SORGHUM CHECKOFF SM

Forage Sorghum Variety Trials

Results from Texas and New Mexico

SORGHUM: THE SMART CHOICE

FOR DAIRY AND BEEF PRODUCTION

The Sorghum Checkoff worked with researchers at New Mexico State University and Texas AgriLife Research and Extension to provide forage sorghum performance trials for livestock producers in Texas and New Mexico. Forage sorghum's drought tolerance and water use efficiency make it a great option for your dairy or beef cattle operation.

For more information about forage sorghum production or nutritional information, request a copy of *Sorghum in Dairy Cattle Production Feeding Guide, Sorghum in Beef Cattle Production Feeding Guide* or the *Western Forage Production Guide*. These guides are helpful resources from the Sorghum Checkoff.

These resources can be found online at

WWW.SORGHUMCHECKOFF.COM

ABOUT FORAGE SORGHUM

Sorghum can be grown either as a grain or forage crop. In some instances, sorghums have an advantage over corn in that they require less water, are more drought tolerant, have less input costs, and because of their regrowth potential, can be harvested multiple times. They fit well into dryland and limited irrigation situations because of their tolerance to drought. It is in these systems that sorghums may have the greatest potential. If managed properly, they make excellent hay for supplemental feeding during times of inadequate forage production. Perhaps the greatest advantage of sorghum is the diversity of management options that the grower has to choose from in order to match his production needs. Depending on which species and variety selected, sorghum may be used for grazing pasture, hay production, silage and green-chop. Their ability to tiller and regrow after cutting or defoliation makes them ideal for multiple cut hay crops and grazing situations. The sorghum species that are generally considered for silage fall into three main categories: forage sorghum, grain sorghum and sorghum-sudangrass hybrids. Forage sorghums are the most popular for use as silage.

Sorghum silage production studies have been conducted since 1999 at the Texas AgriLife Research Station, near Bushland, Texas. Studies have compared forage sorghum types and varieties for agronomic characteristics, water use efficiency, standibility, forage and grain yield, and nutritional value. Comparisons were also made to corn varieties planted in an adjacent trial. Key production practices in growing quality forage sorghum silage are: 1) variety selection, 2) utilize management practices that minimize lodging, and 3) timely harvest. The key advantage for forage sorghum over corn for silage is its ability to produce high quality silage under low water input conditions.

NUTRITIONAL COMPARISONS

There is a great deal of variation within a type (i.e. sorghum-sudangrass, forage sorghum or brown midrib (BMR), etc.). Although an average value for one type may be different from or similar to another type, there are many exceptions when the varieties within types are examined. It is highly recommended that any decisions made be based on varietal comparisons rather than general characteristics of the type of forage.

Quality parameters of BMR and non-BMR sorghums and corn grown in Bushland (Bean et al. 2001)

Type		CP %	ADF %	NDF %	Lignin %	IVTD %
BMR		9.2	27.6	45.9	3.6	81.3
	Range	6.9-10.5	24.3-35.0	40.7-60.1	2.8-4.5	75.1-84.2
Non-BMR		8.3	29.9	49.1	4.4	75.5
	Range	6.3-10.8	21.3-41.7	33.9-67.5	2.7-6.4	60.9-83.6
Corn		9.0	23.9	41.2	3.5	82.7

SORGHUM'S WATER USE EFFICIENCY

Forage sorghum silage yields have been similar to those of corn while using 30 percent less irrigation water. Sorghums will yield 1.75 to 2.5 tons of biomass per one inch of irrigation water. In trials conducted in 2003 and 2004, sorghum silage yield increased approximately 0.75 ton/acre (at 65 percent moisture) for every inch of watered used by the crop. This included water stored in the soil, rainfall and irrigation.

TIMELY HARVEST

Harvesting forage sorghum at the correct stage is essential in producing quality silage and to minimize lodging. Ideally, forage sorghum should be harvested when the whole plant moisture content is between 63 and 68 percent. With grain producing forage sorghums, the correct moisture content is generally reached when the grain has reached the soft dough stage. For forage sorghum types, harvest when grain has attained the late milk to early soft dough stage of development. For sudangrass types, harvest when 50 percent of the plants have reached the flag leaf stage. For sorghum-sudangrass types, harvest when plants have reached the flag leaf stage. Set the harvester about 6 inches above the ground surface. This height will promote more rapid regrowth.

FORAGE SORGHUM SELECTION

Forage sorghum types range from sudangrass to traditional grain sorghum. In addition, forage sorghums can be brown midrib (BMR) or photoperiod sensitive (PS). Which type and variety that is best utilized will depend on its end use. For silage production, generally forage sorghums rather than sudangrass or sorghum/sudangrass hybrids are the best choice. Within the forage sorghums, both BMR and non-BMR varieties can produce quality silage. BMR sorghums, as the name implies, have a brown midrib. More importantly they have less lignin content in the plant making them, on average, higher in digestibility than non-BMR sorghums. Average in-vitro digestibility (IVTD) of BMR varieties has been higher than non-BMR varieties. On average, the BMR varieties have yielded 10 to 11 percent less in most years than non-BMR varieties in the Bushland trials. However, in recent studies the gap between the yield of BMR and non-BMR varieties appears to be narrowing. PS varieties stay in the vegetative stage until day length becomes less than approximately 12 hours and 20 minutes. In the Texas Panhandle environment, these varieties consistently produced the highest yield but lowest digestibility. Another problem with the PS varieties has been high moisture at harvest making them unsuitable for silage unless the crop was dried prior to ensiling.

