

2017 Texas A&M AgriLife Bushland Forage Sorghum Silage Trial

Jourdan Bell, Ed Bynum, Ted McCollum, Ronnie Schnell,
 Preston Sirmon, Carla Naylor, Bronc Finch, Dennis Pietsch and Katrina Horn

The 2017 Texas A&M AgriLife Research and Extension Forage Sorghum Silage Trial at Bushland consisted of 78 entries including forage sorghum, sorghum-sudangrass, sudangrass, and grain sorghum hybrids. Two corn hybrids and two additional grain sorghum hybrids were included as checks. Of the 78 entries, 42 were brown midrib (BMR) forage sorghum and sorghum-sudangrass hybrids, and 15 were brachytic hybrids (Table 1). The average forage yield was 22.3 tons/acre with yields ranging from 27.8 to 12.6 tons/acre. In-season precipitation plus irrigation totaled 24.1 inches. Mild daytime temperatures and above average in-season precipitation resulted in negligible heat and water stress during the growing season (Fig. 1).

The trial was located with a cooperating producer (Mr. Michael Menke) under center pivot irrigation within a forage sorghum circle. Seed companies submitted forage sorghum hybrids on a per fee basis with the exception of the grain sorghum checks and corn hybrids. Plots were planted on June 13, 2017. Hybrids were blocked according to the marketed maturity class so that plots within each maturity class block could be mechanically harvested for forage yield when grain reached soft dough. Hybrids that had not reached soft-dough were all harvested on the last sampling date (October 31, 2017). Plots were minimally damaged by July 2, 2017 hailstorm approximately ten days post emergence when plants were at the 3-leaf stage, but plants quickly and uniformly recovered. Yield was determined by chopping two-30 inch rows by the plot length using a John Deere 3800 style silage chopper, and fresh samples were weighed in the field on a trailer equipped with a load cell. Uniform sub-samples were collected for dry matter and nutritional composition. If hybrid maturity was earlier than the maturity class in which the hybrid was blocked or if the plot lodged, forage yield was obtained from a 25 ft² area (1 row by 10 ft.) hand-sample within each plot, and a uniform sub-sample was chopped for nutritional composition. If possible, plants were harvested from a non-lodged portion of the plot to preserve forage quality. Lodging and plant height were recorded at harvest. A portion of the chopped forage was dried at 221°F (105°C) to determine harvest moisture. The remaining portion of the chopped forage was dried at 140°F (60°C), uniformly ground through a 2-mm screen with a Wiley Mill. Samples were submitted to Dairyland Laboratories, Arcadia, WI for forage analyses completed using near infrared reflectance spectroscopy (NIR). Forage quality was determined for hybrids as requested by the company. Forage constituents are reported on a dry matter (DM) basis.

Cultural Practices

Cooperator: Mr. Michael Menke

Previous Crop: Fallow

Planting Date: June 13, 2017

Seeding Rate: 75,000 seeds/acre

Herbicide: pre-plant application of Bicep (Atrazine + S-metolachlor) 1.5 pts/ac

Insecticide for Sugarcane Aphids: 2 aerial applications of Sivanto (6 oz/ac at 3 GPA) on 8/23 and 9/4

In-season Irrigation: 5.6 in.

In-season Precipitation: 18.5 in.

Plot size: Four, 30-inch rows by 25 ft. (30ft planted)

Sugarcane aphids (SCA) were spotted on August 14, 2017 in all hybrids in the trial. While aphids were present, there were not high levels of damage as in previous years. All plots were rated for SCA infestation and damage on August 17, 2017 prior to being sprayed using the High Plains Texas A&M AgriLife Rating scale. Reported ratings are the average of the three replications for each hybrid. Maximum infestation on August 17 was 30% of the leaf area infested or damaged. The entire field including our test plots was sprayed on August 23 with

Sivanto at 6 oz/ac (3 GPA). Because SCA colonies were located in hot spots, a second 6 oz/ac aerial application (3 GPA) was applied on September 4, 2017. Subsequent ratings are reported in Table 5. In addition to two insecticide applications, beneficial insects, predominately lady beetles and adult syrphid fly larvae, were observed throughout the trial. Due to the large number of beneficials present in the 2017 trial, it is reasonable to believe that these beneficial insects were providing biological control of the SCA. The seasonal average of all damage ratings reflects good control and non-yield limiting infestation and damage during the 2017 production season (Table 5).

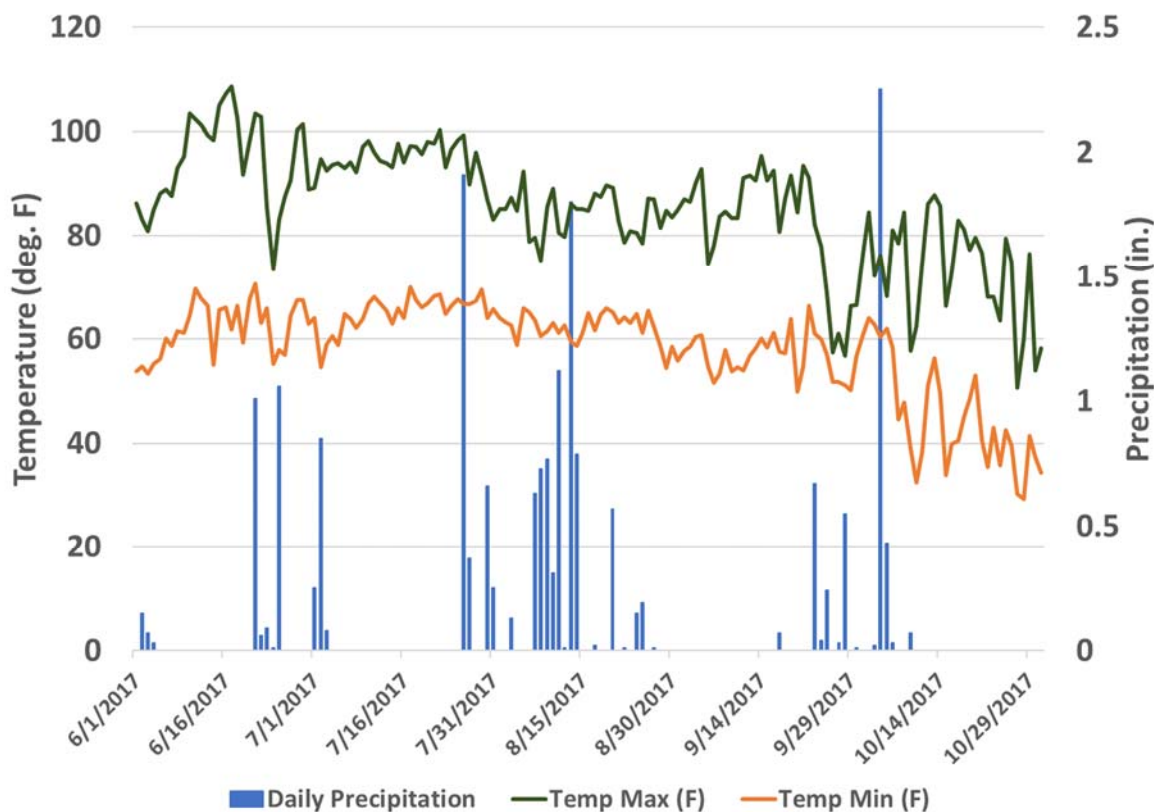


Figure 1. 2017 Daily precipitation and temperature.

High Plains Texas A&M AgriLife Sugarcane Aphid Rating Scale:

- 0: no aphids or honey dew found
- 1: 10% of leaf area infested or damaged, colonies establishing on lower leaves or some honey dew visible on 2 or less leaves
- 2: 11-20% of leaf area infested or damaged
- 3: 21-30% of leaf area infested, damaged or dead
- 4: 31-40% of leaf area infested, damaged or dead
- 5: 41-50% of leaf area infested, damaged or dead
- 6: 51-60% of leaf area infested, damaged or dead
- 7: 61-70% of leaf area infested, damaged or dead
- 8: 71-80% of leaf area infested, damaged or dead
- 9: 81-90% of leaf area infested, damaged or dead
- 10: 91% of leaf area damaged to dead

Agronomic production factors including weather, irrigation, fertility, planting population, weed management, and harvest stage can all affect forage yield potential and quality. The large scale of the Bushland trial provides producers and nutritionists the opportunity to compare forage yield and quality parameters for multiple forage sorghum types under the same production environment. While forage quality requirements vary between livestock class and ration formulation, evaluated parameters provide a broad comparison of forage quality in the respective production environment (Table 1). As expected, photoperiod sensitive types are higher yielding forages, but the digestibility is lower as reflected by the greater ADF and aNDF fractions and lower IVTDMD fraction. On average, lignin concentrations were lower in BMRs than non-BMRs; however, trial data confirms that the percent lignin and digestibility vary between individual BMR hybrids (Fig. 2). On average, starch contents were lower for the PS hybrids because they did not produce grain, or there was very limited grain production. Commonly, producers and nutritionists inquire how forage sorghum hybrids compare with corn silage as corn is considered the industry standard. Trial data reflects that the yield and quality of forage sorghums can exceed that of corn silage.

