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North Dakota
Hard Red Spring Wheat

Variety Trial Results for 2025 and Selection Guide

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Hard red spring (HRS) wheat was planted on 5.1 million acres in 2025, down from 5.4 million acres in 2024. The average yield of HRS wheat was 55 bushels/acre (bu/a) across the state, down slightly from the record-high 59 bu/a recorded in 2024. The 2025 growing season was overall favorable for good HRS wheat yields with abundant rainfall in May and June across much of the state. Unusually, the only area of the state that was consistently dry throughout the growing season was the northeast. Many farmers were able to start seeding early relative to recent years with many starting to plant in mid to late-April and continuing more or less uninterrupted through mid-May. In the middle two weeks of May, much of the state, and especially the central region, recorded well above average rainfall with some locations receiving 5-7 inches of precipitation. Fields that were not seeded prior to this stretch of rainy weather were planted late as farmers had to wait for fields to dry. This had the effect of staggering the maturity of the HRS wheat crop with early-planted fields ready for harvest by mid-August and later-planted fields not ready until September.

WB9590 was again the most popular HRS wheat variety in North Dakota in 2025, reportedly planted on 15.9% of acres, followed by SY Valda (9.0%), AP Murdock (8.2%), MN Torgy (7.7%), and AP Smith (3.2%) as the top five varieties. WB9590 is a WestBred/Monsanto release and SY Valda, AP Murdock and AP Smith are Syngenta/AgriPro varieties. MN Torgy is a University of Minnesota release. NDSU varieties Elgin ND, Faller, and Glenn were reported on 2.2%, 1.5%, and 1.1% of acres, respectively. Glenn is considered a very high-quality HRS wheat and is still contracted on a few acres by the North Dakota Mill to ensure high-quality flour demanded by discerning buyers.

As of early fall, the 2025 HRS wheat crop is showing average to above-average protein levels with few quality issues reported. Cool overnight temperatures and rainy weather in August reduced falling numbers in portions of the affected crop. Locally heavy rains in early August in the central portion of the state reduced quality in early-planted fields that were ready to harvest when the rain fell. The August rains did not appear to harm later-planted fields.

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Successful HRS wheat production depends on numerous factors, including selecting the right variety. The information included in this publication is meant to aid in selecting a variety or group of varieties. Characteristics to consider in selecting a variety include yield potential, protein content when grown with proper fertility, straw strength, plant height, response to problematic pests (diseases, insects, etc.) and maturity. Every growing season differs; therefore, when selecting a variety, we recommend using data that summarize several years and locations. Choose the variety that, on average, performs the best at multiple locations near your farm over several years.

Selecting varieties with good milling and baking quality is important to maintain market class recognition and avoid discounts. HRS wheat from the northern Great Plains is known around the world for its excellent end-use quality. It is recommended that producers balance their variety selection by taking into consideration not only yield, but also the quality rankings presented on Table 6 in this publication.

Millers and bakers consider many factors in determining the quality and value of wheat they purchase. Several key parameters are high test weight (for optimum milling yield and flour color), high falling number (greater than 300 seconds indicates minimal sprout damage), high protein content (the majority of HRS wheat export markets want at least 14% protein) and excellent protein quality (superior bread-making quality is indicated by strong gluten proteins, high baking absorption and large bread loaf volume). These data are presented in Tables 6 and 7.

Gluten strength and milling and baking quality ratings are provided for individual varieties based on the results from the NDSU field trials conducted across multiple locations in 2024 (Table 7). The wheat protein data often are higher than obtained in actual production fields but can be used to compare relative differences among varieties.

The agronomic data presented in this publication are from replicated research trials using experimental designs that enable the use of statistical analysis. These analyses enable the reader to determine, at a predetermined level of confidence, if the differences observed among varieties are reliable or if they might be due to error inherent in the experimental process.

The LSD (least significant difference) values beneath the columns in the tables are derived from these statistical analyses and apply only to the numbers in the column in which they appear. If the difference between two varieties exceeds the LSD value shown at the bottom of the table, it means that with 90% confidence (LSD probability 0.10), the higher-yielding variety has a significant and real yield advantage. When the difference between two varieties is less than the LSD value, no significant difference was found between those two varieties under the growing conditions. Ideally, aim to select varieties that are high-yielding, preferably across locations and years, for your region of the state, along with those varieties that appear in the top half of the Wheat Quality Index ratings (Tables 6 and 7).

NS is used to indicate no significant difference for that trait among any of the varieties tested at the 90% level of confidence. CV stands for coefficient of variation and is expressed as a percentage. The CV is a measure of variability in the trial. Large CVs (CV > 10%) indicate a large amount of variation could not be attributed to differences among the varieties. Yield is reported on a 13.5% moisture basis, while protein content is reported at 12% moisture content, per industry standards.

Presentation of data for the entries tested does not imply approval or endorsement by the authors or agencies conducting the test. North Dakota State University approves the reproduction of any table in the publication only if no portion is deleted or altered, appropriate footnotes are given, and the order of the data is not rearranged. Additional data from county sites are available from each NDSU Research Extension Center and at https://www.ag.ndsu.edu/varietytrials/variety-trial-results.

Overall, the 2025 HRS wheat crop experienced lower disease pressure relative to 2024. However, moderate temperatures and high humidity and/or rain resulted in some localized areas of Fusarium Head Blight (scab). Multiple rounds of strong thunderstorms impacted the crop in the central and southeast parts of the state in mid-summer which contributed to pockets of bacterial leaf streak (BLS) within fields. The disease observations below provide a brief summary of issues that likely impacted yields at selected locations.

Location	2025 Disease and damage observations of note
Casselton	Moderate to high levels of FHB which reduced yield of many varieties. Severe lodging occurred after a period of intense rain and wind and the trial was harvested after a prolonged period of rain.
Forman	Moderate bacterial leaf streak (BLS), trace levels of late-season leaf rust, and high levels of FHB. Grain was harvested late after multiple rain events delayed harvest and caused sprout damage.
Prosper	Moderate levels of FHB, which reduced yield of many varieties. Strong winds caused a fair amount of lodging in the trial.
Thompson	Moderate levels of FHB, which reduced yield of many varieties. Some lodging occurred due to late-summer thunderstorms.
Williston	A late July hailstorm reduced small grain yields by 30%-40% across the research station.

List of Tables

Table 1. North Dakota hard red spring wheat variety descriptions, agronomic traits, 2025.

Variety	Agent or Origin[1]	Year Released	Height (inches)[2]	Straw Strength[3]	Days to Head[4]	Reaction to Disease[5]						
						Stem Rust[6]	Leaf Rust	Tan Spot	Bact. Leaf Streak	Head Scab	Stripe Rust	DRI Value[8]
AAC Hockley	**Evolution Genetics**	**2022**	**31**	**4**	**57**	**2**	**2**	**3**	**7**	**4**	**NA**	**49**
AAC Hodge	**Evolution Genetics**	**2022**	**35**	**4**	**57**	**2**	**4**	**4**	**6**	**4**	**NA**	**49**
AP Dagr	**Syngenta/AgriPro**	**2024**	**29**	**5**	**60**	**2**	**2**	**3**	**6**	**5**	**NA**	**51**
AP Elevate	**Syngenta/AgriPro**	**2024**	**29**	**4**	**59**	**2**	**4**	**3**	**5**	**5**	**3**	**50**
AP Gunsmoke CL2	Syngenta/AgriPro	2021	30	6	58	2	3	6	8	5	4	62
AP Iconic	**Syngenta/AgriPro**	**2024**	**31**	**4**	**59**	**2**	**3**	**6**	**5**	**5**	**NA**	**53**
AP Murdock	Syngenta/AgriPro	2019	30	4	58	2	6	3	6	5	3	54
AP Smith	Syngenta/AgriPro	2021	29	3	60	1	4	5	5	6	4	58
Ascend-SD	SD	2022	35	5	60	2	3	6	4	5	3	51
Brawn-SD	SD	2022	33	5	58	2	2	5	5	6	6	57
CP3678	**Croplan**	**2025**	**31**	**4**	**60**	**2**	**6**	**6**	**5**	**6**	**NA**	**61**
Dagmar	MT	2019	32	4	57	1	8	7	7	8	NA	80
Driver	SD	2019	33	3	60	2	2	6	6	5	2	56
Enhance-SD	**SD**	**2025**	**33**	**4**	**56**	**2**	**3**	**3**	**6**	**6**	**NA**	**58**
Faller	ND	2007	34	7	59	2	8	3	5	5	8	53
LCS Ascent	Limagrain	2022	31	5	56	2	7	5	6	5	2	58
LCS Cannon	Limagrain	2018	30	4	55	2	6	6	7	5	4	61
LCS Rimfire	**Limagrain**	**2024**	**28**	**4**	**57**	**2**	**8**	**2**	**7**	**5**	**NA**	**57**
MN-Lang	MN	2017	32	4	60	2	2	7	4	6	NA	57
MN- Rothsay	MN	2022	29	3	61	2	7	5	6	5	6	58
MN-Torgy	MN	2020	31	4	58	1	2	4	6	4	3	47
Mott[7]	ND	2009	36	4	57	2	8	7	5	5	NA	58
MS Charger	Meridian Seeds	2022	30	7	58	1	4	5	7	5	8	58
MS Cobra	Meridian Seeds	2022	30	4	58	1	2	6	7	6	3	63

