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# 1980 Grain Sorghum Performance Trials

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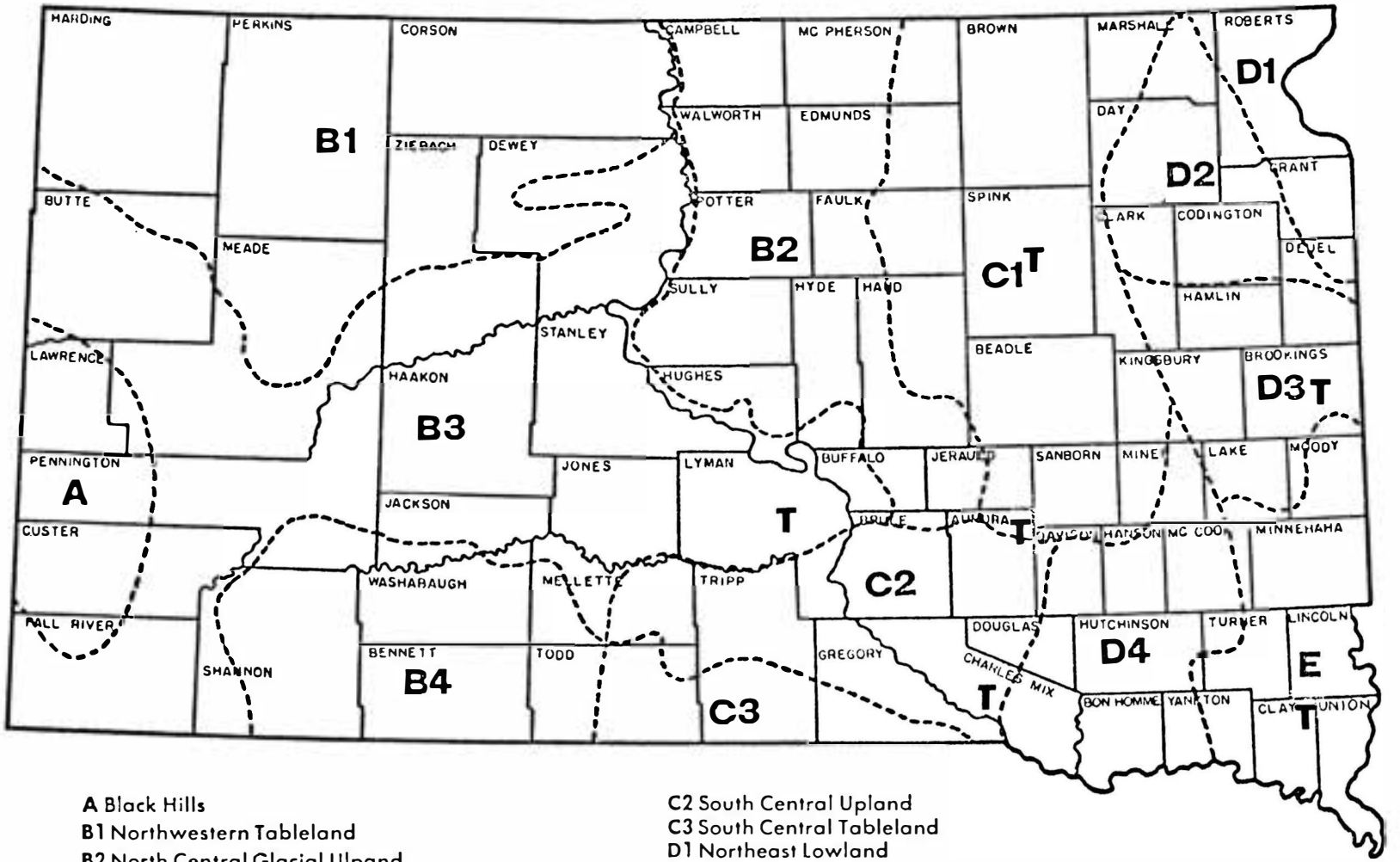
# CROP ADAPTATION AREAS OF

# SOUTH DAKOTA

**T** - INDICATES SITE OF 1980 GRAIN SORGHUM PERFORMANCE TRIAL




**A** Black Hills
**B1** Northwestern Tableland
**B2** North Central Glacial Ulpand
**B3** Pierre Plain
**B4** Southwestern Tableland
**C1** Northern James Valley
**C2** South Central Upland
**C3** South Central Tableland
**D1** Northeast Lowland
**D2** Northern Prairie Coteau
**D3** Central Prairie Coteau
**D4** Southern James Flatland
**E** Southeast Prairie Upland

# 1980 Grain Sorghum Performance Trials

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The relative performance of grain sorghum cultivars grown under similar environmental conditions is evaluated in this report for the 1980 crop season. Performance records of all entries harvested in 1980 and available two through five-year averages are presented. The trials were conducted under the Plant Science Department program in Crop Performance Testing, Agricultural Experiment Station, South Dakota State University.

## Location of the 1980 Trials

For adequate performance evaluation, all entries must be grown under similar environmental conditions. Crop adaptation areas in which the trials are conducted are based upon soil type, elevation, temperature, rainfall and other physical differences. The exact location of each trial, row spacing and dates of seeding and harvesting are included in Table 1. Soil classification and data from soil samples taken, cultural practices and fertilizer applications are shown in Table 2.

## Weather and Climatic Conditions

Climatic data for the 1980 grain sorghum year (Table 3) are based upon U.S. Monthly Climatological Data. Data is not available from the Geddes and Letcher sites so information from Armour, a reporting station between the two sites, is included for reference. Precipitation was below normal at all sites except Brookings from May until about August 10. Seed germination varied from location to location as the seedbed was frequently quite loose and dry. It was so dry during May that the cooperators delayed seeding at Kennebec and Letcher until they had received adequate precipitation to insure germination.

