



# The Agriculture Program

The Texas A&M University System

## 2005 Texas Panhandle Forage Sorghum Silage Trial

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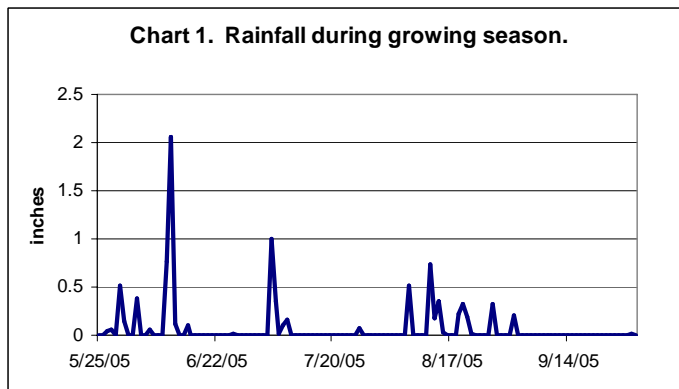
Texas Cooperative Extension and Texas Agricultural Experiment Station

### Introduction

The summer of 2005 we completed our sixth year of consecutive sorghum silage variety trials conducted at the Texas Agricultural Experiment Station Bush Farm, located approximately 8 miles west of Amarillo. Results of trials from previous years can be found at <http://amarillo.tamu.edu/programs/agronomy/>. As in previous years varieties compared included brown midrib (BMR), photoperiod sensitive (PS), forage sorghum, grain sorghum, sorghum/sudangrass, and sudangrass. Corn was grown adjacent to the sorghum plots for comparison and was planted, irrigated, and fertilized identically to the sorghum.

### Methods and Materials

The trial was made up of 74 hybrids provided by seed companies. Several male sterile hybrids were included. These were all capable of producing grain due to cross-pollination that occurred in the field with other hybrids. Seed companies will provide pollinator seed for male sterile hybrids if desired. The hybrids were planted in a randomized block design in four row plots planted on 30-inch raised beds. Irrigation was applied by furrow and the three replications (blocks) were stacked with the first replication being closest to the gated pipe, followed by the second and third replications. Irrigation scheduling was determined by monitoring gypsum blocks placed in the soil at depths of 1, 2, and 3 feet. Gypsum blocks were read every two to three days and plots were irrigated when the average of the three moisture blocks fell below 60. Approximately 13.75 inches of water was applied during the season along with a pre-irrigation



of 4.9 inches. Rainfall totaled 9.1 inches during the growing season (May 25 – September 30). However, very little rainfall occurred after mid-August (Chart 1). Each hybrid was harvested for forage yield when grain reached the soft dough stage. Photoperiod sensitive hybrids were harvested on the last harvest date of the season (Sep 29).

strip on four 30-inch rows at 30,000 seed/acre.

For comparison, corn was planted adjacent to the sorghum trial in a 200-ft strip on four 30-inch rows at 30,000 seed/acre. The variety planted was NC+ 5423B.

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Herbicide, fertilizer, and irrigation application was applied identically to the forage sorghum. Four samples were collected for yield and nutrient composition determination when the kernel milkline had advanced 1/2 to 2/3 of the way down the kernel.

Other cultural practices and study information are listed below:

Trial Location:	Bush farm located one mile north of Bushland, TX
Cooperator:	Texas Agricultural Experiment Station
Previous Crop:	Forage Sorghum
Soil Type:	Pullman Clay Loam, pH = 7.4
Plot Size:	Four, 30 inch rows by 25 ft
Replications:	3
Study Design:	Randomized complete block
Planting Date:	May 25, 2005.
Planting Rate:	120,000 seed/acre
Seed Method:	John Deere Max-emerge Planter
Fertilizer:	200 lbs N and 40 lbs P205 per acre (32-0-0 and 10-34-0) preplant
Herbicide:	One lb/acre atrazine applied immediately after planting
Irrigation:	Furrow irrigated based on moisture block readings. Approximately of 13.75 inches applied during the growing season.
Silage Harvest Date:	Plots were checked weekly and harvested when grain was in the soft dough stage. Harvest dates ranged from September 1 to September 29 and are reported in Table 2.
Grain Harvest Date:	October

#### **Data Collected:**

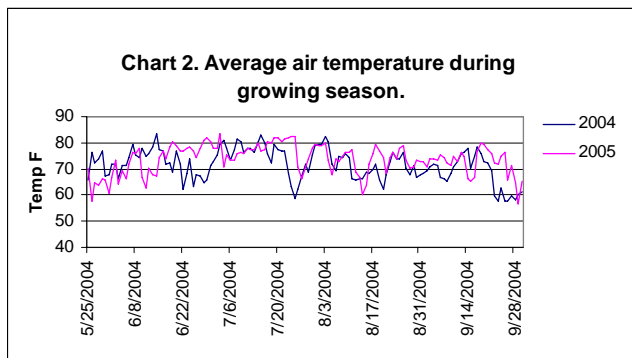
- Plant height (ft) at silage harvest.
- Lodging at silage harvest. Percent of fallen or significantly leaning plants per plot.
- Silage yield. Collected at or near the soft dough stage from 10 feet of row. Yield is reported at 65% moisture in tons/acre.
- Nutrient analysis: Whole plant sub-samples were collected from the yield sample immediately after harvest, chopped, and frozen. These sub-samples were sent to Dairy One Laboratory, Ithaca, NY for analysis. All nutrient constituents were adjusted to a 100% moisture-free basis.
- Grain yield was collected from 10 feet of row from each plot. Samples were thrashed and yield reported in lb/acre. No moisture correction was made.
- Nutrient Analysis Definitions
  - Crude Protein:** 6.25 \* % total nitrogen.
  - TDN:** Estimate of total digestible nutrients
  - NDF:** Neutral detergent fiber; cell wall fraction of the forage.
  - ADF:** % acid detergent fiber; constituent of the cell wall includes cellulose and lignin; inversely related to energy availability.
  - NEI:** Estimate of Net Energy for lactation.
  - NE<sub>m</sub>:** Estimate of Net Energy for maintenance.
  - NE<sub>g</sub>:** Estimate of Net Energy for gain.

- IVTD:** % in vitro true digestibility; positively related to energy availability.
- RFQ:** Relative Forage Quality is an index for comparing forages. RFQ is calculated from CP, ADF, NDF, fat, ash and NDF digestibility measured at 48 hours. It should be more reflective of the feeding value of the forage. RFQ is based on the same scoring system as RFV with an average score of 100. The higher the RFQ, the better the quality.

## Results and Discussion

A summary of yield, agronomic traits, and nutrient composition, are reported by groups of different sorghum types along with corn in Table 1. See Table 2 for a listing of each specific hybrid's agronomy characteristics, yield, and nutrient composition.

Conditions at planting were good following excellent winter and spring moisture along with a pre-irrigation. Rainfall was relatively good early in the season, but was very dry late (Chart 1). Temperatures were considered average for most of the season, but air temperature averaged 2 degrees higher than 2004, with most of the extra heat occurring in September (Chart 2). This trial should be considered **limited irrigated**. During most of the season adequate water was applied, however, we were only able to apply a total of 5 inches of water during August and none during September. This resulted in stress to the sorghum late in the season, and was especially evident in the later maturing varieties.



Similar to previous years, average BMR forage sorghum silage yield was approximately 11% less than nonBMR forage sorghum (Table 1). Photoperiod sensitive varieties of both forage sorghum and sorghum/sudangrass yielded the highest in the trial, but not by as wide a margin as we have seen in previous years. When the photoperiod sensitive varieties were also BMR, yields averaged almost 3 ton/acre less in the forage sorghum and 1 ton/acre less in the sorghum/sudangrass hybrids. Lack of water in September likely resulted in lower yields of the photoperiod sensitive varieties than could have been achieved under full irrigation.

Average lodging scores of both BMR and nonBMR forage sorghum varieties (17 and 20.4%, respectively) were higher than in previous years. This also was likely due to drought stress late in the season. The lodging scores recorded were taken on the day that the sorghum was harvested for silage. It was observed that these lodging scores would have greatly increased in many of the varieties if ratings would have been taken as little as a week later, indicating the importance of harvesting forage sorghum at the correct moisture stage (65 to 68%). Under the stressed conditions, those varieties that tended to produce a lot of grain compared to stover tended to have a whole plant moisture content that was dryer than 65% moisture when the grain was allowed to reach soft dough stage. This was most evident in the traditional grain sorghum varieties where moisture content was 48% when harvested for silage when the grain had reached

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soft dough (Table 1). This indicates that under stressed conditions, when the leaves and stalk are drying down faster than normal, the stage of the grain is a poor indicator of whole plant moisture. Under these conditions, sorghum for silage will need to be harvested earlier than soft dough stage.

Average grain yield of the nonBMR forage sorghums was approximately 80% of the traditional grains sorghum varieties. BMR forage sorghums averaged only 60% of the grain yield of the traditional grain sorghum varieties. However, as in previous years there was a wide range in grain yield of both nonBMR and BMR forage sorghums (Table 2).

