



Progress Report on

GRAIN AND FORAGE SORGHUM
AND
SUDAN GRASS YIELD TESTS

1960

by

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Tucson

GRAIN AND FORAGE SORGHUM

AND

SUDAN GRASS YIELD TESTS

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FORAGE SORGHUM VARIETY TESTS - 1960

Yield tests of forage sorghums for silage purposes were conducted at three locations in the state in 1960 - Marana, Mesa, and Yuma.

Tables 1 through 7 give the results of forage yields in tons per acre at 70% moisture (or 30% dry matter), days from planting to cutting, height in inches at time of cutting, per cent of lodging, per cent of dry matter at time of cutting, and yields in per cent of Regular Hegari. Some of these tables are summaries of two years' data for 1959 and 1960 at the same locations. Table 8 gives the results of a small test at Snowflake.

Hybrids usually seemed to give higher yields than varieties. Lodging is a serious problem in many areas and seems to vary in degree from one area to another. Certain high yielding varieties or hybrids are undesirable from the standpoint of lodging and consequently would not be recommended. It may be necessary from an economical point of view to exchange some yield for standing ability in the field.

Table 9 gives a comparison of single and double harvest of 5 hybrids and 2 varieties for 2 years at Mesa. One entry of mixed varieties was considered as a variety. Apparently a little greater per cent of gain is possible by double cropping a variety in contrast to a hybrid.

These results are from three-row test plots of 15 to 20 feet in length, replicated four times and seeded at about 10 pounds per acre. Only the center row was harvested at the soft to hard dough stage of development.

The yields of any two or more entries in the tables which are under the same vertical line are to be interpreted as not being significantly different at a probability level of five per cent.

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TABLE 1. - Single Harvest of Forage Sorghums at Yuma, Arizona in 1960.

Planted July 7.

| Variety | Days to Cut | Yield T/acre 70% Moisture | Height Inches | Lodging % | % Dry Matter at Cutting | Yield in % of Reg. Hegari |
|--------------------|-------------|---------------------------|---------------|-----------|-------------------------|---------------------------|
| DeKalb FS-22 | 63 | 27.44 | 92 | 3 | 32.0 | 166 |
| NK 300 | 113 | 25.86 | 83 | 0 | 32.5 | 156 |
| Lindsey 101F | 122 | 24.89 | 91 | 4 | 28.2 | 151 |
| DeKalb FS-1A | 106 | 23.32 | 86 | 0 | 30.4 | 141 |
| Lindsey 92F | 81 | 21.85 | 93 | 32 | 31.8 | 132 |
| Tracy | 122 | 19.77 | 102 | 0 | 28.9 | 120 |
| Advance Silage Mix | 114 | 19.36 | 102 | 0 | 28.3 | 117 |
| Regular Hegari | 63 | 16.52 | 69 | 5 | 25.7 | 100 |
| Mexican June Corn | 63 | 11.96 | 111 | 1 | 30.0 | 72 |
| Atlas | 106 | 11.85 | 93 | 0 | 25.8 | 72 |

TABLE 2. - Averages of Two Years Data on Single Harvest of Silage Type Forage Sorghums at Yuma, Arizona. Planted in July for 1959 and 1960.

| Variety | Days to Cut | Yield T/acre 70% Moisture | Height Inches | Lodging % | % Dry Matter at Cutting | Yield in % of Reg. Hegari |
|--------------------|-------------|---------------------------|---------------|-----------|-------------------------|---------------------------|
| DeKalb FS-22 | 83 | 30.06 | 95 | 39 | 29.9 | 140 |
| NK 300 | 113 | 27.24 | 88 | 35 | 29.6 | 127 |
| Lindsey 101F | 124 | 26.25 | 92 | 40 | 26.0 | 122 |
| DeKalb FS-1A | 110 | 26.22 | 89 | 35 | 31.6 | 122 |
| Lindsey 92F | 90 | 24.25 | 95 | 58 | 30.1 | 113 |
| Tracy | 120 | 22.97 | 106 | 14 | 31.05 | 107 |
| Advance Silage Mix | 113 | 22.28 | 114 | 18 | 28.4 | 104 |
| Regular Hegari | 84 | 21.51 | 74 | 20 | 27.4 | 100 |
| Atlas | 112 | 18.43 | 99 | 22 | 32.8 | 86 |
| Mexican June Corn | 87 | 14.80 | 114 | 20 | 31.7 | 69 |

TABLE 3. - Single Harvest of Forage Sorghums at Marana, Arizona in 1960.

