South Dakota State University
College of Agriculture, Food and Environmental Sciences

South Dakota State University Extension
South Dakota Agricultural Experiment Station at SDSU

2021 South Dakota Spring Wheat Variety Trial Results Regional Summaries

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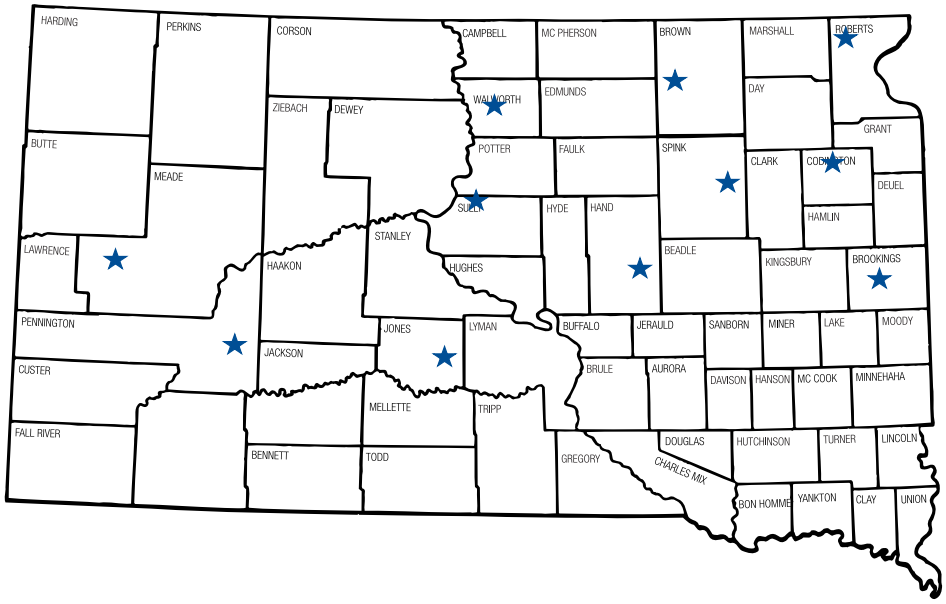

Eastern trial locations:	Brookings, Claire City, Frankfort, South Shore
Central trial locations:	Aberdeen, Gettysburg, Highmore, Selby
Western trial locations:	Draper, Sturgis, Wall

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

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2021 South Dakota Spring Wheat Variety Trial Results Variety List

Table 1. List of spring wheat varieties tested in 2021 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)	Lodging Score (1-5)§	2021 Test Wt. (lb/bu)#	2021 Protein (%)#
AP Gunsmoke CL2	new	AP-21	4	23	1.0	59.4	16.9
AP Murdock	3	AP-19	3	21	1.0	58.5	16.6
AP Revolution	new	AP-22	2	22	1.0	58.3	16.1
Bolles	5+	MN-15	5	25	1.0	59.1	18.2
Boost	5+	SD-15	6	26	1.0	60.0	16.8
CP3099A	2	WF-20	9	27	1.0	58.2	14.9
CP3119A	new	WF-21	8	26	1.0	56.5	15.0
CP3188	new	WF-20	4	24	1.0	59.0	15.1
CP3530	5+	WF-16	6	26	1.0	59.4	16.1
CP3915	3	WF-19	5	24	1.0	60.9	16.5
Driver	5+	SD-19	4	26	1.0	60.8	16.0
Focus	5+	SD-15	0	26	1.0	60.5	17.6
Lang-MN	5+	MN-17	4	24	1.0	59.5	16.4
LCS Buster	2	LCS-20	7	23	1.0	59.4	15.0
LCS Cannon	4	LCS-18	1	23	1.0	61.2	16.1
LCS Rebel	5+	LCS-17	2	26	1.0	60.8	16.7
LCS Trigger	5+	LCS-15	8	25	1.0	60.5	15.0
MN-Torgy	3	MN-20	5	23	1.0	61.6	16.9
MN-Washburn	4	MN-19	5	22	1.0	59.9	16.2
MS Barracuda	4	MS-18	1	22	1.0	59.3	16.8
MS Cobra	new	MS-22	4	24	1.0	59.6	16.5
MS Ranchero	2	MS-20	2	22	1.0	59.0	15.8
ND Frohberg	2	ND-20	4	25	1.0	59.3	16.7
PFS Buns	new	PFS-22	9	23	1.0	58.0	16.4
Prevail	5+	SD-13	3	22	1.0	59.5	16.3
Shelly	5+	MN-16	6	22	1.0	60.9	15.8
Surpass	5+	SD-15	1	22	1.0	60.0	16.5
SY Ingmar	5+	AP-14	6	22	1.0	60.4	16.4
SY Rustler	5+	AP-16	3	22	1.0	58.0	16.2
SY Valda	5+	AP-15	4	22	1.0	60.3	15.9
WB9590	5+	WB-18	2	20	1.0	59.4	17.1
WB9606	2	WB-20	4	24	1.0	60.8	15.5
WB9719	5+	WB-18	6	23	1.0	61.1	16.6
Trial Averages	-	-	-	24	1.0	59.7	16.3

