



CROP QUALITY REPORT

High quality wheat for every need.

2025



FROM THE PRESIDENT

Dear Valued Partners:

I am happy to share with you the 2025 Crop Quality Report, a detailed look at each of the six distinct classes of high-quality wheat grown by U.S. wheat farmers and used by millers and bakers around the world. This is the first Crop Quality Report published since I stepped into my new role as President and CEO of U.S. Wheat Associates (USW), and I am confident you will find value in the information it provides.

With support from our partners – state wheat commission members, public and private industries and USDA's Foreign Agricultural Service – we share this data to help our customers produce the highest quality wheat foods. It is one of many services USW offers – and it is one myself, my colleagues and U.S. wheat farmers are quite proud of.

This year, U.S. wheat production has reached its highest level since 2016, positioning U.S. wheat as a reliable and competitive option for buyers. With total production up from last year and above the five-year average, the supply outlook is strong. Buyers around the world continue to recognize the excellent value that high-quality U.S. wheat offers.

USW encourages wheat buyers to use the Crop Quality Report to review and refine their specific purchase specifications. My USW colleagues around the world are a dedicated group willing to assist and answer any questions you may have about this year's edition. I want to thank Vice President of Programs Erica Oakley, who oversees the collection of the information in the annual Crop Quality Report and its production.

This USW report reflects not only the quality of the 2025 crop, but also the hard work and commitment of U.S. wheat farmers. We're proud to share the results of their efforts with our global partners. It takes a team to feed the world, and USW is happy to be part of the team. We wish you much success.

Sincerely,



Mike Spier
President and CEO
U.S. Wheat Associates

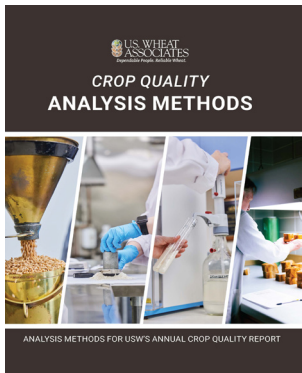


U.S. WHEAT ASSOCIATES IS FUNDED BY THE U.S. DEPARTMENT OF AGRICULTURE'S FOREIGN AGRICULTURAL SERVICE AND BY WHEAT PRODUCERS THROUGH THE FOLLOWING MEMBER ORGANIZATIONS:

- Arizona Grain Research & Promotion Council
- California Wheat Commission
- Colorado Wheat Administrative Committee
- Idaho Wheat Commission
- Kansas Wheat Commission
- Maryland Grain Producers Utilization Board
- Minnesota Wheat Research & Promotion Council
- Montana Wheat & Barley Committee
- Nebraska Wheat Board
- North Dakota Wheat Commission
- Ohio Small Grains Marketing Program
- Oklahoma Wheat Commission
- Oregon Wheat Commission
- South Dakota Wheat Commission
- Texas Wheat Producers Board
- Washington Grain Commission
- Wyoming Wheat Marketing Commission

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SCAN THIS QR CODE TO ACCESS USW'S ANALYSIS METHODS FOR CROP QUALITY TESTING.

The crop quality testing methodologies are now available in a stand-alone document, which provides detailed testing definitions and methodologies. Laboratory testing protocols are outlined for each wheat class.



SCAN THIS QR CODE TO ACCESS USW'S ANNUAL CROP QUALITY REPORTS.

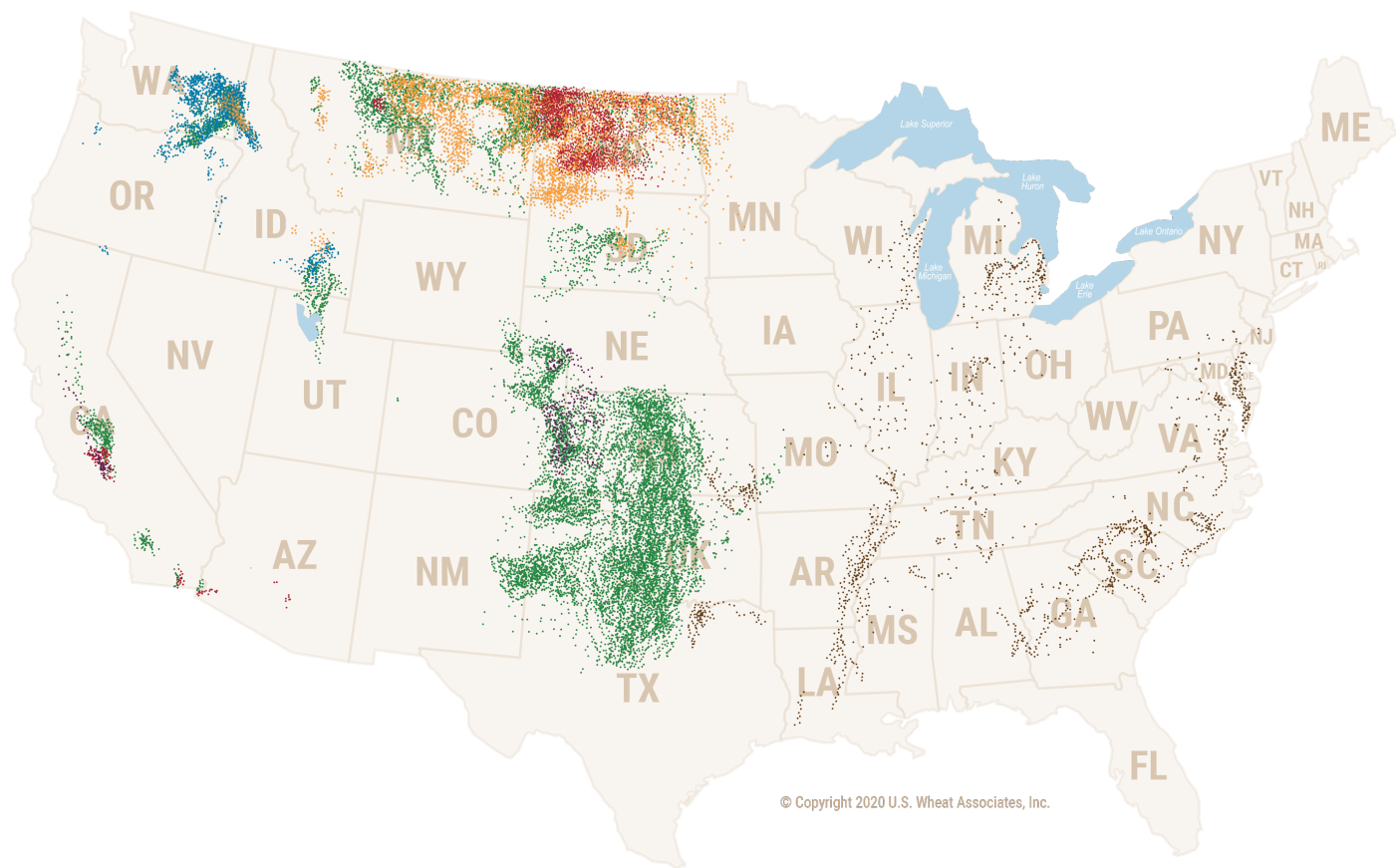
Available in: Arabic, Chinese, English, French, Italian, Portuguese and Spanish.

