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Grain Sorghum Performance Trials in Oklahoma, 2023

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Trial Objectives and Procedures

Performance trials for hybrid grain sorghum are conducted by the Oklahoma Cooperative Extension Service each year. These trials provide producers, Extension educators, industry representatives and researchers with information for grain sorghum hybrids marketed in Oklahoma. Performance trials were planted at eight locations in 2023. All emerged and had decent early-season growth. However, due to dry conditions at planting, the Tipton location was terminated. Trials at Chickasha, McCaull, and Goodwell were irrigated using overhead sprinkler irrigtion. Yields presented in this document are for the early, medium and late maturity hybrids for all locations. Most cultivars are similar among all locations. The exception to this is several early and medium cultivars, which are solely marketed to the panhandle region. Therefore, a number of cultivars are present in only at the three panhandle locations.

Grain sorghum hybrid trial entrants were assigned by companies to their respective maturity groups (early represented less than <60 days to mid-bloom (DMB), medium was 60 to 70 DMB, with late being than >70 DMB). If a cultivar was exactly 60 or 70 DMB, previous years data was used to determine which maturity the cultivar fell into. Companies designated all hybrid characteristics are presented in Table 1. This information was not determined or verified by Oklahoma State University. Company participation was voluntary; therefore, not all hybrids marketed in Oklahoma were included in the trials.

In 2023, 38 hybrids were entered by five seed companies. For the hybrid performance trials, each maturity group was tested independently with individual hybrids being arranged in a randomized complete block design and having a minimum of four replications. All locations were two row plots with 30-inch spacing and 35 feet in length. Plots were trimmed to 25 feet prior to harvest. Tractor-powered cone planters were used to plant all trials with seeding rates adjusted for the trial

location. Trials were harvested with a Kincaid model 8XP plot combine.

Planting densities, cooperating producers, cultural practices, soil series, herbicides and insecticides used in all trials are listed individually in result tables. Rainfall data from the nearest Mesonet sites are also listed. Some trials are long distances from the nearest Mesonet site; therefore, rainfall could be greater or less than reported.

Soil fertility practices will be discussed for each individual location following their yield tables. All applications were made in accordance with OSU Extension best management practices for management. Soil samples were collected in the winter and early spring prior to planting and submitted to the Soil, Water and Forage Analytical Laboratory for analysis. All N, P, and K applications were made based on these results. Nitrogen applications were made based on a 120 bu/ac yield goal, with the exception of Goodwell and McCaull which were made based on a 150 bu/ac yield goal. At all research station sites, soil pH is managed to be suitable for grain sorghum production. Locations on grower's fields are not as controlled; however, all locations this season were within reasonable limits (5.5-7.5).

Due to the degree of variability between the sites in the study and grower's fields around the state, discussions regarding the growing conditions will be made prior to each individual location.

Results

Grain yields are reported in pounds per acre and bushels per acre of threshed grain, adjusted to a moisture content of 14% (Tables 2 through 21). Test weight is also reported in pounds per bushel. Different plant populations at each location prevent accurate comparison between locations. Also,

comparisons across maturity were not conducted as they were treated as independent trials. Producers should note that late-maturing hybrids, due to longer periods of vegetative and early reproductive growth, will generally yield more than early- and medium-maturity hybrids. The availability of moisture at critical crop development stages; however, often influences yield more than the yield differences associated with maturity groups. When choosing a maturity group, the type of cropping system, planting date, planting rate and potential moisture should be taken into consideration. For more information, consult Fact Sheet PSS-2034, Grain Sorghum Planting Rates and Dates, and Fact Sheet PSS-2113 Grain Sorghum Production Calendar.

Least Significant Difference (LSD) is a statistical test of yield differences and is shown at the bottom of each table. Unless two hybrids differ by at least the LSD shown, little confidence can be placed in one hybrid being superior to another, and the difference is probably not real.

The Coefficient of Variation (CV) is provided as an estimate of the precision of the data with respect to the mean for that location and maturity group. To provide some indication of

yield stability, multi-year means for yields and test weights are provided where trials have been conducted for more than one year with more than three entries per maturity group. Producers interested in comparing hybrids for consistency of yield in a specific area should consult these entries. Models with CV's greater than 25 have not been included in this report.

Acknowledgements

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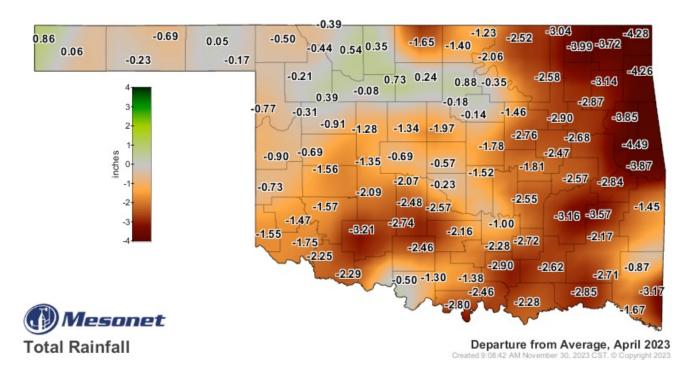


Figure 1. Departure from average rainfall for April 2023.

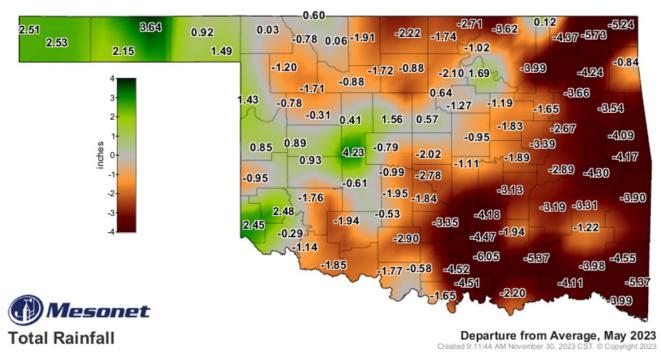


Figure 2. Departure from average rainfall for May 2023.

