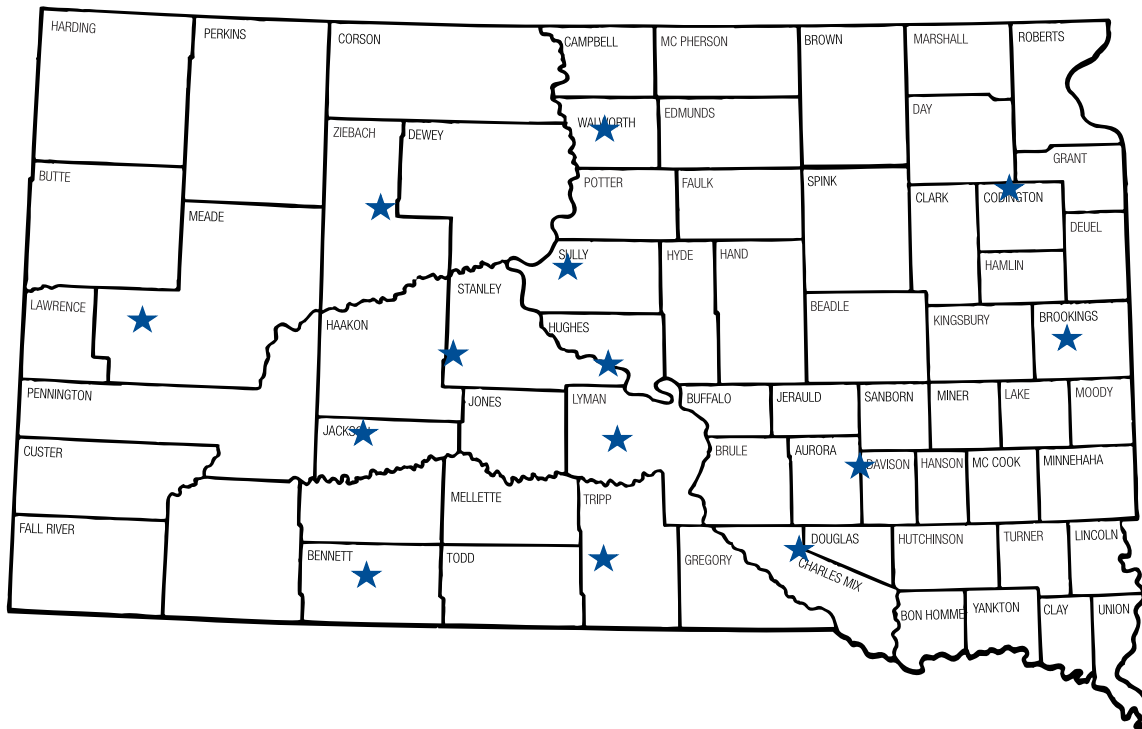




2023 South Dakota Winter Wheat Variety Trial Results Regional Summaries

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Eastern Trial Locations: Brookings, Mt. Vernon, Platte, and South Shore

Central Trial Locations: Hayes, Onida, Pierre, Selby, Vivian, and Winner

Western Trial Locations: Faith/Lantry, Sturgis and Wall

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

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2023 South Dakota Winter Wheat Variety Trial Results Variety List

**SOUTH DAKOTA STATE
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Table 1. List of winter wheat varieties tested in 2022-23 along with origin, agronomic, and grain quality characteristics.

