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### Basic Agronomic Details

<b>Locations:</b>	Dakota Lakes Research Farm - Hughes County	Southeast of Kennebec - Lyman County	North of Wall - Pennington County
<b>Cooperator:</b>	Dwayne Beck - Dakota Lakes	Kim Halverson - Kennebec	Dale Patterson - Wall
<b>Soil Type:</b>	Silt Loam	Silty Clay	Clay Loam
<b>Previous crop:</b>	Soybeans	Winter Wheat	Winter Wheat
<b>Tillage:</b>	No-Till	No-Till	No-Till
<b>Row spacing:</b>	30 inches	30 inches	30 inches
<b>Seeding Rate:</b>	60,000 pure live seed/acre	60,000 pure live seed/acre	60,000 pure live seed/acre
<b>Fertilizer:</b>	75 lbs N/Acre as 28-0-0	100 lbs of N as urea plus 20 pounds of N as Ammonium Sulfate	80 lbs N/Acre as 32-0-0 (6-10-2015)
<b>Herbicide:</b>	2/3 rate of Harness Extra in November, 1/3 rate Harness Extra at planting, Roundup and 2,4 D in the spring application, Buctril also applied post emergence.	1 quart Atrazine plus Roundup last fall (downy brome control), roundup in early spring. Another quart of Atrazine plus generic Dual at planting time	32 oz Roundup/A (6-10-2015) Field Cultivated on July 13, 2015.
<b>Date seeded:</b>	5/28/15	5/27/15	6/8/15
<b>Date harvested:</b>	10/21/15	10/21/15	11/9/15

### **Trial Highlights**

Sorghum variety trials were initiated at three sites across central and western South Dakota. These sites were located in Pierre, Kennebec and Wall. Agronomic practices are referenced in the Basic Agronomic Details section of this document. In total, there were 29 hybrids tested. Basic information on each hybrid can be found in Table 1. Dakota Lakes averaged 70 bu/acre with a range of 94 – 52 bu/ac while the average at Kennebec was 124 bu/ac with a range of 144-106 bu/ac. Full results can be found in Tables 2 & 3. The Dakota Lakes site had a large variation between replicated blocks. This is reflected in a higher Coefficient of Variation (CV). The rolling topography of the trial site likely played a role in this variation as a yield gradient could be seen from higher to lower elevations. The Wall site data is not published due to poor stands and unreliable data.

Another important note is the uncommonly long season that was experienced during the 2015 growing season. October was the fourth hottest on record over the last 120 years with an average temperature 3 °F above normal. This likely benefitted the longer maturity hybrids in the trial with a longer grain filling period and lack of a killing frost. At Kennebec, for example, regression analysis indicates that yields for later maturing hybrids increased by approximately 1 bu/ac per day based on days to 50% bloom. However, there are still large genetic variances even within similar maturing hybrids. Moreover, even the latest hybrids tested were only Medium relative maturity, which reflects the overall shorter growing season in South Dakota compared to more southerly regions. These trials will continue to highlight many of these differences across the various growing environments for sorghum production in South Dakota.

### **Acknowledgements**

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Table 1. 2015 SDSU Sorghum hybrid entry details

Variety Information		Agronomic Information			
Company Name	Hybrid Name	Grain Color (B, C, R, Y)‡	Maturity Group†	Days to 50% Bloom	Panicle Type (SC or SO)§
Alta Seeds	AG1101	R	E	55	SO
	AG1201	B	E	60	SO
	AG1203	B	M/E	63	SO
	AG1301	C	M/E	63	SC
	AG1401	W	E	61	SO
Browning Seeds	Lightning	B	E	57	SO
Channel	5C35	C	E	58	SO
	5B27	B	E	56	SO
Chromatin/Sorghum Partners	KS310	B	E	59	SO
	KS585	B	M	69	SO
	SPX11814	B	E	59	NA
	SPX15714	C	M	69	NA
Dekalb	DK28E	B	E	58	SO
	DKS28-05	B	E	57	SC
	DKS29-28	B	E	58	SO
	Pulsar	B	E	60	SO
Fontanelle	G3472	B	E	60	SC
Legend Seeds	LGS 5001	R	E	51	SO
	LGS EXP 1	R	E	55	SO
	LGS EXP 2	W	E	55	SO
	LGS EXP 3	W	M/E	65	SC
Monsanto	MSM171	B	E	58	SO
	MSM176	B	E	60	SC
	MSN185	C	E	59	SO
	MSN187	B	E	59	SC
	MSN189	B	E	60	SC
	MSN190	C	E	60	SC
Pioneer	8925	R	E	58	SC
	88P68	R	M/E	62	SO

‡ Grain color: B=Bronze, C = Cream, R = Red, W = White, Y = Yellow

§ Panicle type: SC = Semi-closed, SO = Semi-Open, NA = Not available

† Maturity: E = Early, M/E = Medium-Early, M = Medium

Table 2. 2015 Dakota Lakes Sorghum Hybrid Trial Results - Average yield (13% moisture), test weight and harvest moisture content.

