

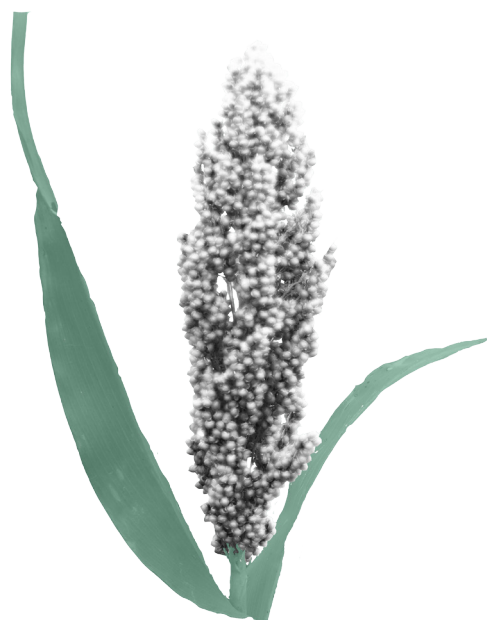
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Crops
Testing



2016 Colorado Spring Crop Variety Performance Trials



Introduction to the 2016 Colorado Spring Crop Variety Performance Trial Results

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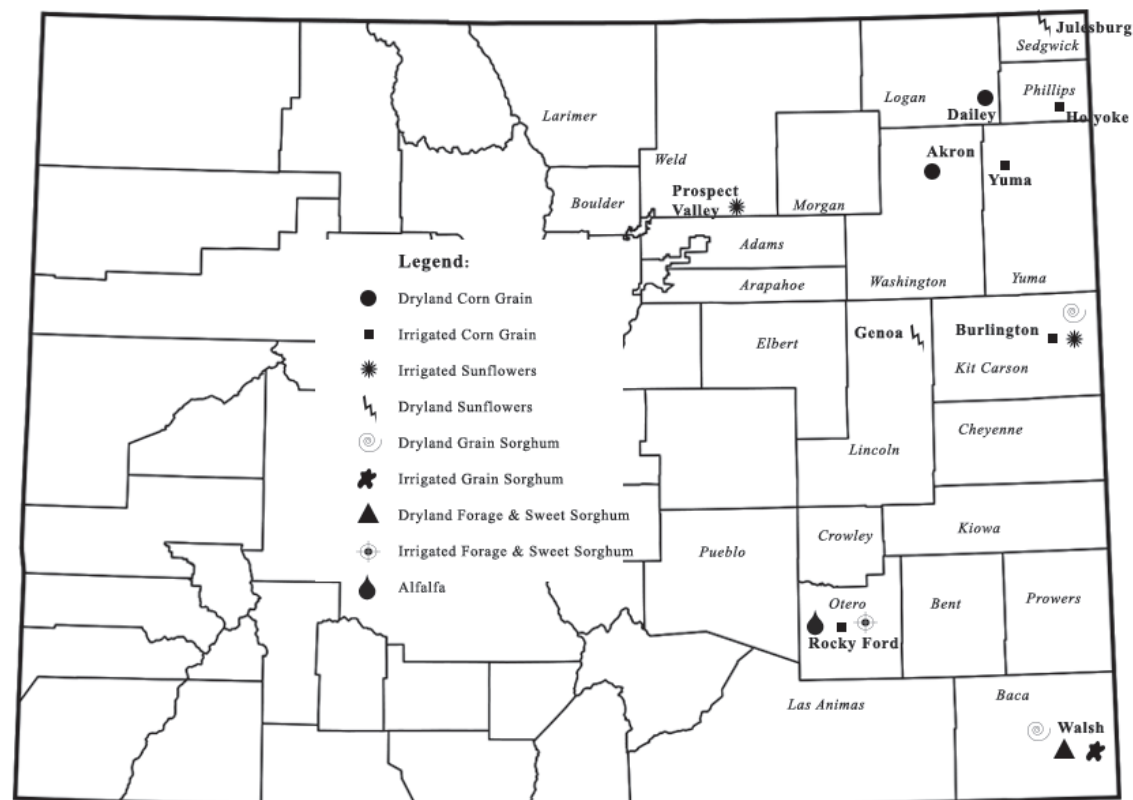
Colorado State University conducts crop variety trials for research-based, unbiased and reliable performance results to help Colorado farmers make informed variety decisions. Choosing which varieties to plant is a cornerstone of all crop production decisions. CSU crop variety testing is a public service open to all seed companies for all the crops we test. It is kept strong by the number and quality of entries in the variety trials. Seed companies use results for marketing decisions. Some trials are part of CSU's formal education efforts to train the next generation of the world's plant breeders and agronomists. CSU extension agents and Agriculture Experiment Station personnel use trial results to make variety recommendations to Colorado farmers.

There were some high yielding corn, sunflower, and sorghum hybrids in 2016. Selected corn, sunflower, grain sorghum, forage sorghum, and alfalfa trial results are featured in the following tables. Please note that these tables are intended to be stand alone and self-explanatory. All of the variety trial results for 2016 (and results from past years) can be found at our website, www.csucrops.com.

The map below provides the approximate location of variety trials in eastern Colorado. Some of the trials are conducted on CSU Agricultural Experiment Stations and others in superior farmer fields. We are very thankful to the farmers who host, without recompense, these variety trials. We are humbled by their generosity. Their names are at the bottom of each trial results table. The trials are made possible with funding from seed company entry fees, and grants from the Colorado Corn Administrative Committee and Colorado Sunflower Administrative Committee.

Hopefully our farmers will recognize the companies that have entered into the Colorado state trials. These companies have excellent hybrids adapted to Colorado conditions. We hope that the companies that are not featured in the following tables will be encouraged to enter.

2016 Colorado Crop Variety Performance Trial Locations



2016 Irrigated Corn Hybrid Performance Trial at Holyoke

Brand	Hybrid	Insect and Herbicide Technology Traits ^a	Yield ^b	Relative		Test Moisture	Plant		Greensnap
				Maturity ^c			Weight	Height	
			bu/ac		percent	lb/bu	in	plants/ac	percent
NuTech/G2 Genetics	5F-906	AM, RR2, LL	218.1	106	14.7	59.9	108	32,249	2.2
NuTech/G2 Genetics	5F-713	AM, RR2, LL	202.0	113	16.3	59.4	114	34,036	8.5
NuTech/G2 Genetics	5F-510	AM, RR2, LL	196.9	110	15.3	60.3	107	33,243	7.9
NuTech/G2 Genetics	5F-709	AM, RR2, LL	190.9	109	15.5	60.1	98	34,848	6.0
LG Seeds	LG5618STXRIB	STXRIB, RR2, LL	190.4	112	17.2	60.0	98	33,457	7.8
LG Seeds	LG5548STXRIB	STXRIB, RR2, LL	182.4	109	13.9	60.2	102	32,910	2.2
Phoenix	6948A3	3000GT, GT, LL	182.0	114	16.4	59.3	110	32,432	0.9
Phoenix	5552A4	3111, GT, LL	179.3	110	14.4	58.3	98	33,364	0.8
LG Seeds	LG2602VT3PRIB	VT3PRIB, RR2	178.0	112	14.1	57.8	104	33,759	4.9
Phoenix	6342A4	3111, GT, LL	177.9	113	14.2	56.8	86	33,167	2.2
Phoenix	6518GTA	GT	174.5	116	16.1	59.0	106	33,759	0.4
LG Seeds	LG5565STXRIB	STXRIB, RR2, LL	173.6	108	13.6	61.6	95	33,033	1.5
Average			187.1	111	15.1	59.4	102	33,355	3.8

^dLSD (P<0.30)

8.1

^aTechnology trait designations: 3000GT=Agrisure 3000GT; 3111=Agrisure Viptera 3111; AM=Optimum AcreMax; GT=Glyphosate Tolerant; LL=LibertyLink; RR2=Roundup Ready 2; STXRIB=Genuity SmartStax Refuge in the Bag Complete; VT3PRIB=Genuity VecTran Triple Protection Refuge in the Bag Complete.

^bYields corrected to 15.5% moisture.

^cRelative maturity is provided by the respective companies and is the approximate time from planting to harvest maturity. The method of calculation of the relative maturity ratings may vary among companies.

^dIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is significant.

