SDSU Extension
agronomy
South Dakota Agricultural Experiment Station Research at SDSU
JANUARY 2019
SOUTH DAKOTA STATE UNIVERSITY®
AGRONOMY, HORTICULTURE, & PLANT SCIENCE DEPARTMENT

2018 South Dakota Irrigated Forage Sorghum Trial Results Vale, SD

Chris Graham | SDSU Extension Agronomist
Bruce Swan | SDSU Agriculture Research Manager
Justin Brown | SDSU Graduate Intern
Jonathan Kleinjan | SDSU Extension Crop Production Associate

Cooperator:	Darrel and Doug Cox
Location:	Vale, SD
Soil Type:	Sandy Loam
Fertilizer:	NA
Previous crop:	Sorghum
Tillage:	Till
Row spacing:	30”
Seeding Rate:	80,000 PLS/acre
Herbicide:	Brawl II
Fungicide:	NA
Date seeded:	6/6/2018
Date harvested:	September/October, 2018

Publication: 03-3071-2018

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Table 1. 2018 forage sorghum entry information sheet.

Entry Hybrid Name/Number	Sorghum Subspecies (FS, SS, SU)†	Brown Midrib	Germ (%)	Maturity Group (E, M/E, M, F)‡	Male Sterile	Days to 50% Bloom	Dryland Entry?	Irrigated Entry?	Company
ADV XF372	FS	Y	85	M	N	-	1	1	Advanta
AF8301	FS	N	85	M	N	-	1	1	Advanta
ADV XF033	FS	N	85	M	N	-	1	1	Advanta
AS6402	SS	Y	85	M	N	-	1	1	Advanta
ADV XS007	SS	Y	70	M	N	-	1	1	Advanta
ADV XS008	SS	Y	70	M	N	-	1	1	Advanta
F70FS71 BMR	FS	Y	85	E	-	52	1	1	Dynagro
F71FS72 BMR	FS	Y	85	E	-	55	1	1	Dynagro
705F	FS	-	85	ME	-	58	1	1	Dynagro
Super Sile 30	FS	-	85	ME	-	58	1	1	Dynagro
FX18878 BMR	FS	Y	85	ME	-	59	1	1	Dynagro
F74FS23 BMR	FS	Y	85	M	-	61	1	1	Dynagro
TopTon	FS	-	85	M	-	61	1	1	Dynagro
FX18851 BMR	FS	Y	85	M	-	61	1	1	Dynagro
FX18317	FS	-	85	M	-	62	1	1	Dynagro
Danny Boy BMR	SS	Y	85	M	Photo	62	1	1	Dynagro
Fullgraze BMR	SS	Y	85	MF	-	64	1	1	Dynagro
GX16921	FS	-	85	MF	-	66	1	1	Dynagro
F76FS77 BMR	FS	Y	85	MF	-	67	1	1	Dynagro
Fullgraze II	SS	-	85	MF	Y	68	1	1	Dynagro
Fullgraze II BMR	SS	Y	85	MF	Y	68	1	1	Dynagro
NK300	FS	N	85	ME	N	63	1	1	Sorghum Partners
SP4555	SS	Y	85	M	N	68	1	1	Sorghum Partners
SS405	FS	N	85	F	N	72	1	1	Sorghum Partners
95BMR	FS	Y	85	ML	N	85	0	1	La Crosse
96BMR	FS	Y	85	L	Y	90	1	0	La Crosse
Bruiser BMR	SS	Y	85	ME	N	65	1	0	Star Seed
Nutrimaxx BMR	SS	Y	85	L	N	90	1	0	Star Seed
Excel	SS	N	85	L	N	90	1	0	Star Seed

† Type: FS = Forage Sorghum, SS = Sorghum x Sudan, SU = Sudangrass
‡ Maturity: E = Early, M/E = Medium Early, M = Medium, F = Full Season

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Table 2. 2018 irrigated forage sorghum performance trial results (average of 4 replications) at Vale, SD§. Yield is adjusted to 65% moisture.

Hybrid	Height (in.)	Harvest Moisture (%)	Yield (tons/a)
705F	81	77	21.7
95BMR	79	76	19.6
ADV XF033	82	77	18.4
ADV XF372	70	79	14.1
ADV XS007	119	78	20.0
ADV XS008	80	79	15.3
AF8301	83	76	20.3
AS6402	79	78	13.5
Danny Boy BMR	120	76	**22.0**
F74FS23BMR	102	79	18.0
F76FS77 BMR	75	78	17.8
Fullgraze BMR	115	75	17.8
F70FS71 BMR	107	64	**31.3**
F71FS72 BMR	80	64	**26.9**
FX18317	115	76	21.4
TopTon	113	78	**23.9**
Fullgraze II	139	71	**24.3**
Fullgraze II BMR	124	72	**23.3**
FX18851BMR	77	77	19.5
FX18878BMR	101	79	20.7
GX16921	69	76	17.9
NK300	89	76	**24.0**
SP4555	109	72	21.5
SS405	134	73	**30.3**
Super Sile 30	111	78	20.4
Trial Average	98	75	21.0
LSD (0.05)†	-	-	5.3
C.V. %‡	-	-	12.7

§ Values in bold rank in the top third of all varieties for each category
† Value required (≥LSD) to determine if varieties are significantly different from one another.
‡ C.V. is a measure of variability or experimental error, 15% or less is acceptable.

