

## 2011 Limited Irrigated Texas Panhandle Sorghum Hay Trial

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### Introduction

The trial consisted of 32 entries that included hybrids with the brown midrib (BMR) and photoperiod sensitive (PS) traits. Two harvests were made, with the first cutting occurring 75 days after planting on August 4<sup>th</sup> and 5<sup>th</sup> and the second cutting on November 3<sup>rd</sup> and 4<sup>th</sup>. The first harvest was delayed more than usual because of the extreme drought experienced in 2011. Percent heading for each hybrid is reported just prior to harvest. The objective of this study was to compare hybrid yields after both the first and second cuttings, as well as the total yield from both cuttings. In addition, nutrient analyses of hybrids were compared after each harvest.

### Methods and Materials

All hybrids were planted with a John Deere Max-Emerge planter equipped with seed cones. Plots consisted of two 25-ft long, 30-inch wide raised beds. Each hybrid was planted three times in a randomized block design. Because of the extreme drought, plots were irrigated three times during the season with a total of 8.5 inches of water. Rainfall totaled less than 2 inches during the growing season with no single rainfall event totaling more than 0.5 inches. Harvest was achieved with a Carter Harvester. Immediately following each harvest a fresh weight was obtained. A subsample of the chopped plants was collected to determine percent moisture at harvest. Following drying, the samples were stored for shipping to Dairyland Laboratories, Arcadia, WI for forage quality analysis. Other cultural practices and study information are listed below:

Trial Location:	Bush farm located one mile north of Bushland, TX
Cooperator:	Texas AgriLife Research
Previous Crop:	Fallow
Soil Type:	Pullman Clay Loam, pH = 7.4
Plot Size:	Two, 30 inch rows by 25 ft
Replications:	3
Study Design:	Randomized complete block
Planting Date:	May 19 <sup>th</sup> , 2011
Planting Rate:	100,000 seed/acre
Seed Method:	John Deere Max-Emerge planter with seed cones.
Fertilizer:	Applied 50 lb/acre N and 50 lb/acre P <sub>2</sub> O <sub>5</sub> based on soil test results.
Herbicide:	One lb/acre atrazine applied five days after planting
Irrigation:	2.8 inches on July 19 <sup>th</sup> , 3.7 inches after first cutting on August 9 <sup>th</sup> , 1.9 inches on September 2 <sup>nd</sup> .

### Nutrient analyses:

Crude Protein:	6.25 * % total nitrogen
TDN:	Estimate of total digestible nutrients

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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
NEL:	Estimate of Net Energy for lactation
NEM:	Estimate of Net Energy for maintenance
NEG:	Estimate of Net Energy for gain
IVTD:	In Vitro True Digestibility; positively related to energy availability
NDFD:	Neutral Detergent Fiber Digestibility, digestible NDF, %: This is a measure of fiber digestibility that is determined from the IVTD analysis.
RFV:	Relative Feed Value is an index for comparing forages based on digestibility and intake potential. RFV is calculated from ADF and NDF. An RFV of 100 is considered the average score and represents alfalfa hay containing 41% ADF and 53% NDF on a dry matter digestibility.
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.
Milk lbs/ton:	A projection of potential milk yield per ton of forage dry matter.

## Results and Discussion

A summary of yield and nutrient composition for the first cutting is reported in Table 1. Entries were grouped by BMR and PS type. Stand establishment was good with all hybrids. The first cutting was made on August 4<sup>th</sup> and 5<sup>th</sup>, 75 days after planting. This was a few days later than when we generally make our first harvest. Sorghum growth was delayed due to the extreme heat and drought experienced during June and July. At the time of harvest, average plant moisture was 70% and only a few hybrids had reached the heading stage. Dry matter yield ranged from a low of 1.25 ton/acre with Sweeter N Honey BMR to a high of 2.46 ton/acre with Sordan II. The test mean was 1.8 ton/acre.

When comparing hybrid types, the nonBMR hybrids averaged 2.04 ton/acre, while the BMR entries averaged 1.76 ton/acre, or 13.7 % less. The PS BMR hybrids had a similar average yield (1.75 ton/acre) to the BMR hybrids. Average digestibility was slightly less with the nonBMR hybrids compared to the BMRs based on % IVTD and % NDFD.

Variability in the yield data was somewhat high in the second cutting, resulting in no significant differences at the P=0.05 level (Table 2). However, yield ranged from a low of 1.42 ton/acre with Sweeter N Honey BMR to a high of 3.11 ton/acre with Sordan Headless. The nonBMR and PS BMR hybrids on average yielded about 0.3 ton/acre more than the BMR hybrids. There were no major differences in forage digestibility with the exception of the sudan hybrid Trudan 8 which had a significantly lower % IVTD and % NDFD than the test mean. The lower digestibility of Trudan 8 was likely because its maturity was further along than the others with 50% of the plants headed at the time of harvest.

