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COLORADO STATE UNIVERSITY

Agricultural Experiment Station

College of Agricultural Sciences - Department of Soil & Crop Sciences - Extension

2024

GRAIN AND FORAGE SORGHUM VARIETY PERFORMANCE TRIALS

Making Better Decisions

CROPS TESTING PROGRAM

Table of Contents

Authors....3
Acknowledgments....4
2024 Colorado Grain and Forage Sorghum Performance Trials....5
2024 Dryland Grain Sorghum Hybrid Performance Trial at Akron....7
2024 Dryland Grain Sorghum Hybrid Performance Trial at Sheridan Lake....8
2024 Dryland Grain Sorghum Hybrid Performance Trial at Walsh....9
2024 Irrigated Grain Sorghum Hybrid Performance Trial at Walsh....10
2024 Irrigated Grain Sorghum Hybrid Performance Trial at Wiggins....11
2024 Irrigated Forage Sorghum Performance Trial at Rocky Ford....12
2024 Dryland Forage Sorghum Performance Trial at Walsh....13

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Cover design by London Breese

Additional Corn Resources

Colorado State University Crop Variety Testing Program: www.csucrops.org

2024 Colorado Grain and Forage Sorghum Performance Trials

Sally Jones-Diamond, Zane Jenkins, and Ayden Marler

Colorado State University (CSU) conducts grain and forage sorghum performance trials to provide research-based, unbiased, current, and reliable information to Colorado sorghum producers to make better planting decisions. CSU promotes crop variety testing as a service to crop producers and seed companies who depend on us for crop variety performance information. The sorghum trials are made possible by funding received from company entry fees, the Colorado Sorghum Producers, and the CSU Agricultural Experiment Station.

Colorado State University personnel planted sorghum trials at six different locations in 2024. Akron, Seibert, Sheridan Lake, and Walsh each had dryland grain sorghum variety trials (the trial at Seibert was lost due to extreme field variation caused by drought). Irrigated grain sorghum trials were done at Walsh and Wiggins. Forage sorghum trials were performed at Rocky Ford and Walsh, where twenty-eight total forage sorghum varieties were tested. Forty-seven unique grain sorghum hybrids were tested in dryland conditions and thirty in irrigated conditions.

All trial results were statistically analyzed and reported shortly after harvest on our website at www.csucrops.org

Testing Methods

Hybrids were included in the variety trials based on paid company entries. Company representatives selected the hybrids to enter in the trials and provided the seed. Check hybrids were included at the request of the farmer cooperators or at the discretion of the Crops Testing Program based on past performance or production acreage.

All trial entries were randomized within each replication using a randomized complete block design. Variety trials at Walsh were fifty feet long and 4-rows wide. The irrigated strip trial at Walsh contained only two replicates, and the dryland trial contained four replicates. At Rocky Ford, the forage sorghum trial was planted in 2-row plots that were thirty feet long and replicated four times. The entire width of the plot was harvested and used for data at Walsh and Rocky Ford. All the other trial locations (Seibert, Sheridan Lake, Akron, and Wiggins) were thirty feet long and four rows wide, with the center two rows harvested for yield data. Four replicates were planted for dryland and three replicates for irrigated trials at those sites.

Plots at Akron, Sheridan Lake, Seibert, and Wiggins were planted using a four-row Seed Research Equipment Solutions (SRES) 2013 Classic Aire small-plot vacuum planter equipped with Monosem seed meters. Trials at Rocky Ford were planted with an International 800 cone planter. Trials at Walsh were planted with a four-row cone planter. Irrigated grain sorghum trials were planted at 40,000 (Walsh) and 85,000 (Wiggins) seeds per acre. The dryland grain sorghum trial at Walsh was planted at 43,500 seeds per acre, and the remaining dryland trials were planted at 45,500 seeds per acre. The irrigated forage sorghum trial at Rocky Ford was planted at 124,500 seeds per acre, and Walsh dryland was planted at 70,000 seeds per acre.

Grain sorghum plots at all locations, except Walsh, were harvested using a 2024 Zurn 150 plot combine equipped with an H2 GrainGage weighing system (provides weight, moisture, and test weight).
At the Walsh location, plots were harvested with a modified Gleaner F3 combine equipped with a HarvestMaster H2 weighing system and a four-row row-crop head to enhance the harvest of lodged tillers. The HarvestMaster H2 weigh system measured all test weights during harvest. Forage sorghum was chopped using a two-row, self-propelled, New Holland 1880 silage chopper at Walsh and a two-row, pull-type, New Holland 880 at Rocky Ford. Both silage choppers were equipped with electronic automated weighing systems. All grain sorghum yields have been adjusted to 14% moisture content, and all forage yields have been reported in both dry matter and moisture-adjusted (65%) moisture content. Yields for all trial entries are reported in their respective tables.

Data Results

The least significant difference (LSD) is provided at the bottom of each results table. The LSD is used to help determine whether differences in hybrid yields are statistically significant. If the difference between two hybrid yields equals or exceeds the LSD value, the difference is significant. If two entries being compared have a difference in yield that is less than the LSD value, those two entries are considered equal yielding. Farmers should use the LSD ($P<0.30$) for selecting superior hybrids to minimize economic loss due to false negative conclusions (concluding hybrids are the same when they are different). Scientists, academics, and others may wish to use LSD ($P<0.05$) to minimize the risk of false positive conclusions (concluding hybrids are different when they are actually the same). Hybrid yields in bold are in the highest LSD yield group and are considered equal to each other, but higher yielding than the non-bolded hybrid yields. Hybrids in the table are sorted from highest to lowest yield.
While yield performance is the primary focus of this report, many factors should be considered when selecting a hybrid. These factors may include time to maturity, herbicide tolerance, disease resistance, pest tolerance, standability, drought tolerance, and cost.

