

2004

KANSAS PERFORMANCE TESTS WITH

SUMMER ANNUAL FORAGES

REPORT OF PROGRESS 938

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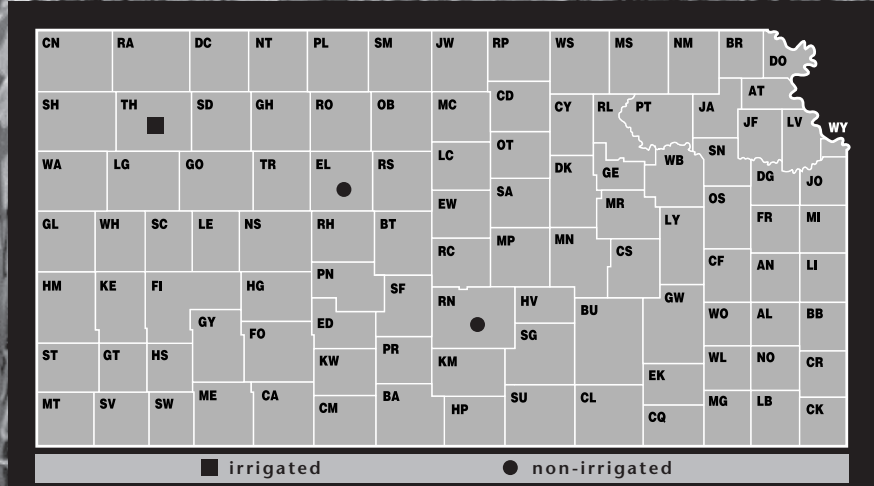


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INTRODUCTION

Kansas is a top producer of meat and animal products. An important input for the beef and dairy industries is the fodder or roughage that forms a key element in ruminant diets. In 2004, Kansas farms produced 3.5 million tons of corn and sorghum silage (January 12, 2005 *Crops Report*, Kansas Agricultural Statistics Service). Additional roughage was obtained from other summer annual forages such as sorghum-sudan, sudan, and millet. This publication presents the results of tests designed to compare forage production and quality of corn, sorghum, and sorghum-sudan hybrids under typical Kansas growing conditions.

PROCEDURES

Crop performance tests in Kansas are a cooperative effort of K-State Research and Extension and the private seed industry. Entry fees from private seed companies help finance the tests. Seed companies receive test announcements and entry forms in late January; deadlines for receipt of completed entry forms and seed are in early March. Because entry selection and location are voluntary, not all hybrids grown in the state are included in tests, and hybrids are not grown uniformly at all test locations.

Seed companies were offered the opportunity to participate in summer annual forage tests at five locations in 2004: Parsons, Hutchinson, St. John, Hays, and Colby. Nine companies entered a total of 20 forage sorghum hybrids and 17 hay types (sorghum-sudan hybrids, sudan, or millet). The test at Parsons was dropped because so few entries were submitted. The test at St. John had to be abandoned because of a severe crabgrass infestation.

Three plots (replications) of each hybrid were grown at each location in a randomized complete-block design. Each forage sorghum plot consisted of four rows trimmed to a length of 20 to 30 feet, depending on location. Forage and grain yield estimates and samples for moisture and quality analysis were obtained from the center two rows. Hay-type entries were planted in narrow rows at high populations.

Each species was harvested as close as possible to the stage of maturity that would optimize yield and quality of forage – forage sorghum hybrids at mid-dough and sorghum-sudan hybrids at boot stage. The hay-type hybrids were harvested twice (Cut 1 and Cut 2).

Samples from each harvest were collected to determine moisture content and for laboratory analysis of forage quality: crude protein (CP), neutral detergent fiber (NDF), acid detergent fiber (ADF), and acid detergent lignin (ADL). Crude protein was calculated by multiplying the nitrogen content by 6.25, the average proportion of elemental nitrogen to plant protein.

Near infrared reflectance (NIR) technology was used to predict forage quality parameters. Calibration equations were based on a subset of samples from the current year that were analyzed with wet chemistry. The calibration equations fit the data quite well, with R^2 of 0.99, 0.98, 0.97, and 0.94 for CP, NDF, ADF, and ADL, respectively. Quality parameters were not available for the second harvest of hay types at Colby.

Although not all of the crude protein in a forage is available to the animal as true protein, a forage with more crude protein generally requires less supplemental protein in the ration. Neutral detergent fiber (NDF) estimates total fiber consisting of cellulose, hemicellulose, and lignin, and is often related to intake. Forages with lesser NDF values are desirable because the animal can consume more of the forage, requiring fewer ration supplements. Acid detergent fiber (ADF) estimates total cellulose, lignin, and pectin, and often is used to predict the energy content of forage. Forages with lesser ADF values are desirable because of their greater energy content and higher digestibility. Acid detergent lignin (ADL) estimates the lignin fraction, an indigestible fiber with no nutritive value. Lesser ADL values are associated with greater forage digestibility.

RESULTS

Individual test results are presented in Tables 1 to 6. Average values for hybrids in all 3 tests grown in 2004 are listed in Tables 7 and 8. Hybrid rankings often followed similar trends when grown in more than one location or in more than one year. Some hybrids, however, were more consistent than others or were better adapted to either dryland or irrigated conditions.

Species yield differences depended on test location. At Hutchinson, the hay types out yielded the forage sorghums on average. Second-cutting yields were actually greater than those for the first cutting, thanks to favorable rainfall during most of the summer. Forage sorghums out yielded the hay types at Hays and Colby. In general, yields were greater than those for last year.

As in the 2003 tests, forage sorghum hybrids tended to have less crude protein than the hay types had. The various fiber components (NDF, ADF, ADL) showed inconsistent species patterns. At Hutchinson, the hay types had less fiber and lignin than the forage sorghums had. At Hays and Colby, the forage sorghums had less fiber on average than the hay types had. At Colby in particular, the average fiber and lignin content of the forage sorghums was much less than that for the hay types. Individual hybrids from either species differed significantly from the species averages for most quality characteristics. Harvest management and hybrid selection both play an important role in obtaining high yields of quality forage.

Table 1. Hutchinson Summer Annual Forage Test - Forage Production, 2004.