The average total seasonal yield was 4.15 ton/acre. Six hybrids yielded more than 4.7 ton/acre (Figure 1). These were Sordan 79 (5.1 ton/acre), AS453 (4.91 ton/acre), Sordan Headless (4.81 ton/acre), AS6501 (4.75 ton/acre), Grazex III (4.73 ton/acre) and Trudan 8 (4.73 ton/acre).

**Table 1. 2011 sorghum Hay Trial, 1st Cutting, 75 Days after Planting.**

Hybrid	Company	Type	Mat.	BMR	Male Sterile	% Heading	Height ft	% Moisture	DM Yield Tons/Ac	% CP	% ADF	% NDF	% TDN	% Lignin	% IVTD NIR	% NDFD NIR
BH 111S	B-H Genetics	SS	M	N	N	20.0 de	3.8 bc	69 c-g	2.11 abc	14.4 a-e	32.4	48.8	58.5	4.12	78.6	56.2
Sweeter 'N Honey II	Richardson Seeds, Ltd.	SS	L	N	N	0.0 g	2.8 efg	71 b-f	1.93 a-e	14.0 b-f	33.4	49.9	57.3	3.68	79.0	58.0
Grazex III	Sharp Bros Seed Co	SS	M	N	Y	11.7 f	3.8 bc	69 c-g	1.81 b-f	13.4 def	34.6	51.2	56.2	4.28	77.2	55.5
Sordan 79	Sorghum Partners, LLC	SS	M	N	N	16.7 def	4.2 ab	65 g	2.46 a	15.1 abc	31.2	46.5	56.9	3.3	82.4	62.1
Sordan Headless	Sorghum Partners, LLC	SS	M	N	N	0.0 g	2.5 fgh	71 b-f	1.7 c-g	14.4 a-e	32.3	50.3	57.1	3.63	79.3	58.9
Trudan 8	Sorghum Partners, LLC	SU	E	N	N	93.3 a	4.5 a	66 fg	2.32 ab	12.5 f	32.1	49.2	58.9	3.55	78.5	56.4
Trudan Headless	Sorghum Partners, LLC	SU	E	N	N	0.0 g	3.0 def	71 b-f	1.93 a-e	15.7 a	33.0	49.1	55.3	4.78	78.4	56.1
<b>Non BMR AVG</b>						<b>20.2</b>	<b>3.5</b>	<b>69</b>	<b>2.04</b>	<b>14.2</b>	<b>32.7</b>	<b>49.3</b>	<b>57.2</b>	<b>3.91</b>	<b>79.1</b>	<b>57.6</b>
AS453	AR-B Seeds, Inc	SS	M	Y	N	0.0 g	2.3 gh	67 fg	1.98 a-e	14.6 a-e	32.8	48.6	55.3	3.24	82.9	65.1
AR-B Sweet King BMR	AR-B Seeds, Inc	SS	ME	Y	N	50.0 b	3.5 cd	70 b-f	1.76 c-g	13.5 c-f	31.7	47.9	56.8	3.18	82.4	63.2
BH 201 SB	B-H Genetics	SS	M	Y	N	1.3 g	3.2 de	70 b-f	2 a-e	15.1 abc	33.2	48.8	56.5	3.05	82.3	64.0
BH 211 SBD	B-H Genetics	SS	ML	Y	N	0.0 g	2.3 gh	69 b-g	1.57 d-g	15.9 a	29.9	46.7	61.9	2.67	83.3	64.3
BH 221 SB	B-H Genetics	SS	ML	Y	N	4.0 g	3.2 de	73 a-d	1.28 fg	16.0 a	31.1	46.8	59.8	3.29	82.2	62.0
BH 231 SB	B-H Genetics	SS	M	Y	N	0.0 g	2.7 e-h	74 ab	1.49 efg	15.0 a-d	35.1	50.3	54.4	3.87	79.0	58.1
2017 BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	0.0 g	2.5 fgh	68 efg	2.07 a-d	14.6 a-e	32.5	49.1	59.4	3.32	80.4	60.1
3017 BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	0.0 g	2.8 efg	68 d-g	1.91 b-e	14.3 a-e	32.8	48.9	57.8	3.27	81.4	62.1
2017 XL BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	0.7 g	3.2 de	70 b-f	2.15 abc	13.3 ef	32.3	48.6	57.9	2.94	81.6	62.2
