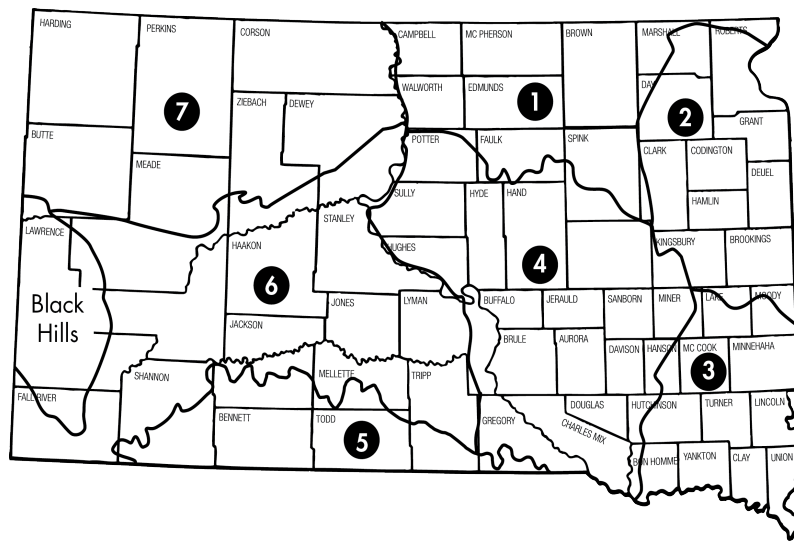


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Crop Zones for Small Grains in South Dakota



Recommended/Promising Oat Varieties for Spring 2017 by Crop Zone†

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

† 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 2016 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	45.496228 -98.558762	Barnes-Cresbard-Tonka complex, 0-3% slopes	Soybeans	No-till
Beresford	SERF	---location was abandoned due to spring flooding---			
Miller	Nathan Lichty	44.494365 -98.863085	Houdek-Prosper loams, 0-2% slopes	Soybeans	No-till
Selby	Tom Fidelar	45.492563 -100.011125	Mobridge silt loam, cool, 0-2% slopes	Soybeans	No-till
South Shore	NERF	45.106979 -97.097062	Kranzburg-Brookings silty clay loams, 0-2% slopes	Soybeans	Conv. Till
Volga	Volga Research Farm	44.302372 -96.920463	Brandt silty clay loam, 0-2% slopes	Soybeans	No-till
West River Locations (3)					
Bison	Brad Seidel	45.529722 -102.401111	Felor-Yegen loams, 2-6% slopes	Spring Wheat	No-till
Draper	Paul Patterson	43.860556 -100.529722	Bullcreek clay, 0-6% slopes	Milo	No-till
Winner	Jorgenson Land & Cattle	43.535962 -99.839923	Milboro silty clay, 0-3% slopes	Milo	No-till

Table 2. Agronomic practices for 2016 oat trial locations.

Location	Agronomic practices					
	Planting date	Starter applied	Other Fertilizer applied	Herbicide applied	Fungicide applied	Harvest date
East River Locations (6)						
Aberdeen	04/04/16	90# 30-10-10	132-0-40-20S	1.5 pt Maestro MA	None	8/2/16
Beresford	---location was abandoned due to spring flooding---					
Miller	04/04/16	90# 30-10-10	100-0-0-36S pp	1.5 pt Maestro	None	7/28/16
Selby	04/06/16	90# 30-10-10	172-52-0 pp	1.5 pt Maestro	15 oz Carumba (flowering)	8/8/16
South Shore	04/13/16	90# 30-10-10	165-0-0 pp	1 pt Brox M Ultra	10 oz Stratego (flowering)	7/26/16
Volga	04/05/16	90# 30-10-10	100-30-30 pp	1.5 pt Maestro MA	10 oz Stratego (flowering)	8/5/16
West River Locations (3)						
Bison	04/13/16	6gpA 10-25-0-5-.5	80 lbs N/Acre as 28-0-0 (4/13/16)	1.3 pt Widematch	none	NA‡
Draper	04/04/16	6gpA 10-25-0-5-.5	80 lbs N/Acre as 28-0-0 (4/4/16)	1 pt Widematch (5/28/16)	none	8/4/16
Winner	03/16/16	90# 30-10-10	none	2 pt Broclean	none	7/14/16

‡ Plots at Bison were abandoned due to damage caused by chemical drift.