BRAND	NAME	Forage					Grain Days		Ht. (in)	Lodg (%)	Stnd (%)
		Yield (pounds DM/acre)		Moist. (%)		yield (bu/a)	to blm				
		Total	Cut 1	Cut 2	Cut 1			Cut 2			
FORAGE SORGHUM											
SORG. PARTNERS	1990	12,519	--	--	72	--	--	--	120	0	--
DEKALB	FS-5	11,167	--	--	63	--	89	75	106	0	--
SORG. PARTNERS	HIKANE II	9,600	--	--	67	--	95	77	112	63	--
SORG. PARTNERS	NK 300	9,571	--	--	41	--	110	73	76	100	--
DEKALB	DKS59-09	8,604	--	--	51	--	112	71	74	60	--
SORG. PARTNERS	SS 405	8,586	--	--	64	--	73	87	132	3	--
BUFFALO	CANEX BMR328	7,800	--	--	57	--	93	78	103	14	--
MATURITY CHECK	EARLY SUMAC	7,442	--	--	67	--	71	73	93	22	--
BUFFALO	CANEX BMR208	7,409	--	--	57	--	85	73	98	73	--
BUFFALO	SILEX BMR	7,023	--	--	66	--	58	79	110	37	--
MATURITY CHECK	ATLAS	6,756	--	--	69	--	86	80	105	2	--
BUFFALO	CANEX BMR248	5,222	--	--	69	--	85	74	112	37	--
	AVERAGES	8,475	--	--	62	--	87	76	103	34	--
	CV(%)	6	--	--	5	--	9	2	7	73	--
	LSD(0.05)*	850	--	--	5	--	13	2	12	42	--
HAY TYPES**											
								Ht1	Ht2		
MATURITY CHECK	NB280S (SS)	15,755	7,082	8,673	79	71	--	68	66	--	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	15,432	6,567	8,865	83	78	--	57	57	--	--
VALLEY PREMIUM	SWEET CHIEF X-TRA (SS)	15,365	6,859	8,506	81	73	--	58	61	--	--
BUFFALO	GRAZEX BMR782 (SS)	14,919	6,544	8,375	83	75	--	64	63	--	--
VALLEY PREMIUM	SW. CHIEF X-TRABMR (SS)	14,913	6,438	8,476	84	74	--	68	62	--	--
SORG. PARTNERS	TRUDAN HEADLESS (SU)	14,333	6,349	7,983	83	77	--	57	58	--	--
BUFFALO	GRAZEX BMR727 (SS)	14,153	6,040	8,113	81	75	--	59	61	--	--
VALLEY PREMIUM	SUPER CHIEF (SS)	13,900	6,159	7,742	82	77	--	63	58	--	--
MATURITY CHECK	PIPER (SU)	13,495	5,987	7,507	79	62	--	71	65	--	--
	AVERAGES	14,696	6,447	8,249	82	74	--	63	61	--	--
	CV(%)	4	5	5	3	2	--	7	4	--	--
	LSD(0.05)*	974	581	778	4	2	--	7	4	--	--
TEST, OVERALL											
	AVERAGES	11,141	--	--	70	--	--	86	--	--	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 1. Hutchinson Summer Annual Forage Test - Forage Production, 2004 (continued).

BRAND	NAME	Forage					Grain Days		Ht. (in)	Lodg (%)	Stnd (%)
		Yield (pounds DM/acre)		Moist. (%)		yield	to				
		Total	Cut 1	Cut 2	Cut 1	Cut 2	(bu/a)	blm			
2 - Year Averages											
FORAGE SORGHUM											
SORG. PARTNERS	1990	11,079	--	--	67	--	0	--	104	0	--
DEKALB	FS-5	9,921	--	--	61	--	50	84	88	0	--
SORG. PARTNERS	SS 405	8,260	--	--	62	--	38	108	121	3	--
DEKALB	DKS59-09	7,499	--	--	57	--	60	86	63	60	--
MATURITY CHECK	ATLAS	6,774	--	--	65	--	46	98	95	2	--
MATURITY CHECK	EARLY SUMAC	5,873	--	--	63	--	41	69	77	22	--
	AVERAGES	7,929	--	--	62	--	46	89	90	34	--
HAY TYPES**											
								Ht1	Ht2		
MATURITY CHECK	NB280S (SS)	12,699	4,798	7,901	74	62	--	53	66	3	92
SORG. PARTNERS	SORDAN HEADLESS (SS)	12,541	4,282	8,260	76	72	--	43	62	5	82
VALLEY PREMIUM	SWEET CHIEF X-TRA (SS)	11,814	4,501	7,312	78	68	--	46	63	7	92
VALLEY PREMIUM	SW. CHIEF X-TRABMR (SS)	9,977	4,134	5,844	79	69	--	50	57	5	88
MATURITY CHECK	PIPER (SU)	9,703	3,774	5,929	75	56	--	53	62	10	80
	AVERAGES	11,003	4,243	6,760	76	68	--	48	60	6	84
TEST, OVERALL											
	AVERAGES	9,239	--	--	68	--	--	67	--	--	--
3 - Year Averages											
FORAGE SORGHUM											
SORG. PARTNERS	1990	10,206	--	--	70	--	0	98	94	0	112
MATURITY CHECK	ATLAS	6,605	--	--	66	--	45	96	84	2	81
MATURITY CHECK	EARLY SUMAC	5,902	--	--	64	--	38	76	69	54	76
	AVERAGES	7,499	--	--	63	--	41	91	80	42	81
HAY TYPES**											
								Ht1	Ht2		
SORG. PARTNERS	SORDAN HEADLESS (SS)	10,043	3,887	6,156	76	74	--	45	57	5	82
MATURITY CHECK	NB280S (SS)	9,986	4,064	5,921	76	66	--	55	64	3	92
VALLEY PREMIUM	SWEET CHIEF X-TRA (SS)	9,676	4,178	5,498	77	71	--	49	60	7	92
VALLEY PREMIUM	SW. CHIEF X-TRABMR (SS)	8,295	3,767	4,529	78	72	--	50	55	5	88
MATURITY CHECK	PIPER (SU)	8,270	3,518	4,752	75	60	--	59	65	10	80
	AVERAGES	8,970	3,832	5,138	76	71	--	50	58	6	84
TEST, OVERALL											
	AVERAGES	8,083	--	--	69	--	--	64	--	--	--

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** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 2. Hutchinson Summer Annual Forage Test - Forage Quality, 2004.

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
FORAGE SORGHUM									
SORG. PARTNERS	1990	7.3	--	65.8	--	43.7	--	8.6	--
MATURITY CHECK	EARLY SUMAC	7.1	--	59.2	--	38.1	--	8.4	--
DEKALB	DKS59-09	6.5	--	65.0	--	45.8	--	10.2	--
BUFFALO	SILEX BMR	6.4	--	56.0	--	35.5	--	6.1	--
SORG. PARTNERS	NK 300	6.2	--	66.9	--	47.3	--	10.0	--
SORG. PARTNERS	HIKANE II	6.2	--	60.5	--	39.6	--	8.4	--
SORG. PARTNERS	SS 405	5.8	--	70.0	--	47.9	--	9.6	--
DEKALB	FS-5	5.7	--	60.2	--	40.2	--	8.0	--
BUFFALO	CANEX BMR328	5.5	--	62.6	--	41.7	--	7.4	--
MATURITY CHECK	ATLAS	5.2	--	57.6	--	37.9	--	7.5	--
BUFFALO	CANEX BMR208	4.5	--	63.9	--	44.0	--	7.8	--
BUFFALO	CANEX BMR248	4.4	--	64.4	--	44.5	--	8.4	--
	AVERAGES	5.9	--	62.7	--	42.2	--	8.4	--
	CV(%)	13.3	--	2.7	--	3.8	--	6.9	--
	LSD(0.05)*	1.7	--	3.7	--	3.6	--	1.3	--
HAY TYPES**									
SORG. PARTNERS	SORDAN HEADLESS (SS)	17.2	12.4	57.6	60.4	34.1	34.4	6.3	5.1
SORG. PARTNERS	TRUDAN HEADLESS (SU)	17.1	11.2	56.9	61.8	32.6	37.6	6.1	6.6
VALLEY PREMIUM	SWEET CHIEF X-TRA (SS)	16.7	10.0	57.5	57.9	33.0	34.0	6.1	5.5
MATURITY CHECK	NB280S (SS)	15.3	11.2	59.6	60.3	35.8	34.0	6.1	6.2
BUFFALO	GRAZEX BMR727 (SS)	15.3	11.0	58.3	60.6	34.6	34.5	4.9	5.0
BUFFALO	GRAZEX BMR782 (SS)	15.0	11.7	57.9	56.7	35.0	31.9	5.3	4.9
MATURITY CHECK	PIPER (SU)	14.9	8.2	61.3	67.1	37.2	42.0	6.6	7.9
VALLEY PREMIUM	SUPER CHIEF (SS)	14.6	9.7	61.3	59.9	39.3	35.3	7.2	5.5
VALLEY PREMIUM	SW. CHIEF X-TRABMR (SS)	13.6	10.1	58.3	57.7	36.3	34.1	5.3	5.1
	AVERAGES	15.5	10.6	58.7	60.3	35.3	35.3	6.0	5.7
	CV(%)	8.8	12.5	3.9	2.9	8.7	5.5	12.0	8.6
	LSD(0.05)*	NS	NS	NS	4.0	NS	4.5	NS	1.1
TEST, OVERALL									
	AVERAGES	10.0	--	61.0	--	39.2	--	7.3	--

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** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 2. Hutchinson Summer Annual Forage Test - Forage Quality, 2004 (continued).