REGIONAL REPORTS ARE ALSO AVAILABLE:

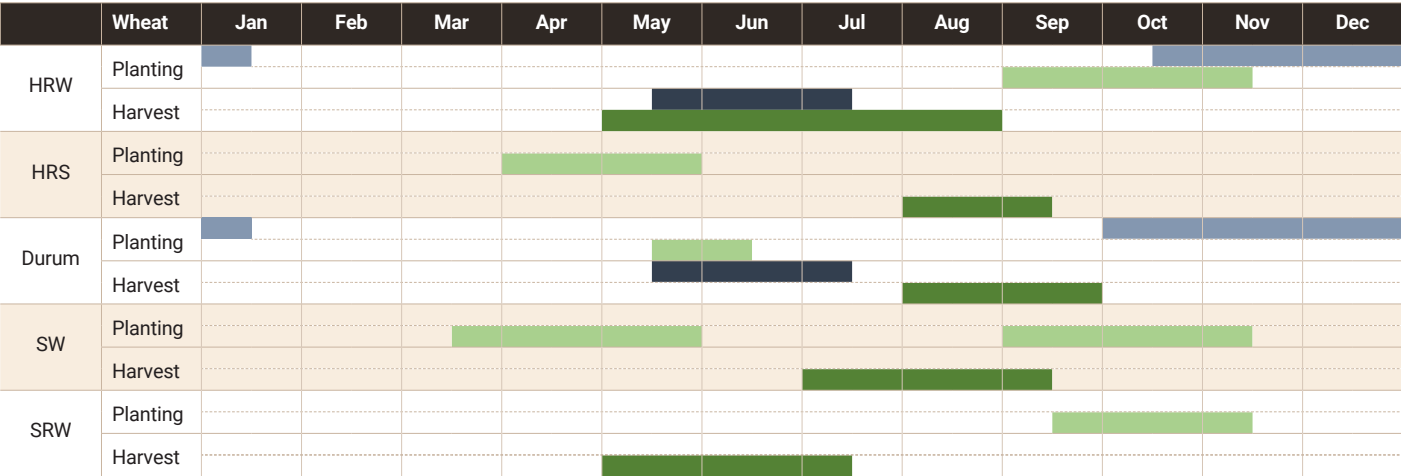
Hard White, Soft Red Winter, Soft White, Hard Red Spring, Northern Durum, Hard Red Winter, California Hard Red Winter and Desert Durum.

(Note: Regional reports are primarily available in English.)

2025 CROP QUALITY OVERVIEW



PLANTING AND HARVEST DATES



U.S. PRODUCTION BY CLASS

CROP YEAR (BEGINNING JUNE 1) (MMT)

	2025	2024	2023	2022	2021
Hard Red Winter	21.9	21.0	16.2	14.5	20.4
Hard Red Spring	12.5	13.7	12.7	12.2	8.1
Hard White	0.6	0.8	0.6	0.5	0.7
Durum	2.3	2.2	1.6	1.7	1.0
Soft White	7.0	6.7	5.8	6.9	4.8
Soft Red Winter	9.6	9.4	12.2	9.1	9.8
Total	54.0	53.8	49.1	44.9	44.8

Based on USDA crop estimates as of September 30, 2025.

U.S. SUPPLY AND DEMAND

ESTIMATED FOR 2025/26 (BEGINNING JUNE 1) (MMT)

	HRW	HRS	SRW	White ²	Durum	Total
Beginning stocks	10.8	5.9	3.5	2.2	0.8	23.2
Production ¹	21.9	12.5	9.6	7.7	2.3	54.0
Imports	0.1	1.8	0.1	0.1	1.1	3.3
Total Supply	32.8	20.2	13.2	10.0	4.2	80.4
Domestic Use	12.4	7.8	6.2	2.5	2.5	31.4
Exports	8.8	6.5	3.3	5.2	0.7	24.5
Total demand	21.3	14.3	9.5	7.6	3.2	55.9
Ending stocks	10.6	5.6	3.3	2.3	1.0	23.0
Stocks 5-year average	8.6	5.0	3.1	1.9	0.7	19.4

Based on USDA Supply/Demand estimates as of September 12, 2025.

¹Production is based on USDA crop estimates as of September 30, 2025.

²Includes both SW and HW.

SUMMARY OF CLASSES

	Hard Red Winter ¹		Hard Red Spring		Soft White		Soft Red Winter		Northern Durum ²		Desert Durum ²	
	2025	5-Year Avg	2025	5-Year Avg	2025	5-Year Avg	2025	5-Year Avg	2025	5-Year Avg	2025	5-Year Avg
Test Weight (lb/bu)	60.0	61.0	61.6	61.5	61.2	60.7	59.0	59.8	61.9	61.3	62.5	63.3
(kg/hl)	79.0	80.2	81.0	80.9	80.5	79.8	77.7	78.7	80.6	79.8	81.4	82.4
Grade	1 HRW	1 HRW	1 NS	1 NS	1 SW	1 SW	2 SRW	2 SRW	1HAD	1 HAD	1 HAD	1 HAD
Dockage (%)	0.5	0.5	0.6	0.6	0.4	0.5	0.5	0.3	0.6	0.9	0.5	0.3
Moisture (%)	11.5	10.9	12.2	11.9	9.3	9.0	12.8	13.1	11.6	11.2	7.2	7.3
Wheat Protein (%), 12% mb	12.1	12.3	14.4	14.5	9.9	10.2	9.3	9.5	14.2	14.2	13.8	13.8
Wheat Ash (%), 14% mb	1.47	1.53	1.53	1.54	1.28	1.42	1.21	1.39	1.55	1.58	1.70	1.65
1000 Kernel Weight (g)	30.1	30.7	33.9	31.5	35.8	33.6	32.9	34.0	43.6	40.9	48.2	48.7
Falling Number (sec)	370	362	404	386	317	336	301	316	325	427	772	652
Flour/Semolina Extraction (%) ²	75.8	75.2	68.0	66.8	71.6	71.1	69.5	67.5	58.8	55.9	68.9	72.3
Flour/Semolina Ash (%) ²	0.53	0.51	0.53	0.49	0.42	0.44	0.41	0.42	0.61	0.65	0.80	0.81
Wet Gluten (%), 14% mb	28.4	29.0	34.3	34.3	19.7	22.7	19.7	20.8	34.5	33.5	34.8	34.3
Farinograph:												
Peak Time (min)	4.9	5.3	7.4	8.0	1.2	1.8	0.6	0.7	—	—	—	—
Stability (min)	9.4	9.5	12.1	14.0	1.7	2.4	1.4	1.7	—	—	—	—
Absorption (%)	58.8	58.7	63.8	62.3	51.0	51.6	53.0	52.2	—	—	—	—
W (10 ⁻⁴ J)	228	248	413	399	86	84	101	86	—	—	—	—
Loaf Volume (cc)	798	885	966	963	698	—	605	613	—	—	—	—
Production (MMT)	21.9	18.0	12.5	12.2	7.0	6.4	9.6	9.6	1.4	1.5	0.2	0.2

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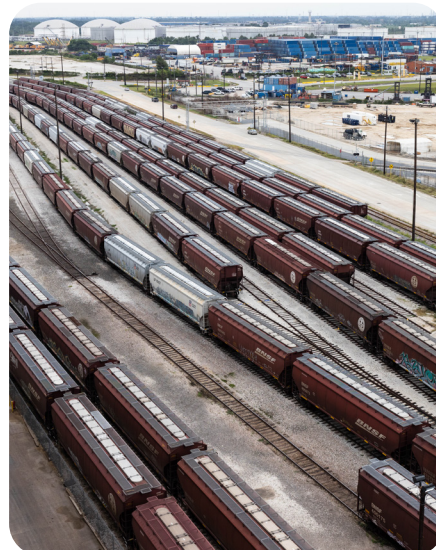
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¹HRW data does not include California.