[1]Refers to agent or developer: MN = Univ of Minnesota; MT = Montana State Univ; ND = North Dakota State Univ; SD = South Dakota State Univ

Varieties in bold text are a recent release or first year entry in NDSU trials with limited data available and the potential for future ratings to change.

[2]Height data averaged from 9 locations in 2025.

[3]Straw Strength = 1 to 9 scale, with 1 the strongest and 9 the weakest. These values are based on recent data and may change as more data become available.

[4]Days to Head = the number of days from planting to head emergence from the boot, averaged based on data from 7 locations in 2025.

[5]Disease reaction scores from 1 to 9, with 1 = resistant and 9 = very susceptible, NA = not available.

[6]Stem rust scores determined from field severity ratings and *Puccinia graminis* f. sp. *tritici* race QFCQ

[7]Solid stem or semi-solid stem for increased resistance to wheat stem sawfly.

[8]Disease Risk Index Value = Value to assess overall disease risk associated with a variety. The higher the value indicates higher disease risk. Value created using a weighted formula based on ranked importance of wheat diseases. Value does not include stripe rust (incomplete data due to minimal stripe rust occurrence in 2025).

Table 1. North Dakota hard red spring wheat variety descriptions, agronomic traits, 2025. (Continued)

Variety	Agent or Origin[1]	Year Released	Height (inches)[2]	Straw Strength[3]	Days to Head[4]	Reaction to Disease[5]						
						Stem Rust[6]	Leaf Rust	Tan Spot	Bact. Leaf Streak	Head Scab	Stripe Rust	DRI Value[8]
MS Nova	**Meridian Seeds**	**2024**	**31**	**4**	**57**	**1**	**4**	**6**	**7**	**5**	**3**	**59**
MT Carlson	MT	2023	30	7	58	2	7	4	7	8	4	76
ND Frohberg	ND	2020	34	4	58	2	4	7	4	5	3	53
ND Heron	ND	2021	32	5	55	1	6	4	7	4	6	52
ND Horizon	**ND**	**2025**	**31**	**3**	**58**	**2**	**5**	**4**	**5**	**5**	**NA**	**52**
ND Roughrider	**ND**	**2025**	**32**	**6**	**60**	**2**	**4**	**3**	**6**	**6**	**NA**	**58**
ND Stampede	**ND**	**2024**	**32**	**4**	**58**	**1**	**2**	**5**	**7**	**5**	**9**	**56**
ND Thresher	ND	2023	30	4	59	2	5	4	4	4	6	44
PFS Muffins	**Peterson Farm Seeds**	**2025**	**29**	**4**	**58**	**2**	**2**	**3**	**6**	**7**	**NA**	**63**
PFS Rolls	**Peterson Farm Seeds**	**2023**	**32**	**4**	**60**	**2**	**5**	**4**	**5**	**7**	**6**	**63**
PG Predator	**Premier Genetics**	**2025**	**29**	**4**	**60**	**2**	**3**	**4**	**5**	**6**	**NA**	**56**
Shelly	MN	2016	30	4	60	1	6	6	7	5	4	60
SY 611CL2	Syngenta/AgriPro	2019	29	3	58	2	6	4	6	4	4	50
SY Ingmar	Syngenta/AgriPro	2014	30	4	59	1	4	4	6	5	4	53
SY Valda	Syngenta/AgriPro	2015	30	5	59	1	3	4	7	5	8	56
TCG-Badlands	**21st Century Genetics**	**2024**	**32**	**4**	**58**	**1**	**6**	**4**	**6**	**7**	**3**	**66**
TCG-Wildcat	21st Century Genetics	2020	31	4	59	1	7	6	6	7	6	69
TCG-Zelda	**21st Century Genetics**	**2024**	**29**	**4**	**57**	**1**	**2**	**6**	**7**	**7**	**8**	**69**
TW Olympic	**Thunder Seed**	**2021**	**32**	**4**	**58**	**2**	**8**	**7**	**6**	**5**	**NA**	**61**
TW Trailfire	**Thunder Seed**	**2022**	**31**	**8**	**56**	**2**	**7**	**6**	**6**	**6**	**NA**	**65**
WB9590	WestBred	2017	27	3	57	2	3	6	8	8	8	78

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Table 2. Yield of hard red spring wheat varieties at six locations in eastern North Dakota 2023-2025.