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2024 Dryland Grain Sorghum Hybrid Performance Trial at Akron

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Brand	Hybrid	Grain Yield[a]	Yield	2-Year Avg. Yield	Test Weight	Moisture	Emerged Plant Population	Harvest Population[b]	Tillering[c]	50% Bloom	Maturity Group[d]	Grain Color
		bu/ac	% of test avg.	bu/ac	lb/bu	percent	plants/ac	heads/ac	tillers/plant	days after planting		
BH Genetics	BH 3701C	**151.9**	111%	-	53.8	10.6	30,000	64,000	1.2	75	ME	Cream
Dyna-Gro Seed	M59GB94	**150.5**	110%	119	55.4	10.6	28,800	67,200	1.4	78	E	Bronze
DYNAGRO	M62GC23	**150.5**	110%	-	53.8	9.7	28,100	66,400	1.4	79	ME	Cream
Dekalb	DKS28-05	**148.9**	109%	129	54.5	9.0	24,000	73,300	2.1	70	E	Bronze
BH Genetics	BH 3520	**146.7**	107%	-	54.5	11.5	29,300	61,100	1.2	73	ME	Red
Channel Seed	5B70	**146.5**	107%	121	54.9	12.6	22,100	63,500	1.9	80	ME	Bronze
Dekalb	DKS29-95	**146.5**	107%	121	51.0	9.4	31,500	70,900	1.3	74	E	Dark Red
Dekalb	DKS28-07	**145.8**	107%	132	54.4	10.1	30,000	67,500	1.2	72	E	Bronze
Dekalb	DKS29-28	144.3	106%	124	55.0	9.7	27,100	67,100	1.5	70	E	Bronze
Channel Seed	5R45	143.0	105%	129	52.6	9.4	30,800	66,500	1.2	77	ME	Red
BH Genetics	BH 3818	142.4	104%	-	54.2	9.9	26,400	70,000	1.7	79	ME	Red
Dyna-Gro Seed	M59GB57	141.6	104%	111	54.5	8.8	27,300	64,200	1.4	71	E	Bronze
Pioneer	88P71	141.3	103%	116	54.9	10.6	30,800	60,800	1.0	73	E	Red
Dekalb	DKS28-16	140.9	103%	-	**58.7**	12.4	27,700	85,500	2.1	73	E	Bronze
LG Seeds	GA 2550R	140.3	103%	-	53.7	10.8	28,600	71,500	1.5	78	ME	Red
Sorghum Partners	SP 45A45 DT	138.9	102%	119	53.3	10.1	27,300	55,100	1.0	82	ME	Bronze
DYNAGRO	M62GB36	138.5	101%	-	53.7	12.8	23,500	62,500	1.7	89	M	Bronze
Hoegemeyer Seed	H6006	138.2	101%	-	55.8	11.1	27,100	71,600	1.7	71	ME	Red
Pioneer	89P52	137.4	100%	-	54.7	9.5	28,900	66,200	1.4	73	E	Red
Hoegemeyer Seed	H6020	137.1	100%	-	55.0	10.7	25,700	62,100	2.1	73	ME	Red
Sorghum Partners	SP 31A15	134.5	98%	120	50.4	9.6	24,900	44,800	0.9	79	ME	Red
Channel Seed	6B02	134.2	98%	-	51.9	9.7	22,700	58,500	1.8	81	ME	Bronze
Dyna-Gro Seed	M54GR24	134.0	98%	114	56.5	10.5	25,400	72,100	1.9	71	E	Red
Pioneer	86P20	133.7	98%	112	53.1	9.2	27,000	59,900	1.3	75	ME	Red
Channel Seed	5B29	133.6	98%	120	53.1	9.2	25,600	71,600	1.9	70	E	Bronze
LG Seeds	GA 1510C	132.6	97%	-	55.3	9.6	21,700	63,300	2.0	77	E	Cream
Sorghum Partners	SP 58M85 DT	130.8	96%	-	51.5	10.6	22,200	50,000	1.3	77	M	Bronze
Sorghum Partners	SPHF273 DT	130.2	95%	-	52.1	9.9	18,400	71,700	2.9	86	-	Bronze
Sorghum Partners	SPHF165 DT	129.3	95%	-	53.7	10.6	20,500	61,000	2.4	71	-	Cream
Sorghum Partners	SP 25C10	128.4	94%	-	55.2	9.7	25,900	69,100	1.7	70	E	Cream
Sorghum Partners	SP 43M80	128.1	94%	106	50.1	10.6	20,000	48,600	1.4	78	ME	Bronze
Sorghum Partners	SPHF371 DT	127.7	93%	-	46.2	6.4	18,200	64,600	2.7	87	-	Cream
Sorghum Partners	SP 30A30 DT	125.2	92%	102	52.3	9.9	26,000	50,300	1.0	82	ME	Bronze
Sorghum Partners	SPHF164 DT	124.7	91%	-	53.1	10.6	14,800	70,300	3.8	76	-	Bronze
Dyna-Gro Seed	M60GB31	115.4	84%	77	50.1	11.7	27,400	55,700	1.0	87	ME	Bronze
Sorghum Partners	251	111.0	81%	-	58.2	11.5	23,700	71,600	2.1	69	E	Red
	Average	**136.8**	**100%**	**116**	**53.6**	**10.2**	**25,500**	**64,400**	**1.7**	**76**	**-**	**-**
	[e]LSD (.30)	6.6			1.3							
	[e]LSD (.05)	12.5			2.5							
	Coefficient of Variation (CV)	4.1			1.8							

[a]Yields adjusted to 14% moisture and hybrids ranked by yield. Hybrid yields in bold are in the top LSD group (.30).

[b]Harvest population is the total number of grain-producing heads/panicles counted at harvest that were mature, including tillers.

[c]Average number of productive (grain containing and mature) tiller heads per plant. Does not include main plant head.

[d]Maturity group: E=early; ME=medium-early; M=medium. Maturity groups are provided by the company and may not align with the observed flowering dates in the trial due to the latitude and relatively high elevation of the trial site (4,659 feet).

[e]Farmers selecting a variety based on yield should use the LSD (.30) to protect themselves from false negative conclusions (concluding varieties are the same when they are actually different). Companies or researchers may use the LSD (.05) to avoid false positive conclusions (concluding varieties are different when they are actually the same).

Site Information

Collaborator:	USDA-ARS Central Great Plains Research Center
Planting Date:	May 28, 2024
Harvest Date:	October 25, 2024
Fertilizer:	Pre-emerge: N at 50 lb/ac
Herbicide:	Pre-plant: ValorSX at 2 oz/ac, dicamba at 6 oz/ac, and glyphosate at 32 oz/ac
Previous Crop:	Winter wheat
Soil Type:	Keith-Kuma complex
GPS Coordinates:	40.161705, -103.1419429
Trial Comments:	Planted into excellent moisture into very heavy wheat residue. Average stands and emergence. Average flowering by date of Aug. 15th. Very timely and frequent rainfall allowed for excellent yield. Good weed control throughout the season. No lodging noted at harvest. First frost date was Oct. 14th. Radar estimates showed the trial received 9.74 inches of rain from planting to harvest, and 18.57 inches since January 1st, which is 120% of the ten-year average (year-to-date).