²Durum extraction and ash values are for semolina.



GRADING, ABBREVIATIONS & CONVERSIONS

GRADES AND GRADE REQUIREMENTS

GRADING FACTORS:	GRADES U.S. NO.:				
	1	2	3	4	5
MINIMUM LIMITS:					
Test Weight (lb/bu)					
HRS or White Club	58.0	57.0	55.0	53.0	50.0
All other classes and subclasses	60.0	58.0	56.0	54.0	51.0
Test Weight (kg/hl)					
HRS or White Club	76.4	75.1	72.5	69.9	66.0
Durum	78.2	75.6	73.0	70.4	66.5
All other classes and subclasses	78.9	76.4	73.8	71.2	67.3
MAXIMUM PERCENT LIMITS:					
Defects					
Damaged kernels:					
- Heat (part of total)	0.2	0.2	0.5	1.0	3.0
- Total	2.0	4.0	7.0	10.0	15.0
Foreign material	0.4	0.7	1.3	3.0	5.0
Shrunken and broken kernels	3.0	5.0	8.0	12.0	20.0
Total ¹	3.0	5.0	8.0	12.0	20.0
Wheat of Other Classes²					
Contrasting classes	1.0	2.0	3.0	10.0	10.0
Total ³	3.0	5.0	10.0	10.0	10.0
Stones	0.1	0.1	0.1	0.1	0.1
MAXIMUM COUNT LIMITS (ALL GRADES):					
Other material (1,000 g sample)					
Animal filth	1				
Castor beans	1				
Crotalaria seeds	2				
Glass	0				
Stones	3				
Unknown foreign substance	3				
Total ⁴	4				
Insect-damaged kernels in 100 g	31				

U.S. Sample Grade is wheat that:

- (a) does not meet the requirements for U.S. Nos. 1, 2, 3, 4, 5; or
- (b) has a musty, sour or commercially objectionable foreign odor (except smut or garlic odor);
- (c) is heating or of distinctly low quality.

Notes:

- ¹ Includes damaged kernels (total), foreign material, and shrunken and broken kernels.
- ² Unclassed wheat of any grade may contain not more than 10.0% of wheat of other classes.
- ³ Includes contrasting classes.
- ⁴ Includes any combination of animal filth, castor beans, crotalaria seeds, glass, stones, or unknown foreign substance.

ABBREVIATIONS

°C	Celsius	in	inch
°F	Fahrenheit	J	joules
AACC	American Association of Cereal Chemists	kg	kilogram
AD	Amber Durum	kg/hl	Kilograms/Hectoliter
α-amylase	alpha-amylase	lb	pound
bu	Winchester bushel	lb/bu	pounds/bushel
BU	Brabender Unit	mb	moisture basis
cc	cubic centimeter (also cm³, ccm)	mg	milligram
Club	White Club	min	minute
cm	centimeter	mL	milliliter
cm²	square centimeters	mm	millimeter
cwt	quintal or hundredweight	MMT	million metric tons
db	Dry basis	MT	metric tons
DNS	Dark Northern Spring	NS	Northern Spring
DON	Deoxynivalenol (Vomitoxin)	PGI	Plains Grains Inc.
Durum	Durum	PNW	Pacific Northwest
FGIS	Federal Grain Inspection Service	ppm	parts per million
g	gram	PPO	polyphenol oxidase
GIPSA	Grain Inspection, Packers and Stockyards Administration	sec	second
GPAL	Great Plains Analytical Lab	SKCS	Single Kernel Characterization System
GPI	Gluten Performance Index	SRC	Solvent Retention Capacity
Gulf	Gulf of Mexico	SRW	Soft Red Winter
HAD	Hard Amber Durum	SW	Soft White
hl	hectoliter	TKW	1000 kernel weight or thousand kernel weight
hr	hour	USDA	United States Department of Agriculture
HRS	Hard Red Spring	WMC	Wheat Marketing Center
HRW	Hard Red Winter	WW	Western White
HW	Hard White		

UNIT CONVERSION FACTORS

The weight units conversion matrix should be read from the top, left.
For example: **1 MT** is equal to **1,000 kg**.

	1 bu	1 lb	1 MT	1 long ton	1 short ton	1 cwt	1 kg
bu	1	0.017	36.74	37.33	33.33	3.674	0.037
lb	60	1	2,204	2,240	2,000	100	2.205
MT	0.0272	0.0005	1	1.016	0.907	22.05	0.0010
long ton	0.0268	0.0004	0.984	1	0.893	0.045	0.0010
short ton	0.030	0.0005	1.102	1.12	1	0.05	0.0011
cwt	0.600	0.01	22.05	22.40	20.37	1	0.022
kg	27.2	0.45	1,000	1,016	907.2	45.36	1

LEGEND:

bu (Winchester bushel)
lb (pound)
MT (metric ton)
cwt (quintal or hundredweight)
kg (kilogram)

LAND AREA:

1 hectare (ha) = 2.47 acres (ac)
1 acre (ac) = 0.40 hectare (ha)

TEST WEIGHT:

Durum wheat: kg/hl = (lb/bu x 1.292) + 0.630
Common wheat: kg/hl = (lb/bu x 1.292) + 1.419

SOLVENT RETENTION CAPACITY:

GPI = Lactic Acid/(Sodium Carbonate + Sucrose)

FLOUR PROTEIN:

14% mb to db = Protein (14% mb) / 0.86
db to 14% mb = Protein (db) x 0.86

WHEAT PROTEIN:

12% mb to db = Protein (12% mb) / 0.88
db to 12% mb = Protein (db) x 0.88

HARD RED WINTER



Grown in the Great Plains, Pacific Northwest (PNW) and California, hard red winter (HRW) wheat is the most widely grown class in the United States. It is shipped via the Gulf and Pacific ports. It has medium to high protein of 10.0 to 13.0% (12% mb), medium hard endosperm, red bran, medium gluten content and mellow gluten.

For the miller, HRW brings consistency to the grist. A balanced mill optimizes flour extraction and helps maximize milling efficiency. Maintaining HRW as the foundation of the mill grist allows the miller to blend other U.S. classes, local wheat or wheat from other origins as cost advantages or product differentiation opportunities develop.

