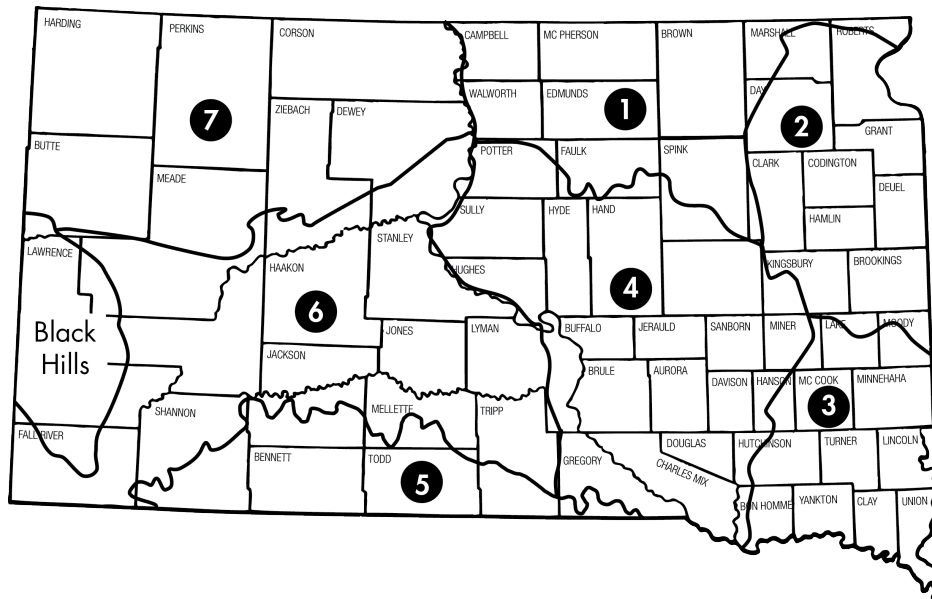


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Crop Zones for Small Grains in South Dakota



Recommended Oat Varieties for Spring 2018 by Crop Zone†

Zone - 1	Zone - 2	Zone - 3	Zone - 4	Zone - 5	Zone - 6	Zone - 7
Deon	Deon	Deon	Deon	Not Evaluated‡	Deon	Not Evaluated‡
Goliath	Goliath	Goliath	Hayden		Hayden	
Hayden	Hayden	Hayden	Newburg		Horsepower	
Newburg	Natty	Natty	Shelby427		Jury	
Souris	Sumo	Sumo	Souris		Natty	

† Crop Zones for small grains are based on soil & climate information. Recommended varieties are in the top 1/3 of the trial over 3 years for each zone.

‡ Varieties are not evaluated in this zone, however it is suggested to select a variety that appears frequently in the recommended list across all zones for the state or neighboring zones.

Table 1. List of 2017 oat testing locations and soil/cultural characteristics.

Location	Testing location characteristics				
	Cooperator	GPS coordinates	Soil Type	Previous crop	Tillage system
East River Locations (6)					
Aberdeen	Locken Farms	45.475323° -98.542901°	Barnes-Cresbard-Tonka complex, 0 to 3 % slopes	soybeans	no-till
Beresford	SERF	43.044178° -96.900127°	Egan-Chancellor-Davison complex, 0 to 3 % slopes	soybeans	conv. till
Miller	Nathan Lichty	44.457747° -98.762627°	Davis silt loam, fans, nearly level	soybeans	no-till
Selby	Tom Fiedler	45.500531° -100.016584°	Highmore silt loam, cool, 0-2% slopes	soybeans	no-till
South Shore	NERF	45.105900° -97.097092°	Kranzburg-Brookings silty clay loams, 0-2% slopes	soybeans	conv. till
Volga	Volga Research Farm	44.302216° -96.922490°	Brandt silty clay loam, 0-2% slopes	soybeans	min-till
West River Locations (3)					
Draper	Paul Patterson	43.907778° -100.557500°	Kirley clay loam, 2-6% slopes	milo	no-till
Wall	Merritt Patterson & Sons	44.0813889° -102.308333°	Blackpipe silty clay loam, 0-2% slopes	safflower in 2015, then fallow	no-till
Winner	Jorgensen Land & Cattle	43.543707° -99.925344°	Milboro silty clay, 0-3% slopes	milo	no-till

Table 2. Agronomic practices for 2017 oat trial locations.