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2024 Dryland Grain Sorghum Hybrid Performance Trial at Sheridan Lake

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Brand	Hybrid	Grain Yield[a]	Yield	2-Year Avg. Yield	Test Weight	Moisture	Emerged Plant Population	Harvest Population[b]	Tillering[c]	50% Bloom	Plant Height	Maturity Group[d]	Grain Color
		bu/ac	% of test avg.	bu/ac	lb/bu	percent	plants/ac	heads/ac	tillers/plant	days after planting	inches		
DYNAGRO	M62GC23	**56.0**	135%	90	56.9	9.1	36,400	34,900	0.0	74	28	ME	Cream
Golden Acres	GA 2630C	**51.9**	125%	84	56.7	10.2	33,700	32,600	0.0	73	32	E	Cream
BH Genetics	BH 3701C	50.5	122%	-	56.3	8.8	35,800	36,700	0.0	73	33	ME	Cream
Channel Seed	5B70	50.3	121%	89	59.2	11.6	25,500	30,700	0.2	76	33	ME	Bronze
Dyna-Gro Seed	M59GB94	50.0	121%	83	59.2	11.5	33,100	30,000	0.0	74	38	E	Bronze
Dekalb	DKS29-95	50.0	121%	79	56.3	9.3	34,400	35,900	0.1	73	31	E	Dark Red
Sorghum Partners	SP 30A30 DT	46.4	112%	80	57.8	10.6	30,500	30,900	0.0	74	30	ME	Bronze
Dekalb	DKS29-28	46.4	112%	74	58.6	10.4	37,900	39,100	0.0	71	29	E	Bronze
Dekalb	DKS36-07	44.8	108%	83	58.9	11.0	29,600	31,400	0.1	74	31	ME	Bronze
Dekalb	DKS28-07	43.4	105%	73	56.0	9.3	34,400	39,200	0.1	69	31	E	Bronze
Channel Seed	5R45	43.4	105%	-	56.6	9.3	39,400	38,700	0.0	72	32	ME	Red
Hoegemeyer Seed	H6020	43.1	104%	77	59.7	10.3	35,200	38,700	0.1	70	38	ME	Red
Hoegemeyer Seed	H6037	42.5	102%	83	60.1	10.3	31,900	31,700	0.1	72	34	ME	Red
Dyna-Gro Seed	M54GR24	42.2	102%	73	59.4	10.5	33,800	34,300	0.0	72	30	E	Red
Sorghum Partners	SPHF273 DT	41.7	101%	-	58.5	10.7	21,000	28,300	0.5	77	31	-	Bronze
Sorghum Partners	SP 58M85 DT	41.5	100%	-	57.0	9.3	31,500	30,700	0.0	71	33	M	Bronze
DYNAGRO	M62GB36	41.5	100%	-	58.3	11.0	25,200	26,800	0.1	80	33	M	Bronze
Dekalb	DKS38-16	41.3	100%	82	59.8	11.0	37,500	38,200	0.0	72	39	ME	Bronze
Dekalb	DKS28-16	41.2	99%	-	58.4	9.6	39,500	45,800	0.2	69	27	E	Bronze
Sorghum Partners	SPHF371 DT	39.9	96%	-	54.9	9.7	18,200	23,800	0.3	75	29	-	Cream
Dyna-Gro Seed	M59GB57	39.6	96%	76	58.0	9.6	31,000	38,200	0.2	69	28	E	Bronze
Channel Seed	5B29	39.5	95%	-	51.1	8.5	31,400	34,400	0.1	70	33	E	Bronze
Sorghum Partners	SP 45A45 DT	39.2	95%	81	57.5	10.6	35,900	34,500	0.0	76	29	ME	Bronze
BH Genetics	BH 3818	39.1	94%	-	55.8	9.9	30,300	28,000	0.0	75	29	ME	Red
Dyna-Gro Seed	M60GB31	39.0	94%	74	56.7	12.1	30,900	26,800	0.0	78	36	ME	Bronze
Sorghum Partners	SPHF165 DT	38.4	93%	-	58.0	10.3	14,500	27,800	0.9	69	33	-	Cream
Hoegemeyer Seed	H6006	38.2	92%	72	60.9	11.0	31,100	38,200	0.2	70	38	ME	Red
Dyna-Gro Seed	M60GB88	37.2	90%	76	55.4	9.5	31,300	32,300	0.1	72	36	ME	Bronze
Dyna-Gro Seed	M63GB78	37.0	89%	77	55.7	9.7	27,300	24,000	0.0	77	29	ME	Bronze
Dekalb	DKS28-05	36.9	89%	68	54.1	9.3	31,800	32,900	0.1	70	33	E	Bronze
Sorghum Partners	SP 43M80	36.0	87%	69	59.4	10.7	30,600	30,900	0.0	71	30	ME	Bronze
Pioneer	86P20	35.7	86%	73	57.0	9.5	39,600	36,500	0.0	70	36	ME	Red
BH Genetics	BH 3520	34.5	83%	-	53.7	8.4	31,000	31,800	0.1	70	30	ME	Red
Pioneer	89P52	34.2	83%	-	56.9	9.6	34,300	37,800	0.2	69	34	E	Red
Sorghum Partners	SPHF164 DT	33.4	81%	-	57.5	11.2	16,700	26,100	0.6	70	30	-	Bronze
Sorghum Partners	251	26.7	64%	-	55.9	9.4	30,800	36,600	0.2	69	31	E	Red
	Average	**41.5**	**100%**	**78**	**57.3**	**10.1**	**31,200**	**33,200**	**0.1**	**72**	**32**	**-**	**-**
	[e]LSD (.30)	4.6			1.1								
	[e]LSD (.05)	8.8			2.1								
	Coefficient of Variation (CV)	9%			1%								

[a]Yields adjusted to 14% moisture and hybrids ranked by yield. Hybrid yields in bold are in the top LSD group (.30).