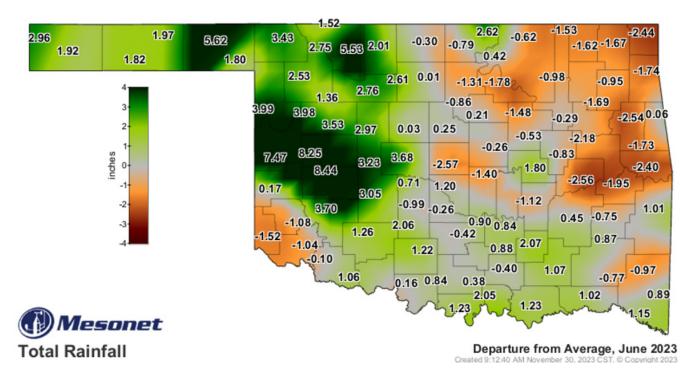


Figure 3. Departure from average rainfall for June 2023.

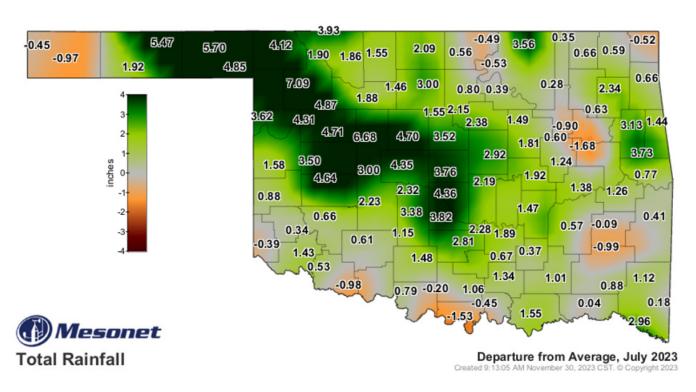


Figure 4. Departure from average rainfall for July 2023.

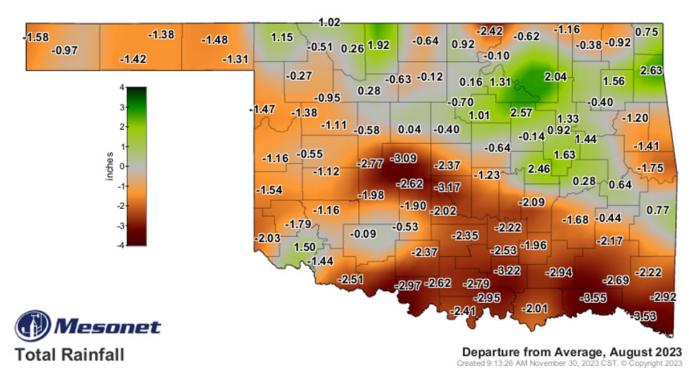


Figure 5. Departure from average rainfall in August 2023.

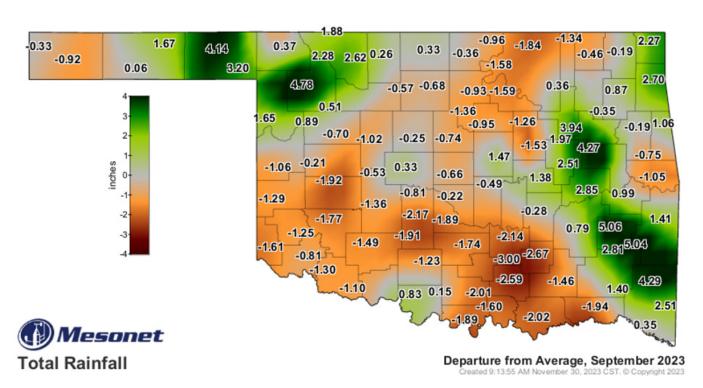


Figure 6. Departure from average rainfall in September 2023.

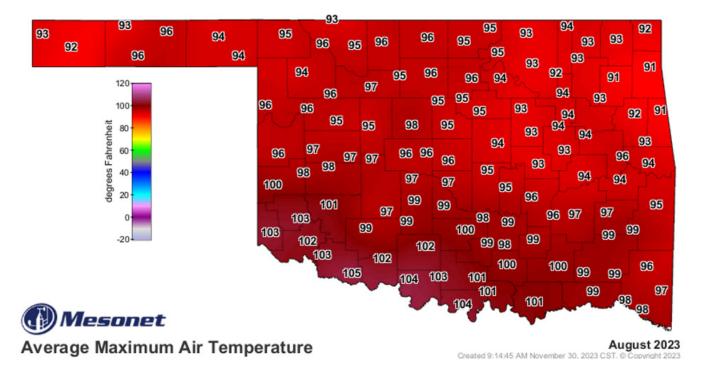


Figure 7. Average maximum air temperature for August 2023.

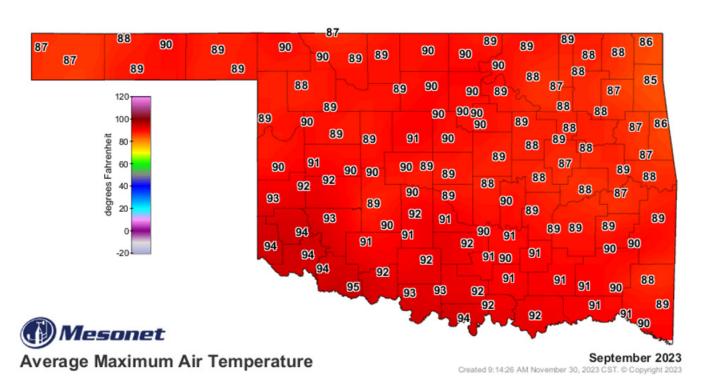


Figure 8. Average maximum air temperature for September 2023.

Table 1. Sorghum cultivars utilized in the performance trial in 2023 along with associated company and agronomic information.

