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Mississippi Grain Sorghum Performance Trials 1981

MAFES MISSISSIPPI AGRICULTURAL & FORESTRY EXPERIMENT STATION
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Mississippi Grain Sorghum Performance Trials 1981

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Hybrids designated for entry in the 1981 Mississippi Grain Sorghum Performance Trials, by sponsors.

Hybrid	Brand	Company	Address
7623 7638 7675 7737	Coker Coker Coker Coker	Coker's Pedigreed Seed Co.	Lubbock, Texas
DK-42Y DK-59 DK-64	DeKalb DeKalb DeKalb	DeKalb AgResearch, Inc.	Lubbock, Texas
1225 DR 1330 DR	Helena Helena	Helena Chemical Co.	Memphis, Tennessee
HT 126 DR HT 128 GDR 656 BR 550 G	Hunt-Terra Hunt-Terra McNair McNair	Hunt-Terra Seed Co., Inc.	Lubbock, Texas
G-522 DR G-611 G-522 A G-1516 HW 5245 G-623 GBR	Funk's Funk's Funk's Funk's Funk's Funk's	Louisiana Seed Co.	Plainview, Texas
174	NC ⁺	NC ⁺ Hybrids	Hastings, Nebraska
Savanna 5 2779 2670 2660	NK NK NK NK	Northrup King Co.	Columbus, Mississippi
5550 6658 5514	PAG PAG PAG	PAG Seeds	Plainview, Texas
DR-1035 DR-1085 R 1090	ACCO ACCO ACCO	Paymaster Seeds	Plainview, Texas
B 815 8308 8311	Pioneer Pioneer Pioneer	Pioneer Hi-Bred Inter., Inc.	Tipton, Indiana
Dinero Dinero-R	T-E T-E	Taylor-Evans Seed Co.	Tulia, Texas
W-839 DR W-851 DR W-744 DR	Warner Warner Warner	George Warner Seed Co.	Hereford, Texas

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Trials are conducted annually in Mississippi to provide farmers, seedsmen, extension personnel and other interested persons with information on performance of commercially available grain sorghum hybrids. Results are particularly helpful to grain sorghum producers in selecting hybrids suited to their area.

We tested 38 commercial and experimental hybrids at six locations in Mississippi in 1981 (Table 1). A good test of performance cannot be made if damaging populations of insects are present; therefore, insecticides were applied as needed. See MAFES Bulletins 817 and 836 for methods of control of insects on grain sorghum.

Testing Procedures

A randomized complete block design with three replications was used at all locations. Each plot consisted of two 20 ft-long rows 38 or 40 inches wide. All trials were planted at the rate of 7 lbs of seed

Results

Too few bird-resistant entries were received to permit a separate trial, and both bird-resistant and non-bird-resistant hybrids were tested in one trial at each location. Bird damage was recorded only at Mississippi State and Holly Springs, and damage averaged over the two locations ranged from 0 to 23% (Table 2). Bird damage at Mississippi State and Holly Springs, respectively, averaged 4%

Table 1. Planting dates, fertilizer rates (lbs/A) and insecticides applied in Hybrid Grain Sorghum Performance Trials, by location of trials, Mississippi 1981.

Location	Planting date	Fertilizer rates ¹	Insecticides applied ²
Mississippi State	May 17	25-25-85PP 100-0-0SD	2-diazinon
Holly Springs	June 10	78-78-78PP	3-sevin
Newton	May 6	52-52-52 34-0-0SD	None
Poplarville	May 18	68-0-0-SD	2-diazinon
Raymond	June 15	100-0-0SD	2-sevin
Verona	May 18	0-50-60PP 100-0-0SD	None

¹SD = Sidedressed, PP = Preplant.
²Insecticides applied as labeled.

Resistance to diseases is important in selecting a hybrid for areas where diseases are a problem. Also,

planting at the recommended time helps reduce damage caused by diseases and insects.

per acre. Heads from 13 ft of each plot were hand-harvested, dried and threshed, and grain yield was adjusted to 14% moisture. Data reported have not been adjusted for bird damage, but trials severely

damaged by birds were not harvested. Location of tests, planting dates, fertilizer rates and insecticides applied are presented in Table 1.

and 11% and ranged from 0 to 9% at Mississippi State and 0 to 40% at Holly Springs.

Lodging was negligible at all locations.

Grain yield of 38 hybrids in the 1981 trials ranged from 1140 lbs/acre for Funk's HW 5245 in the Verona trial to 6653 for N.K. Savanna 5 in the Mississippi State trial (Table 3). Yields averaged over all locations ranged from 2808

lbs/acre for Pioneer Brand 8311 to 3669 lbs for N.K. Savanna 5.