### Comparison to Corn

Both in 2004 and 2005 the corn planted adjacent to the sorghum trial was irrigated and fertilized exactly the same as the sorghum. In both years silage yield was almost identical between the BMR forage sorghum and corn. NonBMR forage sorghum averaged 3 ton/acre more than corn in 2004, and 2.5 ton/acre more in 2005. It will be interesting to see if this trend will continue in the future. The key will likely be not letting the corn stress during tasseling and early grain fill.

Table 1. Summary of key characteristics by sorghum type and corn.

Sorghum Type <sup>1)</sup>	% Lodging @ Harvest	% Moist. @ Harvest	Tons/Ac @ 65% Moist.	Grain Yield, lb/Ac	% Crude Protein	% ADF	% NDF	TDN	% Lignin	% IVTD	Milk lbs/ton DM	Relative Forage Quality (RFQ)
F. Sorghum NonBMR (23)	20.4	63.1	20.9	5,079	7.2	31.6	52.7	63.0	4.9	74.9	2,588	121
F. Sorghum BMR (15)	17.0	67.4	18.5	3,685	7.5	28.4	48.2	68.5	3.9	80.6	2,917	140
F. Sorghum NonBMR, PS (4)	2.1	72.1	22.2	0	6.4	34.6	59.6	60.1	5.1	71.3	2,353	108
F. Sorghum BMR, PS (3)	5.0	73.7	19.5	0	6.3	33.0	58.2	67.0	4.2	79.3	2,714	128
Sorg/Sudan NonBMR (4)	6.7	64.9	18.4	1,442	6.3	33.2	55.8	60.1	5.4	71.8	2,396	107
Sorg/Sudan BMR (12)	13.6	64.5	15.8	1,930	8.1	29.5	50.3	65.3	4.7	76.4	2,731	134
Sorg/Sudan NonBMR, PS (6)	0.6	70.9	21.6	0	5.8	34.7	59.2	58.4	5.3	69.8	2,262	100
Sorg/Sudan BMR, PS (1)	3.3	69.9	20.6	997	6.7	33.2	56.0	63.7	4.7	75.3	2,592	122
Sudangrass NonBMR, BMR, PS (3)	5.6	67.6	18.9	809	7.0	33.8	57.5	58.7	5.3	70.0	2,304	108
Grain Sorghum (3)	1.7	48.0	17.6	6,144	8.0	32.3	52.8	63.9	4.7	77.4	2,605	135
Test Avg.	7.6	66.2	19.4	2,009	6.9	32.4	55.0	62.9	4.8	74.7	2,546	120
Corn (1)	0.0	53.7	18.0	7,408	9.5	19.6	36.8	73.3	3.5	84.0	3,068	

<sup>1)</sup> The number in parenthesis is the number of hybrids that make up each sorghum or corn type.

### **Nutrient Analysis**

Differences among the types of forages were consistent with observations in our previous trials. On average within each type of sorghum or sorghum/sudangrass, the BMR varieties were more digestible than their non-BMR counterparts. This difference reflects the lower lignin content of the BMR varieties.

As in year's past, the number of photoperiod sensitive (PS) entries was limited and therefore the data should be interpreted as differences for the specific entries rather than broad generalizations about the PS type. On average, the PS types contained more fiber (NDF and ADF) and were less digestible than were lower than the non-PS types. Also, the crude protein concentration was lower for the PS types, an observation consistent with previous trials. The varieties that carried both the PS and BMR traits were more digestible than the varieties with only the PS trait. Compared to past trials, the disparity between the BMR and PS/BMR varieties was relatively less this year.

**Table 2. 2005 Comparison of sorghum hybrids for agronomic characteristics, yield, and nutrient composition.**

Variety Information <sup>1)</sup>						Agronomic Information at Forage Harvest <sup>2)</sup>										
Hybrid	COMPANY	Sorghum Type	Maturity	BMR	Male Sterile	Harvest Date	Height, Ft		% Lodging		% Moisture		Ton/ac @ 65% Moist.		Grain Yield, lb/ac	
GW 7828F bmr	Crosbyton Seed	F. Sorghum	M	Y	Y	9/15	7.3	i-q	3.3	ef	63.9	d-n	22.1	a-h	5361	a-j
GW X7181Gbmr	Crosbyton Seed	Sorghum/Sudan	M	Y	Y	9/15	8.1	d-n	16.7	c-f	68.1	a-k	16.7	e-h	1597	q-v
GW X7191Gbmr	Crosbyton Seed	Sorghum/Sudan	M	Y	Y	9/1	7.5	h-p	8.3	ef	66.5	a-m	18.2	a-h	2044	n-v
Dividend BMR	Drussel Seed & Supply	F. Sorghum	ML	Y	N	9/8	7.5	h-p	56.7	abc	71.2	a-f	18.6	a-h	5298	a-j
Bonus-R BMR	Drussel Seed & Supply	Sorghum/Sudan	PS	Y	N	9/29	9.0	a-g	3.3	ef	69.9	a-h	20.6	a-h	1269	r-v
Garst 325	Garst Seed	F. Sorghum	L	N	N	9/29	6.1	p-s	3.3	ef	58.7	l-q	25.7	ab	5436	a-j
Garst 320	Garst Seed	F. Sorghum	M	N	N	9/15	4.8	t-w	6.7	ef	60.6	h-p	19.0	a-h	5708	a-i
Garst 348 BMR	Garst Seed	F. Sorghum	ML	Y	N	9/15	8.0	e-o	10.0	def	69.2	a-h	18.6	a-h	3456	h-t
Garst N318-X	Garst Seed	F. Sorghum	M	N	N	9/8	7.8	f-o	20.0	c-f	69.7	a-h	18.9	a-h	5185	a-k
Garst N340-X	Garst Seed	F. Sorghum	M	Y	N	9/15	7.0	m-r	33.3	a-f	65.8	a-n	19.7	a-h	7021	abc
FS5	Monsanto	F. Sorghum	M	N	N	9/15	7.8	f-o	0.0	f	67.2	a-m	24.1	a-e	4092	d-q
FS 25E	Monsanto	F. Sorghum	L	N	N	9/29	8.2	d-n	8.3	ef	66.9	a-m	25.7	abc	4977	b-l
DKS 59-09	Monsanto	F. Sorghum	M	N	N	9/8	5.5	s-v	0.0	f	72.0	a-f	17.3	c-h	7775	a
4 Ever Green	Walter Moss Seed	F. Sorghum	PS	N	N	9/29	8.5	c-l	1.7	ef	74.3	ab	19.6	a-h	0	v
Mega Green	Walter Moss Seed	Sorghum/Sudan	PS	N	N	9/29	9.2	a-f	1.7	ef	71.3	a-f	20.0	a-h	0	v
4 Ever Green BMR	Walter Moss Seed	F. Sorghum	PS	Y	N	9/29	8.4	c-m	3.3	ef	74.9	a	18.0	a-h	0	v
Centruy BMR	Walter Moss Seed	Sorghum/Sudan	L	Y	N	9/29	8.7	b-j	10.0	def	64.6	c-n	17.1	d-h	642.7	uv
Millennium	Walter Moss Seed	F. Sorghum	L	Y	N	9/15	7.6	g-p	10.0	def	66.4	a-m	18.9	a-h	2789	j-u
Su-2-LM	Walter Moss Seed	Sorghum/Sudan	L	N	N	9/29	9.5	a-d	3.3	ef	65.8	a-n	19.6	a-h	1023	s-v
NutriChoice II	NC+ Hybrids	F. Sorghum	ML	N	N	9/29	5.5	s-v	NA*		56.9	n-q	22.0	a-h	7017	abc
NutriTon II	NC+ Hybrids	F. Sorghum	ML	N	N	9/29	7.0	m-r	61.7	ab	61.7	g-o	20.2	a-h	4486	c-o
800HS	NC+ Hybrids	Sorghum/Sudan	PS	N	N	9/29	10.3	a	0.0	f	68.6	a-j	26.4	a	0	v
Penn 02 BMR	Pennington Seeds	F. Sorghum	M	Y	N	9/15	7.2	k-r	15.0	c-f	63.6	e-n	15.4	fgh	4398	c-o
811F	Pioneer Hi-Bred Int., Inc.	F. Sorghum	PS	N	N	9/29	7.6	g-p	0.0	f	71.1	a-f	22.3	a-g	0	v
979	Pioneer Hi-Bred Int., Inc.	Sorghum/Sudan	ML	N	Y	9/8	7.4	i-q	6.7	ef	68.1	a-k	19.8	a-h	2515	l-v
Silo 700D	Richardson Seeds, Ltd.	F. Sorghum	ML	N	N	9/22	5.6	s-v	1.7	ef	58.9	k-q	20.3	a-h	5626	a-i
Bundle King BMR	Richardson Seeds, Ltd.	F. Sorghum	L	Y	Y	9/29	8.2	d-n	28.3	a-f	69.1	a-h	20.3	a-h	1711	p-v
Dairy Master BMR	Richardson Seeds, Ltd.	F. Sorghum	ML	Y	N	9/15	7.8	f-o	8.3	ef	66.2	a-n	19.1	a-h	2612	k-v
PaceSetter BMR	Richardson Seeds, Ltd.	F. Sorghum	PS	Y	N	9/29	8.4	c-n	1.7	ef	72.5	a-e	20.2	a-h	0	v
Sweeter N Honey	Richardson Seeds, Ltd.	F. Sorghum	M	Y	N	9/8	7.1	l-r	6.7	ef	67.5	a-l	16.8	e-h	3713	g-r
Canex BMR 208	Sharp Brothers Seed	F. Sorghum	ME	Y	N	9/1	7.0	m-r	0.0	f	69.6	a-h	20.9	a-h	4086	d-q
Silex BMR 501	Sharp Brothers Seed	F. Sorghum	M	Y	N	9/29	8.6	c-k	30.0	a-f	67.1	a-m	15.3	fgh	931.5	tuv
Canex	Sharp Brothers Seed	F. Sorghum	ME	N	Y	9/8	6.6	o-s	3.3	ef	66.4	a-m	16.3	e-h	3769	g-r
Grazex BMR 727	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	9/1	7.3	j-q	5.0	ef	69.0	a-j	15.7	e-h	2133	m-v
Grazex BMR 782	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	9/8	7.4	i-q	5.0	ef	68.8	a-j	15.0	fgh	2796	j-u
Grazex BMR 718	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	9/22	7.6	g-p	8.3	ef	58.7	l-q	17.3	c-h	1596	q-v
Grazex BMR 719	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	9/8	7.4	i-q	18.3	c-f	68.9	a-j	13.7	h	1889	o-v
BMR 200	Seed Resource	Sorghum/Sudan	M	Y	N	9/15	7.4	i-q	6.7	ef	63.8	d-n	14.4	gh	2921	j-u
BMR 204	Seed Resource	Sorghum/Sudan	M	Y	N	9/15	7.8	f-o	18.3	c-f	65.2	b-n	16.0	e-h	2112	m-v
BMR 206	Seed Resource	Sorghum/Sudan	M	Y	N	9/1	7.4	i-q	0.0	f	69.1	a-i	17.5	b-h	1568	q-v
NK 300	Sorghum Partners, Inc.	F. Sorghum	M	N	N	9/22	5.3	s-v	NA*		52.6	pq	21.7	a-h	6508	a-e