Planted May 28.

| Entry | Days to Cut | Yield T/A 30% D. M. | Height in Inches | Lodging % | % Dry Matter at Cutting | Yield in % of Reg. Hegari |
|--------------------------|-------------|---------------------|------------------|-----------|-------------------------|---------------------------|
| Northrup King X3059 | 111 | 38.42 | 98 | 80 | 31.0 | 138 |
| Northrup King 320 | 111 | 38.12 | 116 | 84 | 32.4 | 137 |
| Northrup King 300 | 111 | 32.38 | 88 | 8 | 31.5 | 117 |
| Tracy | 111 | 31.12 | 120 | 2 | 25.5 | 112 |
| Lindsey 101F | 137 | 30.75 | 88 | 18 | 30.1 | 111 |
| Honey | 111 | 28.64 | 123 | 76 | 22.5 | 103 |
| Sart | 137 | 28.24 | 114 | 60 | 25.2 | 102 |
| Lindsey 115F | 137 | 28.08 | 122 | 92 | 28.7 | 101 |
| Asgrow Silo King | 103 | 27.81 | 106 | 88 | 28.3 | 100 |
| Regular Hegari | 111 | 27.78 | 67 | 5 | 34.2 | 100 |
| Advance Silage Mix | 111 | 26.11 | 104 | 14 | 27.0 | 94 |
| Asgrow Beef Builder | 137 | 25.64 | 134 | 100 | 28.6 | 92 |
| Atlas | 111 | 25.45 | 102 | 38 | 28.8 | 92 |
| Frontier S-210 | 111 | 23.10 | 104 | 82 | 28.6 | 83 |
| DeKalb FS-1A | 103 | 23.02 | 82 | 80 | 24.2 | 83 |
| Sudan SX-11 (2 Cuttings) | 74 63 | 22.56 | 92 | 27 | 17.1 21.7 | 81 |
| DeKalb FS-22 | 88 | 22.34 | 110 | 20 | 22.0 | 80 |
| Lindsey 92F | 88 | 20.54 | 112 | 2 | 21.2 | 74 |
| Mexican June Corn | 97 | 16.75 | 114 | 78 | 21.9 | 60 |
| Sumac | 83 | 15.98 | 90 | 0 | 22.1 | 58 |

TABLE 4. - Single Harvest of Forage Sorghums at Mesa, Arizona in 1960.

Planted June 4.

| Entry | Days to Cut | Yield T/A 30% D. M. | Height in Inches | Lodging % | % Dry Matter at Cutting | Yield in % of Reg. Hegari |
|--------------------|-------------|---------------------|------------------|-----------|-------------------------|---------------------------|
| Beef Builder | 145 | 31.46 | 129 | 95 | 28.1 | 142 |
| Tracy | 90 | 29.96 | 108 | 45 | 30.0 | 136 |
| NK 300 | 109 | 26.25 | 86 | 0 | 28.4 | 119 |
| Lindsey 101F | 116 | 25.26 | 98 | 20 | 27.0 | 114 |
| Brawley | 116 | 24.57 | 84 | 52 | 32.0 | 111 |
| Regular Hegari | 90 | 22.07 | 66 | 0 | 30.8 | 100 |
| DK FS-22 | 109 | 21.92 | 91 | 71 | 24.2 | 99 |
| Advance Silage Mix | 90 | 19.02 | 82 | 4 | 25.4 | 86 |
| DK FS-1A | 90 | 17.72 | 76 | 2 | 25.6 | 80 |

TABLE 5. - Averages of Two Years' Data on Single Harvest of Silage Type Forage Sorghums at Mesa, Arizona.

Planted in June for 1959 and 1960.

| Entry | Days to Cut | Yield T/A 30% D. M. | Height in Inches | Lodging % | % Dry Matter at Cutting | Yield in % of Reg. Hegari |
|--------------------|-------------|---------------------|------------------|-----------|-------------------------|---------------------------|
| Beef Builder | 144 | 34.8 | 130 | 88 | 32.0 | 170 |
| Tracy | 104 | 27.6 | 108 | 32 | 27.5 | 135 |
| Lindsey 101F | 117 | 27.2 | 96 | 10 | 27.9 | 133 |
| NK 300 | 114 | 25.2 | 88 | 0 | 27.2 | 123 |
| DK FS-22 | 114 | 22.8 | 98 | 36 | 25.0 | 111 |
| Brawley | 117 | 22.8 | 88 | 26 | 31.0 | 111 |
| DK FS-1A | 104 | 21.4 | 82 | 1 | 28.6 | 104 |
| Advance Silage Mix | 104 | 20.8 | 82 | 2 | 26.8 | 101 |
| Regular Hegari | 104 | 20.5 | 68 | 0 | 29.7 | 100 |

TABLE 6. - Double Harvest of Forage Sorghums at Mesa, Arizona.

Planted March 31, 1960.

| Entry | Days to Cut | Yield T/A 30% D. M. | Total Yield | Height Inches | Lodging % | % Dry Matter at Cutting | Yield in % of Reg. Hegari |
|--------------------|-------------|---------------------|-------------|---------------|-----------|-------------------------|---------------------------|
| Beef Builder | 106/119 | 26.3/29.8 | 56.1 | 90/116 | 75/45 | 28.4/29.2 | 158 |
| Lindsey 101F | 106/105 | 21.5/29.2 | 50.7 | 70/106 | 15/18 | 30.5/29.2 | 143 |
| NK 300 | 106/105 | 16.7/27.6 | 44.3 | 60/ 98 | 5/0 | 27.0/30.3 | 125 |
| DK FS-22 | 117/ 94 | 26.5/16.8 | 43.3 | 90/112 | 76/30 | 24.2/27.8 | 122 |
| Advance Silage Mix | 117/ 94 | 24.5/16.3 | 40.8 | 80/ 77 | 9/0 | 29.6/27.9 | 115 |
| DK FS-1A | 106/ 76 | 16.0/21.3 | 37.3 | 63/ 92 | 15/10 | 29.2/24.0 | 105 |
| Regular Hegari | 106/ 76 | 15.6/19.9 | 35.5 | 54/ 70 | 5/0 | 27.6/30.2 | 100 |
| Brawley | 138 | 28.9 | 28.9 | 94 | 55 | 26.3 | - |
| Tracy | 138 | 28.0 | 28.0 | 96 | 45 | 21.7 | - |

TABLE 7. - Averages of Two Years Data on Double Harvest of Silage Type Forage

Sorghums at Mesa, Arizona.

