



HYBRID CORN PERFORMANCE TRIALS IN 1983

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Delta States Area ARS, USDA
in cooperation with**

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HYBRID CORN PERFORMANCE TRIALS IN 1983

Trials are conducted annually in Mississippi to provide farmers, seedsmen, county agents and others with information on the performance of commercially available corn hybrids. Results of the trials are provided for use by corn producers in selecting hybrids suited to their area. New hybrids may be compared with familiar hybrids.

Corn hybrids respond differently to variations in environment, and a given hybrid is not always the best under all conditions. Therefore, it is suggested that corn producers grow two or more good hybrids each year. This practice also reduces the chances for spread of a disease or insect infestation

through the total corn acreage.

The yield of harvestable, good-quality grain (or silage) determines the desirability of corn hybrids. However, attributes other than yield may be extremely important in some instances. For example, resistance to a particular disease should be the prime consideration in areas where the disease occurs. That is, hybrids selected should be from those known to have resistance to diseases found in a geographic area.

All producers and/or distributors of seed corn are eligible to enter hybrids in these tests. Hybrids can be entered for testing in Area 1 (northern Mississippi), Area 2, (southern Mississippi) or

both. The producers designate the hybrids they want entered in each area. Hybrids must be submitted for entry to the Mississippi Agricultural and Forestry Experiment Station by February 15. A nominal fee is charged for each hybrid tested in each area to help defray costs of the tests.

Three or more tests were located in each area. Trials were conducted at nine locations in 1982 (Table 1).

The best guide to the desirability of a hybrid is its performance over a period of years at a number of locations. Therefore, three-year summaries are reported for each area.

Materials and Methods

Hybrids were tested at two population levels. The design was a randomized complete block with three replications. All tests were overplanted and later thinned to 16,000 or 22,000 plants per acre, stand permitting. Each plot consisted of two rows, 38 inches apart

and 200 inches long. Fertilizer was applied by each cooperator as he thought necessary, and weeds were controlled by cultivation and herbicides.

All tests were harvested with a mechanical picker-sheller. Grain harvested from each plot was

weighed, and moisture content was determined. All weights were converted to bushels per acre at 15.5% moisture.

Three or more tests were located in each area. Trials were conducted at nine locations in 1983 (Table 1).

Table 1. Location, number of entries, and dates of planting harvest of hybrid corn performance trials in Mississippi, 1983.

Area and County	Location	No. of entries	Planting date	Harvest date
Area 1				
Marshall	Holly Springs	41	April 27	Sept. 29
Pontotoc	Pontotoc	41	March 29	Sept. 23
Lee	Verona	41	April 27	-----
Washington	Stoneville	41	April 1	Sept. 27
Noxubee	Brooksville	41	May 6	Oct. 6
Oktibbeha	Mississippi State	41	April 13	Oct. 3
Area 2				
Newton	Newton	32	May 4	Sept. 15
Hinds	Raymond	32	April 20	Sept. 14
Pearl River	Poplarville	32	March 9	-----

Results and Discussion

Area 1.

Rainfall amounts were fair to good early in the season, but very limited thereafter. For reasons beyond our control, the test at Verona was abandoned. Stands were not adequate for the high population level at Brooksville; therefore, all six replications were thinned to the low plant population level. Because of field variation, differences among hybrids could not be detected at the low plant population level at Holly Springs and at the high plant population level at Mississippi State University. Therefore, the results are summarized over

four and three locations for the low (Table 2) and high (Table 3) plant population levels.

Average yields of 49, 113, 88 and 121 bu/A were obtained at the low plant population level at Pontotoc, Mississippi State, Brooksville and Stoneville, respectively. Over all locations, yields ranged from 80 to 108 bu/A (Table 2) with a mean of 93 bu/A. Among hybrids tested, root lodging ranged from 1 to 17%, and stalk lodging ranged from 4 to 27%.

Average yields for all hybrids grown at 22,000 plants per acre were 43, 51 and 134 bu/A at Holly

Springs, Pontotoc and Stoneville, respectively. Averaged over the three locations, yields and stalk lodging were 76 bu/A and 20%, respectively (Table 3).

Average yields of the 14 hybrids tested at 16,000 plants per acre for at least three years ranged from 96 to 109 with a mean of 103 bu/A (Table 4). Yields of these same hybrids grown at 22,000 plants per acre (not always at the same locations) ranged from 98.0 to 114 with a mean of 105 bu/A (Table 5).

Table 2. Summary of performance of 41 hybrids grown at four locations (Pontotoc, Mississippi State, Brooksville, and Stoneville) at 16,000 plants per acre in 1983 Mississippi hybrid corn performance trials.