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

Variety	Crop Zone - 1				Crop Zones 1,2, & 4¶		
	Aberdeen		Selby		East River Average		
	Yield	Test Wt.	Yield	Test Wt.	Top 1/3 %	Yield	Test Wt.
Hayden	126.4‡	35.5	154.7	36.4	100	128.5	34.8
CS Camden	116.8	31.1	147.1	35.0	80	123.1	30.6
Natty	108.1	33.3	147.5	36.4	60	120.1	34.4
Souris	122.2	33.9	152.4	36.2	60	118.2	33.8
Rockford	126.1	33.9	154.6	38.4	60	116.9	34.3
Deon	111.3	33.8	141.3	36.5	40	116.7	33.6
GMI 423	122.7	30.2	146.2	33.3	60	116.7	29.4
Newburg	118.6	32.5	145.9	35.9	40	115.2	32.3
Horsepower	117.8	35.6	142.3	36.7	40	114.2	34.8
Goliath	110.7	34.7	142.4	37.3	0	112.4	34.6
GMI 672	112.2	33.0	136.0	36.3	20	111.4	32.7
Stallion	115.2	33.8	141.8	38.7	0	110.6	34.8
Jury	106.1	34.5	135.0	36.5	0	108.1	34.2
Colt	97.5	36.2	140.3	38.0	0	106.1	35.4
Shelby427	93.9	35.5	112.1	37.1	0	103.4	35.8
Jerry	92.3	33.8	129.7	38.1	20	102.5	35.2
<i>Streaker*</i>	87.6	43.9	104.4	45.7	0	83.7	42.9
Trial Average	107.9	34.4	137.4	37.2	-	112.7	34.4
LSD(0.05)†	8.9	1.0	8.7	1.1	-	4.0	0.5
C.V.§	5.8	2.2	4.5	2.2	-	5.7	2.2

¶ The Beresford location was flooded out. There was no test in Crop Zone 3 in 2016.

‡ 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 varieties

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

Variety	Crop Zone - 2				Crop Zone - 4		Crop Zones 1,2, & 4¶		
	South Shore		Volga		Miller		East River Average		
	Yield	Test Wt.	Yield	Test Wt.	Yield	Test Wt.	Top 1/3 %	Yield	Test Wt.
Hayden	91.7‡	33.1	149.6	34.2	120.1	34.7	100	128.5	34.8
CS Camden	78.7	26.3	151.6	30.4	121.4	30.1	80	123.1	30.6
Natty	90.8	32.8	154.5	34.0	99.8	35.4	60	120.1	34.4
Souris	82.6	31.7	126.2	33.5	107.5	33.7	60	118.2	33.8
Rockford	82.7	30.8	117.2	33.1	104.0	35.4	60	116.9	34.3
Deon	82.4	31.5	146.8	31.8	101.7	34.5	40	116.7	33.6
GMI 423	77.2	25.9	134.2	28.0	103.0	29.7	60	116.7	29.4
Newburg	86.1	30.1	124.1	31.3	101.4	32.0	40	115.2	32.3
Horsepower	88.9	34.1	125.7	33.2	96.5	34.2	40	114.2	34.8
Goliath	79.8	32.8	131.6	32.9	97.4	35.1	0	112.4	34.6
GMI 672	67.2	29.0	128.1	31.4	113.5	33.7	20	111.4	32.7
Stallion	78.1	32.8	126.1	33.5	92.0	35.0	0	110.6	34.8
Jury	80.2	32.4	122.8	32.7	96.3	34.7	0	108.1	34.2
Colt	85.7	35.1	124.5	34.6	82.8	33.3	0	106.1	35.4
Shelby427	86.6	34.8	128.6	35.0	95.7	36.8	0	103.4	35.8
Jerry	88.2	35.2	127.2	34.7	75.2	34.1	20	102.5	35.2
<i>Streaker*</i>	67.1	40.8	91.6	40.9	68.2	43.2	0	83.7	42.9
Trial Average	83.6	32.6	137.9	33.5	96.6	34.4	-	112.7	34.4
LSD(0.05)†	6.9	1.0	11.7	1.1	8.4	1.2	-	4.0	0.5
C.V.§	5.9	2.1	6.0	2.3	6.2	2.5	-	5.7	2.2

¶ The Beresford location was flooded out. There was no test in Crop Zone 3 in 2016.