Company	Hybrid	Maturity	Seed Color	DMB
Kauffman Seeds	5563	E	Bronze	56
Kauffman Seeds	5583	E	Bronze	58
Kauffman Seeds	5603	E	Red	60
Kauffman Seeds	5710	М	Bronze	64
Kauffman Seeds	5643	М	Bronze	64
Kauffman Seeds	5730	М	Red	69
Kauffman Seeds	5653IG	М	Red	65
Dyna-Gro	M54GR24	E	Red	54
Dyna-Gro	M59GB57	E	Bronze	59
Dyna-Gro	M59GB94	E	Bronze	59
Dyna-Gro	M60GB31	М	Bronze	62
Dyna-Gro	M60GB88	М	Bronze	60
Dyna-Gro	M63GB78	М	Bronze	63
Dyna-Gro	M67GB87	М	Bronze	67
Dyna-Gro	GX22932	М	Red	68
Dyna-Gro	GX22934	М	Bronze	70
Dyna-Gro	GX22936	М	Bronze	65
Dyna-Gro	GX22937	М	Bronze	69
Dyna-Gro	GX22923	М	Cream	61
Dyna-Gro	M71GR91	L	Red	71
Dyna-Gro	M72GB71	L	Bronze	72
Dekalb	DKS-28-07	E	Bronze	57
Dekalb	DKS-36-07	М	Bronze	62
Dekalb	DKS-33-07	М	Bronze	62
Dekalb	DKS-44-07	М	Red	67
Dekalb	DKS-50-07	М	Red	69
Dekalb	DKS-54-07	L	Red	72
Sorghum Partners	SP 43M80	М	Bronze	60
Sorghum Partners	SP-67B17	М	Bronze	67
Sorghum Partners	SP 66M16	М	Bronze	66
Sorghum Partners	SP 65M60	М	Bronze	65
Sorghum Partners	SPSD 353	М	Bronze	67
Sorghum Partners	SP 7715	L	Bronze	70
Advanta/Alta Grain	ADV G2106	М	Red	62
Advanta/Alta Grain	ADV G2165	М	Red	66
Advanta/Alta Grain	ADV G2168IG	М	Red	66
Advanta/Alta Grain	ADV G2193IG	М	Red	68
Advanta/Alta Grain	ADV G1329	М	Cream	60

Chickasha

The Chickasha location experienced a relatively normal year. Near normal rainfall throughout April and early May resulted in adequate to above average stands. However, since precipitation was not excessive, preplant herbicides were effective at maintaining a weed-limited environment during the first 30 days of growth. A flush of weeds during vegetative growth required an application of Huskie prior to canopy closure. This was primarily made to control pigweeds and other miscellaneous broadleaf weeds. Subsequent flushes of weeds required manual removal. This occurred during the early dough stages. Heat stress was experienced during the later stages of growth. Moisture stress was not experienced due to the ability to provide moderate irrigation in order to not lose the trial. One-inch weekly applications

of moisture were applied during August and September but were terminated at first stages of black-layer of any cultivar. These irrigation applications were made with a sprinkler irrigation system. Because irrigation was terminated at first signs of black-layer, this did favor the early- and medium-maturing cultivars as they were at or near maturity, while the late-maturing cultivars were not quite at physiological maturity. This impact can be seen from the yields across the trial. Periodic moisture and some regrowth of tillers did make it necessary to desiccate the trial and an application of glyphosate was made prior to harvest. No major insect pests or diseases were experienced throughout the trial. Late-season charcoal rot evaluations resulted in no appreciable numbers.

Cooperator: Matt Pettijohn
Tillage Practice: Conventional
Soil Series: Dale Silt Loam
Seeding rate: 37,600 seeds/ac

Herbicide: Preemergence: 2.7 qt/ac Charger Max ATZ + 44oz glyphosate/ac

In-season: 16 oz Huskie in-season

Fertilizer: N- 140 lbs/ac Planting Date: May 9 Harvest Date: September 18

Table 2. Early cultivars from the Chickasha location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5563	7176	129.3	11.2	58.1
Kauffman Seeds	5583	4738	85.4	10.8	55.7
Kauffman Seeds	5603	5459	98.4	11.1	56.1
Dyna-Gro	M54GR24	3753	67.6	12.3	55.3
Dyna-Gro	M59GB57	5634	101.5	11.8	56.7
Dyna-Gro	M59GB94	6853	123.5	12.1	54.3
Dekalb	DKS 28-07	5235	94.3	10.0	55.0
Average		5549		11.3	55.9
CV (%)		17.5			
LSD (0.05)		1003.2			

Table 3. Medium cultivars from the Chickasha location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight Ibs/bu
Kauffman Seeds	5710	6294	93.4	10.4	56.1
Kauffman Seeds	5643	7661	113.6	11.7	55.4
Kauffman Seeds	5730	7606	112.8	10.5	58.2
Kauffman Seeds	5653IG	7873	116.8	9.8	54.1
Sorghum Partners	SP 43M80	6476	96.1	9.9	52.6
Sorghum Partners	SP 67B17	5779	85.7	11.1	53.8
Sorghum Partners	SP 66M16	6618	98.2	12.4	56.2
Sorghum Partners	SP 65M60	6182	91.7	10.6	56.0
Sorghum Partners	SPSD 353	7723	114.5	11.7	57.4
Dyna-Gro	M60GB31	7423	110.1	10.3	55.2
Dyna-Gro	M60GB88	6238	92.5	10.8	53.9
Dyna-Gro	M63GB78	5844	86.7	11.5	52.9
Dyna-Gro	M67GB87	7196	106.7	12.3	55.6
Dyna-Gro	GX22932	6183	91.7	11.4	57.3
Dyna-Gro	GX22934	7170	106.3	10.6	54.1
Dyna-Gro	GX22936	7240	107.4	10.8	53.8
Dyna-Gro	GX22937	8368	124.1	11.2	56.7
Dyna-Gro	GX22923	5606	83.2	10.4	52.3
Dekalb	DKS 36-07	7924	117.5	11.3	55.8
Dekalb	DKS 33-07	6939	102.9	12.5	54.9
Dekalb	DKS 44-07	7475	110.9	9.8	56.1
Dekalb	DKS 50-07	7823	116.0	10.3	55.1
Advanta/Alta Grain	ADV G2106	5493	81.5	11.6	55.0
Advanta/Alta Grain	ADV G2165	7228	107.2	10.3	54.7
Advanta/Alta Grain	ADV G2168IG	5571	82.6	10.0	56.9
Advanta/Alta Grain	ADV G2193IG	6154	91.3	9.7	55.3
Advanta/Alta Grain	ADV G1329	3953	58.6	11.3	50.8
Average		6742		10.9	55.0
CV (%)		12.4			
LSD (0.05)		906.8			

Table 4. Late cultivars from the Chickasha location in 2023.

Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
SP 7715	1063	61.8	14.5	51.2
M71GR91	2356	137.2	15.3	53.4
M72GB71	2356	137.2	14.7	53.7
DKS 54-07	1096	63.8	13.9	50.5
	1718		14.6	52.2
	29.7			
	529.7			
	SP 7715 M71GR91 M72GB71	Cultivar lbs/ac SP 7715 1063 M71GR91 2356 M72GB71 2356 DKS 54-07 1096 1718 29.7	Cultivar Ibs/ac Trial Average SP 7715 1063 61.8 M71GR91 2356 137.2 M72GB71 2356 137.2 DKS 54-07 1096 63.8 1718 29.7	Cultivar Ibs/ac Trial Average % SP 7715 1063 61.8 14.5 M71GR91 2356 137.2 15.3 M72GB71 2356 137.2 14.7 DKS 54-07 1096 63.8 13.9 1718 14.6 29.7 29.7

Homestead

This trial was located on a cooperator's field (Brook Strader) near Homestead, Oklahoma. This location is typically rotated with a winter wheat cover or soybean. The Homestead location in 2023 was potentially one of the most consistent trials. Timely rainfall resulted in above-average stands early in the season. As with the other locations, early-season weed control was very good for the first 30 days. A break in control did happen during the vegetative growing period. Since this was primarily pigweed and marestail, this resulted in an application of Huskie. This was the only in-season weed management

practice needed. Even with prolonged heat and drought stress, no supplemental irrigation was applied throughout the growing season. Light to moderate true and false chinch bug activity did result in light to moderate stress on the crop. However, when evaluating lodging for the crop, no significant lodging (the primary risk for chinch bugs) was noted for any cultivar or any region throughout the trial. No chemical applications were made for control. No other significant insect pests or diseases were present throughout the season.

Cooperator: Brook Strader **Tillage Practice:** Conventional

Soil Series: Canadian Fine Sandy Loam

Seeding rate: 37,600 seeds/ac

Herbicide: Preemergence: 2.7 qt/ac Charger Max ATZ + 44oz glyphosate/ac

In-season: 16 oz Huskie in-season Fertilizer: N- 140 lbs/ac; P- 60 lbs/ac; K- 60 lbs/ac

Planting Date: May 3 Harvest Date: September 8

Table 5. Early cultivars from the Homestead location in 2023.

Company	Cultivar	Yield Ibs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5563	7959	142.1	13.2	61.7
Kauffman Seeds	5583	5084	90.8	11.2	56.9
Kauffman Seeds	5603	6008	107.3	11.3	57.1
Dyna-Gro	M54GR24	4598	82.1	11.9	58.0
Dyna-Gro	M59GB57	5885	105.1	11.1	56.1
Dyna-Gro	M59GB94	6076	108.5	11.9	59.3
Dekalb	DKS 28-07	5905	105.4	11.5	57.4
Average		5931		11.7	58.1
CV (%)		10.2			
LSD (0.05)		607.8			

Table 6. Medium cultivars from the Homestead location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5710	6328	113.0	11.2	58.7
Kauffman Seeds	5643	6795	121.3	11.2	57.3
Kauffman Seeds	5730	6865	122.6	12.0	60.2
Kauffman Seeds	5653IG	7519	134.3	12.3	62.2
Sorghum Partners	SP 43M80	4876	87.1	11.5	58.2
Sorghum Partners	SP 67B17	4750	84.8	11.7	56.1
Sorghum Partners	SP 66M16	5135	91.7	10.9	56.4
Sorghum Partners	SP 65M60	6411	114.5	10.2	54.1
Sorghum Partners	SPSD 353	5915	105.6	11.7	58.4
Dyna-Gro	M60GB31	5408	96.6	10.8	57.0
Dyna-Gro	M60GB88	5945	106.2	10.9	57.4
Dyna-Gro	M63GB78	4896	87.4	11.1	56.9
Dyna-Gro	M67GB87	6450	115.2	12.1	57.5
Dyna-Gro	GX22932	6528	116.6	11.4	60.4
Dyna-Gro	GX22934	7303	130.4	12.2	61.0
Dyna-Gro	GX22936	6880	122.9	11.8	59.4
Dyna-Gro	GX22937	7630	136.3	11.9	60.6
Dyna-Gro	GX22923	5156	92.1	11.0	56.5
Dekalb	DKS 36-07	6575	117.4	11.6	59.4
Dekalb	DKS 33-07	5765	102.9	11.3	57.8
Dekalb	DKS 44-07	7538	134.6	11.7	60.4
Dekalb	DKS 50-07	7381	131.8	12.1	61.8
Advanta/Alta Grain	ADV G2106	3936	70.5	11.2	58.6
Advanta/Alta Grain	ADV G2165	5768	103.0	11.9	58.7
Advanta/Alta Grain	ADV G2168IG	4925	87.9	11.0	58.2
Advanta/Alta Grain	ADV G2193IG	5036	89.9	11.1	56.7
Advanta/Alta Grain	ADV G1329	2513	44.9	7.4	34.5
Average		5935		11.3	57.6
CV (%)		16.4			
LSD (0.05)		1313.7			

Table 7. Late cultivars from the Homestead location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Sorghum Partners	SP 7715	4903	87.5	11.0	57.6
Dyna-Gro	M71GR91	6788	121.2	11.4	61.7
Dyna-Gro	M72GB71	5231	93.4	11.0	59.1
Dekalb	DKS 54-07	6056	108.1	11.0	60.5
Average		5744		11.1	59.7
CV (%)		9.8			
LSD (0.05)		609.3			

Perkins

The Perkins location was at the Cimarron Valley Research Station near Perkins, Oklahoma. The previous crop was a mix of soybean agronomic trials from the previous year; however, none had a significant impact on trial variability. The trial was planted into a tilled field. Dry conditions in early spring paired with excessive moisture in middle to end of April resulted in delayed preparation of site location. However, when the trial was able to be planted, adequate moisture and warming soil temperatures resulted in stands that were average to above-average which developed very quickly. Early season weed management was very good but continued moisture

into May resulted in continued flushes of weeds that had to be controlled with a combination of chemical applications and physical removal. Weeds continued to be an issue throughout the year and had to be continually managed. As this was primarily grassy weeds, physical removal continued to be the primary means of control. Even with prolonged heat and drought stress, no supplemental irrigation was applied throughout the growing season. Very light chinch bug activity was noted in the middle of the season. However, this minor stress resulted in very little impact on the crop. No other disease or insect pressure was noted throughout the season.