DSS Bonus BMR D	Drussel Seed & Supply, Inc	SS	L	Y	N	0.0 g	2.5 fgh	70 b-g	1.64 c-g	15.4 ab	32.3	48.9	57.6	3.11	81.9	63.1
Greentreat A+	Forage First	SS	L	Y	N	15.0 ef	2.8 efg	67 fg	2.04 a-d	14.7 a-e	31.0	47.2	60.8	3.36	80.9	59.5
Greentreat Dynamo	Forage First	SS	ML	Y	N	0.0 g	2.2 h	67 fg	1.89 b-e	15.7 a	31.7	48.5	60.5	3.1	81.4	61.6
Sweeter 'N Honey BMR Red	Richardson Seeds, Ltd.	SS	M	Y	N	0.7 g	2.5 fgh	69 b-g	1.68 c-g	14.7 a-e	32.4	51.2	59.3	3.27	80.7	62.2
Sweeter 'N Honey BMR	Richardson Seeds, Ltd.	SS	M	Y	N	1.3 g	2.8 efg	76 a	1.25 g	14.8 a-e	34.6	52.0	55.7	3.42	79.5	60.7
Sweeter 'N Honey II BMR Red	Richardson Seeds, Ltd.	SS	L	Y	N	2.3 g	2.3 gh	72 a-e	1.56 d-g	15.7 a	32.0	48.8	58.3	3.54	80.9	60.8
Sweeter 'N Honey II BMR	Richardson Seeds, Ltd.	SS	L	Y	N	0.0 g	2.5 fgh	71 b-f	1.82 b-f	15.2 abc	34.3	49.4	52.8	3.51	82.2	64.3
Grazex BMR 718	Sharp Bros Seed Co	SS	ME	Y	Y	21.7 cd	3.5 cd	67 fg	1.77 c-g	15.2 ab	31.5	48.7	59.9	3.21	81.2	61.6
Grazex BMR 301	Sharp Bros Seed Co	SS	M	Y	Y	26.7 c	4.0 abc	69 b-g	1.89 b-e	12.6 f	35.4	52.1	54.7	3.83	78.3	58.9
Grazex BMR 801	Sharp Bros Seed Co	SS	M	Y	Y	2.0 g	3.8 bc	71 b-f	1.67 c-g	15.5 ab	31.3	47.8	58.4	3.2	83.5	65.5
<b>BMR AVG</b>						<b>6.6</b>	<b>2.9</b>	<b>70</b>	<b>1.76</b>	<b>14.8</b>	<b>32.5</b>	<b>49.0</b>	<b>57.8</b>	<b>3.28</b>	<b>81.4</b>	<b>62.1</b>
AS6501	Advanta	SS	PS	Y	N	0.7 g	3.2 de	72 a-e	1.74 c-g	14.6 a-e	35.9	51.6	53.0	3.81	78.6	59.1
XS6502 (X)	Advanta	SS	PS	Y	N	0.0 g	2.8 efg	70 b-f	2.02 a-e	15.4 ab	30.6	47.2	61.2	2.95	82.1	62.2
XS6503 (X)	Advanta	SS	PS	Y	N	0.0 g	2.3 gh	73 a-e	1.53 d-g	15.5 ab	33.6	49.0	55.5	3.78	79.8	58.9
Greentreat Plus	Forage First	SS	PS	Y	N	1.3 g	3.0 def	69 b-g	1.77 c-g	15.2 abc	32.7	49.8	59.0	3.45	81.4	62.7
XS 1101	Forage First	SS	PS	Y	N	0.0 g	3.0 def	72 a-e	1.78 c-g	14.4 a-e	31.1	47.9	58.2	2.87	83.0	64.4
XS 1102	Forage First	SS	PS	Y	N	0.0 g	2.8 efg	73 abc	1.66 c-g	14.6 a-e	31.9	47.4	59.8	3.3	81.6	61.2
<b>PS BMR AVG</b>						<b>0.3</b>	<b>2.9</b>	<b>72</b>	<b>1.75</b>	<b>14.9</b>	<b>32.6</b>	<b>48.8</b>	<b>57.8</b>	<b>3.36</b>	<b>81.1</b>	<b>61.4</b>
<b>Test Mean</b>						8.4	3.0	70.0	1.8	14.7	32.6	49.0	57.6	3.4	80.8	61.0
<b>CV</b>						39.73	11.6	4.4	18.07	6.96	6.54	4.87	6.31	17.76	3.27	6.63
<b>Treatment Prob(F)</b>						0.0001	0.0001	0.0115	0.0137	0.0023	0.145	0.2684	0.261	0.0839	0.2127	0.13