[b]Harvest population is the total number of grain-producing heads/panicles counted at harvest that were mature, including tillers.

[c]Average number of productive (grain containing and mature) tiller heads per plant. Does not include main plant head.

[d]Maturity group: E=early; ME=medium-early; M=medium. Maturity groups are provided by the company and may not align with the observed flowering dates in the trial due to the latitude and relatively high elevation of the trial site (3,990 feet).

[e]Farmers selecting a variety based on yield should use the LSD (.30) to protect themselves from false negative conclusions (concluding varieties are the same when they are actually different). Companies or researchers may use the LSD (.05) to avoid false positive conclusions (concluding varieties are different when they are actually the same).

Site Information

Collaborator: Scherler Farms
Planting Date: May 18, 2024
Harvest Date: October 15, 2024
Fertilizer: Pre-plant: N at 50 lb/ac
Herbicide: Brawl II at 1.33 pt/ac and glyphosate at 32 oz/ac applied on May 18. Glyphosate at 1 qt/ac on June 7 and July 22 applied with hooded sprayer.
Soil Type: Wiley loam
GPS Coordinates: 38.5232807, -102.4708509
Trial Comments: Planted 1.5" deep into moisture. Average stands and emergence. Heavy sandbur weed pressure, which was 70% controlled in harvested rows by pre-emerge herbicide, two applications of glyphosate with a hooded sprayer, and one round of hand-labor. Trial average flowering date of July 29th. Radar estimates showed the trial received about 7.3 inches of rain from planting to harvest, and 10.1 inches since January 1st, which was 67% of the ten-year average (year-to-date).

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2024 Dryland Grain Sorghum Hybrid Performance Trial at Walsh

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Brand	Hybrid	Grain Yield[a]	Yield	Test Weight	Moisture	Plant Lodging	Maturity Group[b]	Grain Color
		bu/ac	% of test average	lb/bu	percent	percent		
BH Genetics	BH3818	**58.9**	125%	61.4	12.4	0	ME	Red
BH Genetics	BH4220	**58.2**	123%	61.7	12.4	2	ME	Bronze
Dyna-Gro	M59GB57	**57.4**	122%	61.5	12.5	2	E	Bronze
Dekalb	DKS38-16	**56.6**	120%	**62.7**	12.7	2	ME	Bronze
BH Genetics	BH3701C	**54.6**	116%	61.5	12.5	1	ME	Cream
LG Seeds	GA2630C	**54.3**	115%	61.6	12.4	1	ME	Cream
Dekalb	DKS29-28	**54.2**	115%	61.8	12.5	2	E	Bronze
Sorghum Partners	SP43M80	**53.6**	114%	62.2	12.5	2	ME	Bronze
Dyna-Gro	M62GC23	**53.3**	113%	61.6	12.4	3	ME	Cream
Pioneer	86P20	51.7	110%	61.7	12.2	0	ME	Red
Dyna-Gro	M54GR24	50.5	107%	61.7	12.4	1	E	Red
Sorghum Partners	SP58M85DT	50.5	107%	61.8	12.4	1	M	Bronze
Dekalb	DKS28-05	50.3	107%	61.1	12.2	2	E	Bronze
Richardson Seeds, Ltd	G1156	49.8	106%	59.7	11.9	1	E	White
Dekalb	DKS36-07	49.3	105%	61.3	12.5	1	ME	Bronze
Dekalb	DKS28-07	49.0	104%	61.0	12.4	3	E	Bronze
Dyna-Gro	M60GB88	47.9	102%	61.2	12.6	5	ME	Bronze
Dekalb	DKS29-95	47.1	100%	61.1	12.2	2	E	Dark Red
Rob See Co	GS6455	45.5	96%	61.2	12.4	0	ME	Bronze
Rob See Co	GS5423	45.2	96%	60.4	12.1	1	E	Bronze
Dekalb	DKS28-16	44.6	95%	62.1	12.5	3	E	Bronze
Sorghum Partners	SP45A45DT	44.5	94%	62.0	12.3	0	ME	Bronze
Sorghum Partners	SPHF273DT	44.5	94%	61.7	12.5	1	-	Bronze
Dyna-Gro	M59GB94	44.0	93%	61.6	12.5	1	ME	Bronze
LG Seeds	GA2550R	43.3	92%	61.5	12.3	1	ME	Red
Sorghum Partners	SP30A30DT	42.7	91%	61.9	12.5	1	E	Bronze
Rob See Co	GS6166W	42.7	91%	61.7	12.6	1	ME	Cream
Sorghum Partners	SP251	42.5	90%	60.8	12.2	6	E	Red
Dyna-Gro	M62GB36	42.0	89%	61.1	12.2	1	M	Bronze
Sorghum Partners	SPHF164DT	42.0	89%	61.9	12.3	1	-	Bronze
Dyna-Gro	M63GB78	35.9	76%	61.1	12.2	0	ME	Bronze
Sorghum Partners	SPHF371DT	34.3	73%	60.8	12.4	2	-	Cream
Sorghum Partners	SPHF165DT	31.6	67%	62.1	12.7	0	-	Cream
Dyna-Gro	M60GB31	30.9	66%	61.3	12.5	0	ME	Bronze
	Average	**47.1**	**100%**	**61.5**	**12.4**	**1**		
	[c]LSD (P<0.30)	5.7		0.3		0		
	[c]LSD (P<0.05)	10.8		0.7		1		
	Coefficient of Variation (CV)	20.7		0.4				

[a]Yields adjusted to 14% moisture and hybrids ranked by yield. Hybrid yields in bold are in the top LSD group

[b]Maturity Group: E=early; ME=medium-early; M=medium. Maturity groupings with two classes are trial

[c]Farmers selecting a variety based on yield should use the LSD (.30) to protect themselves from false negative conclusions (concluding varieties are the same when they are actually different). Companies or researchers may use the LSD (.05) to avoid false positive conclusions (concluding varieties are different when they are actually

Site Information

Collaborator:	Plainsman Research Center: (Zane Jenkins, Brett Pettinger, Perry Jones)
Planting Date:	May 24, 2024
Harvest Date:	December 12, 2024
Previous Crop:	Wheat
Herbicide:	Pre-plant: applied on 4/30: 32 oz/ac Makaze, 21 oz/ac Moccassin II, 5 oz/ac Carabiner, 1.1 lb/ac Atrazine 90WDG, 6.4 oz/ac Staredown
Soil Type:	Wiley Loam
GPS Coordinates:	37.434301, -102.3102
Comments:	Precipitation Planting to First Freeze: 11.14" total (May: 0.05", June: 4.80", July: 1.99", Aug: 2.64", Sep: 1.66", Oct: 0")