Hybrid No.	Brand	Yield bu/A	Lodging		Ear height cm	Days to mid silk* No.	Mois- ture %	Stand %
			root %	stalk %				
DK-747	DeKalb-Pfizer	108.0	6	11	112	79	13.3	99
3165	Pioneer	106.9	4	8	109	83	13.9	102
JX247	Jacques	103.7	8	11	108	79	12.8	104
8990	Paymaster	103.7	16	5	112	79	12.5	101
21	Coker	102.5	2	11	105	80	13.0	97
RA1604	Ring Around	101.5	9	9	103	80	12.7	101
3187	Pioneer	101.2	6	7	107	76	12.9	102
3147	Pioneer	99.0	10	17	115	83	13.0	103
DK-789	DeKalb-Pfizer	98.9	2	10	112	81	13.6	100
84aa	McCurdy	97.5	5	15	106	77	13.3	101
G-4733	Funk's	96.8	7	11	106	79	13.0	101
8400	Jacques	96.7	7	14	107	79	12.6	104
FFR-905C	Richardson	96.4	5	13	101	79	13.1	95
PX87	Northrup King	95.5	6	13	108	79	12.7	101
RA1502	Ring Around	95.3	2	8	102	75	12.6	102
3192	Pioneer	95.2	5	5	101	76	12.8	96
EXP.8006X	Funk's	95.2	14	4	114	83	13.0	100
RX909	Asgrow	93.8	8	9	98	77	13.5	102
G-4522	Funk's	93.0	4	7	101	76	12.3	98
FFR-848C	Richardson	92.7	7	9	113	78	12.3	105
3184	Pioneer	92.5	9	10	97	78	12.9	98
G-4673A	Funk's	92.3	11	10	110	78	12.5	101
EXP.7007X	Funk's	92.3	6	9	114	81	13.0	103
8150	McCurdy	91.2	11	11	115	79	13.4	101
FFR-955C	Richardson	91.0	15	11	117	82	13.4	101
PX9581	Northrup King	90.8	3	10	101	76	12.6	97
G-4740A	Funk's	89.7	6	12	96	82	12.9	95
RX114	Asgrow	89.7	9	14	110	80	12.9	98
7900	Jacques	89.0	6	10	109	76	12.8	103
G-4734	Funk's	88.3	7	11	113	80	13.6	104
508	Northrup King	87.6	3	14	135	89	14.3	98
FFR-929W	Richardson	87.5	6	13	123	81	13.7	101
XL-394	DeKalb-Pfizer	87.0	7	9	123	84	13.4	103
16	Coker	86.8	1	8	93	74	13.3	97
3369A	Pioneer	86.7	5	14	97	73	12.5	99
FFR-811C	Richardson	86.5	4	4	92	76	13.1	97
PX95	Northrup King	84.7	5	27	121	79	13.0	101
PX9692	Northrup King	83.1	7	19	109	82	13.8	95
XL-71	DeKalb-Pfizer	82.7	2	12	101	77	12.6	103
FFR-726C	Richardson	80.8	6	9	98	75	12.3	99
519	Pioneer	80.3	17	12	118	82	13.1	102
Mean		93.0	7	11	108	79	13.0	100

CV = 14.22%

LSD (.05) = 9.61 bu/A

*Data for Mississippi State only.

Area 2.

Early flooding of the test at Poplarville caused poor stands in sections of most replications. Therefore, we abandoned this test.

At population levels of 16,000 plants per acre, yields ranged from 63 to 106 and 47 to 103 bu/A at Newton and Raymond, respectively. Averaged over the two locations,

yields ranged from 56 to 93 with a mean of 79 bu/A (Table 6). Root and stalk lodging were of minor consequence.

At population levels of 22,000 plants per acre, yields ranged from 61 to 109 and 59 to 104 bu/A at Newton and Raymond, respectively. Averaged over the two locations, yields ranged from 67 to 102 with a

mean of 83 bu/A (Table 7).

Yields of the 14 hybrids tested at 16,000 plants per acre for at least three years ranged from 61 to 81 with a mean of 70 bu/A (Table 8). Yields of these same hybrids grown at 22,000 plants per acre ranged from 59 to 76 with a mean of 67.0 bu/A (Table 9).

Table 3. Summary of performance of 41 hybrids grown at three locations (Holly Springs, Pontotoc, and Stoneville) at 22,000 plants per acre in 1983 Mississippi hybrid corn performance trials.