Temperatures during June, July and August were above 90°F for many days at a time at these locations (Table 3). Stands were thin at Geddes, Kennebec and Letcher and plants were short and somewhat stunted by the time the beneficial rains occurred in August. Depending upon the stage of maturity some of the hybrids put forth new tillers or shoots and more heads formed. These were often 8-10 inches higher than the original heads and matured only because a killing frost did not occur until early October. These additional shoots caused additional variability to trials already adversely affected by the dry, hot weather.

Despite the lack of moisture and abnormally high temperatures, the yields produced by adapted hybrids were good, and, the later maturing hybrids did very

The assistance of the following individuals is acknowledged: G. W. Erion and Q. S. Kingsley of the Plant Science Department; farmer-cooperators William Fijala, Harlan Halverson and Oscar Thompson; and Station personnel A. C. Dittman, B. E. Lawrensen, Herb Lund, Lucian Edler and Kevin Kirby.

Table 1. Location of Trials, Dates of Seeding and Harvesting of Grain Sorghum Performance Trials, South Dakota, 1980

| County | Location and Post Office | Row Spacing | Dates Seeded | Dates Harvested |
|---|---|---|---|---|
| Aurora | Oscar Thompson Farm, Letcher | 36" | June 4 | Sept. 25 |
| Brookings | Plant Science Farm, Brookings | 36" | May 23 | Oct. 10 |
| Charles Mix | William Fijala Farm, Geddes | 40" | May 19 | Sept. 25 |
| Clay | Southeast Experiment Farm, Beresford | 36" | May 22 | Sept. 23 |
| Lyman | Harlon Halverson Farm, Kennebec | 31" | June 9 | Sept. 24 |
| Spink | James Valley Research Farm, Redfield | 36" | May 28 | Oct. 7 |

well. This was aided by August rains, a warm, dry September and the lack of killing temperatures until mid-October. The test weight and seed quality of most hybrids was very good. The trials at Centerville produced quite well and show the ability of sorghums to recover from an early hailstorm that badly damaged corn and soybean fields in adjacent plot areas. The roots put forth new tillers and the plants caught up with the season. With the aid of warmer temperatures, the sorghum headed only about 7-10 days later than normal. The delay was beneficial for the 1980 crop year as a second hailstorm in late August found most of the kernels still in a dough stage and most hybrids were still able to produce over 2500 lb/A (45 B/A) of good quality grain (Table 11). The very early varieties suffered the most shattering loss from the hailstorm.

## Hybrid Entry Procedure

Only grain sorghums offered for sale in South Dakota or being produced for 1981 distribution were eligible for entry. A closed-pedigree hybrid was entered by the name and number under which it was sold by the parent company. All entries maintained a minimum laboratory germination of 80% as required by the South Dakota Certification Standards. A nominal fee was charged for each entry in each area, except for the grain sorghum entries developed by the State and Federal Experiment Stations and entered by the South Dakota Agricultural Experiment Station.

Table 2. Soil sample analysis and cultural practices of 1980 Grain Sorghum Sites

| County and crop adaptation areas | Soil Classification | Laboratory analysis Org. mat. % | P lb./A | K lb./A | pH | Field Preparations Methods | Fert. lb/A N | P | K |
|---|---|---|---|---|---|---|---|---|---|
| Lyman, B2 | Pierre clay | 2.6 | 10 | 1000 | 7.1 | Sweeps fall & spring, Gr. stubble | | | |
| Aurora, C1 | Hou. Pros. SiL | 2.3 | 36 | 700 | 6.5 | Disked and harrowed | | | |
| Spink, C1(irr.) | Beotia Si Cl | 3.2 | 34 | 760 | 7.3 | Plowed and disked | 80 | 40 | 0 |
| Chas. Mix, C2 | Highmore SiCl | 3.8 | 200 | 1000 | 7.1 | Plowed and disked | 26 | 13 | 6 |
| Clay, E | Egan SiCl | 3.4 | 32 | 730 | 6.8 | Plowed and disked | 80 | 40 | 20 |

Table 3. Temperature and Precipitation Data for the 1980 Grain Sorghum Growing Season in South Dakota[a]

| | | Temperature, Degrees F | | | | Precipitation, inches | | |
|---|---|---|---|---|---|---|---|---|
| District | Month | Mean av. | Departure from normal | Av. depar. ture | Days 90°+ | Month total | Departure from normal | Total departure |
| Armour | May | 60.9 | +1.1 | | 0 | 1.41 | -1.47 | |
| | June | 72.3 | +3.2 | | 10 | 2.45 | -1.82 | |
| C2 | July | 79.5 | +4.0 | | 25 | 0.64 | -2.05 | |
| | August | 74.4 | +0.3 | | 14 | 5.95 | +3.20 | |
| | Sept. | 66.2 | +2.9 | | 6 | 0.18 | -2.06 | |
| | Oct. | 49.5 | -2.8 | +1.5 | 2 | 1.99 | +0.53 | -3.67 |
| First freeze | | 10/3 - 27° | | | | 12.62 | | |
| Brookings | May | 56.8 | +0.6 | | 0 | 1.09 | -2.11 | |
| 2 NE | June | 65.7 | 0.0 | | 0 | 9.28 | +4.70 | |
| | July | 70.4 | -0.7 | | 6 | 2.58 | -0.26 | |
| D3 | August | 67.9 | -1.7 | | 1 | 3.93 | +1.07 | |
| | Sept. | 59.7 | +0.7 | | 2 | 0.42 | -1.82 | |
| | Oct. | 43.9 | -4.8 | -0.9 | 0 | 0.84 | -0.63 | +0.95 |
| First freeze | | 9/26 - 27° | | | | 18.14 | | |
| Centerville | May | 60.5 | -0.2 | | 2 | 2.17 | -1.31 | |
| 6 SE | June | 69.3 | -0.9 | | 5 | 2.12 | -2.58 | |
| | July | 75.8 | +0.5 | | 19 | 1.25 | -1.86 | |
| E | August | 71.6 | -2.3 | | 6 | 6.49 | +3.45 | |
| | Sept. | 62.7 | -1.0 | | 4 | 0.86 | -1.82 | |
| | Oct. | 45.8 | -7.4 | -1.9 | - | 0.18 | -0.47 | -4.59 |
| First freeze | | 10/3 - 25° | | | | 14.07 | | |
| Redfield | May | 58.6 | [b] | | 2 | 1.85 | [b] | |
| 6 E | June | 66.0 | | | 2 | 4.74 | | |
| | July | 73.2 | | | 14 | 3.20 | | |
| C1(irr.) | August | 69.7 | | | 10 | 3.88 | | |
| | Sept. | 60.6 | | | 2 | 0.50 | | |
| | Oct. | 45.6 | | | 1 | 1.19 | | |
| First freeze | | 10/3 - 30° | | | | 15.36 | | |
| Kennebec | May | 62.4 | +4.3 | | 6 | 0.66 | -2.03 | |
| | June | 73.3 | +5.8 | | 14 | 3.36 | -0.17 | |
| B3 | July | 79.7 | +4.8 | | 28 | 1.05 | -1.00 | |
| | August | 76.2 | +2.3 | | 18 | 4.15 | +1.81 | |
| | Sept. | 65.5 | +2.7 | | 7 | 0.17 | -1.35 | |
| | Oct. | 49.5 | -1.7 | +3.1 | 3 | 3.26 | +2.33 | -0.51 |
| First freeze | | 10/11 - 29° | | | | 12.65 | | |

