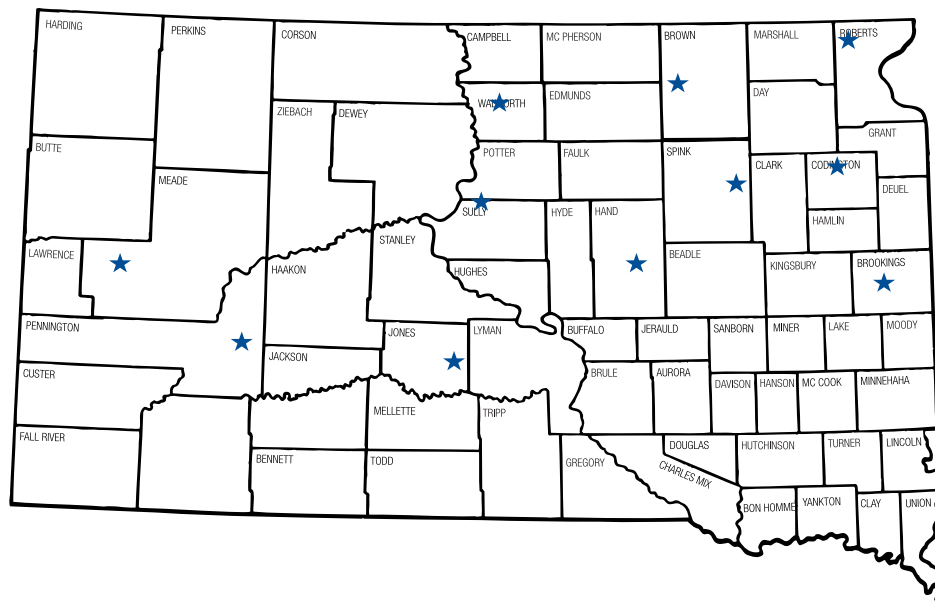


2019 South Dakota Spring Wheat Variety Trial Results Regional Summaries

Jonathan Kleinjan | SDSU Extension Crop Production Associate
 Christopher Graham | SDSU Extension Agronomist
 Karl Glover | SDSU Spring Wheat Breeder
 Shaukat Ali | SDSU Small Grains Pathologist
 Kevin Kirby | Agricultural Research Manager
 Shawn Hawks | Agricultural Research Manager
 Bruce Swan | Agricultural Research Manager
 Christopher Nelson | Agricultural Research Manager



Eastern trial locations: Claire City, Doland, South Shore, Volga

Central trial locations: Aberdeen, Agar, Miller, Selby

Western trial locations: Draper, Sturgis, Wall

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

The 2019 small grain growing season in South Dakota was characterized by a relatively late onset of spring planting followed by an extremely wet growing season in many areas of the state. In general, yields were negatively impacted by the extremely wet conditions and, in some cases, heat during flowering and grain fill. Trial locations at Doland, Sturgis, and Wall were lost due to flooding/saturated soil conditions. Fusarium Head Blight (scab) was a problem in some areas of the state, especially the northeast. Harvest progressed slowly and produced below-average to average yields in most areas of the state. Wheat quality was a concern, as low falling numbers were observed in some areas which had significant harvest delays due to weather.

Spring wheat yields from the South Dakota State University CPT program averaged 44 bu/acre in eastern South Dakota (Claire City, South Shore, and Volga), ranging from 29 bu/acre at Volga to 53 bu/acre at South Shore. Varieties yielding in the top 1/3 of the eastern SD trials for 2019 were **AP Murdock, Commander, CP3530, Forefront, LCS Trigger, Prevail, Surpass, SY Ingmar, SY Rustler, SY Valda, WB9479, WB9590, and WB9653**. Yields in central South Dakota (Aberdeen, Agar, and Selby) averaged 52 bu/acre, ranging from 38 bu/acre at Agar to 60 bu/acre at Selby. Varieties yielding in the top 1/3 of the central SD trials for 2019 were **Ambush, AP Murdock, CP3530, CP3915, Faller, LCS Cannon, LCS Trigger, Prevail, SY611 CL2, SY Valda, WB9590, WB9653, and WB9719**. The lone surviving western South Dakota trial location (Draper) averaged 40 bu/acre. Varieties yielding in the top 1/3 at Draper were **AP Murdock, CP3915, LCS Cannon, LCS Trigger, MN-Washburn, MS Barracuda, Prevail, Shelly, Surpass, SY Rustler, SY Valda, WB9590, WB9653, and WB9719**. The protein content of the crop was very consistent throughout the state, averaging 16.3%, 16.4%, and 16.5% in eastern, central, and western SD, respectively. Detailed trial results, including height and lodging notes for each location are available at: <https://extension.sdstate.edu/wheat-variety-trial-results>.