Variety Information <sup>1)</sup>						Agronomic Information at Forage Harvest <sup>2)</sup>										
Hybrid	COMPANY	Sorghum Type	Maturity	BMR	Male Sterile	Harvest Date	Height, Ft		% Lodging	% Moisture	Ton/ac @ 65% Moist.	Grain Yield, lb/ac				
HIKANE II	Sorghum Partners, Inc.	F. Sorghum	E	N	N	9/8	7.7	f-o	6.7	ef	68.7	a-j	20.2	a-h	3932	e-r
SS 405	Sorghum Partners, Inc.	F. Sorghum	L	N	N	9/29	10.1	ab	0.0	f	60.6	h-p	26.4	a	1407	r-v
SS 506	Sorghum Partners, Inc.	F. Sorghum	L	N	N	9/29	10.1	ab	0.0	f	66.9	a-m	23.1	a-f	1460	q-v
1990	Sorghum Partners, Inc.	F. Sorghum	PS	N	N	9/29	9.2	a-f	1.7	ef	69.8	a-h	25.2	a-d	0	v
Sordan 79	Sorghum Partners, Inc.	Sorghum/Sudan	M	N	N	9/22	7.5	h-p	15.0	c-f	59.7	j-p	14.6	gh	1264	r-v
Sordan Headless	Sorghum Partners, Inc.	Sorghum/Sudan	PS	N	N	9/29	9.5	a-e	0.0	f	71.9	a-f	20.1	a-h	0	v
Trudan 8	Sorghum Partners, Inc.	Sudangrass	M	N	N	9/1	7.4	i-p	16.7	c-f	64.2	d-n	16.6	e-h	2084	n-v
Trudan Headless	Sorghum Partners, Inc.	Sudangrass	PS	N	N	9/29	8.8	b-i	0.0	f	68.7	a-j	20.0	a-h	332.2	uv
Trudan Headless BMR	Sorghum Partners, Inc.	Sudangrass	PS	Y	N	9/29	8.1	d-n	0.0	f	70.0	a-g	20.1	a-h	10.22	v
Super Sile 30	Triumph Seed	F. Sorghum	-	N	N	9/29	7.0	m-r	21.7	c-f	64.6	c-n	23.3	a-f	7057	abc
Sucrosse 5-R BMR	Warner Seeds, Inc.	Sorghum/Sudan	ME	Y	N	9/1	7.3	j-q	3.3	ef	65.4	b-n	18.4	a-h	1541	q-v
Sucrosse 6-R BMR	Warner Seeds, Inc.	F. Sorghum	M	Y	N	9/8	7.2	k-r	6.7	ef	69.1	a-h	15.9	e-h	3815	f-r
Sucrosse 9-R PS	Warner Seeds, Inc.	Sorghum/Sudan	PS	N	NA	9/29	9.8	abc	1.7	ef	71.1	a-f	20.7	a-h	0	v
Gro-N-Graze DREAM	Warner Seeds, Inc.	Sorghum/Sudan	L	N	N	9/29	9.8	abc	1.7	ef	66.0	a-n	19.5	a-h	1508	q-v
Nutrigreen BMR	Warner Seeds, Inc.	F. Sorghum	PS	Y	NA	9/29	8.6	c-k	10.0	def	73.6	abc	20.3	a-h	0	v
2-Way 199PS	Warner Seeds, Inc.	F. Sorghum	PS	N	NA	9/29	8.9	a-h	5.0	ef	73.1	a-d	21.8	a-h	0	v
2-Way F-103	Warner Seeds, Inc.	F. Sorghum	M	N	N	9/29	5.5	s-v	NA*		58.1	m-q	20.7	a-h	4631	c-n
2-Way F-104	Warner Seeds, Inc.	F. Sorghum	ML	N	N	9/22	5.9	q-t	0.0	f	62.8	f-n	18.1	a-h	6538	a-e
2-Way	Warner Seeds, Inc.	F. Sorghum	ML	N	N	9/29	8.0	d-o	33.3	a-f	65.5	b-n	19.5	a-h	4765	b-m
2-Way SRS	Warner Seeds, Inc.	F. Sorghum	ML	N	N	9/29	8.2	d-n	23.3	b-f	65.6	b-n	21.6	a-h	4291	d-p
Sweet Bee	Warner Seeds, Inc.	F. Sorghum	ME	N	N	9/1	7.6	g-o	28.3	a-f	72.6	a-e	20.9	a-h	3362	i-t
Sweet Bee Sterile II	Warner Seeds, Inc.	F. Sorghum	ME	Y	Y	9/15	6.9	n-r	3.3	ef	66.8	a-m	20.3	a-h	4671	c-n
2-Way BMR	Warner Seeds, Inc.	F. Sorghum	M	Y	N	9/15	7.3	j-q	15.0	c-f	69.6	a-h	19.7	a-h	2598	k-v
RedTop Plus	Production Plus	F. Sorghum	ML	Y	N	9/22	7.2	k-r	28.3	a-f	66.7	a-m	16.0	e-h	3628	g-s
Nutri Plus BMR	Production Plus	Sorghum/Sudan	ML	Y	N	9/8	7.8	f-o	63.7	a	69.5	a-h	15.1	fgh	6279	a-g
Sugar Graze Ultra	Coffey Seed Co.	Sorghum/Sudan	PS	N	N	9/29	9.4	a-e	0.0	f	71.7	a-f	20.6	a-h	0	v
MaxiGain	Coffey Seed Co.	Sorghum/Sudan	PS	N	N	9/29	10.3	a	0.0	f	70.8	a-g	21.6	a-h	0	v
Silmaker 6000	Frontier Seed Co.	F. Sorghum	M	N	N	9/15	5.4	s-v	31.7	a-f	60.6	h-p	21.0	a-h	6053	a-h
Silmaker 6500	Frontier Seed Co.	F. Sorghum	M	N	N	9/22	5.8	r-u	NA*		53.0	opq	19.6	a-h	6747	a-d
Silmaker 5700	Frontier Seed Co.	F. Sorghum	ML	N	N	9/8	3.9	w	0.0	f	59.7	i-p	14.5	gh	7364	ab
A571 (check)	Monsanto (Asgrow)	Grain Sorghum	M	N	N	9/15	4.5	vw	0.0	f	51.2	q	18.6	a-h	5795	a-i
8R18 (check)	NC+ Hybrids	Grain Sorghum	M	N	N	9/22	4.6	uvw	0.0	f	38.9	r	17.8	b-h	6467	a-f
P84G62 (check)	Pioneer Hi-Bred Int., Inc.	Grain Sorghum	ML	N	N	9/15	3.8	w	5.0	ef	53.7	opq	16.3	e-h	6714	a-d
LSD (P=.05)							0.815		22.8		5.1		4.577		1456.806	
Standard Deviation							0.504		14.1		3.2		2.831		901.119	
CV							6.7		108.0		4.8		14.62		28.95	

<sup>1)</sup> Variety information provided by seed companies. Male sterile entries were cross pollinated by other entries.

