

Results of the
**KENTUCKY
GRAIN SORGHUM
PERFORMANCE TESTS
1963**

By J. F. SHANE, H. R. RICHARDS and LEO A. LINK



PROGRESS REPORT 133

(FILING CODE: 1-1)

**UNIVERSITY OF KENTUCKY
AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF AGRONOMY
LEXINGTON**

LOCATION OF THE 1963 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	10 T manure	42"	May 17	Sept. 17
Cooperator:	Western Ky. Substation			
2. Franklin	Test not harvested			
Cooperator:	Frank Moody			
3. Lexington	600 lb 12-12-12	40"	May 9	Oct. 14
Cooperator:	Ky. Agr. Exp. Sta.			

RESULTS OF THE KENTUCKY GRAIN SORGHUM
PERFORMANCE TESTS - 1963

J. F. Shane, H. R. Richards and Leo A. Link

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 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. Field data for the test were not adjusted for the minor damage which did occur. The test at Franklin was not harvested because of excessive bird damage.

The average bushel per acre yields for the tests were: Princeton, 98.4 and Lexington, 102.4. The average yield for the hybrids at all locations was 104.9 bushels per acre and that for the varieties 88.9 bushels per acre.

The following tables present data for the 1963 annual summary for the state and one- and three-year summaries for Princeton and Lexington.

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 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. Lodging. Plants leaning at an angle of more than 30 degrees from the vertical are considered lodged.
5. 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.
6. Date Flowered. The number of days after July 1 when 50 percent of the heads have flowered.
7. 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.
8. 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	Combine Shallu
Redbine 58	Caprock
Plainsman	Westland
Midland	

Hybrids

Source of Hybrids

Texas 601	Texas Agricultural Experiment
Texas 611	Substation, Lubbock
Texas 620	
RS 501	Nebraska Agricultural Experiment
RS 608	Station, Lincoln
RS 610	
RS 616	
RS 621	
X-1510	DeKalb Agricultural Association
X-1590	DeKalb, Illinois
Frontier 400C	Frontier Hybrids, Inc.
Frontier 67X	Scott City, Kansas
NK 222	Northrup, King Co.
NK 227	Minneapolis 13, Minnesota
NK X3049	
Apache	Paymaster Seed Farms
Kiowa	Box 1632
	Plainview, Texas
AKS 614	Agricultural Experiment Station
	Fayetteville, Arkansas

Table 1. Annual summary of grain sorghum in Kentucky. 1963

Hybrid or Variety	Yield Bu/acre	Mois. %	Plant height inches	Head type rating	Date* flowered	Test weight lbs/bu
HYBRID						
AKS 614	118.3	14.9	43	1.0	31	58.0
DeKalb						
X-1510	116.8	15.4	45	1.0	32	58.3
X-1590	114.7	14.8	51	2.0	34	60.1
Frontier:						
400C	105.3	14.5	47	4.0	30	57.6
67X	97.3	14.1	36	2.8	31	58.2
N.K. 222	104.1	13.9	38	2.6	31	58.1
N.K. 227	94.8	13.3	43	3.0	32	56.0
N.K. X3049	107.1	14.0	42	3.0	32	57.1
Paymaster:						
Apache	109.1	15.4	44	3.3	37	57.5
Kiowa	114.3	14.1	48	4.0	32	59.1
RS 501	95.2	14.3	55	2.0	26	59.8
RS 608	89.4	13.5	41	2.9	33	57.3
RS 610	116.5	14.0	46	4.0	30	58.4
RS 616	99.5	13.9	32	2.9	35	55.5
RS 621	96.2	12.6	36	1.5	33	58.0
Texas 601	102.1	13.9	45	3.9	32	58.2
Texas 611	115.8	15.1	50	4.3	34	59.8
Texas 620	91.4	14.3	42	4.0	32	57.8
Hybrid Av.	104.9	14.2	44	2.9	32	58.0
VARIETY						
Caprock	84.2	16.3	38	4.1	37	56.2
Combine	91.0	16.9	49	1.0	39	59.9
Shallu						
Martin	91.6	13.5	42	2.8	35	60.3
Midland	88.7	13.4	38	3.8	32	57.0
Plainsman	95.0	14.6	38	4.0	35	56.8
Redbine 58	91.8	13.4	43	3.4	33	58.7
Westland	80.1	14.0	37	4.0	34	59.0
Variety Av.	88.9	14.6	41	3.3	35	58.3
Test Av.	100.4	14.3	43	3.0	33	58.1
L.S.D.	10.8					

* Data obtained at Lexington only.

Table 2. Performance of grain sorghum grown at
Princeton, Kentucky 1963

Hybrid or Variety	Yield Bu/acre	Mois. %	Plant height inches	Head type rating	Test weight lbs/bu
HYBRID					
AKS 614	105.9	14.2	39	1.0	58.2
DeKalb:					
X-1510	110.3	14.6	44	1.0	58.6
X-1590	113.0	14.5	50	2.0	59.8
Frontier:					
400C	100.6	13.4	44	5.0	56.8
67X	90.4	14.0	34	3.0	58.5
N.K. 222	103.7	13.5	36	3.0	58.4
N.K. 227	85.0	13.3	39	3.0	55.8
N.K. X3049	100.2	13.7	40	3.0	57.2
Paymaster:					
Apache	102.8	14.4	39	5.0	58.6
Kiowa	111.4	13.9	44	5.0	58.5
RS 501	94.7	13.7	56	2.0	59.4
RS 608	95.7	13.0	40	3.0	56.6
RS 610	115.8	13.8	45	5.0	57.4
RS 616	98.1	13.0	32	3.0	57.1
RS 621	93.7	12.8	34	1.0	57.0
Texas 601	101.3	13.4	41	5.0	58.2
Texas 611	115.0	14.2	46	5.0	59.5
Texas 620	81.9	14.0	40	5.0	58.3
Hybrid Av.	101.1	13.7	41	3.3	58.0
VARIETY					
Caprock	79.0	13.6	36	5.0	56.8
Combine	97.8	14.2	46	1.0	61.3
Shallu					
Martin	90.0	13.6	38	3.0	61.3
Midland	99.3	13.4	40	5.0	58.5
Plainsman	93.5	14.1	36	5.0	57.7
Redbine 58	97.1	13.2	38	4.0	58.5
Westland	82.6	13.6	34	5.0	59.2
Variety Av.	91.3	13.7	38	4.0	59.0
Test Av.	98.4	13.7	40	3.5	58.3
L.S.D. .05	16.5				