Consider as much performance information as possible when selecting a variety, and give more weight to information from trials close to home, as some varieties may be better suited to certain geographic areas. Also pay close attention to relative performance over many locations. This type of performance is an indication of "yield stability". Good yield stability refers to the ability of a variety exhibit high yield potential at many locations over years. For example, a variety that ranks in the upper 40% at all locations exhibits better yield stability than a variety that is number one for yield at one location but ranks in the lower 40% at some other locations. Performance over multiple years is also very important. Growing conditions in a single season may favor certain varieties, providing a poor representation of yield potential over time. A good rule of thumb is to plant 65%-75% of your acres to varieties with a proven track record (i.e. a good multi-year average) and plant the remaining 25%-35% to a promising new variety.

It is important to remember that varieties may differ by 5 bu/acre or even more and still be statistically similar. This is due to inherent variability in the environment and the yield testing process. Varieties that are statistically similar to the top performing variety at each location can be calculated by subtracting the least significant difference (LSD) value from the top performing variety. The LSD is a statistic used to determine if varieties are truly different from one another.

The coefficient of variation (CV) listed at the bottom of each data column, which is often expressed as a percentage of a given trait mean, is a relative measure of the amount of test variation for that trait. Generally, in yield trials, a CV of 15% is considered acceptable and a CV of 10% or less indicates good quality data. Higher variability (and thus higher CVs) can be caused by several environmental factors, such as stand loss due to residue cover or heavy precipitation, and reduces the ability to detect true varietal differences.

Table 1a. List of spring wheat varieties tested in 2019 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)	Relative Height‡ (inches)	2019 Lodging Score§	2019 Test Wt. (lb/bu)#	2019 Protein (%)#
Advance	5+	SD-11	4	-4	2.5	54.6	15.7
Ambush	3	DG-17	3	-4	2.2	56.3	16.7
AP Murdock	new	AP-19	3	-4	1.9	55.9	15.7
Bolles	5+	MN-15	5	-3	2.4	54.9	18.2
Boost	5+	SD-15	4	-1	2.5	56.2	16.7
Commander	new	DG-20	2	-3	1.5	55.8	16.4
CP3530	5+	CP-16	3	0	2.4	55.7	16.8
CP3888	2	CP-18	3	-3	1.9	54.7	16.5
CP3915	new	CP-19	3	-3	2.1	55.7	16.3
CP3939	new	CP-19	2	-2	1.9	55.1	17.0
Faller	5+	ND-07	5	-1	2.6	54.6	15.6
Focus	5+	SD-15	0	0	2.8	56.8	16.9
Forefront	5+	SD-11	0	0	2.7	57.0	16.5
Lang-MN	5+	MN-17	4	-3	2.4	55.2	16.6
LCS Cannon	2	LCS-18	2	-6	2.1	57.6	16.1
LCS Rebel	3	LCS-17	2	-2	3.0	55.8	16.8
LCS Trigger	5+	LCS-15	8	-3	2.3	55.6	14.3
Linkert	5+	MN-13	4	-6	1.3	56.4	17.4
MN-Washburn	2	MN-19	5	-4	1.4	54.2	16.0
MN14105-7	new	MN-exp	4	-4	1.5	56.8	16.8
MS Barracuda	2	MS-18	1	-6	2.2	54.5	17.0
MS Camaro	3	MS-17	3	-6	1.7	55.7	16.7
MS Chevelle	5+	MS-14	2	-5	2.8	55.5	15.5
MS-19SW1	new	MS-exp	5	1	3.0	52.6	17.5
MS-19SW2	new	MS-exp	3	-2	2.2	53.7	16.4
Prevail	5+	SD-13	2	-3	2.1	57.3	15.7
Prosper	5+	ND-11	4	-1	2.7	54.8	15.7
RB07	5+	MN-07	3	-3	2.9	54.6	16.6

† AP, AgriPro; CP, Croplan; DG, Dyna-Gro Seed; LCS, Limagrain Cereal Seeds; MN, Minnesota; MS, Meridian Seeds, ND, North Dakota; SD, South Dakota; TCG, 21st Century Genetics; WB, WestBred; WY, Wyoming; and – (Year of Release).