Hybrid No.	Brand	Yield bu/A	Lodging		Ear height cm.	Days to * Mid silk no.	Mois- ture %	Stand %
			root %	stalk %				
8990	Paymaster	91.6	12	15	126	81	12.5	99
RX909	Asgrow	90.2	15	22	110	78	12.1	95
3165	Pioneer	87.4	8	13	126	81	13.5	99
8400	Jacques	87.1	15	22	122	79	13.1	98
PX9581	Northrup King	86.3	9	16	113	76	13.3	97
G-4522	Funk's	85.9	9	13	114	78	11.4	95
84AA	McCurdy	85.7	12	20	122	78	13.7	95
DK-789	Dekalb-Pfizer	85.1	8	16	125	79	12.4	97
3187	Pioneer	83.8	18	9	109	78	12.6	95
JX247	Jacques	82.7	13	18	117	79	12.6	100
7900	Jacques	82.2	22	20	121	76	12.4	101
RA1502	Ring Around	81.3	7	25	112	78	12.9	99
PX9692	Northrup King	80.9	13	28	121	79	12.2	91
FFR-811C	Richardson	78.8	12	12	104	77	12.4	90
3184	Pioneer	78.4	21	7	107	79	12.0	99
RA1604	Ring Around	78.1	14	18	120	79	13.0	98
G-4673 A	Funk's	77.6	7	21	109	78	12.6	95
G-4740A	Funk's	77.2	13	17	105	84	13.1	91
3192	Pioneer	76.5	6	18	109	78	12.7	91
XL-394	Dekalb-Pfizer	75.2	13	19	137	84	12.9	91
FFR-726C	Richardson	75.0	15	18	105	75	12.4	93
FFR-848C	Richardson	74.9	11	26	117	78	11.9	97
XL-71	Dekalb-Pfizer	74.7	6	16	112	78	12.6	96
21	Coker	73.7	10	13	113	80	12.7	96
16	Coker	73.6	12	17	101	75	11.9	91
PX87	Northrup King	72.9	17	16	116	80	12.5	94
G-4733	Funk's	71.2	17	21	117	80	13.1	97
8150	McCurdy	69.7	11	17	132	80	13.2	93
FFR-905C	Richardson	69.6	15	29	119	80	12.8	93
3369A	Pioneer	69.1	9	30	112	76	12.4	95
EXP.8006X	Funk's	68.5	22	23	127	84	12.3	92
G-4734	Funk's	68.2	13	24	117	80	13.6	95
DK-747	DeKalb-Pfizer	67.9	12	21	130	81	12.8	94
FFR-955C	Richardson	67.6	22	16	126	82	14.2	94
EXP.7007X	Funk's	67.5	15	21	122	81	12.6	98
RX114	Asgrow	67.1	18	28	122	80	12.4	91
519	Pioneer	66.5	21	24	137	82	12.4	97
PX95	Northrup King	64.0	12	31	135	79	12.3	97
FFR-929W	Richardson	62.4	16	25	132	83	12.7	89
508	Northrup King	62.1	5	28	140	90	14.2	81
3147	Pioneer	62.1	18	20	124	82	13.1	94
MEAN		75.6	13	20	119	80	12.7	95

CV = 18.46%

LSD (.05) = 13.10 bu/A

*Data for Mississippi State only.

Table 4. Three-year (1981-83) average performance of 14 hybrids grown in Area I at 16,000 plants per acre in the Mississippi hybrid corn performance trials.

Hybrid No.	Brand	Yield bu/A	Lodging		Ear heights cm.	Days to mid silk no.	Mois- ture %	Stand %
			root %	stalk %				
3147	Pioneer	108.9	4	13	118	84	14.2	98
21	Coker	107.5	1	13	110	81	13.7	98
G-4733	Funk's	107.2	2	6	110	80	14.1	100
84aa	McCurdy	105.9	2	12	106	78	13.7	97
8150	McCurdy	105.9	5	7	117	80	14.0	101
PX87	Northrup King	105.0	2	12	112	80	13.5	101
508	Northrup King	104.3	2	13	134	90	15.2	101
XL-394	Dekalb-Pfizer	103.4	4	9	125	85	14.4	104
RA1604	Ring Around	102.9	3	13	111	80	13.6	98
PX95	Northrup King	100.3	4	16	122	81	13.9	100
3369A	Pioneer	99.6	2	12	101	75	13.2	96
G-4522	Funk's	99.6	2	9	101	76	13.1	96
519	Pioneer	97.3	7	10	124	83	13.7	101
XL-71	DeKalb-Pfizer	95.6	1	8	104	78	13.2	101
MEAN		103.1	3	11	114	81	13.8	99

Table 5. Three-year (1981-83) average performance of 14 hybrids grown in Area I at 22,000 plants per acre in the Mississippi hybrid corn performance trials.