It is important to note that there is a considerable amount of overlap between BMR and non-BMR varieties in respect to yield and digestibility. It would be a mistake to assume that BMR varieties are always superior in digestibility to non-BMR varieties and that their yield will always be less. When choosing a variety it is important to examine a particular variety's characteristics rather than assuming anything based on it being a BMR or non-BMR variety.

2012 FORAGE SORGHUM TRIALS

Comanche County, Texas

Brand	Replication	Lodging %	Harvest Moisture	Yield T/a	Yield T/a DM	TDN %	ADF %	NDF %	Milk/Ton lb/t	Milk/ Acre lb/a
B H Genetics BH201SB	3	0	77.8	16.70	3.71	58	30.4	51.7	2681	9,947
Forage First Greentreat-DYNO	3	0	72.9	16.94	4.59	58	26.8	51.0	2650	12,164
Forage First SX17	3	0	74.7	16.58	4.19	55	38.5	60.7	2271	9,515
Richland Seed Pacesetter BMR	3	15	73.4	15.19	4.04	58	29.8	49.9	2538	10,237
Forage First 5909	3	15	65.3	15.25	5.29	60	29.3	42.4	2707	14,320
Forage First BMR108	3	0	79.2	21.00	4.37	55	35.6	61.4	2568	11,222
Richardson Seed 9500	3	0	69.9	15.97	4.80	59	28.6	45.9	2660	12,768
Sorghum Partners Hi Kane II	3	50	67.5	9.56	3.11	60	25.4	43.5	2737	8,512
Forage First FS-5	3	0	63.6	17.47	6.36	61	24.5	40.7	2765	17,585

2012 IRRIGATED FORAGE SORGHUM PERFORMANCE TEST

Agricultural Science Center at Clovis, New Mexico

Brand	Sorghum Type	Maturity Group	Dry Forage t/a	Green Forage t/a	Harvest Moisture %	CP %	NDF %	NDFD 48hr %	Ash %	TDN %	NE_1 Mcal/lb	Milk/Ton lb/t	Milk/Acre lb/a
Chromatin CHR-FS4	Conv	L	10.6	33.2	68.0	7.6	54.3	65.1	6.2	62.7	0.643	2975	31549
Chromatin CHR-SS2	Conv	PS	10.3	33.9	69.8	7.0	58.0	64.9	6.4	61.0	0.623	2850	29211
Forage First FS-5	Conv	M	9.6	28.3	66.0	7.9	49.6	63.8	7.1	62.8	0.643	2974	28455
Chromatin CHR-FS9	Conv	PS	9.3	33.8	72.5	7.4	58.0	67.8	6.4	63.0	0.643	3018	28065
Chromatin CHR-SG1	Conv	PS	8.7	34.2	74.5	7.7	58.6	65.8	7.2	61.6	0.630	2898	25317
Richardson Seeds X36400	BMR	L	8.0	30.4	73.8	8.6	53.8	75.5	6.0	67.1	0.690	3367	26813
Eastern Colorado Seeds HP 85 BMR	BMR	E	7.3	20.9	67.5	8.5	53.0	69.2	7.5	64.9	0.667	3162	23193
Eastern Colorado Seeds HP ECS 12 EXP	BMR	M	7.1	25.1	71.6	9.3	49.5	69.6	7.9	66.0	0.680	3250	23117
Eastern Colorado Seeds HP 1010 BMR	BMR	M	7.1	23.2	69.4	8.6	50.5	72.1	7.5	67.8	0.700	3393	24147
Pioneer 849F	Conv	ML	7.1	20.5	65.8	8.6	52.4	61.0	7.4	61.8	0.630	2874	20191
Pioneer 841F	Conv	M	6.9	20.4	62.6	9.0	53.8	63.6	8.2	62.2	0.637	2924	20249
CPS Dyna-Gro 710 F	Conv	M	6.9	22.1	69.2	8.0	52.4	64.0	6.7	62.2	0.637	2928	20099
Eastern Colorado Seeds HP 95 BMR	BMR	E	6.7	19.9	65.6	8.1	52.7	69.0	7.4	64.8	0.667	3159	21266
B-H Genetics BH 380 F	Conv	ML	6.6	20.0	67.3	7.9	49.9	66.0	6.7	62.4	0.637	2961	19369
Eastern Colorado Seeds HP 120 BMR	BMR	L	6.3	20.6	69.3	9.2	51.4	70.2	8.4	66.0	0.680	3250	20597
Eastern Colorado Seeds HP 99 BMR	BMR	M	6.1	20.4	69.9	8.3	48.5	70.7	7.4	65.7	0.673	3232	19768
Forage First BMR 108 Leafy	BMR	M	6.1	21.2	71.0	9.5	51.1	68.5	8.4	65.1	0.670	3173	19399
Red Top Cane	Conv	ME	6.0	20.4	70.8	8.0	45.5	71.3	6.7	65.3	0.670	3208	19105
B-H Genetics BH 312 FBD	BMR	ML	5.9	21.0	71.6	9.7	49.8	68.4	8.5	65.1	0.670	3172	18870
Hegari	Conv	M	4.6	11.6	60.1	7.9	50.0	63.4	8.0	62.5	0.640	2944	13559
Trial Mean			7.4	24.1	68.8	8.3	52.1	67.5	7.3	64.0	0.657	3085	22616
LSD			1.4	4.6	3.1	0.7	4.1	2.5	0.8	1.6	0.019	128	4388
LSD P >			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CV			11.8	11.6	2.7	5.3	4.8	2.2	6.9	1.5	1.8	2.5	11.7

Sorghum Type: Conv = Conventional, BMR = Brown Midrib; Maturity Group: E = Early, M = Medium, L = Late, PS = Photoperiod Sensitive

