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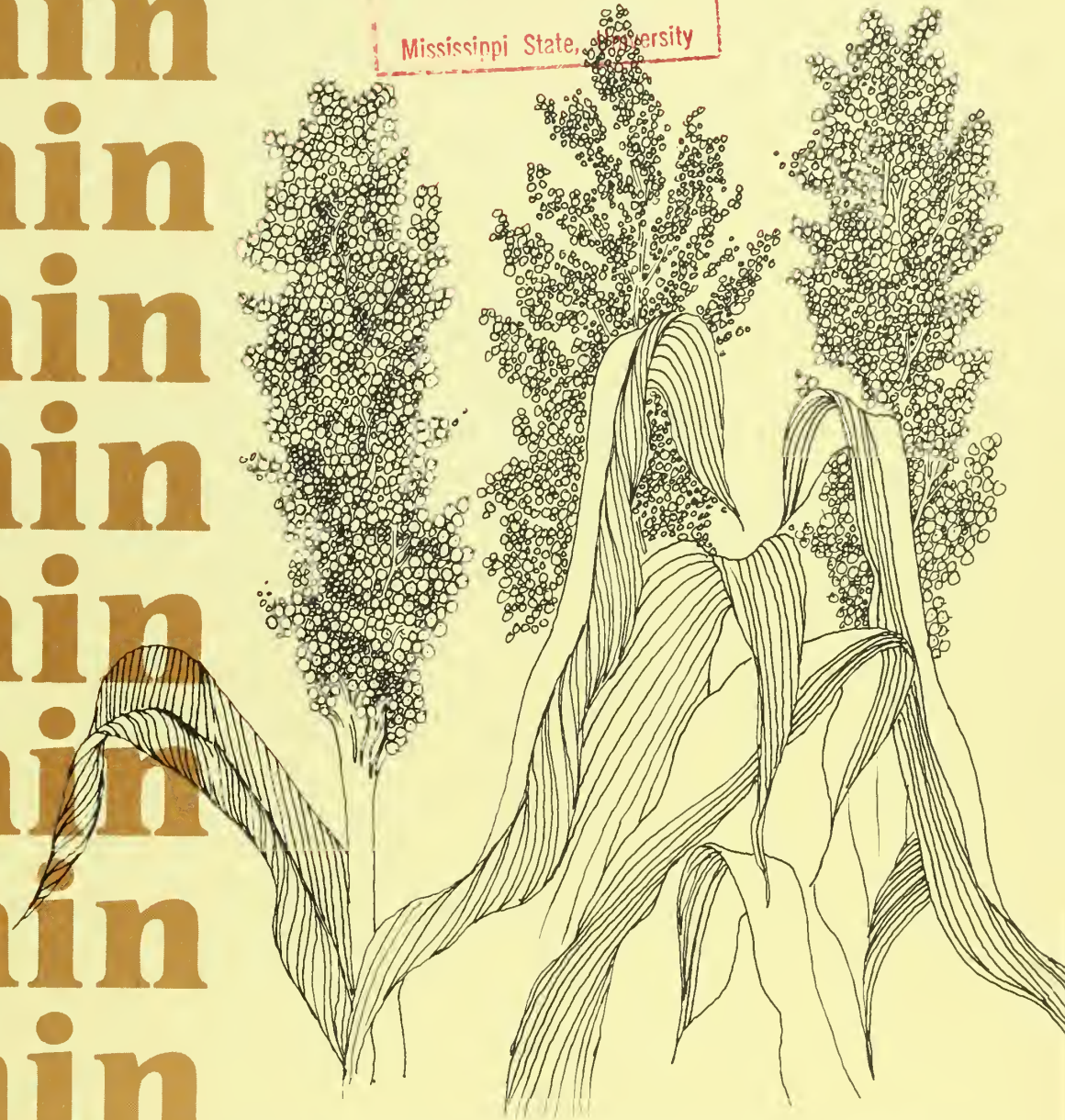
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Mississippi Grain Sorghum Performance Trials 1981

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

Mississippi Grain Sorghum Performance Trials 1981

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 | 0-60-60PP 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 Bloom | Plant ² height | Yellow Sorghum Stunt ³ | | Disease ⁴ | | Bird ⁶ damage | Test ⁷ weight |
|------------|---------|---------------------------|------------------------------|-----------------------------------|---------------------|----------------------|---------------------------|-----------------------------|-----------------------------|
| | | | | Plants affected | Effect on growth | rough spot | Seed ⁵ mold | | |
| | | (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