Plot size: 5' x 31'

Site Information

Collaborator: Brent Adler

Planting Date: May 6, 2016

Harvest Date: October 27, 2016

Fertilizer: N at 208, P at 70, S at 35, and Z at 1.5 lb/ac

Herbicide: Post-emergence (early): Atrazine at 0.75 lb/ac, Status at 3.5 oz/ac, and Roundup at 32 oz/ac
Post-emergence (30 days after planting): Status at 2 oz/ac, Roundup at 32 oz/ac, Dual at 22 oz/ac

Soil Type: Valent sand

Irrigation Type: Center-pivot

Comments: Trial was hailed on June 27, which caused some greensnap in the trial.

2016 Irrigated Corn Hybrid Performance Trial at Rocky Ford

Brand	Hybrid	Insect and Herbicide Technology Traits ^a	Yield ^b bu/ac	Relative Maturity ^c	Moisture percent	Test Weight lb/bu	Plant Height in	Population plants/ac
Pioneer	P1751 AMT	AMT, RR2, LL	294.0	117	18.9	57.4	115	32,888
Producers Hybrids	7493VT2RIB	VT2PRIB, RR2	274.9	114	16.5	58.7	112	31,073
Phoenix	6342A4	3111, GT, LL	267.3	113	17.9	54.8	112	30,928
Producers Hybrids	7268STXRIB	STXRIB, RR2, LL	266.8	112	16.9	58.2	106	32,815
Phoenix	6518GTA	GT	264.6	116	18.6	56.6	112	32,597
Producers Hybrids	7574VT3PRIB	VT3PRIB, RR2	252.6	115	16.0	57.0	111	31,508
Dekalb	DKC65-20 RIB	VT2PRIB, RR2	244.9	120	16.8	60.1	109	30,928
Phoenix	6948A3	3000GT, GT, LL	233.6	114	18.0	56.8	115	30,347
Producers Hybrids	7358STXRIB	STXRIB, RR2, LL	232.9	113	14.8	58.6	106	31,218
Phoenix	5552A4	3111, GT, LL	231.2	110	15.1	56.0	99	32,234
Average			256.3	114	16.9	57.4	110	31,654

^dLSD (P<0.30)

14.0

^aTechnology trait designations: 3000GT=Agrisure 3000GT; 3111=Agrisure Viptera 3111; AMT=Optimum AcreMax TRIssect; GT=Glyphosate Tolerant; LL=LibertyLink; RR2=Roundup Ready 2; STXRIB=Genuity SmartStax Refuge in the Bag Complete; VT2PRIB=Genuity VecTran Double Protection Refuge in the Bag Complete; VT3PRIB=Genuity VecTran Triple Protection Refuge in the Bag Complete.

^bYields corrected to 15.5% moisture.

^cRelative maturity is provided by the respective companies and is the approximate time from planting to harvest maturity. The method of calculation of the relative maturity ratings may vary among companies.

^dIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is significant.

Plot size: 5' x 31'

Site Information

Collaborator: Arkansas Valley Research Center
 Planting Date: May 9, 2016
 Harvest Date: October 24, 2016
 Fertilizer: N at 27 and P at 69 lb/ac during early-season
 Second application of N applied at 148 lb/ac
 Herbicide: Status at 5 oz/ac and Tomahawk at 1 qt/ac applied on May 25
 Soil Type: Rocky Ford silty clay loam
 Irrigation Type: Furrow

2016 Irrigated Corn Hybrid Performance Trial at Yuma

Brand	Hybrid	Insect and Herbicide Technology Traits ^a	Yield ^b	Relative Maturity ^c	Moisture	Test Weight	Plant Height	Population	Bacterial Leaf Streak
LG Seeds	LG5643STX	STX, RR2, LL	217.9	114	17.0	57.8	110	31,726	2
B-H Genetics	BH 8399VT2P	VT2Pro, RR2	213.5	113	15.1	58.9	111	32,597	2
NuTech/G2 Genetics	5F-709	AM, RR2, LL	210.6	109	15.9	59.4	108	30,430	3
NuTech/G2 Genetics	5F-906	AM, RR2, LL	210.5	106	13.8	59.5	111	31,218	3
Phoenix	6518GTA	GT	210.4	116	18.0	57.1	110	30,563	3
LG Seeds	LG5548STXRIB	STXRIB, RR2, LL	207.7	109	14.6	58.6	111	31,871	3
B-H Genetics	BH 8550SS	STX, RR2, LL	205.9	113	14.6	61.2	111	32,402	5
NuTech/G2 Genetics	5F-308	AM, RR2, LL	204.1	108	14.4	59.4	109	31,436	2
Phoenix	6948A3	3000GT, GT, LL	204.1	114	17.0	58.3	115	31,753	2
LG Seeds	LG2602VT3PRIB	VT3PRIB, RR2	201.7	112	14.1	57.2	111	33,255	2
NuTech/G2 Genetics	5F-510	AM, RR2, LL	201.2	110	15.1	60.2	114	31,700	2
Phoenix	6342A4	3111, GT, LL	201.0	113	16.3	55.7	111	31,354	3
Phoenix	5552A4	3111, GT, LL	184.7	110	15.3	57.8	102	31,218	3
LG Seeds	LG5565STXRIB	STXRIB, RR2, LL	174.9	108	14.6	59.9	107	31,363	3
B-H Genetics	BH 7646VT2P	VT2Pro, RR2	172.7	107	13.3	59.1	107	30,975	4
Average			201.4	111	15.3	58.7	110	31,591	3

^cLSD (P<0.30)

10.3

^aTechnology trait designations: 3000GT=Agrisure 3000GT; 3111=Agrisure Viptera 3111; AM=Optimum AcreMax; GT=Glyphosate Tolerant; LL=LibertyLink; RR2=Roundup Ready 2; STX=Genuity SmartStax; STXRIB=Genuity SmartStax Refuge in the Bag Complete; VT2Pro=Genuity VecTran Double Protection; VT3PRIB=Genuity VecTran Triple Protection Refuge in the Bag Complete.

^bYields corrected to 15.5% moisture.

^cRelative maturity is provided by the respective companies and is the approximate time from planting to harvest maturity. The method of calculation of the relative maturity ratings may vary among companies.

^dBacterial Leaf Streak (*Xanthomonas vasicola* pv. *vasculorum*) Score: 1 equals no leaf streak disease present and 5 equals severe disease presence.

^eIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is significant.

Plot size: 5' x 30'

Site Information

Collaborator: Joe Newton
 Planting Date: May 12, 2016
 Harvest Date: October 25, 2016
 Fertilizer: Manure applied at 10 ton/ac
 Early-season: N at 60 lb/ac through pivot and 160 lb/ac side-dressed, P at 40 lb/ac
 Mid to Late-season: N at 20 lb/ac thru pivot at tasseling, N at 20 lb/ac thru pivot at brown silk stage
 Herbicide: Early post-emergence: Clarity at 8 oz/ac, atrazine at 1 pt/ac, Roundup at 1 qt/ac
 Mid-season: Clarity at 4 oz/ac, Laudis at 3 oz/ac, Dual Magnum at 1.3 pt/ac, Roundup at 1 qt/ac
 Fungicide: Quadris at 9 oz/ac at tasseling
 Soil Type: Julesburg loamy sand
 Irrigation Type: Center-pivot

2016 Irrigated Corn Hybrid Performance Trial at Burlington

Brand	Hybrid	Insect and Herbicide Technology Traits ^a	Yield ^b	Relative Maturity ^c	Moisture	Test Weight	Plant Height	Population
			bu/ac		percent	lb/bu	in	plants/ac
NuTech/G2 Genetics	5F-510	AM, RR2, LL	183.9	110	13.1	60.5	101	34,340
NuTech/G2 Genetics	5F-308	AM, RR2, LL	173.5	108	12.6	59.5	99	33,954
NuTech/G2 Genetics	5F-713	AM, RR2, LL	172.4	113	13.6	59.0	102	33,320
Phoenix	6948A3	3000GT, GT, LL	170.4	114	14.6	59.0	101	32,221
NuTech/G2 Genetics	5F-906	AM, RR2, LL	166.2	106	12.5	59.0	98	33,456
Phoenix	6518GTA	GT	163.4	116	14.0	58.4	104	32,865
NuTech/G2 Genetics	5F-709	AM, RR2, LL	157.9	109	13.2	59.8	95	33,013
LG Seeds	LG2602VT3PRIB	VT3PRIB, RR2	155.8	112	12.3	57.0	97	33,396
LG Seeds	LG5548STXRIB	STXRIB, RR2, LL	153.0	109	12.1	58.5	95	33,251
Phoenix	6342A4	3111, GT, LL	150.1	113	13.1	56.5	98	32,452
LG Seeds	LG5565STXRIB	STXRIB, RR2, LL	147.6	108	12.6	60.1	95	34,340
Phoenix	5552A4	3111, GT, LL	141.3	110	12.2	56.9	92	32,810
Average			161.3	111	13.0	58.7	98	33,285

^dLSD (P<0.30)

9.9

^aTechnology trait designations: 3000GT=Agrisure 3000GT; 3111=Agrisure Viptera 3111; AM=Optimum AcreMax; GT=Glyphosate Tolerant; LL=LibertyLink; RR2=Roundup Ready 2; STXRIB=Genuity SmartStax Refuge in the Bag Complete; VT3PRIB=Genuity VecTran Triple Protection Refuge in the Bag Complete.

