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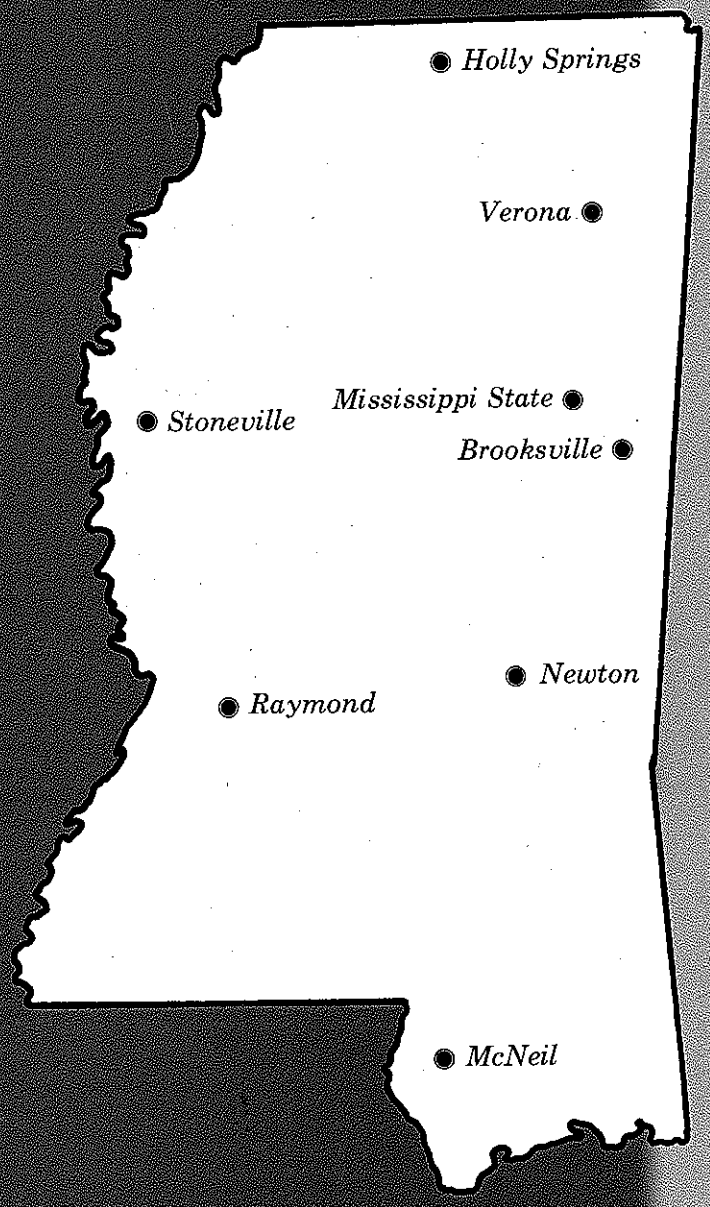

Mississippi Grain Sorghum Performance Trials in 1978

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MAFES MISSISSIPPI AGRICULTURAL & FORESTRY EXPERIMENT STATION
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Mississippi Agricultural and Forestry Experiment Station
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Mississippi Grain Sorghum Performance Trials in 1978

Trials are conducted annually in Mississippi to provide farmers, seedsmen, county agents, 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 52 commercial and experimental hybrids at seven locations in Mississippi in 1978 (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.

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.

Quantity of harvested good-quality grain (or silage) is the best guide to the desirability of sorghum hybrids. Performance data for each hybrid tested in 1978 are presented in this report; 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.

Table 1. Planting dates, fertilizer rates (lbs/A), and insecticides applied, Hybrid Grain Sorghum Performance Trials, by location of trials, Mississippi, 1978.

Location	Planting date	Fertilizer rates[1]	Insecticides applied[2]
Mississippi State	April 25	40-40-40 PP 125-0-0 SD	3-diazinon
Brooksville	May 22	40-40-40 PP 150-0-0 SD	None
Verona	April 27	45-45-45 PP 100-0-0 SD	None
Newton	May 25	65-65-65 PP	None
McNeil	June 20	68-60-100 PP 34-0-0 SD	2-diazinon
Holly Springs	May 22	60-60-60 PP 60-0-0 SD	2-sevin
Raymond	May 2	0-72-72 PP 100-0-0 SD	None

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

Testing Procedures

A randomized complete block design with four replications was used at all locations. Each plot consisted of two rows 38 or 40 inches wide and 20 ft long. All trials were planted at the rate of 7 lbs of seed 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 with average bird damage of more than 25% were not harvested. Planting dates, fertilizer rates and insecticides applied are presented in Table 1.