Quantity of harvested good-quality grain (or silage) is the best guide to the desirability of sorghum hybrids; however, performance data for any one year may be misleading. Therefore, the two- and three-year average yields of hybrids that have been evaluated for these periods of time also are presented (Tables 4 and 5).

Table 2. Performance of 38 grain sorghum hybrids in Mississippi Grain Sorghum Performance Trials, by hybrid and location, 1981.

Hybrid	Brand	50% ¹	Plant ²	Yellow Sorghum Stunt ³		Disease ⁴	Seed ⁵	Bird ⁶	Test ⁷
		Bloom	height	Plants affected	Effect on growth	rough spot	mold	damage	weight
		(days)	(in.)	(%)	(rating)	(rating)	(rating)	(%)	(#/bu)
Savanna 5	N.K.	59	58	5	0	1	1	1	60.5
B 815	Pioneer	59	54	0	0	1	1	1	56.3
2660	N.K.	58	46	80	2	2	2	10	56.5
174	NC+	60	50	40	0	1	2	10	59.0
G-1516	Funk's	61	48	0	0	1	2	0	56.5
G-522 DR	Funk's	59	46	0	0	1	4	10	56.0
1225 DR	Helena	59	48	60	1	2	3	7	58.0
W-839	Warner	58	46	60	1	2	2	5	57.0
8303	Pioneer	59	47	30	2	1	3	10	57.6
7675	Coker	58	47	40	1	1	3	9	55.8
W 851 DR	Warner	59	47	70	1	2	2	5	57.3
2670	N.K.	58	51	20	2	1	3	10	57.0
R 1090	Acco	59	49	20	1	2	3	9	58.0
6658	P-A-G	58	51	80	1	2	1	8	57.4
7638	Coker	57	44	10	2	1	2	11	57.7
Dinero	T-E	59	46	50	2	1	3	9	56.3
G-522 A	Funk's	58	44	40	2	1	3	10	54.8
DK-59	DeKalb	62	45	10	0	1	3	6	56.4
HT 128 GDR	Hunt	59	50	10	2	1	1	9	60.7
7623	Coker	59	52	70	2	2	2	23	57.5
Dinero R	T-E	58	46	50	2	1	3	11	53.4
1330 DR	Helena	60	53	20	0	1	2	19	58.0
DR 1035	Acco	60	46	60	1	1	3	10	58.0
656 BR	McNair	60	50	0	0	1	1	0	55.4
W-744 DR	Warner	59	49	40	1	1	1	0	59.6
HW 5245	Funk's	64	46	20	1	1	2	4	58.5
DR 1085	Acco	59	47	40	1	1	3	11	57.7
DK-64	DeKalb	59	53	0	0	1	2	11	61.3
HT 126 DR	Hunt	58	48	20	0	1	1	10	58.5
G-611	Funk's	59	50	40	2	1	4	7	56.3
7737	Coker	61	49	30	1	1	3	7	56.6
550 G	McNair	60	47	0	0	1	2	4	55.2
5514	P-A-G	57	45	20	1	2	2	7	58.5
DK-42Y	DeKalb	60	46	20	0	2	2	7	59.8
2779	N.K.	58	44	20	1	2	3	8	54.9
G-623 GBR	Funk's	59	45	10	1	2	2	3	53.5
5550	P-A-G	59	46	70	0	2	2	5	53.6
8311	Pioneer	58	45	20	0	2	2	8	53.1
Mean		59	48	31	0.9	1.3	2.2	7.8	57.1

^{1,2}Average of Holly Springs, Newton and Mississippi State

^{3,4,5}Rated at Meridian, Miss. by Dr. Natale Zummo. Yellow Sorghum Stunt - Plants affected is the percentage of the plants with symptoms. Effect on growth - rating of 0 = No effect, 4 = severe stunting. Rough Spot - rating of 0 = No disease symptoms, 4 = disease killed plants. Seed mold - 0 = No molded seeds, 4 = severe seed mold and weathering.

⁶Average of Holly Springs and Mississippi State

⁷Mississippi State only.

Table 3. Yield of 38 grain sorghum hybrids in Mississippi Grain sorghum Performance Trials, by hybrid and location, 1981.