Hybrid No.	Brand	Yield bu/A	Lodging		Ear heights cm	Days to mid silk no.	Mois- ture %	Stand %
			root %	stalk %				
84aa	McCurdy	114.1	4	15	116	79	14.0	96
21	Coker	113.5	4	12	115	81	13.4	97
RA1604	Ring Around	107.9	5	14	118	80	13.9	96
PX 87	Northrup King	107.9	6	14	118	81	13.6	94
8150	McCurdy	106.8	4	13	124	81	14.5	95
G-4522	Funk's	106.7	3	9	107	78	12.6	94
3147	Pioneer	105.8	7	13	124	83	14.6	93
G-4733	Funk's	103.2	6	12	112	81	14.4	97
XL-71	DeKalb-Pfizer	101.9	2	14	109	79	13.7	95
XL-394	DeKalb-Pfizer	101.9	6	13	132	85	14.1	93
508	Northrup King	101.0	2	18	137	91	15.2	91
PX95	Northrup King	99.4	6	18	130	81	13.5	96
519	Pioneer	97.9	9	14	133	83	13.5	95
3369A	Pioneer	98.0	3	20	110	77	13.6	94
MEAN		104.7	5	14	120	81	13.9	94

Table 6. Summary of performance of 32 hybrids grown at two locations (Newton and Raymond) at 16,000 plants per acre in 1983 Mississippi hybrid corn performance trials.

Hybrid No.	Brand	Yield bu/A	Lodging		Ear heights cm	Mois- ture %	Stand %
			root %	stalk %			
DK-747	DeKalb-Pfizer	93.3	0	0	107	15.2	99
77B	Coker	91.3	0	4	130	17.6	100
3147	Pioneer	91.2	0	4	111	15.5	100
3055	Pioneer	91.1	0	4	114	16.5	101
XL-394	DeKalb-Pfizer	87.8	1	3	123	17.2	98
3187	Pioneer	87.5	0	1	109	14.0	100
8172	McCurdy	85.7	0	4	104	15.7	98
12052A	Paymaster	85.5	0	1	108	18.7	100
8951	Paymaster	84.8	0	0	103	15.2	100
8990	Paymaster	83.3	0	2	99	13.4	99
519	Pioneer	82.7	0	1	115	15.3	100
3165	Pioneer	82.3	0	5	103	14.3	98
EXP.8003X	Funk's	81.4	0	3	106	16.0	100
EXP.8006X	Funk's	81.2	0	3	108	16.0	99
3320	Pioneer	80.7	0	3	94	14.3	100
81-37	McCurdy	80.0	0	5	105	15.9	100
G-4734	Funk's	79.2	0	2	102	15.3	99
G-4522	Funk's	79.2	0	4	91	14.4	94
DK-789	DeKalb-Pfizer	79.1	0	7	95	15.0	99
8400	Jacques	78.4	0	2	96	15.0	98
3369A	Pioneer	78.1	0	5	92	14.1	99
RA1502	Ring Around	77.9	0	3	96	14.6	97
PX9692	Northrup King	77.7	0	4	107	16.2	100
JX247	Jacques	77.2	0	4	95	14.8	99
PX9581	Northrup King	74.8	0	4	93	13.8	99
RA1604	Ring Around	72.3	0	3	94	17.9	98
22	Coker	71.6	0	3	97	14.8	97
508	Northrup King	71.2	0	8	128	17.9	99
G-4733	Funk's	71.1	0	3	96	15.8	98
7900	Jacques	65.3	0	3	96	14.7	98
G-4740A	Funk's	62.1	0	9	82	15.2	95
XL-71	DeKalb-Pfizer	55.9	0	2	88	14.6	98
MEAN		79.4	0	3	103	15.5	99

CV = 18.24%

LSD (.05) = 16.72 bu/A

Table 7. Summary of performance of 32 hybrids grown at two locations (Newton and Raymond) at 22,000 plants per acre in 1983 Mississippi Hybrid Corn Performance Trials.