Forage Analyses defined:

CP:	Crude Protein
ADF:	Acid Detergent Fiber; a fraction of the cell wall includes cellulose and lignin, which is inversely related to energy availability
aNDF:	Neutral Detergent Fiber; cell wall fraction of the forage
IVTDMD:	In Vitro Dry Matter Digestibility; estimate of forage disappearance in the digestive tract
NDFD:	NDF digestibility; estimated fiber digestibility after the specified length of time (48 hrs.)
uNDFom:	Undigested NDF after fermentation for the specified length of time (240 hrs.) expressed on an organic matter basis (om) in order to account for the ash
TDN:	Total Digestible Nutrients (by Weiss equation) an index of energy concentration.
RFQ:	Relative Forage Quality - an index for comparing forages, not just alfalfa. RFQ is based on the same scoring system as RFV with an average score of 100; higher scores indicate better feeding value
Milk/ton:	An index based on several variables that influence intake and nutritive value. These are applied to a standard dairy cow to project milk produced per ton of forage.

Grain yields were collected in November following forage harvest for select hybrids upon seed company request at the time of entry. Grain yields were reported to the USDA-Risk Management Agency to update the Loan Deficiency Payment Tables for forage sorghum hybrids (Table 6).

Statistical analyses were completed using SAS 9.4. Adjusted least significant differences for multiple comparisons were determined using Tukey's HSD. Effects and comparisons were determined significant at the 0.05 probability level. The discussion above addresses broad averages for types of forage sorghums, grain sorghums evaluated as silage, and sorghum/sudangrass hybrids evaluated in the 2017 test. We recommended individual hybrids not be selected or disregarded based on the sorghum type nor based on the relative comparison among types. There is overlap among hybrids in these type categories. It is recommended to evaluate the data based on the individual hybrid, not the forage type category.

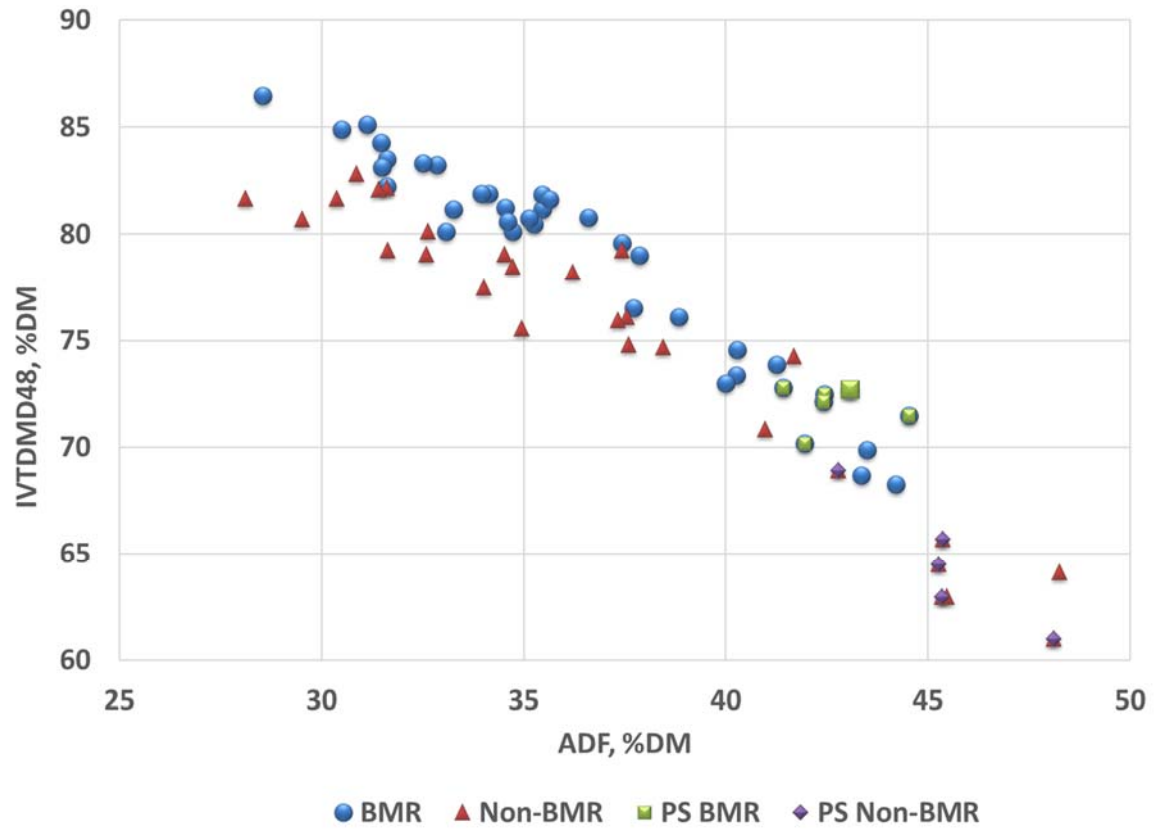


Figure 2. Relationship between %ADF and %IVTDMD (48 hour).

List of Tables

Page	Table
6.....	1. 2017 Summary of yield and lodging by forage type. The number in parentheses represents the number of hybrids that make up each sorghum type.
7.....	2. 2017 mean yield, days to half-bloom, lodging, height and harvest moisture. Hybrid information was provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum
10.....	3. 2017 summary of nutritional composition. Hybrid characteristics were provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum
13.....	4. 2017 summary of calculated nutritional quality with forage yield. Hybrid characteristics were provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum
16.....	5. 2017 Sugarcane aphid ratings following identification of aphids in plots on August 15, 2017 and the seasonal average aphid rating. Means followed by the same letter do not significantly differ using LSD (0.05).
19.....	6. 2017 grain yields reported for FSA to update Loan Deficiency Payment Tables as requested at the time of entry to the trial. Grain yields for all hybrids evaluated as a percent of the trial's long-term grain sorghum check Pioneer 84G62. (2017 84G62 yield: 7880 lbs/acre; 8 year avg: 8111 lbs/acre).

Table 1. 2017 Summary of yield and lodging by forage type. The number in parentheses represents the number of hybrids that make up each sorghum type.

Sorghum Type	% Lodging at Harvest	%Moisture at Harvest	Avg. Yield (tons/ac) 65% Moist.	%CP	%ADF	%aNDF	%Lignin	%Starch	%NDFD48	%uNDF - om240	%IVTDMD48	Relative Feed Quality (RFQ)	TDN	Milk/ton
BMR (42)	10.4	0.70	21.3	8.2	36.8	54.0	5.2	15.3	51.6	19.1	78.3	106	55	3032
Non-BMR (36)	4.9	0.68	23.4	7.4	37.3	53.4	5.9	16.8	45.1	23.0	74.8	99	54	2998
Test Average [†]	7.9	0.69	22.3	7.8	37.0	53.8	5.5	16.0	48.8	20.7	76.8	103	55	3018
by Photoperiod Response														
Photoperiod Sensitive (11)	4.4	0.72	24.1	5.9	43.9	64.1	6.1	2.4	46.5	21.0	68.6	68	46	2517
Non-Photoperiod Sensitive (67)	8.5	0.68	22.0	8.2	35.6	51.7	5.4	18.6	49.3	20.7	78.5	110	56	3116
by Brachytic Trait														
Brachytic (15)	11.8	0.69	21.2	9.5	34.8	51.1	4.8	18.7	52.0	18.6	80.2	114	56	3082
Non-Brachytic (63)	7.0	0.69	22.5	7.4	37.6	54.5	5.7	15.3	48.0	21.3	76.0	100	54	3001
Grain Sorghum and Corn Checks														
Grain Sorghum Checks (2)	0.0	0.65	19.0	9.6	28.3	40.6	4.6	32.4	44.8	19.4	83.3	146	63	3551
Corn with Ears (2) [‡]	0.0	0.62	26.5	8.1	33.4	48.5	5.8	27.2	43.1	22.7	77.1	112	57	3214
Corn without Ears (2)	0.0	0.71	19.8	5.7	52.9	73.4	8.2	2.2	35.0	30.3	54.4	32	32	1674

[†]The test average is the average of the forage entries not including the grain sorghum or corn checks.