Cooperator: Kenneth Watkins Tillage Practice: Conventional Soil Series: Teller Fine Sandy Loam Seeding rate: 37,600 seeds/ac

Herbicide: Preemergence: 2.7 qt/ac Charger Max ATZ + 44oz glyphosate/ac

In-season: 16 oz Huskie in-season

Fertilizer: N- 140 lbs/ac; P- 60 lbs/ac; K- 60 lbs/ac

Planting Date: May 3 Harvest Date: September 8

Table 8. Early maturity grain sorghum hybrids (≤60 days until mid-bloom) yields at the Cimarron Research Station in Perkins, Oklahoma, for the 2023 season.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight Ibs/bu
Kauffman Seeds	5563	7445	134.9	11.7	59.9
Kauffman Seeds	5583	4680	84.8	10.1	55.2
Kauffman Seeds	5603	4990	90.4	10.2	57.2
Dyna-Gro	M54GR24	4412	79.9	10.5	56.9
Dyna-Gro	M59GB57	5308	96.2	10.2	55.0
Dyna-Gro	M59GB94	6313	114.4	10.8	58.0
Dekalb	DKS 28-07	5662	102.6	10.2	54.8
Average		5544		11.0	57.0
CV (%)		15.7			
LSD (0.05)		1818			

Table 9. Medium maturity grain sorghum hybrids (60-70 days until mid-bloom) yields at the Cimarron Research Station in Perkins, Oklahoma, for the 2023 season.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5710	5761	94.9	10.8	57.8
Kauffman Seeds	5643	6307	103.9	10.2	55.0
Kauffman Seeds	5730	7394	121.8	11.4	58.3
Kauffman Seeds	5653IG	7153	117.8	11.1	59.5
Sorghum Partners	SP 43M80	5872	96.7	11.1	57.0
Sorghum Partners	SP 67B17	5103	84.0	11.7	56.2
Sorghum Partners	SP 66M16	6424	105.8	11.7	56.9
Sorghum Partners	SP 65M60	6418	105.7	10.1	54.6
Sorghum Partners	SPSD 353	6349	104.6	10.7	57.5
Dyna-Gro	M60GB31	6316	104.0	10.4	57.6
Dyna-Gro	M60GB88	4892	80.6	10.3	55.6
Dyna-Gro	M63GB78	5124	84.4	10.6	56.9
Dyna-Gro	M67GB87	5367	88.4	10.7	55.8
Dyna-Gro	GX22932	6402	105.4	10.9	59.1
Dyna-Gro	GX22934	7463	122.9	10.9	59.0
Dyna-Gro	GX22936	6097	100.4	10.8	57.7
Dyna-Gro	GX22937	7644	125.9	10.7	56.6
Dyna-Gro	GX22923	4332	71.3	10.3	54.7
Dekalb	DKS 36-07	5928	97.6	10.8	57.7
Dekalb	DKS 33-07	6095	100.4	10.9	57.8
Dekalb	DKS 44-07	7574	124.7	10.8	59.3
Dekalb	DKS 50-07	7331	120.7	11.3	59.4
Advanta/Alta Grain	ADV G2106	5580	91.9	10.2	57.0
Advanta/Alta Grain	ADV G2165	6892	113.5	11.5	57.7
Advanta/Alta Grain	ADV G2168IG	5195	85.6	10.4	56.6
Advanta/Alta Grain	ADV G2193IG	5187	85.4	10.9	55.9
Advanta/Alta Grain	ADV G1329	3704	61.0	10.1	54.9
Average		6070		10.8	57.1
CV (%)		12.4			
LSD (0.05)		1407			

Table 10. Late maturity grain sorghum hybrids (≥70 days until mid-bloom) yields at the Cimarron Research Station in Perkins, OKlahoma, for the 2023 season.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Sorghum Partners	SP 7715	4791	88.1	11.0	56.5
Dyna-Gro	M71GR91	5665	104.2	11.2	58.7
Dyna-Gro	M72GB71	5880	108.2	11.1	57.8
Dekalb	DKS 54-07	5408	99.5	10.9	58.0
Average		5436		11.0	57.7
CV (%)		11.6			
LSD (0.05)		855			

Bixby

The Bixby location is the program's only eastern Oklahoma site, which is often noted for having more stable temperatures and consistent rainfall patterns. This allows for a different look at cultivar performance under these conditions. In 2023. this location was not exempt from hot and dry condition and experienced substantially higher temperatures and lower inseason precipitation than normal for this location, especially in the early months of the year. Similar to other locations, preplant herbicide applications did help with early-season weed control. This location is noted for having heavy pigweed and grass pressure. Grasses were not an issue throughout the growing season, with only minor issues with a patch of Bermudagrass located in early maturing cultivars in the third replication. This was managed through physical removal but did cause slight reductions in yields and increased variability. However, since the pressure was consistent across the early

cultivars, this replication was maintained for analysis. Only a minor amount of pigweed was noted during the course of the year and was manually removed during early flowering/ grain fill stages. Chinch bug pressure was higher here than any other location during 2023. A pyrethroid insecticide was applied across the trial at early reproductive growth via a high-clearance sprayer. These applications did not completely control the pests but did minimize additional growth of populations. While this location can be irrigated, no irrigation was applied due to mechanical issues with the irrigation pump, therefore this should be considered a completely dryland trial in 2023. No significant diseases were present throughout the season. Recent research has also shown that N applications do not have to be as high at this location as it often follows several years of soybean, which was the reason for the lower N application rates.