^bYields corrected to 15.5% moisture.

^cRelative maturity is provided by the respective companies and is the approximate time from planting to harvest maturity. The method of calculation of the relative maturity ratings may vary among companies.

^dIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance the difference is significant.

Plot size: 5' x 31'

Site Information

Collaborator: Tim Stahlecker

Planting Date: May 6, 2016

Harvest Date: October 24, 2016

Fertilizer: N at 218, P at 60, S at 10, and Zn at 1.5 lb/ac

Herbicide: Post-emergence (early): Atrazine at 1 pt/ac, Laudis at 2.5 oz/ac, and Roundup at 32 oz/ac
Post-emergence (mid-season): Halex GT at 3.6 pt/ac (includes Touchdown at 24 oz/ac, Dual at 15.6 oz/ac, and Callisto at 3 oz/ac)

Soil Type: Kuma-Keith silt loam

Irrigation Type: Center-pivot

2016 Akron Dryland Corn Drought and Non-Drought Tolerant Hybrid Performance at Three Plant Densities

Company	Hybrid ^a	Yield				Test Weight			
		Plant Density (plants/acre)				Plant Density (plants/acre)			
		11,000	14,000	17,000	Average	11,000	14,000	17,000	Average
		bu/ac				lb/ac			
	<u>Drought Tolerant</u>	62.8	66.7	66.6	65.4	56.3	55.7	55.6	55.9
NuTech	5X698	71.8	73.0	70.6	71.8	56.0	55.6	55.9	55.8
Dekalb	DKC51-20	68.2	74.3	70.8	71.1	56.2	55.5	54.8	55.5
Channel	198-00	62.0	62.7	69.4	64.7	56.7	56.8	55.8	56.4
Golden Harvest	G01P52	59.2	63.7	56.9	60.0	56.5	55.9	56.0	56.1
NuTech	5F200	52.7	60.1	65.4	59.4	56.0	55.0	55.5	55.5
	<u>Traditional</u>	66.5	71.4	69.7	69.2	56.2	56.3	55.8	56.1
Golden Harvest	G98L17	73.9	70.7	82.3	75.6	54.1	54.5	53.9	54.2
Channel	200-48	71.1	71.8	71.1	71.3	56.3	56.5	56.0	56.3
Dekalb	DKC50-84	62.5	81.6	69.2	71.1	57.0	56.5	55.8	56.4
Dekalb	DKC50-64	64.3	69.7	73.9	69.3	57.3	57.9	56.9	57.4
Channel	197-68	62.2	68.3	68.0	66.2	57.0	56.9	56.1	56.7
Golden Harvest	G01Q76	68.2	69.8	60.2	66.0	56.3	56.3	57.1	56.6
NuTech	5F399	63.2	68.1	63.1	64.8	55.3	55.3	54.7	55.1
	Average	65.0	69.5	68.4	67.6	56.2	56.0	55.7	56.0

^aHybrids ranked from highest to lowest average yield across the three plant densities within each drought tolerance group.

Site Information:

Collaborator: Central Great Plains Research Center

Planting Date: June 1, 2016

Harvest Date: October 10, 2016

Fertilizer: N at 52 lb/ac and P at 6 lb/ac

Herbicide: Cornerstone Plus at 48 oz/ac, Lumax at 1.75 pt/ac, Atrazine at 1 pt/ac applied on June 9

Soil Type: Ascalon sandy loam

2016 Dailey Dryland Corn Drought and Non-Drought Tolerant Hybrid Performance at Three Plant Densities

Company	Hybrid ^a	Yield				Test Weight			
		Plant Density (plants/acre)				Plant Density (plants/acre)			
		11,000	14,000	17,000	Average	11,000	14,000	17,000	Average
		bu/ac				lb/ac			
	<u>Drought Tolerant</u>	110.5	119.8	106.9	112.4	56.9	56.9	56.8	56.9
Dekalb	DKC51-20	114.6	123.9	117.8	118.8	57.1	57.1	56.8	57.0
NuTech	5X698	115.0	119.2	105.6	113.2	56.2	56.8	56.8	56.6
Channel	198-00	110.8	123.3	105.1	113.1	57.5	57.3	57.0	57.2
NuTech	5F200	108.0	122.9	101.4	110.8	56.6	56.5	56.1	56.4
Golden Harvest	G01P52	104.3	109.6	104.8	106.2	57.1	56.8	57.4	57.1
	<u>Traditional</u>	115.2	119.6	112.0	115.6	56.9	56.9	57.0	56.9
Golden Harvest	G98L17	134.6	123.6	115.8	124.7	55.9	55.9	56.1	56.0
Dekalb	DKC50-84	114.4	126.6	110.6	117.2	57.2	57.0	57.2	57.1
NuTech	5F399	116.2	124.2	108.8	116.4	54.5	55.1	54.8	54.8
Channel	197-68	108.4	120.6	116.0	115.0	58.0	57.7	57.8	57.8
Channel	200-48	115.0	121.0	108.7	114.9	57.8	57.1	57.8	57.5
Dekalb	DKC50-64	106.9	114.5	116.2	112.5	58.1	58.3	58.2	58.2
Golden Harvest	G01Q76	111.1	106.9	107.9	108.6	56.7	56.9	57.2	56.9
	Average	113.3	119.7	109.9	114.3	56.9	56.9	56.9	56.9

^aHybrids ranked from highest to lowest average yield across the three plant densities within each drought tolerance group.

Site Information:

Collaborator: Mark and Neil Lambert

Planting Date: May 20, 2016

Harvest Date: October 4, 2016

Fertilizer: Pre-plant: Composted manure at 1.5 ton/ac
Planting: N at 20, P at 10, and Zn at 1.5 lb/ac