† AP, AgriPro; LCS, Limagrain Cereal Seeds; MN, Minnesota; MS, Meridian Seeds; ND, North Dakota; PFS, Peterson Farms Seed; SD, South Dakota, WI, Winfield; WB, WestBred; and – (Year of Release).

‡ Difference in days to heading compared to Focus (2021 eastern and central locationss - Julian date 161 - June 10th).

§ Lodging score: 1, perfectly standing; to 5, completely flat (eastern and central locations). Note: there was no lodging in 2021.

Test weight and protein are statewide averages.

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2021 South Dakota Spring Wheat Variety Trial Results Disease Ratings

Table 2. Spring wheat variety disease ratings.

Variety	Disease Ratings†					
	Stripe Rust	Stem Rust	2021 Leaf Rust	2021 Tan Spot	2021 Bacterial Leaf Streak	2021 Fusarium Head Blight
AP Gunsmoke CL2	-‡	(MR)§	(R)	(MR)	6	1
AP Murdock	-	(MR)	(R)	6	3	6
AP Revolution	-	(R)	(MR)	(MR)	9	1
Bolles	MS	-	4	7	2	4
Boost	S	-	4	7	1	4
CP3099A	-	-	5	7	7	9
CP3119A	-	-	8	6	2	4
CP3188	-	-	7	7	6	4
CP3530	S	(R)	(MR)	-	8	4
CP3915	-	(MR)	4	7	7	3
Driver	-	-	4	7	2	2
Focus	S	-	4	8	6	2
Lang-MN	MS	(R)	7	-	4	3
LCS Buster	-	(R)	(R)	-	1	5
LCS Cannon	(R)	(R)	5	6	9	3
LCS Rebel	(MR)	(R)	7	8	3	2
LCS Trigger	MS	(R)	3	6	1	4
MN-Torgy	-	-	3	7	3	3
MN-Washburn	-	(R)	3	8	5	5
MS Barracuda	MR	(R)	7	8	8	5
MS Cobra	(R)	(R)	4	6	6	5
MS Ranchero	(R)	(R)	7	5	8	7
ND Frohberg	(MR)	(R-MR)	7	8	8	3
PFS Buns	-	-	4	6	5	6
Prevail	MR	MR	6	7	1	2
Shelly	MR	-	6	6	3	4
Surpass	S	-	6	8	2	2
SY Ingmar	S	(R)	4	6	8	4
SY Rustler	MS	(MR)	5	5	5	3
SY Valda	S	(R)	(MR)	(MR)	1	2
WB9590	S	(R)	7	8	2	5
WB9606	(MS)	(MR)	7	6	8	6
WB9719	S	(R)	7	4	7	5

† 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.
‡ A dash (-) signifies no rating provided/available.
§ Parenthesis denote estimated ratings/rankings (X) based on information provided by the program that submitted the variety.

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2021 South Dakota Spring Wheat Variety Trial Results Eastern Summary

Table 3. 2021 spring wheat variety performance trial results for testing sites in eastern South Dakota.
Varieties ranking in the top third of each trial category are shaded light blue.