Table 2. Performance of 40 non-bird-resistant hybrids in Mississippi Grain Sorghum Performance Trials, by location, 1978.

Hybrid	50% Bloom[1]	Plant height[2]	Fusarium[3]	Anthracnose[3]	Bird damage[4]	Test weight[5]	Yield: Miss. State	Brooksville	Verona	Newton	McNeil	Holly Springs	Raymond	Mean
	(days)	(in)	------rating------		(%)	(lbs/bu)	----------lbs/A----------							
T-E Dinero	69	39	1	0	6	58.8	6313	4125	4190	1586	3031	5445	5842	4362
Paymaster R 1090	68	43	0	2	0	58.4	6397	4257	3258	2432	3292	5034	5427	4300
Coker 7675	70	41	0	0	3	58.0	6623	3755	2968	2122	2809	5920	5293	4213
T.T. Two 70-D	70	42	1	0	6	59.6	6043	3430	4703	2058	2625	5065	5210	4162
Coker 7638	68	39	2	0	3	59.0	6648	2968	3704	2256	2693	5540	5313	4160
Funk's G522DR	69	40	2	0	2	58.2	6201	3868	3737	1623	2507	5952	5157	4149
Funk's G622	68	39	0	3	5	58.5	5850	3816	3944	2113	3091	4464	5536	4116
Paymaster DR 1085	69	41	2	0	6	59.3	6233	3299	3985	1918	2475	6015	4669	4085
Paymaster R 1029-A	70	41	1	0	11	58.2	4745	3941	3942	2256	2706	5445	5507	4077
Warner W-839 DR	68	41	1	0	5	59.0	6561	3430	4176	1601	2685	5318	4756	4075
T.T. Two 62yG	69	41	0	1	6	58.9	5643	3127	3937	2076	2856	5318	5408	4052
Asgrow Topaz	70	40	0	0	5	59.6	6677	3464	4185	1029	2813	5034	5150	4050
Wilstar 1225	68	39	0	0	4	58.0	5714	3779	4669	1811	2112	5382	4736	4029
Wilstar 1425	70	43	2	0	6	55.6	6558	3782	3338	1309	1467	5698	5904	4008
Funk's G522	68	38	0	2	4	57.7	6162	3837	3182	1729	2830	5540	4741	4003
Pioneer brand 8225	69	44	0	0	14	59.4	5360	3611	3963	2161	2304	5382	5209	3999
DeKalb C-42y+	70	42	0	0	11	57.3	5840	4134	3540	1851	2424	4495	5664	3993
DeKalb F-67	70	40	0	3	11	57.0	5563	3684	3990	1729	2813	4527	5408	3959
ML 135	68	40	2	0	8	58.6	6098	3391	3430	1428	3023	4812	5396	3940
McNair 650	69	39	0	0	6	58.0	5608	3626	3332	1635	2937	5192	5203	3933
Pioneer brand 8311	69	41	0	0	6	58.7	5424	3045	3420	2174	2543	6205	4604	3916
Paymaster R 109A	68	40	1	0	6	58.2	5186	3681	3194	2262	2907	4970	5042	3892
DeKalb D-59+	70	42	0	0	13	57.3	5489	3660	3873	1822	2505	4590	5044	3855
Coker 7707	70	44	1	0	9	57.8	5147	3017	3495	1598	2706	5287	5440	3813
T-E Y-101-D	69	41	1	0	8	59.7	5647	3189	3670	1989	2719	4337	5035	3798
Wilstar 1330	69	46	2	0	17	56.6	4258	3896	3707	1355	3099	5318	4845	3783
Paymaster DR 1035	69	41	2	0	5	59.0	5360	3840	2787	2222	2642	5255	4238	3763
Funk's HW 2215	70	46	2	0	8	58.1	4484	3929	4428	1157	2591	4115	5627	3762
RA 808gb	71	42	2	0	7	57.4	4390	3440	3762	1540	2659	5287	4984	3723
Funk's G642GBR	72	43	1	0	8	55.9	6104	3388	2763	1406	1668	5382	5248	3708
T-E Y-101-R	69	39	1	0	6	58.8	4893	3176	3242	2125	2881	4812	4777	3701
N.K. brand 2884	69	44	0	0	10	57.4	5263	2846	3646	1741	2736	4242	5170	3663
Funk's G622GBR	69	38	2	0	7	57.8	4857	3235	3539	2143	2971	3989	4825	3651
N.K. brand 2779	67	38	0	0	6	58.6	5334	3085	3452	2320	2642	4147	4495	3639
N.K. brand 2650	70	46	0	0	7	58.4	5447	2956	3345	1991	1868	5192	4638	3634
Coker 7605	68	42	0	2	5	58.9	6098	1952	3674	1717	2663	4432	4730	3609
RA 811Agb	71	41	1	0	11	57.6	4803	3403	3661	1206	2163	4654	5098	3570
Pioneer brand 8272	70	39	1	0	9	56.0	5231	2797	4418	1650	2101	3641	4583	3489
Funk's HW 2195	72	38	0	0	5	59.4	5437	3813	3964	1333	2681	2343	4678	3464
N.K. brand 2266	68	44	1	0	8	59.5	5212	2662	2875	1900	1868	4495	3131	3163
Mean	69.2	41.2	0.8	0.3	7.2	58.2	5623	3458	3677	1809	2603	4957	5044	3882
L.S.D. (.05)							1034	520	1310	796	523	1153	1046	---
C.V.							13.3%	10.8%	25.7%	31.7%	14.5%	16.8%	15.0%	---