TEST DESCRIPTION

Location

County/Area: Curry
Longitude: -103.22
Latitude: 34.60
Elevation: 4,435 ft.
Soil Name: Olton
Soil Texture: Clay Loam
Soil Depth: >60

Test Design

Replications: 3
Plot Length: 20 ft.
Rows per Plot: 2
Row Spacing: 30 in.
Seeding Rate: 90,000 seeds/a

Investigators: M.A. Marsalis, R.E. Kirksey, B. Niece, and A. Scott, NMSU

GROWING CONDITIONS

	Avg. Temp.	Precip (in)	Irrigation (in)
April	59.5	0.33	3.00
May	65.5	2.52	0.00
June	75.9	1.31	2.55
July	77.5	0.50	6.00
August	76.0	1.86	4.50
September	69.4	1.41	3.00

Seasonal precipitation: 7.9 in.
Total Irrigation: 19.1 in.
Last spring frost: April 16
First fall frost: Oct. 7
Frost free period: 174 days

MANAGEMENT PRACTICES

Inputs	Rate	Date
Fertilizer		
Nitrogen	25 lb/a	carryover
Nitrogen	200 lb/a	May 30
P_2O_5	50 lb/a	May 30
Zn	1 lb/a	May 30
Herbicides		
Atrazine	2 pt/a	June 13
Dicamba HD	5 oz/a	June 26
Me Too Anchor	1 pt/a	June 26

Previous Crop: Fallow
Harvest Date: Sept. 24
Planting Date: May 31

2012 DRYLAND FORAGE SORGHUM PERFORMANCE TEST

Agricultural Science Center at Clovis, New Mexico

Brand	Sorghum Type	Maturity Group	Dry Forage t/a	Green Forage t/a	Harvest Moisture %	CP %	NDF %	NDFD 48hr %	Ash %	TDN %	NE_1 Mcal/lb	Milk/Ton lb/t	Milk/Acre lb/a
Forage First FS-5	Conv	M	4.3	12.0	64.9	8.0	46.5	67.5	6.1	66.0	0.677	3228	14083
Chromatin CHR-SG1	Conv	PS	4.1	15.2	73.5	9.5	48.9	71.1	6.7	63.0	0.647	3041	12752
B-H Genetics BH 380 F	Conv	ML	4.0	10.6	62.0	8.5	43.6	67.9	5.9	67.9	0.700	3371	13616
Eastern Colorado Seeds HP 95 BMR	BMR	E	4.0	9.6	57.2	8.6	43.3	71.2	6.0	69.4	0.717	3504	15085
Pioneer 849F	Conv	ML	3.9	9.2	57.9	8.8	45.7	62.0	6.2	64.4	0.660	3070	11928
Chromatin CHR-FS4	Conv	L	3.8	11.9	68.2	8.0	45.1	72.2	5.5	65.3	0.670	3214	12169
Chromatin CHR-FS9	Conv	PS	3.8	15.4	75.2	10.9	49.8	72.9	7.2	64.2	0.660	3141	13058
Pioneer 841F	Conv	M	3.7	11.4	67.4	9.3	47.4	68.9	6.5	66.6	0.687	3286	12225
Eastern Colorado Seeds HP 85 BMR	BMR	E	3.7	8.7	55.3	8.3	46.3	70.9	6.6	68.7	0.707	3453	13830
Chromatin CHR-SS2	Conv	PS	3.7	12.3	69.7	8.8	49.8	70.2	6.5	63.5	0.650	3071	11598
CPS Dyna-Gro 710 F	Conv	M	3.5	8.9	60.5	8.2	43.8	69.2	5.9	68.1	0.703	3390	12009
Eastern Colorado Seeds HP ECS 12 EXP	BMR	M	3.4	11.6	70.3	10.5	47.9	73.4	7.2	64.9	0.667	3197	11032
Eastern Colorado Seeds HP 120 BMR	BMR	L	3.4	11.2	69.7	9.7	47.1	75.4	7.4	65.1	0.667	3222	11597
Eastern Colorado Seeds HP 1010 BMR	BMR	M	3.1	9.7	67.6	9.3	46.2	75.9	7.2	67.4	0.693	3390	10670
Forage First BMR 108 Leafy	BMR	M	3.1	10.2	69.6	9.6	45.6	76.2	7.0	65.1	0.670	3230	10055
B-H Genetics BH 312 FBD	BMR	ML	3.1	10.3	69.7	9.6	45.5	76.4	6.9	66.1	0.680	3301	11291
Eastern Colorado Seeds HP 99 BMR	BMR	M	3.0	8.2	63.6	8.9	43.8	72.2	7.0	66.6	0.687	3308	9850
Richardson Seeds X36400	BMR	L	2.9	10.6	73.1	9.3	47.9	79.5	6.3	66.7	0.687	3365	10384
Hegari	Conv	M	2.4	6.6	64.4	8.0	43.1	67.6	5.8	67.4	0.693	3333	7859
Red Top Cane	Conv	ME	2.0	6.5	68.8	8.4	40.8	69.1	6.2	66.2	0.680	3256	6594
Trial Mean			3.5	10.5	66.4	9.0	45.9	71.5	6.5	66.1	0.680	3269	11584
LSD			0.5	1.2	4.9	0.6	3.0	2.1	0.8	1.4	0.017	108	2081
LSD P >			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CV			9.1	6.6	4.5	3.7	3.9	1.8	7.3	1.3	1.5	2.0	10.9

Sorghum Type: Conv = Conventional, BMR = Brown Midrib; Maturity Group: E = Early, M = Medium, L = Late, PS = Photoperiod Sensitive

