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1966 Purdue University Grain Sorghum Yield Trials

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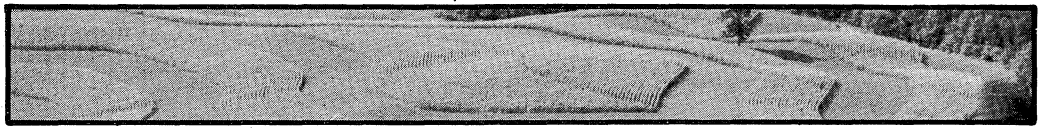
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AGRONOMY GUIDE



**PURDUE
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1966 PURDUE UNIVERSITY GRAIN SORGHUM YIELD TRIALS

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Grain sorghum yield trials were grown at the Purdue University Agronomy Farm near Lafayette, Indiana, the Southern Indiana Forage Farm in Dubois County, Indiana, and the Sand Experimental Farm in Marshall County, Indiana. Results are shown in Tables 1-8. Two and three-year averages are included for those entries tested in 1964, 1965, and 1966. Diseases were not a factor on lodging and yield as they have been in previous years.

Yields at Lafayette were higher in 1966 than in 1965 in all trials even though there was a drouth condition. None of the grain sorghum at the Southern Indiana Forage Farm was harvested because of severe drouth stress. The trials at the Forage Farm were planted in 14-inch row spacings, and there was not sufficient water for growth and seed development. The high population test at Lafayette, also planted in 14-inch row spacings, was not harvested for the same reason. The tests at the Forage Farm will be in wider row spacings in 1967.

At the Purdue Sand Experimental Farm, yields were much lower than at Lafayette. The plots were irrigated once every three weeks, but the dry weather affected the yields drastically because of the very low water holding capacity of the soil.

Bird damage trials were conducted at Lafayette and at the Sand Farm. The results show a tremendous difference in yields. Most of this difference can be attributed to the difference in the panicle types. Those entries with tighter panicles were eaten much more extensively than those with looser panicles.

In all other trials bird damage was controlled by a mixture of DDT, Toxaphene, and Captan. This mixture was sprayed on weekly from the onset of seed development until the hard dough stage.

The Sand Experimental Farm will be one of the locations used in 1967 and the bird damage trial will be continued. This will allow comparisons to be made over years, which was not possible in 1966 for these trials.

Cooperative Extension Work in Agriculture and Home Economics
State of Indiana, Purdue University
and the United States Department of Agriculture Cooperating
H. G. Diesslin, Director, Lafayette, Indiana
Issued in furtherance of the Acts of May 8 and June 30, 1914.

Table 1. 1966 Commercial grain sorghum yield trial, Purdue University Agronomy Farm, Lafayette, Ind. ^{1/}

| Entry | Days to half bloom | Height (in.) | Exert. (in.) | Pan. type ^{2/} | Pan. length (cm.) | Lodging (%) | Pan. per plot | Gms. per pan. | Thresh % | Bushels per acre | Duncan's test ^{3/} |
|--------------------------|--------------------|--------------|--------------|-------------------------|-------------------|-------------|---------------|---------------|----------|------------------|-----------------------------|
| WAC 750 | 79 | 43 | 4.7 | 4.0 | 21.5 | 0 | 133 | 65 | 68 | 184.2 | |
| DeKalb BR-60 | 82 | 50 | 7.0 | 5.5 | 20.7 | 0 | 154 | 54 | 87 | 170.5 | |
| DeKalb BR-62 | 83 | 52 | 5.5 | 5.5 | 21.2 | 0 | 139 | 65 | 84 | 162.9 | |
| Taylor-Evans 77 | 79 | 45 | 4.5 | 4.7 | 21.5 | 0 | 128 | 60 | 84 | 162.1 | |
| DeKalb F-64 | 77 | 55 | 5.0 | 6.5 | 28.2 | 0 | 129 | 56 | 83 | 161.9 | |
| Northrup-King 222A | 82 | 45 | 2.5 | 6.5 | 28.0 | 0 | 112 | 60 | 84 | 160.7 | |
| Taylor-Evans 88 | 77 | 46 | 5.0 | 3.5 | 25.0 | 0 | 124 | 67 | 82 | 159.2 | |
| Taylor-Evans Grainmaster | 76 | 44 | 3.7 | 3.7 | 21.5 | 0 | 137 | 52 | 84 | 156.2 | |
| Northrup-King X3084 | 80 | 46 | 4.7 | 5.0 | 21.0 | 0 | 119 | 61 | 85 | 155.5 | |
| Taylor-Evans 66 | 74 | 41 | 3.7 | 4.5 | 20.7 | 0 | 128 | 53 | 83 | 154.9 | |
| Northrup-King 275 | 76 | 44 | 2.7 | 5.2 | 19.0 | 0 | 112 | 62 | 83 | 153.5 | |
| Northrup-King Savanna | 69 | 44 | 3.2 | 7.2 | 25.7 | 0 | 139 | 54 | 81 | 152.2 | |
| AKS 614 | 72 | 46 | 2.5 | 7.0 | 26.0 | 0 | 137 | 48 | 83 | 151.8 | |
| Asgrow Double T | 79 | 45 | 4.5 | 3.5 | 23.0 | 0 | 128 | 64 | 84 | 151.3 | |
| Northrup-King 212 | 70 | 44 | 4.2 | 3.7 | 19.7 | 0 | 141 | 45 | 85 | 149.2 | |
| DeKalb E-57 | 75 | 47 | 2.7 | 6.2 | 26.0 | 0 | 128 | 50 | 81 | 146.9 | |
| RS 610 | 70 | 44 | 6.0 | 4.5 | 20.0 | 0 | 114 | 56 | 84 | 146.9 | |