[‡]Corn samples were processed from all replicaitons with and without the ear for both hybrids.

Table 2. 2017 mean yield, days to half-bloom, lodging, height and harvest moisture. Hybrid information was provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Mean Days to Half-Bloom, Lodging, Harvest, Height, Moisture and Yield					
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brach. Trait	Male Sterile	Days to HB†	% Lodging at Harvest‡	Harvest Date	Height at Harvest (in.)	%Moisture at Harvest	Yield (tons/ac) 65% Moisture
12	SP 1615	Sorghum Partners	FS	PS	N	N	N	0	0	10/29/2017	128.3	0.69	27.78
48	4EverGreen	Walter Moss	FS	PS	N	N	N	0	0	10/31/2017	127.3	0.73	27.75
81	Corn Check: P1151 w/ ear		Corn						0	9/27/2017	95.0	0.62	27.50
27	Exp 162189	Forage Genetics	FS	ME	N	N	N	62	0	10/11/2017	107.3	0.73	27.03
77	Exp 10226	Gayland Ward	SS	PS	N	N	N	138	0	10/31/2017	124.0	0.72	26.90
54	Silo 700D BMR	Richardson Seeds	FS	ML	Y	N	N	87	0	10/13/2017	94.3	0.69	25.87
35	54243x	Scott Seed	SS	L	N	N	N	90	0	10/26/2017	151.0	0.65	25.86
11	SS 405	Sorghum Partners	FS	L	N	N	N	89	0	10/26/2017	146.3	0.68	25.82
25	EJ7282	Forage Genetics	FS	L	N	N	N	89	0	10/26/2017	126.0	0.71	25.75
78	Exp 15F1104	Gayland Ward	SS	PS	N	N	N	121	42	10/31/2017	132.7	0.71	25.55
82	Corn Check: 55VP77 w/ ear		Corn						0	9/27/2017	102.7	0.62	25.48
28	Exp 162191	Forage Genetics	FS	ME	N	N	N	64	0	10/11/2017	99.0	0.72	25.45
19	FS 3501	Croplan	FS	M	N	N	N	69	0	10/12/2017	96.0	0.73	25.12
23	F4C208	Forage Genetics	FS	M	N	N	N	64	12	10/12/2017	101.7	0.72	24.80
69	Exp 10217	Gayland Ward	FS	L	N	N	N	88	0	10/26/2017	80.3	0.65	24.59
53	Silo 700D	Richardson Seeds	FS	ML	N	N	N	86	0	10/13/2017	91.0	0.69	24.57
8	SP 1880	Sorghum Partners	FS	L	N	N	N	92	20	10/26/2017	133.7	0.68	24.54
24	EJ7281	Forage Genetics	FS	L	N	N	N	89	0	10/26/2017	112.0	0.70	24.43
55	Pacesetter BMR	Richardson Seeds	FS	PS	Y	N	N	0	7	10/31/2017	122.3	0.74	24.40
49	Mega Green	Walter Moss	SU	PS	N	N	N	0	0	10/31/2017	127.7	0.70	24.34
37	50651x	Scott Seed	SS	ME	Y	Y	N	79	43	10/11/2017	97.0	0.71	24.23
16	SP 4555	Sorghum Partners	SS	M	Y	N	N	64	8	9/26/2017	110.0	0.68	24.10
64	Canex BMR 600	Sharp Brothers	FS	ML	Y	N	N	88	3	10/13/2017	121.3	0.74	24.04
59	Sweeter N Honey II	Richardson Seeds	SS	L	N	N	N	83	0	10/26/2017	130.0	0.67	23.95
38	514/23	Scott Seed	FS	ME	Y	N	N	79	22	10/11/2017	109.7	0.72	23.84
2	XF 7302	Advanta	FS	M	Y	Y	N	86	0	10/12/2017	70.3	0.71	23.76
22	F4C207	Forage Genetics	FS	M	N	N	N	69	0	10/12/2017	95.0	0.72	23.69
10	NK 300	Sorghum Partners	FS	ME	N	N	N	76	43	10/11/2017	83.7	0.65	23.50
40	W7051	Warner Seeds	GS	ML	N	N	N	64	0	10/13/2017	74.0	0.62	23.48
45	Nighthawk	Blue River	SS	M	Y	Y	N	76	3	10/12/2017	97.0	0.65	23.41
65	Silex BMR 540	Sharp Brothers	FS	ML	Y	N	N	82	0	10/13/2017	98.3	0.70	23.10
73	Silo Pro BMR	Gayland Ward	FS	L	Y	Y	N	86	0	10/26/2017	76.0	0.64	23.05

Table 2 continued. 2017 mean yield, days to half-bloom, lodging, height and harvest moisture. Hybrid information was provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Mean Days to Half-Bloom, Lodging, Harvest, Height, Moisture and Yield					
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brach. Trait	Male Sterile	Days to HB [†]	% Lodging at Harvest [‡]	Harvest Date	Height at Harvest (in.)	%Moisture at Harvest	Yield (tons/ac) 65% Moisture
72	GW-600 BMR	Gayland Ward	FS	M	Y	N	N	69	10	9/26/2017	112.0	0.65	22.96
6	849F	DuPont Pioneer	FS	M	N	N	N	64	0	10/4/2017	108.0	0.69	22.63
42	W9501	Warner Seeds	GS	L	N	N	N	64	0	10/26/2017	76.3	0.61	22.63
33	50644x	Scott Seed	SS	PS	Y	N	N	0	0	10/31/2017	104.3	0.74	22.53
68	OPAL	MOJO Seed Enterprises	FS	ML	N	Y	N	74	0	10/13/2017	84.7	0.70	22.49
15	SP 3903	Sorghum Partners	FS	ML	Y	Y	N	87	0	10/13/2017	76.0	0.71	22.39
41	W7706	Warner Seeds	GS	ML	N	N	N	64	0	10/13/2017	80.3	0.65	22.32
29	Exp 162192	Forage Genetics	FS	E	Y	N	N	64	0	10/3/2017	98.7	0.69	22.31
31	503/15	Scott Seed	FS	ML	N	N	N	64	0	10/13/2017	66.7	0.61	22.29
75	Sweet Forever BMR	Gayland Ward	SS	PS	Y	N	N	93	0	10/31/2017	117.3	0.70	22.26
20	F4C203	Forage Genetics	FS	ME	N	N	N	60	0	10/11/2017	103.7	0.70	22.26
34	50643x	Scott Seed	SS	L	Y	N	N	96	17	10/26/2017	114.7	0.68	22.24
3	XF 7303	Advanta	FS	M	Y	Y	N	86	0	10/12/2017	61.7	0.71	22.12
76	Super Sugar DM	Gayland Ward	SS	L	N	N	N	93	0	10/26/2017	117.3	0.68	21.73
50	Mega Green BMR	Walter Moss	SU	PS	Y	N	N	0	0	10/31/2017	108.7	0.75	21.72
47	Seahawk	Blue River	SS	ME	Y	N	N	64	5	9/18/2017	122.3	0.69	21.57
1	AF 7401	Advanta	FS	L	Y	Y	N	87	0	10/26/2017	64.7	0.70	21.52
56	Bundle King BMR	Richardson Seeds	FS	L	Y	N	N	89	7	10/26/2017	121.3	0.73	21.51
44	Blackhawk	Blue River	SS	M	Y	N	N	64	13	10/12/2017	111.3	0.68	21.42
57	Sweeter N Honey BMR	Richardson Seeds	SS	ME	Y	N	N	64	32	10/11/2017	105.0	0.69	21.38
62	Canex	Sharp Brothers	FS	ME	N	N	N	62	0	10/3/2017	82.3	0.73	21.34
51	Exp 1701	Walter Moss	FS	PS	Y	Y	Y	0	0	10/31/2017	80.3	0.73	21.19
52	9500W	Richardson Seeds	FS	ME	N	N	N	64	7	10/3/2017	74.3	0.67	21.17
5	841F	DuPont Pioneer	FS	M	N	N	N	73	8	10/12/2017	74.7	0.68	21.12
36	50652x	Scott Seed	SS	PS	Y	Y	N	0	0	10/31/2017	80.7	0.74	21.12
66	Grazex BMR 301	Sharp Brothers	SS	M	Y	N	Y	64	3	9/26/2017	115.7	0.70	20.97
43	W9506	Warner Seeds	GS	L	N	N	N	64	0	10/26/2017	68.7	0.61	20.89
39	506/03	Scott Seed	FS	ME	Y	N	Y	72	25	10/11/2017	96.3	0.70	20.85
18	BMR 3211	Croplan	FS	E	Y	N	N	62	3	10/11/2017	92.7	0.69	20.79
71	Exp 15F909	Gayland Ward	FS	ML	N	N	N	64	3	10/13/2017	110.3	0.59	20.75
46	Pelican	Blue River	SS	M	Y	Y	N	64	12	10/4/2017	88.7	0.64	20.67
81b	Corn Check: P1151 w/o ear		Corn						0	9/27/2017	95.0	0.71	20.65
26	BMR331	Forage Genetics	FS	L	Y	Y	N	88	8	10/26/2017	73.7	0.68	20.42
9	SPX 56216	Sorghum Partners	FS	L	Y	Y	N	76	0	10/26/2017	92.7	0.69	20.40