‡ Difference in days to heading and height compared to Focus (2019 eastern and central locations - Julian date 183 and 33 inches).

§ Lodging score: 1, perfectly standing; to 5, completely flat (eastern and central locations).

Table 1b. List of spring wheat varieties tested in 2019 along with origin, agronomic, and grain quality characteristics, continued.

Variety	Testing and Origin		Agronomic Characteristics			Grain Quality	
	Years tested in SD trials	Origin†-Year	Relative Heading‡ (days)	Relative Height‡ (inches)	2019 Lodging Score§	2019 Test Wt. (lb/bu)#	2019 Protein (%)#
SD4625	3	SD-exp	3	-2	2.2	56.0	16.3
Shelly	4	MN-16	5	-5	2.1	54.9	15.8
Surpass	5+	SD-15	1	-3	2.5	55.4	16.5
SY 611 CL2	new	AP-18	3	-5	1.9	56.0	16.3
SY Ingmar	4	AP-14	3	-2	1.4	56.4	16.7
SY Rustler	5+	AP-16	2	-4	2.1	55.9	16.2
SY Valda	5+	AP-15	4	-4	2.2	55.7	16.1
TCG-Climax	new	TCG-17	7	-2	1.1	56.1	18.1
TCG-Heartland	new	TCG-19	3	-5	1.6	54.9	17.3
TCG-Spitfire	new	TCG-15	5	-2	1.6	53.6	15.6
TCG-Wildfire	new	TCG-15	4	-3	2.0	55.2	16.5
WB9479	3	WB-18	2	-6	1.7	55.0	17.3
WB9590	3	WB-18	2	-7	1.7	55.5	16.9
WB9653	5+	WB-15	3	-6	2.2	55.0	15.6
WB9719	3	WB-18	5	-5	2.0	56.3	15.8

† AP, AgriPro; CP, Croplan; DG, Dyna-Gro Seed; LCS, Limagrain Cereal Seeds; MN, Minnesota; MS, Meridian Seeds, ND, North Dakota; SD, South Dakota; TCG, 21st Century Genetics; WB, WestBred; WY, Wyoming; and – (Year of Release).

‡ Difference in days to heading and height compared to Focus (2019 eastern and central locations - Julian date 183 and 33 inches).

§ Lodging score: 1, perfectly standing; to 5, completely flat (eastern and central locations).

Table 2a. Spring wheat variety disease ratings.

Variety	Disease Ratings†					
	Stripe Rust	Stem Rust	Leaf Rust	2019 Tan Spot	2019 Bacterial Leaf Streak	2019 Fusarium Head Blight
Advance	MS	R-MR	6	6	3	4
Ambush	S	-	4	5	2	5
AP Murdock	-	-	3	6	5	4
Bolles	MS	-	3	7	4	5
Boost	S	-	4	5	1	3
Commander	(MR)#	(MR)	3-4	6	5	5
CP3530	S	(R)	3-4	6	3	4
CP3888*	-	-	4	6	5	5
CP3915	-	-	4	5	3	5
CP3939*	-	-	6	6	3	5
Faller	S	R	4	7	2	4
Focus	S	-	4	5	3	1
Forefront	MS	R-MR	6	5	2	2
Lang-MN	MS	(R)	3	7	2	3
LCS Cannon	-	-	5	5	4	7
LCS Rebel	S	-	6	7	3	5
LCS Trigger	MS	(R)	3	5	1	5
Linkert	MS	-	4	7	5	6
MN-Washburn	-	(R)	4	6	4	5
MN14105-7	-	-	3-4	6	5	5
MS Barracuda	-	-	5	6	8	9
MS Camaro	S	(R)	6	6	8	9
MS Chevelle	MR	(MR)	4	7	7	7
MS-19SW1	-	(R)	3	5	9	9
MS-19SW2	(R)	(MR)	5	6	5	8
Prevail	MR	MR	3	7	2	4
Prosper	S	R	8	6	3	5
RB07	MR	MR	6	7	4	5

† Disease ratings: R, resistant; MR, moderately resistant; MS, moderately susceptible; S, susceptible; or 1, most resistant to 9, most susceptible.