Planted in March, 1959 and 1960.

| Entry | Days to Cut | Yield T/A 30% D. M. | Total Yield | Height Inches | Lodging % | % Dry Matter at Cutting | Yield in % of Reg. Hegari |
|--------------------|-------------|---------------------|-------------|---------------|-----------|-------------------------|---------------------------|
| Beef Builder | 117/111 | 21.2/28.8 | 50.0 | 84/120 | 58/45 | 28.8/28.4 | 155 |
| Lindsey 101F | 117/104 | 17.0/25.2 | 42.2 | 61/ 98 | 8/18 | 34.0/30.9 | 131 |
| DK FS-22 | 132/ 90 | 22.4/17.2 | 39.6 | 92/113 | 48/30 | 22.4/27.1 | 123 |
| NK 300 | 117/104 | 14.4/22.7 | 37.1 | 56/ 96 | 2/0 | 32.4/28.8 | 115 |
| Advance Silage Mix | 132/102 | 20.8/15.7 | 36.5 | 76/ 84 | 10/0 | 28.5/29.0 | 113 |
| Regular Hegari | 117/ 77 | 14.5/17.7 | 32.2 | 50/ 68 | 2/0 | 30.0/30.8 | 100 |
| DK FS-1A | 117/ 90 | 14.2/17.2 | 31.4 | 58/ 90 | 8/10 | 32.6/27.8 | 98 |

TABLE 8. - Single Harvest of Forage Sorghums for Silage at Snowflake, Arizona.

Planted - May 25, 1960.

All Harvested - September 7, 1960.

| Entry | Yield T/A 30% D. M. | Height Inches | Lodging % | % Dry Matter at Cutting |
|-------------|------------------------|------------------|--------------|----------------------------|
| Lindsey 92F | 24.54 | 102 | 5 | 23.5 |
| NK 145 | 23.15 | 66 | 0 | 25.5 |
| NK | 17.25 | 72 | 0 | 24.6 |

TABLE 9. - Comparison of Single and Double Harvest of 5 Hybrids and 2

Varieties at Mesa for 1959 and 1960.

| Entry | Average Yield for Single Harvest for 1959-1960 | Average Yield for Double Harvest for 1959-1960 | Per Cent Increase by Double Harvest |
|--------------------|--|--|--|
| Beef Builder | 34.8 | 50.0 | 44 |
| Lindsey 101F | 27.2 | 42.2 | 55 |
| DK FS-22 | 22.8 | 39.6 | 74 |
| NK 300 | 25.2 | 37.1 | 47 |
| Advance Silage Mix | 20.8 | 36.5 | 76 |
| Regular Hegari | 20.5 | 32.2 | 57 |
| DK FS-1A | 21.4 | 31.4 | 47 |
| 5 Hybrids | 26.3 | 40.1 | 52 |
| 2 Varieties | 20.6 | 34.4 | 67 |

SUDAN GRASS TESTS - 1960

Hay and forage tests for yield of eleven tall growing forage grasses were conducted at Mesa in 1960. The entries consisted of eight varieties and one hybrid sudan grass, sudo-sudan and a millet. They were planted June 28 in 6-6" drill strips 21 1/2 feet long replicated three times.

The hay test was cut twice at early bloom and the forage test of the same entries was cut five times at 18 to 24 inches of height to simulate rotation grazing.

The mean agronomic performance of two cuttings for hay and the total annual yields are given in Table 10. Sudo-sudan, DeKalb SX-11, Sudan 23, and Sweet 372 ranked high on total dry matter production for the season, whereas Gahi Millet was low.

The mean agronomic performance of the same entries cut for forage are given in Table 11. Sudan 23 yielded significantly more than any of the other entries. Sudo-sudan yielded quite low.

Sudan 23 yielded well when used as either hay or forage and has the added attribute of good recovery after cutting or grazing. Tift had a medium rank in yield of hay or forage while Sweet 337 ranked low for both uses. All other entries yielded better for one use but poorer for the other. Gahi Millet performed best, relative to the other entries, when cut as a forage. Sudo-sudan gave its best performance when cut for hay.

The total annual dry matter production per entry cut as forage averaged 33% of their total dry matter production when cut as hay. In other words, the average dry matter production of the hay test was three times that of the forage test.

A forage yield test of ten sudan grass entries was conducted at Tucson in 1960. Planted on April 18, five cuttings were made each at approximately 20 inches of height to simulate rotation pasture conditions. The results are given in Table 12. Sudan #23 was high in yield of dry matter.

The total annual yield of any two or more entries which are under the same vertical line are to be interpreted as not being statistically different at a probability level of five per cent.