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
2-year Averages									
FORAGE SORGHUM									
MATURITY CHECK	EARLY SUMAC	7.5	--	59.0	--	36.1	--	7.2	--
SORG. PARTNERS	1990	7.4	--	65.2	--	40.7	--	7.3	--
DEKALB	DKS59-09	7.3	--	63.2	--	41.1	--	8.6	--
DEKALB	FS-5	6.9	--	61.8	--	38.0	--	7.0	--
MATURITY CHECK	ATLAS	6.2	--	58.2	--	36.0	--	6.9	--
SORG. PARTNERS	SS 405	5.7	--	64.8	--	41.4	--	7.9	--
	AVERAGES	6.8	--	61.8	--	38.8	--	7.3	--
HAY TYPES**									
SORG. PARTNERS	SORDAN HEADLESS (SS)	15.8	12.5	57.2	62.9	31.0	35.4	5.2	5.4
VALLEY PREMIUM	SWEET CHIEF X-TRA (SS)	15.4	11.9	57.2	61.4	30.8	35.3	5.3	5.9
MATURITY CHECK	NB280S (SS)	14.2	11.5	58.8	63.5	32.4	35.5	5.1	6.1
MATURITY CHECK	PIPER (SU)	14.2	10.5	59.4	67.1	33.0	40.0	5.3	7.2
VALLEY PREMIUM	SW. CHIEF X-TRABMR (SS)	13.7	10.9	58.1	60.2	33.6	35.5	5.0	5.8
	AVERAGES	14.9	11.8	57.7	62.3	31.5	35.9	4.9	5.9
TEST, OVERALL									
	AVERAGES	10.9	--	59.6	--	34.9	--	6.0	--
3-year Averages									
FORAGE SORGHUM									
SORG. PARTNERS	1990	7.4	--	64.5	--	39.8	--	7.7	--
MATURITY CHECK	EARLY SUMAC	7.1	--	57.8	--	35.5	--	8.0	--
MATURITY CHECK	ATLAS	6.3	--	57.0	--	35.8	--	7.3	--
	AVERAGES	6.5	--	60.7	--	38.1	--	8.1	--
HAY TYPES**									
SORG. PARTNERS	SORDAN HEADLESS (SS)	13.9	11.8	57.0	61.4	30.7	34.4	5.2	5.1
VALLEY PREMIUM	SWEET CHIEF X-TRA (SS)	13.5	11.2	56.8	60.3	30.4	34.7	5.2	5.8
MATURITY CHECK	NB280S (SS)	13.0	10.7	57.8	62.1	31.5	35.2	5.2	6.0
VALLEY PREMIUM	SW. CHIEF X-TRABMR (SS)	12.8	10.6	57.1	59.1	31.9	34.4	4.7	5.8
MATURITY CHECK	PIPER (SU)	12.7	9.6	58.7	65.0	32.4	39.0	5.5	7.3
	AVERAGES	13.4	11.1	57.1	61.0	31.0	35.1	5.0	5.8
TEST, OVERALL									
	AVERAGES	10.0	--	58.8	--	34.4	--	6.5	--

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** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 3. Hays Summer Annual Forage Test - Forage Production, 2004.

BRAND	NAME	Forage				Grain Days yield to (bu/a) blm	Ht. Lodg (in) (%)	Stnd (%)			
		Yield (pounds DM/acre)		Moist. (%)							
		Total	Cut 1	Cut 2	Cut 1				Cut 2		
FORAGE SORGHUM											
SORG. PARTNERS	1990	15,594	--	--	75	--	--	--	105	0	--
FRONTIER	MUCHO SWEET	14,199	--	--	71	--	50	83	85	3	--
DEKALB	FS-5	14,080	--	--	67	--	63	85	97	0	--
SEED RESOURCE	FS-575	13,486	--	--	74	--	21	97	97	0	--
SEED RESOURCE	FS-555	13,475	--	--	73	--	46	85	93	27	--
SORG. PARTNERS	SS 405	13,371	--	--	69	--	32	88	99	3	--
MATURITY CHECK	ATLAS	12,703	--	--	73	--	41	88	99	0	--
SEED RESOURCE	BMR100	12,444	--	--	67	--	84	82	93	43	--
SORG. PARTNERS	HIKANE II	12,404	--	--	70	--	54	75	85	0	--
DEKALB	DKS59-09	12,211	--	--	65	--	105	79	65	30	--
SORG. PARTNERS	NK 300	12,147	--	--	59	--	100	76	63	43	--
SEED RESOURCE	BMR106	11,828	--	--	64	--	70	77	78	17	--
BUFFALO	CANEX BMR248	10,539	--	--	67	--	35	79	90	0	--
BUFFALO	CANEX BMR208	10,538	--	--	64	--	57	75	79	0	--
SEED RESOURCE	FS-515HQ	10,535	--	--	59	--	72	77	62	97	--
MATURITY CHECK	EARLY SUMAC	10,485	--	--	70	--	38	78	76	40	--
SEED RESOURCE	FAME	9,917	--	--	61	--	91	76	79	67	--
BUFFALO	CANEX BMR328	8,777	--	--	68	--	45	74	81	33	--
	AVERAGES	12,152	--	--	68	--	59	81	85	22	--
	CV(%)	10	--	--	4	--	36	4	7	121	--
	LSD(0.05)*	1,995	--	--	4	--	35	5	10	45	--
HAY TYPES**											
								Ht1	Ht2		
SORG. PARTNERS	TRUDAN 8 (SU)	11,000	6,531	4,469	78	66	--	68	56	--	--
SEED RESOURCE	ATT-A-GRAZE (SS)	9,863	6,096	3,768	82	67	--	66	55	--	--
SORG. PARTNERS	SORDAN 79 (SS)	9,448	6,295	3,153	81	70	--	62	49	--	--
BUFFALO	GRAZEX BMR727 (SS)	8,873	6,030	2,843	81	71	--	62	47	--	--
FRONTIER	CHAMP II (SS)	8,822	5,500	3,323	82	66	--	70	55	--	--
MATURITY CHECK	NB280S (SS)	8,737	5,372	3,365	81	69	--	75	52	--	--
BUFFALO	GRAZEX BMR782 (SS)	8,319	5,547	2,772	82	68	--	64	41	--	--
SEED RESOURCE	SS200BMR (SS)	8,303	5,324	2,979	83	70	--	64	44	--	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	8,190	6,159	2,031	84	69	--	58	32	--	--
SEED RESOURCE	PS210BMR (SS)	8,126	4,943	3,183	85	72	--	58	37	--	--
MATURITY CHECK	PIPER (SU)	7,994	4,486	3,508	75	64	--	77	62	--	--
SORG. PARTNERS	TRUDAN HEADLESS (SU)	7,948	5,131	2,817	84	71	--	60	35	--	--
	AVERAGES	8,802	5,618	3,184	82	69	--	65	47	--	--
	CV(%)	9	11	15	1	2	--	7	11	--	--
	LSD(0.05)*	1,399	1,015	823	2	2	--	7	9	--	--
TEST, OVERALL											
	AVERAGES	10,812	--	--	73	--	--	77	--	--	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 3. Hays Summer Annual Forage Test - Forage Production, 2004 (continued).