Variety	Testing and Origin		Agronomic Characteristics				Grain Quality§		
	Years tested in SD trials	Origin†-Year	Relative Heading (days) ‡	Height (inches)	2023 Lodging Score§	Winter Hrd.¶	2023 Test Wt. (lb/bu)#	2023 Protein (%)#	Baking Quality ††
AP 18AX	4	AP-18	0	24	1.4	A	58.8	13.6	(A)‡‡
AP Bigfoot	3	AP-20	0	23	1.3	A	59.2	13.4	(A)
AP Clair	3	AP-18	4	23	1.0	G	59.1	13.6	(G)
Byrd CL Plus	2	PG-18	3	26	1.8	(G-E)	59.5	12.9	(G)
CP7017AX	4	CP-20	1	24	1.6	A	59.3	12.9	(NR)
CP7220	new	CP-22	1	26	1.6	(G)	60.9	13.9	(G)
CP7266AX	2	CP-22	1	24	1.8	(NR)	59.4	13.4	(NR)
CP7869	3	CP-17	1	25	2.2	A	59.7	13.2	(NR)
CP7909	4	CP-18	-1	24	2.5	G	59.7	13.0	(NR)
Crescent AX	4	PG-18	-1	25	2.3	A	59.3	13.3	(G)
Draper	5+	SD-19	2	25	1.4	G-E	59.6	13.6	G
Expedition	5+	SD-02	0	25	2.0	G	59.7	13.9	G
Ideal	5+	SD-11	5	26	1.3	G-E	60.2	13.2	A
Kivari AX	2	PG-20	1	25	3.1	(E)	59.8	12.4	(G)
LCS Chrome	3	LCS-15	2	26	1.2	G	60.1	14.0	(G)
LCS Helix AX	4	LCS-19	0	25	1.7	G	60.2	13.2	(E)
LCS Runner	new	LCS-21	1	25	1.6	(G)	60.9	12.9	(A)
LCS Steel AX	3	LCS-21	2	26	1.2	A	60.2	12.8	(NR)
MS Maverick	2	MS-20	3	26	1.9	(NR)	60.0	13.7	(NR)
MS Sundown	new	MS-22	0	26	2.0	(NR)	59.7	13.1	(NR)
Redfield	5+	SD-13	4	26	1.5	A	59.8	13.6	G
SD Andes	5+	SD-20	6	26	1.1	E	60.8	13.1	A
SD Midland	5+	SD-21	4	27	1.1	E	60.5	12.9	E
SY Wolf	5+	AP-11	2	24	1.2	(G)	58.7	13.8	A
SY Wolverine	5+	AP-19	-1	23	1.3	G-E	59.5	13.3	(G)
WB4309	4	WB-19	0	24	1.5	G-E	58.2	13.6	(E)
WB4422	2	WB-22	2	25	1.0	(E)	60.2	14.1	(G)
WB4510CLP	2	WB-20	4	28	1.0	(E)	62.0	12.9	(A)
Winner	5+	SD-19	1	26	1.6	G-E	60.0	13.4	G
Trial Average	-	-	-	25	1.6	-	59.8	13.3	-

† AP - AgriPro; CP - Croplan by Winfield; LCS - Limagrain Cereal Seeds; MS - Meridian Seeds; PG - PlainsGold; SD - South Dakota; WB - WestBred; and - (Year of Release).

‡ Relative heading compared to Expedition (152 days Julian or June 1) in 2023.

§ Lodging score: 1, perfectly standing; to 5, completely flat.

¶ Winter hardiness: E - excellent; G - good; F - fair; P - poor, NR - not reported.

Test weight (lbs/bu) and protein (%) as averaged from all SD testing sites.

†† Baking quality: E, excellent; G, good; A, acceptable; P, Poor. Note: SDSU does not perform baking quality analysis.

‡‡ Parenthesis designate estimated ratings (X), based on information provided by entity that submitted the variety.



**SOUTH DAKOTA STATE
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2023 South Dakota Winter Wheat Variety Trial Results Disease Rating

Table 2. Winter wheat variety disease ratings.

Variety	Disease Ratings†						
	Stripe Rust	Stem Rust	Leaf Rust	WSMV‡	Tan Spot	Bacterial Leaf Streak	FHB¶ (Scab)
AP 18AX	2	(NR)‡	7	(4)	5	6	8
AP Bigfoot	(3)‡‡	(2)	7	(4)	4	7	7
AP Clair	(2)	(S)	7	(NR)	5	6	8
Byrd CL Plus	(7)	(8)	8	(3)	6	7	8
CP7017AX	(5)	(R)	6	(NR)	5	5	8
CP7220	(5)	(NR)	8	(NR)	4	4	4
CP7266AX	(3)	(NR)	6	(NR)	3	5	5
CP7869	(3)	(R)	6	(NR)	5	3	7
CP7909	(1)	(MS)	7	(NR)	5	8	5
Crescent AX	(4)	(NR)	7	(2)	4	7	6
Draper	5	MR-MS	7	(NR)	4	8	5
Expedition	7	R	6	S	4	5	4
Ideal	8	MR	4	S	4	3	8
Kivari AX	(8)	(8)	8	(3)	4	4	6
LCS Chrome	(1)	(NR)	7	(NR)	5	4	6
LCS Helix AX	(2)	(1)	7	(1)	4	6	4
LCS Runner	(4)	(2)	(3)	(5)	4	6	5
LCS Steel AX	(7)	(9)	7	(NR)	4	6	8
MS Maverick	(1)	(5)	6	(NR)	5	4	8
MS Sundown	(2)	(3)	(1)	(NR)	4	6	5
Redfield	5	MR	6	S	5	7	8
SD Andes	1	(NR)	8	(NR)	3	4	5
SD Midland	1	(7)	8	(6)	4	4	6
SY Wolf	(4)	(2)	(2)	(4)	3	6	6
SY Wolverine	(6)	(2)	7	(4)	4	8	8
WB4309	(4)	(MR-MS)	8	(MS)	5	8	7
WB4422	(8)	(6)	6	(6)	5	6	8
WB4510CLP	(2)	(NR)	NR	(6)	4	5	8
Winner	5	MR	NR	(NR)	6	6	4