Table 2 continued. 2017 mean yield, days to half-bloom, lodging, height and harvest moisture. Hybrid information was provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Mean Days to Half-Bloom, Lodging, Harvest, Height, Moisture and Yield					
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brach. Trait	Male Sterile	Days to HB [†]	% Lodging at Harvest [‡]	Harvest Date	Height at Harvest (in.)	%Moisture at Harvest	Yield (tons/ac) 65% Moisture
7	845F	DuPont Pioneer	FS	M	N	N	N	64	33	9/26/2017	73.0	0.68	20.21
61	AgDXS16I01	Agric. Alumni Seed Assoc.	SS	M	Y	N	N	62	40	10/4/2017	81.7	0.66	20.16
74	GW-400 BMR	Gayland Ward	FS	ME	Y	N	Y	59	20	10/11/2017	100.0	0.71	20.16
67	Grazex BMR 801	Sharp Brothers	SS	M	Y	N	Y	71	7	10/12/2017	129.7	0.69	19.69
79	Check 1 (84G62)		GS	ML	0	0	0	71	0	10/13/2017	52.7	0.64	19.66
63	Canex BMR 210	Sharp Brothers	FS	M	Y	N	N	67	15	10/12/2017	114.7	0.68	19.62
60	X122	Richardson Seeds	FS	E	N	N	N	64	0	10/11/2017	69.7	0.66	19.46
82b	Corn Check: 55VP77 w/o ear		Corn						0	9/27/2017	102.7	0.71	18.87
70	Exp 10218	Gayland Ward	FS	L	N	N	Y	81	0	10/26/2017	63.7	0.69	18.86
13	SP 2774	Sorghum Partners	FS	ML	Y	N	N	71	7	10/13/2017	114.0	0.70	18.76
17	SP 2880	Sorghum Partners	FS	ML	Y	N	N	64	10	10/13/2017	100.0	0.70	18.68
80	Check 2 (DKS37-07)		GS	ME	0	0	0	58	0	9/25/2017	49.3	0.66	18.44
30	506/10	Scott Seed	FS	L	Y	Y	N	88	17	10/26/2017	80.3	0.66	18.35
58	Sweeter N Honey II BMR	Richardson Seeds	SS	L	Y	N	N	89	0	10/26/2017	120.0	0.72	18.12
32	506/32	Scott Seed	FS	M	Y	N	N	67	8	10/4/2017	55.3	0.66	17.93
21	F4C204	Forage Genetics	FS	ME	N	N	N	62	8	10/11/2017	98.7	0.71	17.75
14	SP 2876	Sorghum Partners	FS	ML	Y	N	N	66	0	10/13/2017	116.3	0.72	17.27
4	XF 7103	Advanta	FS	E	Y	Y	N	62	93	10/11/2017	63.3	0.68	12.55
† If no HB date, hybrid did not reach HB prior to the last harvest date.												Mean	22.26
‡Plots mechanically harvested (2 rows by plot length) unless lodged or maturity earlier than advertised maturity. Lodged plots hand harvested (1 row by 10 ft).												CV(%)	10.21
												LSD	8.83

Table 3. 2017 summary of nutritional composition. Hybrid characteristics were provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Nutrient Composition and Calculations (DM basis)							
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	%CP	%ADF	%aNDF	%Lignin	%Starch	%NDFD48	%uNDF - om240	%IVTDM48
1	AF 7401	Advanta	FS	L	Y	Y	N	9.4	33.1	48.9	4.8	22.5	50.4	19.5	80.1
2	XF 7302	Advanta	FS	M	Y	Y	N	10.7	32.9	48.5	4.4	22.9	52.9	17.4	83.2
3	XF 7303	Advanta	FS	M	Y	Y	N	10.0	34.0	49.6	4.7	22.4	52.3	18.6	81.9
4	XF 7103	Advanta	FS	E	Y	Y	N	9.2	31.5	48.0	4.4	21.2	54.6	19.5	83.1
5	841F	DuPont Pioneer	FS	M	N	N	N	9.3	34.5	48.4	5.5	24.1	46.4	22.8	79.1
6	849F	DuPont Pioneer	FS	M	N	N	N	8.8	36.2	51.4	5.9	20.8	47.3	22.8	78.2
7	845F	DuPont Pioneer	FS	M	N	N	N	9.7	32.6	45.0	5.1	29.1	41.7	20.7	80.1
8	SP 1880	Sorghum Partners	FS	L	N	N	N	5.6	45.5	65.0	7.3	5.7	39.8	27.4	63.0
9	SPX 56216	Sorghum Partners	FS	L	Y	Y	N	8.8	37.7	55.6	5.5	8.9	48.5	18.4	76.5
10	NK 300	Sorghum Partners	FS	ME	N	N	N	8.1	35.0	50.8	5.7	23.0	43.5	23.9	75.6
11	SS 405	Sorghum Partners	FS	L	N	N	N	-----†	-----	-----	-----	-----	-----	-----	-----
12	SP 1615	Sorghum Partners	FS	PS	N	N	N	5.0	48.1	67.7	7.4	1.4	38.7	26.6	61.0
13	SP 2774	Sorghum Partners	FS	ML	Y	N	N	6.1	40.0	58.0	6.0	12.5	47.6	22.4	73.0
14	SP 2876	Sorghum Partners	FS	ML	Y	N	N	7.0	37.9	56.4	5.2	11.9	55.2	18.6	79.0
15	SP 3903	Sorghum Partners	FS	ML	Y	Y	N	9.8	32.5	49.6	4.1	22.7	56.7	17.9	83.3
16	SP 4555	Sorghum Partners	SS	M	Y	N	N	8.9	36.6	51.3	5.7	20.1	50.7	19.8	80.8
17	SP 2880	Sorghum Partners	FS	ML	Y	N	N	7.1	35.2	51.9	5.0	15.4	52.4	18.4	80.5
18	BMR 3211	Croplan	FS	E	Y	N	N	-----	-----	-----	-----	-----	-----	-----	-----
19	FS 3501	Croplan	FS	M	N	N	N	-----	-----	-----	-----	-----	-----	-----	-----
20	F4C203	Forage Genetics	FS	ME	N	N	N	-----	-----	-----	-----	-----	-----	-----	-----
21	F4C204	Forage Genetics	FS	ME	N	N	N	-----	-----	-----	-----	-----	-----	-----	-----
22	F4C207	Forage Genetics	FS	M	N	N	N	-----	-----	-----	-----	-----	-----	-----	-----
23	F4C208	Forage Genetics	FS	M	N	N	N	-----	-----	-----	-----	-----	-----	-----	-----
24	EJ7281	Forage Genetics	FS	L	N	N	N	5.0	37.6	55.5	5.7	7.7	49.8	21.8	76.1
25	EJ7282	Forage Genetics	FS	L	N	N	N	4.8	38.4	56.7	5.7	6.8	48.3	21.2	74.7
26	BMR331	Forage Genetics	FS	L	Y	Y	N	-----	-----	-----	-----	-----	-----	-----	-----
27	Exp 162189	Forage Genetics	FS	ME	N	N	N	-----	-----	-----	-----	-----	-----	-----	-----
28	Exp 162191	Forage Genetics	FS	ME	N	N	N	-----	-----	-----	-----	-----	-----	-----	-----
29	Exp 162192	Forage Genetics	FS	E	Y	N	N	-----	-----	-----	-----	-----	-----	-----	-----
30	506/10	Scott Seed	FS	L	Y	Y	N	10.1	31.1	44.8	4.5	27.3	55.2	17.7	85.1
31	503/15	Scott Seed	FS	ML	N	N	N	9.4	31.4	43.3	4.9	29.0	46.4	21.0	82.1
32	506/32	Scott Seed	FS	M	Y	N	N	11.7	28.5	40.4	4.0	31.8	48.8	16.4	86.5

