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Extension

2021 Sorghum Hybrid Performance Trials in Eastern Colorado

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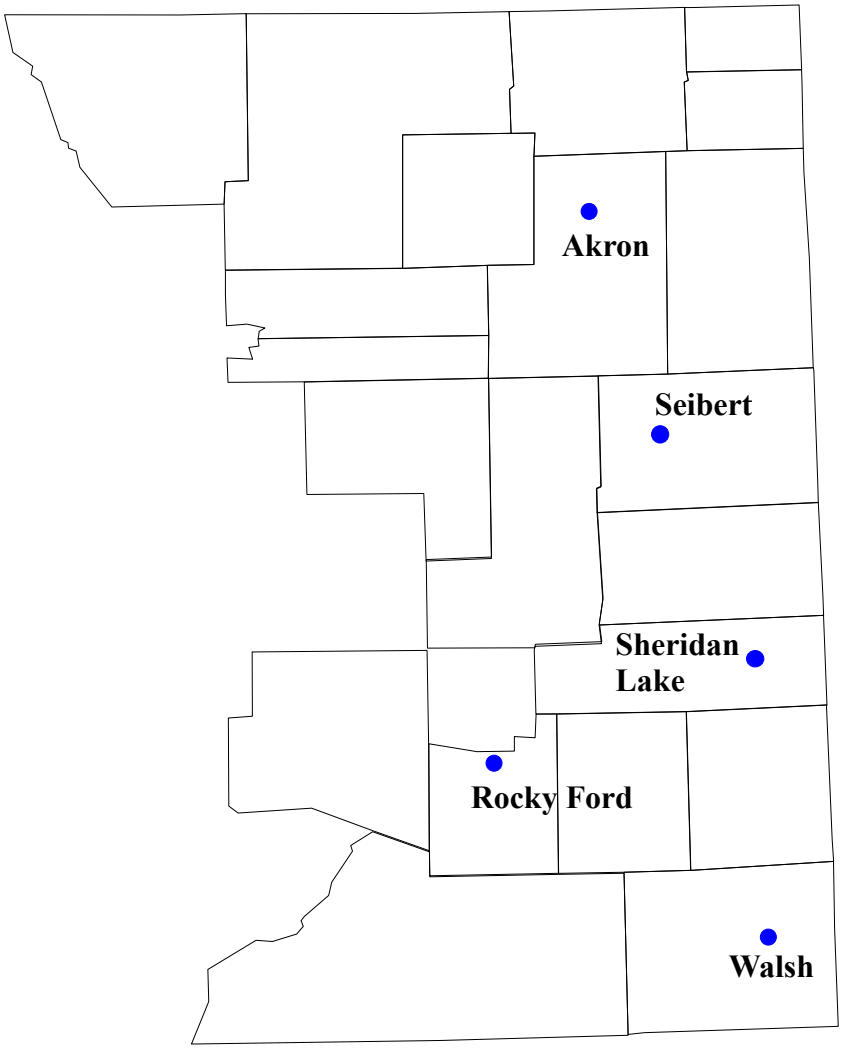
2021 SORGHUM HYBRID PERFORMANCE TRIALS IN EASTERN COLORADO

2021 Sorghum Trial Testing Locations in Eastern Colorado



SORGHUM HYBRID PERFORMANCE TRIALS IN EASTERN COLORADO, 2021

K.J. Larson, S.M. Jones-Diamond, J.J. Johnson, M.E. Bartolo, K.J. Tanabe, and B.T. Pettinger

This publication is a progress report of the sorghum hybrid performance trials conducted by the Department of Soil and Crop Sciences at Colorado State University, Colorado Agricultural Experiment Station (AES), and Colorado State University Extension. The grain sorghum trials were conducted at four sites in eastern Colorado: Akron, Seibert, Sheridan Lake and Walsh. Forage sorghum trials were conducted at Rocky Ford (irrigated) and at Walsh (dryland).

The 2021 Colorado grain sorghum crop is estimated at 17.40 million bushels, 3.4 times higher than the 2020 sorghum crop of 5.10 million bushels. The 2021 sorghum crop is the third largest crop in the last 10 years. The third highest sorghum production this year is due to the highest harvested acres, 435,000 acres, in the last decade. The grain yield this year is estimated at 40.0 bu/acre, which is the fifth lowest average in the last 10 years. Sorghum silage statistics are not published during the current year; however, Colorado sorghum silage statistics are available for the previous year. In 2020, 253,000 tons of sorghum silage was produced, which is the fourth highest sorghum silage production in a decade. The average yield was 11.0 tons/acre from 23,000 harvested acres. (USDA, National Agricultural Statistics Service, Mountain Region, Colorado Field Office, 2021).

Tests are partially funded by entry fees paid by commercial firms. Commercial seed representatives interested in entering sorghum hybrids in any of the trials should contact Sally Jones-Diamond, phone (970) 214-4611, email Sally.Jones@colostate.edu; or Kevin Larson, phone (719) 324-5643, email Kevin.Larson@colostate.edu for further details. Names and addresses of sorghum seed companies submitting entries in 2021 are shown in Table 1. Each firm selected entries for testing and furnished seed for the trials. AES researchers selected closed-pedigree hybrids as standards of comparison.

Summary tables for weather data (NOAA and CoAgMet, 2021), soil analysis (Soil, Plant and Water Testing Laboratory, Colorado State University), fertilization, and available soil water graphs derived from gypsum block readings are provided for certain trial locations. Other information, where available, was included: site description, irrigation, pest control, field history, and pertinent comments.

Table 1.--Entrants in the 2021 Colorado Sorghum Performance Trials.

Brand	Entered by
ALTA SEEDS	Advanta US, 2001 E. 1st St., P.O. Box 2420 Hereford, TX 79045
BROWNING SEED, INC	Browning Seed, Inc., 3101 S. IH 27, Plainview, TX 79072
CHANNEL SEED/ DEKALB	Bayer Crop Science, 800 N. Lindbergh Blvd., Creve Coeur, MO 63141
DYNA-GRO SEED	Loveland Products, Inc., 3005 Rocky Mountain Ave, Loveland, CO 80538
GOLDEN ACRES	AgReliant Genetics, 1122 East 169th St., Westfield, IN 46074
HOEGEMEYER HYBRIDS	Corteva Agriscience, P.O. Box 1000, Johnston, IA 50131
MOJO SEED	Mojo Seed, P.O. Box 1716, Hereford, TX 79045
SORGHUM PARTNERS/ S&W SEED CO	S&W Seed, 2101 Ken Pratt Blvd, Suite 201 Longmont, CO 80501-6085
WARNER SEEDS	Warner Seeds, Inc., 120 South Lawton St., P.O. Box 1877, Hereford, TX 79045

Growing Degree Days for sorghum were calculated from planting through 50% bloom date using a maximum of 111°F and a minimum of 50°F for threshold temperatures (Peacock and Heinrich, 1984). They are calculated by averaging daily high and low temperatures and subtracting the base temperature of 50°F from the average. When daily temperatures are less than 50°F, 50°F is used, when temperatures are above 111°F a maximum temperature of 111°F is used:

$$\frac{\text{(Daily Minimum Temp. + Daily Maximum Temp.)}}{2} - 50^{o}F$$

Experimental Methods and Evaluations

Trials at Walsh were planted with a four-row cone planter and harvested with a modified Gleaner F3 combine equipped with a HarvestMaster H2 weighing system and a four-row row-crop head to enhance harvest of lodged tillers. Trials at Akron, Seibert, and Sheridan Lake were planted with a four-row Seed Research Equipment Solutions precision planter and harvested with a four-row Case 1620 combine modified as a multiple crop plot combine equipped with a HarvestMaster H2 weighing system. 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 automated weighing systems.

Days to Emergence. Seedling emergence was determined as the number of days after planting until approximately half of the seedlings became visible down a planted row.

50% Bloom. Number of days after planting until half of the main heads had pollinating florets halfway down the panicle. Number of days to half bloom provided a good measure of relative maturity between hybrids.

50% Maturity. Number of days after planting until half of the kernels in half of the main heads reached physiological maturity, i.e., the black layer became visible at the base of the kernel.