TEST DESCRIPTION

Location

County/Area: Curry
Longitude: -103.22
Latitude: 34.60
Elevation: 4,435 ft.
Soil Name: Olton
Soil Texture: Clay Loam
Soil Depth: >60

Test Design

Replications: 3
Plot Length: 20 ft.
Rows per Plot: 2
Row Spacing: 30 in.
Seeding Rate: 60,000 seeds/a

Investigators: M.A. Marsalis, R.E. Kirksey, B. Niece, and A. Scott, NMSU

GROWING CONDITIONS

	Avg. Temp.	Precip (in)	Irrigation (in)
May	65.5	2.52	
June	75.9	1.31	1.15*
July	77.5	0.50	
August	76.0	1.86	
September	68.5	2.06	
October	59.5	0.02	

*Emergence Irrigations

Seasonal precipitation: 8.3 in. First fall frost: Oct. 7
Total Irrigation: 1.2 in. Frost free period: 174 days
Last spring frost: April 16

MANAGEMENT PRACTICES

Inputs	Rate	Date
Fertilizer		
Nitrogen	34 lb/a	carryover
Nitrogen	75 lb/a	June 11
P_2O_5	25 lb/a	June 11
S	12 lb/a	June 11
Zn	1 lb/a	June 11
Herbicides		
Atrazine	2 pt/a	June 13
Me Too Anchor	1 pt/a	June 26

Previous Crop: Fallow Harvest Date: Oct. 5
Planting Date: June 11

2011 IRRIGATED FORAGE SORGHUM PERFORMANCE TEST

Agricultural Science Center at Clovis, New Mexico

Brand	Sorghum Type	Dry Forage t/a	Green Forage t/a	Harvest Moisture %	CP %	NDF %	NDFD 48hr %	Ash %	TDN %	NE_1 Mcal/ lb	Milk/ Ton lb/t	Milk/ Acre lb/a
Sorghum Partners SS 405	Conv	9.2	31.2	70.7	6.9	59.0	62.5	6.8	61.0	0.623	2832	25988
B-H Genetics BH 390 F	Conv	8.4	32.4	73.9	6.8	56.1	65.7	6.6	62.7	0.643	2981	25124
Forage First FS-5	Conv	7.8	24.0	67.5	7.0	52.4	63.4	7.5	62.6	0.640	2954	23010
Sorghum Partners NK 300	Conv	7.5	19.2	60.7	7.7	53.8	60.4	8.0	60.1	0.613	2749	20632
B-H Genetics BH 380 F	Conv	7.4	22.0	66.3	7.2	51.2	63.0	7.3	61.7	0.633	2888	21369
Sorghum Partners 1990	Conv	7.4	30.0	75.3	7.6	62.2	64.2	8.2	60.8	0.623	2832	20885
Eastern Colorado Seeds HP 95 BMR	BMR	6.7	19.2	64.8	7.7	54.4	65.3	7.3	63.5	0.650	3034	20459
Pioneer 841 F	Conv	6.6	21.7	69.6	8.5	55.1	61.4	7.9	60.2	0.613	2763	18174
Eastern Colorado Seeds HP 1010 BMR	BMR	6.5	22.6	71.1	7.5	53.6	68.7	7.9	64.9	0.670	3163	20684
Pioneer 849 F	Conv	6.4	20.7	68.9	7.6	55.1	59.7	6.9	60.2	0.617	2752	17640
B-H Genetics BH 304 FB	BMR	6.1	21.5	71.5	8.1	56.3	67.6	8.7	64.3	0.660	3112	19141
Eastern Colorado Seeds HP 120 BMR	BMR	5.5	22.5	75.5	9.6	57.6	67.5	9.2	63.2	0.650	3026	16740
Scott Seed Co. BMR Gold	BMR	5.1	16.9	70.1	7.6	48.2	66.7	7.8	64.4	0.657	3108	15705
B-H Genetics BH 312 FBD	BMR	4.9	19.3	74.7	9.4	55.7	66.2	8.5	63.2	0.647	3021	14806
Scott Seed Co. Great Scott	BMR	4.3	17.0	74.5	9.5	54.2	67.8	7.8	64.8	0.667	3148	13653
	Trial Mean	6.7	22.7	70.3	7.9	55.0	64.7	7.8	62.5	0.640	2957	19600
	LSD	1.0	3.1	2.2	0.4	3.7	2.1	0.7	1.8	0.020	142	3154
	LSD P >	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	CV	9.0	8.3	1.9	3.3	4.0	1.9	5.4	1.7	1.9	2.9	9.6

Sorghum Type: Conv = Conventional, BMR = Brown Midrib

TEST DESCRIPTION

Location

County/Area: Curry
Longitude: -103.22
Latitude: 34.60
Elevation: 4,435 ft.
Soil Name: Olton
Soil Texture: Clay Loam
Soil Depth: >60

Test Design

Replications: 3
Plot Length: 20 ft.
Rows per Plot: 2
Row Spacing: 30 in.
Seeding Rate: 90,000 seeds/a

Investigators: M.A. Marsalis, R.E. Kirksey, B. Niece, and A. Scott, NMSU

GROWING CONDITIONS

	Avg. Temp.	Precip (in)	Irrigation (in)
May	64.0	0.00	5.95
June	77.9	1.46	3.60
July	80.0	0.23	7.92
August	80.0	1.96	6.75
September	70.5	0.38	1.00

Seasonal precipitation: 4.0 in.
Total Irrigation: 25.2 in.
Last spring frost: May 3
First fall frost: Oct.19
Frost free period: 169 days