| | | | | | | | | | | |
|-------------------------------|------|------|------|------|------|-----|-------|------|------|-------|
| Redlan | 81 | 45 | 3.7 | 4.2 | 18.7 | 0 | 106 | 55 | 84 | 142.8 |
| Taylor-Evans Mucho | 70 | 42 | 5.0 | 3.5 | 19.0 | 0 | 131 | 58 | 84 | 141.9 |
| Ga 615 | 77 | 52 | 1.2 | 7.7 | 27.7 | 0 | 104 | 67 | 81 | 141.9 |
| RS 617 | 71 | 48 | 3.5 | 7.5 | 23.7 | 0 | 78 | 64 | 83 | 141.7 |
| Asgrow Rico | 73 | 43 | 5.0 | 3.7 | 22.0 | 0 | 125 | 54 | 84 | 141.0 |
| Northrup-King 222 | 69 | 42 | 6.0 | 6.2 | 25.5 | 0 | 145 | 49 | 84 | 140.6 |
| Taylor-Evans Grainmaster A | 71 | 44 | 5.5 | 4.2 | 20.5 | 0 | 138 | 61 | 84 | 139.8 |
| Martin | 71 | 40 | 5.5 | 5.7 | 20.0 | 0 | 152 | 40 | 70 | 125.5 |
| Northrup-King 133 | 64 | 40 | 3.0 | 7.2 | 25.2 | 0 | 135 | 43 | 81 | 114.4 |
| C.V. | 1.8 | 4.2 | 27.9 | 10.9 | 7.4 | 0.0 | 11.0 | 16.8 | 10.0 | 8.1 |
| Mean | 74.9 | 45.2 | 4.3 | 5.3 | 22.8 | 0.0 | 127.3 | 56.1 | 82.2 | 150.4 |

1/ Planted May 7 in randomized block design with 4 replications. Plot size was 2 rows, 38" apart and 15' long; thinned to 120,000 plants/acre; 20' of row was harvested.

2/ 1-9 rating (1 = tightest panicle).

3/ Any two means spanned by the same line are not significantly different at the 5 percent level.

Table 2. Two- and three-year averages of commercial grain sorghum hybrids, Purdue University Agronomy Farm, Lafayette, Indiana.