Means followed by same letter do not significantly differ (P=.05, LSD)

Type: SS = sorghum/sudangrass, SU = sudangrass

**Table 1. 2011 sorghum Hay Trial, 1st Cutting, 75 Days after Planting.**

Hybrid	Company	Type	Mat.	BMR	Male Sterile	NEL 100 Mcal/lb	NEG 100 Mcal/lb	NEM 100 Mcal/lb	% Ca	% P	% Mg	% K	% S	Rel. Feed Value	Rel. Forage Qual.	Milk lbs/Ton
BH 111S	B-H Genetics	SS	M	N	N	59.7	33.2	59.2	0.32	0.31 c-g	0.17	2.33	0.20	121	134	1,790
Sweeter 'N Honey II	Richardson Seeds, Ltd.	SS	L	N	N	58.3	31.5	57.4	0.32	0.30 d-h	0.22	2.31	0.20	118	131	1,819
Grazex III	Sharp Bros Seed Co	SS	M	N	Y	57.1	29.7	55.3	0.31	0.30 d-h	0.21	2.29	0.18	113	122	1,768
Sordan 79	Sorghum Partners, LLC	SS	M	N	N	58.0	31.6	57.4	0.30	0.31 b-g	0.21	2.44	0.20	129	148	1,869
Sordan Headless	Sorghum Partners, LLC	SS	M	N	N	58.1	31.4	57.2	0.30	0.32 b-g	0.21	2.60	0.20	119	133	1,845
Trudan 8	Sorghum Partners, LLC	SU	E	N	N	60.1	33.1	59.1	0.29	0.26 h	0.21	1.97	0.17	121	131	1,747
Trudan Headless	Sorghum Partners, LLC	SU	E	N	N	56.1	29.4	55.0	0.36	0.33 b-f	0.28	2.39	0.22	120	129	1,823
<b>Non BMR AVG</b>						<b>58.2</b>	<b>31.4</b>	<b>57.2</b>	<b>0.31</b>	<b>0.30</b>	<b>0.22</b>	<b>2.33</b>	<b>0.20</b>	<b>120</b>	<b>133</b>	<b>1,809</b>
AS453	AR-B Seeds, Inc	SS	M	Y	N	56.1	29.2	54.8	0.29	0.34 a-d	0.17	2.67	0.21	122	145	1,955
AR-B Sweet King BMR	AR-B Seeds, Inc	SS	ME	Y	N	57.8	30.8	56.6	0.30	0.28 fgh	0.19	2.06	0.18	125	145	1,853
BH 201 SB	B-H Genetics	SS	M	Y	N	57.4	31.1	56.9	0.35	0.31 d-g	0.25	2.32	0.21	121	143	1,990
BH 211 SBD	B-H Genetics	SS	ML	Y	N	63.5	38.5	65.0	0.29	0.33 b-f	0.21	2.60	0.22	131	162	2,064
BH 221 SB	B-H Genetics	SS	ML	Y	N	61.2	35.7	62.0	0.32	0.32 b-g	0.20	2.36	0.22	129	153	2,031
BH 231 SB	B-H Genetics	SS	M	Y	N	55.1	27.9	53.5	0.34	0.38 a	0.19	2.77	0.20	114	125	1,779
2017 BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	60.7	34.6	60.7	0.30	0.31 b-g	0.19	2.40	0.19	121	142	1,927
3017 BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	58.9	32.5	58.4	0.32	0.30 d-h	0.20	2.20	0.20	121	142	1,979
2017 XL BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	59.0	32.2	58.1	0.31	0.28 gh	0.22	2.12	0.17	123	143	1,844
DSS Bonus BMR D	Drussel Seed & Supply, Inc	SS	L	Y	N	58.7	32.6	58.5	0.34	0.32 b-g	0.22	2.55	0.22	122	144	2,011
Greentreat A+	Forage First	SS	L	Y	N	62.3	36.5	62.9	0.30	0.31 d-g	0.18	2.37	0.20	128	149	1,870
Greentreat Dynamo	Forage First	SS	ML	Y	N	62.0	36.6	62.9	0.32	0.33 a-e	0.19	2.56	0.22	123	148	2,066
Sweeter 'N Honey BMR Red	Richardson Seeds, Ltd.	SS	M	Y	N	60.6	34.5	60.7	0.34	0.31 d-g	0.24	2.35	0.21	116	141	2,172
Sweeter 'N Honey BMR	Richardson Seeds, Ltd.	SS	M	Y	N	56.6	29.7	55.4	0.40	0.32 b-g	0.26	2.25	0.21	112	129	1,878
Sweeter 'N Honey II BMR Red	Richardson Seeds, Ltd.	SS	L	Y	N	59.4	33.5	59.6	0.34	0.33 b-e	0.24	2.53	0.22	122	143	2,030
Sweeter 'N Honey II BMR	Richardson Seeds, Ltd.	SS	L	Y	N	53.3	25.9	51.3	0.35	0.34 a-d	0.22	2.63	0.21	118	136	1,935
Grazex BMR 718	Sharp Bros Seed Co	SS	ME	Y	Y	61.3	35.6	61.8	0.28	0.30 d-h	0.23	2.30	0.21	124	148	2,045
Grazex BMR 301	Sharp Bros Seed Co	SS	M	Y	Y	55.4	27.4	52.9	0.30	0.29 e-h	0.20	2.27	0.18	111	124	1,755
Grazex BMR 801	Sharp Bros Seed Co	SS	M	Y	Y	59.5	33.7	59.7	0.29	0.31 b-g	0.22	2.42	0.21	126	155	2,118
<b>BMR AVG</b>						<b>58.9</b>	<b>32.5</b>	<b>58.5</b>	<b>0.32</b>	<b>0.32</b>	<b>0.21</b>	<b>2.41</b>	<b>0.20</b>	<b>121</b>	<b>143</b>	<b>1,963</b>
AS6501	Advanta	SS	PS	Y	N	53.5	25.8	51.2	0.33	0.35 abc	0.22	2.56	0.19	111	122	1,758
XS6502 (X)	Advanta	SS	PS	Y	N	62.7	37.3	63.7	0.30	0.33 b-e	0.18	2.59	0.21	128	155	2,033
XS6503 (X)	Advanta	SS	PS	Y	N	56.3	29.4	55.1	0.36	0.36 ab	0.22	2.67	0.22	120	134	1,806
Greentreat Plus	Forage First	SS	PS	Y	N	60.2	34.3	60.4	0.35	0.31 b-g	0.21	2.47	0.21	118	146	2,098
XS 1101	Forage First	SS	PS	Y	N	59.3	32.9	58.9	0.30	0.30 d-h	0.19	2.42	0.19	126	151	1,969
XS 1102	Forage First	SS	PS	Y	N	61.1	35.1	61.3	0.31	0.31 d-g	0.20	2.24	0.19	126	150	1,994
<b>PS BMR AVG</b>						<b>58.9</b>	<b>32.5</b>	<b>58.4</b>	<b>0.33</b>	<b>0.33</b>	<b>0.20</b>	<b>2.49</b>	<b>0.20</b>	<b>122</b>	<b>143</b>	<b>1,943</b>
<b>Test Mean</b>						58.7	32.3	58.2	0.3	0.3	0.2	2.4	0.2	121.1	140.7	1925.7
<b>CV</b>						6.89	15.17	9.16	18.34	8.7	16.66	11.3	9.34	6.86	10.15	9.56
<b>Treatment Prob(F)</b>						0.2619	0.1881	0.184	0.935	0.0062	0.1294	0.1255	0.0567	0.2163	0.0568	0.192