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TABLE 10

Mean Performance of Sudan Grass Varieties and Hybrids and Other Tall-Growing Forage Grasses in a Hay Test at Mesa, Arizona in 1960.

| Entry | 1st Cutting 9 - 3 - 60 | | | 2nd Cutting 11 - 7 - 60 | | | Total Annual Yield Tons/Acre Dry Matter |
|---|---------------------------|-------------|------------------------|----------------------------|-------------|-----------------------|---|
| | Ht. In. | % Dry M. | Yield of* Tons/Acre | Ht. In. | % Dry M. | Yield of Tons/Acre | |
| Sudo-Sudan | | 20.1 | 13.18 | 100 | 27.0 | 11.18 | 24.36 |
| DeKalb SX-11 | | 18.7 | 11.86 | 93 | 27.6 | 11.88 | 23.74 |
| Sudan 23 | | 22.0 | 10.03 | 93 | 30.7 | 12.40 | 22.43 |
| Sweet 372 Sudan | | 24.7 | 11.52 | 82 | 24.0 | 10.42 | 21.94 |
| Sweet Sudan | | 20.7 | 8.87 | 84 | 26.5 | 9.94 | 18.81 |
| Tift Sudan | | 20.3 | 8.45 | 81 | 28.7 | 10.36 | 18.80 |
| Green Leaf Sudan | | 20.5 | 9.06 | 87 | 25.0 | 9.63 | 18.69 |
| Piper Sudan | | 19.5 | 8.09 | 85 | 31.3 | 10.09 | 18.18 |
| Sweet 337 Sudan | | 18.7 | 8.98 | 64 | 22.5 | 7.90 | 16.88 |
| Common Sudan | | 20.5 | 10.84 | 74 | 22.5 | 5.98 | 16.82 |
| Gahi Millet | | 15.6 | 10.14 | 59 | 20.5 | 3.85 | 13.99 |
| Average % Dry Matter, All Entries | | 20.12 | | | 26.03 | | |
| Coefficient of Variation (%) | | | 7.73 | | | 20.81 | 11.72 |

*Yield: In tons of dry matter per acre on an oven-dry basis.

TABLE 11

Mean Performance of Sudan Grass Varieties and Hybrids and Other Tall-Growing Forage Grasses in a Repeated Clipping Test at Mesa, Arizona in 1960.

| Entry | 1st Cutting 7 - 25 - 60 | | 2nd Cutting 8 - 15 - 60 | | 3rd Cutting 9 - 7 - 60 | | 4th Cutting 9 - 29 - 60 | | 5th Cutting 10 - 7 - 60 | | Total Annual Yield Tons/Acre Dry Matter |
|--|----------------------------|------------------|----------------------------|-----------------|---------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|---|
| | Ht. In. | Yield* T/Acre | Ht. In. | Yield T/Acre | Ht. In. | Yield T/Acre | Ht. In. | Yield T/Acre | Ht. In. | Yield T/Acre | |
| Sudan #23 | 16 | 0.61 | 34 | 2.15 | 36 | 2.36 | | 1.93 | 28 | 2.44 | 9.49 |
| Common Sudan | 16 | 0.69 | 32 | 2.24 | 34 | 2.08 | | 1.79 | 18 | 1.30 | 8.11 |
| Gahi Millet | 13 | 0.69 | 28 | 2.52 | 23 | 1.25 | | 1.00 | 19 | 1.36 | 6.81 |
| Piper Sudan | 14 | 0.50 | 34 | 1.88 | 28 | 1.48 | | 1.24 | 20 | 1.40 | 6.50 |
| Green Leaf | 16 | 0.75 | 29 | 1.79 | 28 | 1.46 | | 1.24 | 17 | 0.89 | 6.12 |
| Tift Sudan | 16 | 0.53 | 32 | 1.73 | 30 | 1.29 | | 1.45 | 14 | 1.01 | 6.02 |
| DK SX-11 | 20 | 1.10 | 24 | 1.22 | 27 | 1.13 | | 1.04 | 20 | 1.37 | 5.86 |
| Sweet Sudan | 14 | 0.56 | 26 | 1.50 | 26 | 1.39 | | 1.11 | 27 | 1.11 | 5.67 |
| Sweet 372 | 14 | 0.40 | 29 | 1.70 | 26 | 1.36 | | 1.09 | 16 | 0.86 | 5.41 |
| Sudo-Sudan | 18 | 0.72 | 28 | 1.37 | 25 | 1.01 | | 0.66 | 19 | 0.87 | 4.64 |
| Sweet 337 | 13 | 0.36 | 27 | 1.34 | 25 | 1.15 | | 0.88 | 12 | 0.81 | 4.54 |
| Average % Dry Matter All Entries at Cutting | | 14.94 | | 15.36 | | 17.04 | | 16.17 | | 17.14 | |
| Coefficient of Variation | | 78.18 | | 53.67 | | 11.94 | | 65.26 | | 28.74 | 29.05 |

*Yield: In tons of dry matter per acre on an oven-dry basis.