BRAND	NAME	Forage					Grain Days		Ht. Lodg (in)	Std (%)	(%)
		Yield (pounds DM/acre)		Moist. (%)		yield to	blm				
		Total	Cut 1	Cut 2	Cut 1	Cut 2	(bu/a)				
2 - Year Averages											
FORAGE SORGHUM											
SORG. PARTNERS	1990	11,190	--	--	75	--	--	--	76	4	--
SEED RESOURCE	FS-575	10,929	--	--	74	--	21	121	80	12	--
DEKALB	FS-5	10,807	--	--	69	--	63	106	76	5	--
SORG. PARTNERS	SS 405	10,719	--	--	70	--	32	111	80	20	--
SEED RESOURCE	FS-555	10,002	--	--	74	--	46	85	73	18	--
SORG. PARTNERS	NK 300	9,804	--	--	64	--	100	102	54	22	--
MATURITY CHECK	ATLAS	9,450	--	--	73	--	41	115	77	17	--
DEKALB	DKS59-09	8,972	--	--	67	--	105	98	55	32	--
SEED RESOURCE	BMR100	8,830	--	--	70	--	84	103	74	47	--
SEED RESOURCE	FS-515HQ	8,756	--	--	66	--	72	107	55	50	--
SEED RESOURCE	BMR106	8,509	--	--	65	--	70	97	63	40	--
MATURITY CHECK	EARLY SUMAC	8,123	--	--	70	--	38	101	65	32	--
SEED RESOURCE	FAME	7,727	--	--	63	--	91	96	61	57	--
	AVERAGES	9,218	--	--	69	--	59	104	68	28	--
HAY TYPES**											
								Ht1	Ht2		
SORG. PARTNERS	TRUDAN 8 (SU)	11,210	6,980	4,230	68	70	--	56	39	30	--
SORG. PARTNERS	SORDAN 79 (SS)	10,299	6,835	3,464	72	74	--	52	38	13	--
SEED RESOURCE	ATT-A-GRAZE (SS)	10,265	6,564	3,701	70	71	--	53	42	3	--
MATURITY CHECK	NB280S (SS)	10,167	6,095	4,071	70	70	--	59	42	0	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	9,365	6,383	2,983	71	70	--	46	29	0	--
SEED RESOURCE	SS200BMR (SS)	8,830	5,428	3,402	72	71	--	52	38	0	--
SEED RESOURCE	PS210BMR (SS)	8,687	5,245	3,442	74	72	--	47	33	0	--
MATURITY CHECK	PIPER (SU)	7,243	4,593	2,650	64	69	--	62	45	33	--
	AVERAGES	9,119	5,854	3,265	70	71	--	53	38	9	--
TEST, OVERALL											
	AVERAGES	9,231	--	--	69	--	--	62	--	22	--
3 - Year Averages											
FORAGE SORGHUM											
SORG. PARTNERS	1990	9,862	--	--	75	--	--	--	68	4	--
SORG. PARTNERS	SS 405	9,684	--	--	71	--	32	107	81	20	--
MATURITY CHECK	ATLAS	9,630	--	--	74	--	41	107	75	17	--
SORG. PARTNERS	NK 300	9,074	--	--	67	--	100	100	53	22	--
SEED RESOURCE	BMR106	8,658	--	--	65	--	70	91	63	40	--
SEED RESOURCE	BMR100	8,041	--	--	72	--	84	99	72	47	--
SEED RESOURCE	FAME	7,305	--	--	62	--	91	87	58	57	--
MATURITY CHECK	EARLY SUMAC	7,238	--	--	69	--	38	91	64	32	--
	AVERAGES	8,594	--	--	70	--	59	98	66	28	--
HAY TYPES**											
								Ht1	Ht2		
SORG. PARTNERS	SORDAN 79 (SS)	9,261	6,951	3,464	75	74	--	55	38	13	--
SORG. PARTNERS	TRUDAN 8 (SU)	9,118	6,298	4,230	71	70	--	60	39	30	--
MATURITY CHECK	NB280S (SS)	8,530	5,816	4,071	72	70	--	62	42	0	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	7,833	5,844	2,983	76	70	--	47	29	0	--
SEED RESOURCE	PS210BMR (SS)	7,738	5,443	3,442	77	72	--	49	33	0	--
SEED RESOURCE	SS200BMR (SS)	7,494	5,226	3,402	75	71	--	53	38	0	--
MATURITY CHECK	PIPER (SU)	6,160	4,393	2,650	69	69	--	62	45	33	--
	AVERAGES	7,764	5,587	3,265	74	71	--	53	38	9	--
TEST, OVERALL											
	AVERAGES	8,163	--	--	72	--	--	60	--	22	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 4. Hays Summer Annual Forage Test - Forage Quality, 2004.

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
FORAGE SORGHUM									
SORG. PARTNERS	1990	8.1	--	66.1	--	43.5	--	8.9	--
MATURITY CHECK	ATLAS	7.5	--	54.1	--	33.5	--	7.1	--
DEKALB	DKS59-09	7.4	--	48.6	--	32.6	--	7.4	--
SORG. PARTNERS	NK 300	7.4	--	51.1	--	33.5	--	7.8	--
FRONTIER	MUCHO SWEET	7.2	--	53.3	--	35.2	--	8.6	--
SEED RESOURCE	FS-515HQ	7.0	--	54.5	--	36.8	--	8.3	--
SEED RESOURCE	BMR100	7.0	--	53.6	--	34.6	--	7.3	--
SORG. PARTNERS	SS 405	6.3	--	60.6	--	40.2	--	9.1	--
SORG. PARTNERS	HIKANE II	6.1	--	49.6	--	32.5	--	7.6	--
BUFFALO	CANEX BMR248	5.9	--	56.6	--	34.3	--	5.9	--
SEED RESOURCE	FS-575	5.8	--	56.8	--	35.6	--	7.3	--
BUFFALO	CANEX BMR328	5.7	--	53.4	--	34.9	--	5.8	--
SEED RESOURCE	BMR106	5.4	--	54.6	--	35.5	--	6.5	--
MATURITY CHECK	EARLY SUMAC	5.3	--	51.5	--	33.0	--	8.0	--
BUFFALO	CANEX BMR208	5.3	--	55.1	--	35.6	--	6.4	--
SEED RESOURCE	FAME	5.1	--	56.3	--	37.1	--	8.1	--
DEKALB	FS-5	5.0	--	59.4	--	39.2	--	8.7	--
SEED RESOURCE	FS-555	4.5	--	58.6	--	38.9	--	8.4	--
	AVERAGES	6.2	--	55.2	--	35.9	--	7.6	--
	CV(%)	8.2	--	5.6	--	6.9	--	7.0	--
	LSD(0.05)*	1.1	--	6.5	--	5.2	--	1.1	--
HAY TYPES**									
SORG. PARTNERS	TRUDAN HEADLESS (SU)	12.8	8.6	62.0	60.3	43.7	37.4	8.7	7.3
SORG. PARTNERS	TRUDAN 8 (SU)	12.7	4.5	61.2	59.3	39.5	37.0	8.3	6.3
SORG. PARTNERS	SORDAN HEADLESS (SS)	12.3	9.1	60.3	60.4	41.3	36.9	7.7	7.0
BUFFALO	GRAZEX BMR727 (SS)	12.2	7.2	59.8	59.8	39.0	35.7	8.0	5.7
SORG. PARTNERS	SORDAN 79 (SS)	11.5	6.6	61.6	61.7	41.4	37.1	8.1	6.6
MATURITY CHECK	NB280S (SS)	11.4	5.2	62.1	62.8	41.7	38.5	8.7	6.5
FRONTIER	CHAMP II (SS)	11.0	5.4	63.3	60.5	44.2	38.1	9.2	6.6
BUFFALO	GRAZEX BMR782 (SS)	10.8	5.7	60.4	60.7	42.1	37.1	7.7	5.6
SEED RESOURCE	PS210BMR (SS)	10.8	6.9	59.7	60.9	41.7	36.9	6.6	6.3
SEED RESOURCE	SS200BMR (SS)	10.7	6.9	61.9	60.4	42.4	36.8	7.8	6.1
MATURITY CHECK	PIPER (SU)	10.2	4.5	62.9	66.8	40.7	42.1	8.9	7.1
SEED RESOURCE	ATT-A-GRAZE (SS)	9.7	4.4	63.0	61.2	42.8	39.4	8.4	6.0
	AVERAGES	11.3	6.3	61.5	61.2	41.7	37.7	8.2	6.4
	CV(%)	8.6	13.4	2.0	2.4	5.0	3.2	7.2	5.9
	LSD(0.05)*	NS	1.8	NS	3.3	NS	2.6	1.3	0.8
TEST, OVERALL									
	AVERAGES	8.3	--	57.7	--	38.2	--	7.8	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 4. Hays Summer Annual Forage Test - Forage Quality, 2004 (continued).

