

*Results of the*  
KENTUCKY  
GRAIN SORGHUM  
PERFORMANCE TESTS  
1962

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

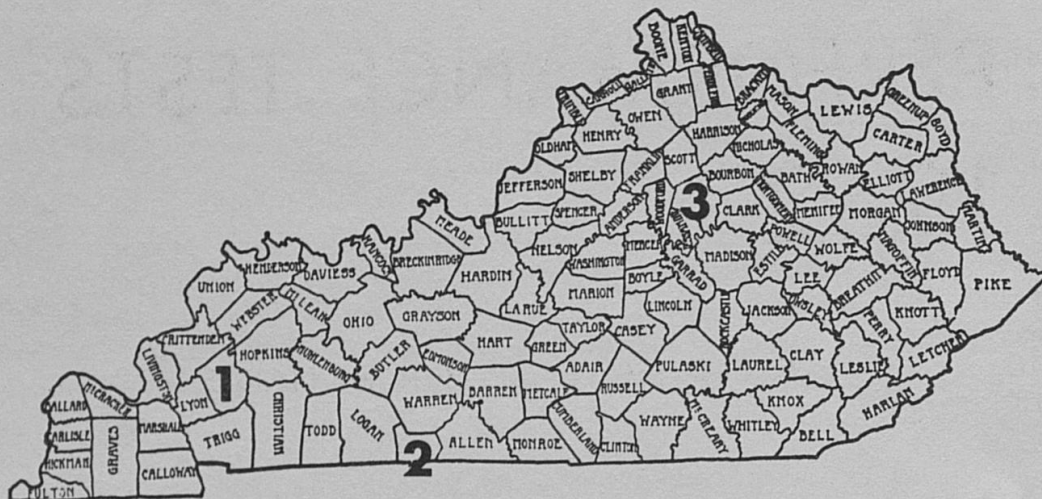


PROGRESS REPORT 126

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UNIVERSITY OF KENTUCKY  
AGRICULTURAL EXPERIMENT STATION  
DEPARTMENT OF AGRONOMY  
LEXINGTON

LOCATION OF THE 1962 GRAIN  
SORGHUM PERFORMANCE TESTS



<u>Location</u>	<u>Fertilizer applied</u>	<u>Row Spacing</u>	<u>Date Planted</u>	<u>Date Harvested</u>
1. Princeton	50 lb P <sub>2</sub> O <sub>5</sub> 10 T manure	42"	May 22	Oct.17
Cooperator:	Western Ky. Substation			
2. Franklin	950 lb 10-10-10	14"	May 15	Sept.27
Cooperator:	Emett Ashlock			
3. Lexington	400 lb 12-12-12	38"	May 10	Sept.23
Cooperator:	Ky. Agr. Exp. Sta.			

RESULTS OF THE KENTUCKY GRAIN SORGHUM  
PERFORMANCE TESTS - 1962

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 21 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. Field data for the test were not adjusted for the minor damage which did occur.

The average bushel per acre yields for the tests were: Princeton, 95.0; Franklin, 105.6; and Lexington, 85.2. The average yield for the hybrids at all locations was 100.0 bushels per acre and that for the varieties 86.4 bushels per acre.

The following tables present data for three and one-year summaries for Princeton and Lexington and one year summary for Franklin.

## EXPLANATION OF TERMS USED IN THIS REPORT

1. Yield. 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. Plants having the best head exsertion are given a rating of 1 and those with the poorest exsertion a rating of 5.
5. Lodging. Plants leaning at an angle of more than 30 degrees from the vertical are considered lodged.
6. Test Weight. 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. Date Flowered. The number of days after July 1 when 50 percent of the heads have flowered.
8. L.S.D. 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. Plants with the most open heads are given a rating of 1 and those with the most compact heads a rating of 5.

VARIETIES AND HYBRIDS TESTED

Varieties

Martin  
Redbine 58  
Plainsman  
Midland

Combine Shallu  
Caprock  
Westland

Hybrids

P.A.G.515

Texas 601  
Texas 611  
Texas 620

RS 501  
RS 590  
RS 608  
RS 610  
RS 650

C-44b  
Expt. 1500  
Expt. 1600

Frontier 400B  
Frontier 410B  
Frontier 22X

NK 222  
NK 227

Commanche  
Ute  
Apache

Source of Hybrids

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

Texas Agricultural Exp.  
Substation Lubbock

Nebraska Agricultural Experiment  
Station, Lincoln

DeKalb Agricultural A'ssn,  
DeKalb, Ill.