Location	Agronomic practices					
	Planting date	Starter applied	Other Fertilizer applied	Herbicide applied	Fungicide applied	Harvest date
East River Locations (6)						
Aberdeen	04/11/17	90# 30-10-10	120-26-20-5S pp	1 pt Brox M Ultra	none	8/14/17
Beresford	04/11/17	65# 30-10-10	45# N as UAN	1 pt Bronate	none	8/11/17
Miller	04/04/17	90# 30-10-10	80-0-0-10S pp	1 pt Brox M Ultra	none	8/1/17
Selby	04/06/17	90# 30-10-10	-----location was hailed out on 6/20/17-----			
South Shore	04/17/17	90# 30-10-10	150-0-100 pp	Roundup Powermax (pre) 1 pt Bronate	none	8/8/17
Volga	04/13/17	90# 30-10-10	100-30-30 pp	1.7 pt Wolverine, 1 pt MCPA ester	7 oz Stratego	8/4/17
West River Locations (3)						
Draper	04/17/17	6 gal 10-25-0-5-.25	125# N as UAN mid-row banded	Roundup & Sharpen (pre) Widematch (post)	none	8/3/17
Wall	04/13/17	6 gal 10-25-0-5-.25	125# N as UAN mid-row banded	24 oz Roundup (pre)	none	7/19/17
Winner	4/11/17	90# 30-10-10	none	1 pt Bronate	none	7/28/17

Table 3a. East River Oat Performance - Average yield (14% moisture) and test weight, sorted by overall average yield.

Variety	Crop Zone - 1		Crop Zone - 2				Crop Zones 1 - 4		
	Aberdeen		South Shore		Volga		East River Average		
	Yield	Test Wt.	Yield	Test Wt.	Yield	Test Wt.	Top 1/3 %	Yield	Test Wt.
Hayden	77.0	30.5	162.1	34.1	159.5	36.0	80	117.5‡	32.7
Newburg	72.5	27.4	160.1	29.0	153.1	33.2	60	114.9	29.0
CS Camden	80.5	28.0	131.7	27.4	155.6	31.7	80	114.4	28.7
Deon	63.4	28.8	147.8	31.6	151.4	34.0	40	113.4	31.6
Goliath	70.2	31.8	153.5	33.0	158.4	35.0	40	113.1	32.9
Natty	73.8	30.4	152.0	33.3	149.2	34.8	40	111.4	33.0
Souris	77.1	29.2	144.0	30.9	155.3	33.7	60	110.8	30.7
Jury	79.5	29.4	142.9	32.0	157.7	33.8	40	110.1	31.1
Shelby427	78.9	31.7	140.5	34.0	143.0	35.9	40	108.7	33.6
Rockford	66.6	29.4	148.4	33.5	148.6	35.7	0	106.4	31.4
Horsepower	69.8	29.2	143.2	31.9	148.6	33.6	0	104.7	31.2
Jerry	57.2	28.7	143.3	33.1	128.8	34.5	0	99.4	32.1
Sumo	48.7	27.2	142.3	34.6	131.0	35.1	0	96.7	32.9
Antigo	59.2	30.0	117.2	35.7	131.1	36.7	0	96.1	33.8
Colt	46.8	27.8	132.2	35.8	123.6	35.8	0	93.8	32.8
<i>Streaker*</i>	51.3	32.0	115.1	41.9	110.7	41.9	0	81.3	39.6
Trial Average	66.5	29.4	145.4	32.9	144.9	34.9	-	107.9	32.3
LSD(0.05)†	9.7	0.9	9.2	1.4	11.2	0.9	-	4.3	0.6
C.V.§	10.4	2.1	4.5	2.9	5.5	1.9	-	6.4	2.8

‡ Shading denotes varieties placing in the top 1/3 for yield at each location (Note: results for some experimental lines tested are not included in this publication).

† Yield or test weight value required to determine if varieties are significantly different from one another with 95% confidence.

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

* Hullless variety.

Table 3b. East River Oat Performance, continued - Average yield (14% moisture) and test weight, sorted by overall average yield.

Variety	Crop Zone - 3		Crop Zone - 4		Crop Zones 1 - 4		
	Beresford		Miller		East River Average		
	Yield	Test Wt.	Yield	Test Wt.	Top 1/3 %	Yield	Test Wt.
Hayden	104.3	30.9	84.5	32.0	80	117.5‡	32.7
Newburg	104.0	26.7	84.7	28.7	60	114.9	29.0
CS Camden	127.3	28.3	77.0	27.9	80	114.4	28.7
Deon	127.5	31.7	77.1	31.6	40	113.4	31.6
Goliath	109.0	32.9	74.5	31.7	40	113.1	32.9
Natty	113.8	34.9	68.2	31.6	40	111.4	33.0
Souris	93.1	28.9	84.4	30.8	60	110.8	30.7
Jury	94.5	28.7	75.9	31.3	40	110.1	31.1
Shelby427	99.1	33.5	82.3	32.7	40	108.7	33.6
Rockford	96.3	29.0	72.2	29.5	0	106.4	31.4
Horsepower	89.6	28.4	72.6	33.0	0	104.7	31.2
Jerry	97.9	31.8	69.8	32.3	0	99.4	32.1
Sumo	94.8	36.6	66.9	31.1	0	96.7	32.9
Antigo	108.5	35.3	64.7	31.4	0	96.1	33.8
Colt	94.7	32.6	71.8	31.8	0	93.8	32.8
<i>Streaker*</i>	69.8	41.4	59.8	40.7	0	81.3	39.6
Trial Average	108.7	32.5	74.1	31.8	-	107.9	32.3
LSD(0.05)†	12.5	2.1	5.9	0.9	-	4.3	0.6
C.V.§	7.5	4.6	5.6	2.0	-	6.4	2.8