TABLE 12

Mean Performance of Sudan Grass Varieties and Hybrids and Other Tall-Growing Forage Grasses in a Repeated Clipping Test at Tucson, Arizona in 1960.

| Entry | 1st Cutting 6 - 8 - 60 | | 2nd Cutting 6 - 28 - 60 | | 3rd Cutting 7 - 25 - 60 | | 4th Cutting 8 - 23 - 60 | | 5th Cutting 10 - 6 - 60 | | Total Annual Yield Tons/Acre Dry Matter |
|--|---------------------------|------------------|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|----------------------------|-----------------|---|
| | Ht. In. | Yield* T/Acre | Ht. In. | Yield T/Acre | Ht. In. | Yield T/Acre | Ht. In. | Yield T/Acre | Ht. In. | Yield T/Acre | |
| Sudan #23 | 21 | .42 | 26 | .72 | 33 | 1.58 | 31 | 1.11 | 42 | 2.19 | 6.02 |
| Piper | 20 | .42 | 20 | .65 | 32 | 1.50 | 31 | 1.00 | 42 | 2.20 | 5.77 |
| Sweet Sudan | 14 | .29 | 20 | .80 | 30 | 1.57 | 27 | .92 | 35 | 1.93 | 5.51 |
| Sweet 372 | 16 | .32 | 18 | .66 | 30 | 1.51 | 26 | .94 | 39 | 2.03 | 5.46 |
| Green Leaf | 19 | .43 | 20 | .71 | 36 | 1.60 | 29 | .91 | 34 | 1.54 | 5.18 |
| DeKalb SX-11 | 16 | .28 | 22 | .60 | 37 | 1.50 | 28 | .69 | 39 | 2.03 | 5.10 |
| Sorghum Alnum | 14 | .26 | 14 | .27 | 18 | 1.24 | 26 | 1.21 | 28 | 1.87 | 5.10 |
| Oklahoma Exp. Hybrid | 14 | .19 | 18 | .45 | 34 | 1.44 | 28 | .94 | 35 | 1.93 | 4.95 |
| Sorghum-Johnson Grass Hybrid | 8 | .18 | 17 | .49 | 26 | 1.35 | 29 | 1.11 | 21 | 1.47 | 4.60 |
| Johnson Grass | 2 | --- | 8 | .10 | 22 | .93 | 22 | .88 | 18 | 1.36 | 3.38 |
| Average % Dry Matter All Entries at Cutting | | 17.0 | | 19.3 | | 18.8 | | 16.6 | | 24.5 | |
| Coefficient of Variation | | 51.6 | | 33.6 | | 26.7 | | 20.3 | | 18.4 | 30.1 |

*Yield: In tons of dry matter per acre on an oven-dry basis.

HYBRID GRAIN SORGHUM YIELDS - 1960

Enclosed are the results of the hybrid grain sorghum yield tests for 1960. Also included are the yield results for 1959 so that more complete data is presented.

The results are shown as percentages of RS 610 (a common check hybrid) because of differences between growers. The reasoning being that yields are relative and a grower gets back what he puts into the crop. One grower may make twice the yield of another but if a hybrid is 10% higher yielding than a known standard, this will be found by either grower.

In 1960, the planting procedure followed was to use a plot that consisted of 2 beds each 50' long 40" wide. Two rows spaced 14 inches apart were grown on each bed, making 4 rows for each plot. The seeding rate was approximately 8 pounds per acre. On the whole, 1960 was a good sorghum year and yields were high. At Yuma, an early planting date of March 29 was made to try for two harvests. The second harvest was a failure due to floret abortion.

In 1959, the plot size used was 2 rows each 50' x 40" and the seeding rate of 5-6 pounds per acre was made. The harvest was late this year due to an excess amount of rain but damage to tests were not serious.

Seed sources included:

1. Northrup King and Company (NK)
2. Pfister Associated Growers (PAG)
3. Paymaster Seed Company
4. Lindsey Seed Company
5. Frontier Hybrid Seed Company
6. DeKalb Hybrid Seed Company
7. Asgrow Texas Company
8. Pioneer HiBred Corn Company