[a] - Based upon reports of Monthly Climatological Data, National Climatic Center, Ashville, NC.

[b] - Departures are figures from 30 years data. This station has not been in operation for that period of time.

## Experimental Procedure

Each trial consisted of four replications of two-row plots. Each plot was randomly located within each replication. All trials were seeded with a 31-cell cone-seeder mounted above flexi-planter units. A recommended herbicide for grassy weed control and an insecticide for greenbug control were banded over the row at seeding time. The row spacings used are indicated in Table 1 and plot lengths were dependent upon the area available at each location. Seeding rates were adequate, under normal conditions, to achieve an average of 2 and 3 plants per foot of row in the central and eastern areas of the state, respectively. The trials at Redfield were irrigated twice by the gravity method.

Moisture determinations were made the third or fourth week in September; the time of normal date of killing frost. These are usually more reliable and informative than determinations made at harvest, generally after a freeze. Moisture and test weight of the grain realistically indicate relative maturity. Grain samples for moisture determinations were taken from all observation plots at all locations during the period of September 17 to 22. Ten to twelve heads, 400-500 grams, were cut from each entry, placed in a polyethelene bag, tagged and sealed. The samples were threshed, cleaned and moisture percentages determined with an electronic moisture meter. The upper limits of the meter are 35% and the material reported above this level, recorded as 35.+ in the tables, would generally indicate lines of late maturity for the area.

The harvested grain was cut from a 10-foot section of each row for 20 linear feet in each individual plot. The heads were bagged at harvest, tagged and tied, and returned to Brookings for drying and threshing. Yields are reported in pounds per acre (x 1.121 for kg/ha) with three or four replications harvested for yield and one left for observational purposes.

## Discussion of Results

Generally, trial yields were good to exceptional for the better entries in each of the trials. In many of the trials the entries were high in kernel moisture when sampled. In a normal season of cooler fall temperatures and earlier killing frosts the yield, test weight and quality of these entries would probably have been poorer. The warm, dry conditions during September 1980 permitted nearly all varieties to reach physiological maturity. The long-term averages give a better indication over several years environments.

The moisture samples were indicative of moisture content in mid-September and had a killing frost occurred soon thereafter it would have been necessary to use a dryer for many of the entries to ensure safe storage. Some drying is favored by many growers as they combine before frost, at 17-18% moisture to avoid excessive lodging problems that often occur once the stalks are frozen. In most of the 1980 trials not very many of the entries had matured enough to be at even the 20% level by September 20 and drying would have been costly.

Greenbugs were noticed at some sites even though and insecticide was applied for their control. Levels of infestations were not high enough to warrant treatments for insect control again.

Lodging was not a serious problem at any site. Most of the 1980 trials were harvested before a killing freeze had affected the stalks. The trial at Brookings was not cleaned up after harvest to permit late evaluation of lodging. Even after several occurrences of a killing freeze and many days of strong wind, some excessively so, only about a maximum of 20% lodging occurred in some varieties (Table 8). Bird damage was very limited at all sites. Yields, quality and test weight were affected by the stage of growth when the rains or high temperatures occurred.

Bird damage, especially from sparrows, was very limited in 1980. The trials located within larger fields of farmer-cooperators were not subject to concentrated pecking as in smaller fields.

## Measurements of Performance

Variations in factors such as soil fertility, slope or stand may cause varieties of equal potential to yield differently. Mathematical determinations were made to determine if yield differences were caused by variations in environment or were true varietal differences. Small yield differences have no significance.

Yields for 1980 and other agronomic data are reported in Tables 4 through 11. Separate tables with two- to five-year averages are reported in Tables 9, 10 and 12.