[1]Average of Mississippi State, Verona, Newton, and Raymond.
[2]Average of Mississippi State, Newton, Holly Springs, and Raymond.
[3]Average of Meridian, MS. Rating of 0 = no disease symptoms, 4 = disease killed plants.
[4]Average of Mississippi State and Verona.
[5]Average of Mississippi State, Brooksville, Verona, and Newton.

Table 3. Performance of 12 bird-resistant hybrids in Mississippi Grain Sorghum Performance Trials, by location 1978.

Hybrid	50% Bloom[1]	Plant height[2]	Fusarium[3]	Anthracnose[3]	Test weight[4]	Yield: Miss. State	Brooksville	Verona	Newton	McNeil	Holly Springs	Raymond	Mean
	(days)	(in)	------rating------		(lbs/bu)	----------lbs/A----------							
Paymaster BR-Y93	70	42	0	2	57.7	3759	4979	5025	2856	2920	4527	5902	4281
N.K. Savanna 5	70	45	2	0	58.6	4186	4407	5346	2353	3106	3894	6298	4227
Coker 7681BR	70	39	2	0	57.8	3907	3905	5336	2441	2905	3862	6107	4066
T.T. Two 75BRG	70	41	2	0	56.2	3756	4082	4804	2265	3104	4021	6267	4043
Pioneer brand B815	70	43	1	0	58.5	3150	4260	5471	2448	2740	3609	5896	3939
Funk's G516BR	71	39	2	0	56.4	3313	4006	4561	2280	2663	4084	6323	3890
GSA 1334BR	71	40	2	2	56.8	3650	4373	4883	2119	2851	3609	5660	3878
Warner W-744DR	70	39	1	1	58.3	3943	4474	4408	1942	3232	2944	5820	3823
DeKalb BR-65+	71	43	2	0	56.0	3769	3632	4330	2490	2487	3641	5435	3683
DeKalb BR-45+	69	39	2	0	59.2	3508	3629	3124	2758	2569	4749	5241	3654
Coker 7652BR	69	39	2	0	57.4	3791	3357	4217	2058	2407	4115	5484	3633
DeKalb BR-64	70	46	2	0	58.6	3153	3905	4107	2426	2462	3324	4971	3478
Mean	70.1	41.2	1.7	0.4	57.6	3657	4084	4634	2370	2787	3865	5784	3883
L.S.D. (.05)						953	811	1199	828	474	882	904	---
C.V.						18.8%	14.3%	18.7%	25.2%	12.3%	16.5%	11.3%	

[1]Average of Mississippi State, Verona, Newton, and Raymond, MS.
[2]Average of Mississippi State, Newton, Holly Springs and Raymond, MS.
[3]Average of Meridian, MS. Rating of 0 = no disease symptoms - 4 = disease killed plants.
[4]Average of Mississippi State, Brooksville, Verona and Newton, MS.