Herbicide: Glyphosate and atrazine

Soil Type: Platner loam

2016 Irrigated Oil Sunflower Hybrid Performance Trial at Prospect Valley

Brand	Hybrid	Oil Type ^a	Technology Traits ^b	2016		Test	Plant	Population	Lodging	Oil Content ^c
				Yield ^c	Moisture	Weight	Height			
				lb/ac	percent	lb/bu	in	plants/ac	percent	percent
Pioneer	P63HE90	HO	ExpressSun	3993	8.0	27.8	59	14,907	3.8	39.2
Nuseed	Sierra	HO	N/A	3993	16.4	20.5	55	16,768	3.2	37.9
Mycogen Seeds	8H456CL	HO	Clearfield, DM	3957	12.9	26.9	56	14,779	7.1	40.0
Mycogen Seeds	8H449CLDM	HO	Clearfield, DM	3896	11.4	27.9	60	15,338	1.2	40.5
Nuseed	Hornet	HO	Clearfield, DM	3643	7.4	26.0	49	14,465	1.1	39.5
Pioneer	P64ME01	NS	ExpressSun	3588	11.6	23.3	54	14,802	0.0	35.6
Croplan	545 CL	NS	Clearfield, DM	3446	13.1	24.6	56	11,582	1.1	36.8
Croplan	455 E HO	HO	ExpressSun, DM	3388	12.4	24.2	55	11,038	0.0	35.6
Syngenta	3732 NS	NS	N/A	3254	7.9	25.3	49	13,990	0.7	40.3
Croplan	553 CL HO	HO	Clearfield, DM	3066	9.8	25.2	54	11,501	0.0	37.0
Croplan	458 E HO	HO	ExpressSun, DM	2947	8.6	26.1	59	13,564	0.5	39.8
Syngenta	SY7919	HO	Clearfield, DM	2652	10.6	25.9	45	10,726	1.2	39.3
Pioneer	P63HE60	HO	ExpressSun	2619	7.6	25.4	57	15,911	0.0	39.4
Nuseed	Daytona	HO	Clearfield	2452	8.4	25.4	46	16,261	1.6	38.0
Croplan	432 E	NS	ExpressSun, DM	2128	7.1	24.7	54	10,364	2.3	36.2
Croplan	549 CL HO	HO	Clearfield, DM	2108	10.9	24.1	60	8,610	5.0	34.5
Nuseed	N4HM354	HO	Clearfield, DM	2064	9.3	25.4	47	16,258	1.1	39.7
Nuseed	Cobalt II	HO	Clearfield, DM	1937	7.4	23.6	45	17,511	0.5	37.2
Syngenta	SY7717	HO	Clearfield, DM	1887	8.5	24.8	47	14,569	1.3	37.9
Average				3001	9.9	25.1	53	13,839	1.7	38.1
^d LSD (P<0.30)				422						
^d LSD (P<0.05)				807						
Coefficient of Variation (%)				19.0						

^aOil type designations: HO=High oleic; NS=NuSun/Mid-oleic.

^bTechnology trait designations: Clearfield=tolerant to Beyond herbicide; DM=downy mildew resistance; ExpressSun=tolerant to Express herbicide; N/A=no technology traits.

^cYield and oil content were corrected to 10% moisture.

^dIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance (P<0.30) or 95% chance (P<0.05) the difference is significant.

Plot size: 5' x 30'

Site Information

Collaborator: David Ruppel
 Planting Date: June 3, 2016
 Harvest Date: October 17, 2016
 Fertilizer: Poultry manure at 4 t/ac
 Herbicide: Sonalan at 3 pt/ac,
 Insecticide: Warrior II at 1.3 oz/ac and Lorsban at 0.75 pt/ac applied August 2.
 Irrigation: Furrow-irrigation three times during the growing season
 Soil Type: Colby loam

2016 Irrigated Confection Sunflower Hybrid Performance Trial at Prospect Valley

Brand	Hybrid	Technology Traits ^a	2016 Yield ^b lb/ac	2-Year Avg. Yield ^b lb/ac	Moisture percent	Test Weight lb/bu	Plant Height in	Population plants/ac	Lodging percent	Seed Retained Over Screen			
										Over 24/64	Over 22/64	Over 20/64	Over 16/64
Red River Commodities, Inc.	RRC 8042	N/A	3262	-	17.1	16.6	37	8,466	2.4	61.4	86.6	95.8	97.4
Red River Commodities, Inc.	RRC 2215 CL	Clearfield	3066	3424	15.5	20.0	53	9,169	11.0	68.0	88.8	94.8	97.4
Red River Commodities, Inc.	RRC 2215	N/A	2477	2849	12.7	20.5	51	10,917	6.5	50.2	80.0	94.2	97.8
Red River Commodities, Inc.	RRC 8015	N/A	2266	2685	14.8	17.9	39	9,099	4.8	64.2	85.4	94.4	98.2
Nuseed	6946 DMR	DM	2201	-	12.0	19.6	44	7,801	27.3	63.8	85.2	94.6	99.0
Nuseed	N6LM448	Clearfield	2025	-	12.8	19.3	48	6,683	6.1	58.4	80.2	92.6	97.6
Nuseed	Panther DMR	DM	1950	-	9.4	20.1	48	12,296	9.5	32.0	60.6	84.0	97.8
Red River Commodities, Inc.	RRC 2205	N/A	1943	-	12.9	18.3	50	10,504	6.7	63.4	82.6	90.8	97.0
Red River Commodities, Inc.	RRC 2217 CP	Clearfield Plus	1705	2641	13.9	19.4	42	7,274	2.7	64.6	84.8	92.6	98.4
Average			2322	2900	13.4	19.1	46	9,134	8.5	58.4	81.6	92.6	97.8

^cLSD (P<0.30)

419

^aTechnology trait designations: Clearfield=tolerant to Beyond herbicide; Clearfield Plus=tolerant to Beyond herbicide; DM=downy mildew resistance; N/A=no technology traits.

^bYields were corrected to 10% moisture.

^cIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance (P<0.30) the difference is significant.

Plot size: 5' x 30'

Site Information

Collaborator: David Ruppel
 Planting Date: June 3, 2016
 Harvest Date: October 17, 2016
 Fertilizer: Poultry manure at 4 t/ac
 Herbicide: Sonalan at 3 pt/ac,
 Insecticide: Warrior II at 1.3 oz/ac and Lorsban at 0.75 pt/ac applied August 2.
 Irrigation: Furrow-irrigation three times during the growing season
 Soil Type: Colby loam

2016 Limited-Irrigation Oil Sunflower Hybrid Performance Trial at Burlington

Brand	Hybrid	Oil Type ^a	Technology Traits ^b	2016 Yield ^c lb/ac	2-Year Avg. Yield ^c lb/ac	Moisture percent	Test Weight lb/bu	Plant Height in	Population plants/ac	Lodging percent	Oil Content ^c percent
Mycogen Seeds	8H456CL	HO	Clearfield, DM	3721	2837	7.0	24.8	70	19,146	1.0	43.8
Mycogen Seeds	8H449CLDM	HO	Clearfield, DM	3542	2814	6.6	28.7	67	19,228	1.1	44.5
Croplan	455 E HO	HO	ExpressSun, DM	3340	-	6.9	26.8	68	17,217	16.0	41.2
Croplan	545 CL	NS	Clearfield, DM	3328	2835	7.5	26.4	74	17,294	0.0	40.2
Croplan	553 CL HO	HO	Clearfield, DM	3270	2570	7.1	28.2	72	16,687	1.9	40.7
Syngenta	SY7919	HO	Clearfield, DM	3256	-	7.1	27.9	62	17,943	1.5	43.6
Nuseed	Sierra	HO	N/A	3184	-	8.4	26.5	67	20,023	0.0	39.8
Nuseed	Hornet	HO	Clearfield, DM	3034	2415	6.6	28.5	65	17,940	10.1	41.4
Croplan	549 CL HO	HO	Clearfield, DM	2942	2385	6.5	28.6	74	18,542	1.6	40.1
Croplan	432 E	NS	ExpressSun, DM	2760	2222	6.8	25.9	62	17,139	0.0	38.5
Syngenta	3732 NS	NS	N/A	2508	1981	6.3	27.7	61	20,257	1.7	42.7
Croplan	458 E HO	HO	ExpressSun, DM	2356	1569	7.2	26.3	67	18,637	0.8	40.6
Nuseed	N4HM354	HO	Clearfield, DM	2240	-	6.4	28.4	64	17,022	0.0	41.8
Syngenta	SY7717	HO	Clearfield, DM	2051	1473	6.4	27.6	59	19,542	0.0	41.6
Nuseed	Daytona	HO	Clearfield	1879	-	7.0	28.2	61	17,892	1.5	40.7
Nuseed	Cobalt II	HO	Clearfield, DM	1791	-	6.4	27.4	59	21,123	0.0	41.5
Average				2825	2310	6.9	27.4	66	18,477	2.3	41.4

^dLSD (P<0.30)

299

^dLSD (P<0.05)

574

Coefficient of Variation (%)

14.3

^aOil type designations: HO=High oleic; NS=NuSun/Mid-oleic.

^bTechnology trait designations: Clearfield=tolerant to Beyond herbicide; DM=downy mildew resistance; ExpressSun=tolerant to Express herbicide; N/A=no technology traits.

^cYield and oil content were corrected to 10% moisture.

^dIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance (P<0.30) or 95% chance (P<0.05) the difference is significant.

Plot size: 5' x 30'

Site Information

Collaborator: Gerhard Heintges

Planting Date: June 4, 2016

Harvest Date: October 14, 2016

Fertilizer: N at 120 lb/ac and P at 40 lb/ac

Herbicide: Spartan 4F at 3 oz/ac and Dual II Magnum at 1.2 pt/ac applied on June 8.