| Entry | Days to half bloom | Height (in.) | Exert. (in.) | Pan. type <u>1</u> / | Pan. per plot | Thresh % | Bushels per acre |
|----------------------------|--------------------|--------------|--------------|----------------------|---------------|----------|------------------|
| <u>1964-65-66 Average:</u> | | | | | | | |
| Taylor-Evans 77 | 77 | 56 | 6.7 | 2.9 | 139 | 81 | 152.0 |
| Taylor-Evans 88 | 76 | 53 | 6.5 | 3.2 | 137 | 81 | 144.0 |
| Taylor-Evans Grainmaster | 74 | 51 | 5.6 | 3.4 | 147 | 81 | 138.5 |
| RS 610 | 70 | 49 | 6.4 | 3.5 | 134 | 80 | 138.4 |
| Redlan | 78 | 52 | 5.5 | 2.1 | 133 | 81 | 134.2 |
| Northrup-King 212 | 71 | 48 | 5.3 | 3.6 | 152 | 81 | 133.0 |
| Northrup-King 222 | 70 | 43 | 6.9 | 6.6 | 151 | 80 | 118.5 |
| Martin | 72 | 48 | 7.0 | 4.8 | 169 | 77 | 113.8 |
| Northrup-King 133 | 63 | 43 | 5.5 | 7.7 | 142 | 77 | 102.5 |
| <u>1965-66 Average:</u> | | | | | | | |
| Taylor-Evans 77 | 78 | 52 | 6.4 | 3.5 | 142 | 84 | 162.3 |
| Northrup-King 275 | 75 | 47 | 3.9 | 4.2 | 131 | 83 | 153.9 |
| Taylor-Evans 88 | 77 | 41 | 5.9 | 3.4 | 134 | 83 | 152.1 |
| Taylor-Evans Grainmaster | 76 | 49 | 4.4 | 3.5 | 149 | 84 | 149.2 |
| RS 610 | 71 | 48 | 6.0 | 3.9 | 135 | 83 | 145.9 |
| Redlan | 80 | 51 | 5.5 | 2.6 | 138 | 84 | 144.2 |
| Northrup-King 212 | 72 | 47 | 5.1 | 3.8 | 155 | 85 | 143.1 |
| Asgrow Rico | 74 | 46 | 5.8 | 3.4 | 146 | 83 | 136.7 |
| Northrup-King 222 | 70 | 42 | 6.1 | 6.5 | 153 | 84 | 130.4 |
| Martin | 73 | 46 | 6.9 | 6.0 | 176 | 77 | 121.6 |
| Northrup-King 133 | 65 | 47 | 5.0 | 7.7 | 147 | 81 | 115.3 |

1/ 1-9 rating (1 = tightest panicle).

Table 3. 1966 late planted commercial grain sorghum yield trial, Purdue University Agronomy Farm, Lafayette, Ind. ^{1/}

| Entry | Stand (%) | Days to half bloom | Height (in.) | Exert. (in.) | Pan. type ^{2/} | Pan. length (cm.) | Lodging (%) | Pan. per plot | Gms. per pan. | Thresh % | Bushels per acre | Duncan's test ^{3/} |
|----------------------------|-----------|--------------------|--------------|--------------|-------------------------|-------------------|-------------|---------------|---------------|----------|------------------|-----------------------------|
| Ga 615 | 76 | 63 | 50 | 2.5 | 7.7 | 26.7 | 25 | 99 | 55 | 76 | 123.9 | |
| Taylor-Evans Mucho | 65 | 55 | 40 | 4.7 | 5.7 | 23.2 | 0 | 87 | 63 | 79 | 117.9 | |
| DeKalb C-446 | 77 | 53 | 48 | 4.0 | 7.0 | 25.2 | 0 | 95 | 57 | 80 | 116.5 | |
| AKS 614 | 60 | 57 | 48 | 3.5 | 7.5 | 26.7 | 5 | 79 | 58 | 75 | 113.4 | |
| DeKalb DD-50 | 58 | 56 | 47 | 4.2 | 6.0 | 24.2 | 0 | 67 | 64 | 78 | 111.6 | |
| RS 617 | 59 | 54 | 50 | 2.7 | 7.5 | 26.7 | 4 | 80 | 57 | 76 | 109.8 | |
| Paymaster Kiowa | 55 | 57 | 44 | 4.7 | 4.5 | 24.0 | 0 | 78 | 47 | 81 | 104.6 | |
| Martin | 64 | 57 | 45 | 6.5 | 6.0 | 26.2 | 0 | 98 | 47 | 82 | 101.9 | |
| Paymaster Pawnee | 75 | 50 | 44 | 3.5 | 5.5 | 29.5 | 0 | 92 | 63 | 77 | 100.6 | |
| Taylor-Evans Grainmaster | 63 | 61 | 50 | 5.7 | 4.7 | 23.7 | 0 | 71 | 74 | 78 | 99.0 | |
| RS 610 | 55 | 55 | 50 | 5.2 | 5.0 | 23.5 | 0 | 72 | 74 | 78 | 96.0 | |
| Taylor-Evans Grainmaster A | 55 | 56 | 44 | 4.7 | 5.2 | 23.2 | 0 | 68 | 57 | 80 | 94.4 | |
| Redlan | 38 | 70 | 50 | 5.2 | 3.0 | 21.0 | 0 | 56 | 49 | 69 | 64.0 | |
| C. V. | 32.7 | 2.7 | 4.3 | 20.5 | 16.9 | 8.3 | 90.4 | 29.2 | 24.0 | 3.8 | 21.7 | |
| Mean | 61.4 | 57.2 | 46.8 | 4.4 | 5.8 | 24.9 | 2.6 | 80.0 | 58.7 | 77.6 | 104.1 | |