Frontier Hybrids, Inc.  
Scott City, Kansas

Northrup, King Co.  
Minneapolis 13, Minn.

Paymaster Seed Farms  
Box 1632  
Plainview, Texas

Table 1. Performance of grain sorghum at Princeton, Ky. 1962

Hybrid or Variety	Yield Bu/acre	% Mois.	Plant height inches	Head type	Head Exsertion	Test weight lb/bu
HYBRID						
DeKalb:						
C-44B	88.4	11.5	58	2	2	45.1
Expt.1500	74.4	11.3	59	3	2	44.0
" 1600	96.9	12.1	63	4	2	46.9
Frontier:						
400B	108.9	12.3	63	4	3	51.1
400C	107.3	13.0	55	3	2	47.6
410B	112.4	12.6	59	3	2	49.8
22X	102.1	13.9	60	3	3	52.4
P.A.G.515	114.6	12.2	64	4	2	47.0
R.S. 501	103.8	13.9	72	4	2	53.5
" 590	113.4	13.9	64	4	2	50.9
" 608	112.2	13.0	60	3	2	51.3
" 610	113.8	12.6	61	3	2	50.1
" 650	77.6	12.5	58	4	3	49.3
Texas 601	98.2	14.0	65	4	1	52.9
611	107.9	13.7	60	5	1	52.6
620	86.1	13.4	60	3	2	50.3
N.K. 222	102.8	12.7	53	2	1	48.6
227	97.1	12.2	59	3	1	44.9
Paymaster:						
Apache	84.3	13.5	56	5	3	51.1
Commanche	97.9	12.4	61	3	2	49.8
Ute	106.8	13.2	54	1	3	48.7
Hybrid Av.	100.3	12.9	60	3	2	49.4
VARIETY						
Caprock	96.3	11.3	55	4	5	42.7
Combine	99.4	11.7	62	1	1	47.7
Shallu						
Martin	114.4	13.2	59	3	2	51.9
Midland	88.6	12.6	65	5	1	44.5
Plainsman	66.3	11.7	58	5	4	41.4
Redbine 58	99.5	12.3	61	2	1	49.3
Westland	63.2	12.6	48	4	3	45.5
Variety Av.	89.7	12.2	58	3	2	46.1
Test Average	95.0	12.6	59	3	2	47.8
L.S.D.	19.0		(6)			

Table 2. Three-year summary of grain sorghum grown at Princeton, Ky. 1960-62

Hybrid or Variety	Yield bu/acre	% <u>1</u> / Mois	Plant height inches	Head type	Head <u>1</u> / Exser- tion	Test Weight lb/bu
HYBRID						
P.A.G. 515	102.1	12.2	53	4.0	2.5	53.7
RS 501	74.8	13.6	60	3.7	1.5	56.6
" 590	87.8	14.0	53	4.0	2.5	55.6
" 608	94.2	12.3	50	3.7	2.5	54.7
" 610	95.6	12.3	53	4.3	2.5	54.6
" 650	77.2	12.9	49	4.0	3.0	54.7
Texas 601	91.9	13.4	55	4.0	1.0	56.9
611	93.1	14.0	57	4.3	2.0	57.4
620	85.9	13.6	53	3.7	1.5	55.5
Hybrid Av.	89.2	13.1	54	4.0	2.1	55.5
VARIETY						
Caprock	83.9	12.8	45	4.7	4.0	51.8
Combine Shallu	70.6	13.3	53	1.0	1.0	55.7
Martin	91.2	12.1	50	3.3	1.5	57.3
Midland	69.4	13.2	48	5.0	2.0	52.4
Plainsman	65.0	12.2	44	5.0	3.5	51.6
Redbine 58	85.5	12.8	52	3.0	1.0	60.0
Westland	59.1	13.1	41	4.7	3.0	53.4
Variety Av.	75.0	12.8	48	3.8	2.3	54.6
Average	83.0	13.0	51	3.9	2.2	55.1