‡ Shading denotes varieties placing in the top 1/3 for yield at each location (Note: results for some experimental lines tested are not included in this publication).

† Yield or test weight value required to determine if varieties are significantly different from one another with 95% confidence.

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

* Hulless variety.

Table 4. West River Oat Performance - Average yield (14% moisture) and test weight, sorted by overall average yield.

Variety	Crop Zone - 6						Crop Zone - 6¶		
	Draper		Wall		Winner		West River Average		
	Yield	Test Wt	Yield	Test Wt	Yield	Test Wt	Top 1/3%	Yield	Test Wt
Hayden	120.8	33.0	71.3	37.0	41.5	35.8	100	77.8‡	35.2
Deon	115.7	31.0	70.7	35.6	40.8	36.6	67	75.7	34.4
Natty	112.1	34.1	76.1	38.1	31.3	37.0	67	73.2	36.4
Rockford	112.6	31.7	72.5	35.2	33.1	35.7	67	72.7	34.2
Souris	109.2	30.6	67.0	35.6	39.4	36.0	67	71.9	34.0
Jury	105.6	32.2	73.2	34.6	32.1	35.3	33	70.3	34.0
Horsepower	112.0	32.7	63.5	36.2	34.5	36.3	33	70.0	35.1
Jerry	111.3	33.2	68.1	37.0	27.9	36.3	33	69.1	35.5
Newburg	111.5	29.1	58.0	34.5	37.8	33.4	67	69.1	32.4
CS Camden	102.2	25.8	55.0	34.7	43.1	33.2	33	66.7	31.2
Shelby427	97.7	34.2	65.1	35.8	33.8	37.8	0	65.5	35.9
Antigo	90.1	34.3	70.8	38.8	33.7	38.5	0	64.9	37.2
Colt	87.8	34.1	64.4	39.1	30.8	37.7	0	61.0	37.0
Goliath	94.2	32.0	53.6	35.4	26.9	34.5	0	58.2	33.9
Sumo	81.9	35.2	53.6	37.2	30.8	37.1	0	55.4	36.5
<i>Streaker*</i>	66.2	36.8	57.5	36.8	23.3	40.9	0	49.0	38.2
Trial Average	101.1	32.5	66.0	36.5	34.8	36.7	-	67.3	35.2
LSD(0.05)†	25.4	4.8	18.9	2.4	6.8	1.2	-	10.7	1.8
C.V.§	17.9	10.6	20.3	4.7	13.8	2.2	-	19.7	6.4

¶ There was no test in Crop Zone 5 or 7 in 2017.

‡ Shading denotes varieties placing in the top 1/3 for yield at each location (Note: results for some experimental lines tested are not included in this publication).

† Yield or test weight value required to determine if varieties are significantly different from one another with 95% confidence.

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

* Hulless variety

Table 5. 2015-2017 (3-Yr Average) East River Oat Variety Performance - sorted by overall yield (bu/ac @ 14% M).

Variety	East River (Crop Zones 1-4)						3-Yr East River Average
	Crop Zone - 1		Crop Zone - 2		Crop Zone - 3	Crop Zone - 4	
	Aberdeen	Selby§	South Shore	Volga	Beresford§	Miller§	
Deon	110.0	153.2	132.2	154.8	156.3	89.4	132.5‡
Hayden	116.7	161.3	130.4	142.1	137.6	102.3	131.5
Natty	105.7	145.0	127.9	146.2	140.9	84.0	125.0
Goliath	109.2	156.8	119.2	137.8	133.1	86.0	123.4
Newburg	112.6	154.7	119.3	126.5	127.6	93.1	122.0
Souris	111.4	162.7	104.6	121.0	101.8	96.0	115.8
Jury	110.1	144.0	111.5	123.9	119.7	86.1	115.8
Shelby427	102.7	115.9	120.1	125.8	124.8	89.0	113.3
Rockford	111.6	148.3	106.3	115.9	107.8	88.1	112.7
Sumo	82.3	125.6	121.1	141.3	130.9	72.8	112.5
Horsepower	112.4	143.1	110.6	121.2	98.6	84.6	111.9
Colt	87.5	151.1	111.8	114.3	118.4	77.3	109.6
Jerry	88.9	143.9	116.8	115.6	116.2	72.5	108.8
<i>Streaker*</i>	81.8	97.4	85.8	92.3	80.1	64.0	83.6
Trial Average	100.2	143.1	115.5	127.0	121.8	84.6	115.4
LSD(0.05)†	12.3	8.0	5.4	6.1	12.5	4.7	15.7

§ Selby is a 2 year average from 2015 & 2016, Beresford is a 2 year average from 2015 & 2017, Miller data is a 2 year average from 2015 & 2017.