^{1/} Planted June 20 in randomized block design with 4 replications. Plot size was 2 rows, 38" apart and 15' long; thinned to 120,000 plants/acre; 20' of row was harvested.

^{2/} 1-9 rating (1 = tightest panicle).

^{3/} Any two means spanned by the same line are not significantly different at the 5 percent level.

Table 4. Two- and three-year averages of late planted commercial grain sorghum hybrids, Purdue University Agronomy Farm, Lafayette, Ind.

| Entry | Days to half bloom | Height (in.) | Exert. (in.) | Pan. type <u>1/</u> | Pan. per plot | Thresh % | Bushels per acre |
|-----------------------------|--------------------------|-----------------|-----------------|------------------------|---------------------|-------------|------------------------|
| <u>1964-65-66 Average:</u> | | | | | | | |
| Taylor-Evans Grainmaster | 63 | 51 | 5.5 | 3.9 | 102 | 77 | 109.0 |
| RS 610 | 57 | 51 | 5.9 | 4.1 | 97 | 77 | 106.0 |
| Martin | 59 | 46 | 6.5 | 5.1 | 114 | 78 | 96.9 |
| Redlan | 71 | 51 | 5.6 | 2.2 | 99 | 72 | 84.1 |
| <u>1965-66 Average:</u> | | | | | | | |
| Taylor-Evans Grainmaster | 65 | 50 | 5.5 | 3.6 | 90 | 78 | 99.2 |
| RS 610 | 59 | 50 | 5.1 | 3.9 | 86 | 78 | 98.8 |
| Martin | 61 | 45 | 6.3 | 6.1 | 107 | 81 | 95.9 |
| Redlan | 72 | 50 | 5.2 | 2.1 | 83 | 72 | 69.7 |

1/ 1-9 rating (1 = tightest panicle).

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Table 5. 1966 Bird damage commercial grain sorghum yield trial, Purdue University Agronomy Farm, Lafayette, Ind. ^{1/}

| Entry | Days to half bloom | Height (in.) | Exert. (in.) | Pan. type ^{2/} | Pan. Length (cm.) | Lodg- ing (%) | Pan. per plot | Gms. per pan. | Thresh % | Bushels per acre | Duncan's test ^{3/} |
|--------------------------|--------------------------|-----------------|-----------------|----------------------------|-------------------------|---------------------|---------------------|---------------------|-------------|------------------------|--------------------------------|
| RS 617 | 60 | 50 | 3.5 | 7.7 | 28.0 | 4 | 119 | 52 | 81 | 147.5 | |
| Ga 615 | 68 | 51 | 2.7 | 6.7 | 26.2 | 30 | 125 | 53 | 76 | 130.4 | |
| AKS 614 | 61 | 47 | 3.0 | 7.5 | 25.2 | 8 | 127 | 50 | 77 | 128.9 | |
| Northrup-King Savanna | 61 | 47 | 4.0 | 7.5 | 26.2 | 6 | 121 | 48 | 76 | 124.2 | |
| Martin | 60 | 45 | 6.7 | 5.2 | 24.2 | 0 | 136 | 27 | 74 | 84.0 | |
| NB 505 | 54 | 49 | 6.5 | 4.0 | 23.2 | 0 | 125 | 11 | 47 | 31.5 | |
| RS 610 | 58 | 51 | 6.0 | 3.2 | 25.0 | 0 | 120 | 8 | 31 | 23.4 | |
| Taylor-Evans 77 | 72 | 51 | 6.7 | 2.7 | 21.7 | 0 | 112 | 5 | 23 | 15.8 | |
| Redlan | 72 | 52 | 5.5 | 2.2 | 20.0 | 0 | 116 | 4 | 20 | 11.9 | |
| C. V. | 1.3 | 4.3 | 23.3 | 15.8 | 8.9 | 186.3 | 7.5 | 27.1 | 14.4 | 19.6 | |
| Mean | 62.9 | 49.2 | 5.0 | 5.2 | 24.4 | 5.3 | 122.3 | 28.6 | 55.9 | 77.5 | |