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
2-year Averages									
FORAGE SORGHUM									
DEKALB	DKS59-09	9.1	--	52.2	--	32.4	--	7.1	--
SORG. PARTNERS	1990	8.8	--	63.9	--	39.9	--	7.7	--
SORG. PARTNERS	NK 300	8.5	--	55.8	--	34.2	--	7.4	--
SEED RESOURCE	FS-515HQ	8.5	--	56.9	--	35.6	--	7.6	--
SEED RESOURCE	BMR100	8.1	--	55.1	--	33.4	--	7.0	--
MATURITY CHECK	ATLAS	7.6	--	55.6	--	33.8	--	7.2	--
SEED RESOURCE	FS-575	7.5	--	57.4	--	33.9	--	6.6	--
SEED RESOURCE	FS-555	7.5	--	58.9	--	36.6	--	7.4	--
SORG. PARTNERS	SS 405	7.4	--	59.5	--	37.0	--	7.9	--
SEED RESOURCE	BMR106	7.1	--	55.6	--	34.0	--	6.5	--
MATURITY CHECK	EARLY SUMAC	7.0	--	54.0	--	33.0	--	7.7	--
SEED RESOURCE	FAME	7.0	--	56.9	--	35.8	--	7.9	--
DEKALB	FS-5	6.3	--	58.5	--	36.1	--	7.5	--
	AVERAGES	7.6	--	56.5	--	34.8	--	7.3	--
HAY TYPES**									
SORG. PARTNERS	SORDAN HEADLESS (SS)	11.4	9.9	59.0	60.5	36.6	37.8	7.1	8.0
SORG. PARTNERS	TRUDAN 8 (SU)	11.3	7.5	60.3	59.7	35.8	36.9	7.1	7.3
SORG. PARTNERS	SORDAN 79 (SS)	10.7	8.8	60.0	60.9	37.4	37.8	7.4	7.5
MATURITY CHECK	NB280S (SS)	10.3	8.4	60.0	61.2	37.2	37.6	7.6	7.4
SEED RESOURCE	PS210BMR (SS)	10.3	9.4	59.1	60.4	37.4	38.3	6.5	7.8
SEED RESOURCE	SS200BMR (SS)	10.1	8.8	59.4	59.7	37.5	37.3	7.3	7.2
MATURITY CHECK	PIPER (SU)	9.5	7.9	60.7	63.3	36.7	39.6	7.9	7.8
SEED RESOURCE	ATT-A-GRAZE (SS)	9.5	8.1	60.0	60.2	37.2	38.1	7.3	6.9
	AVERAGES	10.7	9.0	59.8	60.3	37.0	37.7	7.3	7.5
TEST, OVERALL									
	AVERAGES	8.9	--	57.8	--	35.6	--	7.2	--
3-year Averages									
FORAGE SORGHUM									
SORG. PARTNERS	NK 300	7.8	--	55.5	--	33.5	--	7.4	--
SORG. PARTNERS	1990	7.5	--	62.6	--	38.7	--	7.7	--
SEED RESOURCE	BMR100	7.5	--	53.2	--	32.4	--	6.7	--
SEED RESOURCE	FAME	6.7	--	51.7	--	34.6	--	7.0	--
MATURITY CHECK	EARLY SUMAC	6.6	--	50.5	--	31.1	--	6.9	--
MATURITY CHECK	ATLAS	6.5	--	55.0	--	33.6	--	7.0	--
SEED RESOURCE	BMR106	6.5	--	53.3	--	33.4	--	6.2	--
SORG. PARTNERS	SS 405	6.1	--	58.5	--	36.0	--	7.8	--
	AVERAGES	6.9	--	54.9	--	34.0	--	7.0	--
HAY TYPES**									
SORG. PARTNERS	SORDAN HEADLESS (SS)	11.0	8.6	59.8	60.6	38.9	37.3	7.3	7.7
SORG. PARTNERS	TRUDAN 8 (SU)	9.8	6.5	60.8	57.5	37.2	36.5	8.2	7.6
SEED RESOURCE	SS200BMR (SS)	9.4	7.7	60.3	57.4	38.1	35.7	7.8	7.1
SEED RESOURCE	PS210BMR (SS)	9.4	8.2	59.0	60.0	38.8	37.4	7.9	7.6
MATURITY CHECK	NB280S (SS)	9.3	7.1	60.9	59.2	38.5	37.1	8.6	7.8
SORG. PARTNERS	SORDAN 79 (SS)	9.0	7.1	61.1	58.7	38.9	36.7	8.3	7.9
MATURITY CHECK	PIPER (SU)	8.9	6.6	61.6	63.4	38.3	40.0	8.8	8.5
	AVERAGES	9.8	7.7	60.2	58.7	38.3	36.7	8.0	7.5
TEST, OVERALL									
	AVERAGES	8.2	--	57.6	--	36.3	--	7.6	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 5. Colby Irrigated Summer Annual Forage Test - Forage Production, 2004.