Variety	Dakota Lakes			2-Yr Yield Average	3-Yr Yield Average
	Yield (bu/ac)	Test Wt.	Harvest Moisture (%)	Yield (bu/ac)	Yield (bu/ac)
	KS585	<b>94</b>	57.0	13.8	116
AG1301	<b>93</b>	57.2	14.2		
88P68	<b>92</b>	60.1	15.1		
DK28E	<b>92</b>	54.5	13.0		
MSN187	<b>91</b>	56.8	13.6	111	113
KS310	<b>88</b>	56.7	13.3		
SPX 11814	<b>88</b>	54.5	12.5		
Lightning	<b>87</b>	55.9	13.7		
MSN190	<b>86</b>	57.2	13.4		
5C35	<b>85</b>	55.4	13.0		
AG1203	<b>83</b>	58.8	16.4		
5B27	<b>82</b>	55.7	13.3		
DKS29-28	<b>80</b>	59.7	14.4	101	
8925	<b>79</b>	58.8	14.7		
MSM176	<b>78</b>	<b>60.6</b>	16.1		
AG1201	<b>78</b>	57.5	14.1		
MSN189	<b>77</b>	<b>61.0</b>	15.4		
MSM171	<b>77</b>	57.5	14.1		
LGS exp 3	<b>77</b>	<b>61.3</b>	14.8		
LGS exp 2	<b>76</b>	57.9	14.4		
LGS 5001	<b>76</b>	55.4	13.4		
AG1101	<b>76</b>	56.0	13.6		
DKS28-05	<b>75</b>	56.8	14.0		
Pulsar	68	56.3	14.3		
LGS exp 1	68	<b>60.9</b>	15.5		
MSN185	68	58.7	14.7		
G3472	63	<b>62.7</b>	15.8		
AG 1401	62	57.6	14.8		
SPX 15714	52	<b>62.4</b>	17.0		
<b>Trial Average</b>	79	57.8	14.4		
<b>TPG value‡</b>	72	60.3	-		
<b>C.V.§</b>	17	2.5	-		

‡ Minimum value required to be in the top yield group (TYG) of varieties.

§ C.V. (Coefficient of Variation) is a measure of variability or experimental error, >15% is acceptable.

Table 3. 2015 Kennebec Sorghum Hybrid Trial Results - Average yield (13% moisture), test weight and harvest moisture content.

Variety	Kennebec			2-Yr Yield Average	3-Yr Yield Average
	Yield (bu/ac)	Test Wt.	Harvest Moisture (%)	Yield (bu/ac)	Yield (bu/ac)
	AG1203	<b>144</b>	57.1	15.5	99
KS585	<b>142</b>	55.6	13.9		
AG1301	<b>140</b>	55.3	13.8		
MSN189	<b>136</b>	55.1	13.6		
MSN190	134	51.4	17.1	92	
Pulsar	134	52.2	15.1		
SPX15714	133	56.7	15.2		
88P68	132	<b>57.4</b>	15.0		
MSM171	132	54.0	13.0		
DKS29-28	130	55.8	12.4		
G3472	128	<b>59.0</b>	14.2		
DKS28-05	128	53.5	14.1		
MSN187	122	51.6	15.6	82	83
AG1201	121	56.2	13.0		
AG1401	120	49.5	18.0		
KS310	120	55.1	13.6		
Lightning	120	54.4	13.8		
SPX11814	120	55.0	12.5		
MSM176	119	<b>60.4</b>	14.8		
LGS EXP 3	117	<b>57.8</b>	13.0		
MSN185	117	55.5	14.2	80	
8925	116	56.9	12.6		
DK28E	115	54.2	15.7		
LGS 5001	114	54.2	15.4		
5C35	113	56.1	13.3		
LGS EXP 2	112	53.5	13.6		
LGS EXP 1	111	<b>57.9</b>	13.5		
5B27	110	53.7	12.6		
AG1101	106	55.0	12.8		
<b>Trial Average</b>	124	55.2	14.2		
<b>TPG value‡</b>	135	57.2	-		
<b>C.V.§</b>	6	4.1	-		

‡ Minimum value required to be in the top yield group (TYG) of varieties.

§ C.V. (Coefficient of Variation) is a measure of variability or experimental error, >15% is acceptable.