Means followed by same letter do not significantly differ (P=.05, LSD)

Type: SS = sorghum/sudangrass, SU = sudangrass

**Table 2. 2011 sorghum Hay Trial, 2nd Cutting.**

Hybrid	Company	Type	Mat.	BMR	Male Sterile	% Heading	Height ft	% Moist.	DM Yield Tons/Ac	% CP	% ADF	% NDF	% TDN	% Lignin	% IVTD NIR	% NDFD NIR
BH 111S	B-H Genetics	SS	M	N	N	16.7 b	3.8 abc	41	2.27	10.6 b-h	35.1	49.0 c-h	55.1	4.72 a	77.6 hij	54.3 fgh
Sweeter 'N Honey II	Richardson Seeds, Ltd.	SS	L	N	N	0.0 f	3.2 d-i	42	2.33	11.1 a-f	33.6	48.7 d-h	58.0	4.16 c-f	78.5 f-j	55.9 efg
Grazex III	Sharp Bros Seed Co	SS	M	N	Y	16.7 b	3.5 a-e	35	2.92	9.9 f-i	36.0	51.7 abc	52.8	4.41 abc	77.4 ij	56.2 d-g
Sordan 79	Sorghum Partners, LLC	SS	M	N	N	6.3 b-f	3.5 a-e	38	2.64	11.2 a-e	33.2	48.2 d-h	57.6	4.13 c-g	78.8 d-j	56.1 d-g
Sordan Headless	Sorghum Partners, LLC	SS	M	N	N	0.0 f	3.4 b-f	46	3.11	11.6 abc	33.4	47.6 e-h	56.2	4.37 a-d	77.9 g-j	53.7 gh
Trudan 8	Sorghum Partners, LLC	SU	E	N	N	50.0 a	3.9 ab	39	2.41	9.0 i	35.7	52.9 a	56.5	4.65 ab	74.2 k	51.2 h
Trudan Headless	Sorghum Partners, LLC	SU	E	N	N	0.0 f	3.2 d-i	41	2.34	10.1 e-i	36.0	50.3 a-e	51.7	4.41 abc	77.0 j	54.3 fgh
<b>Non BMR AVG</b>						<b>12.8</b>	<b>3.5</b>	<b>40</b>	<b>2.57</b>	<b>10.5</b>	<b>34.7</b>	<b>49.8</b>	<b>55.4</b>	<b>4.41</b>	<b>77.3</b>	<b>54.5</b>
AS453	AR-B Seeds, Inc	SS	M	Y	N	10.7 b-f	2.9 f-i	36	2.93	11.4 a-d	34.3	49.3 b-g	56.9	3.63 h-k	80.0 a-h	59.5 a-e
AR-B Sweet King BMR	AR-B Seeds, Inc	SS	ME	Y	N	11.7 b-f	2.8 hi	43	2.26	10.7 b-h	34.1	46.2 h	52.0	3.66 g-k	82.2 a	61.6 a
BH 201 SB	B-H Genetics	SS	M	Y	N	4.3 b-f	3.3 c-g	45	2.41	11.2 a-e	35.8	49.8 b-g	53.3	4.08 c-h	79.3 b-j	58.4 a-f
BH 211 SBD	B-H Genetics	SS	ML	Y	N	6.3 b-f	3.4 b-f	37	2.51	12.0 a	34.3	48.5 d-h	54.3	3.72 f-j	80.6 a-f	60.0 a-e
BH 221 SB	B-H Genetics	SS	ML	Y	N	15.0 bcd	3.3 c-g	32	1.55	10.5 b-h	34.4	48.4 d-h	55.0	4.10 c-h	79.5 b-j	57.6 a-g
BH 231 SB	B-H Genetics	SS	M	Y	N	10.0 b-f	3.2 d-i	43	2.38	10.4 c-h	33.1	47.7 e-h	57.4	3.67 g-k	79.8 a-i	57.7 a-g
2017 BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	9.3 b-f	2.8 hi	39	2.47	10.9 a-g	33.3	48.0 d-h	56.8	3.70 f-j	80.4 a-g	59.1 a-e
3017 BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	5.7 b-f	2.9 f-i	38	1.81	10.3 d-h	34.0	47.6 e-h	52.6	3.63 h-k	81.7 ab	61.5 a
2017 XL BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	6.7 b-f	2.8 ghi	39	2.43	9.5 hi	37.0	50.6 a-d	49.0	3.85 e-j	79.0 c-j	58.5 a-f