<sup>2)</sup> Means followed by the same letter do not significantly differ at (P=0.05).

\* NA in lodging column. Lodging score was greater than 40% but was not recorded since variety was harvested late as indicated by % moisture.

**Table 2. 2005 Comparison of sorghum hybrids for agronomic characteristics, yield, and nutrient composition.**

Variety Information <sup>1)</sup>						Nutrient Composition <sup>2)</sup>													
Hybrid	COMPANY	Sorghum Type	Maturity	BMR	Male Sterile	% Crude Protein		% ADF		% NDF		% Lignin		% TDN		NEL Mcal/Lb		NEM Mcal/Lb	
GW 7828F bmr	Crosbyton Seed	F. Sorghum	M	Y	Y	6.6	b-m	29.4	a-d	49.5	a-f	3.8	d-g	69.7	a-d	0.68	a-e	0.70	a-g
GW X7181G bmr	Crosbyton Seed	Sorghum/Sudan	M	Y	Y	7.7	a-l	31.4	a-d	52.0	a-f	4.9	a-g	62.3	a-l	0.60	a-h	0.59	a-j
GW X7191G bmr	Crosbyton Seed	Sorghum/Sudan	M	Y	Y	7.9	a-k	30.1	a-d	52.2	a-f	5.2	a-g	67.7	a-i	0.65	a-g	0.67	a-h
Dividend BMR	Drussel Seed & Supply	F. Sorghum	ML	Y	N	8.3	a-h	27.7	a-d	47.9	a-f	3.9	d-g	65.7	a-k	0.65	a-h	0.64	a-j
Bonus-R BMR	Drussel Seed & Supply	Sorghum/Sudan	PS	Y	N	6.7	b-m	33.2	a-d	56.0	a-f	4.7	a-g	63.7	a-l	0.60	a-h	0.61	a-j
Garst 325	Garst Seed	F. Sorghum	L	N	N	7.2	a-m	28.8	a-d	49.3	a-f	4.8	a-g	63.3	a-l	0.62	a-h	0.61	a-j
Garst 320	Garst Seed	F. Sorghum	M	N	N	7.3	a-m	38.2	a	60.0	abc	6.1	a	58.3	f-l	0.53	d-h	0.53	f-j
Garst 348 BMR	Garst Seed	F. Sorghum	ML	Y	N	6.5	c-m	28.1	a-d	47.8	a-f	3.4	g	70	abc	0.70	abc	0.71	a-d
Garst N318-X	Garst Seed	F. Sorghum	M	N	N	7.1	a-m	31.2	a-d	50.5	a-f	4.6	a-g	62.7	a-l	0.61	a-h	0.60	a-j
Garst N340-X	Garst Seed	F. Sorghum	M	Y	N	7.9	a-k	28.6	a-d	47.5	a-f	4.2	b-g	64.7	a-l	0.64	a-h	0.63	a-j
FS5	Monsanto	F. Sorghum	M	N	N	6.8	a-m	30.3	a-d	50.5	a-f	4.7	a-g	65	a-l	0.64	a-h	0.64	a-j
FS 25E	Monsanto	F. Sorghum	L	N	N	6.9	a-m	29.9	a-d	50.3	a-f	4.6	a-g	65.7	a-k	0.65	a-h	0.64	a-j
DKS 59-09	Monsanto	F. Sorghum	M	N	N	8.4	a-h	30.4	a-d	50.7	a-f	4.4	a-g	67.7	a-i	0.66	a-g	0.67	a-h
4 Ever Green	Walter Moss Seed	F. Sorghum	PS	N	N	5.7	g-m	33.3	a-d	58.5	a-d	5.1	a-g	60.3	b-l	0.55	c-h	0.55	c-j
Mega Green	Walter Moss Seed	Sorghum/Sudan	PS	N	N	5.8	f-m	34.3	a-d	59.4	a-d	5.2	a-f	59.7	c-l	0.54	c-h	0.54	c-j
4 Ever Green BMR	Walter Moss Seed	F. Sorghum	PS	Y	N	6.5	c-m	32.5	a-d	58.1	a-d	4.2	b-g	67.3	a-i	0.62	a-h	0.65	a-i
Centruy BMR	Walter Moss Seed	Sorghum/Sudan	L	Y	N	6.9	a-m	31.4	a-d	53.1	a-f	4.8	a-g	62.3	a-l	0.60	a-h	0.59	a-j
Millennium	Walter Moss Seed	F. Sorghum	L	Y	N	8.1	a-j	26.0	bcd	45.1	c-f	3.6	fg	72	a	0.73	a	0.74	a
Su-2-LM	Walter Moss Seed	Sorghum/Sudan	L	N	N	5.5	i-m	32.6	a-d	56.1	a-f	5.3	a-f	58.7	e-l	0.55	c-h	0.53	f-j
NutriChoice II	NC+ Hybrids	F. Sorghum	ML	N	N	7.4	a-m	34.0	a-d	56.4	a-f	5.1	a-g	62.7	a-l	0.58	a-h	0.59	a-j
NutriTon II	NC+ Hybrids	F. Sorghum	ML	N	N	6.6	b-m	32.0	a-d	53.5	a-f	4.9	a-g	63.3	a-l	0.60	a-h	0.60	a-j
800HS	NC+ Hybrids	Sorghum/Sudan	PS	N	N	5.3	klm	36.4	ab	60.9	ab	5.2	a-g	57.7	h-l	0.51	e-h	0.51	hij
Penn 02 BMR	Pennington Seeds	F. Sorghum	M	Y	N	8.1	a-j	29.6	a-d	48.6	a-f	4.2	b-g	68	a-i	0.67	a-e	0.68	a-h
811F	Pioneer Hi-Bred Int., Inc.	F. Sorghum	PS	N	N	7.1	a-m	34.9	a-d	60.5	abc	5.2	a-g	61.7	a-l	0.55	b-h	0.57	a-j
979	Pioneer Hi-Bred Int., Inc.	Sorghum/Sudan	ML	N	Y	7.9	a-k	32.7	a-d	54.1	a-f	5.2	a-f	63	a-l	0.60	a-h	0.59	a-j
Silo 700D	Richardson Seeds, Ltd.	F. Sorghum	ML	N	N	7.3	a-m	31.3	a-d	52.7	a-f	4.9	a-g	64	a-l	0.61	a-h	0.61	a-j
Bundle King BMR	Richardson Seeds, Ltd.	F. Sorghum	L	Y	Y	5.9	e-m	31.6	a-d	55.9	a-f	4	c-g	68.3	a-h	0.64	a-h	0.67	a-h
Dairy Master BMR	Richardson Seeds, Ltd.	F. Sorghum	ML	Y	N	7.2	a-m	28.7	a-d	48.5	a-f	3.5	fg	70	abc	0.70	a-d	0.71	a-e
PaceSetter BMR	Richardson Seeds, Ltd.	F. Sorghum	PS	Y	N	6.8	b-m	33.2	a-d	57.7	a-e	4.1	b-g	66.6	a-i	0.62	a-h	0.65	a-i
Sweeter N Honey	Richardson Seeds, Ltd.	F. Sorghum	M	Y	N	8.2	a-i	30.1	a-d	49.6	a-f	4.2	b-g	67.3	a-i	0.66	a-g	0.66	a-h
Canex BMR 208	Sharp Brothers Seed	F. Sorghum	ME	Y	N	7.6	a-l	24.6	cd	42.4	ef	3.8	efg	70.7	ab	0.72	ab	0.73	ab
Silex BMR 501	Sharp Brothers Seed	F. Sorghum	M	Y	N	6.4	d-m	30.0	a-d	53.1	a-f	4	c-g	69.3	a-e	0.66	a-g	0.69	a-g
Canex	Sharp Brothers Seed	F. Sorghum	ME	N	Y	8.1	a-j	28.7	a-d	49.3	a-f	4	c-g	70.3	abc	0.69	a-d	0.71	abc
Grazex BMR 727	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	9.3	ab	27.0	bcd	46.4	b-f	4.2	b-g	66.3	a-j	0.67	a-f	0.66	a-h
Grazex BMR 782	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	8.6	a-e	28.9	a-d	50.5	a-f	4.9	a-g	64.3	a-l	0.63	a-h	0.63	a-j
Grazex BMR 718	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	6.5	c-m	31.5	a-d	52.3	a-f	5	a-g	62.7	a-l	0.61	a-h	0.60	a-j
Grazex BMR 719	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	8.4	a-h	30.0	a-d	50.2	a-f	4.6	a-g	67.3	a-i	0.66	a-g	0.67	a-h
BMR 200	Seed Resource	Sorghum/Sudan	M	Y	N	8.5	a-f	28.8	a-d	49.6	a-f	4.5	a-g	68.3	a-h	0.67	a-e	0.68	a-h
BMR 204	Seed Resource	Sorghum/Sudan	M	Y	N	7.7	a-l	29.3	a-d	50.2	a-f	4.6	a-g	64.7	a-l	0.64	a-h	0.63	a-j
BMR 206	Seed Resource	Sorghum/Sudan	M	Y	N	8.3	a-h	29.0	a-d	50.0	a-f	4.5	a-g	69.3	a-e	0.68	a-e	0.70	a-g
NK 300	Sorghum Partners, Inc.	F. Sorghum	M	N	N	8	a-k	29.6	a-d	48.5	a-f	4.9	a-g	62	a-l	0.61	a-h	0.59	a-j