COLORADO STATE UNIVERSITY EXTENSION

2024 Sprinkler Irrigated Grain Sorghum Hybrid Performance Trial at Walsh

CROPS TESTING PROGRAM

Brand	Hybrid	Grain Yield[a]	Yield	Test Weight	Moisture	Emerged Plant Population[b]	Maturity Group[c]	Grain Color
		bu/ac	% of test average	lb/bu	percent	plants/ac		
Rob Seed Co	GS6455	**133.8**	115%	**60.6**	13.9	36,750	ME	Bronze
Dyna-Gro	M60GB31	**131.1**	113%	**60.4**	14.0	33,000	ME	Bronze
Dyna-Gro	M62GB36	**129.5**	112%	**60.4**	13.9	29,000	M	Bronze
BH Genetics	BH 4220	**128.7**	111%	59.1	14.2	34,750	ME	Bronze
Sorghum Partners	SP66M16	**127.4**	110%	58.7	13.9	34,250	M	Bronze
Dyna-Gro	M59GB94	124.3	107%	**60.3**	14.1	33,000	E	Bronze
Rob Seed Co	GS5423	121.7	105%	58.5	14.4	33,000	ME	Cream
Dyna-Gro	M63GB78	120.6	104%	58.7	13.6	34,750	E	Bronze
Sorghum Partners	SP43M80	119.6	103%	59.1	13.7	24,500	ME	Bronze
Sorghum Partners	SP45A45DT	116.7	101%	**60.6**	14.3	32,500	ME	Bronze
Sorghum Partners	SP58M85DT	114.0	98%	57.9	13.9	32,500	ME	Bronze
Dyna-Gro	M59GB57	112.6	97%	59.3	14.0	30,750	M	Bronze
Rob Seed Co	GS6166W	112.2	97%	57.5	13.6	27,250	-	Cream
Sorghum Partners	SPHF371_DT2	110.9	96%	59.0	13.5	30,750	ME	Bronze
Dyna-Gro	M60GB88	105.6	91%	53.4	14.2	25,000	M	Bronze
Sorghum Partners	SP65B21DT	105.4	91%	59.1	13.5	33,000	E	Bronze
Sorghum Partners	SP30A30DT	104.5	90%	57.1	14.0	35,500	E	Bronze
Dyna-Gro	M54GR24	94.3	81%	58.7	13.7	34,500	E	Red
Dyna-Gro	M62GC23	87.4	75%	57.4	13.1	31,250	ME	Cream
Richardson Seeds, Ltd	G1156	77.0	66%	56.3	13.8	21,000	E	White
	Average	**115.9**	**100%**	**58.6**	**13.8**	**31,400**		
	[d]LSD (.30)	8.6		0.6				
	[d]LSD (.05)	16.9		1.3				
	CV:	6.6		0.7				

[a]Yields adjusted to 14% moisture and hybrids ranked by yield. Hybrid yields in bold are in the top LSD group (.30).

[b]Harvest population is the total number of grain-producing heads/panicles counted at harvest that were mature, including tillers.

[c]Maturity group: E=early; ME=medium-early; M=medium. Maturity groups are provided by the company and may not align with the observed flowering dates in the trial due to the latitude and relatively high elevation of the trial site (4,659 feet).

[d]Farmers selecting a variety based on yield should use the LSD (.30) to protect themselves from false negative conclusions (concluding varieties are the same when they are actually different). Companies or researchers may use the LSD (.05) to avoid false positive conclusions (concluding varieties are different when they are actually the same).

Site Information

Collaborator:	Plainsman Research Center: (Zane Jenkins, Brett Pettinger, Perry Jones)
Planting Date:	May 28, 2024
Harvest Date:	December 2, 2024
Fertilizer:	Fall Strip-Till: 158-30-0 (182 lb NH3 & 7.5 gal 10-34-0); Planter Applied: 5-20-0-0.5Zn (5 gal 10-34-0 & 1pt 10% Zn EDTA)
Previous Crop:	Corn
Herbicide:	Pre-Plant: Mad Dog 5.4 at 32oz/ac, Degree Xtra at 3.3 qt/ac, Explorer at 5 oz/ac, Staredown at 6.4 oz/ac Pre-plant 5/22: Makaze at 32 oz/ac, Sterllius II at 1 pt/ac, Atrazine 4L at 32 oz/ac, Staredown at 6.4 oz/ac, Reviton at 1 oz/ac Post Emerge 7/16: Huskie at 16 oz/ac, Atrazine at 0.5 lb/ac, 2, 4-D LV6 at 2 oz/ac
Soil Type:	Ulysses and norka silt loams
GPS Cordinates:	37.429489, -102.327245
Precipitation:	Total 11.14" (May 0.05", June 4.80", July 1.99", Aug 2.64" , Sep 1.66", October 0.00")
Irrigation:	12"

Contact Zane Jenkins at zane.jenkins@colostate.edu or Sally Jones-Diamond at sally.jones@colostate.edu