Plant Height. Plant height was measured in inches from the soil to the tip of the main head.

Lodging. The percentage of tillers with broken basal stems or broken peduncles or stems leaning more than a 45-degree angle were considered lodged. Since both combines were equipped with row crop heads, most of the leaning tillers were harvested.

Emerged Plant Population. Emerged plant population in plants per acre was measured after seedling emergence and final stand establishment. Only main plants, and not tillers, were counted from two rows of the harvest plot length.

Harvest Population. Harvest population was the total number of grain-producing main heads and tillers at harvest from two rows of the harvest plot length in heads per acre.

Test Weight. Test weight was recorded by Harvest Master measuring systems at all sites. A low test weight may indicate that a hybrid did not fully mature prior to the first freeze or that it suffered environmental stress, such as a water deficiency. Given moderate test weights, a low test weight may indicate a genetic difference.

Grain Yield. The grain yield in bushels per acre was adjusted to 14 percent moisture content.

Yield as a % of Test Average. Yield as a percentage of test average provided a comparison among yields within a trial and allowed comparisons among years, irrespective of annual growing conditions.

Forage Yield. Forage yield in tons per acre was adjusted to 65% moisture content. A representative sample of fresh silage was oven-dried at 167°F (75°C) until there was no more weight loss, and then yields were adjusted to 65% moisture content.

Brix. The sugar content, expressed as a percent, in the stalk of forage sorghums at harvest was measured with a hand refractometer.

Available Soil Water

Available soil water from wilting point to field capacity was measured by placing gypsum blocks at 6, 18, 30, and 42 inches below the soil surface. Electrical resistance readings were made weekly or biweekly. Resistance readings varied with the amount of soil water present. With readings below 50% of available water, plant stress was possible. Using resistance readings, available soil water was determined by extrapolating from soil water depletion curves for each soil type.

Statistical Method

Trials were planted in a randomized complete block design with four replications. No less than three replications were harvested. Analysis of variance was applied to the results and the least significant difference (LSD) was computed at alpha 5%, 20%, and 30%. Analysis of variance and regression were performed and with CoStat Statistical Software, a product of Cohort Software, Berkeley, California, and with SAS, SAS Institute, Cary, North Carolina.

Acknowledgements

We are appreciative to the staffs at the Central Great Plains Research Station at Akron, Arkansas Valley Research Center at Rocky Ford, and Plainsman Research Center at Walsh for their assistance in conducting these trials. We would like to extend

a special thank you to Tim Stahlecker, grower-cooperator, for his assistance with the Seibert trial and Burl Scherler for his assistance with the Sheridan Lake trial.

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2021 Dryland Grain Sorghum Hybrid Performance Trial at Akron

Brand	Hybrid	Grain Yield[a]	Yield	2-Year Average Yield	Test Weight	Emerged Plant Population	50% Bloom	Maturity Group[b]	Grain Color
		bu/ac	% of test average	bu/ac	lb/bu	plants/ac	days after planting		
Golden Acres	GA 2730B	**74.7**	119%	72	59	42,000	71	ME	Bronze
Hoegemeyer Seed	H6020	**72.6**	116%	-	59	41,000	68	ME	Red
Dekalb	DKS29-28	**71.7**	115%	76	59	44,800	71	E	Bronze
Golden Acres	GA 2620C	**71.7**	115%	76	59	32,900	71	ME	Cream
Sorghum Partners	SP 31A15	**70.8**	113%	73	57	38,600	72	ME	Bronze
Alta Seeds	ADV G1329	**70.5**	113%	-	58	32,300	71	E	Cream
Dyna-Gro Seed	M59GB57	**69.9**	112%	72	59	36,100	67	E	Bronze
Channel Seed	5B27	68.7	110%	-	58	41,500	65	ME	Red
Dyna-Gro Seed	M59GB94	68.7	110%	66	58	31,200	74	E	Bronze
Alta Seeds	AG1201	67.2	107%	-	58	34,700	70	E	Red
Dekalb	DKS28-05	65.7	105%	71	58	40,500	68	E	Bronze
Dekalb	DKS29-95	65.4	104%	-	58	37,400	72	E	Dark Red
Golden Acres	GA 1510C	65.4	104%	-	58	43,400	69	E	Cream
Channel Seed	5C76	64.5	103%	-	60	34,800	73	ME	Cream
Warner Seed	W5501	64.2	103%	-	58	37,000	67	E	Bronze
Dyna-Gro Seed	GX20973	63.9	102%	-	60	34,400	71	ME	Bronze
Sorghum Partners	KS310	63.9	102%	-	59	28,700	71	ME	Bronze
Alta Seeds	AG1101	62.4	100%	-	58	40,200	66	E	Red
Dyna-Gro Seed	M60GB88	62.1	99%	70	58	39,600	74	ME	Bronze
Sorghum Partners	SP 43M80	62.1	99%	66	59	30,200	73	ME	Bronze
Dyna-Gro Seed	M54GR24	58.8	94%	67	59	37,200	65	E	Red
Alta Seeds	ADV G1120IG	58.2	93%	-	56	31,200	86	ME	Red
Dyna-Gro Seed	M60GB31	57.0	91%	41	58	28,000	81	ME	Bronze
Dekalb	DKS27-80	56.7	91%	-	59	40,700	68	E	Bronze
Sorghum Partners	251	55.2	88%	-	59	35,100	65	E	Red
Sorghum Partners	SP 25C10	54.6	87%	61	60	37,900	66	E	Cream
Alta Seeds	ADV G1153	53.7	86%	-	57	30,600	86	ME	Red
Alta Seeds	ADV XG015IG	12.9	21%	-	54	32,900	111	E	Red
Average		**62.6**		**68**	**58**	**36,200**	**73**		
[c]LSD (.30)		5							
[c]LSD (.05)		10							

[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. Groupings are based on company provided information and may not align with the observed flowering dates in the trial due to the relatively high elevation of the trial site, 4,537 ft.

[c]Farmers selecting a hybrid based on yield should use the LSD (.30) to protect themselves from false negative decisions. Companies or researchers may be interested in the LSD (.05) to avoid false positive conclusions.

Site Information

Collaborator:	USDA-ARS Central Great Plains Research Center
Planting Date:	May 28, 2021 at 43,600 seeds/ac to a planting depth of 1.25 in. to 1.5 in.
Harvest Date:	October 26, 2021 with a harvest area of 10 ft. by 30 ft.
Fertilizer:	N at 49 lb/ac and P at 14 lb/ac
Herbicide:	Pre-plant: Buccaneer plus at 2 qt/ac, Aim at 2 oz/ac, Explorer at 3.5 oz/ac, Brawl at 1.2 pt/ac, Atrazine at 2 pt/ac, Superb HC at 12.8 oz/ac, and Class Act at 64 oz/ac
Soil Type:	Weld silt loam
GPS Coordinates:	40.15498, -103.14245
Trial Comments:	Trial planted into excellent moisture. Very good stands and emergence, heavy wheat stubble in field. Plants were at V5 growth stage on June 30th. Most hybrids were not showing drought stress as of mid-August,even though conditions in July and early August were hot and dry. Trial was starting to flower in early August. Killing freeze on Oct. 13th. Field received 4.4" of rain in May, 0.65" in June, 0.42" in July, 0.5" in August, 0.83" in Sept., and 0.24" up to harvest in Oct. 26th.