Table 3 continued. 2017 summary of nutritional composition. Hybrid characteristics were provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Nutrient Composition and Calculations (DM basis)							
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	%CP	%ADF	%aNDF	%Lignin	%Starch	%NDFD48	%uNDFo m240	%IVTDM48
33	50644x	Scott Seed	SS	PS	Y	N	N	6.6	44.5	64.5	5.8	2.2	49.8	19.1	71.5
34	50643x	Scott Seed	SS	L	Y	N	N	6.3	44.2	64.9	6.1	4.9	46.6	22.9	68.3
35	54243x	Scott Seed	SS	L	N	N	N	4.9	48.3	67.2	7.6	4.0	41.5	27.9	64.1
36	50652x	Scott Seed	SS	PS	Y	Y	N	8.3	42.4	63.0	5.1	2.6	50.5	16.0	72.1
37	50651x	Scott Seed	SS	ME	Y	Y	N	9.5	34.6	49.9	4.9	19.2	51.2	19.4	80.6
38	514/23	Scott Seed	FS	ME	Y	N	N	8.9	34.7	51.9	5.1	17.0	52.0	19.2	80.1
39	506/03	Scott Seed	FS	ME	Y	N	Y	8.0	30.5	46.9	4.7	18.2	55.5	18.4	84.9
40	W7051	Warner Seeds	GS	ML	N	N	N	8.7	30.4	42.4	4.8	30.2	44.5	21.1	81.7
41	W7706	Warner Seeds	GS	ML	N	N	N	9.6	28.1	39.3	4.7	33.3	39.3	21.0	81.7
42	W9501	Warner Seeds	GS	L	N	N	N	8.2	32.6	46.5	5.1	24.5	46.3	23.1	79.1
43	W9506	Warner Seeds	GS	L	N	N	N	9.0	31.6	45.1	5.2	26.8	44.9	21.8	79.3
44	Blackhawk	Blue River	SS	M	Y	N	N	7.5	40.3	57.4	6.2	14.7	46.7	23.0	73.4
45	Nighthawk	Blue River	SS	M	Y	Y	N	10.4	35.6	49.5	4.6	20.9	52.5	19.7	81.6
46	Pelican	Blue River	SS	M	Y	Y	N	9.9	34.5	48.9	5.5	22.5	49.7	19.6	81.3
47	Seahawk	Blue River	SS	ME	Y	N	N	9.2	40.3	57.8	6.3	14.9	47.4	22.0	74.6
48	4EverGreen	Walter Moss	FS	PS	N	N	N	4.7	45.3	65.6	6.8	1.4	42.0	24.4	64.5
49	Mega Green	Walter Moss	SU	PS	N	N	N	5.6	45.3	63.6	7.1	1.9	38.4	26.0	63.0
50	Mega Green BMR	Walter Moss	SU	PS	Y	N	N	7.3	42.4	62.1	5.2	2.5	50.7	17.5	72.5
51	Exp 1701	Walter Moss	FS	PS	Y	Y	Y	7.9	41.4	62.7	4.9	2.0	52.1	16.0	72.8
52	9500W	Richardson Seeds	FS	ME	N	N	N	9.5	29.5	42.5	4.6	31.7	41.8	19.9	80.7
53	Silo 700D	Richardson Seeds	FS	ML	N	N	N	8.0	37.3	52.8	5.8	19.7	46.2	24.4	75.9
54	Silo 700D BMR	Richardson Seeds	FS	ML	Y	N	N	7.4	35.1	53.9	4.9	15.7	56.5	17.7	80.8
55	Pacesetter BMR	Richardson Seeds	FS	PS	Y	N	N	5.0	43.1	65.6	5.3	1.3	53.1	17.1	72.7
56	Bundle King BMR	Richardson Seeds	FS	L	Y	N	N	6.3	38.8	59.1	5.2	8.6	53.5	17.7	76.1
57	Sweeter N Honey BMR	Richardson Seeds	SS	ME	Y	N	N	8.2	33.3	49.5	4.7	23.4	53.6	18.4	81.2
58	Sweeter N Honey II BMR	Richardson Seeds	SS	L	Y	N	N	5.4	41.2	60.6	5.8	6.2	50.6	19.0	73.9
59	Sweeter N Honey II	Richardson Seeds	SS	L	N	N	N	5.3	41.0	58.5	6.8	9.0	44.3	25.1	70.8
60	X122	Richardson Seeds	FS	E	N	N	N	9.6	30.9	45.2	4.8	26.1	50.7	20.4	82.8
61	AgDXS16I01	Agric. Alumni Seed Assoc	SS	M	Y	N	N	9.7	31.6	44.0	5.3	27.0	47.6	19.1	83.5
62	Canex	Sharp Brothers	FS	ME	N	N	N	8.7	31.6	48.8	5.1	18.6	51.5	19.3	82.2
63	Canex BMR 210	Sharp Brothers	FS	M	Y	N	N	7.3	35.5	52.9	5.3	17.0	55.4	18.5	81.2
64	Canex BMR 600	Sharp Brothers	FS	ML	Y	N	N	6.0	37.4	57.5	5.1	9.2	57.2	17.5	79.6
65	Sillex BMR 540	Sharp Brothers	FS	ML	Y	N	N	8.3	34.1	52.0	5.0	18.5	56.5	17.4	81.9
66	Grazex BMR 301	Sharp Brothers	SS	M	Y	N	Y	7.7	43.5	62.1	6.9	10.6	45.5	24.6	69.9

Table 3 continued. 2017 summary of nutritional composition. Hybrid characteristics were provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Nutrient Composition and Calculations (DM basis)							
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	%CP	%ADF	%aNDF	%Lignin	%Starch	%NDFD48	%uNDFo m240	%IVTDMD48
67	Grazex BMR 801	Sharp Brothers	SS	M	Y	N	Y	7.1	43.4	59.3	7.2	13.0	41.3	25.4	68.7
68	OPAL	MOJO Seed Enterprises	FS	ML	N	Y	N	9.1	34.7	48.3	5.7	24.7	45.8	22.7	78.5
69	Exp 10217	Gayland Ward	FS	L	N	N	N	8.6	34.0	49.2	5.3	24.6	47.8	22.4	77.5
70	Exp 10218	Gayland Ward	FS	L	N	N	Y	9.0	37.4	55.2	5.2	11.5	53.7	18.7	79.3
71	Exp 15F909	Gayland Ward	FS	ML	N	N	N	7.1	37.6	52.5	6.4	18.5	43.2	24.3	74.8
72	GW-600 BMR	Gayland Ward	FS	M	Y	N	N	8.3	35.5	49.3	5.2	23.6	51.6	19.6	81.9
73	Silo Pro BMR	Gayland Ward	FS	L	Y	Y	N	9.6	31.6	48.3	4.4	21.5	55.4	17.7	82.2
74	GW-400 BMR	Gayland Ward	FS	ME	Y	N	Y	8.4	31.5	47.7	4.7	19.0	54.6	17.9	84.3
75	Sweet Forever BMR	Gayland Ward	SS	PS	Y	N	N	5.0	41.9	63.3	5.8	2.8	48.3	19.4	70.2
76	Super Sugar DM	Gayland Ward	SS	L	N	N	N	5.4	41.7	60.4	6.8	9.0	50.0	24.6	74.3
77	Exp 10226	Gayland Ward	SS	PS	N	N	N	5.1	45.4	64.7	7.1	2.7	42.7	25.2	65.7
78	Exp 15F1104	Gayland Ward	SS	PS	N	N	N	4.3	42.8	62.7	6.8	5.9	45.2	24.2	68.9
79	Check 1 (84G62)		GS	ML				9.6	28.0	40.2	4.5	31.1	45.3	20.2	83.3
80	Check 2 (DKS37-07)		GS	ME				9.6	28.7	40.9	4.7	33.7	44.4	18.7	83.3
81	Corn Check: P1151 w/ ear		Corn					7.1	36.8	53.6	6.3	24.2	44.3	24.3	73.5
81b	Corn Check: P1151 w/o ear		Corn					5.5	54.1	75.4	8.6	1.4	33.5	31.8	51.6
82	Corn Check: 55VP77 w/ ear		Corn					9.0	30.1	43.5	5.4	30.1	41.9	21.1	80.7
82b	Corn Check: 55VP77 w/o ear		Corn					6.0	51.6	71.4	7.8	3.1	36.6	28.7	57.1

† Forage Quality not requested by company.