† Disease ratings: R, resistant; MR, moderately resistant; MS, moderately susceptible; S, susceptible; or 1, most resistant to 9, most susceptible. Note: SDSU does not perform nursery screenings for all listed pathogens in each growing season.

‡ Wheat Streak Mosaic Virus; ¶ Fusarium Head Blight

‡ Parenthesis denote estimated rankings (X) provided by the program that submitted the variety, NR - not reported.



2023 South Dakota Winter Wheat Variety Trial Results Eastern Summary

**SOUTH DAKOTA STATE
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Table 3. 2021-2023 winter wheat variety performance trial results for testing sites in eastern South Dakota. Varieties ranking in the top 1/3 of each trial category are bolded and shaded light blue.

Variety	2021	2022	2023			2-year			3-year		
	Yield (bu/a)	Yield (bu/a)	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
SD Andes	71.8	61.4	71.8	60.4	13.3	65.3	59.2	13.4	67.8	60.1	13.1
SD Midland	72.3	62.4	68.2	58.8	13.2	64.6	58.7	13.5	67.6	59.5	13.2
LCS Steel AX	68.4	59.8	73.9	59.7	13.3	65.1	58.4	13.1	66.4	58.8	12.7
Winner	69.7	60.8	69.0	58.6	13.8	63.9	58.2	13.8	66.1	59.2	13.4
WB4309	71.0	59.5	67.6	57.1	14.1	62.6	57.5	13.8	65.8	58.6	13.5
AP Clair	71.4	60.9	64.5	58.3	13.9	62.2	58.3	13.9	65.8	59.1	13.6
Ideal	71.4	59.4	63.0	58.6	13.4	60.7	58.6	13.8	64.8	59.8	13.4
SY Wolverine	69.0	60.6	64.7	58.4	13.6	62.1	58.1	13.6	64.8	59.0	13.4
CP7017AX	66.8	63.0	63.8	57.8	13.1	63.3	57.6	13.0	64.7	58.6	12.7
Redfield	67.9	58.8	67.1	59.2	13.5	61.9	58.3	14.1	64.2	59.2	13.9
Draper	66.9	60.6	65.1	58.4	13.7	62.3	57.7	13.8	64.0	58.8	13.6
CP7869	67.5	60.0	62.8	57.7	13.5	61.0	58.0	13.3	63.5	58.9	12.9
CP7909	64.7	59.4	65.9	58.4	13.3	61.8	58.9	13.3	62.9	59.7	13.1
LCS Helix AX	65.6	60.7	62.1	59.2	13.2	61.2	58.6	13.2	62.9	59.7	12.9
AP Bigfoot	66.9	61.3	58.1	57.8	13.7	60.1	57.7	13.6	62.7	58.8	13.4
AP 18AX	64.0	58.4	61.8	57.2	14.0	59.7	57.1	13.8	61.3	58.2	13.5
Crescent AX	60.8	58.6	60.9	57.9	13.6	59.4	58.2	13.5	59.9	59.2	13.4
LCS Chrome	61.4	55.0	60.9	58.7	14.3	57.2	58.1	14.5	58.8	59.0	14.2
Expedition	59.5	57.4	56.5	58.3	14.1	57.1	58.3	14.4	58.0	59.4	14.1
WB4422	-	63.9	68.2	59.5	14.4	65.5	59.1	14.3	-	-	-
Byrd CL Plus	-	59.2	67.5	59.3	13.1	62.3	57.7	13.2	-	-	-
MS Maverick	-	57.3	66.6	59.2	13.7	60.8	58.1	13.9	-	-	-
WB4510CLP	-	54.8	69.8	60.7	13.0	60.4	58.9	13.4	-	-	-
Kivari AX	-	55.2	65.9	58.6	12.9	59.2	57.2	12.7	-	-	-
CP7266AX	-	54.5	63.2	58.2	13.9	57.8	57.7	13.7	-	-	-
CP7220	-	-	68.2	60.5	13.9	-	-	-	-	-	-
LCS Runner	-	-	64.6	59.4	13.3	-	-	-	-	-	-
SY Wolf	-	-	63.9	58.1	14.0	-	-	-	-	-	-
MS Sundown	-	-	61.0	58.5	13.1	-	-	-	-	-	-
Trial Average#	67.5	59.8	66	58.9	13.7	62.1	58.4	13.7	64.2	59.3	13.4
LSD(0.05)†	2.9	1.8	4	1.1	0.3	1.9	0.5	0.2	1.6	0.3	0.2
C.V.%‡	7.0	4.6	7.6	-	-	6.1	-	-	6.5	-	-

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.