Table 4. 1980 Grain Sorghum Performance Trial, Area C2, Wm. Fijala Farm, Geddes, Charles Mix County, South Dakota

| Brand & Variety | Yields, pounds per acre | | | | Test Wt. lb/B | Height, inches | Percent Moisture 9/18/80 |
|---|---|---|---|---|---|---|---|
| | 1980 | 1977-80 | 1978-80 | 1979-80 | | | |
| Funks G499GBR | 4945 | | | | 60 | 30 | 19.1 |
| DeKalb X-030 | 4805 | | | | 60 | 32 | 17.5 |
| Pfizer PGI M550G | 4710 | | | | 61 | 36 | 17.6 |
| Cenex 310T | 4595 | | | 4800 | 61 | 36 | 18.0 |
| Prairie Valley 535GR | 4550 | | | | 61 | 35 | 21.5 |
| Disco 204R | 4510 | | | | 61 | 36 | 19.3 |
| Asgrow Bug-Off E | 4480 | 4425 | 5125 | 4390 | 61 | 34 | 15.5 |
| Asgrow Corral | 4445 | | 5290 | 4365 | 61 | 35 | 18.0 |
| DeKalb C-42A+ | 4375 | 4530 | 5180 | 4590 | 60 | 33 | 16.3 |
| Warner W-545T | 4315 | | | 4395 | 61 | 32 | 14.9 |
| Northrup King Brand 2222 | 4310 | | | | 60 | 34 | 16.2 |
| Cenex 224T | 4245 | | | | 61 | 32 | 14.4 |
| ACCO GR 1018 | 4215 | 4080 | 4680 | 4215 | 61 | 34 | 14.6 |
| Cargill 30 | 4175 | | | 4155 | 60 | 32 | 16.7 |
| ACCO GR 1028 | 4100 | 4010 | 4570 | 4270 | 60 | 33 | 16.7 |
| DeKalb B-38+ | 4100 | 4175 | 4785 | 4390 | 61 | 34 | 16.3 |
| Prairie Valley 515GR | 4035 | | | | 60 | 32 | 14.0 |
| P-A-G 4433 | 3990 | | | 3910 | 59 | 34 | 13.4 |
| Disco 200R | 3910 | | | 4240 | 61 | 38 | 19.9 |
| Warner W-655T | 3905 | | | 4210 | 61 | 35 | 15.5 |
| Disco 202 | 3870 | | | | 56 | 45 | 35.+ |
| Sigco 254 YG | 3830 | | | | 61 | 36 | 20.0 |
| ACCO GR 1020 | 3830 | | | | 60 | 32 | 22.9 |
| Pfizer PGI M56 | 3735 | | | | 61 | 31 | 18.3 |
| Warner W-564T | 3680 | | | 3970 | 61 | 33 | 18.7 |
| Pride P808GB | 3665 | 3900 | 4345 | 3905 | 60 | 31 | 13.0 |
| ACCO DR 1035 | 3615 | | | | 61 | 33 | 14.5 |
| P-A-G 354 | 3615 | | | 3455 | 58 | 31 | 12.4 |
| Cenex 228T | 3455 | | | 3610 | 61 | 35 | 14.6 |
| Funks HW 1769 | 3405 | | | | 60 | 36 | 13.7 |
| Pride P508GB | 3350 | 3635 | 4270 | 3825 | 60 | 32 | 13.8 |
| Funks G261 | 3285 | | | | 58 | 32 | 13.5 |
| Northrup King Brand 2030 | 3260 | | | 3840 | 61 | 30 | 14.0 |
| Western WS-203 | 3245 | | | | 60 | 34 | 13.8 |
| Pfizer PGI M548G | 3160 | | | | 61 | 30 | 13.8 |
| Asgrow Dorado E | 3150 | 3830 | 4290 | 3550 | 60 | 31 | 13.3 |
| DeKalb A-28+ | 3130 | 3840 | 4375 | 3920 | 60 | 33 | 16.1 |
| Northrup King Brand 2018 | 2840 | | | 3620 | 60 | 33 | 13.5 |
| SDAES SD 104 | 2140 | 2355 | 2785 | 2110 | 55 | 32 | 14.0 |
| Prairie Valley 530GR | 340 | | | | 49 | 86 | 35.+ |
| Means | 3785 | | | | 60 | 35 | 17.0 |
| LSD (.05) | 1045 | | | C.V. - % = 17.1 | | | |

Table 5. 1980 Grain Sorghum Performance Trial, Area B3, Harlon Halverson Farm, Kennebec, Lyman County, South Dakota

| Brand & Variety | Yields, pounds per acre | | | | Test Wt. lb/B | Height, inches | Percent Moisture 9/18/80 |
|---|---|---|---|---|---|---|---|
| | 1980 | 1977-80 | 1978-80 | 1979-80 | | | |
| ACCO R 1014 | 5090 | 4030 | 3720 | 4525 | 59 | 33 | 35.+ |
| Funks G499GBR | 4980 | | | | 59 | 34 | 31.9 |
| Western WS-206 | 4945 | | 3795 | 4645 | 61 | 34 | 31.9 |
| Pfizer PGI M548G | 4685 | | | | 59 | 36 | 33.0 |
| ACCO R 920 | 4565 | 3655 | 3605 | 4265 | 57 | 36 | 24.2 |
| Sigco 252 YG | 4395 | | | | 61 | 34 | 30.8 |
| DeKalb A-25a+ | 4290 | 3635 | 3535 | 4315 | 59 | 30 | 23.6 |
| Northrup King 180A | 4210 | 3895 | 3395 | 4030 | 58 | 33 | 29.2 |
| Cargill 30 | 4190 | | | | 57 | 36 | 35.+ |
| Funks G261 | 4185 | | | | 61 | 31 | 27.7 |
| P-A-G 4433 | 4180 | | | | 59 | 35 | 33.5 |
| Warner W-564T | 4140 | | | 3650 | 56 | 37 | 35.+ |
| Sigco Ex86 | 4070 | | | | 59 | 34 | 35.+ |
| DeKalb B-38+ | 4035 | | 3130 | 3660 | 59 | 37 | 32.2 |
| Pride P151GB | 3945 | | | | 60 | 32 | 29.8 |
| Warner W-655T | 3910 | | | 3745 | 56 | 36 | 35.+ |
| Sigco 254 YG | 3900 | | | | 56 | 41 | 35.+ |
| Northrup King 121A | 3895 | | | | 58 | 32 | 28.0 |
| Sigco Ex85 | 3850 | | | | 58 | 39 | 35.+ |
| Prairie Valley 515GR | 3830 | | | | 60 | 29 | 28.5 |
| Northrup King Brand 1210 | 3790 | | | | 60 | 32 | 28.4 |
| DeKalb A-28+ | 3785 | 3470 | 3190 | 3910 | 59 | 34 | 31.0 |
| Western WS-203 | 3760 | | | | 60 | 35 | 33.5 |
| Pfizer PGI M518G | 3665 | | | | 61 | 31 | 29.5 |
| ACCO R 980 | 3605 | | 3045 | 3555 | 60 | 33 | 31.4 |
| P-A-G 354 | 3565 | | | | 59 | 30 | 30.3 |
| Cenex 224T | 3300 | | | | 58 | 32 | 35.+ |
| Funks HS 1769 | 3240 | | | | 60 | 35 | 32.4 |
| Pioneer Brand 894 | 3070 | | | | 59 | 28 | 25.5 |
| Warner W-545T | 3065 | | | 3275 | 59 | 31 | 34.8 |
| SDAES SD 104 | 3050 | 2605 | 2570 | 3185 | 58 | 37 | 21.4 |
| Cenex 310T | 3130 | | | 3520 | 56 | 40 | 35.+ |
| Cenex 228T | 2890 | | | 3355 | 58 | 35 | 31.8 |
| Sigco 8710K | 775 | | | | 55 | 34 | 23.5 |
| Means | 3820 | | | | 60 | 34 | 24.7 |
| LSD (.05) | 1185 | | | C.V. - % = 15.5 | | | |