^{1/} Planted June 1 in randomized block design with 4 replications. Plot size was 2 rows, 38" apart and 15' long; thinned to 120,000 plants/acre; 20' of row was harvested. No attempt was made to keep birds from feeding on the grain.

^{2/} 1-9 rating (1 = tightest panicle).

^{3/} Any two means spanned by the same line are not significantly different at the 5 percent level.

Table 6. 1966 USDA Uniform Yield Nursery, Purdue University Agronomy Farm, Lafayette, Ind. ^{1/}

| Entry | Days to half bloom | Height (in.) | Exert. (in.) | Pan. type ^{2/} | Pan. length (cm.) | Lodging (%) | Pan. per plot | Gms. per pan | Thresh % | Bushels per acre | Duncan's test ^{3/} |
|---------------|--------------------|--------------|--------------|-------------------------|-------------------|-------------|---------------|--------------|----------|------------------|-----------------------------|
| 62004 (Ark.) | 80 | 55 | 4.7 | 7.5 | 31.0 | 0 | 152 | 45 | 81 | 159.5 | |
| RS 671 | 76 | 44 | 3.0 | 4.0 | 18.7 | 0 | 163 | 55 | 84 | 156.5 | |
| 65LHO26 | 79 | 45 | 4.5 | 3.0 | 20.7 | 0 | 165 | 57 | 83 | 147.6 | |
| 633225 (Neb.) | 69 | 47 | 6.5 | 6.0 | 23.2 | 0 | 144 | 54 | 84 | 142.7 | |
| RS 622 | 76 | 41 | 5.2 | 4.0 | 22.5 | 0 | 182 | 44 | 83 | 141.0 | |
| 633491 (Neb.) | 72 | 42 | 5.0 | 4.7 | 20.7 | 0 | 137 | 65 | 84 | 133.8 | |
| RS 626 | 70 | 45 | 4.5 | 4.0 | 19.5 | 0 | 160 | 52 | 84 | 132.0 | |
| RS 610 | 72 | 44 | 5.2 | 3.5 | 21.7 | 0 | 129 | 55 | 84 | 131.6 | |
| RS 631 | 76 | 46 | 5.5 | 4.5 | 22.7 | 0 | 137 | 55 | 83 | 130.2 | |
| RS 625 | 71 | 41 | 4.7 | 5.0 | 24.7 | 0 | 140 | 55 | 84 | 130.0 | |
| 633533 (Neb.) | 73 | 39 | 4.7 | 4.7 | 21.0 | 0 | 91 | 64 | 83 | 110.8 | |
| NB 505 | 67 | 41 | 6.0 | 6.2 | 22.7 | 0 | 151 | 37 | 81 | 103.5 | |
| Colo. 606 | 72 | 49 | 8.5 | 4.0 | 21.7 | 0 | 136 | 42 | 79 | 100.6 | |
| C. V. | 3.9 | 3.8 | 24.2 | 11.7 | 8.9 | 0.0 | 8.9 | 18.2 | 1.8 | 6.0 | |
| Mean | 73.1 | 44.3 | 5.3 | 4.7 | 22.4 | 0.0 | 145.0 | 52.2 | 82.8 | 132.3 | |

^{1/} Planted May 10 in randomized block design with 4 replications. Plot size was 2 rows, 38" apart and 15' long; thinned to 120,000 plants/acre; 20' of row was harvested.

^{2/} 1-9 rating (1 = tightest panicle).

^{3/} Any two means spanned by the same line are not significantly different at the 5 percent level.