# 2023 South Dakota Oat Variety Trial Results Regional Summaries

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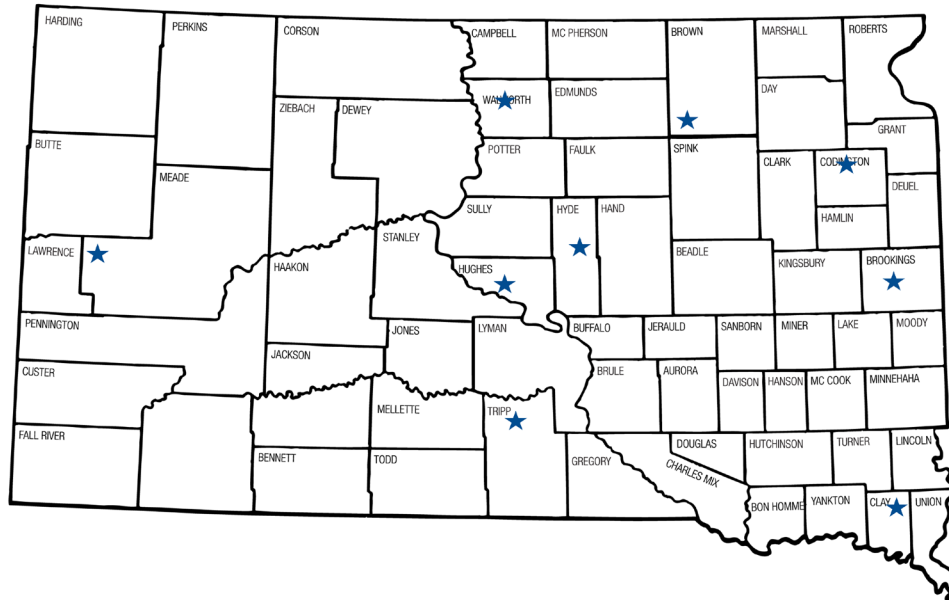
Eastern trial locations: Beresford (not reported), South Shore, Volga

Central trial locations: Northville (not harvested), Miller, Pierre, Selby

Western trial locations: Sturgis, Winner (not harvested)

Individual trial location results can be accessed online at: https://extension.sdstate.edu/oat-variety-trial-results

Table 1. List of oat varieties tested in 2023 along with origin, agronomic, and grain quality characteristics.

Variety	Testing and Origin		Agronomic Characteristics			Grain Quality§			Disease Ratings¶			
	Years tested in SD trials	Origin†-Year	Relative Heading (days)	Height (inches)	2023 Lodging Score‡	Grain Color	2023 Test Wt. (lb/bu)	2023 Protein (%)	Smut	Stem Rust	Crown Rust	BYDV
2018Y0689	new	GM-exp	4	31	1.5	White	33.9	13.5	(MS)#	-	7	-
2018Y1315	new	GM-exp	2	28	1.9	White	31.0	13.3	(S)	-	6	-
CDC Endure	2	MS-23	7	32	1.8	White	35.5	13.3	(R)	(S)	3	I
CS Camden	5+	MS-16	6	32	1.7	White	33.9	13.9	MR	(S)	3	4
Deon	5+	MN-13	4	32	2.0	Yellow	34.3	14.2	R	MR	2	4
Goliath	5+	SD-12	7	39	3.1	White	36.8	14.3	MR	R	8	4
Hayden	5+	SD-14	5	33	1.9	White	34.6	13.8	R	MS	7	4
MN Pearl	4	MN-18	3	32	2.6	White	34.3	13.2	R	-	7	4
Rushmore	5+	SD-19	1	31	2.3	White	35.9	14.0	R	-	6	3
SD-Buffalo	5+	SD-21	2	32	1.8	White	34.3	13.8	R	-	6	-
Shelby427	5+	SD-09	1	32	1.7	White	35.5	14.3	R	MS	7	3
Warrior	5+	SD-18	0	30	1.4	White	33.7	13.6	R	-	8	4
Trial Average	-	-	-	33	2.0	-	35.2	13.8	-	-	-	-

† IL, Illinois; MN, Minnesota; MS, Meridian Seeds; SD, South Dakota; WI, Wisconsin; - (Year of Release)
‡ Lodging scores: 1, standing perfectly to 5, completely flat
§ Grain protein content and test weight statewide averages
¶ Disease ratings: 1, most resistant to 9, most susceptible (or traditional ratings MR, MS, etc.)
# Parenthesis and italics (X) denote ratings provided by the entity submitting the variety; NR = not reported

Table 2. Grain quality and milling characteristics.