	Carrington		Casselton		Forman		Langdon		Prosper		Thompson		Average	
Variety	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**2 Yr.**	**2025**	**3 Yr.**
	(bu/a)													
AAC Hockley	**66.4**	--	**77.3**	--	**62.0**	--	**80.5**	--	**85.8**	--	**65.7**	--	**72.9**	--
AAC Hodge	**72.7**	--	**86.7**	--	**71.8**	--	**87.3**	--	**91.6**	--	**72.0**	--	**80.4**	--
AP Dagr	**81.7**	--	**87.7**	--	**72.0**	--	**87.4**	--	**93.0**	--	**77.0**	--	**83.1**	--
AP Elevate	**78.7**	--	**92.9**	--	**68.4**	--	**90.4**	--	**99.5**	--	**79.6**	**92.7**	**84.9**	--
AP Gunsmoke CL2	76.9	68.6	89.9	86.1	70.2	68.4	81.7	78.6	89.1	89.6	80.1	87.2	81.3	79.7
AP Iconic	**76.2**	--	**89.5**	--	**66.0**	--	**89.6**	--	**99.0**	--	**80.1**	--	**83.4**	--
AP Murdock	84.2	76.0	92.1	91.3	67.1	68.7	93.6	84.0	99.9	93.5	81.3	93.5	86.4	84.5
AP Smith	75.1	72.2	85.9	86.4	62.7	65.6	83.8	81.7	87.5	88.4	74.4	88.2	78.2	80.4
Ascend-SD	79.8	79.7	95.6	92.3	73.6	67.0	96.4	85.9	94.0	99.3	79.0	92.2	86.4	86.1
Brawn-SD	85.3	76.5	89.2	90.5	67.9	67.1	89.7	85.9	104.9	101.6	76.0	94.3	85.5	86.0
CP3678	**71.8**	--	**94.4**	--	**68.4**	--	**88.5**	--	**89.9**	--	**64.4**	--	**79.6**	--
Dagmar	81.3	--	91.0	--	60.2	--	86.2	--	96.9	--	80.0	--	82.6	--
Driver	70.9	72.4	93.5	89.7	74.7	68.1	90.7	85.6	93.4	92.7	72.5	85.9	82.6	82.4
Enhance-SD	**87.5**	--	**90.6**	--	**75.0**	--	**92.4**	--	**103.4**	--	**78.5**	**94.9**	**87.9**	--
Faller	86.4	78.7	95.4	--	77.7	--	98.2	89.4	100.0	--	81.3	92.2	89.8	86.8
LCS Ascent	77.9	71.9	80.4	89.7	68.9	67.4	92.1	86.6	100.2	--	80.0	94.4	83.2	82.0
LCS Cannon	72.2	70.4	83.5	87.2	74.3	69.4	87.3	84.9	96.8	93.9	82.3	92.3	82.7	83.0
LCS Rimfire	**82.0**	--	**85.9**	--	**65.8**	--	**89.6**	--	**97.7**	**88.4**	**70.3**	--	**81.9**	**88.4**
MN-Lang	70.5	--	83.7	--	69.7	--	86.9	--	83.0	--	73.5	--	77.9	--
MN- Rothsay	79.2	74.1	93.2	88.1	75.9	69.1	89.1	85.6	93.7	93.0	78.4	91.1	84.9	83.5
MN-Torgy	79.5	70.1	86.6	85.5	73.4	69.4	94.9	83.9	92.6	94.6	70.2	83.9	82.9	81.2
Mott	--	--	87.9	--	68.8	--	.	.	91.9	--	67.7	--	79.0	--
MS Charger	81.0	77.2	92.2	92.4	71.1	70.5	92.5	88.3	92.7	97.3	79.2	97.8	84.8	87.2
MS Cobra	75.9	70.7	81.4	87.3	61.9	63.7	91.0	84.1	93.5	90.0	70.3	89.3	79.0	80.9
MS Nova	**69.3**	--	**79.1**	--	**68.4**	--	**84.2**	--	**92.9**	--	**76.7**	**87.1**	**78.4**	**87.1**
MT Carlson	75.3	--	87.4	--	51.5	--	74.7	--	97.5	--	64.7	81.5	75.2	81.5
ND Frohberg	69.9	69.0	80.1	82.7	62.9	59.0	80.9	77.2	92.2	90.6	68.6	84.7	75.8	77.2
ND Heron	69.9	64.9	78.9	79.1	70.1	64.6	85.1	80.0	90.8	88.9	71.5	79.7	77.7	76.2
ND Horizon	**80.7**	**75.1**	**93.5**	**96.3**	**74.1**	**71.3**	**89.4**	**85.1**	**101.0**	**98.6**	**90.4**	**93.2**	**88.2**	**86.6**
ND Roughrider	**83.5**	**86.8**	**96.3**	**93.2**	**69.7**	**73.6**	**88.1**	**87.7**	**99.5**	**104.3**	**85.8**	**102.6**	**87.1**	**91.4**
ND Stampede	**81.6**	**79.0**	**90.8**	**86.9**	**73.2**	**71.2**	**85.6**	**85.5**	**98.5**	**97.0**	**84.5**	**103.3**	**85.7**	**87.2**
ND Thresher	75.4	71.0	91.8	86.6	65.8	63.3	96.1	81.6	93.3	92.3	72.1	90.5	82.4	80.9
PFS Muffins	**82.1**	--	**83.3**	--	**64.8**	--	**95.8**	--	**93.6**	--	**81.1**	--	**83.4**	--
PFS Rolls	**75.7**	--	**86.5**	--	**58.6**	--	**85.7**	--	**100.8**	--	**75.3**	**86.5**	**80.4**	**86.5**
PG Predator	**73.1**	--	**89.6**	--	**69.1**	--	**88.3**	--	**95.3**	--	**79.5**	--	**82.5**	--
Shelly	71.7	68.8	80.5	83.5	74.3	70.7	88.2	88.3	98.3	95.5	76.4	--	81.6	81.3

Table 2. Yield of hard red spring wheat varieties at six locations in eastern North Dakota 2023-2025. (Continued)

	Carrington		Casselton		Forman		Langdon		Prosper		Thompson		Average	
Variety	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**2 Yr.**	**2025**	**3 Yr.**
	---------- (bu/a) ----------													
SY 611CL2	79.1	75.1	84.6	86.7	70.9	67.1	87.3	85.3	92.5	93.7	75.8	91.6	81.7	83.2
SY Ingmar	71.2	69.1	86.0	85.4	62.7	63.2	84.9	76.8	90.1	89.3	72.7	86.2	77.9	78.3
SY Valda	77.1	75.6	89.3	92.0	67.9	71.2	89.0	85.0	90.8	97.4	86.4	96.5	83.4	86.3
TCG-Badlands	**79.8**	**--**	**87.8**	**--**	**61.8**	**--**	**82.5**	**--**	**93.5**	**--**	**69.6**	**89.6**	**79.2**	**89.6**
TCG-Wildcat	78.7	77.5	88.4	89.6	60.4	59.8	85.5	82.9	97.5	98.2	85.7	94.8	82.7	83.8
TCG-Zelda	**82.5**	**--**	**87.8**	**--**	**68.4**	**--**	**90.3**	**--**	**102.9**	**--**	**78.6**	**96.5**	**85.1**	**96.5**
TW Olympic	**75.2**	**--**	**93.0**	**--**	**73.0**	**--**	**96.3**	**--**	**99.6**	**--**	**75.0**	**--**	**85.3**	**--**
TW Trailfire	**72.3**	**--**	**84.4**	**--**	**66.6**	**--**	**81.9**	**--**	**84.5**	**--**	**74.1**	**--**	**77.3**	**--**
WB9590	66.5	67.7	80.4	82.3	68.6	63.7	84.7	82.5	99.9	97.3	76.0	89.1	79.3	80.4
Mean	76.9	73.5	87.7	87.9	68.0	67.2	89.0	84.1	95.0	94.5	76.3	91.1	82.0	84.1
CV%	5.4	--	3.6	--	4.2	--	4.2	--	6.4	--	6.5	--	5.0	--
LSD 0.10	4.8	--	4.2	--	3.9	--	4.0	--	6.4	--	8.6	--	4.0	--

Table 3. Yield of hard red spring wheat varieties grown at five locations in western North Dakota 2023-2025.