BRAND	NAME	Forage				Grain Days		Ht. Lodg (in)	Stnd (%)		
		Yield (pounds DM/acre)		Moist. (%)		yield (bu/a)	to blm				
		Total	Cut 1	Cut 2	Cut 1	Cut 2					
FORAGE SORGHUM											
DEKALB	FS-5	20,538	--	--	66	--	71	87	112	3	--
SORG. PARTNERS	1990	19,053	--	--	69	--	--	--	117	0	--
SEED RESOURCE	FS-575	18,651	--	--	70	--	60	85	109	53	--
MATURITY CHECK	ATLAS	18,397	--	--	68	--	47	90	109	8	--
DRUSSEL SEED	DSS DIVIDEND BMR	18,394	--	--	70	--	78	83	93	77	--
SORG. PARTNERS	HIKANE II	18,330	--	--	68	--	71	82	111	12	--
SEED RESOURCE	FS-555	18,233	--	--	67	--	97	83	97	43	--
SORG. PARTNERS	SS 405	17,929	--	--	66	--	74	85	120	0	--
DEKALB	DKS59-09	17,405	--	--	69	--	102	83	77	28	--
SORG. PARTNERS	NK 300	17,355	--	--	64	--	100	69	78	7	--
PIONEER	84B52	16,737	--	--	71	--	101	83	109	52	--
SEED RESOURCE	BMR100	15,937	--	--	72	--	76	83	98	70	--
SEED RESOURCE	BMR106	15,857	--	--	66	--	88	78	97	10	--
SEED RESOURCE	FS-515HQ	15,833	--	--	66	--	115	70	78	3	--
SEED RESOURCE	FAME	15,644	--	--	67	--	82	80	101	33	--
GOLDEN HARVEST	SI GRO H-45	15,149	--	--	65	--	83	72	74	5	--
MATURITY CHECK	EARLY SUMAC	15,056	--	--	72	--	55	84	101	5	--
BUFFALO	SILEX BMR	14,381	--	--	70	--	54	86	105	7	--
	AVERAGES	17,160	--	--	68	--	80	81	99	23	--
	CV(%)	8	--	--	4	--	15	2	4	73	--
	LSD(0.05)*	2,263	--	--	5	--	20	2	7	28	--
HAY TYPES**											
								Ht1	Ht2		
GOLDEN HARVEST	RE-GRO EX35 (SS)	15,809	11,724	4,085	75	69	--	99	41	--	--
MATURITY CHECK	NB280S (SS)	15,663	11,128	4,535	73	66	--	110	46	--	--
GOLDEN HARVEST	RE-GRO H-22B (SS)	14,674	10,150	4,524	74	68	--	101	43	--	--
SORG. PARTNERS	TRUDAN HEADLESS (SU)	14,564	10,535	4,029	78	71	--	92	34	--	--
MATURITY CHECK	PIPER (SU)	13,972	7,810	6,162	71	62	--	102	47	--	--
DRUSSEL SEED	DSS BONUS-R BMR (SS)	13,933	9,441	4,492	82	69	--	91	41	--	--
GOLDEN HARVEST	RE GRO H-33 (SS)	13,705	10,812	2,893	75	68	--	95	32	--	--
SEED RESOURCE	ATT-A-GRAZE (SS)	13,084	8,360	4,724	77	69	--	97	40	--	--
SEED RESOURCE	SS200BMR (SS)	12,866	9,267	3,598	77	69	--	94	40	--	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	12,503	8,658	3,845	80	71	--	93	35	--	--
SEED RESOURCE	PS210BMR (SS)	11,341	8,087	3,255	82	71	--	94	37	--	--
	AVERAGES	13,829	9,634	4,195	77	69	--	97	40	--	--
	CV(%)	9	8	11	2	3	--	3	13	--	--
	LSD(0.05)*	2,048	1,378	788	3	3	--	5	9	--	--
TEST, OVERALL											
	AVERAGES	15,896	--	--	71	--	--	98	--	--	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 5. Colby Irrigated Summer Annual Forage Test - Forage Production, 2004 (continued).

BRAND	NAME	Forage					Grain Days		Ht. Lodg (in)	Std (%)	
		Yield (pounds DM/acre)		Moist. (%)		yield to	blm				
		Total	Cut 1	Cut 2	Cut 1	Cut 2	(bu/a)	(%)			
2 - Year Averages											
FORAGE SORGHUM											
DEKALB	FS-5	17,820	--	--	66	--	59	85	103	2	100
SEED RESOURCE	FS-555	17,297	--	--	67	--	48	83	98	22	78
SORG. PARTNERS	NK 300	16,438	--	--	63	--	70	76	73	3	84
SORG. PARTNERS	1990	16,421	--	--	69	--	0	--	110	0	86
SEED RESOURCE	FS-575	16,256	--	--	70	--	30	96	111	27	65
DRUSSEL SEED	DSS DIVIDEND BMR	15,788	--	--	69	--	47	85	92	67	91
SEED RESOURCE	BMR100	15,172	--	--	68	--	47	82	96	72	90
DEKALB	DKS59-09	15,064	--	--	68	--	81	79	74	19	108
SEED RESOURCE	FS-515HQ	14,954	--	--	66	--	72	78	73	2	72
MATURITY CHECK	ATLAS	14,828	--	--	69	--	39	86	103	4	49
SEED RESOURCE	FAME	14,022	--	--	65	--	67	78	93	22	102
MATURITY CHECK	EARLY SUMAC	13,845	--	--	71	--	48	80	98	8	80
SEED RESOURCE	BMR106	13,739	--	--	67	--	67	79	92	30	71
	AVERAGES	15,211	--	--	68	--	53	82	95	18	82
HAY TYPES**											
MATURITY CHECK	NB280S (SS)	13,739	9,918	3,820	72	53	--	Ht1 104	Ht2 31	0	--
DRUSSEL SEED	DSS BONUS-R BMR (SS)	13,242	9,921	3,321	79	50	--	84	27	0	--
MATURITY CHECK	PIPER (SU)	12,108	7,758	4,351	68	49	--	100	31	0	--
SEED RESOURCE	ATT-A-GRAZE (SS)	12,033	8,667	3,366	74	50	--	92	27	0	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	11,955	8,697	3,258	79	51	--	84	26	0	--
SEED RESOURCE	PS210BMR (SS)	11,902	8,643	3,259	80	48	--	87	25	0	--
SEED RESOURCE	SS200BMR (SS)	11,827	8,716	3,111	74	48	--	87	27	0	--
	AVERAGES	12,451	9,090	3,361	75	50	--	91	27	3	--
TEST, OVERALL											
	AVERAGES	14,202	--	--	71	--	--	94	--	9	--
3 - Year Averages											
FORAGE SORGHUM											
SORG. PARTNERS	NK 300	15,630	--	--	65	--	62	78	72	3	84
SORG. PARTNERS	1990	15,144	--	--	71	--	0	--	100	0	86
SEED RESOURCE	BMR100	13,248	--	--	71	--	43	80	92	72	90
SEED RESOURCE	FAME	12,777	--	--	66	--	57	74	84	22	102
MATURITY CHECK	ATLAS	12,587	--	--	70	--	31	85	97	4	49
SEED RESOURCE	BMR106	12,386	--	--	67	--	62	76	86	30	71
MATURITY CHECK	EARLY SUMAC	11,899	--	--	71	--	39	76	92	8	80
	AVERAGES	13,615	--	--	69	--	43	81	90	18	82
HAY TYPES**											
MATURITY CHECK	NB280S (SS)	14,439	9,795	4,644	71	52	--	Ht1 99	Ht2 33	0	--
MATURITY CHECK	PIPER (SU)	13,005	8,122	4,883	67	48	--	95	33	0	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	12,125	8,542	3,583	79	54	--	83	28	0	--
SEED RESOURCE	SS200BMR (SS)	11,592	8,059	3,533	75	48	--	84	31	0	--
SEED RESOURCE	PS210BMR (SS)	11,270	7,765	3,505	81	50	--	84	28	0	--
	AVERAGES	12,281	8,537	3,743	75	50	--	87	29	3	--
TEST, OVERALL											
	AVERAGES	13,182	--	--	72	--	--	89	--	9	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 6. Colby Irrigated Summer Annual Forage Test - Forage Quality, 2004.