For the baker, HRW benefits include improved baking characteristics, including dough stability and water absorption, either alone or as part of a blend. HRW delivers consistency as it is always available and provides the most reliable foundational ingredient for most wheat-based products.



APPLICATIONS

With excellent milling and baking characteristics for wheat foods like pan breads, hard rolls, croissants and flat breads, HRW is an important and versatile wheat. It is also an ideal choice for some types of Asian noodles, general purpose flour and as an improver for blending.

Applications include:

- Baguettes
- Flatbreads, tortillas
- Pan breads
- Yeast breads and rolls
- Hard rolls
- Hearth breads
- Cereals
- Croissants
- Dumplings, Chinese
- Noodles, Asian-style
- Steamed bread (mushipan)
- Non-durum pasta
- Wide variety of other baked goods
- Flours (general-purpose, bread)
- Blending improver



SCAN THIS
QR CODE
to access the crop
quality testing
methods.

SURVEY METHODOLOGY

SAMPLE COLLECTION AND ANALYSIS

Plains Grains Inc. in Lincoln, Nebraska, collaborated with USDA/ARS Hard Winter Wheat Quality Lab (HWWQL) in Manhattan, Kansas, to collect samples and conduct quality analyses.

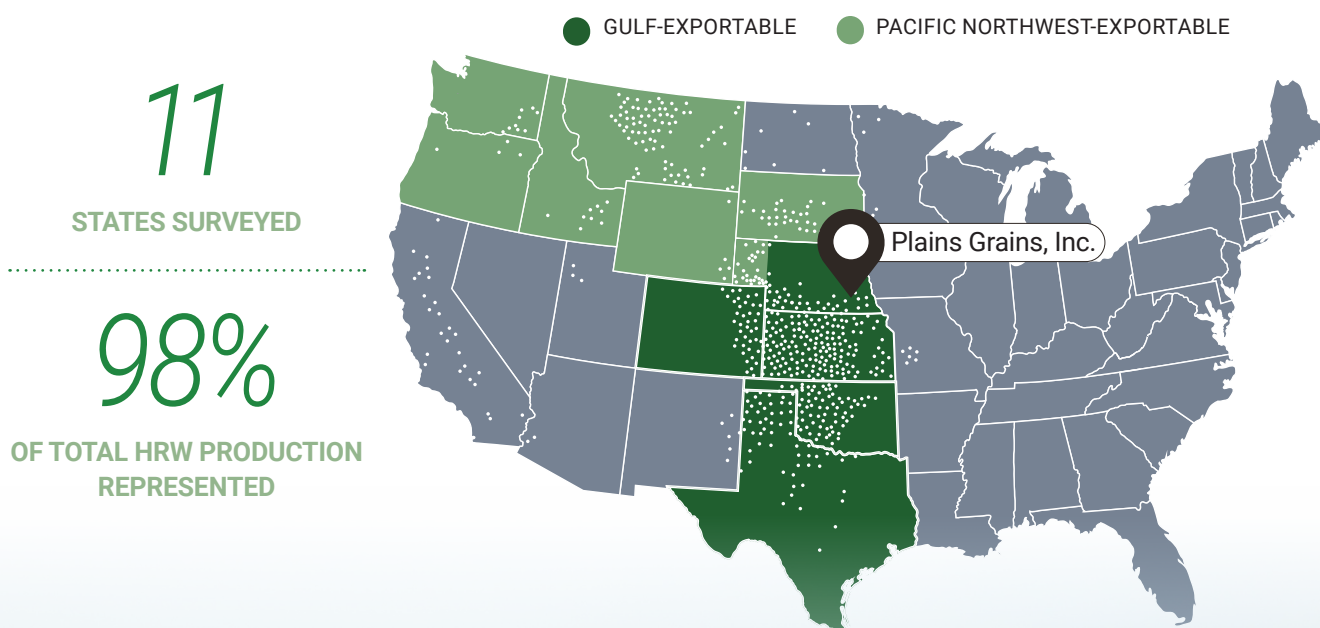
SAMPLE TESTING

Official grade and non-grade factors were determined on each sample. Functionality tests were conducted on 93 composite samples categorized by growing region and protein ranges of <11.5%, 11.5 to 12.5% and >12.5%. Production weighted results are presented as Overall, Gulf-exportable and Pacific Northwest (PNW)-exportable averages. The methods are described in the Analysis Methods booklet.

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SAMPLES OF
HARD RED WINTER

collected from grain elevators
in 40 reporting areas after
at least 30% of the local
harvest was complete.



WEATHER AND HARVEST

PLANTED area for the 2025 hard red winter (HRW) wheat crop was estimated at 9.5 million hectares (23.5 million acres) seeded in fall 2024, down just 1% from the previous year. The crop entered dormancy drier than the previous year, leading to uneven stand establishment in some areas.

GROWING conditions varied widely across regions. The Southern Plains began under drought stress, with improvement across the region following timely spring rains. In Kansas, Oklahoma and Texas, late-season rainfall events and mild temperatures increased yield potential and test weights but stretched into harvest, impacting progress. Drier conditions in Nebraska limited overall production. In the Northern Plains and PNW, winter moisture supported development, but hot, dry conditions in summer accelerated maturity and reduced yield potential, particularly in dryland areas.

HARVEST was generally early for most of the HRW growing region, however, there were rain-related delays in Texas, Oklahoma and parts of Kansas and South Dakota. Wyoming and

HARD RED WINTER PRODUCTION

FOR THE MAJOR PRODUCING STATES (MMT)

	2025	2024	2023	2022	2021
California	0.2	0.2	0.2	0.1	0.2
Colorado	1.8	1.7	1.9	0.9	1.8
Idaho	0.4	0.4	0.3	0.3	0.2
Kansas	9.0	7.9	5.1	6.2	9.3
Montana	2.7	2.5	2.3	1.6	1.5
Nebraska	1.0	1.2	0.9	0.7	1.1
Oklahoma	2.8	2.9	1.8	1.8	3.1
Oregon	0.1	0.1	0.1	0.1	0.1
South Dakota	0.9	1.3	0.9	1.0	0.7
Texas	2.2	2.1	2.1	1.0	1.9
Washington	0.3	0.3	0.3	0.3	0.2
Wyoming	0.1	0.1	0.1	0.0	0.1
Twelve-State Total	21.5	20.7	15.8	14.1	20.1
Gulf-Exportable	16.2	15.0	11.2	10.3	16.5
PNW-Exportable	5.1	5.5	4.5	3.8	3.5
Total HRW Production	21.9	21.0	16.2	14.5	20.4