2021 Dryland Grain Sorghum Hybrid Performance Trial at Seibert

Brand	Hybrid	Grain Yield[a]	Yield	2-Year Average Yield	Test Weight	Emerged Plant Population	Harvest Population[b]	50% Bloom	Plant Height	Maturity Group[c]	Grain Color
		bu/ac	% of test average	bu/ac	lb/bu	plants/ac	heads/ac	days after planting	in		
Dekalb	DKS29-28	**71.1**	121%	52	60	42,900	53,000	71	31	E	Bronze
Dyna-Gro Seed	M59GB94	**69.3**	118%	46	60	32,500	41,400	70	31	E	Bronze
Hoegemeyer Seed	H6020	66.0	113%	-	60	40,800	46,900	70	29	ME	Red
Dyna-Gro Seed	GX20973	64.2	110%	-	62	34,000	39,200	70	37	ME	Bronze
Golden Acres	GA 2730B	62.1	106%	-	60	35,000	38,500	71	37	ME	Bronze
Dyna-Gro Seed	M60GB88	61.8	106%	42	59	43,000	43,700	72	38	ME	Bronze
Dyna-Gro Seed	M60GB31	61.5	105%	37	60	25,700	31,400	79	35	ME	Bronze
Golden Acres	GA 2620C	60.0	102%	-	61	30,100	40,900	67	34	ME	Cream
Dekalb	DKS29-95	59.7	102%	42	59	40,700	47,300	69	33	E	Dark Red
Dyna-Gro Seed	M59GB57	59.1	101%	43	60	34,400	42,500	67	34	E	Bronze
Sorghum Partners	SP 43M80	59.1	101%	42	60	33,200	35,100	71	33	ME	Bronze
Channel Seed	5B27	58.8	100%	-	59	36,600	55,500	67	34	ME	Red
S&W Seed	SWGS3183	58.8	100%	-	59	36,500	36,900	73	30	ME	Bronze
S&W Seed	SWGS3001	58.5	100%	-	60	25,600	34,100	70	34	ME	Bronze
Warner Seed	W5501	57.9	99%	46	59	33,800	44,900	71	36	E	Bronze
Alta Seeds	ADV G1120IG	57.3	98%	-	59	27,500	32,800	76	36	ME	Red
Sorghum Partners	SP 31A15	57.3	98%	38	60	38,900	40,800	69	32	ME	Bronze
Dekalb	DKS27-80	56.1	96%	43	60	41,400	44,700	69	40	E	Bronze
S&W Seed	SWGS9011	55.8	95%	-	61	38,800	42,500	68	31	M	Bronze
Golden Acres	GA 1510C	55.5	95%	-	59	39,900	39,800	70	27	E	Cream
Dyna-Gro Seed	M54GR24	55.2	94%	41	60	41,100	50,500	68	35	E	Red
Dekalb	DKS28-05	54.3	93%	43	60	40,600	55,600	68	34	E	Bronze
Channel Seed	5C76	54.0	92%	-	60	39,100	45,600	73	38	ME	Cream
Sorghum Partners	KS310	51.9	89%	-	61	26,500	32,200	70	36	ME	Bronze
Sorghum Partners	SP 25C10	50.7	87%	39	61	31,600	45,900	68	31	E	Cream
Sorghum Partners	251	46.5	79%	-	59	36,200	41,500	67	29	E	Red
Average		**58.6**		**43**	**60**	**35,600**	**42,400**	**70**	**34**		
[d]LSD (.30)		4									
[d]LSD (.05)		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, including tillers.

[c]Maturity group: E=early; ME=medium-early; M=medium. Groupings are based on company provided information and may not align with the observed flowering dates in the trial due to the relatively high elevation of the trial site (4,711 feet).

[d]Farmers selecting a hybrid based on yield should use the LSD (.30) to protect themselves from false negative decisions. Companies or researchers may be interested in the LSD (.05) to avoid false positive conclusions.

Site Information

Collaborator: Tim Stahlecker

Planting Date: May 29, 2021 at 43,600 seeds/ac to a planting depth of 1.25 in. to 1.5 in.

Harvest Date: October 27, 2021 with a harvest area of 10 ft. by 30 ft. per plot.

Herbicide: Pre-emerge (spring): Atrazine, glyphosate, and s-metolachlor at labeled rates. In-season (mid-June): Huskie, atrazine, and 2,4-D at labeled rates.

Soil Type: Ascalon sandy loam

GPS Coordinates: 39.26418, -102.81716

Trial Comments: Planted into good moisture and wheat residue. Good stands and emergence. Trial was flowering at beginning of August. Rain in June totaled about 1.5" and in July the total was 2.2". About 3.8" of rain received from August through harvest in October. Very good weed control throughout the season.

2021 Dryland Grain Sorghum Hybrid Performance Trial at Sheridan Lake

Brand	Hybrid	Grain Yield[a]	Yield	2-Year Avg. Yield	Test Weight	Emerged Plant Population	Harvest Population[b]	Tillering[c]	50% Bloom	Lodging	Plant Height	Maturity Group[d]	Grain Color
		bu/ac	% of test average	bu/ac	lb/bu	plants/ac	heads/ac	tillers/plant	days after planting	percent	in		
Hoegemeyer Seed	H6064	**77.4**	119%	61	59	43,100	54,400	0.3	74	45	42	M	Bronze
Dyna-Gro Seed	M63GB78	**75.9**	117%	-	58	35,400	53,500	0.5	72	80	45	ME	Bronze
Dyna-Gro Seed	GX20973	**73.8**	114%	-	61	38,100	57,000	0.5	71	73	47	ME	Bronze
Alta Seeds	AG1201	72.0	111%	-	58	35,600	70,400	1.0	70	8	41	E	Red
Dyna-Gro Seed	M59GB94	70.8	109%	61	59	33,000	63,200	0.9	70	70	48	E	Bronze
Dyna-Gro Seed	M60GB31	70.5	109%	55	59	32,600	43,700	0.4	81	0	44	ME	Bronze
Alta Seeds	ADV G1120IG	70.2	108%	-	60	35,300	46,700	0.3	74	15	48	ME	Red
Hoegemeyer Seed	H6020	70.2	108%	67	59	43,800	61,300	0.4	72	63	47	ME	Red
Dekalb	DKS36-07	69.6	107%	-	59	37,400	61,100	0.7	72	15	47	ME	Bronze
Hoegemeyer Seed	H6037	69.6	107%	60	60	40,200	56,900	0.4	72	45	40	ME	Red
Sorghum Partners	SP 31A15	69.3	107%	56	58	38,600	60,300	0.6	71	33	36	ME	Bronze
Dekalb	DKS28-05	68.4	105%	62	59	41,200	69,300	0.7	69	60	44	E	Bronze
Dyna-Gro Seed	M59GB57	67.5	104%	58	59	36,400	80,800	1.3	69	8	40	E	Bronze
Hoegemeyer Seed	H6041	67.2	104%	63	60	35,400	57,800	0.6	72	88	37	ME	Cream
Alta Seeds	ADV G1153	66.6	103%	-	59	36,700	52,300	0.4	76	0	42	ME	Red
Alta Seeds	ADV G1329	65.7	101%	-	59	38,100	66,000	0.7	71	0	38	E	Cream
Dyna-Gro Seed	M54GR24	65.7	101%	61	59	41,500	73,600	0.8	67	35	45	E	Red
Warner Seed	W5716	65.7	101%	-	59	36,300	47,600	0.3	74	15	46	E	Red
Golden Acres	GA 1510C	64.8	100%	60	59	38,400	72,200	0.9	72	0	46	E	Cream
Golden Acres	GA 2730B	64.8	100%	59	59	37,000	56,300	0.5	72	58	47	ME	Bronze
Golden Acres	GA 2620C	63.6	98%	61	60	37,800	59,600	0.6	70	35	36	ME	Cream
Dekalb	DKS27-80	63.0	97%	-	60	42,700	74,800	0.8	69	25	46	E	Bronze
Dyna-Gro Seed	M60GB88	63.0	97%	57	59	41,600	57,800	0.4	72	18	48	ME	Bronze
Sorghum Partners	SP 43M80	62.4	96%	58	59	41,500	56,600	0.4	71	30	41	ME	Bronze
Dekalb	DKS29-28	61.8	95%	57	59	41,000	62,700	0.5	68	3	36	E	Bronze
Sorghum Partners	KS310	58.2	90%	-	60	36,700	53,000	0.5	72	28	49	ME	Bronze
Warner Seed	W5501	56.7	87%	59	59	40,300	74,300	0.8	69	3	34	E	Bronze
Dekalb	DKS29-95	55.8	86%	53	59	39,200	63,100	0.6	70	5	37	E	Dark Red
Sorghum Partners	SP 25C10	54.0	83%	53	60	34,100	70,800	1.1	68	23	43	E	Cream
Alta Seeds	AG1101	53.4	82%	-	59	37,200	75,000	1.0	67	0	38	E	Red
Alta Seeds	ADV XG015IG	50.1	77%	-	59	35,300	37,700	0.1	81	0	43	E	Red
Sorghum Partners	251	47.7	74%	-	60	42,900	71,400	0.7	68	30	39	E	Red
Average		**64.9**		**59**	**59**	**38,300**	**61,300**	**0.6**	**71**	**28**	**43**		
[e]LSD (.30)		5											
[e]LSD (.05)		9											

[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, including tillers.