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Plant Breeder

HYBRID SORGHUM YIELD TEST
COMMERCIAL ENTRIES
MARANA ARIZONA

| Variety | 1960 | | | | 1959 | |
|---------------------|-----------------------|------------------|--------------------|----------------|-------------------|-----------------------|
| | Yield % of RS 610* | Days to Bloom | Height (Inches) | Test Weight | Variety | Yield % of RS 610* |
| LINDSEY 3031 | 111 | 67 | 52 | 57.2 | | |
| PAG 2026 | 110 | 61 | 58 | 56.7 | PAG 2026 | 102 |
| FRONTIER 400 C | 110 | 53 | 48 | 57.6 | | |
| AMAK R 12 | 109 | 60 | 47 | 56.1 | AMAK R 12 | 100 |
| FRONTIER 400 B | 108 | 53 | 44 | 57.3 | | |
| FRONTIER 410 B | 104 | 59 | 47 | 56.3 | | |
| FRONTIER 410 C | 104 | 60 | 44 | 57.6 | | |
| PAG 435-S | 103 | 52 | 46 | 57.2 | PAG 435-S | 95 |
| RS 608 (PAYMASTER) | 101 | 53 | 46 | 56.9 | RS 608 | 96 |
| RS 610 (PAYMASTER) | 100 | 52 | 43 | 56.0 | RS 610 | 100 |
| NORTHRUP KING 210 | 100 | 53 | 42 | 55.9 | NORTHRUP KING 210 | 107 |
| AMAK R 10 | 98 | 53 | 43 | 56.4 | AMAK R 10 | 98 |
| PAG 465-S | 97 | 59 | 46 | 56.7 | PAG 465-S | 88 |
| FRONTIER 410 E | 97 | 65 | 45 | 57.8 | | |
| LINDSEY 3028 | 96 | 68 | 55 | 56.9 | | |
| ASGROW COASTAL | 94 | 62 | 47 | 57.2 | | |
| PAG 515-S | 94 | 61 | 51 | 56.2 | PAG 515-S | 107 |
| LINDSEY 3029 | 93 | 68 | 54 | 57.6 | | |
| ASGROW COASTAL T | 93 | 61 | 53 | 58.1 | | |
| PIONEER 852 | 92 | 56 | 49 | 56.3 | | |
| ASGROW ROCKET | 92 | 49 | 40 | 56.3 | | |
| ASGROW RED RAIDER A | 91 | 54 | 44 | 55.7 | | |
| PIONEER 851 | 91 | 56 | 47 | 57.8 | | |
| ASGROW RANGER | 91 | 57 | 48 | 55.0 | | |
| PAG EXP. 2037 | 90 | 56 | 50 | 56.8 | PAG EXP. 2037 | 110 |
| PAG 665-S | 87 | 66 | 53 | 57.5 | PAG 665-S | 87 |
| LINDSEY 3007 | 87 | 68 | 48 | 57.5 | | |
| DeKALB F 62 A | 86 | 58 | 51 | 55.6 | DeKALB F 62 A | 99 |
| FRONTIER 411 | 85 | 65 | 46 | 57.6 | | |
| DeKALB E 56 A | 85 | 53 | 45 | 55.8 | DeKALB E 56 A | 90 |
| NORTHRUP KING 310 | 85 | 74 | 46 | 58.6 | | |
| DeKALB F 63 | 85 | 61 | 53 | 56.6 | DeKALB F 63 | 93 |
| DeKALB D 55 A | 84 | 55 | 55 | 54.9 | DeKALB D 55 A | 109 |

(Continued on Page 13)

| Variety | 1960 | | | | 1959 | |
|-------------------------|--------------------|---|-----------------|-----------------------|--------------------|--------------------|
| | Yield % of RS 610* | Days to Bloom | Height (Inches) | Test Weight | Variety | Yield % of RS 610* |
| RS 650 (PAYMASTER) | 83 | 58 | 44 | 56.1 | RS 650 | 92 |
| TX 660 (PAYMASTER) | 82 | 59 | 48 | 55.5 | TX 660 | 103 |
| LINDSEY 788 | 82 | 68 | 48 | 57.8 | LINDSEY 788 | 108 |
| ASGROW RED RAIDER | 81 | 53 | 39 | 52.5 | ASGROW RED RAIDER | 102 |
| DeKALB X 49 | 78 | 50 | 46 | 54.9 | DeKALB X 49 | 91 |
| PAG 62 5-S | 77 | 66 | 40 | 56.5 | PAG 625-S | 99 |
| LINDSEY 722 | 76 | 52 | 46 | 56.4 | LINDSEY 722 | 90 |
| CAPROCK | 75 | 70 | 45 | 56.7 | CAPROCK | 84 |
| COMBINE HEGARI | 72 | 61 | 47 | 56.2 | COMBINE HEGARI | 131 |
| PLAINSMAN | 59 | 69 | 44 | 56.5 | PLAINSMAN | 86 |
| DD 38 | 57 | 58 | 38 | 55.0 | DD 38 | 126 |
| | | | | | DeKALB C 44 A | 116 |
| | | | | | DeKALB D 50 A | 107 |
| | | | | | ASGROW H-58-10 | 104 |
| | | | | | PAG 2060 | 100 |
| | | | | | PAG 535-S | 97 |
| | | | | | PAG 2048 | 97 |
| | | | | | PAYMASTER 7087-X | 96 |
| | | | | | PAYMASTER 8001-X | 96 |
| | | | | | NORTHRUP KING 135 | 96 |
| | | | | | PAG 605-S | 96 |
| | | | | | ASGROW H-58-6 | 95 |
| | | | | | ASGROW H-58-14 | 95 |
| | | | | | PAG 305-S | 94 |
| | | | | | RS 501 | 93 |
| | | | | | NORTHRUP KING 3000 | 93 |
| | | | | | PAG 425-S | 85 |
| | | | | | PAG 405-S | 84 |
| | | | | | COMBINE 7078 | 82 |
| | | | | | MARTIN | 80 |
| | | | | | HEGARI (REGULAR) | 70 |
| *Actual Yield of RS 610 | | | 6361 | 4101 | | |
| Planted: | | | 6-4-60 | 6-8-59 | | |
| Harvested: | | | 12-12-60 | 12-8-59 | | |
| Plot Size: | | 2 beds each 50' x 40" and 2 rows on each bed | | 2 rows each 50' x 40" | | |
| Replications: | | 4 | | 4 | | |