Variety Information <sup>1)</sup>						Nutrient Composition <sup>2)</sup>													
Hybrid	COMPANY	Sorghum Type	Maturity	BMR	Male Sterile	% Crude Protein	% ADF	% NDF	% Lignin	% TDN	NEL Mcal/Lb	NEM Mcal/Lb							
HIKANE II	Sorghum Partners, Inc.	F. Sorghum	E	N	N	7.6	a-l	28.0	a-d	47.2	a-f	4.4	a-g	67.7	a-i	0.68	a-e	0.68	a-h
SS 405	Sorghum Partners, Inc.	F. Sorghum	L	N	N	4.7	m	37.1	ab	62.3	a	5.9	ab	54.7	l	0.48	h	0.47	j
SS 506	Sorghum Partners, Inc.	F. Sorghum	L	N	N	6.2	e-m	32.6	a-d	56.5	a-f	4.8	a-g	61.3	a-l	0.57	a-h	0.57	a-j
1990	Sorghum Partners, Inc.	F. Sorghum	PS	N	N	6.8	a-m	35.4	abc	60.7	abc	5.1	a-g	59.7	c-l	0.53	c-h	0.54	c-j
Sordan 79	Sorghum Partners, Inc.	Sorghum/Sudan	M	N	N	6.7	b-m	33.9	a-d	55.9	a-f	5.5	a-e	60	b-l	0.56	a-h	0.55	c-j
Sordan Headless	Sorghum Partners, Inc.	Sorghum/Sudan	PS	N	N	6.1	e-m	33.6	a-d	58.3	a-d	5.4	a-e	60.3	b-l	0.55	b-h	0.55	b-j
Trudan 8	Sorghum Partners, Inc.	Sudangrass	M	N	N	8.5	a-g	33.1	a-d	56.1	a-f	5.9	ab	60	b-l	0.56	a-h	0.55	b-j
Trudan Headless	Sorghum Partners, Inc.	Sudangrass	PS	N	N	5.4	j-m	34.9	a-d	60.6	abc	5.6	a-d	55.7	jkl	0.49	gh	0.48	ij
Trudan Headless BMR	Sorghum Partners, Inc.	Sudangrass	PS	Y	N	7.1	a-m	33.4	a-d	55.8	a-f	4.5	a-g	60.3	b-l	0.57	a-h	0.56	b-j
Super Sile 30	Triumph Seed	F. Sorghum	-	N	N	6.2	e-m	33.7	a-d	55.6	a-f	5.1	a-g	61.7	a-l	0.58	a-h	0.58	a-j
Sucrosse 5-R BMR	Warner Seeds, Inc.	Sorghum/Sudan	ME	Y	N	8.1	a-j	28.0	a-d	49.0	a-f	4.5	a-g	66.3	a-j	0.66	a-g	0.66	a-h
Sucrosse 6-R BMR	Warner Seeds, Inc.	F. Sorghum	M	Y	N	9.5	a	26.3	bcd	44.0	def	3.8	efg	69	a-f	0.70	abc	0.70	a-f
Sucrosse 9-R PS	Warner Seeds, Inc.	Sorghum/Sudan	PS	N	NA	6	e-m	34.9	a-d	59.9	abc	5.4	a-e	57.3	i-l	0.52	e-h	0.51	hij
Gro-N-Graze DREAM	Warner Seeds, Inc.	Sorghum/Sudan	L	N	N	5	lm	33.5	a-d	57.1	a-f	5.5	a-e	58.7	e-l	0.55	c-h	0.53	e-j
Nutrigreen BMR	Warner Seeds, Inc.	F. Sorghum	PS	Y	NA	5.8	f-m	33.3	a-d	58.8	a-d	4.3	b-g	67	a-i	0.61	a-h	0.65	a-i
2-Way 199PS	Warner Seeds, Inc.	F. Sorghum	PS	N	NA	6.1	e-m	34.7	a-d	58.5	a-d	5.1	a-g	58.7	e-l	0.54	c-h	0.53	d-j
2-Way F-103	Warner Seeds, Inc.	F. Sorghum	M	N	N	8.3	a-i	30.1	a-d	50.2	a-f	4.8	a-g	65	a-l	0.64	a-h	0.63	a-j
2-Way F-104	Warner Seeds, Inc.	F. Sorghum	ML	N	N	7.7	a-l	28.1	a-d	48.8	a-f	5	a-g	66.7	a-i	0.66	a-g	0.66	a-h
2-Way	Warner Seeds, Inc.	F. Sorghum	ML	N	N	5.9	e-m	34.6	a-d	57.1	a-f	5.1	a-g	58	g-l	0.54	c-h	0.52	g-j
2-Way SRS	Warner Seeds, Inc.	F. Sorghum	ML	N	N	6.4	d-m	31.5	a-d	52.3	a-f	5	a-g	60.7	b-l	0.59	a-h	0.57	a-j
Sweet Bee	Warner Seeds, Inc.	F. Sorghum	ME	N	N	7.9	a-k	26.9	bcd	45.3	c-f	4.1	c-g	66.3	a-j	0.67	a-e	0.67	a-h
Sweet Bee Sterile II	Warner Seeds, Inc.	F. Sorghum	ME	Y	Y	6.6	b-m	28.9	a-d	48.4	a-f	4.5	a-g	65.7	a-k	0.65	a-h	0.64	a-j
2-Way BMR	Warner Seeds, Inc.	F. Sorghum	M	Y	N	7.2	a-m	28.3	a-d	48.3	a-f	3.8	d-g	70	abc	0.70	a-d	0.71	a-d
RedTop Plus	Production Plus	F. Sorghum	ML	Y	N	7.8	a-l	27.9	a-d	46.3	b-f	3.9	c-g	67.3	a-i	0.68	a-e	0.67	a-h
Nutri Plus BMR	Production Plus	Sorghum/Sudan	ML	Y	N	9.2	abc	28.8	a-d	47.8	a-f	4.4	a-g	62.1	a-l	0.62	a-h	0.59	a-j
Sugar Graze Ultra	Coffey Seed Co.	Sorghum/Sudan	PS	N	N	6.1	e-m	33.1	a-d	56.3	a-f	5	a-g	60	b-l	0.56	a-h	0.55	c-j
MaxiGain	Coffey Seed Co.	Sorghum/Sudan	PS	N	N	5.7	h-m	36.1	ab	60.6	abc	5.5	a-e	55.3	kl	0.50	fgh	0.48	ij
Silmaker 6000	Frontier Seed Co.	F. Sorghum	M	N	N	7.1	a-m	33.0	a-d	54.5	a-f	5.7	abc	59	d-l	0.56	a-h	0.54	c-j
Silmaker 6500	Frontier Seed Co.	F. Sorghum	M	N	N	7.3	a-m	32.7	a-d	55.3	a-f	5.6	a-e	61.3	a-l	0.58	a-h	0.58	a-j
Silmaker 5700	Frontier Seed Co.	F. Sorghum	ML	N	N	8.2	a-i	33.9	a-d	55.3	a-f	5.1	a-g	61.3	a-l	0.58	a-h	0.58	a-j
A571 (check)	Monsanto (Asgrow)	Grain Sorghum	M	N	N	7.4	a-m	36.6	ab	59.0	a-d	5.1	a-g	61.7	a-l	0.56	b-h	0.58	a-j
8R18 (check)	NC+ Hybrids	Grain Sorghum	M	N	N	9.1	a-d	24.1	d	41.6	f	3.9	c-g	68.7	a-g	0.70	abc	0.70	a-g
P84G62 (check)	Pioneer Hi-Bred Int., Inc.	Grain Sorghum	ML	N	N	7.5	a-l	36.2	ab	57.9	a-e	5	a-g	61.3	a-l	0.57	a-h	0.57	a-j
LSD (P=.05)						1.496		6.064		8.516		0.985		5.962		0.093		0.097	
Standard Deviation						0.925		3.751		5.268		0.609		3.688		0.057		0.06	
CV						12.92		11.98		9.95		12.9		5.78		9.38		9.76	

<sup>1)</sup> Variety information provided by seed companies. Male sterile entries were cross pollinated by other entries.

<sup>2)</sup> Means followed by the same letter do not significantly differ at (P=0.05).

\* NA in lodging column. Lodging score was greater than 40% but was not recorded since variety was harvested late as indicated by % moisture.