Variety	% Plump	% Mid	% Thin	1000 Kernel Weight (g)	Groat %	NIR groat protein (%)	NIR groat beta-glucan (%)	NIR groat fat (%)
2018Y0689	36.1	58.6	5.3	35.5	70.6	17.8	4.8	5.8
2018Y1315	64.5	30.6	4.9	37.9	69.2	18.1	5.7	6.3
CDC Endure	81.6	16.5	2.0	41.9	72.9	17.3	5.3	4.8
CS Camden	61.8	35.8	2.4	39.5	70.2	18.2	5.2	5.3
Deon	44.8	49.9	5.3	37.7	72.3	17.1	4.7	5.7
Goliath	55.4	39.9	4.7	37.6	73.1	18.0	4.5	5.5
Hayden	66.3	29.9	3.8	39.9	70.8	17.2	4.6	6.3
MN Pearl	62.6	33.7	3.7	38.6	76.3	16.0	4.5	6.1
Rushmore	60.1	35.9	3.9	37.2	71.9	18.2	4.4	5.0
SD-Buffalo	57.0	39.1	3.8	40.1	70.8	18.6	4.7	6.0
Shelby427	45.2	50.5	4.3	34.1	71.3	19.0	4.6	5.8
Warrior	42.1	52.9	4.9	35.4	71.6	17.9	4.8	5.3
Trial Average	57.0	39.2	3.7	37.5	72.1	17.7	4.8	5.6
LSD(0.05)†	8.2	8.6	1.2	1.7	1.8	0.7	0.2	0.2
C.V.%‡	13.5	19.1	28.6	3.9	2.2	3.6	3.9	3.4

† Value required (≥LSD) to determine if varieties are significantly different from one another.
‡ C.V. is a measure of variability or experimental error

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Table 3. 2021–2023 oat variety performance trial results for testing sites in eastern South Dakota. Varieties ranking in the top 1/3 of each trial category are boldfaced and shaded light blue.

Variety	2021 Yield (bu/a)	2022 Yield (bu/a)	2023 Yield (bu/a)	2023 Test Wt (lbs)	2-year Yield (bu/a)	2-year Test Wt (lbs)	3-year Yield (bu/a)	3-year Test Wt (lbs)
CS Camden	**91.8**	**101.5**	**118.7**	31.7	**107.3**	30.9	**99.6**	30.1
Deon	**86.7**	**104.9**	108.5	34.3	**106.1**	34.0	**96.4**	33.2
Warrior	**86.1**	100.1	109.9	34.2	103.4	33.5	**94.7**	32.6
SD-Buffalo	84.0	100.7	101.8	33.6	101.1	33.5	92.5	32.5
Hayden	85.1	93.9	**111.9**	35.1	99.9	34.0	92.5	33.1
Goliath	81.6	95.4	108.8	36.0	99.9	34.3	90.8	33.8
Shelby427	83.0	92.7	101.5	34.6	95.6	34.8	89.3	34.3
MN Pearl	80.5	93.9	104.5	35.7	97.4	33.3	89.0	33.5
Rushmore	77.2	90.5	98.0	35.9	93.0	35.2	85.1	34.8
CDC Endure	-	**112.7**	**124.9**	33.5	**116.7**	32.9	-	-
2018Y0689	-	-	**120.1**	32.6	-	-	-	-
2018Y1315	-	-	110.0	29.4	-	-	-	-
Trial Average#	85.3	100.8	112.2	34.6	104.4	34.1	94.2	33.3
LSD(0.05)†	2.5	3.2	6.8	0.6	3.1	0.4	1.9	0.4
C.V.%‡	5.1	4.5	6.1	-	5.2	-	5.2	-

Trial averages may include values from experimental lines that are not reported.
† 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 considered acceptable.