Insecticide: Lorsban at 1 pt/ac and Lambda at 3.8 oz/ac

Irrigation: Center-pivot; pre-watered 3 inches before planting and applied 2 inches during growing season

Soil Type: Kuma-Keith silt loam

2016 Limited-Irrigation Confection Sunflower Hybrid Performance Trial at Burlington

Brand	Hybrid	Technology Traits ^a	2016 Yield ^b lb/ac	3-Year Avg. Yield ^b lb/ac	Moisture percent	Test Weight lb/bu	Plant Height in	Population plants/ac	Seed Retained Over Screen			
									Over 24/64	Over 22/64	Over 20/64	Over 16/64
Red River Commodities, Inc.	RRC 2215 CL	Clearfield	3031	3088	8.3	20.5	80	16,005	18.8	52.4	82.2	98.4
Nuseed	N6LM448	Clearfield	2958	-	9.2	18.5	68	12,935	43.2	64.2	84.4	98.2
Nuseed	6946 DMR	DM	2898	-	7.2	22.7	66	14,969	12.6	37.0	71.4	95.8
Red River Commodities, Inc.	RRC 8015	N/A	2846	2829	8.1	17.9	70	15,849	16.6	49.2	85.8	98.8
Red River Commodities, Inc.	RRC 2215	N/A	2810	2838	7.7	21.6	77	15,527	9.8	38.0	74.2	96.8
Red River Commodities, Inc.	RRC 8042	N/A	2798	-	9.4	19.4	67	13,971	20.0	45.6	75.8	96.6
Red River Commodities, Inc.	RRC 2217 CP	Clearfield Plus	2681	2664	8.4	18.7	72	12,478	37.0	67.2	90.6	98.6
Nuseed	Panther DMR	DM	2015	-	7.8	18.2	62	12,822	23.2	46.8	75.4	95.0
Red River Commodities, Inc.	RRC 2205	N/A	2011	-	8.1	19.3	66	14,934	25.4	56.8	78.0	96.8
Average			2672	2855	8.2	19.6	70	14,388	23.0	50.8	79.8	97.2
°LSD (P<0.30)			297									
°LSD (P<0.05)			577									
Coefficient of Variation (%)			14.8									

^aTechnology trait designations: Clearfield=tolerant to Beyond herbicide; Clearfield Plus=tolerant to Beyond herbicide; DM=downy mildew resistance; N/A=no technology traits.

^bYields were corrected to 10% moisture.

^cIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance (P<0.30) or 95% chance (P<0.05) the difference is significant.

Plot size: 5' x 30'

Site Information

Collaborator: Gerhard Heintges
 Planting Date: June 4, 2016
 Harvest Date: October 14, 2016
 Fertilizer: N at 120 lb/ac and P at 40 lb/ac
 Herbicide: Spartan 4F at 3 oz/ac and Dual II Magnum at 1.2 pt/ac applied on June 8.
 Insecticide: Lorsban at 1 pt/ac and Lambda at 3.8 oz/ac
 Irrigation: Center-pivot; pre-watered 3 inches before planting and applied 2 inches during growing season
 Soil Type: Kuma-Keith silt loam

2016 Dryland Oil Sunflower Hybrid Performance Trial at Julesburg

Brand	Hybrid	Oil Type ^a	Technology Traits ^b	2016		Test Weight	Plant Height	Population	Lodging	Oil Content ^c
				Yield ^c	Moisture					
				lb/ac	percent	lb/bu	in	plants/ac	percent	percent
Mycogen Seeds	8H456CL	HO	Clearfield, DM	2021	7.5	28.4	59	12,107	20.8	40.4
Nuseed	Hornet	HO	Clearfield, DM	1935	6.6	29.2	54	12,452	33.5	-
Croplan	553 CL HO	HO	Clearfield, DM	1778	7.2	30.4	55	13,351	45.7	39.1
Pioneer	P64ME01	NS	ExpressSun	1774	8.8	29.2	57	12,379	20.6	36.9
Syngenta	3732 NS	NS	N/A	1765	6.7	30.7	51	12,150	29.7	38.2
Syngenta	SY7919	HO	Clearfield, DM	1754	7.9	28.6	50	8,695	24.8	37.1
Mycogen Seeds	8H449CLDM	HO	Clearfield, DM	1709	7.4	29.4	55	11,991	24.3	39.7
Nuseed	Sierra	HO	N/A	1659	9.0	27.6	57	12,449	28.1	36.3
Croplan	545 CL	NS	Clearfield, DM	1522	6.8	29.6	56	11,129	35.0	38.2
Croplan	455 E HO	HO	ExpressSun, DM	1490	7.7	29.7	53	11,206	40.2	38.9
Pioneer	P63HE90	HO	ExpressSun	1461	8.4	29.2	55	7,850	49.5	36.6
Croplan	549 CL HO	HO	Clearfield, DM	1424	7.1	29.6	54	14,236	37.6	36.7
Pioneer	P63HE60	HO	ExpressSun	1386	7.0	30.0	52	13,052	37.9	38.3
Croplan	458 E HO	HO	ExpressSun, DM	1358	7.3	28.7	50	12,162	21.6	37.9
Nuseed	Daytona	HO	Clearfield	1343	6.8	28.5	52	12,534	36.8	38.0
Nuseed	N4HM354	HO	Clearfield, DM	1322	6.5	30.4	54	13,881	34.3	38.2
Croplan	432 E	NS	ExpressSun, DM	1235	6.7	29.4	48	11,166	30.7	35.5
Syngenta	SY7717	HO	Clearfield, DM	1168	8.0	28.4	50	8,178	29.3	34.9
Nuseed	Cobalt II	HO	Clearfield, DM	1093	6.5	29.4	47	14,081	30.1	36.6
Average				1537	7.4	29.3	53	11,845	32.1	37.6

^dLSD (P<0.30)

187

^dLSD (P<0.05)

358

Coefficient of Variation (%)

16.5

^aOil type designations: HO=High oleic; NS=NuSun/Mid-oleic.

^bTechnology trait designations: Clearfield=tolerant to Beyond herbicide; DM=downy mildew resistance; ExpressSun=tolerant to Express herbicide; N/A=no technology traits.

^cYield and oil content were corrected to 10% moisture.

^dIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance (P<0.30) or 95% chance (P<0.05) the difference is significant.

Plot size: 10' x 31'

Site Information

Collaborator: Josh Leachman

Planting Date: June 8, 2016

Harvest Date: October 20, 2016

Fertilizer: N at 39 lb/ac and P at 9 lb/ac at planting

Herbicide: Pre-plant: Spartan at 4 oz/ac and Prowl at 1.8 pt/ac

Soil Type: Richfield loam

Trial Comments: Trial was hailed in late-June. Sunflower plants recovered despite serious damage.

2016 Dryland Confection Sunflower Hybrid Performance Trial at Julesburg

Brand	Hybrid	Technology Traits ^a	2016 Yield ^b lb/ac	Moisture percent	Test Weight lb/bu	Plant Height in	Population plants/ac	Lodging percent	Seed Retained Over Screen			
									Over 24/64	Over 22/64	Over 20/64	Over 16/64
Nuseed	N6LM448	Clearfield	2124	17.3	18.1	53	5,154	21.7	15.4	35.2	71.8	94.2
Nuseed	Panther DMR	DM	1768	9.5	22.9	46	5,842	28.0	59.4	77.0	86.6	94.2
Nuseed	6946 DMR	DM	1737	10.0	22.7	49	5,078	32.2	21.0	40.8	71.6	95.2
Average			1876	12.2	21.2	49	5,358	27.3	31.9	51.0	76.7	94.5

^cLSD (P<0.30)

NS

^aTechnology trait designations: Clearfield=tolerant to Beyond herbicide; DM=downy mildew resistance.

^bYield corrected to 10% moisture.

^cNS=Yields were not significantly different from each other.

Plot size: 10' x 31'

Site Information

Collaborator: Josh Leachman

Planting Date: June 8, 2016

Harvest Date: October 20, 2016

Fertilizer: N at 39 lb/ac and P at 9 lb/ac at planting

Herbicide: Pre-plant: Spartan at 4 oz/ac and Prowl at 1.8 pt/ac

Soil Type: Richfield loam

Trial Comments: Trial was hailed in late-June. Sunflower plants recovered despite serious damage.