SOIL AND CROP SCIENCES
COLORADO STATE UNIVERSITY

2024 Irrigated Grain Sorghum Hybrid Performance Trial at Wiggins

CROPS TESTING PROGRAM

Brand	Hybrid	Grain Yield[a]	Yield	2-Year Average Yield	Test Weight	Moisture	Plant Population	Maturity Group[b]	Grain Color
		bu/ac	% of test avg.	bu/ac	lb/bu	percent	plants/ac		
Dyna-Gro Seed	M59GB94	**153.9**	120%	140.5	**61.7**	13.6	52,800	E	Bronze
Channel Seed	5B70	**147.5**	115%	140.6	**62.2**	13.0	39,100	E	Bronze
BH Genetics	BH 3701C	142.9	111%	-	**61.6**	12.6	51,600	ME	Cream
Dyna-Gro Seed	M62GC23	142.9	111%	-	**62.3**	13.0	50,800	ME	Cream
Channel Seed	6B02	137.5	107%	128.9	61.4	13.4	40,500	ME	Bronze
Dekalb	DKS28-07	135.3	105%	-	59.5	11.5	44,400	E	Bronze
Pioneer	86P20	133.9	104%	138.1	**61.6**	12.5	43,300	ME	Red
Dekalb	DKS29-95	133.2	104%	-	60.5	12.1	52,000	E	Dark Red
Dyna-Gro Seed	M62GB36	131.6	102%	-	59.5	13.3	34,200	M	Bronze
Dekalb	DKS28-05	129.8	101%	-	59.6	11.9	37,600	E	Bronze
Dekalb	DKS28-16	128.9	100%	-	**61.8**	12.2	45,400	E	Bronze
Pioneer	88P71	126.4	98%	125.6	**62.4**	12.3	49,500	E	Red
Channel Seed	5R45	125.9	98%	132.1	**62.7**	13.4	40,300	ME	Red
Dyna-Gro Seed	M60GB31	123.4	96%	123.2	**62.6**	14.7	45,700	ME	Bronze
Golden Acres	GA 1510C	119.6	93%	112.6	61.0	12.2	43,700	E	Cream
Dekalb	DKS29-28	118.9	93%	-	**61.8**	12.5	44,900	E	Bronze
Dyna-Gro Seed	M59GB57	114.8	89%	117.2	60.9	11.8	42,100	E	Bronze
Golden Acres	GA 2550R	113.4	88%	-	**61.7**	12.7	46,700	E	Red
Richardson Seeds	G1156	104.8	82%	-	59.5	11.3	33,300	E	White
Dyna-Gro Seed	M54GR24	102.6	80%	105.5	**61.7**	11.8	48,000	E	Red
	Average	**128.5**	**100%**	**126.4**	**61.3**	**12.6**	**44,300**		
	[c]LSD (.30)	8.4			1.2				
	[c]LSD (.05)	16.1			2.2				
	Coefficient of Variation (CV)	8.4			1.3				

[a]Yields adjusted to 14% moisture and hybrids ranked by yield. Hybrid yields in bold are in the top LSD group (.30).

[b]Maturity group: E=early; ME=medium-early. Maturity groups are provided by the company and may not align with the observed flowering dates in the trial due to the latitude and relatively high elevation of the trial site (4,800 feet).

[c]Farmers selecting a variety based on yield should use the LSD (.30) to protect themselves from false negative conclusions (concluding varieties are the same when they are actually different). Companies or researchers may use the LSD (.05) to avoid false positive conclusions (concluding varieties are different when they are actually the same).

Site Information

Collaborator: Cooksey Family Farms
Planting Date: May 29, 2024
Harvest Date: November 1, 2024
Soil Type: Heldt clay
GPS Coordinates: 39.98746, -104.10388
Trial Comments: Trial had good emergence and stands. Field had moderate weed pressure mid-season, hand labor was used to clean up trial area.

SOIL AND CROP SCIENCES
COLORADO STATE UNIVERSITY

2024 Irrigated Forage Sorghum Variety Performance Trial at Rocky Ford

CROPS TESTING PROGRAM

		Yield										Forage Quality[a]												
Variety	Brand	Forage[b]	Dry Matter	Yield	4-Year Forage Avg.	Moisture	Brix	Plant Height	Forage Type[c]	Relative Maturity[d]	Traits[e]	RFQ	CP	aNDFom	Lignin	WSC (Sugar)	Starch	Ash	Fat	NDFD 30hr	NDFD 240hr	TDN	NEL	Milk/Ton
		tons/ac		% of test avg.	tons/ac	% at harvest	percent	in				index	percent										Mcal/cwt	lb/ton
Fullgraze II	Dyna-Gro Seed	**28.1**	**9.8**	139%	31.0	68	9	153	SS	ML	-	82	7.1	67	5.5	7.3	3	4	2	52	68	63	58	2433
Fullgraze II BMR	Dyna-Gro Seed	23.7	8.3	117%	26.3	71	12	144	SS	ML	BMR	96	7.0	61	6.0	8.9	5	8	2	55	69	64	58	2458
Danny Boy II BMR	Dyna-Gro Seed	23.4	8.2	116%	29.2	80	9	133	SS	ME	BMR	89	8.0	63	6.5	6.7	1	12	2	56	69	63	52	2117
Super Sile 30	Dyna-Gro Seed	23.4	8.2	116%	25.4	73	5	115	FS	ME	-	84	7.2	58	4.5	9.6	6	7	2	49	66	64	58	2398
Super Sile 20	Dyna-Gro Seed	22.8	8.0	113%	27.4	76	10	137	FS	ML	-	89	7.2	58	4.9	9.4	6	7	2	51	67	64	59	2455
Dynagraze II	Dyna-Gro Seed	22.1	7.7	109%	22.3	65	5	111	SS	ME	-	119	7.8	44	5.1	9.5	25	7	2	42	59	66	68	2943
Excel II	Star Seed	21.4	7.5	106%	-	73	13	142	SS	L	-	82	6.7	57	5.3	8.4	11	9	2	47	65	64	56	2262
F74FS23 BMR	Dyna-Gro Seed	21.2	7.4	105%	18.4	75	2	121	FS	M	BMR, BD	110	7.1	50	5.2	8.8	20	9	2	50	64	66	62	2647
Dynagraze II BMR	Dyna-Gro Seed	21.1	7.4	104%	23.7	67	5	113	SS	ME	BMR	112	8.0	50	6.6	8.4	20	6	2	47	65	66	66	2882
ADVFX 193	Alta Seeds	20.9	7.3	103%	-	74	2	103	FS	M	BMR	128	7.2	45	4.8	9.9	25	8	2	50	64	67	66	2937
Super Sweet 10	Dyna-Gro Seed	20.3	7.1	100%	-	68	5	112	SS	M	-	103	7.8	47	5.6	9.7	21	7	2	40	58	66	65	2760
F72FS05	Dyna-Gro Seed	20.3	7.1	100%	22.1	73	3	92	FS	ME	-	81	6.8	53	5.2	6.9	15	9	2	45	64	65	60	2453
Cadan	Browning Seed	20.2	7.1	100%	-	64	15	140	SS	M	WMR	100	7.3	52	5.6	8.6	19	6	2	45	62	65	64	2717
F75FS13	Dyna-Gro Seed	20.2	7.1	100%	-	71	3	110	FS	M	-	122	8.5	47	4.6	10.1	20	5	2	48	64	66	68	3047
ADVF 8322	Alta Seeds	20.0	7.0	99%	22.1	72	0	91	FS	M	SCA	98	7.0	56	5.8	7.1	17	7	2	51	67	65	61	2580
SweetTon MS	Dyna-Gro Seed	18.7	6.5	92%	22.9	71	8	106	GS	ML	SCA	136	7.7	42	4.2	13.1	19	7	3	46	63	67	69	3096
Drylander	Star Seed	18.0	6.3	89%	-	80	6	126	SS	PS	BMR	92	7.6	65	5.8	6.4	3	8	2	58	72	64	55	2320
FX24067	Dyna-Gro Seed	17.9	6.3	89%	-	77	1	134	-	-	-	91	8.3	59	5.5	6.9	9	9	2	52	68	64	57	2363
F71FS72 BMR	Dyna-Gro Seed	17.6	6.2	87%	18.3	69	2	83	FS	E	BMR	144	7.3	41	5.3	10.8	25	8	2	50	64	67	69	3115
F74FS72 BMR	Dyna-Gro Seed	17.5	6.1	87%	17.1	75	4	77	FS	M	BMR	126	8.6	49	4.6	7.8	18	11	2	61	73	66	63	2823
ADVF 7232	Alta Seeds	17.5	6.1	87%	-	75	1	76	FS	M	SCA, BMR, BD	132	9.6	50	5.5	7.8	19	9	2	60	71	66	65	2939
FX24015	Dyna-Gro Seed	17.1	6.0	84%	-	71	9	109	-	-	-	111	6.9	42	4.8	10.7	22	7	2	40	59	66	68	2934
3 Little Indians	Browning Seed	16.0	5.6	79%	-	68	1	115	FS	M	-	96	7.8	53	5.7	7.6	17	7	2	46	64	65	62	2594
Quick Chop	Star Seed	15.9	5.6	78%	-	72	11	104	FS	E	BMR	97	6.6	54	3.7	11.2	7	12	2	54	68	65	57	2343
	Average	**20.2**	**7.1**	**100%**	**23.6**	**72**	**6**	**114**				**105**	**7.5**	**53**	**5.3**	**8.8**	**15**	**8**	**2**	**50**	**65**	**65**	**62**	**2651**
	[f]LSD (0.30)	1.8	0.6																					
	[f]LSD (0.05)	3.4	1.1																					
	Coefficient of Variation (CV)	5.7	5.7																					