MANAGEMENT PRACTICES

Inputs	Rate	Date
Fertilizer		
Nitrogen	20 lb/a	carryover
Nitrogen	200 lb/a	May 3
P_2O_5	60 lb/a	May 3
Zn	1 lb/a	May 3
Herbicides		
Atrazine	2 pt/a	May 20
Me Too Anchor	1 pt/a	June 21
Atrazine	8 oz/a	June 21
Dicamba HD	5 oz/a	June 21
Insecticides		
Intrepid 2F	8 oz/a	July 30

Previous Crop: Fallow
Planting Date: May 19
Harvest Date: Sept. 13

2011 DRYLAND FORAGE SORGHUM PERFORMANCE TEST

Agricultural Science Center at Clovis, New Mexico

Brand	Sorghum Type	Dry Forage t/a	Green Forage t/a	Harvest Moisture %	CP %	NDF %	NDFD 48hr %	Ash %	TDN %	NE_1 Mcal/lb	Milk/Ton lb/t	Milk/Acre lb/a
Forage First FS-5	Conv	2.1	7.7	73.2	11.1	49.9	69.9	7.1	64.7	0.663	3159	6488
B-H Genetics BH 390 F	Conv	2.0	8.1	75.2	11.9	50.1	70.6	7.8	65.4	0.673	3208	6415
Pioneer 849 F	Conv	1.9	6.7	71.8	11.0	49.5	68.3	6.8	63.0	0.643	3018	5685
B-H Genetics BH 380 F	Conv	1.9	6.7	71.8	11.5	48.0	68.2	7.2	63.5	0.653	3059	5724
Pioneer 841 F	Conv	1.7	5.8	70.8	11.9	48.9	69.2	8.0	64.1	0.657	3105	5193
Sorghum Partners SS 405	Conv	1.6	6.2	73.7	11.9	47.8	70.1	8.0	64.2	0.657	3118	5055
Eastern Colorado Seeds HP 95 BMR	BMR	1.5	5.3	71.6	11.5	47.9	71.8	7.2	64.8	0.667	3174	4766
Sorghum Partners 1990	Conv	1.5	5.2	71.2	12.3	48.6	69.3	8.0	63.8	0.653	3085	4581
Sorghum Partners NK 300	Conv	1.5	4.9	69.9	11.1	46.8	70.5	7.3	63.8	0.653	3098	4603
Eastern Colorado Seeds HP 1010 BMR	BMR	1.4	5.3	74.3	11.3	46.5	73.9	7.3	65.1	0.670	3216	4402
B-H Genetics BH 304 FB	BMR	1.3	4.9	74.5	11.6	47.9	73.0	7.8	65.4	0.673	3225	4060
B-H Genetics BH 312 FBD	BMR	1.2	4.1	71.6	11.6	45.4	73.8	7.5	65.0	0.667	3204	3714
Eastern Colorado Seeds HP 120 BMR	BMR	1.1	3.6	70.0	12.0	47.1	72.1	8.2	64.8	0.667	3176	3388
Scott Seed Co. BMR Gold	BMR	1.0	3.6	72.6	10.6	44.6	71.7	6.8	64.2	0.660	3132	3116
Scott Seed Co. Great Scott	BMR	1.0	3.1	69.6	12.5	46.0	71.0	8.2	64.2	0.660	3128	2971
Trial Mean		1.5	5.4	72.1	11.6	47.7	70.9	7.5	64.4	0.661	3140	4677
LSD		0.5	1.9	2.0	0.7	2.8	2.2	0.7	1.1	0.014	88	1582
LSD P >		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CV		19.9	20.6	1.7	3.8	3.5	1.8	5.6	1.0	1.3	1.7	20.2

Sorghum Type: Conv = Conventional, BMR = Brown Midrib

TEST DESCRIPTION

Location

County/Area: Curry
Longitude: -103.22
Latitude: 34.60
Elevation: 4,435 ft.
Soil Name: Olton
Soil Texture: Clay Loam
Soil Depth: >60

Test Design

Replications: 3
Plot Length: 20 ft.
Rows per Plot: 2
Row Spacing: 30 in.
Seeding Rate: 60,000 seeds/a

Investigators: M.A. Marsalis, R.E. Kirksey, B. Niece, and A. Scott, NMSU

GROWING CONDITIONS

	Avg. Temp.	Precip (in)	Irrigation (in)
May	64.0	0.00	
June	77.9	1.46	1.60*
July	80.0	0.23	
August	80.0	1.96	
September	71.8	0.21	

*Emergence & crust mellowing irrigations

Seasonal precipitation: 3.9 in.
Total Irrigation: 1.6 in.
Last spring frost: May 3
First fall frost: Oct.19
Frost free period: 169 days

MANAGEMENT PRACTICES

Inputs	Rate	Date
Fertilizer		
Nitrogen	30 lb/a	carryover
Nitrogen	75 lb/a	June 14
P_2O_5	40 lb/a	June 14
S	11 lb/a	June 14
Zn	1 lb/a	June 14
Herbicides		
Atrazine	2 pt/a	June 17