2016 Dryland Oil Sunflower Hybrid Performance Trial at Genoa

Brand	Hybrid	Oil Technology		Yield ^c	Moisture	Test Weight	Plant Height	Population	Oil Content ^c
		Type ^a	Traits ^b						
				lb/ac	percent	lb/bu	in	plants/ac	percent
Mycogen Seeds	8H449CLDM	HO	Clearfield, DM	2059	5.3	32.0	50	10,091	44.6
Syngenta	3732 NS	NS	N/A	1924	5.2	29.9	44	11,035	41.5
Mycogen Seeds	8H456CL	HO	Clearfield, DM	1824	5.1	28.2	52	11,398	44.5
Syngenta	SY7919	HO	Clearfield, DM	1704	5.8	29.3	52	6,582	41.0
Syngenta	SY7717	HO	Clearfield, DM	1153	5.2	29.3	52	10,019	41.0
Average				1733	5.3	29.7	50	9,825	42.5
^d LSD (P<0.30)				231					

^aOil type designations: HO=High oleic; NS=NuSun/Mid-oleic.

^bTechnology trait designations: Clearfield=tolerant to Beyond herbicide; DM=downy mildew resistance; N/A=no technology traits.

^cYield and oil content were corrected to 10% moisture.

^dIf the difference between two hybrid yields equals or exceeds the LSD value, there is a 70% chance (P<0.30) the difference is significant.

Plot size: 10' x 31'

Site Information

Collaborator: Rob Boyd
 Planting Date: June 8, 2016
 Harvest Date: November 1, 2016
 Fertilizer: N at 50 lb/ac
 Herbicide: Roundup at 36 oz/ac and Spartan Charge at 4 oz/ac
 Soil Type: Fort Collins-Platner loams

2016 Irrigated Hybrid Forage Sorghum Performance Trial at Rocky Ford

Brand	Hybrid	Forage		Stem	Plant	Lodging	Relative	Forage	Traits ^d
		Yield ^a	Yield	Sugar	Height		Maturity ^b	Type ^c	
		tons/ac	% of test avg.	%	in	%			
Sorghum Partners	SS405	53.7	158	3.5	124	0	L	FS	-
Sorghum Partners	SP1880	51.3	151	6.0	130	0	L	FS	-
Walter Moss Seed Co.	MEGA GREEN	44.7	132	11.0	121	0	PS	SS	-
Sorghum Partners	SP1615	44.0	129	10.0	123	0	PS	FS	-
Gayland Ward Seed	Sweet Six BMR	43.6	128	13.0	105	1	ME	SS	BMR, DS
CHS, Inc.	HighYield	41.9	123	2.0	128	0	L	SS	-
Chromatin, Inc.	CHR14FB0240	41.7	123	5.5	105	2	M	FS	BMR
Summer Select	FS 95 BMR BD	40.4	119	3.0	96	6	ME	FS	BMR-6, BD
Pawnee Buttes Seed	PB Arikaree	40.2	118	9.5	112	0	L	SS	-
Sorghum Partners	Sordan Headless	39.7	117	-	128	0	PS	SS	-
Sorghum Partners	SS304	37.9	111	3.5	122	1	L	FS	-
Gayland Ward Seed	Sweet Forever BMR	37.9	111	11.0	109	0	PS	SS	BMR
Alta Seeds	AF7201	37.2	109	2.0	94	2	ME	FS	BMR-6, DS
Gayland Ward Seed	Super Sugar (delayed mat.)	37.1	109	2.0	126	0	L	SS	-
Walter Moss Seed Co.	4EVER GREEN	34.5	101	7.0	114	0	PS	FS	-
Gayland Ward Seed	EXP 10216	34.5	101	7.0	104	1	M	-	-
Sorghum Partners	NK300	34.4	101	5.5	85	1	E	FS	-
Alta Seeds	AF8301	33.7	99	2.0	83	1	M	FS	BMR
Sorghum Partners	SP2774 BMR	33.1	97	11.0	97	0	ME	FS	BMR
Sorghum Partners	SP2876	32.3	95	3.0	112	0	ME	FS	BMR
Gayland Ward Seed	GW-400 BMR (sterile)	31.7	93	7.0	102	1	ME	FS	BMR, MS
Gayland Ward Seed	Nutra-King BMR 6	31.7	93	9.0	106	2	ME	SS	BMR-6
Alta Seeds	AF7301	31.5	93	4.0	90	1	M	FS	BMR-6, MS
Sorghum Partners	Hikane II	31.2	92	4.0	108	1	M	FS	-
Gayland Ward Seed	Super Sugar	30.7	90	7.0	101	0	ME	SS	-
Sorghum Partners	Red+Top Plus BMR	30.1	89	4.0	110	1	ME	FS	BMR, MS
Gayland Ward Seed	GW-600 BMR (fertile)	29.5	87	5.0	120	2	M	FS	BMR
CHS, Inc.	HighYield BMR Dwarf	29.0	85	3.5	100	1	ME	SS	BMR
Alta Seeds	AF7401	28.0	82	6.5	76	0	L	FS	BMR-6, BD
Gayland Ward Seed	GW-2120 (sterile)	28.0	82	3.0	96	0	M	FS	MS
Chromatin, Inc.	CHR12FS0012	27.9	82	2.5	96	2	M	FS	-
Pawnee Buttes Seed	PB EXP 5143	27.8	82	1.0	90	1	L	FS	-
Sorghum Partners	SP3903 BD	25.0	74	8.5	74	0	ML	FS	BMR, BD
Pawnee Buttes Seed	PB Arapahoe	24.2	71	2.5	94	3	ME	SS	BMR
Gayland Ward Seed	Silo Pro BMR (fertile)	23.6	69	2.5	86	0	ML	FS	BMR-6, BD
Sorghum Partners	SP4105	23.6	69	6.5	99	1	PS	SS	BMR
CHS, Inc.	HighYield BMR	23.1	68	11.0	112	1	L	SS	BMR
Sorghum Partners	SP3902 BD	22.5	66	7.0	81	0	ML	FS	BMR, BD
Average		34.0		5.7	104	1			

^cLSD (P<0.20)

4.8

^aYields are adjusted to 70% moisture content based on oven-dried samples.

^bRelative maturities are provided by the companies. E=early; ME=medium-early; M=medium; ML=medium-late; L=late; PS=photoperiod sensitive.

^cForage Type: FS=forage sorghum; SS=sorghum sudangrass.

^dTraits are provided by the companies. Dashes mean no traits are present or information isn't available. BD=brachytic dwarf; BMR=brown mid-rib; BMR-6=one of the three main brown mid-rib genes; DS=dry stalk; MS=male sterile.

^eIf the difference between two varieties yields equals or exceeds the LSD value, then they are significantly different with less than 20% probability that the difference is due to random error.

Site Information

Collaborator: Arkansas Valley Research Center
 Planting Date: May 25, 2016
 Harvest Date: September 27, 2016
 Previous Crop: Corn
 Herbicide: Weedmaster at 1 pt/ac
 Fertilizer: N at 27 and P at 69 lb/ac (applied as 18-46-0)
 Soil Type: Rocky Ford silty clay loam