Table 4. 2017 summary of calculated nutritional quality with forage yield. Hybrid characteristics were provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Nutritional Quality Calculations			Yield
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	RFQ	TDN	Milk/ton	(tons/ac) 65% Moist.
1	AF 7401	Advanta	FS	L	Y	Y	N	116	57	3137	21.5
2	XF 7302	Advanta	FS	M	Y	Y	N	122	58	3169	23.8
3	XF 7303	Advanta	FS	M	Y	Y	N	115	57	3053	22.1
4	XF 7103	Advanta	FS	E	Y	Y	N	128	59	3239	12.6
5	841F	DuPont Pioneer	FS	M	N	N	N	114	58	3232	21.1
6	849F	DuPont Pioneer	FS	M	N	N	N	104	56	3101	22.6
7	845F	DuPont Pioneer	FS	M	N	N	N	123	59	3249	20.2
8	SP 1880	Sorghum Partners	FS	L	N	N	N	56	44	2464	24.5
9	SPX 56216	Sorghum Partners	FS	L	Y	Y	N	90	52	2825	20.4
10	NK 300	Sorghum Partners	FS	ME	N	N	N	96	55	3013	23.5
11	SS 405	Sorghum Partners	FS	L	N	N	N	-----	-----	-----	25.8
12	SP 1615	Sorghum Partners	FS	PS	N	N	N	49	41	2286	27.8
13	SP 2774	Sorghum Partners	FS	ML	Y	N	N	86	52	2878	18.8
14	SP 2876	Sorghum Partners	FS	ML	Y	N	N	105	55	3038	17.3
15	SP 3903	Sorghum Partners	FS	ML	Y	Y	N	126	58	3174	22.4
16	SP 4555	Sorghum Partners	SS	M	Y	N	N	110	56	3086	24.1
17	SP 2880	Sorghum Partners	FS	ML	Y	N	N	113	57	3125	18.7
18	BMR 3211	Croplan	FS	E	Y	N	N	-----	-----	-----	20.8
19	FS 3501	Croplan	FS	M	N	N	N	-----	-----	-----	25.1
20	F4C203	Forage Genetics	FS	ME	N	N	N	-----	-----	-----	22.3
21	F4C204	Forage Genetics	FS	ME	N	N	N	-----	-----	-----	17.7
22	F4C207	Forage Genetics	FS	M	N	N	N	-----	-----	-----	23.7
23	F4C208	Forage Genetics	FS	M	N	N	N	-----	-----	-----	24.8
24	EJ7281	Forage Genetics	FS	L	N	N	N	98	55	3085	24.4
25	EJ7282	Forage Genetics	FS	L	N	N	N	91	53	2955	25.8
26	BMR331	Forage Genetics	FS	L	Y	Y	N	-----	-----	-----	20.4
27	Exp 162189	Forage Genetics	FS	ME	N	N	N	-----	-----	-----	27.0
28	Exp 162191	Forage Genetics	FS	ME	N	N	N	-----	-----	-----	25.5
29	Exp 162192	Forage Genetics	FS	E	Y	N	N	-----	-----	-----	22.3
30	506/10	Scott Seed	FS	L	Y	Y	N	146	62	3473	18.4
31	503/15	Scott Seed	FS	ML	N	N	N	134	61	3417	22.3
32	506/32	Scott Seed	FS	M	Y	N	N	153	63	3495	17.9

Table 4 continued. 2017 summary of calculated nutritional quality with forage yield. Hybrid characteristics were provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Nutritional Quality Calculations			Yield
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	RFQ	TDN	Milk/ton	(tons/ac) 65% Moist.
33	50644x	Scott Seed	SS	PS	Y	N	N	72	47	2498	22.5
34	50643x	Scott Seed	SS	L	Y	N	N	67	46	2542	22.2
35	54243x	Scott Seed	SS	L	N	N	N	56	44	2476	25.9
36	50652x	Scott Seed	SS	PS	Y	Y	N	74	47	2449	21.1
37	50651x	Scott Seed	SS	ME	Y	Y	N	114	57	3138	24.2
38	514/23	Scott Seed	FS	ME	Y	N	N	110	57	3101	23.8
39	506/03	Scott Seed	FS	ME	Y	N	Y	140	62	3496	20.8
40	W7051	Warner Seeds	GS	ML	N	N	N	137	62	3470	23.5
41	W7706	Warner Seeds	GS	ML	N	N	N	142	62	3498	22.3
42	W9501	Warner Seeds	GS	L	N	N	N	121	59	3312	22.6
43	W9506	Warner Seeds	GS	L	N	N	N	123	60	3342	20.9
44	Blackhawk	Blue River	SS	M	Y	N	N	87	52	2920	21.4
45	Nighthawk	Blue River	SS	M	Y	Y	N	118	58	3156	23.4
46	Pelican	Blue River	SS	M	Y	Y	N	118	59	3253	20.7
47	Seahawk	Blue River	SS	ME	Y	N	N	84	51	2786	21.6
48	4EverGreen	Walter Moss	FS	PS	N	N	N	58	44	2445	27.8
49	Mega Green	Walter Moss	SU	PS	N	N	N	54	43	2334	24.3
50	Mega Green BMR	Walter Moss	SU	PS	Y	N	N	78	48	2551	21.7
51	Exp 1701	Walter Moss	FS	PS	Y	Y	Y	79	48	2521	21.2
52	9500W	Richardson Seeds	FS	ME	N	N	N	133	60	3360	21.2
53	Silo 700D	Richardson Seeds	FS	ML	N	N	N	95	53	2919	24.6
54	Silo 700D BMR	Richardson Seeds	FS	ML	Y	N	N	115	58	3199	25.9
55	Pacesetter BMR	Richardson Seeds	FS	PS	Y	N	N	79	50	2720	24.4
56	Bundle King BMR	Richardson Seeds	FS	L	Y	N	N	95	54	2987	21.5
57	Sweeter N Honey BMR	Richardson Seeds	SS	ME	Y	N	N	125	60	3367	21.4
58	Sweeter N Honey II BMR	Richardson Seeds	SS	L	Y	N	N	85	51	2828	18.1
59	Sweeter N Honey II	Richardson Seeds	SS	L	N	N	N	77	49	2707	23.9
60	X122	Richardson Seeds	FS	E	N	N	N	134	61	3402	19.5
61	AgDXS16I01	Agric. Alumni Seed Assoc.	SS	M	Y	N	N	133	61	3371	20.2
62	Canex	Sharp Brothers	FS	ME	N	N	N	124	61	3400	21.3
63	Canex BMR 210	Sharp Brothers	FS	M	Y	N	N	120	59	3344	19.6
64	Canex BMR 600	Sharp Brothers	FS	ML	Y	N	N	107	56	3108	24.0
65	Silex BMR 540	Sharp Brothers	FS	ML	Y	N	N	122	59	3300	23.1
66	Grazex BMR 301	Sharp Brothers	SS	M	Y	N	Y	71	48	2624	21.0

Table 4 continued. 2017 summary of calculated nutritional quality with forage yield. Hybrid characteristics were provided by seed companies. Male sterile entries were pollinated by other hybrids. FS=Forage Sorghum, SS=Sorghum Sudan, SU=Sudangrass, GS=Grain Sorghum

Hybrid Characteristics								Nutritional Quality Calculations			Yield (tons/ac) 65% Moist.
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	RFQ	TDN	Milk/ton	
67	Grazex BMR 801	Sharp Brothers	SS	M	Y	N	Y	71	48	2656	19.7
68	OPAL	MOJO Seed Enterprises	FS	ML	N	Y	N	113	58	3226	22.5
69	Exp 10217	Gayland Ward	FS	L	N	N	N	114	58	3289	24.6
70	Exp 10218	Gayland Ward	FS	L	N	N	Y	103	55	2984	18.9
71	Exp 15F909	Gayland Ward	FS	ML	N	N	N	94	54	3018	20.7
72	GW-600 BMR	Gayland Ward	FS	M	Y	N	N	119	58	3164	23.0
73	Silo Pro BMR	Gayland Ward	FS	L	Y	Y	N	131	60	3336	23.0
74	GW-400 BMR	Gayland Ward	FS	ME	Y	N	Y	133	61	3408	20.2
75	Sweet Forever BMR	Gayland Ward	SS	PS	Y	N	N	76	49	2745	22.3
76	Super Sugar DM	Gayland Ward	SS	L	N	N	N	85	51	2821	21.7
77	Exp 10226	Gayland Ward	SS	PS	N	N	N	61	45	2468	26.9
78	Exp 15F1104	Gayland Ward	SS	PS	N	N	N	71	48	2668	25.6
79	Check 1 (84G62)		GS	ML				149	63	3563	19.7
80	Check 2 (DKS37-07)		GS	ME				144	63	3539	18.4
81	Corn Check: P1151 w/ ear		Corn					92	53	2962	27.5
81b	Corn Check: P1151 w/o ear		Corn					28	30	1588	20.7
82	Corn Check: 55VP77 w/ ear		Corn					133	62	3467	25.5
82b	Corn Check: 55VP77 w/o ear		Corn					37	34	1759	18.9

Table 5. 2017 Sugarcane aphid ratings following identification of aphids in plots on August 15, 2017 and the seasonal average aphid rating. Means followed by the same letter do not significantly differ using LSD (0.05).