Hybrid	Brand	Yield						
		Miss. State	Holly Springs	Newton	Poplarville	Raymond	Verona	Mean
-----lbs/acre-----								
Savanna 5	N.K.	6653	1804	2195	3537	4064	3761	3669
B 815	Pioneer	5168	2699	2187	3463	4213	3522	3542
2660	N.K.	5372	2299	1591	3667	4228	3729	3481
174	NC+	5389	2253	1852	3953	4356	2889	3449
G-1516	Funk's	5647	2284	1599	3193	4607	2800	3355
G-522 DR	Funk's	5946	2464	2220	2932	3845	2562	3330
1225 DR	Helena	5507	2334	1942	2842	4271	2795	3282
W-839	Warner	5505	2365	1412	2965	4254	3167	3278
8303	Pioneer	5685	2491	1493	3373	3356	3092	3248
7675	Coker	5482	2402	1599	2867	3948	2976	3212
W 851 DR	Warner	5147	1479	2464	3390	4542	2238	3210
2670	N.K.	5194	2122	1501	3063	3867	3305	3175
R 1090	Acco	5350	2493	1493	2581	3923	3108	3158
6658	P-A-G	5482	2373	2024	2338	3489	3171	3145
7638	Coker	4898	1688	2432	2997	3583	3241	3240
Dinero	T-E	4910	2379	1901	3324	3723	2562	3133
G-522 A	Funk's	5321	2146	1967	2891	3972	2429	3121
DK-59	DeKalb	5592	1893	1370	3242	3626	2960	3114
HT 128 GDR	Hunt	5205	1585	1958	2818	3719	3267	3092
7623	Coker	5139	1705	1681	3398	3826	2742	3082
Dinero R	T-E	4673	2251	2358	3030	3948	2260	3087
1330 DR	Helena	5330	2455	1485	3104	3687	2285	3058
DR 1035	Acco	4895	2043	1738	2434	3768	3469	3058
656 BR	McNair	4593	1778	1338	3880	3960	2785	3056
W-744 DR	Warner	5238	1837	1893	3439	3307	2557	3045
HW 5245	Funk's	5530	2015	2285	3226	4045	1140	3040
DR 1085	Acco	4931	2328	1640	2695	3441	3143	3030
DK-64	DeKalb	5558	2045	1657	3071	4140	1565	3006
HT 126 DR	Hunt	4777	2042	2097	3537	3049	2451	2992
G-611	Funk's	5456	2063	1314	2573	3687	2800	2982
7737	Coker	5321	1790	1510	2818	4556	1712	2951
550 G	McNair	4960	1913	1363	3030	3430	3008	2947
5514	P-A-G	4361	1816	1999	2769	3601	3066	2935
DK-42Y	DeKalb	5143	1831	2040	2883	3390	2313	2933
2779	N.K.	4687	2455	1248	2156	3527	3432	2918
G-623 GBR	Funk's	5071	2048	1893	3357	3062	1846	2880
5550	P-A-G	4644	2334	1991	3234	3577	1437	2870
8311	Pioneer	4572	1763	1591	3087	3233	2599	2808
Mean		5220	2107	1798	3083	3822	2750	3130
LSD (.05)		718	443	819	1156	846	1147	--
CV		8.5%	12.9%	28.0%	23.1%	13.6%	25.7%	--

Table 4. Two-year average (1980-81) yield of 13 grain sorghum hybrids in Mississippi Grain Sorghum Performance Trials, by hybrid and location of trials.

Hybrid	Brand	Yield				Mean
		Mississippi State	Newton	Raymond	Verona	
-----lbs/acre-----						
Savanna 5*	N.K.	5549	2362	5475	3981	4342
G-522 A	Funk's	5094	2021	5827	----	4314
Dinero	T-E	4612	2286	5884	----	4261
DK-64	DeKalb	4385	2620	5726	----	4244
B 815*	Pioneer	5111	2220	5537	3749	4154
7675	Coker	5008	1485	5442	----	3978
G-611	Funk's	4724	1717	5464	----	3968
2670	N.K.	4212	2108	5474	----	3931
7638	Coker	4040	2431	5266	----	3912
G-522 DR	Funk's	5286	1850	5769	2625	3883
7737	Coker	4837	2009	6243	2396	3871
2779	N.K.	3923	1662	5227	----	3604
8311	Pioneer	4010	1791	4900	2868	3392
Mean		4676	2043	5556	3124	3989

*Bird-resistant hybrid

Table 5. Three-year average (1979-81) yield of 10 grain sorghum hybrids in Mississippi Grain Sorghum Performance Trials, by hybrid and location of trials.

Hybrid	Brand	Yield				Mean
		Mississippi State	Newton	Raymond	Verona	
-----lbs/acre-----						
Savanna 5*	N.K.	5084	4199	4659	4647	
G-522 DR	Funk's	5030	3785	-----	4408	
7737	Coker	4979	3791	-----	4385	
B 815*	Pioneer	4686	3634	4764	4361	
7675	Coker	5084	3033	-----	4059	
Dinero	T-E	4730	3319	-----	4025	
DK-64	DeKalb	4523	3514	-----	4019	
7638	Coker	3941	3676	-----	3809	
8311	Pioneer	3927	3128	-----	3528	
2779	N.K.	3843	2769	-----	3306	
Mean		4583	3485	4712	4055	

*Bird-resistant hybrid

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