Cooperator: Ted Newell
Tillage Practice: Conventional
Soil Series: Wynona Silty Clay Loam
Seeding rate: 37,600 seeds/ac

Herbicide: Preemergence: 2.7 qt/ac Charger Max ATZ + 44oz glyphosate/ac

Fertilizer: N- 60 lbs/ac Planting Date: May 30 Harvest Date: October 21

Table 11. Early cultivars from the Bixby location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5563	5568	180.8	16.9	55.2
Kauffman Seeds	5583	2615	84.9	19.6	51.2
Kauffman Seeds	5603	2493	80.9	17.3	52.5
Dyna-Gro	M54GR24	1591	51.7	17.7	53.3
Dyna-Gro	M59GB57	2884	93.6	17.0	56.6
Dyna-Gro	M59GB94	3739	121.4	16.0	51.0
Dekalb	DKS 28-07	2669	86.7	18.0	50.7
Average		3080		17.5	52.9
CV (%)		17.8			
LSD (0.05)		879.6			

Table 12. Medium cultivars from the Bixby location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5710	6539	100.3	16.5	53.8
Kauffman Seeds	5643	7808	119.7	16.3	51.5
Kauffman Seeds	5730	6880	105.5	16.7	54.3
Kauffman Seeds	5653IG	6476	99.3	16.1	54.8
Sorghum Partners	SP 43M80	5326	81.7	18.3	48.8
Sorghum Partners	SP 67B17	5784	88.7	16.7	51.0
Sorghum Partners	SP 66M16	6413	98.4	15.9	52.5
Sorghum Partners	SP 65M60	5738	88.0	15.4	49.3
Sorghum Partners	SPSD 353	6809	104.4	16.8	53.6
Dyna-Gro	M60GB31	7670	117.6	16.3	53.5
Dyna-Gro	M60GB88	5756	88.3	15.4	51.8
Dyna-Gro	M63GB78	6933	106.3	16.6	53.9
Dyna-Gro	M67GB87	7856	120.5	17.1	51.9
Dyna-Gro	GX22932	7100	108.9	16.3	51.7
Dyna-Gro	GX22934	8080	123.9	16.7	54.7
Dyna-Gro	GX22936	6364	97.6	17.0	53.6
Dyna-Gro	GX22937	7578	116.2	16.4	50.5
Dyna-Gro	GX22923	5445	83.5	15.6	49.3
Dekalb	DKS 36-07	7038	107.9	16.0	53.5
Dekalb	DKS 33-07	5428	83.2	16.1	51.7
Dekalb	DKS 44-07	5575	85.5	15.6	51.2
Dekalb	DKS 50-07	7186	110.2	17.1	54.9
Advanta/Alta Grain	ADV G2106	6293	96.5	16.4	53.2
Advanta/Alta Grain	ADV G2165	5241	80.4	16.8	52.3
Advanta/Alta Grain	ADV G2168IG	6163	94.5	15.7	50.6
Advanta/Alta Grain	ADV G2193IG	5579	85.6	16.0	52.6
Advanta/Alta Grain	ADV G1329	6988	107.2	17.1	52.3
Average		6520		16.4	52.3
CV (%)		11.4			
LSD (0.05)		1047.2			

Table 13. Late cultivars from the Bixby location in 2023.

Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
SP 7715	7491	98.4	16.1	55.5
M71GR91	7360	96.7	16.3	54.9
M72GB71	8020	105.3	16.2	55.1
DKS 54-07	7589	99.7	15.9	55.3
	7615		16.1	55.2
	4.7			
	449.2			
	SP 7715 M71GR91 M72GB71	Cultivar lbs/ac SP 7715 7491 M71GR91 7360 M72GB71 8020 DKS 54-07 7589 7615 4.7	Cultivar Ibs/ac Trial Average SP 7715 7491 98.4 M71GR91 7360 96.7 M72GB71 8020 105.3 DKS 54-07 7589 99.7 7615 4.7	Cultivar Ibs/ac Trial Average % SP 7715 7491 98.4 16.1 M71GR91 7360 96.7 16.3 M72GB71 8020 105.3 16.2 DKS 54-07 7589 99.7 15.9 7615 16.1 4.7 4.7

Slapout

This trial was on a grower field (Jordan Shearer) near Slapout, Oklahoma. The trial is a traditional sorghum and wheat rotation for the region. The trial was planted in the middle of June, which was typically later than normal for this region. This was due to a combination of cooler soils and challenges with soil moisture. Due to rapid warming and good early soil moisture, the trial emerged very quickly and was able to get an adequate stand within the first 7-10 days (depending on maturity). Growth and development of the trial continued and progressed very well during June and July due to consistent moisture patterns. This did lead to several flushes of weeds in the trial that were managed by manual removal several

times during the course of the season. This continued until mid-August when dry conditions and above average temperatures returned to the region. This occurred during later stages of reproductive growth and early grain fill, especially for the longer maturity cultivars. This stress became severely yield limiting during the later stages of reproductive growth and limited the top end of yield potential for the cultivars. This later season stress can also be seen on the lower test weights for a majority of the cultivars compared to other trial locations in 2023. No major disease or insect issues were noted at the Slapout location and therefore were not managed.

Cooperator: Jordan Shearer Tillage Practice: Conventional Soil Series: Oklark-Alopark Loams Seeding rate: 37,600 seeds/ac

Herbicide: Burndown: 24 oz glyphosate/ac + 10 oz dicamba/ac

Preemergence: 1 pt atrazine/ac + 1.3 pt S-Metolachlor + 1 oz Saflufenacil/ac

Fertilizer: 60 lbs N/ac + 20 lbs P/ac

Planting Date: June 14 Harvest Date: November 8

Table 14. Early cultivars from the Slapout location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5563	3819	119.1	15.0	60.0
Kauffman Seeds	5583	2900	90.5	12.4	54.1
Kauffman Seeds	5603	3575	111.5	12.0	56.1
Dyna-Gro	M54GR24	3445	107.5	11.5	54.8
Dyna-Gro	M59GB57	2906	90.7	11.6	55.0
Dyna-Gro	M59GB94	2533	79.0	13.5	56.6
Dekalb	DKS 28-07	3264	101.8	11.9	53.4
Average		3206		12.5	55.7
CV (%)		11.1			
LSD (0.05)		422			