**Table 2. 2005 Comparison of sorghum hybrids for agronomic characteristics, yield, and nutrient composition.**

Variety Information <sup>1)</sup>						Nutrient Composition <sup>2)</sup>													
Hybrid	COMPANY	Sorghum Type	Maturity	BMR	Male Sterile	NEG		% Ca		% P		% Mg		% K		% S		% IVTD	
GW 7828F bmr	Crosbyton Seed	F. Sorghum	M	Y	Y	0.43	a-g	0.25	a-f	0.22	ab	0.20	abc	1.31	a-f	0.11	a-j	82.3	abc
GW X7181G bmr	Crosbyton Seed	Sorghum/Sudan	M	Y	Y	0.33	a-k	0.41	a	0.20	ab	0.19	abc	1.13	c-f	0.12	a-h	74.0	b-m
GW X7191G bmr	Crosbyton Seed	Sorghum/Sudan	M	Y	Y	0.40	a-i	0.29	a-f	0.21	ab	0.16	a-d	1.33	a-f	0.09	b-l	77.7	a-k
Dividend BMR	Drussel Seed & Supply	F. Sorghum	ML	Y	N	0.38	a-j	0.32	a-f	0.23	ab	0.15	a-d	1.48	a-f	0.11	a-j	76.7	a-m
Bonus-R BMR	Drussel Seed & Supply	Sorghum/Sudan	PS	Y	N	0.35	a-k	0.28	a-f	0.19	ab	0.16	a-d	1.27	a-f	0.08	e-l	75.3	a-m
Garst 325	Garst Seed	F. Sorghum	L	N	N	0.34	a-k	0.31	a-f	0.22	ab	0.19	abc	1.36	a-f	0.11	a-j	75.3	a-m
Garst 320	Garst Seed	F. Sorghum	M	N	N	0.27	f-k	0.37	abc	0.18	ab	0.15	a-d	1.37	a-f	0.15	a	71.0	f-m
Garst 348 BMR	Garst Seed	F. Sorghum	ML	Y	N	0.44	a-d	0.26	a-f	0.21	ab	0.15	a-d	1.46	a-f	0.10	a-k	83.0	ab
Garst N318-X	Garst Seed	F. Sorghum	M	N	N	0.34	a-k	0.31	a-f	0.19	ab	0.14	a-d	1.43	a-f	0.10	a-k	74.7	a-m
Garst N340-X	Garst Seed	F. Sorghum	M	Y	N	0.37	a-k	0.37	abc	0.22	ab	0.18	a-d	1.24	a-f	0.13	a-e	78.3	a-j
FS5	Monsanto	F. Sorghum	M	N	N	0.37	a-k	0.28	a-f	0.20	ab	0.17	a-d	1.37	a-f	0.09	c-l	76.7	a-m
FS 25E	Monsanto	F. Sorghum	L	N	N	0.38	a-j	0.28	a-f	0.21	ab	0.17	a-d	1.42	a-f	0.09	c-l	76.7	a-m
DKS 59-09	Monsanto	F. Sorghum	M	N	N	0.40	a-i	0.33	a-f	0.23	ab	0.20	abc	1.48	a-f	0.13	a-e	80.3	a-h
4 Ever Green	Walter Moss Seed	F. Sorghum	PS	N	N	0.30	b-k	0.35	a-e	0.20	ab	0.13	a-d	1.42	a-f	0.08	f-l	71.7	d-m
Mega Green	Walter Moss Seed	Sorghum/Sudan	PS	N	N	0.29	c-k	0.29	a-f	0.19	ab	0.13	a-d	1.39	a-f	0.08	e-l	71.3	e-m
4 Ever Green BMR	Walter Moss Seed	F. Sorghum	PS	Y	N	0.39	a-i	0.36	a-e	0.21	ab	0.13	a-d	1.65	abc	0.09	b-l	80.3	a-h
Centruy BMR	Walter Moss Seed	Sorghum/Sudan	L	Y	N	0.33	a-k	0.27	a-f	0.20	ab	0.16	a-d	1.38	a-f	0.08	e-l	73.7	b-m
Millennium	Walter Moss Seed	F. Sorghum	L	Y	N	0.47	a	0.32	a-f	0.23	ab	0.21	ab	1.23	a-f	0.14	abc	84.7	a
Su-2-LM	Walter Moss Seed	Sorghum/Sudan	L	N	N	0.27	e-k	0.22	c-f	0.19	ab	0.14	a-d	1.31	a-f	0.07	h-l	70.7	g-m
NutriChoice II	NC+ Hybrids	F. Sorghum	ML	N	N	0.33	a-k	0.30	a-f	0.20	ab	0.15	a-d	1.49	a-f	0.12	a-h	75.0	a-m
NutriTon II	NC+ Hybrids	F. Sorghum	ML	N	N	0.34	a-k	0.35	a-f	0.21	ab	0.17	a-d	1.40	a-f	0.12	a-g	75.0	a-m
800HS	NC+ Hybrids	Sorghum/Sudan	PS	N	N	0.26	h-k	0.25	a-f	0.16	b	0.12	bcd	1.28	a-f	0.05	l	68.3	j-m
Penn 02 BMR	Pennington Seeds	F. Sorghum	M	Y	N	0.41	a-i	0.25	a-f	0.23	ab	0.17	a-d	1.24	a-f	0.12	a-g	80.3	a-h
811F	Pioneer Hi-Bred Int., Inc.	F. Sorghum	PS	N	N	0.32	a-k	0.20	def	0.20	ab	0.18	a-d	1.71	a	0.09	c-l	73.0	b-m
979	Pioneer Hi-Bred Int., Inc.	Sorghum/Sudan	ML	N	Y	0.33	a-k	0.37	a-d	0.20	ab	0.18	a-d	1.17	b-f	0.12	a-g	75.3	a-m
Silo 700D	Richardson Seeds, Ltd.	F. Sorghum	ML	N	N	0.35	a-k	0.33	a-f	0.20	ab	0.19	abc	1.30	a-f	0.11	a-k	75.7	a-m
Bundle King BMR	Richardson Seeds, Ltd.	F. Sorghum	L	Y	Y	0.40	a-i	0.31	a-f	0.20	ab	0.12	bcd	1.68	ab	0.09	c-l	81.3	a-f
Dairy Master BMR	Richardson Seeds, Ltd.	F. Sorghum	ML	Y	N	0.44	abc	0.29	a-f	0.23	ab	0.18	a-d	1.45	a-f	0.11	a-j	82.3	abc
PaceSetter BMR	Richardson Seeds, Ltd.	F. Sorghum	PS	Y	N	0.38	a-j	0.35	a-e	0.21	ab	0.16	a-d	1.58	a-e	0.09	c-l	78.1	a-k
Sweeter N Honey	Richardson Seeds, Ltd.	F. Sorghum	M	Y	N	0.40	a-i	0.24	b-f	0.19	ab	0.15	a-d	1.15	b-f	0.11	a-j	79.3	a-i
Canex BMR 208	Sharp Brothers Seed	F. Sorghum	ME	Y	N	0.45	ab	0.26	a-f	0.21	ab	0.20	abc	1.19	a-f	0.10	b-k	81.3	a-f
Silex BMR 501	Sharp Brothers Seed	F. Sorghum	M	Y	N	0.42	a-g	0.27	a-f	0.22	ab	0.14	a-d	1.60	a-e	0.09	c-l	81.7	a-e
Canex	Sharp Brothers Seed	F. Sorghum	ME	N	Y	0.44	abc	0.26	a-f	0.24	ab	0.17	a-d	1.56	a-e	0.12	a-h	83.0	ab
Grazex BMR 727	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	0.40	a-i	0.33	a-f	0.25	a	0.20	abc	1.42	a-f	0.12	a-f	77.0	a-l
Grazex BMR 782	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	0.36	a-k	0.41	ab	0.20	ab	0.17	a-d	1.23	a-f	0.12	a-g	75.3	a-m
Grazex BMR 718	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	0.34	a-k	0.30	a-f	0.20	ab	0.20	abc	1.10	def	0.10	b-k	74.7	a-m
Grazex BMR 719	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	0.40	a-i	0.37	a-d	0.22	ab	0.22	a	1.32	a-f	0.12	a-g	78.3	a-j
BMR 200	Seed Resource	Sorghum/Sudan	M	Y	N	0.42	a-h	0.30	a-f	0.22	ab	0.19	abc	1.29	a-f	0.11	a-i	79.0	a-i
BMR 204	Seed Resource	Sorghum/Sudan	M	Y	N	0.37	a-k	0.25	a-f	0.20	ab	0.20	abc	1.27	a-f	0.09	c-l	76.0	a-m
BMR 206	Seed Resource	Sorghum/Sudan	M	Y	N	0.43	a-f	0.30	a-f	0.22	ab	0.14	a-d	1.43	a-f	0.09	c-l	79.3	a-i
NK 300	Sorghum Partners, Inc.	F. Sorghum	M	N	N	0.33	a-k	0.30	a-f	0.20	ab	0.17	a-d	1.12	c-f	0.11	a-j	73.3	b-m