Results

Hybrids were separated into two trials at each location, 40 non-bird-resistant hybrids in one trial (Table 2) and 12 bird-resistant hybrids in the other (Table 3). Bird damage to the non-bird-resistant hybrids was appreciable only at Mississippi State and Verona, probably due to the early planting date at these two locations. Bird damage of the non-bird-resistant hybrids ranged from 0 to 14% at Mississippi State, from 1 to 25% at Verona and averaged 7% for both locations.

Lodging was negligible at all locations, probably due to the reduced plant height resulting from drought.

Grain yield of the 40 non-bird-resistant hybrids in the 1978 trials ranged from 1029 lbs per acre for Asgrow Topaz in the Newton trial to 6677 for Asgrow Topaz in the Mississippi State trial. Yields of the 40 hybrids averaged 3882 lbs per acre for the seven test locations (Table 2).

Grain yield of the 12 bird-resistant hybrids in the 1978 trials ranged from 1942 lbs per acre for Warner W-744DR in the Newton trial to 6323 lbs for Funk's G516BR in the Raymond trial. Yield of the 12 hybrids averaged 3883 lbs per acre for the seven test locations (Table 3). Yields of all hybrids in the state were reduced by prolonged drought.

Three-year average yields of non-bird-resistant and bird-resistant hybrids are reported in Tables 4 and 5, respectively. Two-year average yields of both classes of hybrids are reported in Tables 6 and 7, respectively.

Table 4. Yield of 14 non-bird-resistant hybrids in Mississippi Grain Sorghum Performance Trials, by location of trials, average for three years, 1976-78.

Hybrid	Locations		Mean
	McNeil	Raymond	
	----------lbs/A----------		
GSA ML135	4175	4673	4424
Wilstar 1425	3592	4862	4227
Funk's G522	3872	4376	4124
Paymaster R 1090	3854	4374	4114
Pioneer brand 8311	3837	4359	4098
Ringaround 808gb	3748	4416	4082
Paymaster R 109A	3596	4543	4070
Funk's G622GBR	3873	4258	4066
Paymaster R 1029-A	3871	4259	4065
T. T. Two 62yG	3755	4064	3910
Wilstar 1225	3542	4234	3888
Wilstar 1330	3963	3700	3832
T-E Y-101-R	3568	4017	3792
Paymaster DR 1085	3771	3807	3789
Mean	3787	4282	4034

Table 5. Yield of eight bird-resistant hybrids in Mississippi Grain Sorghum Performance Trials, by location of trials, average for three years, 1976-78.

Hybrid	Locations				Mean
	Miss. State	Verona	McNeil	Raymond	
	----------lbs/A----------				
N. K. Savanna 5	4874	6137	4730	5157	5224
Paymaster BR-Y93	5433	5861	4486	4733	5128
GSA 1334BR	5344	5846	4518	4690	5100
Pioneer brand B815	4614	6197	4158	4970	4985
Funk's G516BR	5214	5241	4404	4698	4889
Warner W-744DR	5044	5568	4170	4691	4868
DeKalb BR-65+	4960	5430	4056	4411	4714
DeKalb BR-64	5009	5322	4248	3861	4610
Mean	5062	5700	4346	4651	4940

Table 6. Yield of 22 non-bird-resistant hybrids in Mississippi Grain Sorghum Performance Trials, by location of trials, average for two years, 1977-78.

Hybrid	Locations						
	Miss. State	Verona	Newton	McNeil	Holly Springs	Raymond	Mean
	lbs/A						
Paymaster R 1090	5646	4322	2626	3094	5183	4673	4257
Funk's G522DR	5514	4731	2228	2936	4838	4508	4126
Warner W-839DR	5715	4188	2076	3414	4247	4210	3975
Wilstar 1425	5617	4180	2030	2100	4983	4924	3972
Funk's G522	5466	4020	2199	2963	4962	4216	3971
GSA ML135	5458	3642	2032	3280	4768	4595	3962
McNair 650	5308	4328	2284	3464	3850	4454	3948
Paymaster R 1029-A	4440	4038	2458	3052	5086	4500	3929
Pioneer brand 8311	4692	4111	2326	2878	5308	4032	3891
T. T. Two 62yG	5052	4438	2453	2624	4581	4058	3868
Paymaster R 109A	4897	3818	2270	3049	4750	4418	3867
Wilstar 1225	5033	4818	2184	2263	4716	4116	3855
Paymaster DR 1085	5479	4003	2394	2688	4577	3922	3844
Funk's G622GBR	4420	4015	2518	2890	4070	4280	3699
T-E Y-101-R	4549	3758	2450	2986	4282	4050	3679
DeKalb C-42y+	4762	3375	2203	2786	4020	4862	3668
Pioneer brand 8272	4628	4537	2044	2372	4265	4156	3667
Ringaround 808gb	4345	3868	2214	2655	4502	4302	3648
Pioneer brand 8225	3931	3454	2652	2530	4996	4321	3647
Funk's G642GBR	5356	3518	1916	2123	4432	4340	3614
N.K. brand 2779	4775	4096	2328	2517	3734	3864	3552
Wilstar 1330	4324	3252	1946	2929	4234	4505	3532
Mean	4973	4023	2265	2903	4563	4332	3843