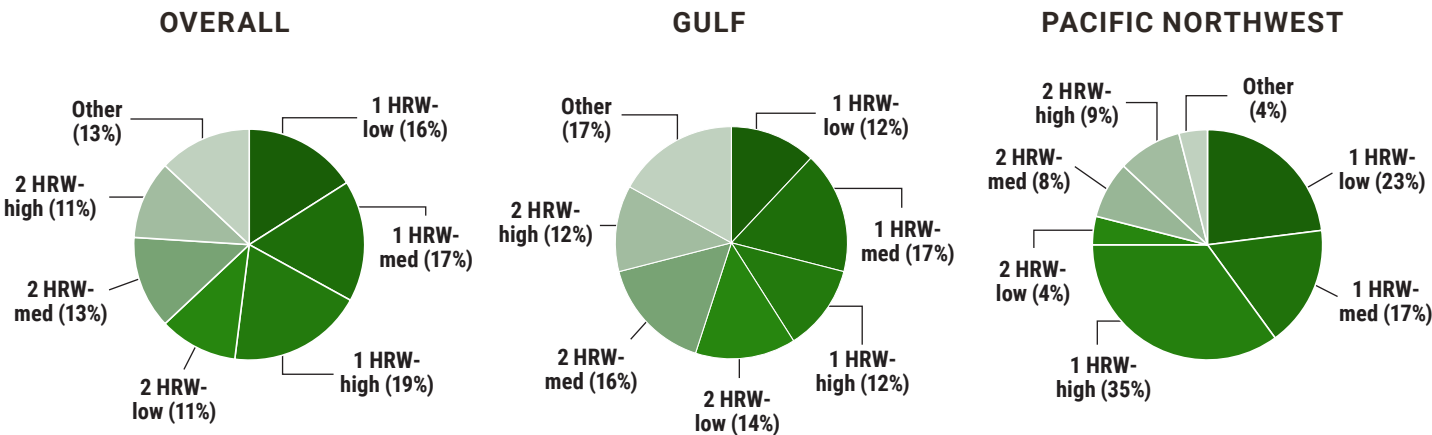
Based on USDA crop estimates as of September 30, 2025.

Montana reported better-than-expected yields despite early-season challenges. Overall, disease and insect pressure were generally low.

PRODUCTION of the 2025 U.S. HRW crop is estimated at 21.9 million metric tons (804 million bushels). Higher yields helped result in production levels comparable to last year and marking a second consecutive year of strong production following drought-stressed years.

DISTRIBUTION BY GRADE

PROTEIN RANGE, 12% MB: LOW, <11.5%; MED, 11.5-12.5%; HIGH, >12.5%.



OVERALL HARVEST DATA

	2025 BY PROTEIN ¹			2025	2024	5-Year
	Low	Med	High	Avg	Avg	Avg
WHEAT GRADE DATA:						
Test Weight (lb/bu)	60.2	60.0	59.9	60.0	61.4	61.0
(kg/hl)	79.2	79.0	78.8	79.0	80.7	80.2
Damaged Kernels (%)	0.2	0.3	0.3	0.3	0.1	0.3
Foreign Material (%)	0.1	0.0	0.1	0.1	0.1	0.1
Shrunken & Broken (%)	0.7	0.7	0.7	0.7	0.8	1.0
Total Defects (%)	1.0	1.0	1.1	1.1	0.9	1.4
Grade	1 HRW	1 HRW	2 HRW	1 HRW	1 HRW	1 HRW
WHEAT NON-GRADE DATA:						
Dockage (%)	0.6	0.5	0.5	0.5	0.5	0.5
Moisture (%)	11.5	11.5	11.5	11.5	10.7	10.9
Protein (%), 12%/0% mb	11.0/12.5	12.0/13.6	13.1/14.9	12.1/13.7	11.9/13.5	12.3/13.9
Ash (%), 14%/0% mb	1.46/1.70	1.46/1.70	1.48/1.72	1.47/1.71	1.44/1.68	1.53/1.78
1000 Kernel Weight (g)	30.7	30.2	29.6	30.1	30.1	30.7
Kernel Size (%) lg/md/sm	69/30/00	68/32/00	67/33/00	68/32/00	66/33/01	64/35/02
Single Kernel: Hardness	57.5	59.6	59.2	58.8	61.4	63.9
Weight (mg)	31.1	31.2	31.3	31.2	32.3	31.6
Diameter (mm)	2.61	2.61	2.62	2.62	2.65	2.62
Sedimentation (cc)	44.2	49.8	59.2	51.4	49.1	51.9
Falling Number (sec)	367	375	367	370	358	362
DON (ppm)	0.1	0.0	0.0	0.0	0.1	0.2
FLOUR DATA:						
Lab Mill Extraction (%) ²	75.9	75.9	75.6	75.8	75.0	75.2
Color: L*	90.8	90.8	90.6	90.7	91.0	90.8
a*	-1.5	-1.4	-1.4	-1.4	-1.4	-1.5
b*	10.1	10.3	10.1	10.2	10.7	10.2
Protein (%), 14%/0% mb	9.9/11.5	10.9/12.7	12.0/13.9	11.0/12.8	11.0/12.8	11.2/13.1
Ash (%), 14%/0% mb	0.53/0.62	0.53/0.62	0.53/0.62	0.53/0.62	0.53/0.61	0.51/0.59
Wet Gluten (%), 14% mb	28.6	28.2	28.3	28.4	29.1	29.0
Falling Number (sec)	408	416	413	412	397	406
Amylograph Viscosity: 65g (BU)	667	740	759	724	811	796
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	74.2/2191	73.0/2295	75.3/2353	74.2/2283	74.5/2383	74.8/2414
Hot Paste Visc. (cP)/Final Visc. (cP)	1487/2644	1608/2840	1630/2855	1578/2785	1658/2890	1620/2833
Damaged Starch (%)	6.3	6.3	6.1	6.2	6.4	6.4
SRC: Water/50% Sucrose (%)	66/112	66/113	66/114	66/113	67/114	63/112
5% Lactic Acid/5% Na ₂ CO ₃ (%)	137/88	137/87	140/89	138/88	137/89	136/91
Gluten Performance Index (GPI)	0.69	0.69	0.69	0.69	0.67	0.67
DOUGH PROPERTIES:						
Farinograph: Peak Time (min)	3.8	5.0	5.8	4.9	5.4	5.3
Stability (min)	8.7	9.7	9.8	9.4	9.1	9.5
Absorption (%)	57.6	58.7	59.9	58.8	58.6	58.7
Alveograph: P (mm)	82	82	83	82	82	89
L (mm)	75	82	90	82	87	82
P/L Ratio	1.09	1.00	0.92	1.00	0.94	1.13
W (10 ⁻⁴ J)	208	227	248	228	231	248
Extensograph (45/135 min): Resistance ₅₀ (BU)	377/602	357/591	352/566	361/586	336/568	350/614
Resistance max (BU)	500/778	493/815	496/806	496/801	463/775	477/818
Extensibility (cm)	14.3/12.7	15.0/14.0	15.5/14.6	15.0/13.8	15.0/13.8	14.7/13.2
Area (cm ²)	94/121	97/139	100/144	97/135	91/130	91/130
R ₅₀ /E Ratio	2.7/4.9	2.4/4.3	2.3/4.0	2.4/4.4	2.3/4.3	2.4/4.9
Rmax/E Ratio	3.5/6.2	3.3/5.9	3.2/5.6	3.3/5.9	3.1/5.8	3.3/6.4
BAKING EVALUATION:						
Pan Bread: Bake Absorption (%)	60.3	62.0	63.9	62.1	61.8	63.6
Loaf Volume (cc)	754	795	839	798	849	885
Specific Volume (cc/g)	5.1	5.3	5.5	5.3	5.7	5.7
% OF SAMPLES:	24	22	53	100		

¹ Protein Range: Low, <11.5%; Med, 11.5 - 12.5%; High, >12.5%.