[c]Tillering is the ratio of the difference between total productive heads and emerged main plants. Does not include main plant head.

[d]Maturity group: E=early; ME=medium-early; M=medium. Groupings are based on company provided information and may not align with the observed flowering dates in the trial due to the relatively high elevation of the trial site (3,963 feet).

[e]Farmers selecting a hybrid based on yield should use the LSD (.30) to protect themselves from false negative decisions. Companies or researchers may be interested in the LSD (.05) to avoid false positive conclusions.

Site Information

Collaborator:	Burl Scherler
Planting Date:	May 29, 2021 at 43,600 seeds/ac to a plant depth of 1.25 in. to 1.5 in.
Harvest Date:	October 27, 2021 with a harvest area of 10 ft. by 30 ft. per plot.
Fertilizer:	Pre-plant: N at 55 lb/ac
Herbicide:	Pre-plant (spring): Flumioxazin, atrazine, glyphosate, and s-metolachlor at labeled rates.
Soil Type:	Olney sandy loam
GPS Coordinates:	38.54125, -102.47425
Trial Comments:	Planted into good moisture and heavy wheat residue. Excellent stands and emergence. Growth stage on June 30th was V5. Trial was flowering at beginning of August. Rain in June totaled about 0.5" and in July the total was 5.8". About 3.3" of rain received from August through harvest in October. Very good weed control throughout the season.

2021 Dryland Grain Sorghum Hybrid Performance Trial at Walsh

Source	Hybrid	Grain Yield[a]	Yield	Test Weight	Plant Lodging	Emerged Plant Population	Plant Height	50% Bloom	GDD[b]	50% Mature	Maturity Group[c]	Grain Color
		bu/ac	% of test average	lb/bu	percent	plants/ac	in	days after planting		days after planting		
Dyna-Gro Seed	M59GB94	**56**	137	60	4	32,200	42	65	1710	111	ME/E	Bronze
Dekalb	DKS36-07	**53**	131	58	5	36,400	40	67	1769	113	ME	Bronze
Sorghum Partners	SP 43M80	**51**	125	60	2	30,200	42	66	1740	111	ME	Bronze
Hoegemeyer Seed	H6064	**49**	120	58	24	33,000	36	74	1948	119	M	Bronze
Sorghum Partners	SP 31A15	**48**	118	59	6	36,400	34	64	1682	108	ME	Bronze
Warner Seeds, Inc.	W5716	**48**	117	60	2	32,000	35	75	1973	119	M/E	Red
S&W Seed	SWGS9011	**47**	117	60	6	31,800	38	65	1710	109	ME	Bronze
Sorghum Partners	KS310	**44**	107	60	2	29,800	39	64	1682	108	ME	Bronze
Dyna-Gro Seed	GX20973	43	106	60	35	33,200	43	67	1769	113	ME	Bronze
Dyna-Gro Seed	M60GB88	42	103	59	12	33,200	41	66	1740	110	ME	Bronze
Channel Seed	5C76	42	103	59	14	33,800	38	68	1790	113	ME	Cream
Hoegemeyer Seed	H6020	42	103	59	29	33,800	40	61	1597	107	E/ME	Red
Dekalb	DKS29-28	41	102	59	9	38,200	33	61	1597	106	E	Bronze
S&W Seed	SWGS3183	41	100	60	1	33,800	42	67	1769	113	ME/M	Bronze
Channel Seed	5B27	40	100	59	10	31,000	36	54	1438	97	E/ME	Red
Dyna-Gro Seed	M59GB57	40	98	58	19	31,600	37	57	1503	103	E	Bronze
Dekalb	DKS28-05	39	97	58	34	37,200	37	59	1543	104	E	Bronze
Dekalb	DKS29-95	39	97	58	6	35,600	39	64	1682	108	ME/E	Dark Red
S&W Seed	SWGS3001	38	92	59	7	28,000	36	63	1651	108	ME	Bronze
Dyna-Gro Seed	M60GB31	36	88	59	2	27,600	35	77	2028	121	M/ME	Bronze
Dyna-Gro Seed	M54GR24	36	88	59	5	33,200	39	62	1625	106	E	Red
Hoegemeyer Seed	H6037	36	88	59	27	30,600	37	61	1597	106	E/ME	Red
Dekalb	DKS27-80	34	84	60	9	35,600	41	57	1503	102	E	Bronze
Dyna-Gro Seed	M63GB78	34	83	58	9	30,200	31	75	1973	119	M/ME	Bronze
Hoegemeyer Seed	H6041	33	82	59	39	31,000	43	59	1543	103	E/ME	Cream
Sorghum Partners	SP 25C10	30	74	59	4	30,600	37	56	1482	97	E	Cream
Sorghum Partners	251	30	74	59	13	29,400	35	55	1465	97	E	Red
Warner Seeds, Inc.	W5916	26	64	59	0	39,600	36	90	2398	126	L/ME	Orange
Average		**41**		**59**	**12**	**32,800**	**38**	**65**	**1711**	**109**	**ME**	
[d]LSD (P<0.20)		12			3							

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

[b]GDD: Sorghum growing degree days to 50% bloom date.

[c]Maturity Group: E=early; ME=medium-early; M=medium; ML=medium late; L=late. Maturity groupings with two classes are trial observation/seed company description.

[d]The LSD can be used to judge whether the observed difference between any two entries is meaningful. The LSD (P<0.2) means there is a 20% chance that the observed difference between two entries as great or greater than the LSD are not different, but due to random error.

Site Information

Collaborator: Plainsman Research Center (Kevin Larson & Brett Pettinger)
Planting Date: June 7, 2021 at 87,100 seeds/ac to a planting depth of 1.5 in.
Harvest Date: October 19, 2021 with a harvest area of 10 ft. by 44 ft. per plot.
Previous Crop: Wheat
Herbicide: Preemergence: Flumioxazin at 2.5 oz/ac; Atrazine at 1.0 lb/ac, Mesotrione at 6.4 oz/ac; and Metolachlor at 1.33 pts/ac; Post emergence: 2,4-D amine at 12 oz/ac.
Fertilizer: Anhydrous N at 60 lb/ac and 10-34-0 at 5 gal/ac (20 lb P2O5/ac, 6 lb N/ac) was strip till applied.
Soil Type: Richfield silt loam
Comments: Planted into strip tilled wheat stubble. Rapid emergence and good stands. From planting (June 7) to Aug. 1, the trial received 6.49 inches of rain. The rest of the growing season was dry, totaling 1.54 inches of rain from Aug. 2 to October 16 (first freeze). Weed control was good. Some, mostly minor, lodging noted at harvest.