	Dickinson		Hettinger		Mandan		Minot		Williston[1]		Average	
Variety	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**
	(bu/a)											
AAC Hockley	--	--	**64.3**	--	**55.6**	--	**58.8**	--	**42.0**	--	**55.2**	--
AAC Hodge	--	--	**69.6**	--	**56.5**	--	**66.5**	--	**43.5**	--	**59.0**	--
AP Dagr	**80.4**	--	**64.5**	--	**58.7**	--	**65.3**	--	**38.4**	--	**61.5**	--
AP Elevate	**80.7**	--	**67.8**	--	**59.8**	--	**67.2**	--	**32.5**	--	**61.6**	--
AP Gunsmoke CL2	83.2	67.7	65.2	70.5	50.0	53.9	64.1	61.0	42.2	51.4	60.9	60.9
AP Iconic	**79.2**	--	**70.6**	--	**56.0**	--	**66.4**	--	**39.3**	--	**62.3**	--
AP Murdock	74.2	61.7	63.2	65.0	54.6	58.6	60.5	63.9	32.1	43.2	56.9	58.5
AP Smith	77.2	62.6	64.8	66.7	52.6	54.2	62.3	60.6	34.9	41.6	58.4	57.1
Ascend-SD	86.7	67.2	68.8	70.8	57.3	62.7	72.1	66.0	38.8	45.3	64.7	62.4
Brawn-SD	86.6	67.8	71.8	75.0	65.1	61.0	75.4	70.5	41.9	45.5	68.2	63.9
CP3678	**88.9**	--	**69.0**	--	**54.6**	--	**67.6**	--	**45.0**	--	**65.0**	--
Dagmar	82.3	--	67.9	--	52.9	--	71.3	--	46.0	--	64.1	--
Driver	84.0	66.1	66.9	71.8	62.3	62.2	66.2	57.8	44.6	51.3	64.8	61.9
Enhance-SD	**76.5**	--	**70.1**	--	**57.7**	--	**65.0**	--	**36.2**	--	**61.1**	--
Faller	85.6	68.7	71.2	--	57.1	--	78.0	--	38.8	--	66.1	68.7
LCS Ascent	94.1	73.8	70.9	69.6	55.0	56.6	77.1	70.2	39.1	52.1	67.2	64.5
LCS Cannon	76.1	67.0	68.3	67.2	56.6	56.0	67.3	60.6	42.6	46.9	62.2	59.5
LCS Rimfire	**83.2**	--	**67.4**	--	**56.9**	--	**71.9**	--	**43.8**	--	**64.6**	--
MN-Lang	79.7	--	64.4	--	53.6	--	64.0	--	35.3	--	59.4	--
MN- Rothsay	88.0	67.5	68.9	69.8	58.0	59.7	67.6	65.6	38.5	43.8	64.2	61.3
MN-Torgy	83.5	67.7	68.8	71.4	62.3	64.8	68.5	66.6	43.3	49.0	65.3	63.9
Mott	--	--	--	--	--	--	--	--	--	--	--	--
MS Charger	91.4	67.7	67.8	72.0	57.3	56.1	78.7	63.8	43.2	51.3	67.7	62.2
MS Cobra	84.4	67.1	63.8	66.9	55.7	58.5	70.8	66.3	35.9	44.6	62.1	60.7
MS Nova	**86.3**	--	**67.4**	--	**56.8**	--	**68.1**	--	**47.1**	--	**65.2**	--
MT Carlson	80.4	--	66.4	--	50.8	--	72.1	--	37.2	--	61.4	--
ND Frohberg	79.2	64.8	63.7	66.1	58.2	55.5	66.2	60.2	34.2	42.7	60.3	57.9
ND Heron	75.9	62.1	65.8	65.3	55.0	54.0	66.7	58.6	43.8	48.9	61.4	57.8
ND Horizon	**82.0**	**64.1**	**64.9**	**69.5**	**61.6**	**62.3**	**81.0**	**65.4**	**43.5**	--	**66.6**	**65.3**
ND Roughrider	**92.7**	**69.2**	**75.7**	**76.2**	**68.4**	**68.1**	**81.0**	**71.4**	**41.6**	--	**71.9**	**71.2**

[1]Williston site damaged by a hailstorm which was estimated to reduce small grain yields by 40%. Assuming 40% loss, trial average yield potential was 55.3 bu/ ac.

Table 3. Yield of hard red spring wheat varieties grown at five locations in western North Dakota 2023-2025. (Continued)

	Dickinson		Hettinger		Mandan		Minot		Williston[1]		Average	
Variety	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**	**2025**	**3 Yr.**
	---------- (bu/a) ----------											
ND Stampede	**86.1**	**65.6**	**67.2**	**70.3**	**61.5**	**59.4**	**78.5**	**68.3**	**35.6**	--	**65.8**	**65.9**
ND Thresher	77.8	60.7	61.4	67.2	45.1	52.3	64.2	56.7	36.9	39.2	57.1	55.2
PFS Muffins	**91.9**	--	**68.4**	--	**58.5**	--	**79.8**	--	**38.7**	--	**67.5**	--
PFS Rolls	**91.7**	--	**70.1**	--	**54.3**	--	**74.3**	--	**33.8**	--	**64.8**	--
PG Predator	**82.0**	--	**67.6**	--	**58.8**	--	**71.1**	--	**33.8**	--	**62.7**	--
Shelly	88.8	69.0	65.0	69.9	57.9	59.1	78.0	68.9	40.2	44.5	66.0	62.3
SY 611CL2	80.7	66.6	68.0	69.2	56.0	61.0	68.4	61.4	42.2	49.9	63.1	61.6
SY Ingmar	77.5	64.1	63.9	62.9	52.0	55.2	64.8	58.4	38.0	--	59.2	60.1
SY Valda	85.5	68.1	66.2	69.7	58.0	61.5	69.5	61.3	42.7	--	64.4	65.1
TCG-Badlands	**87.5**	--	**66.4**	--	**57.6**	--	**73.7**	--	**30.1**	--	**63.1**	--
TCG-Wildcat	83.0	67.5	66.2	67.4	58.8	59.9	63.0	66.2	33.9	45.1	61.0	61.2
TCG-Zelda	**89.1**	--	**69.6**	--	**61.5**	--	**72.3**	--	**43.6**	--	**67.2**	--
TW Olympic	**88.7**	--	**70.3**	--	**59.1**	--	**68.0**	--	**36.6**	--	**64.5**	--
TW Trailfire	**76.0**	--	**59.8**	--	**44.7**	--	**71.1**	--	**45.3**	--	**59.4**	--
WB9590	79.0	64.5	69.7	68.5	56.2	55.4	71.1	65.7	35.8	--	62.4	63.5
Mean	83.9	66.4	67.6	69.5	56.0	58.5	70.4	--	39.5	46.5	63.1	62.1
CV%	6.2	--	4.5	--	8.2	--	7.2	--	6.7	--	5.9	--
LSD 0.10	4.8	--	2.8	--	4.2	--	6.8	--	6.2	--	3.9	--

[1]Williston site damaged by a hailstorm which was estimated to reduce small grain yields by 40%. Assuming 40% loss, trial average yield potential was 55.3 bu/ ac.

Table 4. Protein at 12% moisture of hard red spring wheat varieties across 11 locations in North Dakota, 2025.