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
FORAGE SORGHUM									
DRUSSEL SEED	DSS DIVIDEND BMR	7.5	--	43.7	--	27.9	--	5.2	--
PIONEER	84B52	7.3	--	43.9	--	29.0	--	6.0	--
SEED RESOURCE	FS-575	6.9	--	39.1	--	26.5	--	5.5	--
SORG. PARTNERS	HIKANE II	6.8	--	38.7	--	25.5	--	5.7	--
BUFFALO	SILEX BMR	6.4	--	43.1	--	28.8	--	5.5	--
SEED RESOURCE	BMR100	6.2	--	49.6	--	32.1	--	5.9	--
DEKALB	DKS59-09	6.1	--	42.0	--	28.1	--	6.0	--
SORG. PARTNERS	NK 300	6.1	--	41.5	--	26.7	--	6.6	--
SORG. PARTNERS	1990	6.1	--	65.4	--	43.1	--	8.2	--
DEKALB	FS-5	6.1	--	48.1	--	31.5	--	7.4	--
MATURITY CHECK	ATLAS	6.0	--	45.2	--	29.4	--	6.2	--
GOLDEN HARVEST	SI GRO H-45	6.0	--	40.8	--	27.3	--	6.4	--
SEED RESOURCE	BMR106	5.9	--	38.9	--	26.2	--	4.1	--
SEED RESOURCE	FS-515HQ	5.7	--	39.1	--	26.5	--	6.5	--
SEED RESOURCE	FS-555	5.5	--	42.7	--	27.8	--	7.0	--
SORG. PARTNERS	SS 405	5.2	--	54.3	--	36.2	--	7.7	--
MATURITY CHECK	EARLY SUMAC	5.2	--	43.7	--	28.6	--	6.3	--
SEED RESOURCE	FAME	4.9	--	45.0	--	29.5	--	6.5	--
	AVERAGES	6.1	--	44.7	--	29.5	--	6.3	--
	CV(%)	11.1	--	6.8	--	6.6	--	7.6	--
	LSD(0.05)*	1.4	--	6.4	--	4.1	--	1.0	--
HAY TYPES**									
DRUSSEL SEED	DSS BONUS-R BMR (SS)	8.0	--	62.8	--	41.7	--	9.5	--
SEED RESOURCE	PS210BMR (SS)	8.0	--	61.9	--	41.5	--	8.3	--
GOLDEN HARVEST	RE GRO H-33 (SS)	7.8	--	60.6	--	39.3	--	9.0	--
SEED RESOURCE	ATT-A-GRAZE (SS)	7.1	--	61.9	--	42.4	--	10.3	--
MATURITY CHECK	PIPER (SU)	6.7	--	64.9	--	44.7	--	10.9	--
GOLDEN HARVEST	RE-GRO EX35 (SS)	6.3	--	60.5	--	39.1	--	8.3	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	6.2	--	66.4	--	45.9	--	9.3	--
GOLDEN HARVEST	RE-GRO H-22B (SS)	5.8	--	59.0	--	39.6	--	9.6	--
SEED RESOURCE	SS200BMR (SS)	5.5	--	60.0	--	39.8	--	7.5	--
SORG. PARTNERS	TRUDAN HEADLESS (SU)	5.2	--	63.2	--	43.5	--	9.7	--
MATURITY CHECK	NB280S (SS)	4.7	--	66.3	--	45.5	--	10.7	--
	AVERAGES	6.5	--	62.5	--	42.1	--	9.4	--
	CV(%)	20.2	--	2.5	--	3.9	--	7.3	--
	LSD(0.05)*	NS	--	3.5	--	3.7	--	1.5	--
TEST, OVERALL									
	AVERAGES	6.2	--	51.5	--	34.3	--	7.4	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 6. Colby Irrigated Summer Annual Forage Test - Forage Quality, 2004 (continued).

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
2-year Averages									
FORAGE SORGHUM									
DRUSSEL SEED	DSS DIVIDEND BMR	7.3	--	49.6	--	32.2	--	7.0	--
SEED RESOURCE	BMR100	6.7	--	52.4	--	34.6	--	8.1	--
SORG. PARTNERS	1990	6.7	--	62.2	--	40.2	--	8.3	--
SORG. PARTNERS	NK 300	6.4	--	50.6	--	33.4	--	8.1	--
SEED RESOURCE	FS-575	6.4	--	46.8	--	31.1	--	7.3	--
SEED RESOURCE	FS-515HQ	6.4	--	46.8	--	30.1	--	7.2	--
SEED RESOURCE	BMR106	6.2	--	47.6	--	32.2	--	7.0	--
DEKALB	DKS59-09	6.1	--	50.1	--	33.8	--	7.7	--
DEKALB	FS-5	6.0	--	51.7	--	33.8	--	7.9	--
MATURITY CHECK	ATLAS	5.9	--	49.5	--	32.0	--	7.0	--
SEED RESOURCE	FS-555	5.9	--	49.5	--	32.5	--	8.2	--
SEED RESOURCE	FAME	5.7	--	51.7	--	34.3	--	8.0	--
MATURITY CHECK	EARLY SUMAC	5.3	--	48.2	--	32.0	--	7.8	--
	AVERAGES	6.3	--	50.4	--	33.1	--	7.5	--
HAY TYPES**									
SEED RESOURCE	PS210BMR (SS)	9.6	--	61.8	--	40.3	--	7.8	--
DRUSSEL SEED	DSS BONUS-R BMR (SS)	9.0	--	61.5	--	40.2	--	9.5	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	8.1	--	64.1	--	43.0	--	8.9	--
SEED RESOURCE	SS200BMR (SS)	8.1	--	59.5	--	38.3	--	7.6	--
SEED RESOURCE	ATT-A-GRAZE (SS)	7.8	--	60.3	--	39.9	--	9.4	--
MATURITY CHECK	PIPER (SU)	7.5	--	63.3	--	41.6	--	9.6	--
MATURITY CHECK	NB280S (SS)	6.4	--	63.5	--	41.2	--	9.0	--
	AVERAGES	8.0	--	61.5	--	40.1	--	8.7	--
TEST, OVERALL									
	AVERAGES	6.9	--	54.5	--	35.8	--	8.0	--
3-year Averages									
FORAGE SORGHUM									
SORG. PARTNERS	1990	6.7	--	63.0	--	40.1	--	8.3	--
SEED RESOURCE	BMR100	6.2	--	53.4	--	35.0	--	8.2	--
SORG. PARTNERS	NK 300	6.1	--	53.0	--	35.3	--	8.6	--
SEED RESOURCE	BMR106	5.9	--	49.8	--	33.7	--	7.6	--
MATURITY CHECK	ATLAS	5.9	--	51.3	--	32.9	--	7.1	--
SEED RESOURCE	FAME	5.6	--	52.9	--	35.9	--	8.6	--
MATURITY CHECK	EARLY SUMAC	5.2	--	49.2	--	32.6	--	8.0	--
	AVERAGES	6.1	--	52.7	--	34.7	--	8.0	--
HAY TYPES**									
SEED RESOURCE	PS210BMR (SS)	8.7	--	61.6	--	40.5	--	8.2	--
SEED RESOURCE	SS200BMR (SS)	7.8	--	59.4	--	37.9	--	7.7	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	7.8	--	63.7	--	42.5	--	9.1	--
MATURITY CHECK	PIPER (SU)	6.9	--	63.0	--	41.6	--	9.4	--
MATURITY CHECK	NB280S (SS)	6.3	--	62.8	--	41.0	--	9.3	--
	AVERAGES	7.6	--	61.5	--	40.1	--	8.8	--
TEST, OVERALL									
	AVERAGES	6.7	--	56.1	--	36.8	--	8.3	--

* Unless two varieties differ by more than the LSD, little confidence can be placed in one being superior to the other.