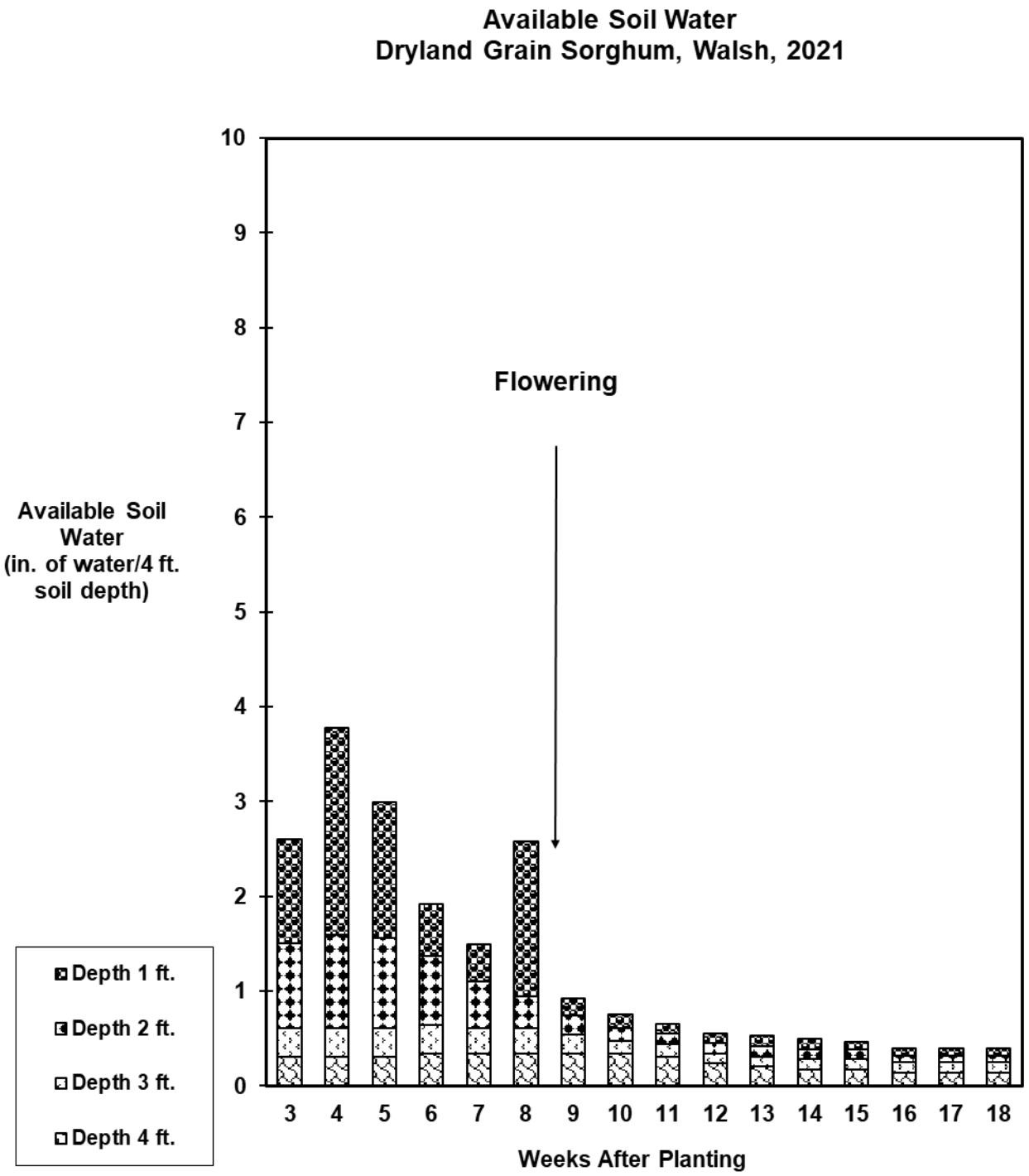

Fig. 1. Available soil water in dryland grain sorghum at Walsh. Gypsum block measurements taken to 4 ft. with 1 ft. increments. Total rainfall at Walsh from planting to first freeze (October 16) was 8.03 in. Any increase in available soil water between weeks is from rain.

2021 Drip Irrigated Grain Sorghum Hybrid Performance Trial at Walsh

Source	Hybrid	Grain Yield[a]	Yield	Test Weight	Plant Lodging	Emerged Plant Population	Plant Height	50% Bloom	GDD[b]	50% Mature	Maturity Group[c]	Grain Color
		bu/ac	% of test average	lb/bu	percent	plants/ac	in	days after planting		days after planting		
Golden Acres	GA 2840B	114.0	131	63	27	48,400	54	61	1614	108	ME	Bronze
Dyna-Gro Seed	M60GB88	107.8	124	61	35	55,000	53	61	1614	105	ME	Bronze
S&W Seed	SWGS3183	107.6	124	62	3	55,800	56	60	1598	105	ME/M	Bronze
Sorghum Partners	SP 68M57	105.2	121	62	15	43,400	51	64	1696	110	M	Bronze
Golden Acres	GA 4880R	98.8	114	62	10	50,200	52	71	1885	117	ML	Red
Dyna-Gro Seed	M54GR24	97.0	112	62	4	47,200	48	59	1574	102	E	Red
Dekalb	DKS29-95	96.6	111	61	3	47,200	48	58	1552	103	E	Dark Red
Dekalb	DKS36-07	94.0	108	62	9	48,000	47	66	1752	113	M/ME	Bronze
Sorghum Partners	KS310	89.8	103	61	2	45,200	48	61	1614	106	ME	Bronze
Sorghum Partners	SP 31A15	89.8	103	61	7	47,200	51	61	1614	105	ME	Bronze
Sorghum Partners	251	89.8	103	61	0	52,200	47	52	1363	97	E	Red
Dyna-Gro Seed	M63GB78	88.8	102	61	8	53,400	55	64	1696	111	M/ME	Bronze
Golden Acres	GA 3180B	85.6	99	60	38	57,600	49	65	1721	110	M	Bronze
Dekalb	DKS29-28	85.0	98	62	1	55,800	46	57	1536	101	E	Bronze
Dekalb	DKS38-16	81.6	94	61	29	41,800	55	61	1614	106	ME	Bronze
Dyna-Gro Seed	GX20973	78.6	90	61	50	48,400	53	60	1598	106	ME	Bronze
Dyna-Gro Seed	M59GB57	78.0	90	61	11	47,600	47	57	1536	102	E	Bronze
S&W Seed	SWGS9011	77.6	89	61	2	49,200	45	60	1598	105	ME	Bronze
Sorghum Partners	SP 43M80	77.6	89	62	8	45,000	51	60	1598	106	ME	Bronze
Dekalb	DKS27-80	75.2	87	60	2	57,200	42	58	1552	103	E	Bronze
Sorghum Partners	SP 25C10	74.4	86	61	0	45,600	47	54	1418	99	E	Cream
Dyna-Gro Seed	M60GB31	73.4	84	62	22	48,000	56	66	1752	112	M/ME	Bronze
S&W Seed	SWGS3001	72.0	83	60	6	41,800	45	61	1614	106	ME	Bronze
Dyna-Gro Seed	M59GB94	69.8	80	61	12	53,800	46	62	1637	109	ME/E	Bronze
Dekalb	DKS28-05	65.0	75	61	15	48,400	52	59	1574	104	E	Bronze
Average		**86.9**		**61**	**13**	**49,300**	**50**	**61**	**1613**	**106**	**ME**	
[d]LSD (P<0.20)		20.0			16							

[a]Yields adjusted to 14% moisture and hybrids ranked by yield.

[b]GDD: Sorghum growing degree days to 50% bloom date.

[c]Maturity Group: E=early; ME=medium-early; M=medium; ML=medium late. Maturity groupings with two classes are trial observation/seed company description.

[e]The LSD can be used to judge whether the observed difference between any two entries is meaningful. The LSD (P<0.2) means there is a 20% chance that the observed difference between two entries as great or greater than the LSD are not different, but due to random error.

Site Information

Collaborator: Plainsman Research Center (Kevin Larson & Brett Pettinger)

Planting Date: June 4, 2021 at 87,100 seeds/ac to a planting depth of 1.5 in.

Harvest Date: October 22, 2021 with a harvest area of 10 ft. by 44 ft. per plot.

Previous Crop: Wheat

Herbicide: Preemergence: Flumioxazin at 2.5 oz/ac; Atrazine at 1.0 lb/ac, Mesotrione at 6.4 oz/ac; and Metolachlor at 1.33 pts/ac; Post emergence: 2,4-D amine at 12 oz/ac.

Fertilizer: Anhydrous N at 125 lb/ac and 10-34-0 at 7.5 gal/ac (30 lb P2O5/ac, 9 lb N/ac) was strip till applied.

Soil Type: Richfield silt loam

Irrigation: Subsurface drip irrigation applied weekly from June through mid-August, total applied water 10.7 in/ac.

Comments: Planted into strip tilled sunflower stalks. Rapid emergence and good stands. From planting (June 4) to Aug. 1, the trial received 6.49 inches of rain. The rest of the growing season was dry, totaling 1.54 inches of rain from Aug. 2 to October 16 (first freeze). Weed control was good. Ony three hybrids had 35% or greater lodging, most hybrids had minor lodging at harvest.