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Table 4. 2021–2023 oat variety performance trial results for testing sites in central South Dakota. Varieties ranking in the top 1/3 of each trial category are boldfaced and shaded light blue.

Variety	2021 Yield (bu/a)	2022 Yield (bu/a)	2023		2-year		3-year	
			Yield (bu/a)	Test Wt (lbs)	Yield (bu/a)	Test Wt (lbs)	Yield (bu/a)	Test Wt (lbs)
CS Camden	**107.2**	118.7	**154.9**	32.8	**134.2**	33.3	**128.2**	32.8
SD-Buffalo	74.4	**124.0**	**152.2**	35.6	**136.1**	36.4	**122.4**	35.4
Deon	**86.6**	119.5	141.6	35.2	129.0	36.1	**119.5**	35.3
Warrior	**84.3**	119.2	130.8	34.0	124.2	35.3	115.3	34.2
Hayden	71.5	**124.1**	131.0	35.7	127.1	36.9	114.7	35.2
MN Pearl	78.6	110.9	142.9	35.3	124.6	35.3	114.4	34.8
Goliath	76.6	110.3	137.4	36.5	121.9	36.9	111.8	36.0
Shelby427	83.9	112.2	126.5	35.3	118.4	36.6	110.7	35.7
Rushmore	76.7	104.2	136.4	35.8	118.0	36.8	108.8	36.0
CDC Endure	-	**119.6**	**152.3**	34.8	**133.6**	35.0	-	-
2018Y0689	-	-	**151.6**	32.9	-	-	-	-
2018Y1315	-	-	149.3	31.4	-	-	-	-
Trial Average#	81.3	119.0	140.7	35.4	128.5	36.3	117.4	35.4
LSD(0.05)†	5.9	4.9	6.5	0.5	4.0	0.4	3.3	0.5
C.V.%‡	7.4	5.9	5.8	-	5.9	-	6.0	-

Trial averages may include values from experimental lines that are not reported.
† 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 considered acceptable.

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Table 5. 2021–2023 oat variety performance trial results for testing sites in western South Dakota. Varieties ranking in the top 1/3 of each trial category are boldfaced and shaded light blue.

Variety	2021 Yield (bu/a)	2022 Yield (bu/a)	2023 Yield (bu/a)	2023 Test Wt (lbs)	2-year Yield (bu/a)	2-year Test Wt (lbs)	3-year Yield (bu/a)	3-year Test Wt (lbs)
CS Camden	**56.9**	72.4	**143.3**	37.1	**96.0**	35.9	**80.4**	32.9
SD-Buffalo	**58.1**	73.8	84.8	33.8	77.4	35.2	**69.7**	32.8
Shelby427	**53.9**	69.1	97.7	36.5	78.6	37.1	**68.7**	35.1
Hayden	50.6	**79.7**	82.5	33.1	**80.6**	35.1	68.6	33.3
Rushmore	53.8	61.7	**111.1**	35.8	78.2	35.9	68.4	33.8
Goliath	52.7	61.4	93.5	37.9	72.1	37.3	64.4	35.4
Warrior	39.5	**75.4**	89.9	32.9	80.2	35.6	63.9	33.6
MN Pearl	42.5	63.6	80.6	31.9	69.2	34.3	58.5	33.1
Deon	46.3	55.3	79.3	33.6	63.3	35.4	56.5	34.7
CDC Endure	-	**77.1**	**148.2**	38.2	**100.8**	35.4	-	-
2018Y0689	-	-	**120.1**	36.3	-	-	-	-
2018Y1315	-	-	107.0	32.3	-	-	-	-
Trial Average#	52.1	70.0	97.6	35.3	79.4	36.1	67.7	34.2
LSD(0.05)†	4.2	7.9	13	1.6	6.6	0.9	4.3	0.9
C.V.%‡	8.3	11.4	9.4	-	10.3	-	10.2	-

Trial averages may include values from experimental lines that are not reported.

† 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 considered acceptable.