Note: Eastern trial sites include Brookings, Mt. Vernon, Platte, and South Shore.



2023 South Dakota Winter Wheat Variety Trial Results Central Summary

**SOUTH DAKOTA STATE
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Table 4. 2021-2023 winter wheat variety performance trial results for testing sites in central South Dakota. Varieties ranking in the top 1/3 of each trial category are bolded and shaded light blue.

Variety	2021	2022	2023			2-year			3-year		
	Yield (bu/a)	Yield (bu/a)	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
SY Wolverine	76.3	71.3	54.6	60.1	13.2	64.6	59.8	13.7	68.5	60.0	13.8
SD Andes	71.8	70.4	57.3	61.7	13.5	65.2	60.7	13.7	67.4	60.9	13.8
WB4309	73.4	69.4	54.5	59.4	13.4	63.5	58.8	13.9	66.8	59.0	14.0
LCS Steel AX	72.7	68.7	56.3	60.6	13.3	63.8	59.4	13.2	66.8	59.5	13.2
CP7017AX	71.5	71.4	53.2	60.1	13.4	64.1	59.5	13.2	66.6	59.5	13.2
SD Midland	70.8	67.2	59.8	61.0	13.1	64.2	60.1	13.7	66.4	60.2	13.8
Draper	72.3	68.0	54.5	60.1	13.9	62.6	59.0	14.1	65.8	59.0	14.1
Winner	74.4	64.7	56.1	60.6	13.2	61.3	59.8	14.2	65.7	59.9	14.0
AP Clair	73.4	69.8	49.6	60.2	13.8	61.7	59.7	13.9	65.6	59.9	14.0
Ideal	72.4	63.7	57.9	61.5	13.4	61.4	60.2	13.8	65.1	60.2	13.9
AP Bigfoot	72.8	68.3	50.1	59.9	13.7	61.0	59.2	13.8	64.9	59.3	13.9
CP7909	69.3	69.0	51.0	60.0	13.2	61.8	59.3	13.4	64.3	59.3	13.5
AP 18AX	69.0	66.5	53.0	59.6	13.8	61.1	59.1	13.6	63.7	59.1	13.7
LCS Helix AX	66.5	69.5	51.5	60.8	13.4	62.3	60.4	13.5	63.7	60.8	13.5
Redfield	64.1	66.4	55.6	61.2	14.1	62.1	59.4	14.4	62.8	59.7	14.5
LCS Chrome	67.0	64.2	54.5	61.1	14.2	60.3	59.3	14.6	62.5	59.6	14.6
CP7869	67.2	64.0	53.3	60.6	13.4	59.8	59.7	13.7	62.3	59.7	13.7
Crescent AX	62.3	68.6	48.5	60.3	13.4	60.5	59.7	13.5	61.1	60.1	13.7
Expedition	65.0	63.2	48.8	61.4	14.2	57.4	60.0	14.5	60.0	60.1	14.5
WB4422	-	74.2	56.4	61.4	13.6	67.1	60.7	14.3	-	-	-
MS Maverick	-	64.8	57.1	61.2	13.7	61.7	59.6	14.1	-	-	-
Byrd CL Plus	-	66.6	53.4	60.3	13.3	61.3	58.8	13.3	-	-	-
Kivari AX	-	65.5	53.7	61.0	12.9	60.8	59.4	12.6	-	-	-
CP7266AX	-	62.7	50.0	60.3	13.7	57.6	59.1	13.5	-	-	-
WB4510CLP	-	58.6	55.0	63.0	13.1	57.1	61.0	13.9	-	-	-
CP7220	-	-	54.9	61.7	14.0	-	-	-	-	-	-
MS Sundown	-	-	52.2	60.1	13.4	-	-	-	-	-	-
SY Wolf	-	-	51.9	60.8	13.6	-	-	-	-	-	-
LCS Runner	-	-	51.3	61.6	13.2	-	-	-	-	-	-
Trial Average#	70.4	67.1	54.1	60.9	13.6	61.9	59.8	13.8	65.0	59.9	13.9
LSD(0.05)†	3.4	2.8	3.6	0.5	0.3	2.2	0.4	0.2	1.9	0.3	0.2
C.V.%‡	7.8	7.5	9.6	-	-	8.3	-	-	8.1	-	-

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.