2021 Dryland Forage Sorghum Hybrid Performance Trial at Walsh

Brand	Hybrid	Forage Yield[a]	Yield	Brix	Emerged Plant Population	Plant Height	Lodging	Days to Boot	Relative Maturity[b]	Forage Type[c]	Traits[d]	RFQ[e]
		tons/ac	% of test average	percent	plants/ac	in	percent	days after planting				
Dyna-Gro Seed	5 Star	**16.7**	155	9	49,100	106	46	74	ME	FS	-	112
Dyna-Gro Seed	F72FS05	13.8	128	14	43,600	75	7	74	ME	FS	SCA	110
Mojo Seed	Pearl	13.2	123	9	43,200	80	22	71	M	FS	SCA	124
Browning Seed	Tridan	13.1	122	13	38,000	123	2	63	L	SS	-	126
Browning Seed	Headless Wonder BMR	12.3	114	9	51,100	106	12	68	PPS	SS	BMR	102
Dyna-Gro Seed	F71FS72 BMR	11.9	111	9	50,300	56	41	67	E	FS	BMR	157
Dyna-Gro Seed	FX21815	11.8	109	10	45,900	48	0	72	ME	FS	-	167
Dyna-Gro Seed	First Graze	11.6	108	11	40,000	84	36	61	ME	SS	-	119
Dyna-Gro Seed	Dynagraze II BMR	11.5	107	8	56,200	99	36	62	ME	SS	BMR	139
Dyna-Gro Seed	Fullgraze II	10.5	97	19	57,000	95	5	77	ML	SS	-	121
Dyna-Gro Seed	Super Sile 30	10.4	96	13	38,800	58	4	83	ME	FS	-	124
Dyna-Gro Seed	Sweet Ton MS	10.4	96	8	54,300	90	54	63	ML	FS		130
Dyna-Gro Seed	F70FS91 BMR	10.4	96	13	50,700	76	21	71	E	FS	BMR	148
Dyna-Gro Seed	Dynagraze II	9.7	90	16	51,500	81	41	61	ME	SS	-	115
Dyna-Gro Seed	Super Sweet 10	9.6	89	10	53,100	84	14	63	ME	SS	-	133
Browning Seed	Cadan 99B WMR	9.1	84	14	57,800	80	5	62	E	SS	DS	153
Browning Seed	Sweet Sioux BMR VI	9.1	84	17	46,700	72	40	71	L	SS	BMR	146
Dyna-Gro Seed	Fullgraze II BMR	8.5	79	14	35,600	76	2	89	ML	SS	BMR	141
Dyna-Gro Seed	F74FS23 BMR	8.1	75	12	47,100	66	56	73	M	FS	BMR	128
Dyna-Gro Seed	Danny Boy II BMR	7.7	71	10	45,500	83	1	Veg	PPS	SS	BMR	117
Browning Seed	Sweet Sioux WMR	7.1	66	12	50,300	94	10	63	L	SS	-	118
	Average	**10.8**		**12**	**47,900**	**82**	**22**	**69**				**130**
	[f]LSD (0.20)	1.4										

[a]Yields are adjusted to 65% moisture content based on oven-dried samples.

[b]Relative maturities are provided by the companies. E=early; ME=medium-early; M=medium; ML=medium-late; L=late; PPS=photoperiod sensitive.

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

[d]Traits are provided by the companies. DS=dry stalk; BMR=brown mid-rib; SCA=Sugar Cane Aphid.

[e]Forage quality analyses based on oven-dried weight, RFQ=relative forage quality.

[f]The LSD can be used to judge whether the observed difference between any two entries is meaningful. The LSD (P<0.2) means there is a 20% chance that the observed difference between two entries as great or greater than the LSD are not different, but due to random error.

Site Information

Collaborator: Plainsman Research Center (Kevin Larson & Brett Pettinger)
Planting Date: June 7, 2021 at 69,700 seeds/ac to a planting depth of 1.5 in.
Harvest Date: September 23, 2021 with a harvest area of 5 ft. by 44 ft. per plot.
Previous Crop: Wheat
Herbicide: Pre-emerge: Flumioxazin at 2.5 oz/ac; Atrazine at 1.0 lb/ac; and Metolachlor at 1.33 pts/ac
Fertilizer: Anhydrous N at 60 lb/ac and 10-34-0 at 5 gal/ac was strip till applied
Soil Type: Richfield silt loam
Comments: Planted into strip tilled wheat stubble. Rapid emergence and good stands. From planting (June 7) to Aug. 1, the trial received 6.49 inches of rain. The rest of the growing season was dry, totaling 0.90 inches of rain from Aug.2 to Sept. 23 (harvest). Weed control was good. Some lodging noted at harvest.

2021 Dryland Forage Sorghum Hybrid Performance Trial Feed Quality at Walsh

			Forage Quality[a]														
Brand	Hybrid	Forage Yield[b]	RFQ	CP	ADF	aNDFom	Lignin	Sugar	Starch	Fat	Ash	NDFD 30hr	NDFD 240hr	TDN	NEL	Milk/Ton	Beef/Ton
		tons/ac		percent											Mcal/cwt	lb/ton	lb/ton
Dyna-Gro Seed	5 Star	**16.7**	112	7	35	55	5	2	14	2	8	54	71	65	67	3,253	126
Dyna-Gro Seed	F72FS05	13.8	110	7	34	54	5	2	17	2	8	52	69	66	68	3,206	120
Mojo Seed	Pearl	13.2	124	7	34	50	4	3	19	2	8	53	69	66	68	3,090	150
Browning Seed	Tridan	13.1	126	7	31	47	4	3	23	2	7	48	65	67	69	3,113	143
Browning Seed	Headless Wonder BMR	12.3	102	7	36	59	5	1	8	2	7	54	69	65	67	3,021	106
Dyna-Gro Seed	F71FS72 BMR	11.9	157	8	26	42	4	3	23	3	8	54	67	68	71	3,238	190
Dyna-Gro Seed	FX21815	11.8	167	10	24	40	3	2	29	3	6	51	66	69	71	3,091	202
Dyna-Gro Seed	First Graze	11.6	119	8	31	49	5	2	18	2	7	49	65	66	69	2,876	133
Dyna-Gro Seed	Dynagraze II BMR	11.5	139	7	33	49	5	3	20	2	7	56	71	66	68	2,957	181
Dyna-Gro Seed	Fullgraze II	10.5	121	8	31	52	4	2	5	3	6	54	71	66	69	2,969	163
Dyna-Gro Seed	Super Sile 30	10.4	124	9	31	52	4	1	7	2	9	58	75	67	69	2,855	153
Dyna-Gro Seed	Sweet Ton MS	10.4	130	9	31	53	3	2	10	2	10	62	75	67	69	2,899	165
Dyna-Gro Seed	F70FS91 BMR	10.4	148	9	28	47	4	3	15	3	8	59	73	68	70	3,161	197
Dyna-Gro Seed	Dynagraze II	9.7	115	8	33	52	5	2	17	2	8	51	67	66	68	2,953	125
Dyna-Gro Seed	Super Sweet 10	9.6	133	8	29	47	4	3	20	3	7	52	67	67	70	2,819	164
Browning Seed	Cadan 99B WMR	9.1	153	9	28	42	4	3	27	3	5	49	64	68	70	2,885	194
Browning Seed	Sweet Sioux BMR VI	9.1	146	8	30	48	4	3	11	2	9	60	74	67	69	2,937	187
Dyna-Gro Seed	Fullgraze II BMR	8.5	141	9	31	52	4	3	5	2	9	64	78	67	69	2,943	193
Dyna-Gro Seed	F74FS23 BMR	8.1	128	9	32	52	4	3	8	2	13	61	75	66	68	3,023	143
Dyna-Gro Seed	Danny Boy II BMR	7.7	117	9	35	55	4	2	3	2	13	61	75	65	67	2,784	120
Browning Seed	Sweet Sioux WMR	7.1	118	9	35	51	5	2	11	2	6	51	68	65	67	2,805	154
	Average	**10.8**	**130**	**8**	**31**	**50**	**4**	**2**	**15**	**2**	**8**	**55**	**70**	**66**	**69**	**2,994**	**158**
	[c]LSD (0.20)	1.4															

[a]All forage quality analyses results are dry basis values. CP=crude protein; aNDFom=ash free neutral detergent fiber; 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]Yields are adjusted to 65% moisture content based on oven-dried samples.