Variety	Carrington	Casselton	Forman	Langdon	Prosper	Thompson	Dickinson	Hettinger	Mandan	Minot	Williston	State Avg.
						(%)						
AAC Hockley	**15.6**	**15.0**	**15.6**	**14.1**	**13.7**	**13.9**	--	**12.4**	**13.9**	**14.1**	**17.8**	**14.6**
AAC Hodge	**15.4**	**14.5**	**15.9**	**15.2**	**14.5**	**14.1**	--	**13.3**	**14.7**	**14.4**	**17.3**	**14.9**
AP Dagr	**14.0**	**13.4**	**14.3**	**13.4**	**13.2**	**12.6**	**13.8**	**11.4**	**13.0**	**12.5**	**16.6**	**13.5**
AP Elevate	**14.8**	**14.3**	**15.2**	**14.4**	**13.6**	**13.0**	**14.4**	**13.1**	**14.3**	**15.0**	**16.8**	**14.4**
AP Gunsmoke CL2	15.5	14.8	15.5	14.7	14.9	14.9	14.3	11.8	13.5	15.0	17.3	14.7
AP Iconic	**14.2**	**13.8**	**14.6**	**14.0**	**13.4**	**12.8**	**14.3**	**12.5**	**14.0**	**13.1**	**16.2**	**13.9**
AP Murdock	14.5	14.3	15.3	14.0	13.6	12.8	14.0	12.3	13.7	15.0	16.3	14.1
AP Smith	15.1	14.4	15.2	14.7	13.7	13.7	14.5	13.3	14.5	14.3	16.1	14.5
Ascend-SD	15.1	14.7	15.6	15.2	14.1	14.4	14.3	12.5	13.2	14.7	16.3	14.6
Brawn-SD	13.7	14.3	14.6	13.3	13.0	12.7	13.1	12.0	12.4	14.2	15.2	13.5
CP3678	**15.1**	**14.9**	**16.1**	**14.5**	**14.4**	**14.5**	**14.7**	**12.7**	**14.1**	**15.1**	**16.4**	**14.8**
Dagmar	14.7	15.3	16.4	15.2	14.1	14.5	15.0	12.4	14.4	16.0	16.7	15.0
Driver	14.4	14.6	15.4	14.1	13.9	13.7	13.9	13.1	13.5	15.3	15.2	14.3
Enhance-SD	**15.1**	**14.8**	**16.0**	**15.0**	**13.7**	**14.1**	**14.0**	**13.2**	**13.7**	**14.8**	**16.4**	**14.6**
Faller	13.5	14.1	15.4	13.7	13.2	13.1	13.6	12.3	13.5	14.2	14.7	13.8
LCS Ascent	13.4	13.9	15.1	14.1	12.7	12.1	13.3	11.8	12.9	13.8	15.9	13.5
LCS Cannon	14.6	14.9	15.5	14.0	12.8	12.8	14.0	12.7	12.9	14.8	15.8	14.1
LCS Rimfire	**13.9**	**14.7**	**15.7**	**14.6**	**13.2**	**13.5**	**14.0**	**12.5**	**13.9**	**15.3**	**15.1**	**14.2**
MN-Lang	14.9	15.0	16.4	15.2	14.4	14.6	14.6	13.2	15.1	15.7	15.7	15.0
MN- Rothsay	14.9	14.2	15.4	14.4	13.4	13.4	13.8	13.2	13.7	15.0	16.2	14.3
MN-Torgy	14.9	14.5	16.1	14.5	14.1	14.5	14.1	12.5	14.2	15.1	16.4	14.6
Mott	--	14.4	15.9	--	13.5	13.6	--	--	--	--	--	14.3
MS Charger	13.4	13.0	14.0	12.6	12.2	11.9	12.6	11.5	12.5	13.2	14.3	12.8
MS Cobra	14.8	14.5	16.0	14.8	13.7	13.5	14.0	12.7	13.9	15.3	15.7	14.4
MS Nova	**15.0**	**14.7**	**15.8**	**14.5**	**13.7**	**13.3**	**13.8**	**12.7**	**13.5**	**14.5**	**16.2**	**14.3**
MT Carlson	14.1	14.4	15.5	14.1	13.0	12.8	13.5	12.1	13.3	13.8	15.0	13.8
ND Frohberg	15.4	14.4	15.4	14.5	13.4	13.3	14.8	12.5	14.3	15.3	16.1	14.5
ND Heron	15.0	15.1	16.0	15.0	14.2	13.8	14.5	13.2	14.0	14.6	17.0	14.8
ND Horizon	**15.5**	**15.0**	**15.9**	**15.6**	**14.1**	**13.7**	**14.6**	**13.0**	**13.8**	**14.9**	**16.5**	**14.8**
ND Roughrider	**14.5**	**14.1**	**14.8**	**14.4**	**14.3**	**13.9**	**13.3**	**11.9**	**13.7**	**14.0**	**16.9**	**14.2**
ND Stampede	**14.4**	**15.1**	**15.8**	**15.2**	**13.8**	**14.0**	**14.3**	**12.4**	**13.8**	**16.1**	**17.2**	**14.7**
ND Thresher	14.5	14.7	15.6	14.8	13.8	14.1	14.3	12.9	15.6	15.4	16.0	14.7
PFS Muffins	**14.0**	**14.4**	**15.4**	**14.3**	**13.7**	**13.2**	**13.7**	**11.9**	**13.6**	**15.2**	**15.8**	**14.1**

Table 4. Protein at 12% moisture of hard red spring wheat varieties across 11 locations in North Dakota, 2025. (Continued)

Variety	Carrington	Casselton	Forman	Langdon	Prosper	Thompson	Dickinson	Hettinger	Mandan	Minot	Williston	State Avg.
						(%)						
PFS Rolls	**15.0**	**14.3**	**15.7**	**14.6**	**13.3**	**13.2**	**13.5**	**12.2**	**13.6**	**14.0**	**15.7**	**14.1**
PG Predator	**14.6**	**14.3**	**15.3**	**14.7**	**13.7**	**13.1**	**14.5**	**13.0**	**14.4**	**14.6**	**16.3**	**14.4**
Shelly	14.7	14.1	15.9	14.5	13.3	13.5	13.6	11.7	13.5	14.6	14.3	14.0
SY 611CL2	14.6	14.5	15.5	14.7	14.0	13.7	14.6	12.2	14.0	14.6	16.3	14.4
SY Ingmar	15.3	14.6	15.1	14.8	14.0	13.9	14.7	13.0	14.8	15.0	16.7	14.7
SY Valda	14.9	14.0	14.8	14.2	13.6	13.2	13.8	12.1	13.1	14.5	15.9	14.0
TCG-Badlands	**14.5**	**14.3**	**15.1**	**14.3**	**13.2**	**13.3**	**13.9**	**12.2**	**13.4**	**14.5**	**16.2**	**14.1**
TCG-Wildcat	14.3	15.0	15.6	15.1	13.9	13.9	14.3	13.1	14.1	15.4	17.0	14.7
TCG-Zelda	**14.3**	**14.8**	**15.1**	**14.2**	**13.6**	**13.8**	**14.0**	**12.6**	**13.6**	**14.8**	**16.4**	**14.3**
TW Olympic	**14.1**	**14.8**	**15.7**	**14.2**	**14.2**	**13.8**	**13.7**	**12.5**	**13.7**	**15.4**	**16.0**	**14.4**
TW Trailfire	**14.5**	**15.3**	**16.0**	**14.8**	**13.0**	**13.2**	**14.3**	**12.4**	**13.4**	**15.3**	**16.1**	**14.4**
WB9590	15.5	15.3	15.9	14.7	13.9	13.8	14.7	13.0	13.9	14.5	17.1	14.8
Mean	14.5	14.5	15.5	14.3	13.7	13.5	14.1	12.5	13.7	14.5	16.1	14.3
CV%	3.8	1.2	0.3	2.2	4.1	1.9	2.9	4.1	2.6	4.8	3.1	2.8
LSD 0.10	0.6	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.3	0.9	1.2	0.3

Table 5. Test weight of hard red spring wheat varieties grown at 11 locations in North Dakota, 2025.