Note: Ratings are a combination of program ratings, field observations, and field and/or greenhouse nursery screenings.

Estimated rankings (X) based on information provided by the program that submitted the variety.

Table 2b. Spring wheat variety disease ratings, continued.

Variety	Disease Ratings†					
	Stripe Rust	Stem Rust	Leaf Rust	2019 Tan Spot	2019 Bacterial Leaf Streak	2019 Fusarium Head Blight
SD4625	-		3	7	3	3
Shelly	MR	-	6	7	2	4
Surpass	S	-	4	7	3	4
SY 611 CL2	-	-	4	6	2	6
SY Ingmar	S	(R)#	3	5	4	4
SY Rustler	MS	(MR)	3	6	4	5
SY Valda	S	(R)	4	7	3	4
TCG-Climax	(MS)	-	5	5	7	9
TCG-Heartland	-	-	4	6	5	7
TCG-Spitfire	(MS)	-	5	5	6	8
TCG-Wildfire	(MS)	-	4	5	2	6
WB9479	MS	(R)	4	5	2	8
WB9590	S	(R)	4	6	3	7
WB9653	S	(MR)	3	6	2	7
WB9719	S	(R)	3	6	3	4

† Disease ratings: R, resistant; MR, moderately resistant; MS, moderately susceptible; S, susceptible; or 1, most resistant to 9, most susceptible.

Note: Ratings are a combination of program ratings, field observations, and field and/or greenhouse nursery screenings.

Estimated rankings (X) based on information provided by the program that submitted the variety.

Table 3a. 2017-2019 spring wheat variety performance trial results for testing sites in eastern South Dakota. Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019			2-year			3-year		
	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	53.6	13.9	53.3	55.7	14.4	57.0	56.6	14.1
SY Ingmar	50.9	54.7	16.3	51.0	56.7	16.7	53.8	57.1	16.2
SY Rustler	48.6	54.1	16.4	47.7	55.4	16.8	52.9	56.1	16.2
SY Valda	49.8	53.3	16.1	50.0	55.3	16.5	52.6	56.0	15.9
Prevail	47.0	55.3	15.5	48.0	56.3	15.9	52.5	57.0	15.5
WB9653	45.2	53.4	15.9	48.5	54.3	16.1	51.8	55.0	15.4
CP3530	48.7	54.5	16.8	50.8	55.1	17.1	51.8	55.5	16.5
WB9590	46.1	53.9	16.5	48.9	54.6	17.2	51.6	55.5	16.8
WB9719	43.6	55.3	15.5	47.8	56.4	16.1	51.0	56.9	15.7
Surpass	47.0	53.9	16.5	46.3	54.8	17.0	50.6	55.7	16.4
Forefront	47.0	55.6	16.2	46.3	56.2	16.8	50.2	56.9	16.2
SD4625	40.9	52.8	16.4	44.3	54.9	16.6	50.1	56.0	16.0
WB9479	44.8	53.6	17.0	45.4	54.4	17.7	49.6	55.4	17.2
Shelly	38.4	52.5	16.0	43.2	54.2	16.3	49.3	55.4	15.8
Ambush	42.1	54.3	17.0	44.9	55.9	17.3	49.0	56.9	16.7
Lang-MN	39.6	54.7	16.9	43.2	55.7	17.2	47.9	56.6	16.5
MS Chevelle	36.2	52.2	15.5	42.5	54.5	15.8	47.5	55.2	15.3
Boost	43.7	54.3	16.3	44.9	55.7	16.7	47.5	56.1	16.4
Faller	40.6	53.3	15.3	47.0	55.5	15.7	47.5	55.5	15.2
Focus	41.2	55.4	16.8	43.4	56.4	17.3	47.4	57.2	16.8
Advance	43.6	53.8	15.7	43.7	55.0	16.1	46.9	55.8	15.5
LCS Rebel	37.0	55.3	16.8	41.9	56.5	17.2	46.6	57.2	16.7
RB07	40.1	53.3	16.0	42.7	54.8	16.7	45.5	55.4	16.2
Prosper	36.5	51.5	15.4	43.7	54.4	15.9	45.1	54.9	15.3
Bolles	36.3	52.6	18.4	41.1	53.7	18.8	44.7	54.7	18.1
Linkert	35.9	53.9	17.1	39.4	55.7	17.4	44.2	56.6	17.0
MS Camaro	36.0	53.3	16.7	38.9	54.4	17.1	43.8	55.6	16.7
LCS Cannon	38.0	54.7	16.5	44.1	56.3	16.8	-	-	-
Trial Average#	43.7	53.9	16.3	47.1	56.1	16.7	50.0	56.3	16.2
LSD(0.05)†	6.6	2.3	0.5	6.9	1.7	0.4	5.8	1.2	0.4
C.V.%‡	7.7	2.0	2.8	8.5	2.1	2.4	8.4	2.0	2.8