Hybrid Characteristics								SCA Ratings					
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	8/17/2017 [†]	8/28/2017	9/7/2017	9/15/2017	Average Rating	
1	AF 7401	Advanta	FS	L	Y	Y	N	1.7	1.0	1.7	1.0	BCD	1.3 A-E
2	XF 7302	Advanta	FS	M	Y	Y	N	1.0	1.7	2.3	3.3	AB	2.1 ABC
3	XF 7303	Advanta	FS	M	Y	Y	N	1.7	2.3	2.3	3.7	A	2.5 AB
4	XF 7103	Advanta	FS	E	Y	Y	N	1.0	0.7	0.0	0.3	CD	0.5 CDE
5	841F	DuPont Pioneer	FS	M	N	N	N	1.3	1.3	3.3	3.3	AB	2.3 ABC
6	849F	DuPont Pioneer	FS	M	N	N	N	1.0	1.0	1.3	1.0	BCD	1.1 A-E
7	845F	DuPont Pioneer	FS	M	N	N	N	1.0	0.7	0.0	0.3	CD	0.5 CDE
8	SP 1880	Sorghum Partners	FS	L	N	N	N	1.0	1.0	0.3	0.3	CD	0.7 BCDE
9	SPX 56216	Sorghum Partners	FS	L	Y	Y	N	1.7	2.0	2.7	0.3	CD	1.7 ABCD
10	NK 300	Sorghum Partners	FS	ME	N	N	N	2.3	2.3	2.7	2.7	ABC	2.5 AB
11	SS 405	Sorghum Partners	FS	L	N	N	N	1.7	1.7	1.0	0.0	D	1.1 A-E
12	SP 1615	Sorghum Partners	FS	PS	N	N	N	1.7	1.0	0.7	0.0	D	0.8 BCDE
13	SP 2774	Sorghum Partners	FS	ML	Y	N	N	1.0	1.0	1.0	0.7	CD	0.9 BCDE
14	SP 2876	Sorghum Partners	FS	ML	Y	N	N	1.7	0.3	1.0	0.7	CD	0.9 BCDE
15	SP 3903	Sorghum Partners	FS	ML	Y	Y	N	1.3	2.0	3.0	3.3	AB	2.4 AB
16	SP 4555	Sorghum Partners	SS	M	Y	N	N	1.0	1.0	2.0	0.7	CD	1.2 A-E
17	SP 2880	Sorghum Partners	FS	ML	Y	N	N	1.3	1.3	1.0	1.3	ABCD	1.3 A-E
18	BMR 3211	Croplan	FS	E	Y	N	N	1.3	0.7	0.7	0.0	D	0.7 CDE
19	FS 3501	Croplan	FS	M	N	N	N	1.0	1.0	2.7	2.3	ABCD	1.8 ABCD
20	F4C203	Forage Genetics	FS	ME	N	N	N	0.7	1.0	0.3	0.3	CD	0.6 CDE
21	F4C204	Forage Genetics	FS	ME	N	N	N	1.0	0.7	0.0	0.7	CD	0.6 CDE
22	F4C207	Forage Genetics	FS	M	N	N	N	1.3	1.7	2.7	2.7	ABC	2.1 ABCD
23	F4C208	Forage Genetics	FS	M	N	N	N	1.3	2.0	3.3	2.7	ABC	2.3 ABC
24	EJ7281	Forage Genetics	FS	L	N	N	N	2.3	1.3	1.0	0.7	CD	1.3 A-E
25	EJ7282	Forage Genetics	FS	L	N	N	N	1.0	1.0	1.0	1.0	BCD	1.0 BCDE
26	BMR331	Forage Genetics	FS	L	Y	Y	N	1.3	1.7	3.3	0.7	CD	1.8 A-E
27	Exp 162189	Forage Genetics	FS	ME	N	N	N	1.0	1.3	1.0	1.0	BCD	1.1 A-E
28	Exp 162191	Forage Genetics	FS	ME	N	N	N	1.0	1.0	1.3	0.7	CD	1.0 A-E
29	Exp 162192	Forage Genetics	FS	E	Y	N	N	1.3	1.0	0.3	0.0	D	0.7 BCDE
30	506/10	Scott Seed	FS	L	Y	Y	N	1.3	2.0	2.0	2.0	ABCD	1.8 ABCD
31	503/15	Scott Seed	FS	ML	N	N	N	1.0	1.0	1.0	1.0	BCD	1.0 BCDE
32	506/32	Scott Seed	FS	M	Y	N	N	2.0	2.0	3.3	1.7	ABCD	2.3 ABC

Table 5 continued. 2017 Sugarcane aphid ratings following identification of aphids in plots on August 15, 2017 and the seasonal average aphid rating. Means followed by the same letter do not significantly differ using LSD (0.05).

Hybrid Characteristics								SCA Ratings					
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	8/17/2017 [†]	8/28/2017	9/7/2017	9/15/2017	Average Rating	
33	50644x	Scott Seed	SS	PS	Y	N	N	2.3	1.7	1.0	0.7	CD	1.4 A-E
34	50643x	Scott Seed	SS	L	Y	N	N	1.0	0.7	0.3	0.0	D	0.5 BCDE
35	54243x	Scott Seed	SS	L	N	N	N	2.0	1.3	0.3	0.0	D	0.9 BCDE
36	50652x	Scott Seed	SS	PS	Y	Y	N	1.3	1.0	0.3	0.7	CD	0.8 BCDE
37	50651x	Scott Seed	SS	ME	Y	Y	N	1.0	1.0	0.3	0.0	D	0.6 BCDE
38	514/23	Scott Seed	FS	ME	Y	N	N	2.7	1.3	0.0	0.3	CD	1.1 A-E
39	506/03	Scott Seed	FS	ME	Y	N	Y	1.0	1.0	0.0	0.0	D	0.5 CDE
40	W7051	Warner Seeds	GS	ML	N	N	N	0.7	0.7	0.3	0.3	CD	0.5 DE
41	W7706	Warner Seeds	GS	ML	N	N	N	1.0	0.7	0.7	0.3	CD	0.7 BCDE
42	W9501	Warner Seeds	GS	L	N	N	N	1.0	1.0	0.3	0.0	D	0.6 BCDE
43	W9506	Warner Seeds	GS	L	N	N	N	1.0	0.7	1.0	0.0	D	0.7 BCDE
44	Blackhawk	Blue River	SS	M	Y	N	N	0.7	0.3	0.0	0.3	CD	0.3 DE
45	Nighthawk	Blue River	SS	M	Y	Y	N	2.0	2.0	3.0	3.3	AB	2.6 A
46	Pelican	Blue River	SS	M	Y	Y	N	1.0	1.0	1.7	0.7	CD	1.1 BCDE
47	Seahawk	Blue River	SS	ME	Y	N	N	0.7	1.0	1.0	0.0	D	0.7 CDE
48	4EverGreen	Walter Moss	FS	PS	N	N	N	1.3	4.3	0.3	0.3	CD	1.6 A-E
49	Mega Green	Walter Moss	SU	PS	N	N	N	1.3	2.0	1.0	0.0	D	1.1 BCDE
50	Mega Green BMR	Walter Moss	SU	PS	Y	N	N	1.7	1.0	1.3	0.7	CD	1.2 BCDE
51	Exp 1701	Walter Moss	FS	PS	Y	Y	Y	2.0	1.0	1.3	0.7	CD	1.3 A-E
52	9500W	Richardson Seeds	FS	ME	N	N	N	1.0	1.0	1.0	0.0	D	0.8 BCDE
53	Silo 700D	Richardson Seeds	FS	ML	N	N	N	1.7	1.7	2.7	3.3	AB	2.3 ABC
54	Silo 700D BMR	Richardson Seeds	FS	ML	Y	N	N	1.7	1.7	2.0	2.0	ABCD	1.8 ABCD
55	Pacesetter BMR	Richardson Seeds	FS	PS	Y	N	N	1.3	0.3	0.0	0.0	D	0.4 CDE
56	Bundle King BMR	Richardson Seeds	FS	L	Y	N	N	1.3	0.7	0.3	0.0	D	0.6 BCDE
57	Sweeter N Honey BMR	Richardson Seeds	SS	ME	Y	N	N	1.3	1.0	0.3	0.0	D	0.7 BCDE
58	Sweeter N Honey II BMR	Richardson Seeds	SS	L	Y	N	N	1.7	1.0	0.0	0.0	D	0.7 BCDE
59	Sweeter N Honey II	Richardson Seeds	SS	L	N	N	N	1.3	0.7	0.3	0.3	CD	0.7 CDE
60	X122	Richardson Seeds	FS	E	N	N	N	1.0	1.0	0.0	0.0	D	0.5 CDE
61	AgDXS16I01	Agric. Alumni Seed Assoc.	SS	M	Y	N	N	1.0	0.0	0.3	0.3	CD	0.4 CDE
62	Canex	Sharp Brothers	FS	ME	N	N	N	1.0	0.7	0.0	0.0	D	0.4 CDE
63	Canex BMR 210	Sharp Brothers	FS	M	Y	N	N	1.0	0.7	0.3	0.3	CD	0.6 BCDE
64	Canex BMR 600	Sharp Brothers	FS	ML	Y	N	N	1.3	0.3	0.7	0.0	D	0.6 CDE
65	Silex BMR 540	Sharp Brothers	FS	ML	Y	N	N	1.7	1.3	1.3	1.3	ABCD	1.4 A-E
66	Grazex BMR 301	Sharp Brothers	SS	M	Y	N	Y	1.3	1.0	1.7	0.3	CD	1.1 A-E