Previous Crop: Fallow
Planting Date: June 16
Harvest Date: Sept. 6

2010 IRRIGATED FORAGE SORGHUM PERFORMANCE TEST

Agricultural Science Center at Clovis, New Mexico

Brand	Sorghum Type	Dry Forage t/a	Green Forage t/a	Harvest Moisture %	CP %	NDF %	NDFD 48hr %	Ash %	TDN %	NE_1 Mcal/ lb	Milk/ Ton lb/t	Milk/ Acre lb/a
Forage First FS-5	Conv	8.9	23.4	62.4	7.4	48.5	67.5	5.7	66.5	0.69	3266	28919
Pioneer 849F	Conv	8.6	20.3	57.8	7.9	49.7	64.4	5.4	65.7	0.67	3184	27299
Eastern Colorado Seeds HP95 BMR	BMR	8.3	17.9	53.6	7.4	50.4	70.4	6.6	67.7	0.70	3376	28160
Warner Seeds, Inc. 2 way F104	Conv	8.2	19.1	57.3	7.9	46.5	65.8	6.2	66.0	0.68	3220	26315
Eastern Colorado Seeds HP1010 BMR	BMR	7.0	20.0	64.8	7.7	52.9	73.2	7.3	68.3	0.71	3438	24201
Pioneer 841F	Conv	6.9	17.1	59.3	7.9	51.1	66.8	6.9	65.3	0.67	3171	22017
B-H Genetics BH 312FBD	BMR	6.5	18.9	65.5	8.2	51.1	69.5	7.5	66.5	0.68	3282	21298
B-H Genetics BH 304FB	BMR	6.1	17.6	65.5	7.6	52.8	71.9	7.7	67.6	0.70	3375	20543
Eastern Colorado Seeds HP120 BMR DW	BMR	5.9	17.4	65.9	8.2	50.9	69.5	7.4	66.7	0.69	3294	19492
	Trial Mean	7.4	19.1	61.3	7.8	50.4	68.8	6.8	66.7	0.69	3290	24249
	LSD	1.5	3.1	3.8	0.4	NS	1.9	1.3	NS	NS	143	5412
	LSD P >	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	CV	11.5	9.5	3.5	3.2	5.2	1.6	11.1	1.6	1.9	2.5	12.9
	F Test	0.0023	0.0126	<0.0001	0.0074	0.1620	<0.0001	0.0133	0.0552	0.0786	0.0124	0.0103

Sorghum Type: Conv = Conventional, BMR = Brown Midrib

TEST DESCRIPTION

Location

County/Area: Curry
Longitude: -103.22
Latitude: 34.60
Elevation: 4,435 ft.
Soil Name: Olton
Soil Texture: Clay Loam
Soil Depth: >60

Test Design

Replications: 3
Plot Length: 20 ft.
Rows per Plot: 2
Row Spacing: 30 in.
Seeding Rate: 90,000 seeds/a

Investigators: M.A. Marsalis, R.E. Kirksey, B. Niece, and A. Scott, NMSU

GROWING CONDITIONS

	Avg. Temp.	Precip (in)	Irrigation (in)
May	63.0	2.34	0.65
June	77.8	2.98	2.60
July	76.0	2.30	3.25
August	77.0	6.83	0.75
September	74.0	0.00	1.00

Seasonal precipitation: 14.5 in.
Total Irrigation: 8.3 in.
Last spring frost: April 9
First fall frost: Oct. 28
Frost free period: 202 days

MANAGEMENT PRACTICES

Inputs	Rate	Date
Fertilizer		
Nitrogen	10 lb/a	carryover
Nitrogen	180 lb/a	May 1
P_2O_5	40 lb/a	May 1
Zn	1 lb/a	May 1
Herbicides		
Atrazine	2 pt/a	May 28
Yukon	5 oz/a	June 22
Dual II Mag	1 pt/a	June 22
Insecticides		
Intrepid	8 oz/a	Aug. 4
Lorsban	1 pt/a	Aug. 4
Oberon	8 oz/a	Aug. 4

Previous Crop: Fallow
Planting Date: May 27
Harvest Date: Sept. 15

2010 DRYLAND FORAGE SORGHUM PERFORMANCE TEST

Agricultural Science Center at Clovis, New Mexico

Brand	Sorghum Type	Dry Forage t/a	Green Forage t/a	Harvest Moisture %	CP %	NDF %	NDFD 48hr %	Ash %	TDN %	NE_1 Mcal/ lb	Milk/ Ton lb/t	Milk/ Acre lb/a
Forage First FS-5	Conv	7.0	18.3	61.7	7.4	50.3	64.5	5.6	65.1	0.67	3147	22086
Pioneer 841F	Conv	6.4	17.1	63.1	8.3	47.8	61.9	6.2	66.8	0.69	3291	20933
Eastern Colorado Seeds HP95 BMR	BMR	6.2	14.2	56.2	7.9	46.4	64.8	5.8	69.4	0.71	3513	21906
Pioneer 849F	Conv	5.7	14.5	60.7	8.4	49.6	65.6	5.6	65.8	0.68	3204	18274
B-H Genetics BH 312FBD	BMR	5.6	15.8	63.9	7.9	49.5	62.8	6.9	66.3	0.68	3254	18338
Eastern Colorado Seeds HP120 BMR DW	BMR	5.6	16.2	65.7	8.6	49.4	63.5	6.9	67.5	0.70	3359	18897
Warner Seeds, Inc. 2 way F104	Conv	5.3	13.6	60.8	8.4	48.4	60.3	5.6	65.7	0.68	3196	17043
Eastern Colorado Seeds HP1010 BMR	BMR	4.9	14.4	65.8	8.6	49.4	65.3	6.5	69.0	0.71	3479	17167
B-H Genetics BH 304FB	BMR	4.3	12.3	65.0	8.6	48.6	72.8	6.6	69.1	0.71	3492	15013
Trial Mean		5.7	15.2	62.5	8.3	48.8	64.6	6.2	67.2	0.69	3326	18850
LSD		NS	NS	4.0	NS	NS	NS	1.0	1.4	0.01	110	NS
LSD P >		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CV		18.6	17.1	3.7	7.7	4.7	9.3	9.2	1.2	1.2	1.2	17.9
F Test		0.1650	0.2143	0.0021	0.3117	0.6251	0.4476	0.0290	<0.0001	<0.0001	<0.0001	0.2308

Sorghum Type: Conv = Conventional, BMR = Brown Midrib

TEST DESCRIPTION

Location

County/Area: Curry
Longitude: -103.22
Latitude: 34.60
Elevation: 4,435 ft.
Soil Name: Olton
Soil Texture: Clay Loam
Soil Depth: >60 in.