Table 6. 1980 Grain Sorghum Performance Trial, Area C1, Oscar Thompson Farm, Letcher, Aurora County, South Dakota

| Brand & Variety | Yields, pounds per acre | | | | Test Wt. | Height, | Percent Moisture |
|---|---|---|---|---|---|---|---|
| | 1980 | 1977-80 | 1978-80 | 1979-80 | lb/B | inches | 9/18/80 |
| Sigco 254 YG | 3540 | | | | 59 | 37 | 35.+ |
| DeKalb A-28+ | 3490 | 3270 | 3175 | 3375 | 61 | 31 | 29.9 |
| Cenex 310T | 3170 | | | 3255 | 59 | 34 | 35.0 |
| Cenex 224T | 3135 | | | | 60 | 29 | 30.4 |
| Funks G261 | 3060 | | | | 60 | 34 | 27.1 |
| Warner W-564T | 3020 | | | 3020 | 60 | 34 | 35.+ |
| Disco 204R | 2975 | | | | 59 | 34 | 35.+ |
| P-A-G 4433 | 2920 | | | | 59 | 31 | 30.2 |
| Warner W-655T | 2890 | | | 3690 | 59 | 35 | 35.+ |
| Pfizer PGI M548G | 2890 | | | | 61 | 33 | 29.2 |
| Cenex 228T | 2865 | | | 3525 | 60 | 32 | 30.3 |
| Asgrow Dorado E | 2835 | | | 3820 | 61 | 30 | 29.9 |
| Pride P151GB | 2835 | | | | 60 | 29 | 22.0 |
| Prairie Valley 515GR | 2790 | | | | 60 | 29 | 27.6 |
| Young Oro Recio | 2780 | | | | 61 | 30 | 28.7 |
| Cargill 30 | 2760 | | | | 59 | 33 | 32.1 |
| ACCO R920 | 2750 | 2590 | 2865 | 3230 | 58 | 35 | 21.5 |
| Funks G499GBR | 2705 | | | | 59 | 30 | 31.4 |
| ACCO R 1014 | 2675 | 2795 | 2780 | 2880 | 59 | 29 | 32.7 |
| Asgrow Bug-Off E | 2655 | | 2770 | 2945 | 59 | 35 | 33.4 |
| Pride P508GB | 2655 | 3135 | 3035 | 2655 | 60 | 31 | 27.5 |
| Funks HW 1769 | 2650 | | | | 61 | 34 | 28.9 |
| Northrup King Brand 2018 | 2575 | | | 3110 | 61 | 31 | 26.4 |
| Western WS-203 | 2555 | | | | 60 | 32 | 24.9 |
| Asgrow Corral | 2525 | | 3380 | 3330 | 58 | 34 | 35.+ |
| DeKalb B-38+ | 2525 | 3295 | 3245 | 3140 | 59 | 34 | 35.+ |
| Pioneer Brand 894 | 2500 | | | | 60 | 27 | 14.9 |
| Northrup King 180A | 2475 | | | 3290 | 58 | 32 | 24.2 |
| Pfizer PGI M518G | 2475 | | | | 59 | 29 | 26.4 |
| Warner W-545T | 2470 | | | 2925 | 60 | 29 | 25.3 |
| Northrup King Brand 2030 | 2265 | | | 3085 | 56 | 33 | 35.+ |
| P-A-G 354 | 2260 | | | | 59 | 29 | 25.8 |
| ACCO R 980 | 2165 | | 2470 | 2575 | 61 | 29 | 29.3 |
| Disco 200R | 2160 | | | 2750 | 56 | 35 | 34.4 |
| Disco 202 | 1790 | | | | 49 | 41 | 35.+ |
| SDAES SD 104 | 990 | 1580 | 1730 | 1715 | 58 | 35 | 18.0 |
| Means | 2660 | | | | 59 | 32 | 29.4 |
| LSD (.05) | 715 | | | C.V. - % = 16.6 | | | |