‡ 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 varieties

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		Winner		West River Average		
	Yield	Test Wt	Yield	Test Wt	Top 1/3%	Yield	Test Wt
Hayden	68.2‡	33.0	107.4	38.4	100	87.8	35.7
Horsepower	59.0	32.0	98.2	38.7	100	78.6	35.3
Natty	58.3	31.5	96.5	39.0	100	77.4	35.3
Jury	61.5	31.7	84.3	37.1	50	72.9	34.4
GMI 423	58.7	26.6	85.7	32.0	50	72.2	29.3
Goliath	57.4	32.2	85.8	38.9	0	71.6	35.5
Newburg	55.3	30.1	87.8	35.9	0	71.5	33.0
Rockford	54.2	29.4	86.9	38.1	0	70.6	33.7
Deon	54.3	30.4	86.7	37.1	0	70.5	33.8
Stallion	52.3	32.3	88.3	38.4	0	70.3	35.4
Souris	52.4	30.3	85.8	37.9	0	69.1	34.1
CS Camden	51.7	26.3	85.9	34.4	0	68.8	30.4
Shelby427	35.5	31.5	89.3	40.1	50	62.4	35.8
Colt	47.1	30.9	76.8	40.2	0	61.9	35.6
Jerry	39.7	31.1	82.7	39.2	0	61.2	35.1
GMI 672	40.0	27.8	74.7	37.6	0	57.3	32.7
<i>Streaker*</i>	41.7	39.1	67.0	46.4	0	54.4	42.7
Trial Average	52.8	31.0	86.8	38.5	-	69.8	34.7
LSD(0.05)†	9.9	2.0	14.1	1.1	-	8.6	1.1
C.V.§	13.2	4.5	11.5	2.1	-	12.4	3.2

¶ The Bison location was lost due to chemical drift. There was no test in Crop Zone 5 or 7 in 2016.

‡ 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 varieties

Table 5. 2014-2016 (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	128.4	143.4	125.5	156.4	125.1	121.1	137.4‡
Hayden	138.1	155.0	115.5	116.0	122.8	140.6	133.3
Natty	124.5	138.0	116.1	129.2	124.1	122.2	129.0
Stallion	129.1	142.0	113.4	116.9	130.0	121.3	127.5
Goliath	125.2	136.9	110.3	119.5	114.7	118.0	123.5
Newburg	128.9	152.4	102.3	98.7	112.2	128.9	123.0
Jury	122.4	138.4	104.3	97.9	117.1	116.9	117.5
Horsepower	132.9	139.9	102.6	86.4	87.0	124.3	115.2
Souris	126.5	157.5	87.9	82.2	86.2	125.9	114.1
Rockford	131.5	142.1	83.5	79.7	96.9	131.1	111.6
Shelby427	115.2	112.2	105.3	96.6	106.2	116.3	110.5
Colt	108.6	136.8	96.4	95.0	107.9	99.9	110.1
Jerry	103.9	126.5	92.7	88.7	94.6	103.5	105.0
<i>Streaker*</i>	99.9	104.8	71.4	71.0	69.6	82.7	85.8
Trial Average	121.1	137.6	101.9	102.4	106.7	118.0	116.6
LSD(0.05)†	6.9	6.8	6.4	6.0	13.3	8.1	11.6

§ Beresford is a 2 year average from 2014-2015, Miller data is a 2 year average from 2014 and 2016.

‡ 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%

* Hulless varieties.

Table 6. 2014-2016 (3-Yr Average) West River Oat Variety Performance - sorted by overall yield (bu/ac @ 14% M).