DSS Bonus BMR D	Drussel Seed & Supply.	SS	L	Y	N	9.3 b-f	2.7 i	38	2.16	11.5 a-d	34.1	49.2 b-g	56.2	3.65 h-k	79.7 a-i	58.8 a-e
Greentreat A+	Forage First	SS	L	Y	N	5.7 b-f	3.7 a-d	44	2.19	10.9 a-g	34.8	49.7 b-g	56.7	4.20 b-e	78.9 c-j	57.6 a-g
Greentreat Dynamo	Forage First	SS	ML	Y	N	2.3 ef	2.8 ghi	43	1.97	11.7 ab	33.6	48.8 d-h	56.8	3.65 h-k	80.6 a-g	60.2 a-e
Sweeter 'N Honey BMR Red	Richardson Seeds, Ltd.	SS	M	Y	N	9.7 b-f	2.7 i	35	1.54	11.6 abc	34.0	49.9 b-g	57.7	3.78 e-j	79.3 b-j	58.4 a-f
Sweeter 'N Honey BMR	Richardson Seeds, Ltd.	SS	M	Y	N	16.3 b	2.8 hi	38	1.42	11.2 a-e	33.9	49.8 b-g	58.3	3.94 c-j	79.0 c-j	57.8 a-g
Sweeter 'N Honey II BMR Red	Richardson Seeds, Ltd.	SS	L	Y	N	3.3 c-f	3.3 d-h	49	2.20	10.4 c-h	33.5	48.7 d-h	57.3	3.92 d-j	79.6 a-j	58.1 a-f
Sweeter 'N Honey II BMR	Richardson Seeds, Ltd.	SS	L	Y	N	1.7 ef	3.0 e-i	39	2.19	10.1 e-i	36.0	50.0 b-f	51.2	3.86 e-j	79.6 a-j	59.3 a-e
Grazex BMR 718	Sharp Bros Seed Co	SS	ME	Y	Y	12.3 b-f	3.7 a-d	43	2.13	10.5 b-h	33.1	49.4 b-g	59.9	3.86 e-j	78.5 f-j	56.5 c-g
Grazex BMR 301	Sharp Bros Seed Co	SS	M	Y	Y	15.3 bc	4.0 a	43	2.49	9.8 ghi	34.0	48.8 d-h	56.5	3.99 c-i	79.5 b-j	57.9 a-g
Grazex BMR 801	Sharp Bros Seed Co	SS	M	Y	Y	9.7 b-f	3.8 abc	35	2.73	11.0 a-f	34.1	49.5 b-g	55.7	4.16 c-f	78.8 e-j	57.1 b-g
<b>BMR AVG</b>						<b>8.7</b>	<b>3.1</b>	<b>40</b>	<b>2.20</b>	<b>10.8</b>	<b>34.3</b>	<b>48.9</b>	<b>55.5</b>	<b>3.84</b>	<b>79.8</b>	<b>58.7</b>
AS6501	Advanta	SS	PS	Y	N	12.3 b-f	3.5 a-e	35	3.01	11.4 a-d	36.7	50.6 a-d	52.4	4.16 c-f	79.0 c-j	58.5 a-f
XS6502 (X)	Advanta	SS	PS	Y	N	0.0 f	3.3 d-h	45	2.46	10.8 b-g	32.4	47.2 gh	57.6	3.23 k	81.5 a-d	60.8 abc
XS6503 (X)	Advanta	SS	PS	Y	N	13.3 b-e	3.3 c-g	49	2.41	11.4 a-d	33.3	47.3 fgh	55.7	3.52 ijk	81.5 abc	60.9 ab
Greentreat Plus	Forage First	SS	PS	Y	N	2.7 def	3.1 e-i	39	2.14	10.0 f-i	38.2	51.9 ab	48.6	3.92 d-j	79.4 b-j	60.3 a-d
XS 1101	Forage First	SS	PS	Y	N	0.0 f	3.1 e-i	51	2.55	10.1 e-i	34.3	49.6 b-g	56.5	3.59 ijk	79.7 a-i	59.1 a-e
XS 1102	Forage First	SS	PS	Y	N	0.0 f	2.8 ghi	49	2.18	11.6 abc	34.2	48.3 d-h	53.7	3.51 jk	81.2 a-e	61.1 ab
<b>BMR PS AVG</b>						<b>4.7</b>	<b>3.2</b>	<b>45</b>	<b>2.46</b>	<b>10.9</b>	<b>34.9</b>	<b>49.1</b>	<b>54.1</b>	<b>3.66</b>	<b>80.4</b>	<b>60.1</b>
<b>Test Mean</b>						8.9	3.2	40.8	2.3	10.8	34.5	49.2	55.2	3.9	79.4	58.1
<b>CV</b>						85.41	10.01	21	23.43	6.79	5.4	3.5	8.5	7.32	2.04	4.62
<b>Treatment Prob(F)</b>						0.0001	0.0001	0.607	0.0626	0.0002	0.099	0.0078	0.454	0.0001	0.0003	0.0016