Hybrid	Brand	Yield bu/A	Lodging		Ear height cm	Mois- ture %	Stand %
			root %	stalk %			
8400	Jacques	101.9	0	2	107	14.1	100
3055	Pioneer	100.3	0	3	118	14.8	97
EXP.8003X	Funk's	97.1	0	1	110	16.3	100
12052A	Paymaster	93.4	0	2	114	16.8	95
81-37	McCurdy	92.4	0	3	116	14.5	97
3187	Pioneer	91.3	0	2	110	13.3	96
519	Pioneer	89.6	1	1	121	14.8	98
RA1604	Ring Around	89.3	1	2	106	13.8	99
8172	McCurdy	89.2	0	2	121	15.7	100
3165	Pioneer	88.3	0	4	110	14.9	94
G-4733	Funk's	87.4	0	0	100	17.0	95
DK-747	DeKalb-Pfizer	87.0	0	4	110	15.7	97
EXP.8006X	Funk's	86.5	1	5	109	14.0	96
XL-394	DeKalb-Pfizer	86.4	0	6	119	16.3	96
508	Northrup King	86.3	0	2	133	16.7	96
8951	Paymaster	85.9	0	5	102	13.4	94
8990	Paymaster	82.4	0	1	103	15.2	97
PX9692	Northrup King	82.4	0	4	113	14.0	94
G-4740A	Funk's	82.2	0	5	95	16.1	96
3147	Pioneer	78.0	0	4	115	15.6	96
PX9581	Northrup King	77.7	0	2	94	13.6	96
3369A	Pioneer	77.6	0	2	95	13.4	95
7900	Jacques	77.5	0	1	100	12.9	97
DK-789	Dekalb-Pfizer	76.7	0	7	107	15.2	94
77B	Coker	76.2	0	7	129	18.3	94
JX247	Jacques	76.2	0	3	104	15.4	96
RA1502	Ring Around	76.2	0	2	95	14.5	91
G-4734	Funk's	73.6	0	4	98	15.0	97
3320	Pioneer	71.4	0	4	94	14.0	95
G-4522	Funk's	71.1	2	5	92	14.8	93
22	Coker	70.9	0	5	103	14.9	97
XL-71	DeKalb-Pfizer	67.1	0	5	93	14.5	93
MEAN		83.4	0	3	107	15.0	96

CV = 18.40%

LSD (.05) = 17.72 bu/A

Table 8. Three-year (1981-83) average performance of 14 hybrids grown in Area II at 16,000 plants per acre in the Mississippi Hybrid Corn Performance Trials.

Hybrid No.	Brand	Yield bu/A	Lodging		Ear height cm	Mois- ture %	Stand %
			root %	stalk %			
12052A	Paymaster	80.9	1	1	98	20.0	99
3147	Pioneer	78.2	1	4	97	17.7	96
XL-394	DeKalb-Pfizer	73.5	1	2	107	17.6	96
508	Northrup King	72.8	0	6	116	19.8	98
8951	Paymaster	72.1	1	4	93	17.5	95
77B	Coker	71.8	0	5	105	20.4	93
3320	Pioneer	71.0	1	4	85	16.7	93
519	Pioneer	70.8	1	4	103	16.1	94
G-4522	Funk's	70.3	0	6	84	16.8	91
G-4733	Funk's	68.7	0	3	87	18.3	94
3369A	Pioneer	67.4	1	5	83	16.2	95
RA-1604	Ring Around	64.7	0	7	90	18.0	92
22	Coker	62.8	0	5	92	17.8	95
XL-71	DeKalb-Pfizer	61.0	0	4	85	16.4	99
MEAN		70.4	1	4	95	17.8	95

Table 9. Three-year (1981-83) average performance of 14 hybrids grown in Area II at 22,000 plants per acre in the Mississippi Hybrid Corn Performance Trials.

Hybrid No.	Brand	Yield bu/A	Lodging		Ear height cm	Mois- ture %	Stand %
			root %	stalk %			
G-4733	Funk's	75.9	0	3	93	18.3	91
508	Northrup King	74.0	0	6	114	20.5	83
12052A	Paymaster	72.8	3	4	99	20.5	90
519	Pioneer	71.2	1	4	106	16.2	93
8951	Paymaster	70.1	0	7	92	16.6	93
XL-394	DeKalb-Pfizer	68.7	1	5	103	18.3	88
3147	Pioneer	67.6	0	8	101	17.7	94
77B	Coker	66.9	2	7	115	19.2	90
RA1604	Ring Around	66.8	0	9	96	17.1	92
3320	Pioneer	62.4	0	6	91	16.7	89
3369A	Pioneer	62.3	1	6	86	16.1	88
XL-71	DeKalb-Pfizer	62.0	0	9	86	17.5	86
G-4522	Funk's	59.1	1	7	85	16.1	83
22	Coker	59.0	0	11	92	17.1	85
MEAN		67.0	1	7	97	17.7	90

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In conformity with Title IX of the Education Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973, Dr. T. K. Martin, Vice President, 610 Allen Hall, P. O. Drawer J, Mississippi State, Mississippi 39762, office telephone number 325-3221, has been designated as the responsible employee to coordinate efforts to carry out responsibilities and make investigation of complaints relating to nondiscrimination.