[c]The LSD can be used to judge whether the observed difference between any two entries is meaningful. The LSD (P<0.2) means there is a 20% chance that the observed difference between two entries as great or greater than the LSD are not different, but due to random error.

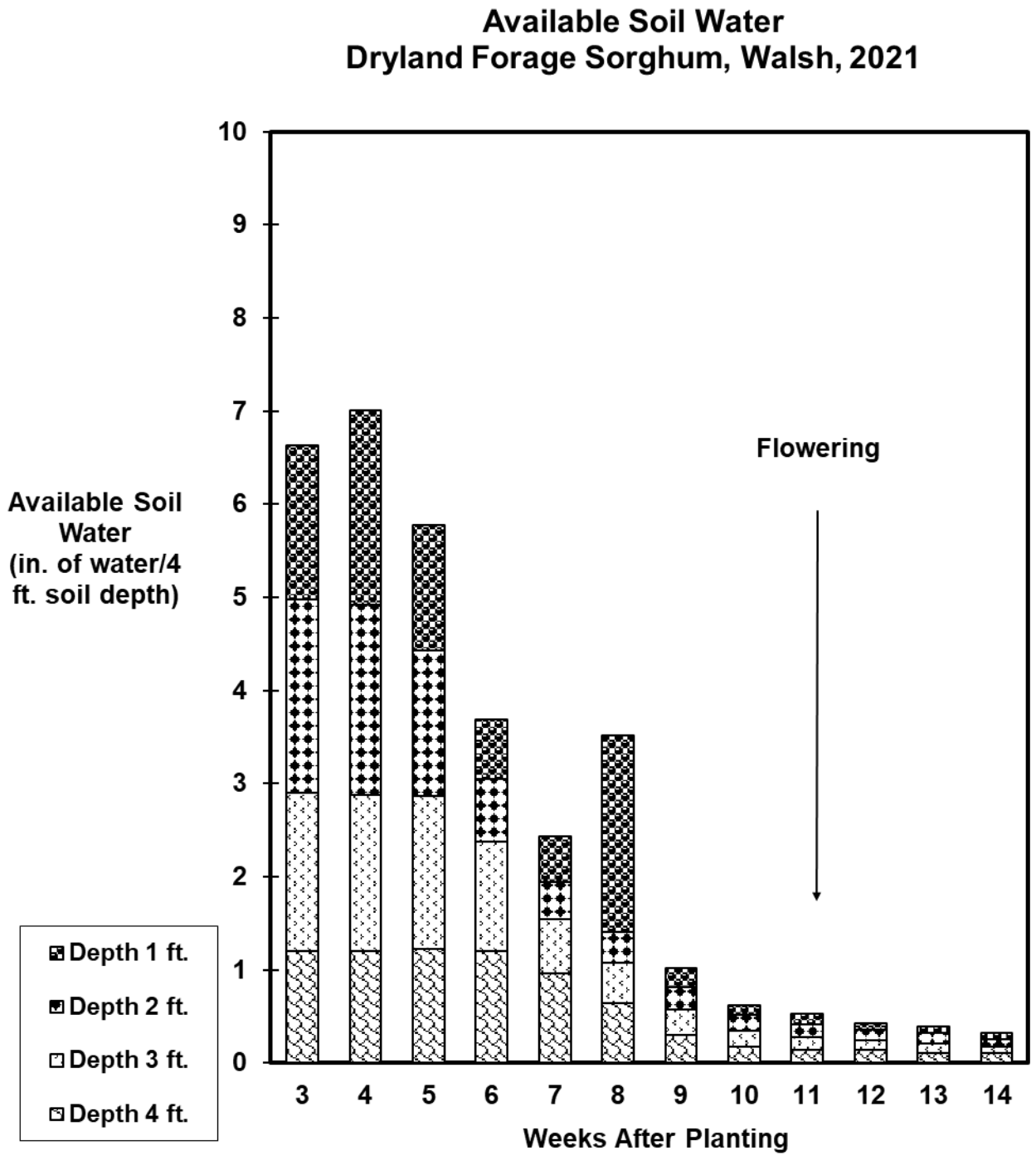

Fig. 2. Available soil water in dryland grain sorghum at Walsh. Gypsum block measurements taken to 4 ft. with 1 ft. increments. Total rainfall at Walsh from planting to harvest was 7.39 in. Any increase in available soil water between weeks is from rain.

2021 Irrigated Forage Sorghum Hybrid Performance Trial at Rocky Ford

Brand	Hybrid	Yield				Moisture	Brix	Plant Height	Forage Type[b]	Relative Maturity[c]	Traits[d]	RFQ[e]
		Forage[a]	Dry Matter	Yield	2-Year Avg.							
		tons/ac		% of test average	tons/ac	% at harvest	percent	in				
Sorghum Partners	SS405	**37.5**	13.2	153	27	67	8	130	FS	ML	-	102
Browning Seed	Headless Wonder BMR	**35.7**	12.6	146	-	66	7	141	SS	PPS	BMR	82
Dyna-Gro Seed	Fullgraze II	33.9	12.0	138	26	67	9	155	SS	ML	-	66
Dyna-Gro Seed	Danny Boy II BMR	31.5	11.1	129	23	77	7	136	SS	PPS	BMR	75
Alta Seeds	ADV XS005	31.2	10.8	127	-	76	7	133	SS	PPS	SCA, BMR	82
Dyna-Gro Seed	Super Sile 30	30.9	10.8	126	22	74	11	109	FS	ME	-	86
Dyna-Gro Seed	5 Star	30.6	10.8	125	-	72	9	113	FS	ME	-	92
Alta Seeds	ADV S6520	30.3	10.5	124	-	75	2	113	SS	PPS	SCA, BMR	80
Dyna-Gro Seed	Super Sile 20	29.7	10.5	121	23	73	7	133	FS	ML	-	93
Dyna-Gro Seed	Fullgraze II BMR	29.4	10.2	120	22	72	10	142	SS	ML	BMR	86
Dyna-Gro Seed	FX21842	26.4	9.3	108	-	70	6	109	FS	ML	-	140
Dyna-Gro Seed	F70FS91 BMR	26.1	9.0	107	21	67	3	100	FS	E	BMR	132
Alta Seeds	ADV XF450IG	25.8	9.0	105	-	74	10	78	FS	M	IGROWTH	86
Browning Seed	Sweet Sioux WMR	25.5	9.0	104	-	63	5	131	SS	L	-	108
Dyna-Gro Seed	Sweet Ton MS	25.2	8.7	103	-	73	11	113	FS	ML	-	104
Dyna-Gro Seed	Dynagraze II BMR	24.6	8.7	100	-	70	3	116	SS	ME	BMR	98
Dyna-Gro Seed	Super Sweet 10	24.6	8.7	100	18	67	2	107	SS	ME	-	114
Browning Seed	Cadan 99B WMR	24.3	8.4	99	-	64	3	128	SS	L	DS	94
Mojo Seed	PEARL	24.3	8.4	99	-	72	3	89	FS	M	SCA	123
Browning Seed	Tridan	24.0	8.4	98	-	65	2	132	SS	L	-	107
Browning Seed	Sweet Sioux BMR VI	23.4	8.1	96	-	73	12	109	SS	L	BMR	117
Alta Seeds	ADV F7216	23.1	8.1	94	-	67	4	114	FS	ME	BMR, DS	120
Dyna-Gro Seed	Dynagraze II	23.1	8.1	94	19	65	3	108	SS	ME	-	114
Dyna-Gro Seed	First Graze	23.1	8.1	94	-	68	2	101	SS	ME	-	106
Dyna-Gro Seed	F72FS05	22.5	7.8	92	18	72	10	81	FS	ME	SCA	110
Alta Seeds	ADV F8322	21.9	7.8	89	-	73	11	82	FS	M	SCA	105
Mojo Seed	OPAL	20.1	7.2	82	-	75	3	86	FS	ML	SCA	100
Dyna-Gro Seed	F72FS25 BMR	19.5	6.9	80	-	78	13	75	FS	M	BMR, BD	117
Sorghum Partners	SP 3904	19.5	6.9	80	17	77	7	74	FS	ML	BD, BMR	123
Dyna-Gro Seed	FX21865	18.6	6.6	76	-	72	3	71	FS	ML	-	128
Sorghum Partners	NK300	18.3	6.3	75	18	70	3	71	FS	ME	-	133
Dyna-Gro Seed	F71FS72 BMR	17.7	6.3	72	17	73	2	96	FS	E	BMR	133
Sorghum Partners	SP 3905	17.4	6.0	71	19	74	5	82	FS	ME	BD, BMR	155
Dyna-Gro Seed	F74FS72 BMR	16.5	5.7	67	17	78	10	74	FS	ML	BMR, BD	110
Dyna-Gro Seed	F74FS23 BMR	12.9	4.5	53	14	75	12	101	FS	M	BMR	122
Dyna-Gro Seed	FX21815	12.6	4.5	51	-	75	5	73	FS	ME	-	107
	Average	**24.5**	**8.6**		**20**	**71**	**6**	**105**				**107**
[f]LSD (0.30)/LSD (0.05)		2.3/4.4										