Table 7. 1980 Grain Sorghum Performance Trial, Area C1 (irrigated), James Valley Research Center, Redfield, Spink County, South Dakota

| Brand & Variety | Yield, lb/A | Test Wt. lb/B | Height, inches | Percent Moisture 9/17/80 | Date Headed |
|---|---|---|---|---|---|
| Asgrow Dorado E | 5965 | 60 | 45 | 34.3 | 8/4 |
| ACCO R 1014 | 5595 | 59 | 45 | 34.7 | 8/5 |
| Asgrow Corral | 5315 | 59 | 48 | 35.+ | 8/7 |
| Western WS-203 | 5135 | 60 | 48 | 30.1 | 8/4 |
| Cenex 228T | 5045 | 60 | 46 | 34.4 | 8/4 |
| DeKalb A-28+ | 5000 | 60 | 42 | 30.3 | 8/1 |
| Western WS-206 | 4995 | 59 | 46 | 31.8 | 8/6 |
| Cargill 30 | 4830 | 59 | 45 | 33.2 | 8/6 |
| Pride P508GB | 4815 | 60 | 44 | 29.6 | 8/3 |
| Warner W-655T | 4810 | 59 | 50 | 35.+ | 8/7 |
| Warner W-545T | 4780 | 60 | 39 | 31.9 | 8/2 |
| Northrup King Brand 2222 | 4780 | 58 | 45 | 35.+ | 8/9 |
| Northrup King 180A | 4710 | 59 | 45 | 33.2 | 8/1 |
| Sigco 254 YG | 4680 | 59 | 48 | 35.+ | 8/6 |
| Prairie Valley 515GR | 4600 | 60 | 40 | 33.0 | 8/3 |
| P-A-G 4433 | 4520 | 58 | 48 | 35.+ | 8/6 |
| Northrup King Brand 2018 | 4490 | 60 | 44 | 31.5 | 8/3 |
| P-A-G 354 | 4420 | 58 | 41 | 27.5 | 8/4 |
| Cenex 310T | 4420 | 59 | 50 | 35.+ | 8/8 |
| ACCO GR 1018 | 4410 | 59 | 43 | 35.+ | 8/6 |
| Asgrow Bug-Off E | 4320 | 59 | 47 | 35.+ | 8/7 |
| Cenex 224T | 4310 | 60 | 38 | 31.5 | 8/3 |
| ACCO R 920 | 4295 | 58 | 45 | 27.4 | 7/25 |
| ACCO R 980 | 4255 | 61 | 40 | 30.3 | 8/5 |
| Pioneer Brand 894 | 4185 | 59 | 38 | 27.5 | 7/29 |
| ACCO GR 1020 | 4160 | 57 | 45 | 35.+ | 8/11 |
| Warner W-564T | 4140 | 58 | 45 | 35.+ | 8/8 |
| Northrup King Brand 2030 | 4110 | 58 | 42 | 34.9 | 8/8 |
| SDAES SD 104 | 3660 | 59 | 38 | 28.5 | 7/25 |
| Means | 4645 | 59 | 44 | 32.9 | 8/4 |
| LSD (.05) | 945 | CV - % = 12.5 | | | |

Table 8. 1980 Grain Sorghum Performance Trial, Area D3, Plant Science Farm, Brookings, Brookings County, South Dakota

| Brand & Variety | Yield, lb/A | Test Wt. lb/B | Height, inches | Percent Moisture 9/22/80 | Date Headed | % Erect Plants 11/19/80 |
|---|---|---|---|---|---|---|
| Western WS-203 | 5900 | 58 | 47 | 35.+ | 8/2 | 82 |
| Cenex 228T | 5070 | 56 | 44 | 35.+ | 8/6 | 96 |
| Northrup King 121A | 5020 | 55 | 40 | 35.+ | 8/2 | 92 |
| Western WS-206 | 4985 | 57 | 46 | 35.+ | 8/7 | 92 |
| Prairie Valley 515GR | 4960 | 56 | 39 | 35.+ | 8/4 | 94 |
| Northrup King 180A | 4935 | 55 | 44 | 35.+ | 8/3 | 90 |
| Northrup King Brand 1210 | 4925 | 57 | 41 | 29.3 | 7/31 | 87 |
| Warner W-545T | 4925 | 56 | 38 | 35.+ | 8/4 | 94 |
| Cenex 224T | 4900 | 56 | 37 | 35.+ | 8/4 | 93 |
| ACCO R 1014 | 4895 | 54 | 44 | 35.+ | 8/9 | 92 |
| P-A-G 354 | 4780 | 55 | 41 | 35.+ | 8/5 | 95 |
| Warner W-655T | 4755 | 54 | 47 | 35.+ | 8/8 | 92 |
| Cenex 310T | 4710 | 54 | 49 | 35.+ | 8/9 | 89 |
| Sigco 254 YG | 4590 | 54 | 48 | 35.+ | 8/10 | 92 |
| Northrup King Brand 1580 | 4440 | 56 | 42 | 35.+ | 8/7 | 95 |
| Cargill 30 | 4315 | 50 | 46 | 35.+ | 8/9 | 97 |
| Warner W-564T | 4220 | 53 | 44 | 35.+ | 8/11 | 94 |
| ACCO R 920 | 4040 | 56 | 47 | 28.6 | 7/27 | 87 |
| DeKalb A-28+ | 3935 | 58 | 42 | 35.0 | 8/3 | 88 |
| SDAES SD104 | 3930 | 58 | 39 | 28.7 | 7/24 | 85 |
| ACCO R 980 | 3850 | 56 | 42 | 34.7 | 8/7 | 96 |
| Means | 4670 | 55 | 43 | 34.1 | 8/5 | 92 |
| LSD (.05) | 550 | | | C.V. - % = 7.2 | | |

Table 9. Two-, Three-, Four-, and Five-Year Average Yields of Grain Sorghum Hybrids Entered at Redfield, South Dakota, 1976-1980.

| Brand & Variety | Average Yield, pounds per acre | | | |
|---|---|---|---|---|
| | 1976-80 | 1977-80 | 1978-80 | 1979-80 |
| ACCO R 920 | 3900 | 3790 | 3460 | 3050 |
| ACCO R 980 | | | | 3015 |
| ACCO R 1014 | 4290 | 4020 | 3705 | 3660 |
| ACCO GR 1018 | | 3415 | 3305 | 2855 |
| Asgrow Bug-Off E | | | | 2900 |
| Asgrow Corral | | | 4025 | 3655 |
| Asgrow Dorado E | 4570 | 4185 | 4110 | 3905 |
| Cenex 228T | | | | 3345 |
| Cenex 310T | | | | 3170 |
| DeKalb A-28+ | | 3985 | 3675 | 3440 |
| Northrup King Brand 2018 | | | | 3415 |
| Northrup King Brand 2030 | | | | 2850 |
| Pride P508GB | | | | 3480 |
| SDAES SD 104 | | 2735 | 2770 | 2450 |
| Warner W-545T | | | | 3120 |
| Warner W-564T | | | | 3055 |
| Western WS-206 | | | | 3535 |