2016 Dryland Hybrid Forage Sorghum Performance Trial at Walsh

Brand	Hybrid	Forage		Stem	Harvest	Plant	Lodging	Days to	Relative	Forage	Traits ^d
		Yield ^a	Yield	Sugar	Density	Height		Boot	Maturity ^b	Type ^c	
		tons/ac	% of test avg.	percent	plants/ac (1000 x)	in	percent	days after planting			
Blade	F4C207	15.7	135	11.0	34.5	86	8	73	M	FS	-
Sorghum Partners	Sordan Headless	14.3	123	11.9	38.7	99	0	Veg	PS	SS	-
Sudax	331 BMR	14.3	123	13.0	30.2	58	0	92	L	FS	BMR
Croplan	BMR 3411	14.2	122	15.5	29.0	97	0	84	ML	FS	BMR
Summer Select	FS 95 BMR BD	14.1	121	7.8	41.4	80	40	79	M	FS	BMR-6, BD
CHS, Inc.	HighYield	13.6	116	11.2	24.0	109	0	87	L	SS	-
Sorghum Partners	Hikane II	13.4	115	7.3	29.0	96	4	63	ME	FS	-
Sorghum Partners	SP1615	13.1	113	11.2	30.6	86	0	Veg	PS	FS	-
CHS, Inc.	HighYield BMR	12.2	105	12.2	29.8	95	1	95	L	SS	BMR
CHS, Inc.	HighYield BMR Dwarf	12.0	103	4.4	29.4	83	5	68	ME	SS	BMR
Sorghum Partners	SP4105	11.5	99	14.5	45.3	64	0	Veg	PS	SS	BMR
Sorghum Partners	Millex32	10.8	93	9.9	19.4	83	0	54	E	Millet	-
Blade	F4C204	10.6	91	17.7	34.5	93	1	64	ME	FS	-
Croplan	BMR 3561	10.5	91	12.3	34.9	85	0	73	M	FS	BMR
Croplan	BMR 3631	10.3	89	12.5	30.6	69	0	89	ML	FS	BMR
Blade	S4B230	10.2	87	7.8	31.0	107	0	64	ME	FS	BMR
Sudax	EXP1601	9.2	79	14.4	27.1	96	0	70	ME	FS	-
Mycogen Seeds	2V709 (corn)	8.3	71	10.6	21.7	78	0	64	ME	Corn	-
Sorghum Partners	SP4555	7.9	68	14.8	37.6	89	35	57	E	FS	-
Sorghum Partners	Millex BMR	6.5	56	11.1	7.4	85	0	79	M	Millet	BMR
Average		11.6		11.6	30.3	87	5	74			

^cLSD (P<0.20)

1.4

^aYields are adjusted to 70% moisture content based on oven-dried samples.

^bRelative Maturity: E=early; ME=medium-early; M=medium; ML=medium-late; L=late; PS=photoperiod sensitive.

^cForage Type: FS=forage sorghum; S=sudangrass; SS=sorghum sudangrass; Millet=hybrid pearl millet.

^dTraits are provided by the companies. Dashes mean no traits are present or information isn't available. BD=brachytic dwarf; BMR=brown mid-rib; BMR-6=one of the three main brown mid-rib genes;

^eIf the difference between two varieties yields equals or exceeds the LSD value, then they are significantly different with less than 20% probability that the difference is due to random error.

Site Information

Collaborator: Plainsman Research Center (Kevin Larson & Brett Pettinger)
 Planting Date: June 6, 2016
 Harvest Date: October 18, 2016
 Herbicide: Pre-emergence: Atrazine at 1 lb/ac and S-Metolachlor at 1.33 pt/ac
 Post-emergence: Huskie at 16 oz/ac and Atrazine at 0.75 lb/ac
 Fertilizer: Anhydrous N at 50 lb/ac and N at 6 lb/ac and P at 20 lb/ac applied as 10-34-0
 Soil Type: Richfield silt loam

2016 Dryland Grain Sorghum Hybrid Performance Trial at Burlington

Brand	Hybrid	Grain		Test Weight	Harvest Plant Population	Plant Height	Maturity Group ^b	Grain Color
		Yield ^a	Yield					
		bu/ac	% of test avg.	lb/bu	plants/ac	in		
Sorghum Partners	SP 34A19	63.2	149	55.7	19,502	41	ME	Bronze
Sorghum Partners	KS310	61.6	145	59.8	18,783	41	E	Bronze
Dyna-Gro Seed	GX16667	56.8	134	56.5	19,447	42	M	Bronze
Dyna-Gro Seed	GX16957	51.2	121	58.0	19,169	39	E	Bronze
Dekalb	DKS29-28	47.9	113	58.4	17,116	38	E	Bronze
Chromatin, Inc	CHR0L0163	47.1	111	59.2	15,520	41	E	Bronze
Alta Seeds	AG1101	43.6	103	59.1	18,010	37	E	Red
Sorghum Partners	SP 31A15	43.5	102	58.4	19,048	41	E	Bronze
Dyna-Gro Seed	GX16988	42.9	101	59.7	20,050	44	E	Bronze
Dekalb	DKS28-05	40.6	96	60.6	21,136	44	E	Bronze
Alta Seeds	AG1201	32.8	77	58.1	16,490	36	E	Bronze
Alta Seeds	AG2115	29.6	70	57.8	13,989	45	M	Red
Dyna-Gro Seed	M58GR24	29.0	68	59.2	14,562	47	E	Red
Alta Seeds	AG1203	23.4	55	58.0	12,320	43	ME	Bronze
Dyna-Gro Seed	M60GB31	23.0	54	58.2	10,478	38	ME	Bronze
Average		42.4		58.4	17,041	41		

^cLSD (P<0.30)

6.0

^aYields adjusted to 14% moisture and hybrids ranked by yield within maturity group.

^bMaturity Group: E=early; ME=medium-early; M=medium.

^cIf the difference between two varieties yields equals or exceeds the LSD value, there is a 70% chance the difference is significant.

Site Information

Collaborator: Tim Stahlecker

Planting Date: June 8, 2016

Harvest Date: November 14, 2016

Fertilizer: N at 40 lb/ac

Herbicide: Pre-Emergence: Sequence at 3 pt/ac

Post-Emergence: Huskie at 13 oz/ac, atrazine at 0.75 pt/ac, and 2,4-D Amine

Soil Type: Satanta-Sampson loam

2016 Subsurface Drip Irrigated Grain Sorghum Hybrid Performance Trial at Walsh

Source	Hybrid	Grain Yield ^a	Yield	Test Weight	Lodging	Harvest Plant Population	Plant Height	50% Bloom	GDD ^b	50% Mature	Maturity Group ^c	Grain Color
		bu/ac	% of trial avg.	lb/bu	percent	plants/ac	in	days after planting		days after planting ^d		
Alta Seeds	AG1203	120.1	122	61.0	5	41,400	48	66	1894	112	ME	Bronze
Sorghum Partners	KS585	117.6	120	61.6	12	38,000	48	69	1957	115	M	Bronze
Dyna-Gro Seed	M60GB31	115.0	117	60.2	2	44,900	48	68	1936	115	M	Bronze
Dekalb	DKS51-01	111.6	114	59.7	10	41,400	51	72	2035	119	ML	Bronze
Alta Seeds	AG2115	107.5	110	58.4	22	44,500	47	67	1914	113	M	Red
Dyna-Gro Seed	M71GR75	105.1	107	57.2	22	46,500	63	77	2142	HD	ML	Red
Sorghum Partners	SP 34A19	104.6	107	58.7	9	42,200	44	63	1807	109	ME	Bronze
Dekalb	DKS38-16	101.6	104	59.4	19	45,300	54	70	1983	117	M	Bronze
Dyna-Gro Seed	GX16988	101.1	103	58.9	18	41,000	49	61	1754	106	E	Bronze
Dyna-Gro Seed	GX16667	95.1	97	56.7	8	32,900	59	78	2168	HD	ML	Bronze
Dyna-Gro Seed	GX16957	84.0	86	59.8	0	40,300	40	57	1649	103	E	Bronze
Alta Seeds	AG1201	80.7	82	57.8	1	36,400	37	62	1780	108	ME	Bronze
Sorghum Partners	SP 33S40	70.6	72	60.0	3	32,900	46	61	1754	107	E	White
Sorghum Partners	SP 3303	59.0	60	60.0	8	33,700	41	59	1710	108	E	White
Average		98.1		59.2	10	40,100	48	66	1892	113		
^c LSD (P<0.05)		17.8			11							
^c LSD (P<0.20)		11.4			7							

^aYields adjusted to 14% moisture and hybrids ranked by yield.

^bGDD: Growing degree days to 50% bloom date.

^cMaturity Group: E=early; ME=medium-early; M=medium; ML=medium late.

^dDays after planting or maturation of seed at first freeze. HD = hard dough.

^eIf the difference between two varieties yields equals or exceeds the LSD value, there is a 95% (at P<0.05) or 80% (at P<0.20) chance the difference is statistically significant.