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Table 3. 2018 irrigated forage sorghum performance trial results - forage quality

Hybrid	CP (%)	ADF (%)	NDF (%)	RFV	TDN (%)	NE Maint (MCal/cwt)	NE Gain (MCal/cwt)	NE Lact (MCal/cwt)
705F	8.3	43.4	62.6	82.3	53.1	48.7	23.6	55.2
95BMR	7.7	**38.7**	62.0	88.3	**58.4**	**57.0**	**31.2**	**61.0**
ADV XF033	**9.3**	44.4	64.3	78.7	51.9	47.0	22.0	54.0
ADV XF372	**10.1**	39.5	61.2	**89.3**	57.5	55.6	29.9	60.0
ADV XS007	7.8	46.7	66.0	74.0	49.3	42.8	18.1	51.1
ADV XS008	**9.4**	44.3	64.3	78.7	52.0	47.1	22.1	54.1
AF8301	7.7	41.6	64.7	81.3	55.1	51.8	26.4	57.3
AS6402	**9.4**	41.7	63.3	83.7	55.1	51.7	26.3	57.3
Danny Boy BMR	6.3	45.3	65.0	76.7	50.9	45.3	20.4	52.8
F74FS23BMR	8.2	41.0	62.2	85.7	55.9	53.0	27.5	58.2
F76FS77 BMR	**8.9**	**37.9**	**58.9**	**94.3**	**59.3**	**58.3**	**32.4**	**62.0**
Fullgraze BMR	6.7	**37.4**	**56.9**	**97.7**	**59.9**	**59.3**	**33.3**	**62.6**
F70FS71 BMR	7.6	**37.4**	**56.8**	**98.3**	**59.9**	**59.3**	**33.3**	**62.7**
F71FS72 BMR	7.8	**33.3**	**52.7**	**111.3**	**64.6**	**66.2**	**39.5**	**67.8**
FX18317	6.3	40.7	62.0	85.7	56.1	53.4	27.9	58.5
TopTon	5.1	40.4	**59.4**	**90.3**	56.5	54.0	28.4	58.9
Fullgraze II	5.9	47.5	67.3	71.7	48.4	41.3	16.7	50.1
Fullgraze II BMR	6.4	40.8	62.3	85.7	56.1	53.4	27.8	58.5
FX18851BMR	**8.7**	**39.3**	61.5	88.3	**57.7**	**56.0**	**30.3**	**60.3**
FX18878BMR	**8.3**	**37.1**	**55.7**	**100.3**	**60.2**	**59.7**	**33.6**	**63.0**
GX16921	7.8	39.6	**61.0**	89.0	57.4	55.3	29.6	59.9
NK300	7.9	42.2	62.7	83.7	54.5	50.8	25.5	56.7
SP4555	6.9	**37.0**	**55.6**	**101.0**	**60.4**	**59.9**	**33.8**	**63.1**
SS405	6.1	44.3	61.3	84.3	52.0	46.9	21.8	54.0
Super Sile 30	**8.4**	43.2	63.1	81.3	53.3	49.0	23.8	55.4
Trial Average	7.7	41.0	61.3	87.3	55.8	52.9	27.4	58.2
LSD (0.05)†	2.78	5.22	6.12	14.3	5.96	9.22	8.5	6.48
C.V. %‡	18.1	6.3	4.9	8.1	5.2	8.6	15.2	5.5

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Table 4. 2018 irrigated forage sorghum performance trial results - mineral nutrition

Hybrid	Ca (%)	P (%)	K (%)	Mg (%)
705F	0.45	0.20	1.66	**0.37**
95BMR	0.46	0.17	1.29	**0.37**
ADV XF033	0.40	0.19	1.45	**0.37**
ADV XF372	**0.52**	**0.26**	**2.05**	**0.42**
ADV XS007	**0.49**	0.20	**1.93**	**0.39**
ADV XS008	**0.46**	**0.24**	**2.00**	0.34
AF8301	0.39	0.16	1.43	0.33
AS6402	**0.48**	**0.23**	**1.84**	**0.35**
Danny Boy BMR	0.44	0.15	1.77	0.34
F74FS23BMR	0.41	**0.23**	**1.83**	0.31
F76FS77 BMR	**0.48**	**0.25**	**1.95**	0.34
Fullgraze BMR	0.45	0.19	1.63	0.33
F70FS71 BMR	0.40	0.21	1.55	0.33
F71FS72 BMR	0.39	0.22	1.61	0.35
FX18317	0.42	0.16	1.73	0.31
TopTon	0.33	0.12	1.50	0.27
Fullgraze II	0.35	0.12	1.31	0.23
Fullgraze II BMR	0.40	0.15	1.47	0.26
FX18851BMR	**0.48**	**0.23**	**1.83**	0.35
FX18878BMR	0.44	**0.26**	1.78	0.32
GX16921	0.43	**0.22**	1.57	0.29
NK300	**0.52**	0.21	**1.88**	**0.39**
SP4555	0.40	0.18	1.50	0.29
SS405	0.37	0.17	1.70	0.26
Super Sile 30	**0.49**	0.19	1.61	**0.41**
Trial Average	0.43	0.20	1.68	0.33
LSD (0.05)†	0.094	0.054	0.44	0.1
C.V. %‡	10.8	13.3	12.8	15

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