Table 10. Two-, Three-, Four-, and Five-Year Average Yields of Grain Sorghum Hybrids Entered at Brookings, South Dakota, 1976-1980

| Brand & Variety | Average Yield, pounds per acre | | | |
|---|---|---|---|---|
| | 1976-80 | 1977-80 | 1978-80 | 1979-80 |
| ACCO R 920 | 3905 | 3875 | 3850 | 3960 |
| ACCO R 980 | | | 4085 | 4080 |
| ACCO R 1014 | 4145 | 4050 | 4700 | 4815 |
| Cenex 228T | | | | 4945 |
| DeKalb A28+ | | 3905 | 4120 | 4170 |
| Northrup King 121A | | | 5395 | 5195 |
| Northrup King 180A | 4805 | 4605 | 4950 | 4865 |
| Northrup King 1580 | | 4090 | 4770 | 4630 |
| SDAES SD 104 | | 4025 | 4465 | 4480 |
| Warner W-545T | | | | 4800 |
| Warner W-564T | | | | 4485 |

Table 11. 1980 Grain Sorghum Performance Trial, Area E, Southeast Experiment Farm, Centerville, Clay County, South Dakota[a]

| Brand & Variety | Yield, lb/A | Test Wt. lb/B | Height, inches | Percent Moisture 9/19/80 | Date Headed |
|---|---|---|---|---|---|
| Cenex 310T | 3375 | 57 | 46 | 26.8 | 7/30 |
| Warner W-564T | 3290 | 58 | 41 | 24.5 | 7/31 |
| Asgrow Corral | 3180 | 56 | 46 | 24.8 | 8/2 |
| Northrup King Brand 2222 | 3165 | 57 | 39 | 28.3 | 8/4 |
| Pfizer PGI M550G | 3165 | 57 | 42 | 27.2 | 8/1 |
| Warner W-655T | 3125 | 57 | 43 | 26.3 | 7/30 |
| DeKalb X-030 | 3120 | 57 | 37 | 22.6 | 7/26 |
| Disco 204R | 3065 | 52 | 44 | 26.0 | 8/2 |
| ACCO R 1014 | 3020 | 56 | 42 | 18.6 | 7/25 |
| Disco 200R | 2990 | 58 | 45 | 24.3 | 8/1 |
| P-A-G 4433 | 2935 | 56 | 41 | 19.5 | 7/28 |
| DeKalb C-42A+ | 2890 | 55 | 39 | 21.4 | 7/29 |
| Sigco 254 YG | 2880 | 57 | 43 | 25.3 | 8/2 |
| ACCO GR 1018 | 2860 | 56 | 39 | 20.8 | 7/27 |
| Prairie Valley 535GR | 2845 | 57 | 40 | 27.8 | 8/3 |
| ACCO GR 1020 | 2845 | 58 | 37 | 30.2 | 8/7 |
| Warner W-545T | 2765 | 57 | 35 | 19.9 | 7/27 |
| Disco 202R | 2765 | 59 | 45 | 35.+ | 8/11 |
| Sigco 0515 | 2730 | 58 | 41 | 32.4 | 8/8 |
| Funks G499 GBR | 2705 | 55 | 35 | 22.2 | 7/28 |
| Pfizer PGI M56 | 2705 | 56 | 41 | 25.9 | 8/4 |
| Cenex 228T | 2610 | 56 | 38 | 20.9 | 7/26 |
| Cargill 30 | 2530 | 56 | 40 | 23.2 | 7/29 |
| Prairie Valley 515GR | 2490 | 57 | 36 | 20.3 | 7/25 |
| ACCO GR 1028 | 2415 | 56 | 37 | 28.2 | 8/5 |
| Asgrow Bug-Off E | 2375 | 57 | 41 | 21.2 | 7/28 |
| Cenex 224T | 2310 | 56 | 36 | 16.5 | 7/25 |
| Funks HW 1769 | 2260 | 57 | 38 | 25.4 | 7/25 |
| Funks G261 | 2200 | 58 | 39 | 14.3 | 7/21 |
| DeKalb B-38+ | 2185 | 55 | 43 | 20.4 | 7/27 |
| Asgrow Dorado E | 2075 | 58 | 41 | 12.8 | 7/23 |
| ACCO DR 1035 | 1855 | 57 | 40 | 20.7 | 7/29 |
| Pfizer PGI M548G | 1825 | 55 | 37 | 22.0 | 7/27 |
| Northrup King Brand 2030 | 1565 | 57 | 36 | 21.1 | 7/24 |
| SDAES SD 104 | 330 | 56 | 36 | 12.0 | 7/13 |
| Prairie Valley 530GM | 240 | 50 | 84 | 35.+ | late |
| Means | 2545 | 56 | 41 | 23.7 | 7/29 |
| LSD(.05) | 445 | | | C.V. - % = 10.8 | |

[a] Trial was damaged twice by hail, in early June and late August. Heading was delayed initially and the last storm caused shattering to the earlier maturing varieties.