Means followed by same letter do not significantly differ (P=.05, LSD)

Type: SS = sorghum/sudangrass, SU = sudangrass

**Table 2. 2011 sorghum Hay Trial, 2nd Cutting.**

Hybrid	Company	Type	Mat.	BMR	Male Sterile	NEL 100 Mcal/lb	NEG 100 Mcal/lb	NEM 100 Mcal/lb	% Ca	% P	% Mg	% K	% S	Rel. Feed Value	Rel. Forage Qual.	Milk lbs/Ton
BH 111S	B-H Genetics	SS	M	N	N	55.9	27.2	52.6	0.39	0.21 c-f	0.23	1.46 b-h	0.15 a-d	117 a-g	123 b-g	1,498
Sweeter 'N Honey II	Richardson Seeds, Ltd.	SS	L	N	N	59.2	31.3	57.1	0.32	0.24 abc	0.21	1.82 a-d	0.15 bcd	120 a-e	132 a-e	1,551
Grazex III	Sharp Bros Seed Co	SS	M	N	Y	53.4	23.7	48.9	0.34	0.20 def	0.22	1.38 e-h	0.14 bcd	110 fgh	115 efg	1,555
Sordan 79	Sorghum Partners, LLC	SS	M	N	N	58.7	30.8	56.6	0.32	0.23 a-d	0.22	1.67 a-g	0.15 a-d	122 a-d	133 a-d	1,526
Sordan Headless	Sorghum Partners, LLC	SS	M	N	N	57.2	29.1	54.7	0.33	0.26 a	0.24	2.03 a	0.17 a	123 abc	127 a-f	1,437
Trudan 8	Sorghum Partners, LLC	SU	E	N	N	57.5	28.4	53.9	0.28	0.19 f	0.19	1.28 gh	0.12 e	108 gh	110 g	1,488
Trudan Headless	Sorghum Partners, LLC	SU	E	N	N	52.2	22.3	47.3	0.36	0.24 abc	0.25	1.84 abc	0.15 a-d	113 d-h	112 fg	1,418
<b>Non BMR AVG</b>						<b>56.3</b>	<b>27.5</b>	<b>53.0</b>	<b>0.33</b>	<b>0.22</b>	<b>0.22</b>	<b>1.64</b>	<b>0.15</b>	<b>116</b>	<b>122</b>	<b>1,496</b>
AS453	AR-B Seeds, Inc	SS	M	Y	N	57.9	29.9	55.6	0.33	0.23 a-d	0.22	1.69 a-f	0.14 bcd	118 a-g	135 a-d	1,666
AR-B Sweet King BMR	AR-B Seeds, Inc	SS	ME	Y	N	52.4	22.6	47.8	0.34	0.22 b-f	0.22	1.39 e-h	0.14 cde	125 a	135 a-d	1,440
BH 201 SB	B-H Genetics	SS	M	Y	N	53.9	25.1	50.3	0.38	0.24 abc	0.23	1.59 b-g	0.15 bcd	114 b-h	124 b-g	1,585
BH 211 SBD	B-H Genetics	SS	ML	Y	N	55.1	26.8	52.2	0.40	0.25 ab	0.24	1.64 a-g	0.17 a	119 a-f	133 a-d	1,673
BH 221 SB	B-H Genetics	SS	ML	Y	N	55.8	27.0	52.5	0.36	0.22 c-f	0.23	1.36 fgh	0.14 cde	120 a-f	130 a-e	1,551
BH 231 SB	B-H Genetics	SS	M	Y	N	58.5	30.2	55.9	0.35	0.22 b-f	0.22	1.57 b-h	0.15 bcd	124 ab	136 a-d	1,521
2017 BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	57.8	29.6	55.3	0.37	0.22 b-f	0.22	1.58 b-h	0.15 bcd	122 a-d	137 abc	1,590
3017 BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	53.1	23.6	48.8	0.42	0.22 c-f	0.27	1.49 b-h	0.15 bcd	122 a-d	133 a-d	1,525
2017 XL BMR	Coffey Forage Seeds, Inc.	SS	M	Y	N	49.1	30.5	42.3	0.45	0.19 ef	0.25	1.19 h	0.14 cde	111 e-h	112 fg	1,071
DSS Bonus BMR D	Drussel Seed & Supply.	SS	L	Y	N	57.2	29.1	54.7	0.35	0.23 a-d	0.22	1.42 d-h	0.15 a-d	118 a-f	132 a-e	1,684