² The lab mill extraction calculation changed in 2023; values are not comparable to the 5-year average. See analysis methods.

GULF-EXPORTABLE HARVEST SURVEY

The 2025 Gulf-exportable U.S. hard red winter (HRW) wheat crop reflects a season of contrasts, shaped by early drought, uneven rainfall and harvest weather challenges. While regional variability impacted yields and test weights, the crop maintains functional quality for milling and baking. Early-season dryness in Texas, Oklahoma and Nebraska led to poor emergence and some abandonment, while Colorado benefited from snow cover that supported stand establishment. Spring rains improved conditions in Kansas and parts of Nebraska, though flooding in Oklahoma and harvest delays in Texas added stress. Disease pressure remained localized, and protein levels – generally moderate – support flour functionality. Overall, the 2025 Gulf HRW crop offers a dependable supply with versatile milling and baking characteristics, meeting contract specifications and provides consistent value to customers.

GULF-EXPORTABLE CROP HIGHLIGHTS

GRADE: The overall average for the Gulf-exportable crop is U.S. No. 2 HRW.

TEST WEIGHT: Values trended lower, likely due to dry conditions before preharvest rains, which reduced kernel density in the Gulf crop.

WHEAT MOISTURE: Values were higher this year compared to the average, reflecting increased rainfall and cooler temperatures at maturity.

WHEAT PROTEIN (12% MB): Values are similar to last year's and the five-year average. Protein content is typical for the Gulf, with slight decreases possible due to late-season rainfall.

KERNEL CHARACTERISTICS: Values align with the five-year average, with Gulf samples showing larger and plumper kernels and higher 1000 kernel weights, supporting improved flour extraction.

WHEAT FALLING NUMBER: Average is similar to last year and above the five-year average, confirming a sound crop with minimal sprout damage.

TANDEM LABORATORY MILL: Extraction rates are on par with the five-year average, aided by larger, plumper kernels. Commercial mills should see better

extractions. Note: In 2023, flour extraction calculations shifted from a total product weight basis to a tempered wheat weight, therefore, they should not be compared to the five-year average.

WET GLUTEN: Aligns with the five-year average and tracks with protein content.

SOLVENT RETENTION CAPACITY (SRC): Gluten performance index (GPI) values are above the 0.60 threshold which is desirable for bread making in hard wheats.

STARCH PASTING PROPERTIES: Amylograph and rapid visco analyzer (RVA) viscosities indicate the crop is suitable for noodle making, particularly clean bite noodles such as instant fried noodles.

DOUGH PROPERTIES: Absorption and stability are generally close to the five-year average, but dough strength is limited, as indicated by alveograph W, farinograph peak time, and extensograph Rmax.

PAN BREAD: Bake absorption is similar to the average, but bread volume and specific volume are below average, indicating lower protein. This year's Gulf HRW offers good opportunities for blending with stronger wheats.

"We had better than expected yields. The growing season started out wet, but test weights held and did pretty good. Despite some mixed weather, we harvested some very high-quality hard red winter wheat with very little damage, which I attribute to the good work wheat breeders are doing. Overall, it was a very encouraging harvest, and I am confident our customers will be happy with this year's crop."

— Michael Peters, Oklahoma wheat farmer

GULF-EXPORTABLE HARVEST DATA

	2025 BY PROTEIN ¹			2025	2024	5-Year
	Low	Med	High	Avg	Avg	Avg
WHEAT GRADE DATA:						
Test Weight (lb/bu)	59.8	59.9	59.5	59.7	60.9	60.6
(kg/hl)	78.6	78.8	78.3	78.6	80.1	79.8
Damaged Kernels (%)	0.3	0.4	0.5	0.4	0.2	0.4
Foreign Material (%)	0.1	0.0	0.1	0.1	0.1	0.2
Shrunken & Broken (%)	0.6	0.6	0.6	0.6	0.7	1.0
Total Defects (%)	1.1	1.1	1.2	1.1	0.9	1.6
Grade	2 HRW	2 HRW	2 HRW	2 HRW	1 HRW	1 HRW
WHEAT NON-GRADE DATA:						
Dockage (%)	0.7	0.5	0.4	0.5	0.5	0.5
Moisture (%)	11.8	11.6	11.8	11.7	11.4	11.2
Protein (%), 12%/0% mb	11.0/12.5	11.9/13.6	13.1/14.9	12.0/13.6	12.1/13.8	12.3/14.0
Ash (%), 14%/0% mb	1.48/1.73	1.48/1.72	1.50/1.75	1.49/1.73	1.45/1.69	1.53/1.78
1000 Kernel Weight (g)	29.9	30.0	29.6	29.9	29.6	30.1
Kernel Size (%) lg/md/sm	70/30/00	68/31/00	69/31/00	69/31/00	66/33/01	62/36/02
Single Kernel: Hardness	59.1	60.1	60.3	59.8	61.0	62.6
Weight (mg)	30.1	30.7	31.0	30.6	30.1	30.6
Diameter (mm)	2.60	2.61	2.64	2.62	2.60	2.59
Sedimentation (cc)	42.6	48.1	56.1	48.7	50.4	50.8
Falling Number (sec)	367	377	378	374	371	358
DON (ppm)	0.0	0.1	0.0	0.0	0.1	0.2
FLOUR DATA:						
Lab Mill Extraction (%) ²	75.8	75.8	75.5	75.7	75.0	75.1
Color: L*	90.7	90.8	90.6	90.7	91.0	90.9
a*	-1.5	-1.4	-1.4	-1.4	-1.5	-1.5
b*	10.0	10.3	10.1	10.2	10.5	10.1
Protein (%), 14%/0% mb	9.9/11.5	10.8/12.6	11.8/13.7	10.8/12.6	11.2/12.7	11.2/12.7
Ash (%), 14%/0% mb	0.55/0.64	0.54/0.62	0.55/0.64	0.54/0.63	0.53/0.61	0.52/0.60
Wet Gluten (%), 14% mb	28.3	27.9	28.2	28.1	29.6	28.6
Falling Number (sec)	407	419	422	416	405	407
Amylograph Viscosity: 65g (BU)	615	724	749	696	845	778
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	73.0/2136	71.8/2287	75.8/2357	73.4/2259	70.0/2532	72.0/2451
Hot Paste Visc. (cP)/Final Visc. (cP)	1405/2531	1588/2811	1625/2826	1540/2725	1714/2959	1596/2797
Damaged Starch (%)	6.3	6.2	6.2	6.2	6.3	6.2
SRC: Water/50% Sucrose (%)	66/113	66/114	67/112	66/113	66/113	65/111
5% Lactic Acid/5% Na ₂ CO ₃ (%)	139/87	138/87	136/89	138/88	135/86	132/87
Gluten Performance Index (GPI)	0.69	0.69	0.68	0.69	0.68	0.67
DOUGH PROPERTIES:						
Farinograph: Peak Time (min)	3.7	5.0	5.8	4.8	5.7	5.3
Stability (min)	8.4	9.8	9.8	9.4	10.0	9.8
Absorption (%)	57.8	58.8	60.2	58.9	58.4	58.3
Alveograph: P (mm)	81	82	86	83	79	86
L (mm)	73	80	82	78	94	86
P/L Ratio	1.11	1.03	1.04	1.06	0.84	1.04
W (10 ⁻⁴ J)	201	223	239	221	239	245
Extensograph (45/135 min): Resistance ₅₀ (BU)	370/571	360/590	350/563	360/576	339/580	352/622
Resistance max (BU)	491/742	498/809	496/804	495/786	474/799	480/828
Extensibility (cm)	14.4/13.0	14.9/13.9	15.5/14.6	14.9/13.8	15.1/13.8	14.7/13.2
Area (cm ²)	94/119	97/137	100/144	97/133	93/134	92/132
R ₅₀ /E Ratio	2.6/4.5	2.4/4.3	2.3/3.9	2.4/4.3	2.3/4.3	2.4/4.9
Rmax/E Ratio	3.4/5.8	3.3/5.9	3.2/5.6	3.3/5.8	3.2/5.9	3.3/6.5
BAKING EVALUATION:						
Pan Bread: Bake Absorption (%)	60.3	62.0	63.7	62.0	62.1	63.2
Loaf Volume (cc)	758	800	854	803	872	894
Specific Volume (cc/g)	5.1	5.3	5.7	5.4	5.8	5.8
% OF SAMPLES:	14	15	46	75		