Variety	2019	2020	2021			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 %
LCS Trigger	46.3	72.3	59.9	61.6	13.8	66.1	61.1	13.5	59.0	58.6	13.6
SY Valda	49.8	63.8	54.1	60.6	15.0	58.9	60.7	14.9	55.0	58.2	15.3
MN-Torgy	46.2	63.4	51.7	62.3	16.3	57.5	61.1	15.8	54.9	59.3	16.0
CP3530	48.7	65.9	51.6	60.0	15.4	58.8	60.3	15.2	54.7	58.3	15.7
Driver	40.9	65.1	56.6	62.4	15.3	60.8	61.9	15.1	53.6	58.9	15.5
Shelly	38.4	65.6	56.7	61.7	14.8	61.2	60.9	14.5	53.0	58.1	15.0
AP Murdock	48.3	63.4	47.8	58.7	15.6	55.6	59.1	15.2	52.3	57.4	15.3
SY Ingmar	50.9	58.6	50.3	60.8	15.4	54.4	60.8	15.5	52.2	58.6	15.8
WB9719	43.6	61.1	54.0	62.8	15.9	57.6	62.2	15.5	52.2	59.8	15.5
Prevail	47.0	61.5	49.3	60.4	15.1	55.4	60.1	14.7	51.7	58.4	15.0
SY Rustler	48.6	59.2	48.2	57.9	15.1	53.7	58.7	15.1	51.0	57.0	15.5
WB9590	46.1	58.9	50.0	60.7	16.3	54.5	60.0	16.2	50.8	57.8	16.3
CP3915	43.8	60.0	50.8	62.2	15.8	55.4	61.5	15.4	50.8	59.1	15.7
Surpass	47.0	59.1	47.7	61.0	15.4	53.4	60.0	15.4	50.3	57.9	15.8
Boost	43.7	58.5	50.0	60.9	16.1	54.3	60.7	15.8	50.0	58.5	16.0
MN-Washburn	37.6	61.4	51.5	61.0	15.3	56.5	60.2	14.9	49.5	57.6	15.3
Lang-MN	39.6	59.4	50.6	60.0	15.6	55.0	60.4	15.5	49.2	58.4	15.9
LCS Cannon	38.0	60.2	51.0	61.5	15.3	55.6	61.5	15.0	49.0	59.2	15.5
LCS Rebel	37.0	54.9	51.7	61.7	16.1	53.3	61.2	15.9	47.1	59.1	16.2
Bolles	36.3	59.0	48.0	59.8	17.9	53.5	59.8	17.2	47.1	57.3	17.6
Focus	41.2	58.7	42.0	60.8	17.2	50.4	60.7	16.4	46.4	58.8	16.6
MS Barracuda	35.3	56.8	47.5	60.2	15.8	52.1	59.9	15.8	45.8	57.6	16.4
LCS Buster	-	68.8	58.1	60.3	13.7	63.5	59.7	13.5	-	-	-
WB9606	-	62.4	58.4	61.7	14.3	60.4	60.8	13.9	-	-	-
CP3099A	-	56.9	58.5	59.4	13.5	57.7	57.5	13.3	-	-	-
ND Frohberg	-	58.2	52.8	60.8	15.8	55.5	60.7	15.5	-	-	-
MS Ranchero	-	56.9	49.6	59.3	14.6	53.2	58.6	14.8	-	-	-
CP3119A	-	-	56.3	57.9	14.2	-	-	-	-	-	-
PFS Buns	-	-	54.2	59.1	15.3	-	-	-	-	-	-
AP Gunsmoke CL2	-	-	53.8	59.6	16.2	-	-	-	-	-	-
CP3188	-	-	53.0	58.5	14.1	-	-	-	-	-	-
MS Cobra	-	-	50.2	60.7	15.7	-	-	-	-	-	-
AP Revolution	-	-	47.8	59.1	15.1	-	-	-	-	-	-
Trial Average#	43.7	60.8	52.2	60.6	15.4	56.7	60.3	15.2	53.0	58.9	15.6
LSD(0.05)†	6.6	1.9	2.3	0.5	0.3	5.5	1.6	0.6	6.2	1.4	0.6
C.V.%‡	7.7	4.8	6.4	1.2	5.7	5.3	1.2	2.0	6.0	1.4	2.2

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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2021 South Dakota Spring Wheat Variety Trial Results Central Summary

Table 4. 2021 spring wheat variety performance trial results for testing sites in central South Dakota.
Varieties ranking in the top third of each trial category are shaded light blue.