Table 5 continued. 2017 Sugarcane aphid ratings following identification of aphids in plots on August 15, 2017 and the seasonal average aphid rating. Means followed by the same letter do not significantly differ using LSD (0.05).

Hybrid Characteristics								SCA Ratings				
Entry	Hybrid	Company	Sorghum Type	Maturity	Brown Midrib	Brachytic	Male Sterile	8/17/2017 [†]	8/28/2017	9/7/2017	9/15/2017	Average Rating
67	Grazex BMR 801	Sharp Brothers	SS	M	Y	N	Y	1.0	0.3	0.3	1.3 ABCD	0.8 BCDE
68	OPAL	MOJO Seed Enterprises	FS	ML	N	Y	N	1.0	1.3	0.3	0.3 CD	0.8 BCDE
69	Exp 10217	Gayland Ward	FS	L	N	N	N	1.7	1.7	2.3	1.3 ABCD	1.8 ABCD
70	Exp 10218	Gayland Ward	FS	L	N	N	Y	1.3	1.3	2.0	0.7 CD	1.3 A-E
71	Exp 15F909	Gayland Ward	FS	ML	N	N	N	1.0	0.7	0.0	0.0 D	0.4 CDE
72	GW-600 BMR	Gayland Ward	FS	M	Y	N	N	1.0	0.7	0.7	0.3 CD	0.7 BCDE
73	Silo Pro BMR	Gayland Ward	FS	L	Y	Y	N	1.0	1.3	2.3	0.7 CD	1.3 A-E
74	GW-400 BMR	Gayland Ward	FS	ME	Y	N	Y	1.3	1.3	0.3	0.3 CD	0.8 BCDE
75	Sweet Forever BMR	Gayland Ward	SS	PS	Y	N	N	1.0	0.7	0.7	0.0 D	0.6 CDE
76	Super Sugar DM	Gayland Ward	SS	L	N	N	N	1.0	1.0	0.3	0.3 CD	0.7 BCDE
77	Exp 10226	Gayland Ward	SS	PS	N	N	N	1.7	1.0	0.3	0.0 D	0.8 CDE
78	Exp 15F1104	Gayland Ward	SS	PS	N	N	N	0.7	0.0	0.0	0.0 D	0.2 E
79	Check 1 (84G62)		GS	ML				1.7	1.7	2.0	1.3 ABCD	1.7 A-E
80	Check 2 (DKS37-07)		GS	ME				0.3	1.0	0.3	0.3 CD	0.5 CDE
81	Corn Check: P1151 w/ ear		Corn					0.0	0.0	0.0	0.0	0.0
82	Corn Check: 55VP77 w/ ear		Corn					0.0	0.0	0.0	0.0	0.0

[†] rating made prior to aerial insecticide applications on 8/20/2017 and 9/4/2017

Table 6. 2017 grain yields reported for FSA to update Loan Deficiency Payment Tables as requested at the time of entry to the trial. Grain yields for all hybrids evaluated as a percent of the trial’s long-term grain sorghum check Pioneer 84G62. (2017 84G62 yield: 7880 lbs/acre; 8 year avg: 8111 lbs/acre).

Entry	Hybrid	Company	Sorghum Type	Maturity	Male Sterile	Yield, lb/ac (13% Moist.)	Yield as a % of the 2017 Grain Sorghum Check (84G62)	Yield as a % of the Grain Sorghum Check (84G62) 8-year average
80	Check 2 (DKS37-07)		GS	ME	N	8464	107.4	104.3
79	Check 1 (84G62)		GS	ML	N	7880	100.0	97.1
5	841F	DuPont Pioneer	FS	M	N	7339	93.1	90.5
3	XF 7303	Advanta	FS	M	N	7186	91.2	88.6
60	X122	Richardson Seeds	FS	E	N	6770	85.9	83.5
31	503/15	Scott Seed	FS	ML	N	6597	83.7	81.3
52	9500W	Richardson Seeds	FS	ME	N	6563	83.3	80.9
53	Silo 700D	Richardson Seeds	FS	ML	N	6352	80.6	78.3
23	F4C208	Forage Genetics	FS	M	N	6036	76.6	74.4
2	XF 7302	Advanta	FS	M	N	5794	73.5	71.4
6	849F	DuPont Pioneer	FS	M	N	5464	69.3	67.4
4	XF 7103	Advanta	FS	E	N	5176	65.7	63.8
64	Canex BMR 600	Sharp Brothers	FS	ML	N	5167	65.6	63.7
68	OPAL	MOJO Seed Enterprises	FS	ML	N	4998	63.4	61.6
28	Exp 162191	Forage Genetics	FS	ME	N	4484	56.9	55.3
22	F4C207	Forage Genetics	FS	M	N	4442	56.4	54.8
65	Silex BMR 540	Sharp Brothers	FS	ML	N	4407	55.9	54.3
54	Silo 700D BMR	Richardson Seeds	FS	ML	N	4142	52.6	51.1
27	Exp 162189	Forage Genetics	FS	ME	N	3933	49.9	48.5
29	Exp 162192	Forage Genetics	FS	E	N	3908	49.6	48.2
18	BMR 3211	Croplan	FS	E	N	3837	48.7	47.3
1	AF 7401	Advanta	FS	L	N	3808	48.3	46.9
63	Canex BMR 210	Sharp Brothers	FS	M	N	3799	48.2	46.8
19	FS 3501	Croplan	FS	M	N	3600	45.7	44.4
32	506/32	Scott Seed	FS	M	N	3488	44.3	43.0
7	845F	DuPont Pioneer	FS	M	N	3466	44.0	42.7
21	F4C204	Forage Genetics	FS	ME	N	3369	42.7	41.5
72	GW-600 BMR	Gayland Ward	FS	M	N	3264	41.4	40.2
26	BMR331	Forage Genetics	FS	L	N	3229	41.0	39.8
71	Exp 15F909	Gayland Ward	FS	ML	N	3195	40.6	39.4
20	F4C203	Forage Genetics	FS	ME	N	1954	24.8	24.1
8	SP 1880	Sorghum Partners	FS	L	N	1845	23.4	22.7
11	SS 405	Sorghum Partners	FS	L	N	1748	22.2	21.6

Acknowledgements: We greatly appreciate Mr. Michael Menke for his cooperation. Furthermore, we greatly appreciate the assistance Aislinn Walton, Jammie Moore, Mattie Brooks, Evan Motley and Zach Stubbs for their valuable assistance with field maintenance, notes, harvest and sample processing.