Greentreat A+	Forage First	SS	L	Y	N	57.6	29.4	55.0	0.35	0.22 b-f	0.21	1.48 b-h	0.14 bcd	116 a-g	131 a-e	1,622
Greentreat Dynamo	Forage First	SS	ML	Y	N	57.8	30.0	55.7	0.36	0.25 ab	0.22	1.69 a-f	0.15 a-d	120 a-e	137 abc	1,674
Sweeter 'N Honey BMR Red	Richardson Seeds, Ltd.	SS	M	Y	N	58.8	31.0	56.8	0.35	0.24 abc	0.24	1.74 a-f	0.16 abc	117 a-g	133 a-d	1,681
Sweeter 'N Honey BMR	Richardson Seeds, Ltd.	SS	M	Y	N	59.5	31.8	57.6	0.32	0.22 b-f	0.23	1.51 b-h	0.15 a-d	117 a-g	133 a-d	1,711
Sweeter 'N Honey II BMR Red	Richardson Seeds, Ltd.	SS	L	Y	N	58.3	30.0	55.7	0.31	0.23 a-d	0.23	1.86 ab	0.14 bcd	120 a-e	135 a-d	1,518
Sweeter 'N Honey II BMR	Richardson Seeds, Ltd.	SS	L	Y	N	51.5	21.4	46.5	0.39	0.22 b-f	0.26	1.66 a-g	0.14 bcd	113 c-h	120 d-g	1,473
Grazex BMR 718	Sharp Bros Seed Co	SS	ME	Y	Y	61.2	33.6	59.6	0.27	0.24 abc	0.20	1.83 abc	0.14 bcd	119 a-f	134 a-d	1,576
Grazex BMR 301	Sharp Bros Seed Co	SS	M	Y	Y	57.5	28.7	54.3	0.29	0.22 c-f	0.21	1.61 b-g	0.14 cde	119 a-f	132 a-e	1,544
Grazex BMR 801	Sharp Bros Seed Co	SS	M	Y	Y	56.6	28.1	53.7	0.39	0.22 b-e	0.24	1.69 a-f	0.16 ab	117 a-g	128 a-f	1,602
<b>BMR AVG</b>						<b>56.3</b>	<b>28.3</b>	<b>53.2</b>	<b>0.36</b>	<b>0.23</b>	<b>0.23</b>	<b>1.58</b>	<b>0.15</b>	<b>118</b>	<b>131</b>	<b>1,563</b>
AS6501	Advanta	SS	PS	Y	N	53.0	23.9	49.0	0.39	0.24 abc	0.23	1.61 b-g	0.15 a-d	111 e-h	121 c-g	1,630
XS6502 (X)	Advanta	SS	PS	Y	N	58.7	30.7	56.5	0.31	0.25 ab	0.20	1.77 a-e	0.14 bcd	126 a	143 a	1,634
XS6503 (X)	Advanta	SS	PS	Y	N	56.6	28.4	54.0	0.35	0.24 abc	0.22	1.62 b-g	0.14 bcd	124 ab	140 ab	1,628
Greentreat Plus	Forage First	SS	PS	Y	N	48.6	25.9	42.1	0.42	0.20 def	0.25	1.19 h	0.14 de	106 h	112 fg	1,293
XS 1101	Forage First	SS	PS	Y	N	57.5	28.8	54.4	0.39	0.21 c-f	0.22	1.44 c-h	0.14 cde	117 a-g	131 a-e	1,637
XS 1102	Forage First	SS	PS	Y	N	54.4	25.7	51.1	0.38	0.24 abc	0.24	1.53 b-h	0.15 a-d	121 a-e	133 a-d	1,655
<b>BMR PS AVG</b>						<b>54.8</b>	<b>27.2</b>	<b>51.2</b>	<b>0.37</b>	<b>0.23</b>	<b>0.23</b>	<b>1.53</b>	<b>0.14</b>	<b>117</b>	<b>130</b>	<b>1,580</b>
<b>Test Mean</b>						56.0	27.9	52.8	0.4	0.23	0.23	1.58	0.15	117.70	128.87	1,552
<b>CV</b>						9.3	17.8	13.9	20.38	8.39	13.42	15.46	7.54	5.26	8.11	13
<b>Treatment Prob(F)</b>						0.454	0.324	0.451	0.533	0.0032	0.544	0.0144	0.0255	0.0139	0.0063	0.2021

Means followed by same letter do not significantly differ (P=.05, LSD)

Type: SS = sorghum/sudangrass, SU = sudangrass

**Figure 1. Yield contribution of each cutting to total tons/Acre.**