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

† Value required (\geq 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.

Table 3b. 2017-2019 spring wheat variety performance trial results for testing sites in eastern South Dakota, continued. Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019			2-year			3-year		
	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
CP3888	39.1	52.6	16.7	43.5	54.8	16.9	-	-	-
MN-Washburn	37.6	52.7	16.0	42.7	54.7	16.3	-	-	-
MS Barracuda	35.3	53.3	17.7	41.5	54.1	17.6	-	-	-
AP Murdock	48.3	54.6	15.5	-	-	-	-	-	-
Commander	48.1	54.6	16.0	-	-	-	-	-	-
MN14105-7	46.2	54.0	16.7	-	-	-	-	-	-
SY 611 CL2	44.6	54.2	16.2	-	-	-	-	-	-
CP3915	43.8	54.7	16.2	-	-	-	-	-	-
TCG-Spitfire	42.8	51.2	15.3	-	-	-	-	-	-
TCG-Wildfire	41.1	53.0	16.4	-	-	-	-	-	-
MS-19SW2	40.6	50.4	16.4	-	-	-	-	-	-
CP3939	39.8	53.2	17.2	-	-	-	-	-	-
MS-19SW1	36.1	51.7	17.7	-	-	-	-	-	-
TCG-Climax	34.5	53.7	17.9	-	-	-	-	-	-
TCG-Heartland	34.4	53.1	17.2	-	-	-	-	-	-
Trial Average#	43.7	53.9	16.3	47.1	56.1	16.7	50.0	56.3	16.2
LSD(0.05)†	6.6	2.3	0.5	6.9	1.7	0.4	5.8	1.2	0.4
C.V.%‡	7.7	2.0	2.8	8.5	2.1	2.4	8.4	2.0	2.8

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

† Value required (\geq 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.

Table 4a. 2017-2019 spring wheat variety performance trial results for testing sites in central South Dakota. Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019			2-year			3-year		
	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	58.0	14.2	60.1	58.3	14.4	58.8	58.8	14.7
SY Valda	55.8	56.3	16.2	55.2	57.4	16.2	53.3	57.9	16.2
WB9653	55.2	57.3	15.6	54.2	57.0	15.6	52.9	57.5	15.8
WB9719	54.3	57.8	15.8	53.1	58.3	16.3	52.6	58.3	16.3
CP3530	58.0	57.8	17.2	53.0	57.6	17.0	52.1	57.5	16.9
Shelly	53.5	57.8	15.6	51.0	57.7	15.8	50.9	57.8	15.9
Faller	55.5	57.3	15.6	52.1	57.2	15.7	50.6	57.3	15.8
SY Ingmar	52.0	58.9	16.8	50.4	58.8	16.9	50.6	58.8	16.8
Prosper	53.3	57.4	15.7	52.1	57.3	15.7	50.1	57.1	15.8
Advance	52.3	56.5	15.9	50.6	57.9	15.9	49.9	58.4	15.9
Lang-MN	52.3	57.7	16.6	49.9	58.9	17.0	49.9	59.0	16.9
SD4625	51.9	57.8	16.2	50.4	58.0	16.2	49.5	58.3	16.5
MS Chevelle	49.6	56.9	15.6	50.4	57.6	15.7	49.2	57.6	15.9
SY Rustler	53.2	56.9	16.3	51.0	57.5	16.4	48.8	57.3	16.5
LCS Rebel	50.7	58.5	17.0	50.1	58.5	17.1	48.7	58.5	17.2
Ambush	54.9	57.9	16.6	50.7	58.6	16.8	48.5	58.4	16.9
Surpass	52.6	57.3	16.7	50.2	57.2	16.7	48.5	57.3	16.8
WB9590	53.7	57.5	17.0	50.6	57.3	17.4	48.3	57.4	17.4
Prevail	54.1	58.4	15.5	51.4	58.8	15.8	48.1	59.1	16.1
Forefront	50.0	59.1	16.5	47.3	58.9	16.7	47.0	58.5	16.9
RB07	51.9	56.6	16.5	48.7	57.0	16.7	46.5	57.1	16.9
WB9479	48.6	56.5	17.5	47.7	57.3	17.8	45.8	57.4	17.8
Boost	47.7	57.2	16.7	46.8	57.6	16.9	45.5	57.6	17.0
Focus	50.5	58.4	16.7	47.6	58.8	16.9	44.4	58.6	17.2
Bolles	46.6	55.7	18.6	44.8	56.0	18.7	44.3	56.2	18.7
Linkert	44.3	57.2	17.0	42.8	57.4	17.6	42.7	57.8	17.7
MS Camaro	47.2	56.9	16.3	44.2	56.8	16.8	42.0	56.7	17.0
LCS Cannon	55.4	59.4	15.8	51.4	59.2	16.2	-	-	-
Trial Average#	51.8	57.4	16.4	51.8	57.9	16.5	47.9	57.6	16.7
LSD(0.05)†	2.1	1.1	0.2	4.4	1.2	0.5	3.6	1.0	0.4
C.V.%‡	5.1	2.3	1.9	6.0	2.5	2.3	6.6	2.4	3.1