Table 7. Yield of nine bird-resistant hybrids in Mississippi Grain Sorghum Performance Trials, by location of trials, average for two years, 1977-78.

Hybrid	Locations						
	Miss. State	Verona	Newton	McNeil	Holly Springs	Raymond	Mean
	lbs/A						
N. K. Savanna 5	4274	5818	3144	3744	3864	5054	4316
Paymaster BR-Y93	4480	5064	2458	3372	4948	4387	4118
Pioneer brand B815	3653	5934	2863	3158	4069	4492	4028
GSA 1334 BR	4344	5420	2546	3099	4204	4426	4006
Funk's G516BR	4200	4526	2536	3167	4234	4500	3860
Warner W-744DR	4118	5024	2336	3310	3850	4487	3854
T. T. Two 75BRG	4080	5228	2304	3028	3860	4316	3803
DeKalb BR-65+	3966	5085	2434	2809	3548	4406	3708
DeKalb BR-64	4060	5050	2822	3228	2786	3546	3582
Mean	4131	5239	2605	3213	3929	4402	3920

Hybrids Designated for Entry in the 1978 Mississippi Grain Sorghum Performance Trials, by Sponsers.

Hybrid	Company	Address
Asgrow Topaz	Asgrow Seed Co.	Des Moines, Ia.
Coker 7605 Coker 7638 Coker 7675 Coker 7707 Coker 7652BR Coker 7681BR	Coker's Pedigreed Seed Co.	Lubbock, Tex.
DeKalb C-42y+ DeKalb D-59+ DeKalb F-67 DeKalb BR-45+ DeKalb BR-64 DeKalb BR-65+	DeKalb AgResearch, Inc.	Lubbock, Tex.
Funk's HW 2215 Funk's G522 Funk's G516BR Funk's G622GBR Funk's G642GBR Funk's G622 Funk's G522DR Funk's HW 2195	Louisiana Seed Co., Inc.	Plainview, Tex.
Growers ML 135 Growers GSA 1334BR	Growers Seed Assn.	Lubbock, Tex.
McNair 650	McNair Seed Co.	Laurinburg, N. C.
N.K. brand 2884 N.K. Savanna 5 N.K. brand 2650 N.K. brand 2779 N.K. brand 2266	Northrup, King & Co.	Richardson, Tex.
Paymaster BR-Y93 Paymaster R 1029-A Paymaster DR 1035 Paymaster DR 1085 Paymaster R 1090 Paymaster R 109A	ACCO Seed Co.	Plainview, Tex.
Pioneer brand B815 Pioneer brand 8311 Pioneer brand 8225 Pioneer brand 8272	Pioneer Hi-Bred, Inc.	Tipton, Ind.
Ring Around RA 808gb Ring Around RA 811Agb	Ring Around Products, Inc.	Plainview, Tex.
T-E Y-101-D T-E Y-101-R T-E Dinero	Taylor-Evans Seed Co.	Tulia, Tex.
T.T. Two 75BRG T.T. Two 62yG T.T. Two 70-D	Texas Triumph Seed Co., Inc.	Ralls, Tex.

(continued)

Continued. **Hybrids Designated for Entry in the 1978 Mississippi Grain Sorghum Performance Trials, by Sponsors.**

Hybrid	Company	Address
Warner W-744DR Warner W-839DR	Warner Seed Co., Inc.	Hereford, Tex.
Wilstar 1225 Wilstar 1330 Wilstar 1425	Helena Chemical Co.	Memphis, Tenn.

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