Variety	Carrington	Casselton	Forman	Langdon	Prosper	Thompson	Dickinson	Hettinger	Mandan	Minot	Williston	State Avg.
	---------- (lb/bu) ----------											
AAC Hockley	**63.9**	**61.7**	**60.3**	**59.8**	**60.8**	**59.6**	**--**	**61.7**	**58.2**	**64.0**	**55.2**	**60.5**
AAC Hodge	**63.6**	**61.4**	**59.7**	**58.6**	**60.3**	**59.6**	**--**	**61.5**	**57.7**	**63.8**	**55.0**	**60.1**
AP Dagr	**61.0**	**59.8**	**56.7**	**58.0**	**56.9**	**55.3**	**60.2**	**59.3**	**56.6**	**62.5**	**53.1**	**58.1**
AP Elevate	**61.5**	**61.1**	**58.9**	**58.4**	**58.9**	**58.3**	**61.4**	**60.5**	**57.1**	**63.0**	**54.6**	**59.4**
AP Gunsmoke CL2	62.1	60.3	59.3	58.1	58.2	58.9	61.1	59.9	56.9	63.1	54.5	59.3
AP Iconic	**62.8**	**61.3**	**58.6**	**58.9**	**58.8**	**58.0**	**61.1**	**60.4**	**56.8**	**63.7**	**54.8**	**59.6**
AP Murdock	61.7	60.5	58.3	56.2	59.3	59.1	60.6	60.4	56.7	62.3	54.0	59.0
AP Smith	62.1	60.9	58.6	58.8	58.6	57.4	61.5	60.9	56.5	63.6	54.7	59.4
Ascend-SD	63.4	61.2	59.8	55.3	59.9	59.6	61.8	61.4	58.2	63.3	54.5	59.9
Brawn-SD	64.0	62.1	58.9	61.6	61.5	60.2	62.8	61.9	58.9	64.8	56.8	61.2
CP3678	**62.3**	**60.9**	**58.0**	**58.4**	**59.4**	**57.2**	**61.4**	**61.0**	**56.4**	**63.3**	**55.9**	**59.5**
Dagmar	63.0	60.6	57.7	59.0	59.7	58.7	60.9	61.1	56.9	62.9	54.8	59.6
Driver	63.4	61.8	59.1	60.5	60.5	59.7	62.1	61.9	58.9	64.2	56.6	60.8
Enhance-SD	**62.7**	**60.3**	**57.5**	**57.8**	**59.7**	**58.5**	**60.8**	**60.9**	**57.0**	**62.7**	**55.1**	**59.4**
Faller	62.9	60.7	58.0	59.6	58.6	58.9	61.0	60.3	56.8	63.2	54.3	59.5
LCS Ascent	63.0	60.9	59.7	54.9	60.2	59.5	62.0	61.5	57.5	63.5	55.8	59.9
LCS Cannon	63.8	61.8	60.2	60.2	60.9	60.1	62.8	61.4	58.9	64.1	56.4	61.0
LCS Rimfire	**62.7**	**60.4**	**57.4**	**55.7**	**59.0**	**57.6**	**61.1**	**60.5**	**56.9**	**62.6**	**55.1**	**59.0**
MN-Lang	63.5	61.4	60.5	60.5	61.2	60.5	62.2	61.6	57.7	63.4	55.2	60.7
MN- Rothsay	63.0	61.3	58.5	57.9	59.8	58.7	61.7	61.2	57.0	63.2	56.2	59.8
MN-Torgy	63.1	61.1	60.5	58.6	60.4	59.3	61.6	61.7	58.3	63.1	55.6	60.3
Mott	--	61.0	58.1	--	60.0	59.4	--	--	--	--	--	59.6
MS Charger	62.4	60.5	58.4	59.3	58.1	57.6	60.7	60.1	57.3	62.8	56.2	59.4
MS Cobra	62.8	61.1	57.2	57.8	59.9	59.1	61.4	60.7	57.7	62.7	56.7	59.7
MS Nova	**62.4**	**61.0**	**57.9**	**58.2**	**59.4**	**58.9**	**61.6**	**60.8**	**57.8**	**63.2**	**54.8**	**59.6**
MT Carlson	62.0	60.2	53.3	52.3	59.5	56.8	60.8	59.7	56.6	62.9	54.8	58.1
ND Frohberg	63.5	61.4	56.8	59.2	60.0	58.8	62.2	61.2	58.3	63.6	55.6	60.1
ND Heron	64.0	61.4	60.2	59.5	61.0	59.6	62.4	61.3	58.7	63.2	55.7	60.6
ND Horizon	**62.9**	**61.8**	**58.8**	**56.9**	**59.1**	**60.2**	**61.1**	**58.0**	**57.3**	**63.4**	**55.2**	**59.5**
ND Roughrider	**61.7**	**60.2**	**56.3**	**57.8**	**58.1**	**57.9**	**60.7**	**59.7**	**56.9**	**63.0**	**52.2**	**58.6**
ND Stampede	**62.6**	**61.1**	**58.2**	**60.5**	**58.9**	**58.4**	**61.4**	**59.9**	**56.8**	**63.0**	**54.0**	**59.5**
ND Thresher	61.6	60.3	58.4	55.7	59.1	58.1	60.1	59.1	55.2	62.3	53.3	58.5
PFS Muffins	**62.2**	**60.8**	**56.8**	**56.3**	**58.1**	**57.3**	**61.0**	**59.9**	**56.7**	**62.9**	**54.7**	**58.8**

Table 5. Test weight of hard red spring wheat varieties grown at 11 locations in North Dakota, 2025. (Continued)

Variety	Carrington	Casselton	Forman	Langdon	Prosper	Thompson	Dickinson	Hettinger	Mandan	Minot	Williston	State Avg.
	---------- (lb/bu) ----------											
PFS Rolls	**62.3**	**60.9**	**56.8**	**56.4**	**60.0**	**58.4**	**60.8**	**60.4**	**56.0**	**63.2**	**55.0**	**59.1**
PG Predator	**61.6**	**60.5**	**59.4**	**58.2**	**58.2**	**57.8**	**61.3**	**60.2**	**56.7**	**62.7**	**55.7**	**59.3**
Shelly	62.7	61.1	58.5	58.2	60.0	53.1	61.9	60.7	57.8	63.5	57.0	59.5
SY 611CL2	62.9	61.6	59.3	58.6	59.4	58.6	62.6	60.8	58.1	63.1	55.5	60.0
SY Ingmar	63.1	61.7	59.5	59.3	58.9	58.8	62.0	61.1	57.5	63.6	56.0	60.1
SY Valda	63.1	61.4	60.0	60.5	59.0	59.3	61.6	60.8	57.6	63.4	55.6	60.2
TCG-Badlands	**62.5**	**60.5**	**56.0**	**55.3**	**59.6**	**58.2**	**61.1**	**60.6**	**55.9**	**62.6**	**55.1**	**58.9**
TCG-Wildcat	63.5	61.1	55.5	59.0	59.3	59.9	62.3	60.5	57.9	63.8	55.4	59.8
TCG-Zelda	**62.9**	**61.3**	**58.2**	**57.5**	**59.0**	**58.0**	**61.3**	**60.4**	**56.3**	**63.2**	**55.4**	**59.4**
TW Olympic	**63.1**	**61.3**	**59.4**	**60.3**	**58.9**	**58.8**	**62.2**	**61.2**	**58.5**	**63.3**	**56.2**	**60.3**
TW Trailfire	**62.8**	**60.7**	**58.9**	**56.9**	**59.1**	**57.5**	**60.8**	**60.1**	**57.2**	**62.6**	**54.9**	**59.2**
WB9590	62.5	60.8	57.0	56.8	59.7	57.9	61.0	60.6	56.8	63.3	53.8	59.1
Mean	62.6	61.0	58.3	58.0	59.4	58.5	61.4	60.6	57.2	63.2	55.1	59.6
CV%	0.7	0.4	1.0	0.5	3.4	3.6	0.6	0.9	1.3	0.5	1.2	1.7
LSD 0.10	0.5	0.3	0.8	0.8	0.7	0.7	0.3	0.5	0.7	0.4	1.5	0.7

Table 6. Quality data from 2022-2024. The Wheat Quality Index (WQI) is a weighted average developed to summarize the relative milling and baking quality of lines in the trial. Data from across years are from 2022-2024 for all varieties which were tested in a minimum of two years (and four locations per year) across North Dakota.

Variety	Test Weight[1]	Vitreous Kernels[2]	Wheat Protein[3]	Farinograph Absorption[4]	Flour Extraction[5]	Farinograph Stability[6]	Loaf Volume[7]	WQI RANK[8]
	lb/bu	%	12% m.b.	%	%	min	cm^3	
ND Frohberg	61.6	69.1	14.3	67.7	67.3	13.7	982.1	1
MS Cobra	61.1	79.9	14.5	67.1	68.0	11.0	1052.4	2
ND Thresher	59.6	68.5	14.8	66.3	68.9	11.9	999.7	3
ND Horizon	61.1	73.7	14.6	68.0	67.6	9.5	995.3	4
ND Stampede	60.7	71.8	14.3	68.0	66.5	12.4	975.4	5
SY Ingmar	61.3	73.4	14.8	64.7	67.9	12.5	990.5	6
AP Smith	60.5	71.8	14.5	64.6	67.1	14.9	952.2	7
Ascend-SD	61.3	83.4	14.4	66.5	67.2	10.8	952.2	8
WB9590	61.0	72.1	14.5	65.3	66.8	14.0	940.2	9
SY 611CL2	61.6	68.8	14.4	69.7	66.3	10.2	958.8	10
Faller	60.5	65.3	13.9	65.5	69.4	11.2	965.4	11
LCS Cannon	62.4	53.7	14.3	65.2	69.2	12.5	943.9	12
ND Heron	62.0	68.1	15.1	73.4	65.6	8.7	970.9	13
MN Rothsay	60.7	58.7	14.2	63.0	68.5	15.4	935.5	14
LCS Ascent	61.7	40.5	13.7	65.0	67.6	15.6	930.7	15
TCG-Wildcat	61.5	71.7	14.6	65.5	67.5	10.8	925.0	16
AP Murdock	60.1	59.9	14.0	65.4	67.3	13.2	927.1	17
Brawn-SD	62.3	62.2	13.5	63.7	67.8	16.1	899.0	18
Shelly	61.2	60.7	13.7	62.6	69.1	14.5	902.1	19
MN Torgy	61.2	65.2	14.5	63.8	67.0	11.8	911.8	20
ND Roughrider	59.6	72.5	13.7	66.6	67.2	9.4	909.6	21
SY Valda	60.7	71.8	14.1	64.7	67.9	8.9	919.3	22
AP Gunsmoke CL2	60.3	66.4	14.8	63.0	66.6	13.4	890.2	23
MS Charger	60.7	53.6	12.8	65.7	67.7	10.7	896.8	24
Driver	61.3	61.8	14.1	61.9	68.0	12.3	891.6	25
Mean	**60.8**	**68.3**	**14.2**	**65.4**	**67.6**	**12.8**	**943.4**	

[1]Test weight - Expressed in pounds (lbs) per bushel. A high test weight is desirable. A 58 lb test weight is required for a grade of US No. 1.