Table 12. Two-, Three-, Four-, and Five-Year Average Yields of Grain Sorghum Hybrids Entered at Centerville, South Dakota, 1976-1980.

| Brand & Variety | Average Yield, pounds per acre | | | |
|---|---|---|---|---|
| | 1976-80 | 1977-80 | 1978-80 | 1979-80 |
| ACCO R 1014 | 4365 | 4770 | 4330 | 4830 |
| ACCO GR 1018 | | 4535 | 4045 | 4395 |
| ACCO GR 1028 | | 4550 | 3990 | 4315 |
| Asgrow Bug-Off E | | | | 4490 |
| Asgrow Corral | | | 4675 | 4980 |
| Asgrow Dorado E | | | | 4120 |
| Cargill 30 | | | | 4400 |
| Cenex 228T | | | | 4335 |
| Cenex 310T | | | | 5170 |
| DeKalb B-38+ | 4020 | 4365 | 3830 | 4050 |
| DeKalb C-42A+ | 4825 | 5140 | 4510 | 4710 |
| Disco 200R | | | | 4770 |
| Disco 202R | | | | 4795 |
| Northrup King Brand 2030 | | | | 4040 |
| P-A-G 4433 | | | | 4420 |
| SDAES SD 104 | | 2900 | 2285 | 2010 |
| Warner W-545T | | | | 4420 |
| Warner W-564T | | | | 4985 |

Table 13. Entries Submitted for the 1980 Grain Sorghum Performance Trials and Tables where the Results Appear

| Company & Brand | Variety | Tables |
|---|---|---|
| Asgrow Seed Company | Dorado E | 4,6,7,9,11,12 |
| 7000 Portage Road | Bug Off E | 4,6,7,9,11,12 |
| Kalamazoo, MI 49001 | Corral | 4,6,7,9,11,12 |
| "Asgrow" | | |
| DeKalb Ag Research, Inc. | A-25a+ | 5 |
| Rt. 1, Box 225 | A-28+ | 4,5,6,7,8,9,10 |
| Glenvil, NB 68941 | B-38+ | 4,5,7,11,12 |
| "DeKalb" | C-42a+ | 4,11,12 |
| | X-030 | 4,11 |
| Disco Seed Co. | 200R | 4,6,11,12 |
| P.O. Box 640 | 202 | 4,6,11,12 |
| Mitchell, SD 57301 | 204 | 4,6,11 |
| "Disco" | | |
| Northrup King Co. | 121A | 5,8,10 |
| P.O. Box 959 | 180A | 5,6,7,8,10 |
| Minneapolis, MN 55440 | 1210 | 5,8, |
| "NK Brand" | 1580 | 9,10 |
| | 2018 | 4,6 |
| | 2030 | 4,6,7,9 |
| | 2222 | 4,7,11 |
| P-A-G Seeds | 354 | 4,5,6,7,8 |
| P.O. Box 9480, Dept. 16 | 4433 | 4,5,6,7,11,12 |
| Minneapolis, MN 55440 | | |
| "P-A-G" | | |
| Pioneer Hi-Bred, Intn'l | 894 | 5,6,7 |
| 1206 Mulberry St. | | |
| Des Moines, IA 50308 | | |
| "Pioneer Brand" | | |
| Pride Company, Inc. | P151GB | 5,6 |
| P.O. Box 8 | P508GB | 4,6,7,9 |
| Glen Haven, WI 53810 | P808GB | 4 |
| "Pride" | | |
| Funks Seeds International | G499GBR | 4,5,6,11 |
| 719 26th Street | G261 | 4,5,6,11 |
| Lubbock, TX 79404 | HW 1769 | 4,5,6,11 |
| "Funks" | | |
| Pfizer Genetics, Inc. | M56 | 4,11 |
| P.O. Box 166 | M518G | 5,6 |
| Olivia, MN 56277 | M548G | 4,5,6,11 |
| "Pfizer Genetics" | M550G | 4,11 |
| R. C. Young Seed Co. | Oro Recio | 6 |
| 624 27th Street | | |
| Lubbock TX 79404 | | |
| Cenex Seed Co. | 224T | 4,5,6,7,8,11 |
| Box 964 | 228T | 4,5,6,7,8,9,10,11,12 |
| Sioux Falls, SD 57101 | 310T | 4,5,6,7,8,9,11,12 |
| "Cenex" | | |
| Cargill Seeds | 30 | 4,5,6,7,8,11,12 |
| P.O. Box 9300, Dept. 16 | | |
| Minneapolis, MN 55440 | | |
| "Cargill" | | |
| SIGCO Research, Inc. | 0515 | 11 |
| Box 150 | 252 YG | 5 |
| Breckenridge, MN 56520 | 254 YG | 4,5,6,7,8,11 |
| "Sigco" | 8710K | 5 |
| | EX 85 | 5 |
| | EX 86 | 5 |
| Prairie Valley, Inc. | PV 515GR | 4,5,6,7,8,11 |
| Box 125 | PV 530GR | 4,11 |
| Phillips, NB 68865 | PV 535GR | 4,11 |
| King's Western Seed, Inc. | WS-203 | 4,5,6,7,8 |
| P.O. Box 947 | WS-206 | 5,7,8,9 |
| Huron, SD 57350 | | |
| "King's Western" | | |

Table 13. 1980 Grain Sorghum Entries (cont.)

| Company & Brand | Variety | Tables |
|---|---|---|
| ACCO Seed | R 920 | 5,6,7,8,9,10 |
| P.O. Box 1630 | R 980 | 5,6,7,8,9,10 |
| Plainview, TX 79072 | R 1014 | 5,6,7,8,9,10,11,12 |
| "ACCO" | GR 1018 | 4,7,9,11,12 |
| | GR 1020 | 4,7,11 |
| | GR 1028 | 4,11,12 |
| | DR 1035 | 4,11 |
| George Warner Seed Co. | W-545T | 4,5,6,7,8,9,10,11,12 |
| P.O. Box 1448 | W-564T | 4,5,6,7,8,9,10,11,12 |
| Hereford, TX 79045 | W-655T | 4,5,6,7,8,11 |
| "Warner" | | |
| Agr. Exp. Station | SD 104 | 4,5,6,7,8,9,10,11,12 |
| South Dakota State U. | | |
| Brookings, SD 57007 | | |
| "SDAES" | | |

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