1/ Two-year data

Table 3. Performance of grain sorghum at Franklin, Ky. 1962

Hybrid or Variety	Yield Bu/A	% Moist.	Plant Height inches	1 = open 5 - compt Head Rating
HYBRID				
DeKalb:				
C-44B	129.4	13.0	41	1
Expt.1500	89.3	12.5	41	2
" 1600	97.0	12.5	48	2
Frontier:				
400B	111.1	14.0	37	2
400C	144.4	13.8	53	3
410B	117.6	13.7	43	3
22X	130.4	13.8	51	4
P.A.G.515	119.7	14.0	37	4
R.S.:				
501	85.4	14.5	69	2
590	118.0	13.6	52	3
608	114.5	13.9	52	3
610	130.9	14.0	40	4
650	127.5	13.5	50	4
Texas:				
601	102.3	14.3	57	3
611	130.7	14.2	59	3
620	115.2	14.2	47	2
N.K.:				
222	84.0	13.4	33	3
227	122.9	12.9	46	2
Paymaster:				
Apache	122.0	13.1	55	4
Commanche	91.5	13.1	43	2
Ute	85.5	13.2	30	4
Hybrid Av.	112.8	13.6	47	3
VARIETY				
Caprock	88.2	13.3	43	4
Combine Shallu	75.5	11.9	36	2
Martin	95.6	13.0	49	2
Midland	64.0	13.3	58	4
Plainsman	107.6	13.0	30	2
Redbine 58	84.9	13.4	50	3
Westland	70.3	12.2	36	2
Variety Av.	83.7	12.9	43	3
Average	105.6	13.4	46	3
L.S.D.	7.7	(8)		



Table 4. Performance of grain sorghum at Lexington, Ky. 1962

Hybrid or Variety	Yield Bu/A	% Mois.	Plant height inches	Head type	Date flowered	Test Wt lb/bu
HYBRID						
DeKalb:						
C-44B	95.0	22.7	57	3	16	56.8
Expt.1	85.5	23.5	48	4	14	56.5
" 1600	93.3	25.9	60	3	18	55.5
Frontier:						
400B	71.9	23.8	57	4	14	57.2
400C	97.6	26.9	60	5	14	56.2
410B	85.4	23.0	54	5	16	58.2
22X	93.0	25.5	57	5	21	55.6
P.A.G.515	100.8	30.7	60	5	18	54.4
R.S. 501	--	24.1	63	5	6	56.0
" 590	72.4	25.1	57	5	17	58.2
" 608	83.5	26.6	51	4	14	58.1
" 610	79.4	24.8	57	5	14	56.1
" 650	90.6	24.5	54	5	14	56.9
Texas 601	72.8	21.6	60	5	13	58.6
" 611	90.2	25.2	62	5	15	55.7
" 620	78.0	24.1	56	5	15	58.2
N.K. 222	73.0	24.8	44	4	10	59.1
" 227	90.9	27.8	60	5	13	54.2
Paymaster:						
Apache	101.2	30.4	60	5	24	52.6
Commanche	87.7	21.6	51	5	14	59.6
Ute	96.2	22.1	51	5	13	59.5
Hybrid Av.	86.9	25.0	56	5	15	56.8
VARIETY						
Caprock	82.4	28.1	53	3	20	55.8
Combine	106.4	21.1	60	1	20	60.3
Shallu						
Martin	74.1	20.2	54	5	16	56.5
Midland	62.8	26.6	57	5	14	57.0
Plainsman	92.8	31.1	48	5	21	53.1
Redbine 58	74.7	24.8	57	4	13	58.4
Westland	70.1	21.1	44	5	14	57.4
Variety Av.	80.5	24.7	53	4	17	56.8
Average	85.2	24.9	55	5	15	56.8
L.S.D.	16.6		(9)			

Table 5. Three-year summary of performance of grain sorghum at Lexington, Ky. 1960-62

Hybrid or Variety	Yield Bu/A	% Mois.	Plant Height inches	Head <sup>1/</sup> type	Date Flowered July
HYBRID					
P.A.G. 515	120.5	28.6	57	4.0	33
RS 501	98.8 <sup>1/</sup>	21.5	63	3.0	22
" 590	99.2	26.8	57	4.0	31
" 608	96.8	26.2	52	3.5	28
" 610	105.1	24.3	57	4.0	28
" 650	83.1	23.9	54	5.0	31
Texas 601	92.4	25.1	59	4.0	30
" 611	103.5	27.7	62	4.0	31
" 620	96.1	25.5	57	4.0	31
Hybrid Av.	99.5	25.5	58	3.9	29
VARIETY					
Caprock	89.2	30.0	51	3.0	34
Combine Shallu	99.4	26.7	60	1.0	37
Martin	81.6	21.0	53	4.0	29
Midland	72.1	21.8	52	4.0	29
Plainsman	90.2	30.9	48	4.0	34
Red ine 58	86.5	24.5	56	3.5	28
Westland	78.8	20.0	45	4.0	29
Variety Av.	85.4	25.0	52	3.4	31
Average	93.3	25.3	55	3.7	30

<sup>1/</sup> two year data