Variety	2019	2020	2021			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 %
LCS Trigger	64.3	81.5	44.3	60.0	14.8	62.9	59.8	14.5	62.8	59.2	14.4
SY Valda	55.8	72.1	41.6	60.5	15.8	56.8	59.7	16.2	56.1	58.6	16.2
CP3530	58.0	72.7	38.9	59.1	16.2	55.8	58.7	16.4	56.1	58.4	16.7
Shelly	53.5	70.5	42.3	60.5	15.7	56.4	59.7	15.6	55.1	59.1	15.6
CP3915	54.2	69.8	40.6	61.4	16.9	55.2	60.6	16.6	54.4	60.1	16.5
Driver	51.9	70.8	41.1	61.1	16.2	56.0	60.4	16.2	54.4	59.6	16.2
MN-Torgy	57.6	69.3	37.1	60.8	17.3	53.2	60.0	17.1	54.1	59.5	16.9
WB9719	54.3	70.4	39.1	61.1	17.6	54.8	60.2	16.9	54.1	59.4	16.6
LCS Cannon	55.4	68.3	39.1	61.6	16.6	53.7	61.0	16.5	53.8	60.5	16.3
AP Murdock	60.6	67.5	33.5	59.2	16.9	50.5	58.9	16.5	53.2	58.7	16.3
MN-Washburn	47.8	70.4	37.8	59.4	16.5	54.1	59.1	16.3	51.7	58.5	16.2
SY Ingmar	52.0	64.5	38.4	60.5	16.9	51.4	60.1	16.9	51.2	59.7	16.9
LCS Rebel	50.7	64.2	39.1	60.7	17.2	51.7	59.9	17.2	50.9	59.4	17.2
SY Rustler	53.2	63.9	34.8	58.0	16.8	49.3	58.0	16.8	50.0	57.6	16.7
Lang-MN	52.3	62.5	36.5	59.3	16.6	49.5	58.9	17.0	49.9	58.5	16.8
WB9590	53.7	64.6	32.9	59.2	18.2	48.8	58.4	17.8	49.9	58.1	17.5
Surpass	52.6	63.3	34.0	60.5	17.3	48.7	59.1	17.0	49.4	58.5	16.9
Prevail	54.1	63.3	32.0	59.1	17.1	47.7	58.8	16.5	49.2	58.6	16.2
MS Barracuda	51.9	62.2	33.9	59.3	17.3	48.0	58.9	17.2	48.8	58.5	17.0
Boost	47.7	63.0	36.4	59.8	17.0	49.6	59.2	16.8	48.6	58.5	16.8
Bolles	46.6	61.9	34.3	58.9	18.8	48.1	58.2	18.4	47.2	57.4	18.5
Focus	50.5	60.2	27.3	60.3	18.4	43.8	59.6	17.9	45.4	59.2	17.5
LCS Buster	-	81.1	45.3	59.0	14.7	63.1	58.5	14.5	-	-	-
CP3099A	-	74.4	44.5	57.6	14.4	59.5	57.1	14.5	-	-	-
WB9606	-	70.3	39.8	60.6	15.9	55.1	59.7	15.6	-	-	-
MS Ranchero	-	64.9	36.8	58.9	16.1	50.8	58.1	16.0	-	-	-
ND Frohberg	-	63.4	30.6	59.2	17.4	47.0	59.2	17.0	-	-	-
CP3119A	-	-	43.8	55.9	14.9	-	-	-	-	-	-
PFS Buns	-	-	43.6	57.5	16.3	-	-	-	-	-	-
AP Gunsmoke CL2	-	-	41.5	59.5	16.9	-	-	-	-	-	-
CP3188	-	-	41.2	59.3	14.9	-	-	-	-	-	-
AP Revolution	-	-	36.4	59.9	16.5	-	-	-	-	-	-
MS Cobra	-	-	35.2	59.5	16.9	-	-	-	-	-	-
Trial Average#	51.8	67.2	36.7	59.7	16.7	52.9	59.2	16.5	52.5	59.0	16.6
LSD(0.05)†	2.1	1.8	1.8	0.5	0.4	4.7	0.8	0.7	4.8	0.8	0.7
C.V.%‡	5.1	3.8	6.8	1.2	3.2	4.9	1.0	2.8	4.8	1.5	2.5

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.

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2021 South Dakota Spring Wheat Variety Trial Results Western Summary

Table 5. 2021 spring wheat variety performance trial results for testing sites in western South Dakota.
Varieties ranking in the top third of each trial category are shaded light blue.