Test Design

Replications: 3
Plot Length: 20 ft.
Rows per Plot: 2
Row Spacing: 30 in.
Seeding Rate: 60,000 seeds/a

Investigators: M.A. Marsalis, R.E. Kirksey, B. Niece, and A. Scott, NMSU

GROWING CONDITIONS

	Avg. Temp.	Precip (in)	Irrigation (in)
May	63.0	2.34	
June	77.8	2.98	
July	76.0	2.30	
August	77.0	6.83	
September	73.0	1.41	

*Emergence & crust mellowing irrigations

Seasonal precipitation: 15.9 in.
Total Irrigation: 0.0s in.
Last spring frost: April 9
First fall frost: Oct. 28
Frost free period: 202 days

MANAGEMENT PRACTICES

Inputs	Rate	Date
Fertilizer		
Nitrogen	24 lb/a	carryover
Nitrogen	85 lb/a	June 1
P_2O_5	40 lb/a	June 1
S	13 lb/a	June 1
Zn	1 lb/a	June 1
Herbicides		
Atrazine	2 pt/a	June 3
Yukon	5 oz/a	June 22
Dual II Mag	1 pt/a	June 22
Clarity	6 oz/a	July 1
Insecticides		
Lorsban	1 pt/a	Aug. 4
Fanfare	6.4 oz/a	Aug. 4

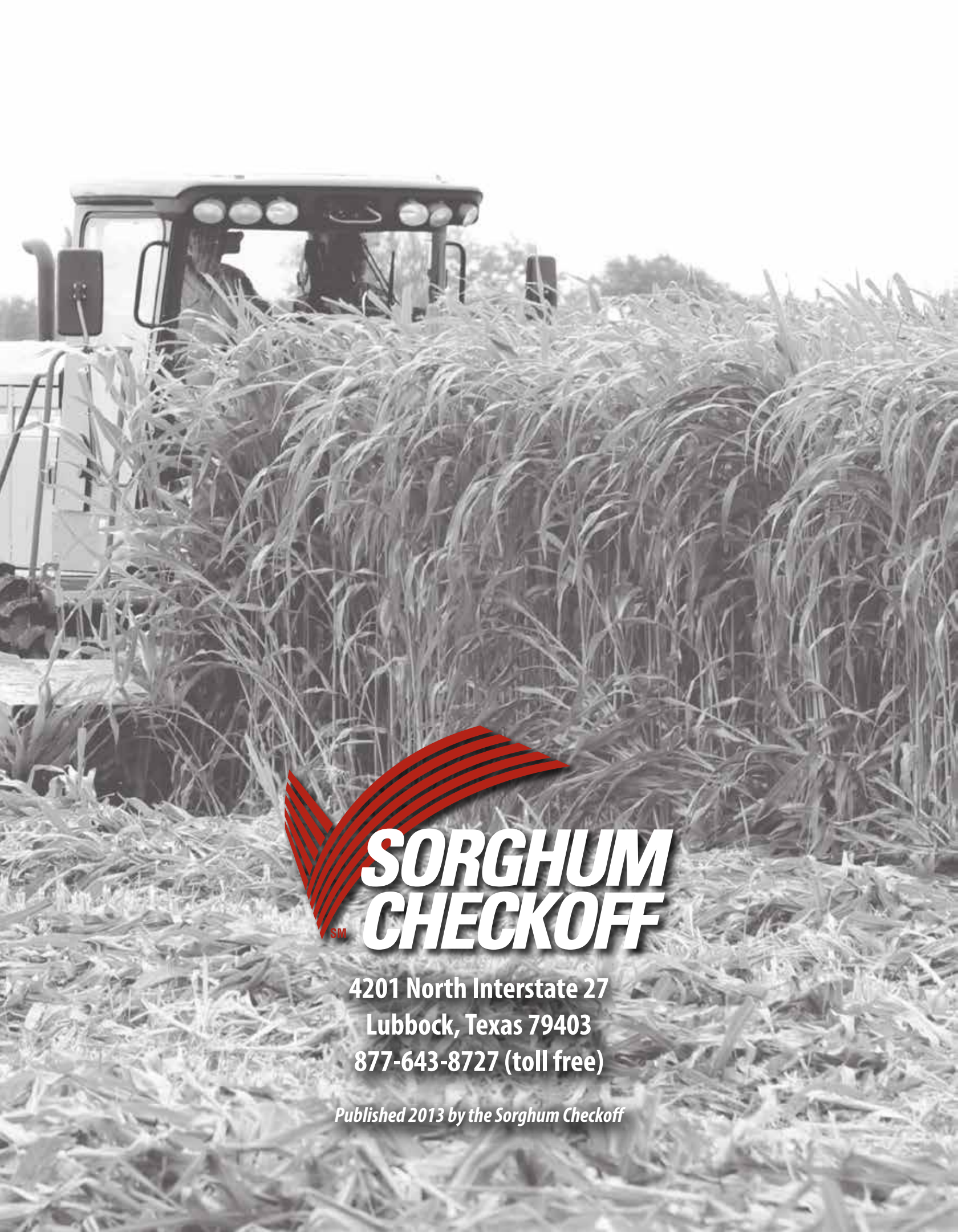
Previous Crop: Fallow
Planting Date: June 2
Harvest Date: Sept. 30