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

† Value required (\geq 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.

Table 4b. 2017-2019 spring wheat variety performance trial results for testing sites in central South Dakota, continued. Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019			2-year			3-year		
	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
CP3888	49.1	55.9	16.6	49.4	57.1	16.6	-	-	-
MN-Washburn	47.8	57.3	16.1	48.1	57.6	16.2	-	-	-
MS Barracuda	51.9	57.6	16.7	47.8	58.1	16.9	-	-	-
AP Murdock	60.6	58.4	15.9	-	-	-	-	-	-
MN14105-7	57.6	58.4	16.6	-	-	-	-	-	-
CP3915	54.2	58.9	16.4	-	-	-	-	-	-
SY 611 CL2	54.1	58.3	16.4	-	-	-	-	-	-
Commander	53.4	55.9	16.1	-	-	-	-	-	-
MS-19SW2	51.1	54.9	16.2	-	-	-	-	-	-
TCG-Spitfire	51.1	55.0	15.6	-	-	-	-	-	-
CP3939	47.6	56.8	17.1	-	-	-	-	-	-
TCG-Wildfire	47.5	57.3	16.5	-	-	-	-	-	-
TCG-Heartland	46.8	56.9	17.3	-	-	-	-	-	-
TCG-Climax	46.7	57.6	18.3	-	-	-	-	-	-
MS-19SW1	41.8	53.8	17.4	-	-	-	-	-	-
Trial Average#	51.8	57.4	16.4	51.8	57.9	16.5	47.9	57.6	16.7
LSD(0.05)†	2.1	1.1	0.2	4.4	1.2	0.5	3.6	1.0	0.4
C.V.%‡	5.1	2.3	1.9	6.0	2.5	2.3	6.6	2.4	3.1

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

† Value required (\geq 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.