[2]Vitreous kernels - Percentage seeds having a vitreous-colored endosperm, a high percentage is desirable. US No. 1 DNS requires > 75% vitreous kernels.

[3]Wheat Protein - Measured by NIR at a 12% moisture basis. A high protein is desirable for baking quality.

[4]Farinograph Absorption - Measured by NIR at a 14% moisture basis. A measure of dough water absorption, expressed as percent. A high absorption is desirable.

[5]Flour Extraction - Percentage of milled flour recovered from cleaned and tempered wheat. A high flour extraction percentage is desirable.

[6]Farinograph Stability - A measure of dough strength expressed in minutes above the 500 Brabender unit line during mixing. A high stability is desirable.

[7]Loaf Volume - The volume of the pup loaf of bread, expressed in cubic centimeters. A high volume is desirable.

[8]Standardized means were used to calculate the Wheat Quality Index (WQI). The WQI is a weighted index calculated as: Test Weight (5%); Vitreous kernel (5%); Wheat Protein (10%); Flour Extraction (10%); Farinograph Absorption (23.3%); Farinograph Stability (23.3%) and Loaf Volume (23.3%). Adjusted means across locations were calculated for each trait using a mixed model. These means were standardized (mean=0 and standard deviation=1) to remove the effect of scale, which varies between traits.

Table 7. Quality Data from 2024 from four locations across North Dakota. The Wheat Quality Index (WQI) is a weighted average developed to summarize relative milling and baking quality of the varieties tested. Data below are from varieties tested in 2024 at Hettinger, Williston, Minot, and Thompson (Grand Forks Co.) ND. These data are always presented from the previous year due to the amount of time it takes to test the samples.

Variety	Test Weight[1]	Vitreous Kernels[2]	Wheat Protein[3]	Farinograph Absorption[4]	Flour Extraction[5]	Farinograph Stability[6]	Loaf Volume[7]	WQI Rank[8]
	lb/bu	%	12% m.b.	%	%	min	cm^3	
ND Horizon	61.5	80.2	14.4	70.2	68.2	10.1	982.1	1
MS Cobra	61.4	82.8	14.0	68.8	67.9	11.7	1039.6	2
ND Frohberg	61.8	79.2	14.0	69.0	67.6	13.0	960.0	3
AP Smith	60.8	81.1	14.3	66.7	67.2	18.9	956.9	4
ND Thresher	59.9	75.7	14.6	67.9	68.5	11.8	977.1	5
AP Elevate	60.9	75.8	14.2	68.2	67.4	12.5	979.1	6
SY Ingmar	61.5	76.9	14.6	66.9	67.2	13.1	987.2	7
Ascend-SD	61.5	89.1	14.4	69.3	67.8	11.3	949.9	8
ND Stampede	60.8	80.0	14.0	69.6	67.7	12.3	953.9	9
LCS Cannon	62.6	62.9	14.2	67.4	68.9	14.1	945.8	10
SY 611CL2	61.8	70.0	14.0	70.3	66.6	12.0	969.0	11
MN Rothsay	61.0	64.0	13.9	64.9	68.5	16.1	958.9	12
WB9590	61.1	74.4	14.0	66.7	66.8	16.4	930.7	13
TCG-Zelda	61.4	77.3	14.0	67.7	67.0	13.6	937.8	14
MS Nova	61.2	71.7	13.8	65.7	66.3	15.8	977.1	15
TCG-Badlands	60.9	78.3	13.8	66.7	67.5	11.6	962.0	16
PFS Rolls	61.0	73.3	13.9	64.1	68.6	19.7	922.7	17
TCG-Wildcat	61.6	79.9	14.3	67.0	67.3	12.3	920.6	18
Faller	60.8	68.8	13.7	66.5	69.1	11.4	956.9	19
LCS Ascent	61.9	41.5	13.5	66.8	67.1	17.1	921.6	20
MT Carlson	61.1	65.4	13.6	66.9	66.0	12.3	996.3	21
AP Gunsmoke CL2	60.4	73.3	14.5	65.6	67.6	15.9	888.4	22
AP Murdock	60.7	64.8	13.9	67.5	67.6	14.9	880.3	23
MN Torgy	61.4	67.5	14.2	65.7	66.7	13.2	945.8	24
Brawn-SD	62.6	69.2	13.3	66.3	67.6	15.8	891.4	25
ND Heron	62.1	75.2	14.8	73.9	65.1	9.3	926.7	26
Driver	61.1	66.4	13.9	63.5	68.2	13.9	920.6	27
Shelly	61.2	66.1	13.5	64.1	68.5	13.9	909.5	28
ND Roughrider	59.6	79.2	13.6	68.3	67.2	10.4	877.3	29
SY Valda	60.9	78.9	14.0	66.1	67.9	9.6	894.4	30
MS Charger	60.4	56.0	12.4	67.0	68.5	11.4	862.2	31
Mean	**60.9**	**73.6**	**13.9**	**67.0**	**67.6**	**13.6**	**938.9**	

[1]Test weight - Expressed in pounds (lbs) per bushel. A high test weight is desirable. A 58 lb test weight is required for a grade of US No. 1.

[2]Vitreous kernels - Percentage of seeds having a vitreous-colored endosperm, a high percentage is desirable. US No. 1 DNS requires > 75% vitreous kernels.

[3]Wheat Protein - Measured by NIR at a 12% moisture basis. A high protein is desirable for baking quality.

[4]Farinograph Absorption - Measured by NIR at a 14% moisture basis. A measure of dough water absorption, expressed as percent. A high absorption is desirable.

[5]Flour Extraction - Percentage of milled flour recovered from cleaned and tempered wheat. A high flour extraction percentage is desirable.

[6]Farinograph Stability - A measure of dough strength expressed in minutes above the 500 Brabender unit line during mixing. A high stability is desirable.

[7]Loaf Volume - The volume of the pup loaf of bread, expressed in cubic centimeters. A high volume is desirable.

[8]Standardized means were used to calculate the Wheat Quality Index (WQI). The WQI is a weighted index calculated as: Test Weight (5%); Vitreous kernel (5%); Wheat Protein (10%); Flour Extraction (10%); Farinograph Absorption (23.3%); Farinograph Stability (23.3%) and Loaf Volume (23.3%). Adjusted means across locations were calculated for each trait using a mixed model. These means were standardized (mean=0 and standard deviation=1) to remove the effect of scale, which varies between traits.

Table 8. Data from the hard red spring wheat variety x fungicide trials conducted at Prosper (Cass County) and Thompson (Grand Forks County) in 2025. These trials are funded by the ND Wheat Commission and provide an opportunity to collect data on the yield response of spring wheat varieties included in the statewide NDSU trials under varying levels of disease pressure. For these trials, Prosaro @ 8.2 fl oz/ ac was applied at early flowering ± 5 days (depending on the variety). In 2025, fungicide was applied on July 2 at Prosper and Thompson.