Table 15. Medium cultivars from the Slapout location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5710	3778	157.5	13.7	56.4
Kauffman Seeds	5643	2475	103.2	13.6	53.7
Kauffman Seeds	5730	2599	108.4	15.1	56.4
Kauffman Seeds	5653IG	2441	101.8	14.5	55.1
Sorghum Partners	SP 43M80	1926	80.3	13.8	54.1
Sorghum Partners	SP 67B17	2050	85.5	13.7	56.0
Sorghum Partners	SP 66M16	2253	93.9	13.7	55.1
Sorghum Partners	SP 65M60	1724	71.9	13.4	51.6
Sorghum Partners	SPSD 353	1845	76.9	12.7	52.2
Dyna-Gro	M60GB31	1655	69.0	13.6	50.7
Dyna-Gro	M60GB88	2416	100.7	12.3	50.6
Dyna-Gro	M63GB78	2189	91.3	15.8	54.6
Dyna-Gro	M67GB87	2805	117.0	14.7	53.4
Dyna-Gro	GX22932	1988	82.9	16.4	52.8
Dyna-Gro	GX22934	2304	96.1	13.7	55.6
Dyna-Gro	GX22936	3404	141.9	13.2	50.2
Dyna-Gro	GX22937	3111	129.7	14.1	53.6
Dyna-Gro	GX22923	2490	103.8	13.3	52.4
Dekalb	DKS 36-07	2824	117.7	12.2	51.2
Dekalb	DKS 33-07	3065	127.8	14.2	53.5
Dekalb	DKS 44-07	2798	116.6	13.0	56.4
Dekalb	DKS 50-07	2545	106.1	15.7	55.5
Advanta/Alta Grain	ADV G2106	1586	66.1	13.5	51.1
Advanta/Alta Grain	ADV G2165	1964	81.9	15.4	53.3
Advanta/Alta Grain	ADV G2168IG	1739	72.5	13.4	50.9
Advanta/Alta Grain	ADV G2193IG	2026	84.5	12.5	51.8
Advanta/Alta Grain	ADV G1329	2760	115.1	12.8	52.1
Average		2398		13.8	53.3
CV (%)		17.4			
LSD (0.05)		522.8			

Goodwell

The Goodwell location was at the Oklahoma Panhandle Research and Extension Center (OPREC) and was under an overhead sprinkler irrigation system. The trial was strip tilled into the previous year's corn crop. The trial was fertilized through the strip-till unit. The location had adequate moisture prior to planting as well as good moisture following; therefore, emergence was not an issue, and an adequate stand was achieved. Due to moisture early in the season, weeds were a continual issue this season. These weeds were predominately volunteer corn early in the season and a mix of annual grasses and pigweed later in the season.

These were controlled with a combination of chemical applications and manual removal (after chemicals were no longer labeled). Irrigation was needed throughout the middle and later portions of the season. Unfortunately, irrigation was delayed by a week or two due to mechanical issues. This could have attributed to the minor decrease in yields compared to other irrigated locations in the panhandle. However, this was not universal, and some cultivars exhibited greater stress compared to others. No significant insect and disease pressure was noted at this location.

Cooperator: Cameron Murley

Tillage Practice: Strip-tilled into corn residue

Soil Series: Gruver Clay Loam Target Population: 66,000 seeds/ac Fertilizer: 200 lbs N/ac, 65 lbs P/ac

Planting Date: June 14 Harvest Date: November 8

Table 16. Application date, application and rate of the Goodwell location in 2023.

Application Date	Application	Rate
April 5	Flumioxazin	2 oz
	Dicamba	12 oz
	Atrazine	32 oz
	Saflufenacil	2 oz
May 17	Atrazine	48 oz
	Fluroxypyr	6.4 oz
	Glyphosate	32 oz
	Mesotrione	3 oz
	Acetochlor	40 oz
May 30	Saflufenacil	10 oz
	Glyphosate	32 oz
June 21	Fluroxypyr	6.4 oz
	S-Metolachlor	16 oz
July 26	2,4-D	16 oz
	Metsulfuron	0.5 oz

Table 17. Early cultivars from the Goodwell location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5563	6792	127.8	11.7	60.6
Kauffman Seeds	5583	4261	80.2	11.3	54.4
Kauffman Seeds	5603	6454	121.4	11.7	57.6
Dyna-Gro	M54GR24	2749	51.7	11.3	53.5
Dyna-Gro	M59GB57	5098	95.9	11.3	56.1
Dyna-Gro	M59GB94	5479	103.1	11.5	57.2
Dekalb	DKS 28-07	6381	120.0	11.2	57.7
Average		5316		11.4	56.7
CV (%)		21.2			
LSD (0.05)		1088.6			

Table 18. Medium cultivars from the Goodwell location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5710	2699	68.9	12.4	54.9
Kauffman Seeds	5643	4345	111.0	8.6	42.1
Kauffman Seeds	5730	6503	166.1	12.1	61.4
Kauffman Seeds	5653IG	5884	150.3	12.0	59.2
Sorghum Partners	SP 43M80	1856	47.4	12.1	47.8
Sorghum Partners	SP 67B17	1509	38.5	12.1	53.8
Sorghum Partners	SP 66M16	3215	82.1	11.5	55.9
Sorghum Partners	SP 65M60	4203	107.3	11.0	54.9
Sorghum Partners	SPSD 353	4076	104.1	12.1	57.2
Dyna-Gro	M60GB31	7196	183.8	11.8	60.6
Dyna-Gro	M60GB88	3470	88.6	11.5	49.5
Dyna-Gro	M63GB78	2843	72.6	9.6	47.1
Dyna-Gro	M67GB87	3166	80.9	11.5	49.5
Dyna-Gro	GX22932	6136	156.7	12.0	60.6
Dyna-Gro	GX22934	5023	128.3	12.1	59.1
Dyna-Gro	GX22936	4276	109.2	11.8	58.8
Dyna-Gro	GX22937	6596	168.4	11.9	59.8
Dyna-Gro	GX22923	4158	106.2	11.1	54.8
Dekalb	DKS 36-07	4654	118.8	11.5	57.7
Dekalb	DKS 33-07	2538	64.8	10.6	47.7
Dekalb	DKS 44-07	3116	79.6	11.2	54.0
Dekalb	DKS 50-07	5956	152.1	11.7	59.2
Advanta/Alta Grain	ADV G2106	1985	50.7	10.2	45.0
Advanta/Alta Grain	ADV G2165	2469	63.0	9.0	41.0
Advanta/Alta Grain	ADV G2168IG	1005	25.7	6.4	28.6
Advanta/Alta Grain	ADV G2193IG	2928	74.8	10.8	47.0
Advanta/Alta Grain	ADV G1329	3928	100.3	11.1	57.0
Average		3916		11.1	53.0
CV (%)		29.8			
LSD (0.05)		1472.6			