** SS = Sorghum-sudan hybrid, SU = Sudan.

Table 7. Summer Annual Forage Tests, Multi-location Averages - Forage Production, 2004.

BRAND	NAME	Forage					Grain Days		Ht. (in)	Lodg (%)	Stnd (%)
		Yield (pounds DM/acre)			Moist. (%)		yield (bu/a)	to blm			
		Total	Cut 1	Cut 2	Cut 1	Cut 2					
FORAGE SORGHUM											
SORG. PARTNERS	1990	15,722	--	--	72	--	--	--	114	0	--
DEKALB	FS-5	15,262	--	--	66	--	75	83	105	1	--
SORG. PARTNERS	HIKANE II	13,445	--	--	68	--	73	78	103	25	--
SORG. PARTNERS	SS 405	13,296	--	--	66	--	60	87	117	2	--
SORG. PARTNERS	NK 300	13,024	--	--	55	--	103	73	72	50	--
DEKALB	DKS59-09	12,740	--	--	61	--	106	78	72	39	--
MATURITY CHECK	ATLAS	12,619	--	--	70	--	58	86	105	3	--
MATURITY CHECK	EARLY SUMAC	10,995	--	--	70	--	55	78	90	22	--
	AVERAGES	12,596	--	--	66	--	75	79	96	27	--
HAY TYPES*											
MATURITY CHECK	NB280S (SS)	13,385	7,861	5,524	77	69	--	Ht1 84	Ht2 55	--	--
SORG. PARTNERS	TRUDAN HEADLESS (SU)	12,281	7,338	4,943	82	73	--	70	43	--	--
SORG. PARTNERS	SORDAN HEADLESS (SS)	12,042	7,128	4,914	82	73	--	69	41	--	--
MATURITY CHECK	PIPER (SU)	11,820	6,094	5,726	75	63	--	83	58	--	--
	AVERAGES	12,442	7,233	5,209	80	70	--	75	49	--	--
TEST, OVERALL											
	AVERAGES	12,616	--	--	72	--	--	87	--	--	--

* SS = Sorghum-sudan hybrid, SU = Sudan.

Table 8. Summer Annual Forage Tests, Multi-location Averages - Forage Quality, 2004.

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
FORAGE SORGHUM									
SORG. PARTNERS	1990	7.2	--	65.8	--	43.5	--	8.6	--
DEKALB	DKS59-09	6.7	--	51.9	--	35.5	--	7.9	--
SORG. PARTNERS	NK 300	6.6	--	53.2	--	35.8	--	8.1	--
SORG. PARTNERS	HIKANE II	6.3	--	49.6	--	32.5	--	7.2	--
MATURITY CHECK	ATLAS	6.2	--	52.3	--	33.6	--	7.0	--
MATURITY CHECK	EARLY SUMAC	5.8	--	51.5	--	33.2	--	7.5	--
SORG. PARTNERS	SS 405	5.8	--	61.7	--	41.4	--	8.8	--
DEKALB	FS-5	5.6	--	55.9	--	37.0	--	8.0	--
	AVERAGES	6.1	--	54.2	--	35.9	--	7.4	--
HAY TYPES*									
SORG. PARTNERS	SORDAN HEADLESS (SS)	11.9	10.8	61.4	60.4	40.4	35.6	7.8	6.0
SORG. PARTNERS	TRUDAN HEADLESS (SU)	11.7	9.9	60.7	61.0	39.9	37.5	8.2	7.0
MATURITY CHECK	PIPER (SU)	10.6	6.3	63.0	66.9	40.9	42.0	8.8	7.5
MATURITY CHECK	NB280S (SS)	10.5	8.2	62.6	61.6	41.0	36.2	8.5	6.4
	AVERAGES	11.1	8.4	60.9	60.7	39.7	36.5	7.8	6.1
TEST, OVERALL									
	AVERAGES	8.2	--	56.7	--	37.2	--	7.5	--

* SS = Sorghum-sudan hybrid, SU = Sudan.

Table 9. Entrants in the 2004 Kansas Summer Annual Forage Performance Tests.

Brand/Company/Address			Brand/Company/Address		
Crop - Hybrid	Traits* Maturity**		Crop - Hybrid	Traits* Maturity**	
BUFFALO			PIONEER		
Sharp Bros. Seed Company Box 140 Healy, KS 67850 800-462-8483 sharpseed.com			Pioneer, A DuPont Co. 1616 S. Kentucky Suite C350 Amarillo, TX 79102 800-258-5604 pioneer.com		
FS - CANEX BMR208	BMR	E	FS - 84B52	BMR	M
FS - CANEX BMR248	BMR	E			
FS - CANEX BMR328	BMR	E			
FS - SILEX BMR	BMR	ML			
SS - GRAZEX BMR727	BMR	E			
SS - GRAZEX BMR782	BMR	E			
DEKALB			SEED RESOURCE		
Monsanto Seed 7159 N. 247th West P.O. Box 7 Mount Hope, KS 67108 620-445-2290 monsanto.com			Seed Resource P.O. Box 326 505 East Service Rd. Tulia, TX 79088 806-995-3882		
FS - DKS59-09	--	M	FS - BMR100	BMR	M
FS - FS-5	--	M	FS - BMR106	BMR	M
			FS - FAME	--	M
			FS - FS-515HQ	--	M
			FS - FS-555	--	L
			FS - FS-575	--	L
			SS - ATT-A-GRAZE	--	M
			SS - PS210BMR	BMR	PS
			SS - SS200BMR	BMR	M
DRUSSEL SEED			SORG. PARTNERS		
Drussel Seed, Inc. 2197 West Parallel Rd. Garden City, KS 67846 620-275-2359			Sorghum Partners, Inc. Box 189, 403 S. Monroe New Deal, TX 79350 806-746-5566 sorghum-partners.com		
FS - DSS DIVIDEND BMR	BMR	ML	FS - 1990	--	PS
SS - DSS BONUS-R BMR	BMR	PS	FS - HIKANE II	--	M
			FS - NK 300	--	M
			FS - SS 405	--	L
			SS - SORDAN 79	--	M
			SS - SORDAN HEADLESS	--	PS
			SU - TRUDAN 8	--	M
			SU - TRUDAN HEADLESS	--	PS
FRONTIER			VALLEY PREMIUM		
Frontier Hybrids PO Box 177 1612 Ave. H Abernathy, TX 79311 806-298-2595 frontierhybrid.com			Valley Feed & Seed, Inc. 11916 S. Highway 17 Hutchinson, KS 67501 316-942-2278		
FS - MUCHO SWEET	--	--	SS - SUPER CHIEF	--	M
SS - CHAMP II	--	--	SS - SW. CHIEF X-TRABMR	BMR	ME
			SS - SWEET CHIEF X-TRA	--	ME
GOLDEN HARVEST					
J.C. Robinson Seed Co. 100 JC Robinson Blvd. Waterloo, NE 68069 800-228-9906 jcrob.com					
FS - SI GRO H-45	--	M			
SS - RE GRO H-33	BMR	M			
SS - RE-GRO EX35	BMR	M			
SS - RE-GRO H-22B	--	M			

* BMR = brown mid-rib

** E = early, M = medium, L = late, PS = photoperiod sensitive

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