Variety	2019	2020	2021			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 %
LCS Trigger	43.4	55.3	42.6	59.9	16.4	47.7	59.1	15.6	47.0	58.4	15.4
LCS Cannon	45.4	49.1	45.0	60.5	16.4	46.6	60.3	15.7	46.4	60.0	15.8
LCS Rebel	42.0	52.2	41.6	59.8	16.8	45.8	59.7	16.3	45.2	58.7	16.3
Shelly	43.7	48.6	43.4	60.6	16.8	45.4	59.9	16.1	45.2	59.0	16.0
MN-Torgy	38.0	48.5	44.9	61.8	17.1	46.3	60.9	16.5	44.9	60.4	16.6
SY Valda	53.2	46.3	41.1	59.9	16.8	43.2	59.8	16.1	44.9	59.4	16.0
Surpass	48.8	48.1	41.1	58.5	16.9	43.9	58.7	16.0	44.7	58.1	16.1
Lang-MN	40.8	52.6	39.9	59.3	17.0	45.0	59.1	16.3	44.3	58.1	16.3
CP3530	43.4	50.1	40.6	59.2	16.7	44.4	58.4	16.4	44.2	57.8	16.5
CP3915	45.2	48.6	40.7	59.0	16.8	43.9	59.4	16.2	44.1	58.4	16.2
Driver	39.6	53.2	39.4	59.0	16.5	44.9	58.9	15.6	44.0	58.7	15.7
MN-Washburn	47.2	49.3	39.4	59.1	16.7	43.4	59.0	16.1	44.0	58.0	16.1
SY Rustler	47.0	47.8	40.3	57.9	16.7	43.3	57.7	15.9	43.9	57.6	16.0
Prevail	43.9	45.4	42.3	58.9	16.6	43.5	58.8	16.0	43.6	58.7	16.0
WB9590	44.8	47.9	39.1	58.5	16.7	42.7	58.6	16.1	43.0	58.0	16.2
WB9719	45.4	49.5	37.2	59.5	16.5	42.1	60.1	15.9	42.7	59.3	15.9
SY Ingmar	41.5	50.3	36.7	60.0	17.0	42.1	59.3	16.5	42.0	58.7	16.6
MS Barracuda	47.4	46.3	36.9	58.3	17.3	40.7	58.4	16.3	41.7	57.5	16.4
AP Murdock	44.7	43.5	35.5	57.6	17.2	38.7	57.1	16.4	39.6	57.1	16.4
Focus	38.7	43.6	35.2	60.5	17.3	38.6	60.4	16.7	38.6	59.8	16.8
Bolles	31.7	47.5	34.2	58.6	18.0	39.5	58.2	17.6	38.3	57.9	16.9
Boost	34.7	41.4	35.0	59.3	17.3	37.6	58.6	16.8	37.1	58.4	16.9
LCS Buster	-	56.7	37.8	58.7	16.7	45.4	57.7	15.6	-	-	-
WB9606	-	51.0	41.3	60.2	16.4	45.1	59.7	15.7	-	-	-
MS Ranchero	-	48.6	42.3	59.0	16.6	44.8	58.6	15.7	-	-	-
CP3099A	-	60.2	33.8	57.7	16.7	44.4	57.2	15.4	-	-	-
ND Frohberg	-	47.1	35.6	58.0	16.8	40.2	58.1	16.4	-	-	-
CP3188	-	-	43.0	59.2	16.2	-	-	-	-	-	-
AP Gunsmoke CL2	-	-	40.3	59.1	17.6	-	-	-	-	-	-
MS Cobra	-	-	40.3	58.4	17.0	-	-	-	-	-	-
AP Revolution	-	-	36.5	56.0	16.8	-	-	-	-	-	-
PFS Buns	-	-	34.8	57.4	17.5	-	-	-	-	-	-
CP3119A	-	-	34.3	55.8	16.1	-	-	-	-	-	-
Trial Average#	39.7	48.9	39.5	59.4	16.8	43.4	59.0	16.1	43.2	58.6	16.2
LSD(0.05)†	6.9	3.8	3.0	2.1	0.5	5.6	1.4	0.7	4.9	1.5	0.7
C.V.%‡	10.8	8.0	9.4	7.5	4.2	9.1	2.4	4.2	9.2	3.1	6.1

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