Variety Information <sup>1)</sup>						Nutrient Composition <sup>2)</sup>													
Hybrid	COMPANY	Sorghum Type	Maturity	BMR	Male Sterile	NEG		% Ca		% P		% Mg		% K		% S		% IVTD	
HIKANE II	Sorghum Partners, Inc.	F. Sorghum	E	N	N	0.41	a-i	0.30	a-f	0.22	ab	0.18	a-d	1.26	a-f	0.10	b-k	78.7	a-j
SS 405	Sorghum Partners, Inc.	F. Sorghum	L	N	N	0.21	k	0.20	def	0.16	b	0.13	a-d	1.40	a-f	0.06	kl	66.3	m
SS 506	Sorghum Partners, Inc.	F. Sorghum	L	N	N	0.31	a-k	0.24	c-f	0.19	ab	0.15	a-d	1.36	a-f	0.07	h-l	71.7	d-m
1990	Sorghum Partners, Inc.	F. Sorghum	PS	N	N	0.29	c-k	0.26	a-f	0.20	ab	0.16	a-d	1.60	a-e	0.08	f-l	71.3	e-m
Sordan 79	Sorghum Partners, Inc.	Sorghum/Sudan	M	N	N	0.30	b-k	0.26	a-f	0.19	ab	0.17	a-d	1.18	a-f	0.10	b-k	70.3	h-m
Sordan Headless	Sorghum Partners, Inc.	Sorghum/Sudan	PS	N	N	0.30	b-k	0.27	a-f	0.18	ab	0.13	a-d	1.58	a-e	0.07	h-l	71.3	e-m
Trudan 8	Sorghum Partners, Inc.	Sudangrass	M	N	N	0.29	b-k	0.32	a-f	0.20	ab	0.16	a-d	1.34	a-f	0.09	b-l	69.7	i-m
Trudan Headless	Sorghum Partners, Inc.	Sudangrass	PS	N	N	0.23	jk	0.27	a-f	0.18	ab	0.12	a-d	1.41	a-f	0.06	kl	67.7	klm
Trudan Headless BMR	Sorghum Partners, Inc.	Sudangrass	PS	Y	N	0.30	b-k	0.37	abc	0.19	ab	0.17	a-d	1.59	a-e	0.08	e-l	72.7	b-m
Super Sile 30	Triumph Seed	F. Sorghum	-	N	N	0.32	a-k	0.30	a-f	0.22	ab	0.16	a-d	1.46	a-f	0.09	c-l	73.3	b-m
Sucrosse 5-R BMR	Warner Seeds, Inc.	Sorghum/Sudan	ME	Y	N	0.39	a-i	0.27	a-f	0.22	ab	0.17	a-d	1.43	a-f	0.09	b-l	77.0	a-l
Sucrosse 6-R BMR	Warner Seeds, Inc.	F. Sorghum	M	Y	N	0.43	a-e	0.29	a-f	0.22	ab	0.18	a-d	1.11	def	0.12	a-f	81.0	a-g
Sucrosse 9-R PS	Warner Seeds, Inc.	Sorghum/Sudan	PS	N	NA	0.25	ijk	0.27	a-f	0.18	ab	0.14	a-d	1.54	a-e	0.07	g-l	69.0	i-m
Gro-N-Graze DREAM	Warner Seeds, Inc.	Sorghum/Sudan	L	N	N	0.27	e-k	0.18	f	0.18	ab	0.12	bcd	1.35	a-f	0.06	jkl	71.0	f-m
Nutrigreen BMR	Warner Seeds, Inc.	F. Sorghum	PS	Y	NA	0.39	a-i	0.38	abc	0.20	ab	0.10	cd	1.65	abc	0.07	f-l	79.3	a-i
2-Way 199PS	Warner Seeds, Inc.	F. Sorghum	PS	N	NA	0.28	d-k	0.28	a-f	0.18	ab	0.14	a-d	1.55	a-e	0.06	i-l	69.3	i-m
2-Way F-103	Warner Seeds, Inc.	F. Sorghum	M	N	N	0.37	a-k	0.34	a-f	0.23	ab	0.20	abc	1.40	a-f	0.12	a-f	77.0	a-l
2-Way F-104	Warner Seeds, Inc.	F. Sorghum	ML	N	N	0.39	a-i	0.35	a-e	0.20	ab	0.18	a-d	1.17	b-f	0.11	a-j	79.3	a-i
2-Way	Warner Seeds, Inc.	F. Sorghum	ML	N	N	0.27	g-k	0.27	a-f	0.20	ab	0.13	a-d	1.42	a-f	0.09	c-l	70.3	h-m
2-Way SRS	Warner Seeds, Inc.	F. Sorghum	ML	N	N	0.31	a-k	0.22	c-f	0.20	ab	0.15	a-d	1.18	a-f	0.08	d-l	72.0	c-m
Sweet Bee	Warner Seeds, Inc.	F. Sorghum	ME	N	N	0.40	a-i	0.28	a-f	0.20	ab	0.15	a-d	1.08	ef	0.12	a-h	77.3	a-l
Sweet Bee Sterile II	Warner Seeds, Inc.	F. Sorghum	ME	Y	Y	0.38	a-j	0.24	b-f	0.21	ab	0.17	a-d	1.13	c-f	0.10	b-k	76.3	a-m
2-Way BMR	Warner Seeds, Inc.	F. Sorghum	M	Y	N	0.44	abc	0.34	a-f	0.21	ab	0.17	a-d	1.40	a-f	0.10	a-k	82.0	a-d
RedTop Plus	Production Plus	F. Sorghum	ML	Y	N	0.40	a-i	0.28	a-f	0.23	ab	0.19	abc	1.28	a-f	0.11	a-j	79.0	a-i
Nutri Plus BMR	Production Plus	Sorghum/Sudan	ML	Y	N	0.33	a-k	0.30	a-f	0.23	ab	0.15	a-d	1.49	a-e	0.12	a-g	74.7	a-m
Sugar Graze Ultra	Coffey Seed Co.	Sorghum/Sudan	PS	N	N	0.30	b-k	0.36	a-e	0.19	ab	0.16	a-d	1.47	a-f	0.07	f-l	71.7	d-m
MaxiGain	Coffey Seed Co.	Sorghum/Sudan	PS	N	N	0.23	jk	0.29	a-f	0.19	ab	0.13	a-d	1.59	a-e	0.07	h-l	67.0	lm
Silmaker 6000	Frontier Seed Co.	F. Sorghum	M	N	N	0.28	c-k	0.30	a-f	0.18	ab	0.14	a-d	1.18	a-f	0.12	a-h	71.7	d-m
Silmaker 6500	Frontier Seed Co.	F. Sorghum	M	N	N	0.32	a-k	0.34	a-f	0.19	ab	0.18	a-d	1.29	a-f	0.13	a-d	74.3	a-m
Silmaker 5700	Frontier Seed Co.	F. Sorghum	ML	N	N	0.32	a-k	0.28	a-f	0.19	ab	0.16	a-d	1.31	a-f	0.14	ab	73.7	b-m
A571 (check)	Monsanto (Asgrow)	Grain Sorghum	M	N	N	0.31	a-k	0.30	a-f	0.21	ab	0.15	a-d	1.36	a-f	0.14	ab	75.3	a-m
8R18 (check)	NC+ Hybrids	Grain Sorghum	M	N	N	0.42	a-g	0.20	ef	0.20	ab	0.09	d	0.96	f	0.12	a-f	80.7	a-h
P84G62 (check)	Pioneer Hi-Bred Int., Inc.	Grain Sorghum	ML	N	N	0.32	a-k	0.34	a-f	0.21	ab	0.18	a-d	1.62	a-d	0.13	a-d	76.3	a-m
LSD (P=.05)						0.088		0.092		0.044		0.053		0.293		0.028		5.812	
Standard Deviation						0.055		0.057		0.027		0.033		0.181		0.018		3.595	
CV						15.6		19.14		13.28		20.35		13.25		17.61		4.75	

<sup>1)</sup> Variety information provided by seed companies. Male sterile entries were cross pollinated by other entries.

<sup>2)</sup> Means followed by the same letter do not significantly differ at (P=0.05).

\* NA in lodging column. Lodging score was greater than 40% but was not recorded since variety was harvested late as indicated by % moisture.