‡ Shading denotes varieties placing in the top 1/3 for yield at each location.

† Yield or test weight value required to determine if varieties are significantly different from one another with 95% confidence.

* Hulless variety.

Table 6. 2015-2017 (3-Yr Average) West River Oat Variety Performance - sorted by overall yield (bu/ac @ 14% M).

Variety	West River (Crop Zone 6)		
	Crop Zone - 6		3-Yr West River Average
	Draper§	Winner	
Hayden	94.5	80.0	81.9‡
Deon	85.0	71.3	74.0
Jury	83.5	71.6	73.8
Horsepower	85.5	71.5	73.5
Natty	85.2	68.5	73.3
Rockford	83.4	70.5	73.3
Souris	80.8	71.8	72.5
Newburg	83.4	64.9	68.4
Shelby427	66.6	70.7	67.2
Jerry	75.5	62.7	65.8
Goliath	75.8	62.5	64.0
Colt	67.4	63.8	63.3
Sumo	70.4	60.6	61.2
<i>Streaker*</i>	54.0	52.9	52.4
Trial Average	77.9	67.4	70.6
LSD(0.05)†	10.9	8.1	7.2

§Draper data is a 2 year average from 2016 & 2017.

‡ Shading denotes varieties placing in the top 1/3 for yield at each location.

† Yield or test weight value required to determine if varieties are significantly different from one another with 95% confidence.

* Hulless variety.

Table 7. Oat variety origin, characteristics, grain quality, and disease ratings.

Variety	Testing and Origin		Agronomic Characteristics			Grain Quality¶			Disease Ratings#			
	Years Tested in SD	Origin†- Year	Rel.‡ Hdg. days	Rel.‡ Height inches	2017 Ldg Score §	Grain Color	Test Wt.	2017 Protein	Smut	Stem Rust	Crown Rust	2017 BYDV Score
Antigo	new	WI-17	1	0	1.6	Yellow	Good	16.0	-	-	MR	5
Colt	5+	SD-05	0	0	1.9	White	Average	14.9	R	MS	S	7
CS Camden	2	MS-16	7	1	1.5	White	Low	14.1	-	(S)*	MS	8
Deon	5+	MN-13	8	5	2.0	Yellow	Average	14.3	R	MR	R	4
Goliath	5+	SD-12	7	9	2.4	White	Average	14.6	R	R	S	2
Hayden	5+	SD-14	7	4	1.9	White	Average	14.1	R	MS	S	3
Horsepower	5+	SD-11	3	-2	2.0	White	Average	14.0	MR	R	S	6
Jerry	5+	ND-94	4	4	2.0	White	Average	14.4	MS	MS	S	6
Jury	5+	ND-12	6	7	2.5	White	Average	13.9	-	R	S	3
Natty	5+	SD-14	2	5	2.9	White	Average	14.9	R	MS	MS	5
Newburg	5+	ND-11	6	7	2.7	White	Low	13.6	S	R	S	4
Rockford	5+	ND-09	7	5	1.7	White	Average	14.5	MR-MS	S	S	4
Shelby427	5+	SD-09	2	4	1.8	White	Good	14.7	MR	MS	S	6
Souris	5+	ND-06	6	1	2.5	White	Low	13.9	MR	MS	S	6
Streaker††	5+	SD-09	3	5	2.1	Hulless	High	17.5	R	MR	MS	6
Sumo	3	ALS-16	0	2	1.7	White	Average	14.2	R	-	MR	6

† ALS - Albert Lea Seed, MN - Minnesota, MS - Meridian Seeds, ND - North Dakota, SD - South Dakota, WI - Wisconsin; - (Year of Release)

‡ Days to heading as compared to **Colt (162 days Julian)**. Height compared to **Colt (31 inches)** statewide.

§ Lodging score: Rating scale 1-5 (1=Standing perfectly to 5=Completely flat) based on 2016 East River locations.

¶ Based on 2017 East River test weight and protein.

Disease ratings: R - resistant, MR - moderately resistant, MS - moderately susceptible, S - susceptible, VS - very

* Ratings (X) based on information supplied by the entity submitting the variety.

†† Hulless variety.