¹ Protein Range: Low, <11.5%; Med, 11.5 - 12.5%; High, >12.5%.

² The lab mill extraction calculation changed in 2023; values are not comparable to the 5-year average. See analysis methods.

PNW-EXPORTABLE HARVEST SURVEY

The 2025 PNW-exportable U.S. hard red winter (HRW) wheat crop was shaped by variable weather across production regions, resulting in an average crop with dependable functionality. Early-season moisture supported good stand establishment in Montana, Idaho and Oregon, while drought and cold conditions challenged Wyoming and South Dakota. As the season progressed, rainfall improved prospects in some areas, but heat and dryness in early summer accelerated maturity and reduced yields, especially in dryland fields. Protein levels trended higher than average in the PNW, while test weights were lower in several states. Disease pressure remained limited, with only localized issues reported. Overall, the 2025 PNW crop offers solid grade and kernel characteristics, with strong protein supporting reliable milling and baking performance – especially for tortillas and flatbreads.

PNW-EXPORTABLE CROP HIGHLIGHTS

GRADE: The overall average for the PNW-exportable crop is U.S. No. 1 HRW.

TEST WEIGHT: Values trended lower, likely due to hot and dry conditions until harvest, especially in Montana and PNW states.

WHEAT MOISTURE: Values were higher this year compared to the average, attributed to cooler temperatures at maturity.

WHEAT PROTEIN (12% MB): Values are higher than last year and similar to the five-year average.

KERNEL CHARACTERISTICS: PNW kernels were smaller and had lower thousand kernel weights, but increased softness contributed to better flour extraction rates than last year and the five-year average.

WHEAT FALLING NUMBER: Average is higher than last year and close to the five-year average, confirming a sound crop with minimal sprout damage.

WET GLUTEN: Aligns with the five-year average and tracks with protein content.

LABORATORY MILL: Extraction rates are better than last year and the five-year average, likely due to kernel softness. Commercial mills should see better

extractions. In 2023, flour extraction calculations shifted from a total product weight basis to a tempered wheat weight, therefore, they should not be compared to the five-year average.

SOLVENT RETENTION CAPACITY (SRC): Gluten performance index (GPI) values are above the 0.60 threshold which is desirable for bread making in hard wheats.

STARCH PASTING PROPERTIES: Amylograph and rapid visco analyzer (RVA) viscosities indicate the crop is suitable for noodle making, particularly clean bite noodles such as instant fried noodles. RVA peak viscosity is higher than last year, while amylograph is lower.

DOUGH PROPERTIES: The PNW crop exhibits strength, but increased extensibility in both extensograph and alveograph results, which may result in lower bread volumes.

PAN BREAD: Bake absorption is similar to the average, but the lower loaf volume compared to the five-year average is likely due to higher extensibility. This year's PNW HRW crop offers good opportunities for blending, especially for extensibility, and may perform well in flatbreads and tortillas.

“Hard red winter (HRW) acres planted were above normal thanks to good precipitation during fall planting. Growing season rainfall varied, but production was above average in many areas. Protein and test weights were also average to above average, so we’re calling it a good wheat year for us.”