Site Information

Collaborator: Plainsman Research Center (Kevin Larson and Brett Pettinger)
 Planting Date: June 7, 2016
 Harvest Date: October 28, 2016
 Fertilizer: N at 150 lb/ac and N at 6 lb/ac and P at 20 lb/ac applied as 10-34-0
 Herbicide: Pre-Emergence: Atrazine at 1 lb/ac, S-Metolachlor at 1.33 pt/ac, and glyphosate at 32 oz/ac
 Post-Emergence: Huskie at 16 oz/ac and Atrazine at 0.75 lb/ac
 Insecticide: Transform for treatment of sugarcane aphids
 Soil Type: Richfield silt loam

2016 Dryland Grain Sorghum Hybrid Performance Trial at Walsh

Source	Hybrid	Grain	Test		Harvest Plant	Plant	50%	50%	Maturity	Grain		
		Yield ^a	Yield	Weight	Lodging	Population	Height	Bloom	GDD ^b	Mature	Group ^c	Color
		bu/ac	% of test avg.	lb/bu	percent	plants/ac	in	days after planting	days after planting ^d			
Alta Seeds	AG1203	112.2	132	60.8	0	25,200	48	68	1914	112	ME	Bronze
Heartland Genetics	HG44-R	103.2	121	59.7	0	28,700	42	67	1894	114	ME	Red
Gayland Ward Seed	EXP 9135	102.5	120	60.6	1	25,900	46	71	1982	118	M	-
Dyna-Gro Seed	M60GB31	101.6	119	61.1	0	27,100	47	68	1914	114	ME	Bronze
Gayland Ward Seed	EXP 8022	99.5	117	58.1	1	24,400	50	77	2119	123	ML	-
Gayland Ward Seed	9139	95.1	112	61.3	2	23,200	49	68	1914	113	ME	-
Gayland Ward Seed	EXP 8019	93.3	110	57.4	6	28,300	47	77	2119	121	ML	-
Sorghum Partners	KS585	92.7	109	61.0	0	29,800	45	73	2035	120	M	Bronze
Dekalb	DKS29-28	91.7	108	60.8	0	26,700	39	60	1710	106	E	Bronze
Dyna-Gro Seed	GX16667	89.6	105	58.5	2	30,200	52	76	2096	123	ML	Bronze
Dyna-Gro Seed	GX16988	89.5	105	59.5	0	27,900	45	63	1780	107	ME	Bronze
Gayland Ward Seed	EXP 9076	86.1	101	58.1	13	23,600	53	74	2063	119	M	-
Gayland Ward Seed	EXP 9059	85.8	101	59.8	0	27,500	50	67	1894	112	ME	-
Sorghum Partners	SP 34A19	85.6	101	58.7	0	35,600	41	65	1835	111	ME	Bronze
Sorghum Partners	KS310	85.0	100	60.7	0	29,800	43	63	1780	109	ME	Bronze
Dekalb	DKS28-05	84.8	100	59.9	0	31,400	43	60	1710	107	E	Bronze
Gayland Ward Seed	9138	84.6	99	61.2	2	22,900	54	69	1936	115	ME	-
Heartland Genetics	HG23-R	84.0	99	60.8	0	30,600	40	62	1754	107	ME	Red
Alta Seeds	AG2115	83.6	98	59.6	0	27,100	45	71	1982	118	M	Red
Sorghum Partners	SP 31A15	80.5	95	59.6	0	23,600	42	64	1807	111	ME	Bronze
Dyna-Gro Seed	M58GR24	80.1	94	59.9	5	23,600	48	60	1710	105	E	Red
Dyna-Gro Seed	GX16957	79.9	94	60.8	0	27,100	35	59	1680	105	E	Bronze
Alta Seeds	AG1201	77.7	91	59.3	0	24,800	37	62	1754	106	ME	Bronze
Dyna-Gro Seed	M71GR75	77.5	91	56.2	6	28,300	61	79	2168	HD	ML	Red
Sorghum Partners	SP 33S40	77.0	90	61.2	0	24,400	46	61	1732	107	E	White
Gayland Ward Seed	EXP 9134	76.6	90	60.7	10	25,200	52	73	2035	120	M	-
Chromatin, Inc	CHR0L0163	75.3	88	60.5	0	16,700	44	66	1867	113	ME	Bronze
Alta Seeds	AG1101	64.9	76	60.2	0	24,800	33	56	1589	100	E	Red
Heartland Genetics	HG18-R	64.6	76	60.8	0	25,200	39	58	1649	103	E	Red
Sorghum Partners	SP 3303	49.7	58	60.4	1	19,800	42	61	1732	109	E	White
Average		85.1		59.9	2	26,300	45	67	1872	112		
^e LSD (P<0.05)		11.7			3							
^e LSD (P<0.20)		7.6			2							

^aYields adjusted to 14% moisture and hybrids ranked by yield.

^bGDD: Growing degree days to 50% bloom date.

^cMaturity Group: E=early; ME=medium-early; M=medium; ML=medium late.

^dDays after planting or maturation of seed at first freeze. HD = hard dough.

^eIf the difference between two varieties yields equals or exceeds the LSD value, there is a 95% (at P<0.05) or 80% (at P<0.20) chance the difference is statistically significant.

Site Information

Collaborator: Plainsman Research Center (Kevin Larson and Brett Pettinger)
 Planting Date: June 6, 2016
 Harvest Date: October 31, 2016
 Fertilizer: Anhydrous N at 50 lb/ac and N at 6 lb/ac and P at 20 lb/ac applied as 10-34-0
 Herbicide: Pre-Emergence: Atrazine at 1 lb/ac, S-Metolachlor at 1.33 pt/ac, and glyphosate at 32 oz/ac
 Post-Emergence: Huskie at 16 oz/ac and Atrazine at 0.75 lb/ac
 Insecticide: Transform for treatment of sugarcane aphids
 Soil Type: Richfield silt loam

2014-2016 Alfalfa Variety Performance Trial at Rocky Ford

Variety ^a	Source/Brand	2014 Total Yield	2015 Total Yield	2016 Total Yield	Total 3-Year Yield
tons/acre ^b					
Ameristand 445NT	America's Alfalfa	9.44	9.38	8.56	27.38
WL 363HQ	WL Research	9.34	9.53	8.49	27.37
HybriForce 2400	Dairyland	9.44	9.44	8.30	27.18
59W205	FGI	9.15	9.48	8.27	26.89
48W214	FGI	9.20	9.23	8.33	26.75
DG 4210	CPS	9.39	9.11	7.96	26.46
FSG 403LR	Allied	9.58	8.91	7.89	26.38
HybriForce 2600	Dairyland	9.08	9.22	8.07	26.38
Gunner	Croplan Genetics	9.15	8.95	8.19	26.29
6585Q	Nexgrow	9.11	8.83	8.18	26.11
FSG 423ST	Allied	9.02	8.91	8.02	25.95
FSG 524	Allied	9.20	8.81	7.62	25.62
Nimbus	Croplan Genetics	8.43	9.03	7.81	25.28
FSG 424	Allied	8.75	8.83	7.58	25.16
Integra 8420	Wilbur-Ellis	8.82	8.43	7.70	24.95
6422Q	Nexgrow	8.69	8.49	7.44	24.63
6401N	Nexgrow	8.33	8.41	7.79	24.53
Average		9.07	9.00	8.01	26.08
LSD _(0.05)		0.70	0.63	0.57	

^aVarieties are ranked highest to lowest by total 3-year yield.

^bYields were calculated on a dry basis.

Site Information:

Cooperators: Arkansas Valley Research Center (Mike Bartolo and Kevin Tanabe)
 Planting Date: August 29, 2013 at 20 lb/ac
 Irrigation Type: Furrow
 Soil Type: Rocky Ford Silty Clay Loam
 Fertilizer: 100 lb/ac 18-46-0 applied March 13, 2014, none in 2015, 150 lb/ac 18-46-0 applied March 25, 2016.
 Herbicide: Thunder 5 oz/acre and Volunteer 16 oz/acre applied on March 25, 2014 to control broadleaves and grasses in the plots, Thunder 6 oz/ac applied on March 21, 2016 to control broadleaves.
 Insecticide: Warhawk 16 oz/acre and Lambda-Cy EC 3.84 oz/acre applied on April 20, 2015 to control alfalfa weevil, Warhawk at 32 oz/ac and LamCap at 3 oz/ac applied May 5, 2016 to control alfalfa weevil.