Variety	West River (Crop Zones 6 & 7)			
	Crop Zone - 6		Crop Zone - 7	3-Yr West River Average
	Draper§	Winner§	Bison§	
Hayden	81.4‡	99.2	75.9	89.4
Jury	76.0	91.3	72.3	85.7
Souris	72.7	88.0	72.5	83.9
Newburg	73.1	78.4	78.9	83.9
Horsepower	73.1	90.0	74.1	81.4
Rockford	69.5	89.2	73.0	80.0
Goliath	77.2	80.4	70.2	79.9
Deon	72.9	86.5	70.6	79.9
Stallion	72.1	82.9	57.3	78.4
Natty	75.2	87.2	53.5	77.5
Shelby427	61.5	89.2	52.5	73.1
Jerry	61.5	80.0	58.9	70.7
Colt	65.0	80.3	49.3	68.6
<i>Streaker*</i>	53.9	67.7	33.7	57.8
Trial Average	70.4	85	62.0	77.9
LSD(0.05)†	10.6	12.2	10.8	9.2

§ Bison data is a 2 year average from 2014-2015, Draper data is a 2 year average from 2014 and 2016, Winner data is a 2 year average from 2015-2016.

‡ 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 varieties.

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

Variety ^{PVP*}	Testing and Origin		Agronomic Characteristics			Grain Quality [¶]			Disease Ratings [#]			
	Years Tested in SD	Origin [†] -Year	Rel.‡ Hdg. days	Rel.‡ Height inches	2016 Ldg Score §	Grain Color	Test Wt.	2016 Protein	Smut	Stem Rust	Crown Rust	2016 BYDV Score
Colt ^{PVP}	5+	SD-05	<u>0</u>	<u>0</u>	2.8	White	Good	15.9	R	MS	S	7
CS Camden	new	MS-16	7	0	1.8	White	Low	15.0	-	(S)	(MS)	7
Deon ^{Pdg}	5+	MN-13	6	3	2.4	Yellow	Adequate	15.5	R	MR	R	6
GMI 423	2	GM-15	7	3	2.7	White	Low	14.3	(R) ^{††}	(MS)	(MS)	5
GMI 672	new	GM-17	6	-1	1.3	White	Low	14.6	(R)	-	(MS)	3
Goliath ^{Pdg}	5+	SD-12	5	7	3.1	White	Adequate	15.2	R	R	MS	2
Hayden ^{Pdg}	4	SD-14	5	3	2.1	White	Adequate	14.9	R	MS	MS	3
Horsepower ^{Pdg}	5+	SD-11	2	-1	2.6	White	Adequate	15.4	MR	R	S	6
Jerry ^{PVP}	5+	ND-94	2	3	2.2	White	Adequate	16.0	MS	MS	S	7
Jury ^{Pdg}	5+	ND-12	5	5	2.9	White	Adequate	15.3	-	R	S	3
Natty ^{Pdg}	4	SD-14	2	3	3.0	White	Adequate	15.5	R	MS	MS	5
Newburg ^{PVP}	5+	ND-11	5	6	3.0	White	Low	14.7	S	R	S	4
Rockford ^{PVP}	5+	ND-09	6	3	1.7	White	Adequate	15.6	MR-MS	S	S	4
Shelby427 ^{PVP}	5+	SD-09	2	3	1.9	White	Good	15.9	MR	MS	S	6
Souris ^{PVP}	5+	ND-06	6	0	2.8	White	Adequate	15.4	MR	MS	S	5
Stallion ^{PVP}	5+	SD-06	5	3	3.1	White	Adequate	15.6	S	S	MR	7
Streaker ^{PVP}	5+	SD-09	2	3	3.0	Hulless	Very High	17.5	R	MR	MS	5

* Plant variety protection (PVP) status or PVP status that is pending (Pdg).

† GM - General Mills, MN - Minnesota, MS - Meridian Seeds, ND - North Dakota, SD - South Dakota; - (Year of Release)

‡ Days to heading as compared to **Colt**. 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 2016 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.