2008-2011 YIELD & QUALITY FORAGE SORGHUM TRIALS

Entered in at Least 3 Trials Over Last 4 Years at Bushland, Texas

Brand	Maturity	BMR	Male Sterile	# of Trials	Lodging Range 2008-2011	% Lodging	Ht. (ft)	Harvest Moisture %	Yield (T/a)	% NDFD	% IVTD	Milk lbs/ ton	% trials w/ Yield above Mean
						----------Three- or Four-Year Average----------							
Walter Moss Seed Co. 4Ever Green	PS	N	N	3	0-27	14.4	10.4	75.7	26.8	59.3	65.6	1,994	100
Advanta GW3072F	M	N	N	3	8-97	46.3	6.1	62.3	25.5	64.0	67.0	2,319	100
Sorghum Partners NK 300	ME	N	N	3	0-93	33.9	5.9	60.6	24.8	47.1	73.0	2,370	100
AR-B Seeds Inc. AS781	ML	Y	N	3	0-23	8.9	5.5	66.2	22.9	66.8	72.0	2,342	100
Sorghum Partners SS405	ML	N	N	3	4-15	8.1	10.5	66.2	21.5	44.7	68.0	1,900	100
Pioneer 849 F	L	N	N	4	0-2	0.8	7.7	69.7	22.6	56.7	69.9	2,571	75
Richardson Seeds 9500	ML	N	N	4	0-2	0.6	5.5	64.8	22.1	56.6	72.4	2,588	75
Richardson Seeds Pacesetter BMR	PS	Y	N	4	0-28	9.2	9.1	73.7	21.6	63.2	70.7	2,377	75
Walter Moss Seed Co. Mega Green	PS	N	N	3	0-23	10.0	10.3	73.3	24.1	56.7	63.9	2,126	66
Sorghum Partners 1990	PS	N	N	3	0-67	33.9	8.8	71.6	24.0	48.8	71.2	2,274	66
Walter Moss Seed Co. 4Ever Green BMR	PS	Y	N	3	0-2	0.6	9.8	74.6	23.8	62.4	67.2	2,393	66
Syngenta Si-Gro H-44	L	N	N	3	0-65	30.6	6.1	63.5	23.5	64.0	66.6	2,328	66
Forage First FS-5	M	N	N	3	0-8	5.0	7.6	71.4	22.2	58.6	67.1	2,697	66
Triumph Seed Co. Super Sile 30	ML	N	N	3	7-60	25.0	7.6	66.6	21.8	66.7	69.1	2,388	66
Walter Moss Seed Co. Millennium BMR	ML	Y	N	3	0-20	12.2	7.9	70.3	21.6	64.4	72.0	2,802	66
Sorghum Partners SS506	L	N	N	3	7-50	21.1	10.5	68.7	21.4	46.9	70.3	2,213	66
Scott Seed Co. BMR Gold X	M	Y	Y	3	0-10	7.2	7.3	70.8	21.4	64.1	74.6	2,670	66
Sorghum Partners Hikane II	ME	N	N	3	0-23	10.8	7.6	69.8	20.8	49.8	79.4	2,724	66
Richardson Seeds Silo 700D	L	N	N	4	0-32	9.2	6.6	68.6	21.9	58.8	69.5	2,399	50
Scott Seed Co. Premium Stock LS	PS	N	N	4	0-78	21.2	9.3	71.1	21.6	57.5	68.0	2,347	50
Eastern Colorado Seeds HP 95 BMR	M	Y	N	4	0-23	10.8	7.4	67.6	19.7	62.9	74.8	2,698	50
Advanta GW8528fbmr	M	Y	N	3	0-32	12.2	7.2	67.3	21.2	73.5	75.3	3,083	33
Pioneer 84G62	ML	N	N	3	0	0.0	4.0	65.5	20.5	60.6	72.2	2,606	33
Forage First BMR 108 Leafy	L	Y	N	3	0-48	16.7	5.5	65.1	20.0	64.1	70.6	2,461	33
Coffey Forage Seeds 6810 BMR	M	Y	Y	4	0-5	2.7	7.3	70.7	21.6	65.6	76.8	2,624	25
Richardson Seeds Dairy Master BMR	ML	Y	N	4	0-15	6.7	7.8	71.7	19.9	64.2	74.7	2,599	25
Richardson Seeds Bundle King BMR	L	Y	Y	4	8-23	15.4	9.1	70.0	19.8	63.3	71.4	2,522	25
Scott Seed Co. BMR Gold	M	Y	N	3	0-7	3.3	7.3	70.2	21.0	65.9	76.0	2,687	0
Sharp Bros. Seed Co. Canex BMR 403	M	Y	Y	3	0-3	1.7	7.3	70.7	20.1	74.2	76.0	2,996	0
Richardson Seeds Sweeter'N Honey BMR	ME	Y	N	3	0-42	13.9	7.5	70.5	19.5	61.5	71.5	2,518	0
Scott Seed Co. BMR Gold II	M	Y	N	3	11-28	22.8	8.5	69.7	18.9	57.7	68.3	2,559	0
AR-B Seeds Inc Sweet Choice BMR	M	Y	Y	3	0-23	10.5	7.3	70.5	18.4	64.4	73.7	2,594	0
Eastern Colorado Seeds HP 1010 BMR	ML	Y	Y	4	2-27	8.9	7.3	70.7	18.4	63.1	75.4	2,570	0
Sharp Bros. Seed Co. Canex BMR 208	ME	Y	N	4	0-9	5.0	7.0	71.4	18.3	64.3	74.9	2,811	0
Mean						**13.7**	**7.5**	**69.3**	**20.5**	**51.3**	**76.2**	**2,410**	

Investigator: B. Bean, Texas AgriLife Research, Bushland, Texas



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