETY						
Caprock	85.7	14.3	45	С	F	57.4
Combine Shallu	62.3	14.9	56	0	G	61.2
Martin	92.0	10.9	52	SC	G	61.0
Midland	63.2	13.7	42	C	F	58.3
Plainsman	92.0	12.7	43	C	F	57.0
Redbine 58	91.1	13.3	54	SC	G	60.6
Westland	67.4	13.6	43	C	F	58.2
Variety Av.	79.1	13.3	48			59.1
Average	94.7	13.2	52			58.9
			(10)			

Table 4. Performance of grain sorghum at Lexington, Ky.1961

			Dlant		
Hebrid on	Yield	%	Plant height	Head	Date
Hybrid or	Bu/acre		inches		flowered
Variety	bu/acre	Mois	Inches	type	llowered
HYBRID					
i ii jakib					
DeKalb:					
C-44a	142.5	22.8	53	0	41
C-45	156.6	16.7	53	0	42
D-50a	149.1	19.8	63	0	42
D-55	153.8	23.8	60	0	45
E-56a	125.3	21.8	58	0	48
F-63	162.2	13.7	60	0	54
Frontier 400-C	131.8	25.0	59	SC	41
Frontier 410-C	127.4	25.8	57	C	48
Frontier 400-F	120.4	30.7	55	SC	46
P.A.G. 515	142.0	28.8	59	SC	49
RS 501	95.7	15.6	65	0	36
RS 590	121.8	24.3	57	SC	46
RS 608	121.7	24.5	56	SC	40
RS 610	138.9	19.6	58	SC	42
RS 650	79.0	19.0	54	C	48
Texas 601	107.6	24.2	59	SC	46
Texas 611	109.1	26.3	61	SC	47
Texas 620	111.8	24.1	57	SC	48
Urrhanid Are	127.6	22.6	58		45
Hybrid Av.	127.0	22.0	70		45
VARIETY					
Caprock	110.6	27.1	55	SC	47
Combine Shallu	96.2	29.2	64	0	54
Martin	95.2	20.6	54	SC	42
Midland	82.8	16.0	50	SC	40
Plainsman	102.5	29.3	50	SC	47
Redbine 58	100.9	20.3	57	SC	42
Westland	100.9	15.6	47	SC	43
Variety Av.	98.4	22.6	54		45
Average	119.4	22.6	57		45