Note: Central trial sites include Hayes, Onida, Pierre, Selby, Vivian, and Winner.



2023 South Dakota Winter Wheat Variety Trial Results Western Summary

**SOUTH DAKOTA STATE
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Table 5. 2021-2023 winter wheat variety performance trial results for testing sites in western South Dakota. Varieties ranking in the top 1/3 of each trial category are bolded and shaded light blue.

Variety	2021	2022	2023			2-year			3-year		
	Yield (bu/a)	Yield (bu/a)	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
SD Andes	66.5	45.8	84.6	58.0	13.2	58.8	58.4	13.6	61.3	58.9	13.2
SD Midland	67.2	44.7	72.6	57.5	13.3	54.0	57.9	13.7	58.4	58.1	13.4
Winner	66.6	43.5	74.3	58.0	14.1	53.8	58.1	14.1	58.0	58.1	13.6
Draper	63.2	46.5	71.9	57.3	14.3	55.0	57.6	14.2	57.7	57.8	14.0
LCS Steel AX	61.8	42.5	76.2	58.0	12.7	53.7	57.2	13.6	56.4	57.4	13.2
Redfield	64.5	44.1	68.9	56.6	14.2	52.3	57.4	14.4	56.4	57.7	14.2
SY Wolverine	61.5	44.4	69.1	58.0	14.2	52.6	58.4	14.0	55.6	58.2	13.8
CP7909	67.1	44.2	60.1	57.1	13.1	49.5	58.2	13.9	55.4	58.1	13.7
LCS Helix AX	64.8	41.6	67.9	58.7	13.7	50.4	58.4	13.8	55.2	58.5	13.4
Ideal	59.1	44.7	68.1	57.1	13.9	52.5	58.5	14.0	54.7	58.1	13.9
CP7869	59.6	41.9	72.7	57.9	13.5	52.2	58.0	13.9	54.7	57.6	14.0
WB4309	66.1	40.6	64.8	56.3	14.3	48.7	57.2	14.4	54.5	57.5	14.0
LCS Chrome	60.8	42.2	68.7	57.7	14.4	51.0	58.3	14.5	54.3	58.4	14.2
CP7017AX	54.1	45.7	65.1	58.0	13.3	52.2	58.5	13.5	52.8	57.7	13.6
AP 18AX	58.6	43.5	57.5	56.4	14.1	48.2	56.8	13.9	51.6	56.7	13.8
AP Bigfoot	58.7	39.3	62.5	58.0	13.8	47.0	58.7	14.3	50.9	58.4	14.0
AP Clair	62.9	41.9	46.9	55.9	14.0	43.6	57.6	14.2	50.0	57.6	14.1
Expedition	57.7	41.0	56.0	57.1	14.4	46.0	57.9	14.4	49.9	58.0	14.3
Crescent AX	61.2	38.3	56.2	57.9	14.2	44.2	57.9	14.1	49.9	58.1	13.8
Kivari AX	-	49.2	72.7	57.8	12.5	57.0	57.7	12.8	-	-	-
MS Maverick	-	45.9	70.0	56.6	14.8	53.9	58.0	14.3	-	-	-
WB4422	-	44.6	71.6	57.7	15.2	53.6	58.7	14.8	-	-	-
Byrd CL Plus	-	46.0	68.1	56.8	13.0	53.4	57.3	13.4	-	-	-
WB4510CLP	-	39.2	80.5	59.5	13.3	53.0	59.3	14.0	-	-	-
CP7266AX	-	40.3	60.8	56.8	13.5	47.1	57.4	13.9	-	-	-
CP7220	-	-	71.6	58.5	14.4	-	-	-	-	-	-
LCS Runner	-	-	63.7	58.8	13.2	-	-	-	-	-	-
MS Sundown	-	-	56.7	57.4	13.9	-	-	-	-	-	-
SY Wolf	-	-	51.7	55.6	14.6	-	-	-	-	-	-
Trial Average#	62.0	43.2	67.1	57.4	14.0	51.4	58.0	14.0	54.7	57.9	13.8
LSD(0.05)†	4.7	3.7	6.1	1.0	0.4	3.1	0.6	0.3	2.5	0.5	0.4
C.V.%‡	9.5	12.2	9.2	-	-	10.7	-	-	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.

Note: Western trial sites include Faith/Lantry, Sturgis, and Wall.