HYBRID SORGHUM YIELD TEST
 EARLY MATURING ENTRIES
 MARANA ARIZONA
 1960

| Variety | Yield % of NK 210* | Days to Bloom | Height (Inches) | Exsertion (Inches) |
|--------------------------|-----------------------|------------------|--------------------|-----------------------|
| <u>Northrup King 210</u> | <u>100</u> | <u>53</u> | <u>46</u> | <u>6</u> |
| Amak R 10 | 94 | 53 | 43 | 8 |
| DeKalb C 44 A | 93 | 47 | 41 | 6 |
| Northrup King 135 | 88 | 44 | 46 | 6 |
| Martin | 86 | 53 | 44 | 7 |
| RS 501 | 75 | 46 | 48 | 6 |
| PP - 18 - 1 - 1 | 73 | 53 | 39 | 5 |
| DeKalb D 50 A | 72 | 47 | 47 | 6 |
| Northrup King 3000 | 66 | 37 | 42 | 7 |
| Combine 7078 | 63 | 53 | 38 | 5 |

*Actual Yield of NK 210 (This the RS 610 type) 7008 lbs. per acre
 Planted: 6-4-60
 Harvested: 12-12-60
 Plot Size: 2 beds each 50' x 40"
 and 2 rows on each bed
 Replications: 4

HYBRID SORGHUM YIELD TEST
COMMERCIAL ENTRIES
MESA ARIZONA

| 1960 | | 1959 | | |
|----------------------------------|-----------------------|-----------------------|-----------------------|--------------------|
| Variety | Yield % of RS 610* | Variety | Yield % of RS 610* | Height (Inches) |
| DD 38 | 105 | DD 38 | 106 | 47 |
| RS 610 (Paymaster) | 100 | RS 610 | 100 | 40 |
| Amak R 10 | 99 | Amak R 10 | 97 | 41 |
| Amak R 12 | 94 | Amak R 12 | 86 | 40 |
| Northrup King 210 | 92 | Northrup King 210 | 101 | 46 |
| Lindsey 788 | 90 | Lindsey 788 | 78 | 43 |
| DeKalb F 63 | 87 | DeKalb F 63 | 70 | 45 |
| DeKalb E 56 A | 86 | DeKalb E 56 A | 116 | 43 |
| DeKalb F 62 A | 86 | | | |
| PAG 665-S | 86 | | | |
| Lindsey 722 | 83 | Lindsey 722 | 105 | 41 |
| RS 608 (Paymaster) | 81 | RS 608 | 65 | 41 |
| RS 650 (Paymaster) | 74 | | | |
| TX 660 (Paymaster) | 63 | TX 660 | 81 | 41 |
| Northrup King 310 | 54 | | | |
| | | Red Raider Asgrow | 127 | 41 |
| | | Plainsman | 95 | 41 |
| | | Paymaster 7087-X | 85 | 41 |
| | | PAG 625-S | 60 | 40 |
| *Actual Yield of RS 610 | | 2807 | | |
| Planted: 6-1-60 | | 7-10-59 | | |
| Harvested: 11-18-60 | | 12-7-59 | | |
| Plot Size: 2 beds each 50' x 40" | | 2 rows each 50' x 40" | | |
| and 2 rows on each bed | | | | |
| Replications: 4 | | 4 | | |

HYBRID SORGHUM YIELD TEST
 COMMERCIAL ENTRIES
 YUMA ARIZONA
 1960

| Variety | Yield % of RS 610* |
|---------------------------|--------------------|
| DeKalb E 56 A | 133 |
| DeKalb F 62 A | 126 |
| Lindsey 3019 | 125 |
| Northrup King 230 | 124 |
| DeKalb D 55 A | 121 |
| Amak R 10 | 117 |
| Northrup King 210 | 114 |
| Texas 660 (Paymaster) | 109 |
| Asgrow Rocket | 108 |
| RS 650 (Paymaster) | 107 |
| Northrup King 310 | 105 |
| Combine Hegari | 103 |
| Lindsey 788 | 103 |
| Amak R 12 | 103 |
| RS 608 (Paymaster) | 103 |
| Asgrow Coastal T | 101 |
| PAG 515-S | 101 |
| <u>RS 610 (Paymaster)</u> | <u>100</u> |
| Asgrow Ranger | 99 |
| DD 38 | 97 |
| Lindsey 722 | 92 |
| Asgrow Red Raider | 90 |
| DeKalb F 63 | 90 |
| PAG 625-S | 84 |
| Asgrow Coastal | 82 |
| Paymaster 8000-X | 82 |
| RS 701 | 75 |
| PAG 665-S | 69 |

*Actual Yield of RS 610 3560 lbs. per acre
 Planted: 3-29-60
 Harvested: 7-29-60
 Plot Size: 2 beds each 50' x 40"
 and 2 rows on each bed
 Replications: 4