[a]All forage quality analyses results are dry basis values. CP=crude protein; aNDFom=ash free neutral detergent fiber; WSC=water-soluble carbohydrates; NDFD=neutral detergent fiber digestibility; TDN=total digestable nutrients; NEL=net energy for lactation; Milk/ton=predicted amount of milk produced per ton of silage dry matter calculated using MILK2013.

[b]Forage yield adjusted to 65% moisture content based on dried samples.

[c]Forage Type: GS=grain sorghum; FS=forage sorghum; SS=sorghum sudangrass.

[d]Relative maturities are provided by the companies. E=early; ME=medium-early; M=medium; ML=medium-late; PS=Photoperiod sensitive; L=late.

[e]Traits are provided by the companies. Dashes mean conventional (no traits) or information isn't available. BD=brachytic dwarf; BMR=brown mid-rib; SCA=sugar cane aphid; WMR=white mid-rib.

[f]Farmers selecting a variety based on yield should use the LSD (.30) to protect themselves from false negative conclusions (concluding varieties are the same when they are actually different). Companies or researchers may use the LSD (.05) to avoid false positive conclusions (concluding varieties are different when they are actually the same).

Site Information

Collaborator: CSU Arkansas Valley Research Center (Jeff Davidson and Kevin Tanabe)
Planting Date: May 15, 2024
Harvest Date: September 9, 2024
Fertilizer: Planting: N at 8, P at 22, K at 3 lb/ac applied as 9-24-3; Side-dress: N at 142 lb/ac applied as 32-0-0
Herbicide: Husky at 16 oz/ac and cultivated twice during season for weed control
Soil Type: Rocky Ford silty clay loam
GPS Coordinates: 38.0389, -103.6933
Trial Comments: Planted into good moisture, good early moisture from rain, hot and dry the rest of the season. Weed control was excellent throughout the season.