Table 5a. 2017-2019 spring wheat variety performance trial results for testing sites in western South Dakota. Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019			2-year			3-year		
	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
SY Valda	53.2	57.7	15.9	49.6	56.9	14.2	45.5	57.4	14.8
WB9653	47.3	54.4	15.2	47.2	55.1	13.5	43.8	55.5	14.2
Surpass	48.8	54.9	16.3	44.2	56.0	15.0	43.6	57.4	15.1
CP3530	43.4	55.0	16.5	46.1	54.7	14.5	42.3	55.2	15.4
WB9719	45.4	55.8	16.1	42.4	56.9	14.8	42.1	57.8	15.2
LCS Trigger	43.4	55.1	14.7	47.3	55.5	12.9	41.9	55.3	14.4
WB9590	44.8	55.0	17.0	43.3	55.8	15.1	41.5	56.6	15.5
Prevail	43.9	58.3	16.1	42.1	56.1	14.8	41.1	56.9	15.2
LCS Rebel	42.0	53.6	16.7	41.5	56.2	15.2	40.6	57.1	15.6
SY Rustler	47.0	56.6	16.1	41.6	56.4	14.8	40.6	56.7	15.1
SD4625	39.6	57.5	16.3	40.4	57.8	14.4	40.5	58.1	15.0
Shelly	43.7	54.5	15.7	44.8	55.4	13.6	40.5	56.1	14.6
Advance	42.3	53.4	15.6	41.2	55.2	14.2	40.0	56.0	15.0
Prosper	40.1	55.5	16.1	43.4	55.2	13.9	39.9	55.6	14.7
Lang-MN	40.8	53.3	16.4	40.5	55.0	14.8	39.2	56.2	15.4
Forefront	38.0	56.3	16.7	37.4	56.3	15.4	38.9	57.4	15.6
Focus	38.7	56.7	17.4	39.7	56.3	15.9	38.8	58.1	16.1
RB07	40.0	54.0	17.2	42.4	55.2	15.3	38.5	56.2	15.7
Faller	37.9	53.1	15.8	41.1	54.9	13.9	38.0	55.3	14.8
SY Ingmar	41.5	55.7	16.8	39.0	57.0	15.6	38.0	56.8	16.3
MS Chevelle	37.2	57.4	15.4	38.2	56.5	13.9	37.6	56.9	14.6
Ambush	40.6	56.9	16.5	37.8	56.7	14.9	37.3	57.3	15.6
WB9479	40.7	54.8	17.5	39.4	55.4	15.6	37.3	56.3	15.9
Linkert	37.0	58.0	18.0	37.2	56.6	16.4	36.8	57.2	16.6
Boost	34.7	57.2	17.2	35.7	56.0	15.4	35.0	55.9	16.0
MS Camaro	35.9	56.8	17.1	35.1	56.2	15.7	34.8	56.8	16.2
Bolles	31.7	56.2	17.6	34.5	55.2	13.9	33.0	55.5	15.3
LCS Cannon	45.4	58.7	16.0	45.7	58.6	14.4	-	-	-
Trial Average#	39.7	55.7	16.5	41.3	56.1	14.9	36.4	56.3	15.0
LSD (0.05)†	6.9	3.5	0.4	5.1	4.1	1.4	5.3	1.8	1.1
C.V.%‡	10.8	4.6	1.8	10.6	3.6	6.0	12.1	3.2	5.5

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

† Value required (\geq 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.

Table 5b. 2017-2019 spring wheat variety performance trial results for testing sites in western South Dakota, continued. Varieties ranking in the top 1/3 of each trial category are shaded light blue.

Variety	2019			2-year			3-year		
	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %	Yield (bu/a)	Test Wt (lbs)	Protein %
MN-Washburn	47.2	52.8	16.1	44.5	54.9	14.5	-	-	-
MS Barracuda	47.4	52.7	16.7	41.3	55.0	15.0	-	-	-
CP3888	35.5	55.7	16.3	40.4	56.1	14.4	-	-	-
CP3915	45.2	53.7	16.3	-	-	-	-	-	-
AP Murdock	44.7	54.8	15.8	-	-	-	-	-	-
SY 611 CL2	42.4	55.4	16.4	-	-	-	-	-	-
TCG-Spitfire	40.2	54.7	15.8	-	-	-	-	-	-
CP3939	38.8	55.2	16.7	-	-	-	-	-	-
Commander	38.8	56.9	17.0	-	-	-	-	-	-
TCG-Heartland	38.1	54.8	17.3	-	-	-	-	-	-
MN14105-7	38.0	58.0	17.2	-	-	-	-	-	-
MS-19SW2	35.4	55.9	16.7	-	-	-	-	-	-
TCG-Wildfire	32.4	55.2	16.6	-	-	-	-	-	-
MS-19SW1	31.1	52.3	17.5	-	-	-	-	-	-
TCG-Climax	30.5	56.9	18.2	-	-	-	-	-	-
Trial Average#	39.7	55.7	16.5	41.3	56.1	14.9	36.4	56.3	15.0
LSD (0.05)†	6.9	3.5	0.4	5.1	4.1	1.4	5.3	1.8	1.1
C.V.%‡	10.8	4.6	1.8	10.6	3.6	6.0	12.1	3.2	5.5

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

† Value required (\geq 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.