HYBRID SORGHUM YIELD TEST
 COMMERCIAL ENTRIES
 WILLCOX ARIZONA
 1959

| Variety | Yield % of RS 610* | Days to Bloom | Height (Inches) |
|-------------------|-----------------------|------------------|--------------------|
| Combine Hegari | 130 | 72 | 45 |
| Caprock | 120 | 86 | 42 |
| DeKalb D 55 A | 115 | 71 | 54 |
| Texas 660 | 114 | 74 | 47 |
| DeKalb F 62 A | 114 | 76 | 43 |
| RS 650 | 112 | 74 | 48 |
| Lindsey 788 | 111 | 81 | 48 |
| DeKalb F 63 | 107 | 81 | 46 |
| PAG 625-S | 107 | 77 | 41 |
| RS 630 | 106 | 71 | 53 |
| DeKalb D 50 A | 103 | 67 | 55 |
| Paymaster 8001-X | 103 | 77 | 41 |
| PAG Exp. 2060 | 103 | 78 | 52 |
| Lindsey 722 | 102 | 70 | 50 |
| DeKalb C 44 A | 102 | 63 | 41 |
| RS 610 | 100 | 70 | 46 |
| Plainsman | 99 | 80 | 40 |
| PAG 665-S | 99 | 82 | 45 |
| Paymaster 7087-X | 96 | 71 | 43 |
| PAG 465-S | 94 | 76 | 40 |
| PAG 305-S | 94 | 66 | 55 |
| PAG Exp. 2026 | 94 | 73 | 45 |
| PAG Exp. 2037 | 93 | 73 | 42 |
| Amak R 12 | 91 | 76 | 49 |
| PAG 425-S | 90 | 72 | 44 |
| DeKalb E 56 A | 90 | 74 | 45 |
| Asgrow H-58-6 | 86 | 75 | 46 |
| Asgrow H-58-10 | 86 | 77 | 44 |
| PAG Exp. 2048 | 84 | 72 | 43 |
| Amak R 10 | 83 | 72 | 41 |
| PAG 535-S | 84 | 74 | 43 |
| PAG 405-S | 82 | 71 | 42 |
| RS 608 | 80 | 70 | 46 |
| PAG 605-S | 80 | 76 | 45 |
| RS 501 | 80 | 62 | 54 |
| Asgrow H-58-14 | 79 | 75 | 42 |
| Asgrow Red Raider | 77 | 75 | 38 |
| Northrup King 135 | 77 | 65 | 46 |
| Combine 7078 | 77 | 72 | 37 |
| PAG 515-S | 76 | 77 | 46 |
| PAG 435-S | 75 | 71 | 41 |
| DD 38 | 70 | 71 | 36 |

*Actual Yield of RS 610 4197 lbs. per acre
 Planted: 6-9-59
 Harvested: 11-24-59
 Plot Size: 2 rows 50' x 38"
 Replications: 4

UNIFORM HYBRID SORGHUM YIELD TEST
REGIONAL NURSERY

MARANA

ARIZONA

1960

| Variety | Yield % of RS 610* | Days to Bloom | Height (Inches) | Exsertion (Inches) | Test Weight |
|------------|-----------------------|------------------|--------------------|-----------------------|----------------|
| 57 MH 36 | 118 | 66 | 48 | 4 | 58.5 |
| 56001 | 112 | 64 | 45 | 0 | 55.4 |
| 55 HH 69 | 111 | 65 | 45 | 4 | 58.3 |
| RS 630 | 104 | 52 | 42 | 4 | 54.3 |
| 57 MH 72 | 100 | 68 | 41 | 0 | 57.3 |
| RS 610 | 100 | 53 | 42 | 6 | 55.2 |
| 55 MH 14 | 100 | 69 | 41 | 3 | 56.7 |
| CE 9002 | 100 | 54 | 45 | 4 | 56.9 |
| CE 9043 | 97 | 52 | 43 | 6 | 56.9 |
| RS 609 | 96 | 53 | 45 | 6 | 56.5 |
| H 13171 | 95 | 53 | 39 | 4 | 56.5 |
| 56 HH 5632 | 95 | 70 | 43 | 3 | 56.7 |
| CE 9057 | 95 | 66 | 47 | 5 | 55.7 |
| RS 681 | 94 | 67 | 43 | 2 | 57.8 |
| H 13174 | 93 | 57 | 41 | 3 | 58.1 |
| 55 MH 19 | 92 | 66 | 45 | 3 | 56.8 |
| H 13190 | 91 | 51 | 36 | 4 | 56.0 |
| Martin | 88 | 55 | 41 | 6 | 57.2 |
| Exp. 1 | 87 | 53 | 42 | 3 | 53.6 |
| 57 MH 38 | 85 | 67 | 39 | 0 | 58.3 |
| 55 HH 1792 | 84 | 70 | 40 | 2 | 58.1 |
| CE 9016 | 84 | 59 | 47 | 6 | 53.8 |
| CE 9142 | 83 | 68 | 41 | 0 | 54.5 |
| CE 9075 | 80 | 66 | 41 | 3 | 57.6 |
| CE 9144 | 79 | 67 | 39 | 0 | 54.4 |
| CE 9048 | 79 | 65 | 44 | 3 | 54.9 |
| H 13167 | 78 | 50 | 32 | 3 | 59.8 |
| N 26 | 76 | 61 | 42 | 3 | 57.2 |
| CE 9131 | 74 | 53 | 37 | 5 | 55.9 |
| CE 9090 | 72 | 69 | 42 | -1 | 56.1 |
| H 13184 | 72 | 52 | 38 | 6 | 55.2 |
| SD 41 | 70 | 45 | 47 | 8 | 53.9 |
| SD 51 | 67 | 43 | 40 | 10 | 54.0 |
| 57 MH 58 | 67 | 70 | 37 | -1 | 56.7 |
| N 73 | 65 | 65 | 43 | 3 | 55.4 |
| RS 501 | 53 | 47 | 45 | 6 | 56.5 |

*Actual Yield of RS 610 4112
Planted: 6-4-60
Harvested: 12-12-60
Plot Size: 2 beds - 50' x 40"
and 2 rows per bed
Replications: 3