	Prosper 2025						Thompson 2025					
	No fungicide			Yes fungicide			No fungicide			Yes fungicide		
Variety	Yield	Test wgt	Protein	Yield	Test wgt	Protein	Yield	Test wgt	Protein	Yield	Test wgt	Protein
	bu/a	lbs/bu	%	bu/a	lbs/bu	%	bu/a	lbs/bu	%	bu/a	lbs/bu	%
AAC Hockley	85.8	60.8	13.7	88.0	61.0	14.1	65.7	59.6	13.9	64.2	60.2	13.8
AAC Hodge	91.6	60.3	14.5	93.9	60.2	14.4	72.0	59.6	14.1	73.9	59.2	14.0
AP Dagr	93.0	56.9	13.2	98.9	58.4	12.9	77.0	55.3	12.6	84.1	57.3	12.4
AP Elevate	99.5	58.9	13.6	101.8	59.6	13.2	79.6	58.3	13.0	86.3	58.9	13.3
AP Gunsmoke CL2	89.1	58.2	14.9	97.0	59.1	14.8	80.1	58.9	14.9	82.1	59.0	14.9
AP Iconic	99.0	58.8	13.4	102.3	59.4	13.0	80.1	58.0	12.8	93.8	59.9	12.7
AP Murdock	99.9	59.3	13.6	100.8	60.0	13.4	81.3	59.1	12.8	85.5	59.3	12.8
AP Smith	87.5	58.6	13.7	95.0	59.2	13.5	74.4	57.4	13.7	78.1	58.9	13.8
Ascend-SD	94.0	59.9	14.1	105.2	60.3	14.5	79.0	59.6	14.4	88.3	60.4	14.2
Brawn-SD	104.9	61.5	13.0	101.9	61.7	13.3	76.0	60.2	12.7	90.2	61.2	12.8
CP3678	89.9	59.4	14.4	93.5	59.5	14.6	64.4	57.2	14.5	67.7	57.9	14.2
Dagmar	96.9	59.7	14.1	105.9	60.1	13.9	80.0	58.7	14.5	85.1	59.5	14.0
Driver	93.4	60.5	13.9	96.2	60.6	13.6	72.5	59.7	13.7	73.1	60.5	13.7
Enhance-SD	103.4	59.7	13.7	109.0	59.9	13.5	78.5	58.5	14.1	86.8	59.0	13.9
Faller	100.0	58.6	13.2	101.7	59.1	13.3	81.3	58.9	13.1	86.6	59.4	13.0
LCS Ascent	100.2	60.2	12.7	102.7	60.8	12.9	80.0	59.5	12.1	85.2	60.1	12.1
LCS Cannon	96.8	60.9	12.8	100.0	61.0	13.0	82.3	60.1	12.8	85.5	60.8	12.8
LCS Rimfire	97.7	59.0	13.2	94.5	59.4	13.6	70.3	57.6	13.5	72.1	57.3	13.4
MN-Lang	83.0	61.2	14.4	87.9	50.1	14.1	73.5	60.5	14.6	77.5	61.3	14.1
MN- Rothsay	93.7	59.8	13.4	100.2	59.8	13.4	78.4	58.7	13.4	83.3	59.3	13.1
MN-Torgy	92.6	60.4	14.1	96.9	60.4	13.7	70.2	59.3	14.5	74.1	60.0	13.8
Mott	91.9	60.0	13.5	97.2	60.3	13.3	67.7	59.4	13.6	78.6	60.1	12.9
MS Charger	92.7	58.1	12.2	105.9	58.2	12.4	79.2	57.6	11.9	84.8	58.3	11.8
MS Cobra	93.5	59.9	13.7	92.1	60.8	13.7	70.3	59.1	13.5	76.8	59.7	13.2
MS Nova	92.9	59.4	13.7	92.6	59.8	13.5	76.7	58.9	13.3	82.9	59.8	13.1
MT Carlson	97.5	59.5	13.0	101.7	59.8	13.1	64.7	56.8	12.8	73.8	58.6	12.6
ND Frohberg	92.2	60.0	13.4	97.7	60.5	13.5	68.6	58.8	13.3	76.8	59.7	13.0

NS = not significantly different at p<0.1

Table 8. Data from the hard red spring wheat variety x fungicide trials conducted at Prosper (Cass County) and Thompson (Grand Forks County) in 2025. These trials are funded by the ND Wheat Commission and provide an opportunity to collect data on the yield response of spring wheat varieties included in the statewide NDSU trials under varying levels of disease pressure. For these trials, Prosaro @ 8.2 fl oz/ ac was applied at early flowering ± 5 days (depending on the variety). In 2025, fungicide was applied on July 2 at Prosper and Thompson. (Continued)

	Prosper 2025						Thompson 2025					
	No fungicide			Yes fungicide			No fungicide			Yes fungicide		
Variety	**Yield**	**Test wgt**	**Protein**	**Yield**	**Test wgt**	**Protein**	**Yield**	**Test wgt**	**Protein**	**Yield**	**Test wgt**	**Protein**
	bu/a	**lbs/bu**	**%**	**bu/a**	**lbs/bu**	**%**	**bu/a**	**lbs/bu**	**%**	**bu/a**	**lbs/bu**	**%**
ND Heron	90.8	61.0	14.2	94.7	61.1	13.8	71.5	59.6	13.8	77.4	59.5	13.8
ND Horizon	101.0	59.1	14.1	100.3	59.8	14.0	90.4	60.2	13.7	85.7	60.7	13.6
ND Roughrider	99.5	58.1	14.3	104.9	58.4	13.9	85.8	57.9	13.9	93.4	58.8	13.4
ND Stampede	98.5	58.9	13.8	101.9	59.1	14.2	84.5	58.4	14.0	94.4	60.0	13.5
ND Thresher	93.3	59.1	13.8	92.7	59.2	13.9	72.1	58.1	14.1	84.1	59.5	13.6
PFS Muffins	93.6	58.1	13.7	100.1	58.8	13.7	81.1	57.3	13.2	88.6	58.6	13.0
PFS Rolls	100.8	60.0	13.3	104.4	60.2	13.5	75.3	58.4	13.2	76.7	58.9	13.3
PG Predator	95.3	58.2	13.7	99.7	59.2	13.5	79.5	57.8	13.1	86.4	58.9	12.8
Shelly	98.3	60.0	13.3	101.0	60.0	13.1	76.4	53.1	13.5	78.0	59.5	13.1
SY 611CL2	92.5	59.4	14.0	95.6	59.6	13.5	75.8	58.6	13.7	84.6	59.8	13.9
SY Ingmar	90.1	58.9	14.0	94.6	59.5	13.8	72.7	58.8	13.9	80.1	60.0	13.9
SY Valda	90.8	59.0	13.6	99.5	59.8	13.4	86.4	59.3	13.2	90.0	59.8	13.2
TCG-Badlands	93.5	59.6	13.2	100.5	60.4	13.0	69.6	58.2	13.3	83.5	59.7	13.1
TCG-Wildcat	97.5	59.3	13.9	103.6	59.7	13.9	85.7	59.9	13.9	89.1	60.2	14.0
TCG-Zelda	102.9	59.0	13.6	101.5	59.7	13.5	78.6	58.0	13.8	86.5	58.4	13.3
TW Olympic	99.6	58.9	14.2	105.5	59.3	14.1	75.0	58.8	13.8	83.1	59.6	13.6
TW Trailfire	84.5	59.1	13.0	94.1	59.7	12.7	74.1	57.5	13.2	80.6	53.2	13.2
WB9590	99.9	59.7	13.9	107.4	60.4	13.6	76.0	57.9	13.8	77.1	59.2	13.3
Mean	**95.0**	**59.5**	**13.7**	**99.3**	**59.7**	**13.6**	**76.3**	**58.6**	**13.5**	**82.1**	**59.3**	**13.3**
*Higher value p<0.1			*	*	NS				*	*	*	

NS = not significantly different at p<0.1

For more information on this and other topics, see www.ndsu.edu/extension

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