Table 3. Three-year summary of grain sorghum at
Princeton, Kentucky 1961-63

Hybrid or Variety	Yield Bu/acre	Mois %	Plant height inches	Head type rating	Test weight lbs/bu
HYBRID					
Frontier 400C	101.5	13.4	50	4.3	54.0
RS 501	93.4	13.6	62	3.0	57.4
RS 608	101.7	12.5	50	3.7	55.4
RS 610	108.0	12.8	53	4.3	55.3
Texas 601	100.7	13.4	53	4.7	56.7
Texas 611	110.1	14.1	55	5.0	57.6
Texas 620	89.3	13.7	51	4.3	55.9
Hybrid Av.	100.7	13.4	53	4.2	56.0
VARIETY					
Caprock	87.6	13.1	45	4.7	52.2
Combine Shallu	86.4	13.6	54	1.0	56.7
Martin	98.7	12.6	50	3.0	58.0
Midland	83.6	13.2	49	5.0	53.7
Plainsman	83.8	12.8	46	5.0	52.0
Redbine 58	95.8	12.9	51	3.0	56.1
Westland	71.0	13.3	42	4.7	54.2
Variety Av.	86.7	13.1	48	3.8	54.7
Average	93.7	13.2	51	4.0	55.4

Table 4. Performance of grain sorghum grown at
Lexington, Kentucky 1963

Hybrid or Variety	Yield Bu/acre	Mois. %	Plant height inches	Head type rating	Date flow- ered	Test weight lbs/bu
HYBRID						
AKS 614	130.6	15.5	48	1.0	31	57.7
DeKalb:						
X-1510	123.3	16.1	46	1.0	32	58.0
X-1590	116.4	15.0	53	2.0	34	60.4
Frontier:						
400C	109.9	15.5	49	3.0	30	58.4
67X	104.2	14.2	37	2.5	31	57.8
N.K. 222	104.5	14.3	39	2.2	31	57.8
N.K. 227	104.5	13.2	46	3.0	32	56.2
N.K. X3049	114.0	14.2	44	3.0	32	57.0
Paymaster						
Apache	115.4	16.4	48	3.5	37	56.3
Kiowa	117.1	14.2	51	3.0	32	59.6
RS 501	95.7	14.8	55	2.0	26	60.2
RS 608	83.0	14.0	42	2.8	33	57.9
RS 610	117.1	14.2	48	3.0	30	59.3
RS 616	100.9	14.8	33	2.8	35	53.8
RS 621	98.6	12.4	37	2.0	33	59.0
Texas 601	102.8	14.3	50	2.8	32	58.1
Texas 611	116.6	16.0	54	3.5	34	60.1
Texas 620	100.8	14.5	44	3.0	32	57.3
Hybrid Av.	108.6	14.6	46	2.6	32	58.0
VARIETY						
Caprock	89.4	18.9	40	3.2	37	55.5
Combine	84.1	19.6	52	1.0	39	58.4
Shallu						
Martin	93.2	13.3	46	2.5	35	59.2
Midland	78.1	13.4	40	2.5	32	55.4
Plainsman	96.5	15.0	41	3.0	35	55.8
Redbine 58	86.5	13.6	48	2.8	33	58.8
Westland	77.5	14.3	39	3.0	34	58.8
Variety Av.	86.5	15.4	44	2.6	35	57.4
Test Av.	102.4	14.9	45	2.6	33	57.9
L.S.D. .05	13.9					

Table 5. Three-year summary of grain sorghum at
Lexington, Kentucky 1961-63

Hybrid or Variety	Yield Bu/acre	Mois. %	Plant height inches	Head type rating	Date flow- ered	Test* weight lbs/bu
HYBRID						
Frontier 400C	113.0	22.7	60	3.6	31	57.3
RS 501	95.7	18.1	61	2.7	23	58.1
RS 608	96.0	21.7	50	3.3	29	58.0
RS 610	111.7	19.5	54	3.6	29	57.7
Texas 601	94.3	20.0	56	3.6	30	58.4
Texas 611	105.2	22.5	59	3.8	32	57.9
Texas 620	96.8	20.9	52	3.6	32	57.8
Hybrid Av.	101.8	20.8	56	3.5	29	57.9
VARIETY						
Caprock	94.0	24.7	49	3.1	35	55.7
Combine Shallu	95.5	23.3	59	1.0	38	59.4
Martin	87.4	18.0	51	3.5	31	57.9
Midland	74.5	18.6	49	3.5	28	56.2
Plainsman	97.2	25.1	46	3.7	34	54.5
Redbine 58	87.3	19.5	54	3.3	29	58.6
Westland	82.8	17.0	43	3.6	30	58.1
Variety Av.	88.4	20.9	50	3.1	32	57.2
Average	95.1	20.8	53	3.3	31	57.5

*Two-year data