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

[b]Forage Type: FS=forage sorghum; SS=sorghum sudangrass.

[c]Relative maturitiesprovided companies. E=early; ME=medium-early; M=medium; ML=medium-late; L=late; PPS=photoperiod sensitive.

[d]Traits are provided by the companies. Dashes mean conventional (no traits) or information isn't available. BD=brachytic dwarf; BMR=brown mid-rib; DS=dry stalk; MS=male sterile; SCA=sugar cane aphid.

[e]Forage quality analyses based on oven-dried weight. RFQ=relative forage quality.

[f]Farmers selecting a hybrid based on yield should use the LSD (0.30) to protect from false negative decisions. Companies or researchers may be interested in the LSD (0.05) to avoid false positive conclusions.

Site Information

Collaborator: Arkansas Valley Research Station (Kevin Tanabe, Lane Simmons, and Mike Bartolo)
Planting Date: June 8, 2021 at 124,500 seeds/ac to a planting depth of 1.5 in.
Harvest Date: September 20, 21 with a harvest area of 5 ft. by 31 ft per plot.
Herbicide: Pre-plant: Paraquat at 1 qt/ac, Mad Dog Plus at 1 qt/ac, and Dual at 1.3 pt/ac
Fertilizer: Pre-plant: N at 10, P at 27, and K at 3 lb/ac
Irrigation: Furrow irrigated with 2 in/ac per irrigation on June 9, July 2, July 30, August 17, and September 7.
Soil Type: Rocky Ford silty clay loam

2021 Irrigated Forage Sorghum Hybrid Performance Trial at Rocky Ford

			Forage Quality[a]													
Brand	Hybrid	Forage Yield[b]	RFQ	CP	aNDFom	Lignin	WSC (Sugar)	Starch	Ash	Fat	NDFD 30hr	NDFD 240hr	TDN	NEL	Milk/Ton	Beef/Ton
		tons/ac						percent						Mcal/cwt	lb/ton	lb/ton
Sorghum Partners	SS405	**37.5**	102	6	53	5	7	17	7	2	46	64	65	67	2,807	98
Browning Seed	Headless Wonder BMR	**35.7**	82	6	61	6	6	10	6	2	46	63	64	65	2,513	51
Dyna-Gro Seed	Fullgraze II	33.9	66	7	70	7	6	2	6	1	47	64	62	63	2,211	16
Dyna-Gro Seed	Danny Boy II BMR	31.5	75	7	64	5	10	0	12	2	50	66	62	64	2,034	23
Alta Seeds	ADV XS005	31.2	82	9	65	5	13	0	14	2	55	68	63	65	1,956	32
Dyna-Gro Seed	Super Sile 30	30.9	86	7	55	5	8	14	8	2	43	61	65	67	2,512	49
Dyna-Gro Seed	5 Star	30.6	92	6	53	4	11	15	9	2	45	62	65	67	2,549	63
Alta Seeds	ADV S6520	30.3	80	9	62	5	8	4	13	2	51	64	63	65	2,014	21
Dyna-Gro Seed	Super Sile 20	29.7	93	7	54	5	6	16	8	2	45	62	65	67	2,617	69
Dyna-Gro Seed	Fullgraze II BMR	29.4	86	7	63	5	11	1	8	2	52	67	63	65	2,407	64
Dyna-Gro Seed	FX21842	26.4	140	8	45	4	2	26	7	2	51	66	67	69	3,224	167
Dyna-Gro Seed	F70FS91 BMR	26.1	132	8	46	4	5	23	9	2	51	64	66	68	2,979	135
Alta Seeds	ADV XF450IG	25.8	86	10	61	5	5	5	12	2	52	68	64	65	2,244	50
Browning Seed	Sweet Sioux WMR	25.5	108	8	51	5	5	19	8	2	47	63	66	68	2,818	100
Dyna-Gro Seed	Sweet Ton MS	25.2	104	6	50	3	10	15	9	2	45	62	66	68	2,709	84
Dyna-Gro Seed	Dynagraze II BMR	24.6	98	8	63	6	6	12	8	2	57	70	64	66	2,574	95
Dyna-Gro Seed	Super Sweet 10	24.6	114	9	47	5	3	23	8	2	45	61	66	68	2,907	103
Browning Seed	Cadan 99B WMR	24.3	94	8	52	5	3	18	10	2	45	61	65	67	2,588	63
Mojo Seed	PEARL	24.3	123	8	47	4	1	26	8	2	48	65	67	69	2,977	129
Browning Seed	Tridan	24.0	107	9	49	5	3	21	9	2	44	60	66	68	2,800	88
Browning Seed	Sweet Sioux BMR VI	23.4	117	9	51	5	5	16	10	2	53	67	65	67	2,748	115
Alta Seeds	ADV F7216	23.1	120	8	48	4	3	22	9	2	49	63	66	68	2,899	120
Dyna-Gro Seed	Dynagraze II	23.1	114	9	46	5	6	23	8	2	43	61	66	68	2,915	104
Dyna-Gro Seed	First Graze	23.1	106	8	49	6	3	20	7	2	42	60	65	67	2,888	100
Dyna-Gro Seed	F72FS05	22.5	110	8	51	5	5	19	8	2	49	67	66	68	2,820	110
Alta Seeds	ADV F8322	21.9	105	8	52	5	3	18	9	2	48	65	66	68	2,744	95
Mojo Seed	OPAL	20.1	100	8	52	4	5	15	10	2	47	63	66	68	2,580	73
Dyna-Gro Seed	F72FS25 BMR	19.5	117	9	52	4	6	14	11	2	56	68	65	67	2,674	111
Sorghum Partners	SP 3904	19.5	123	10	51	3	4	14	13	2	57	68	66	68	2,646	113
Dyna-Gro Seed	FX21865	18.6	128	10	47	4	3	17	10	2	53	67	66	68	2,879	132
Sorghum Partners	NK300	18.3	133	8	43	4	2	29	8	2	45	61	68	70	3,123	130
Dyna-Gro Seed	F71FS72 BMR	17.7	133	8	45	4	4	22	9	2	51	65	66	68	3,050	144
Sorghum Partners	SP 3905	17.4	155	8	42	4	3	27	8	2	53	66	67	69	3,299	177
Dyna-Gro Seed	F74FS72 BMR	16.5	110	10	54	3	8	7	13	2	58	69	65	67	2,494	97
Dyna-Gro Seed	F74FS23 BMR	12.9	122	8	47	3	5	24	11	2	50	65	67	69	2,802	107
Dyna-Gro Seed	FX21815	12.6	107	10	52	5	3	15	10	2	51	67	65	67	2,679	100
	Average	**24.5**	**107**	**8**	**53**	**5**	**5**	**16**	**9**	**2**	**49**	**65**	**65**	**67**	**2,686**	**92**
LSD (0.30)/LSD (0.05)		2.3/4.4														

[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.