**Table 2. 2005 Comparison of sorghum hybrids for agronomic characteristics, yield, and nutrient composition.**

Variety Information <sup>1)</sup>											
Hybrid	COMPANY	Sorghum Type	Maturity	BMR	Male Sterile	Hay Crop Milk/Ton		Relative Forage Quality		Relative Feed Value	
GW 7828F bmr	Crosbyton Seed	F. Sorghum	M	Y	Y	2935	a-f	136	a-i	125	a-d
GW X7181Gbmr	Crosbyton Seed	Sorghum/Sudan	M	Y	Y	2544	a-j	122	a-i	117	a-d
GW X7191Gbmr	Crosbyton Seed	Sorghum/Sudan	M	Y	Y	2854	a-h	142	a-h	119	a-d
Dividend BMR	Drussel Seed & Supply	F. Sorghum	ML	Y	N	2749	a-j	133	a-i	131	a-d
Bonus-R BMR	Drussel Seed & Supply	Sorghum/Sudan	PS	Y	N	2592	a-j	122	a-i	105	bcd
Garst 325	Garst Seed	F. Sorghum	L	N	N	2632	a-j	120	a-i	127	a-d
Garst 320	Garst Seed	F. Sorghum	M	N	N	2252	e-j	107	c-i	92	d
Garst 348 BMR	Garst Seed	F. Sorghum	ML	Y	N	3005	a-d	137	a-i	131	a-d
Garst N318-X	Garst Seed	F. Sorghum	M	N	N	2581	a-j	120	a-i	122	a-d
Garst N340-X	Garst Seed	F. Sorghum	M	Y	N	2723	a-j	130	a-i	132	a-d
FS5	Monsanto	F. Sorghum	M	N	N	2725	a-j	125	a-i	122	a-d
FS 25E	Monsanto	F. Sorghum	L	N	N	2779	a-j	130	a-i	121	a-d
DKS 59-09	Monsanto	F. Sorghum	M	N	N	2789	a-j	140	a-h	120	a-d
4 Ever Green	Walter Moss Seed	F. Sorghum	PS	N	N	2367	b-j	103	c-i	100	bcd
Mega Green	Walter Moss Seed	Sorghum/Sudan	PS	N	N	2336	c-j	102	c-i	98	cd
4 Ever Green BMR	Walter Moss Seed	F. Sorghum	PS	Y	N	2723	a-j	129	a-i	102	bcd
Centruy BMR	Walter Moss Seed	Sorghum/Sudan	L	Y	N	2548	a-j	118	b-i	114	a-d
Millennium	Walter Moss Seed	F. Sorghum	L	Y	N	3140	a	154	abc	143	a-d
Su-2-LM	Walter Moss Seed	Sorghum/Sudan	L	N	N	2316	c-j	98	d-i	106	bcd
NutriChoice II	NC+ Hybrids	F. Sorghum	ML	N	N	2497	a-j	120	b-i	106	bcd
NutriTon II	NC+ Hybrids	F. Sorghum	ML	N	N	2594	a-j	119	b-i	112	bcd
800HS	NC+ Hybrids	Sorghum/Sudan	PS	N	N	2184	g-j	94	f-i	92	d
Penn 02 BMR	Pennington Seeds	F. Sorghum	M	Y	N	2872	a-g	139	a-i	134	a-d
811F	Pioneer Hi-Bred Int., Inc.	F. Sorghum	PS	N	N	2410	a-j	116	c-i	95	d
979	Pioneer Hi-Bred Int., Inc.	Sorghum/Sudan	ML	N	Y	2528	a-j	123	a-i	109	bcd
Silo 700D	Richardson Seeds, Ltd.	F. Sorghum	ML	N	N	2644	a-j	125	a-i	115	a-d
Bundle King BMR	Richardson Seeds, Ltd.	F. Sorghum	L	Y	Y	2834	a-h	130	a-i	107	bcd
Dairy Master BMR	Richardson Seeds, Ltd.	F. Sorghum	ML	Y	N	2993	a-e	143	a-h	129	a-d
PaceSetter BMR	Richardson Seeds, Ltd.	F. Sorghum	PS	Y	N	2685	a-j	129	a-i	101	bcd
Sweeter N Honey	Richardson Seeds, Ltd.	F. Sorghum	M	Y	N	2813	a-i	150	a-d	126	a-d
Canex BMR 208	Sharp Brothers Seed	F. Sorghum	ME	Y	N	3111	ab	144	a-f	153	ab
Silex BMR 501	Sharp Brothers Seed	F. Sorghum	M	Y	N	2928	a-g	137	a-i	116	a-d
Canex	Sharp Brothers Seed	F. Sorghum	ME	N	Y	3041	abc	153	abc	128	a-d
Grazex BMR 727	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	2814	a-i	144	a-g	136	a-d
Grazex BMR 782	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	2672	a-j	131	a-i	126	a-d
Grazex BMR 718	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	2582	a-j	116	c-i	114	a-d
Grazex BMR 719	Sharp Brothers Seed	Sorghum/Sudan	ME	Y	N	2829	a-h	142	a-h	122	a-d
BMR 200	Seed Resource	Sorghum/Sudan	M	Y	N	2913	a-g	147	a-f	126	a-d
BMR 204	Seed Resource	Sorghum/Sudan	M	Y	N	2710	a-j	129	a-i	123	a-d
BMR 206	Seed Resource	Sorghum/Sudan	M	Y	N	2940	a-f	149	a-e	124	a-d
NK 300	Sorghum Partners, Inc.	F. Sorghum	M	N	N	2607	a-j	124	a-i	131	a-d

Variety Information <sup>1)</sup>											
Hybrid	COMPANY	Sorghum Type	Maturity	BMR	Male Sterile	Hay Crop Milk/Ton		Relative Forage Quality		Relative Feed Value	
HIKANE II	Sorghum Partners, Inc.	F. Sorghum	E	N	N	2902	a-g	138	a-i	133	a-d
SS 405	Sorghum Partners, Inc.	F. Sorghum	L	N	N	2071	ij	86	i	90	d
SS 506	Sorghum Partners, Inc.	F. Sorghum	L	N	N	2482	a-j	112	c-i	105	bcd
1990	Sorghum Partners, Inc.	F. Sorghum	PS	N	N	2326	c-j	109	c-i	94	d
Sordan 79	Sorghum Partners, Inc.	Sorghum/Sudan	M	N	N	2416	a-j	111	c-i	105	bcd
Sordan Headless	Sorghum Partners, Inc.	Sorghum/Sudan	PS	N	N	2390	b-j	107	c-i	100	bcd
Trudan 8	Sorghum Partners, Inc.	Sudangrass	M	N	N	2395	a-j	120	a-i	105	bcd
Trudan Headless	Sorghum Partners, Inc.	Sudangrass	PS	N	N	2120	hij	90	ghi	95	d
Trudan Headless BMR	Sorghum Partners, Inc.	Sudangrass	PS	Y	N	2397	a-j	112	c-i	105	bcd
Super Sile 30	Triumph Seed	F. Sorghum	-	N	N	2499	a-j	111	c-i	110	bcd
Sucrosse 5-R BMR	Warner Seeds, Inc.	Sorghum/Sudan	ME	Y	N	2812	a-i	137	a-i	128	a-d
Sucrosse 6-R BMR	Warner Seeds, Inc.	F. Sorghum	M	Y	N	3018	a-d	170	ab	152	abc
Sucrosse 9-R PS	Warner Seeds, Inc.	Sorghum/Sudan	PS	N	NA	2209	f-j	98	d-i	96	d
Gro-N-Graze DREAM	Warner Seeds, Inc.	Sorghum/Sudan	L	N	N	2324	c-j	95	e-i	102	bcd
Nutrigreen BMR	Warner Seeds, Inc.	F. Sorghum	PS	Y	NA	2735	a-j	125	a-i	100	bcd
2-Way 199PS	Warner Seeds, Inc.	F. Sorghum	PS	N	NA	2307	c-j	104	c-i	98	cd
2-Way F-103	Warner Seeds, Inc.	F. Sorghum	M	N	N	2694	a-j	133	a-i	122	a-d
2-Way F-104	Warner Seeds, Inc.	F. Sorghum	ML	N	N	2815	a-i	134	a-i	128	a-d
2-Way	Warner Seeds, Inc.	F. Sorghum	ML	N	N	2279	d-j	100	c-i	102	bcd
2-Way SRS	Warner Seeds, Inc.	F. Sorghum	ML	N	N	2514	a-j	113	c-i	116	a-d
Sweet Bee	Warner Seeds, Inc.	F. Sorghum	ME	N	N	2860	a-h	136	a-i	140	a-d
Sweet Bee Sterile II	Warner Seeds, Inc.	F. Sorghum	ME	Y	Y	2761	a-j	125	a-i	128	a-d
2-Way BMR	Warner Seeds, Inc.	F. Sorghum	M	Y	N	3008	a-d	141	a-h	134	a-d
RedTop Plus	Production Plus	F. Sorghum	ML	Y	N	2865	a-h	137	a-i	136	a-d
Nutri Plus BMR	Production Plus	Sorghum/Sudan	ML	Y	N	2556	a-j	127	a-i	130	a-d
Sugar Graze Ultra	Coffey Seed Co.	Sorghum/Sudan	PS	N	N	2402	a-j	107	c-i	105	bcd
MaxiGain	Coffey Seed Co.	Sorghum/Sudan	PS	N	N	2048	j	90	hi	93	d
Silmaker 6000	Frontier Seed Co.	F. Sorghum	M	N	N	2360	c-j	110	c-i	112	bcd
Silmaker 6500	Frontier Seed Co.	F. Sorghum	M	N	N	2465	a-j	117	b-i	107	bcd
Silmaker 5700	Frontier Seed Co.	F. Sorghum	ML	N	N	2452	a-j	121	a-i	110	bcd
A571 (check)	Monsanto (Asgrow)	Grain Sorghum	M	N	N	2387	b-j	115	c-i	97	d
8R18 (check)	NC+ Hybrids	Grain Sorghum	M	N	N	2991	a-e	174	a	167	a
P84G62 (check)	Pioneer Hi-Bred Int., Inc.	Grain Sorghum	ML	N	N	2436	a-j	118	b-i	99	bcd
LSD (P=.05)						409.443		29.385		29.633	
Standard Deviation						253.265		18.177		18.33	
CV						9.66		14.62		15.78	

<sup>1)</sup> Variety information provided by seed companies. Male sterile entries were cross pollinated by other entries.

<sup>2)</sup> Means followed by the same letter do not significantly differ at (P=0.05).

\* NA in lodging column. Lodging score was greater than 40% but was not recorded since variety was harvested late as indicated by % moisture.