SOIL AND CROP SCIENCES
COLORADO STATE UNIVERSITY

2024 Dryland Forage Sorghum Variety Performance Trial at Walsh

CROPS TESTING PROGRAM

		Yield										Forage Quality[a]												
Variety	Brand	Forage[b]	Dry Matter	Yield	Moisture	Brix	Plant Height	Plant Density	Forage Type[c]	Relative Maturity[d]	Traits[e]	RFQ	CP	aNDFom	Lignin	WSC (Sugar)	Starch	Ash	Fat	NDFD 30hr	NDFD 240hr	TDN	NEL	Milk/Ton
		tons/ac		% of test avg.	% at harvest	percent	in	plants/ac				index	percent										Mcal/cwt	lb/ton
F72FS05	Dyna-Gro Seed	**11.1**	**3.9**	138%	59	22	50	47,500	FS	ME	-	118	8.2	50	4.1	6.3	16	8	1	54	68	62	64	2828
Super Sile 20	Dyna-Gro Seed	**10.0**	**3.5**	125%	64	17	72	39,500	FS	ML	-	108	8.5	53	3.8	5.4	13	8	1	52	68	59	61	2624
Super Sile 30	Dyna-Gro Seed	9.4	3.3	118%	62	13	55	34,000	FS	ME	-	100	8.2	56	4.3	4.6	11	10	1	55	70	58	58	2446
FX24015	Dyna-Gro Seed	9.3	3.2	116%	56	14	80	42,000	-	-	-	105	9.6	50	2.8	8.4	19	12	1	56	68	57	58	2466
Fullgraze II	Dyna-Gro Seed	9.1	3.2	115%	61	19	95	44,500	SS	ML	-	77	6.4	64	4.1	4.9	3	8	1	51	65	53	54	2177
NK300	Sorghum Partners	9.0	3.2	113%	52	14	48	44,500	FS	ME	-	129	8.0	48	3.6	7.9	20	8	1	56	69	63	66	2956
F75FS13	Dyna-Gro Seed	8.8	3.1	110%	60	20	76	49,500	FS	M	-	130	8.8	48	3.8	6.2	22	7	1	54	66	63	67	2993
F71FS72 BMR	Dyna-Gro Seed	8.4	2.9	105%	56	12	58	36,500	FS	E	BMR	130	8.9	45	3.9	8.7	22	10	1	54	65	62	64	2867
SP2606 BMR	Sorghum Partners	8.2	2.9	103%	59	11	52	37,000	FS	E	BMR	137	8.0	46	3.7	7.4	21	10	1	61	71	64	65	2924
Fullgraze II BMR	Dyna-Gro Seed	8.2	2.9	103%	64	19	89	32,000	SS	ML	BMR	115	8.7	56	4.4	5.5	8	9	1	61	72	62	60	2659
SS405	Sorghum Partners	8.2	2.9	102%	64	20	78	34,500	FS	L	-	110	8.4	53	4.8	7.0	11	8	1	52	68	59	61	2618
Quick Chop	Star Seed	8.1	2.8	101%	57	14	74	35,000	FS	E	BMR	123	8.6	50	3.8	6.8	15	10	1	57	70	62	62	2744
SweetTon MS	Dyna-Gro Seed	7.9	2.8	99%	64	25	74	37,500	GS	ML	SCA	111	9.2	52	2.8	8.4	12	10	1	56	69	59	60	2579
FX24067	Dyna-Gro Seed	7.8	2.7	98%	62	16	72	33,500	-	-	-	107	7.8	53	4.6	5.7	14	9	1	52	67	58	60	2542
Cadan	Browning Seed	7.8	2.7	98%	55	10	97	41,500	SS	M	WMR	77	7.0	62	5.3	3.1	9	8	1	49	64	53	55	2202
F74FS72 BMR	Dyna-Gro Seed	7.8	2.7	97%	58	20	42	37,000	FS	M	BMR	133	9.5	52	5.2	4.4	10	8	1	62	74	65	64	2914
Drylander	Star Seed	7.7	2.7	96%	71	17	72	42,500	SS	PS	BMR	115	9.4	57	5.6	2.7	4	10	1	63	78	62	59	2587
Excel II	Star Seed	7.7	2.7	96%	65	19	77	46,500	SS	L	-	105	8.4	55	3.8	5.9	8	10	1	58	70	59	58	2476
F74FS23 BMR	Dyna-Gro Seed	7.6	2.7	95%	66	21	62	29,000	FS	M	BMR, BD	134	10.0	51	3.8	6.7	9	10	1	63	74	63	62	2781
ADVFX 193	Alta Seeds	7.4	2.6	93%	64	11	59	32,000	FS	M	BMR	119	8.8	56	4.8	4.8	8	10	1	62	72	62	60	2628
Danny Boy II BMR	Dyna-Gro Seed	7.2	2.5	91%	72	17	71	38,000	SS	ME	BMR	107	9.1	53	3.7	2.9	2	16	1	65	74	58	53	2237
SP2707 DT	Sorghum Partners	7.1	2.5	89%	56	15	38	32,000	FS	ME	DT	118	8.4	52	3.9	6.3	17	9	1	55	70	60	62	2694
3 Little Indians	Browning Seed	7.0	2.4	87%	55	13	89	32,000	FS	M	-	119	8.1	48	4.9	7.1	21	7	1	49	64	61	65	2829
Super Sweet 10	Dyna-Gro Seed	6.3	2.2	79%	60	18	80	45,500	SS	M	-	109	7.6	52	5.2	7.8	19	6	1	49	65	60	64	2797
Dynagraze II BMR	Dyna-Gro Seed	5.3	1.9	67%	60	21	78	41,500	SS	ME	BMR	125	8.5	51	4.9	7.3	16	7	1	57	70	63	65	2927
Dynagraze II	Dyna-Gro Seed	5.3	1.9	66%	62	24	83	40,500	SS	ME	-	71	6.8	63	5.4	4.6	8	10	1	50	66	50	52	1986
	Average	**8.0**	**2.8**	**100%**	**61**	**17**	**70**	**38,500**				**113**	**8.4**	**53**	**4.3**	**6.0**	**13**	**9**	**1**	**56**	**69**	**60**	**61**	**2634**
	[f]LSD (0.30)	1.1	0.4																					
	[f]LSD (0.05)	2.1	0.7																					
	Coefficient of Variation (CV)	11.1	11.1																					

[a]All forage quality analyses results are dry basis values. CP=crude protein; aNDFom=ash free neutral detergent fiber; WSC=water-soluble carbohydrates; NDFD=neutral detergent fiber digestibility; TDN=total digestable nutrients; NEL=net energy for lactation; Milk/ton=predicted amount of milk produced per ton of silage dry matter calculated using MILK2013.

[b]Forage yield adjusted to 65% moisture content based on dried samples.

[c]Forage Type: GS=grain sorghum; FS=forage sorghum; SS=sorghum sudangrass.

[d]Relative maturities are provided by the companies. E=early; ME=medium-early; M=medium; ML=medium-late; PS=Photoperiod sensitive; L=late.

[e]Traits are provided by the companies. Dashes mean conventional (no traits) or information isn't available. BD=brachytic dwarf; BMR=brown mid-rib; DT=DoubleTeam herbicide system; SCA=sugar cane aphid.

[f]Farmers selecting a variety based on yield should use the LSD (.30) to protect themselves from false negative conclusions (concluding varieties are the same when they are actually different). Companies or researchers may use the LSD (.05) to avoid false positive conclusions (concluding varieties are different when they are actually the same).

Site Information

Collaborator:	Plainsman Research Center (Kevin Larson, Brett Pettinger, Perry Jones, and Zane Jenkins)
Planting Date:	June 7, 2024
Harvest Date:	October 24, 2024
Fertilizer:	Fall Strip-Till: 60-20-0 as NH3 & 10-34-0
Herbicide:	Pre-Plant: Makaze applied at 32 oz/ac, Atrazine 4L at 32 oz/ac, Strellius II at 16 oz/ac, and Staredown at 6.4 oz/ac applied on May 22
Soil Type:	Wiley Loam
GPS Coordinates:	37.434367, -102.310195
Trial Comments:	Precipitation Planting to First Freeze: 11.09" total (June: 4.80", July: 1.99", Aug: 2.64", Sep: 1.66", Oct: 0")

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