Table 19. Late cultivars from the Goodwell location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight Ibs/bu
Sorghum Partners	SP 7715	6280	118.2	11.9	61.0
Dyna-Gro	M71GR91	4525	85.2	11.9	60.5
Dyna-Gro	M72GB71	3365	63.3	11.4	57.7
Dekalb	DKS 54-07	7082	133.3	11.8	61.4
Average		5313		11.8	60.1
CV (%)		17.8			
LSD (0.05)		1037.5			

McCaull

The trial location was at the McCaul Extension Farm near Elkhart, Kansas. The trial was strip tilled into previous wheat crop residue. All fertilizer was applied in the strip. The trial was irrigated with overhead sprinkler irrigation. The trial was on the inner irrigation spans of a quarter-acre pivot, with the outer spans planted to corn. With rainfall and irrigation applied prior to planting, soil moisture at planting was more than adequate. This resulted in very good stands shortly after planting. However, with the associated moisture, early flushes of weeds had to be sprayed in order to maintain a weed-free environment. Successive flushes of weeds were controlled through manual removal.

Minor delays in irrigation during the early portions of July and August did potentially increase stress of the trial, but significant yield limitations were not noted throughout the trial. Lower yields for the later maturity cultivars can be explained by the increased temperature and lower natural rainfall during August and September. At the end of August, most of the early and medium cultivars had already begun to set and fill grain, while the later cultivars experienced this stress during anthesis and early grain development. Stress during this period does tend to decrease yields compared to other later-season growth stages. No significant insect or disease pressure was noted throughout the season.

Cooperator: Cameron Murley

Tillage Practice: Strip-tilled into wheat residue

Soil Series: Gruver Clay Loam Target Population: 66,000 seeds/ac Fertilizer: 200 lbs N/ac, 65 lbs P/ac

Planting Date: June 14 Harvest Date: November 11

Table 20. Application date, application and rate of the McCaull location in 2023.

Application Date	Application	Rate
April 10	Flumioxazin	2 oz
	Dicamba	12 oz
	Atrazine	32 oz
	Saflufenacil	2 oz
May 17	Atrazine	48 oz
	Fluroxypyr	6.4 oz
	Glyphosate	32 oz
	Mesotrione	3 oz
	Acetochlor	40 oz
May 30	Saflufenacil	10 oz
	Glyphosate	32 oz
June 21	Fluroxypyr	6.4 oz
	S-Metolachlor	16 oz
July 26	2,4-D	16 oz
	Metsulfuron	0.5 oz

 Table 21. Early cultivars from the McCaull location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5563	7261	109.9	10.0	53.6
Kauffman Seeds	5583	7389	111.8	8.9	53.1
Kauffman Seeds	5603	7976	120.7	9.1	54.5
Dyna-Gro	M54GR24	5903	89.3	9.1	54.0
Dyna-Gro	M59GB57	5981	90.5	8.8	52.1
Dyna-Gro	M59GB94	5258	79.6	9.6	50.1
Dekalb	DKS 28-07	6478	98.0	9.1	53.1
Average		6606		9.2	52.9
CV (%)		11.7			
LSD (0.05)		788.9			

Table 22. Medium cultivars from the McCaull location in 2023.

Company	Cultivar	Yield lbs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Kauffman Seeds	5710	7990	113.2	9.1	48.0
Kauffman Seeds	5643	7318	103.6	9.6	55.2
Kauffman Seeds	5730	8734	123.7	10.0	58.3
Kauffman Seeds	5653IG	7599	107.6	10.4	59.8
Sorghum Partners	SP 43M80	5994	84.9	9.9	56.8
Sorghum Partners	SP 67B17	7446	105.5	10.0	56.9
Sorghum Partners	SP 66M16	7473	105.8	9.9	57.9
Sorghum Partners	SP 65M60	8114	114.9	9.5	53.1
Sorghum Partners	SPSD 353	7058	100.0	9.6	56.4
Dyna-Gro	M60GB31	7103	100.6	9.8	58.3
Dyna-Gro	M60GB88	3801	53.8	7.4	41.8
Dyna-Gro	M63GB78	7613	107.8	10.1	57.9
Dyna-Gro	M67GB87	6335	89.7	9.9	56.2
Dyna-Gro	GX22932	6953	98.5	10.4	60.3
Dyna-Gro	GX22934	6808	96.4	10.1	59.5
Dyna-Gro	GX22936	7240	102.6	9.6	56.6
Dyna-Gro	GX22937	6433	91.1	10.1	59.3
Dyna-Gro	GX22923	7723	109.4	9.7	56.1
Dekalb	DKS 36-07	4616	65.4	9.7	53.7
Dekalb	DKS 33-07	7421	105.1	9.8	56.4
Dekalb	DKS 44-07	9050	128.2	10.3	58.9
Dekalb	DKS 50-07	6724	95.2	10.2	57.6
Advanta/Alta Grain	ADV G2106	5206	73.7	9.9	56.4
Advanta/Alta Grain	ADV G2165	8659	122.6	10.0	58.4
Advanta/Alta Grain	ADV G2168IG	6014	85.2	9.8	54.1
Advanta/Alta Grain	ADV G2193IG	8190	116.0	9.5	55.6
Advanta/Alta Grain	ADV G1329	7008	99.3	10.2	55.9
Average		7060		9.8	56.1
CV (%)		16.1			
LSD (0.05)		1306.6			

Table 23. Late cultivars from the McCaull location in 2023.

Company	Cultivar	Yield Ibs/ac	Percent of Trial Average	Moisture %	Test Weight lbs/bu
Sorghum Partners	SP 7715	4593	95.2	10.7	58.3
Dyna-Gro	M71GR91	6170	128.0	10.6	59.6
Dyna-Gro	M72GB71	2676	55.5	10.7	53.2
Dekalb	DKS 54-07	5850	121.3	10.8	58.8
Average		4822		10.7	57.4
CV (%)		20.8			
LSD (0.05)		1508.9			

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