— Lee Dahlman, Montana Wheat Farmer

PNW-EXPORTABLE HARVEST DATA

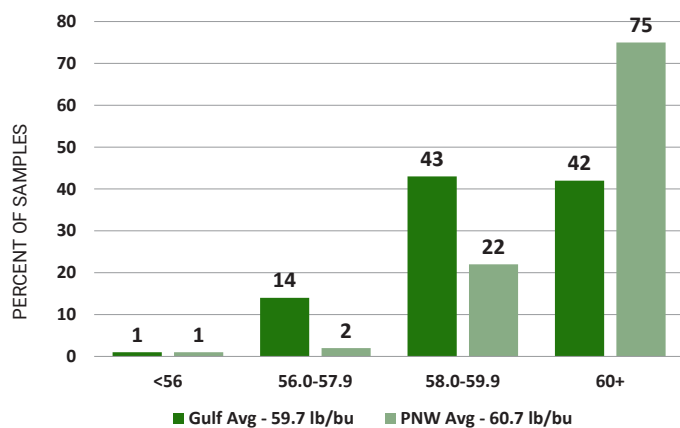
	2025 BY PROTEIN¹			2025	2024	5-Year
	Low	Med	High	Avg	Avg	Avg
WHEAT GRADE DATA:						
Test Weight (lb/bu)	61.3	60.5	60.5	60.7	62.3	61.8
(kg/hl)	80.6	79.6	79.6	79.9	81.9	81.3
Damaged Kernels (%)	0.0	0.1	0.1	0.1	0.0	0.2
Foreign Material (%)	0.0	0.0	0.0	0.0	0.0	0.1
Shrunken & Broken (%)	0.8	0.8	0.9	0.8	0.9	0.9
Total Defects (%)	0.9	0.9	1.0	0.9	1.0	1.2
Grade	1 HRW	1 HRW	1 HRW	1 HRW	1 HRW	1 HRW
WHEAT NON-GRADE DATA:						
Dockage (%)	0.4	0.4	0.5	0.5	0.4	0.5
Moisture (%)	10.5	11.4	11.1	11.0	9.5	10.3
Protein (%), 12%/0% mb	10.9/12.4	12.1/13.7	13.2/15.0	12.3/14.0	11.3/12.8	12.1/13.7
Ash (%), 14%/0% mb	1.40/1.63	1.40/1.62	1.45/1.69	1.42/1.66	1.43/1.66	1.52/1.76
1000 Kernel Weight (g)	32.9	30.8	29.5	30.8	31.1	31.9
Kernel Size (%) lg/md/sm	69/30/00	67/33/00	64/36/00	66/34/00	67/32/01	68/31/01
Single Kernel: Hardness	53.3	57.7	57.7	56.5	62.3	66.8
Weight (mg)	33.7	32.9	31.7	32.6	36.8	33.9
Diameter (mm)	2.66	2.62	2.59	2.62	2.77	2.69
Sedimentation (cc)	48.7	55.8	63.7	57.6	46.7	53.6
Falling Number (sec)	365	369	351	359	333	365
DON (ppm)	0.2	0.0	0.1	0.1	0.1	0.1
FLOUR DATA:						
Lab Mill Extraction (%)²	76.2	76.2	75.7	76.0	74.8	75.3
Color: L*	91.0	90.8	90.7	90.8	90.9	90.8
a*	-1.5	-1.4	-1.4	-1.4	-1.4	-1.5
b*	10.4	10.3	10.1	10.2	10.9	10.3
Protein (%), 14%/0% mb	10.1/11.7	11.1/12.9	12.2/14.2	11.3/13.2	10.6/12.1	11.3/12.8
Ash (%), 14%/0% mb	0.50/0.57	0.52/0.61	0.51/0.60	0.51/0.59	0.53/0.61	0.50/0.58
Wet Gluten (%), 14% mb	29.6	29.5	28.4	29.0	28.2	29.8
Falling Number (sec)	409	406	400	404	381	400
Amylograph Viscosity: 65g (BU)	812	794	775	790	743	783
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	77.6/2342	76.9/2322	74.5/2346	76.0/2338	83.5/2085	80.7/2387
Hot Paste Visc. (cP)/Final Visc. (cP)	1715/2960	1675/2939	1638/2899	1668/2926	1547/2751	1730/2989
Damaged Starch (%)	6.3	6.3	6.0	6.1	6.8	6.7
SRC: Water/50% Sucrose (%)	66/112	66/112	65/117	66/114	69/117	68/113
5% Lactic Acid/5% Na₂CO₃ (%)	133/88	132/84	145/87	138/87	140/96	138/94
Gluten Performance Index (GPI)	0.66	0.68	0.71	0.69	0.66	0.67
DOUGH PROPERTIES:						
Farinograph: Peak Time (min)	4.1	5.0	5.8	5.1	4.8	5.2
Stability (min)	9.5	9.1	9.8	9.5	7.5	8.7
Absorption (%)	57.2	58.3	59.5	58.6	59.0	59.8
Alveograph: P (mm)	84	81	79	81	90	98
L (mm)	80	89	101	92	74	76
P/L Ratio	1.05	0.92	0.78	0.88	1.22	1.32
W (10⁻⁴ J)	225	239	262	246	216	257
Extensograph (45/135 min): Resistance₅₀ (BU)	396/689	346/595	354/571	363/609	328/531	343/593
Resistance max (BU)	524/876	477/837	496/810	499/834	432/702	464/788
Extensibility (cm)	13.7/12.1	15.3/14.4	15.5/14.5	15.0/13.8	14.8/13.6	14.7/13.1
Area (cm²)	93/127	96/147	100/143	97/140	85/117	89/125
R₅₀/E Ratio	2.9/5.9	2.3/4.2	2.3/4.0	2.5/4.6	2.3/4.1	2.4/4.7
Rmax/E Ratio	3.9/7.4	3.1/5.9	3.2/5.7	3.4/6.2	3.0/5.4	3.2/6.2
BAKING EVALUATION:						
Pan Bread: Bake Absorption (%)	60.2	62.2	64.1	62.5	61.2	63.8
Loaf Volume (cc)	744	775	816	786	804	869
Specific Volume (cc/g)	5.0	5.1	5.4	5.2	5.4	5.4
% OF SAMPLES:	10	8	7	25		

¹ Protein Range: Low, <11.5%; Med, 11.5 - 12.5%; High, >12.5%.

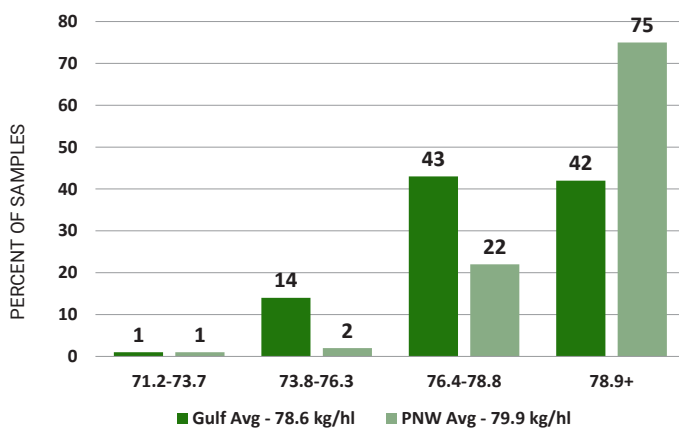
² The lab mill extraction calculation changed in 2023; values are not comparable to the 5-year average. See analysis methods.

DISTRIBUTIONS

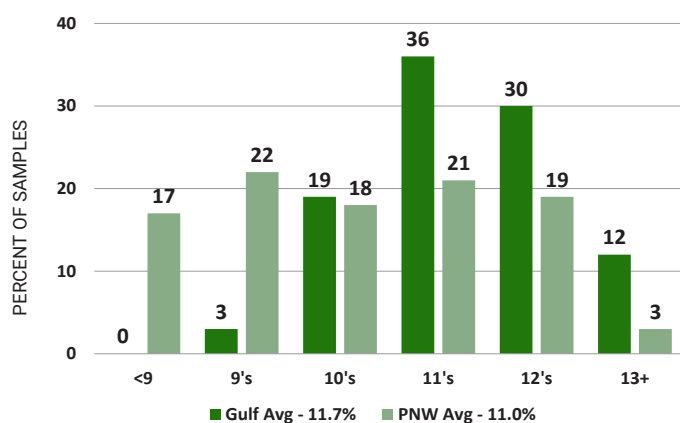
TEST WEIGHT | Pounds/Bushel



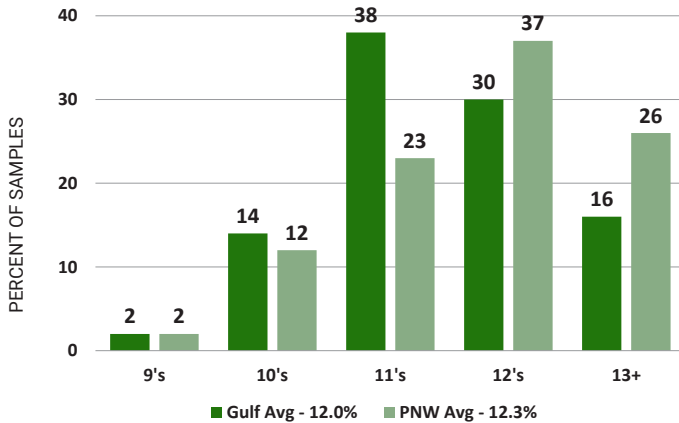
TEST WEIGHT | Kilograms/Hectoliter



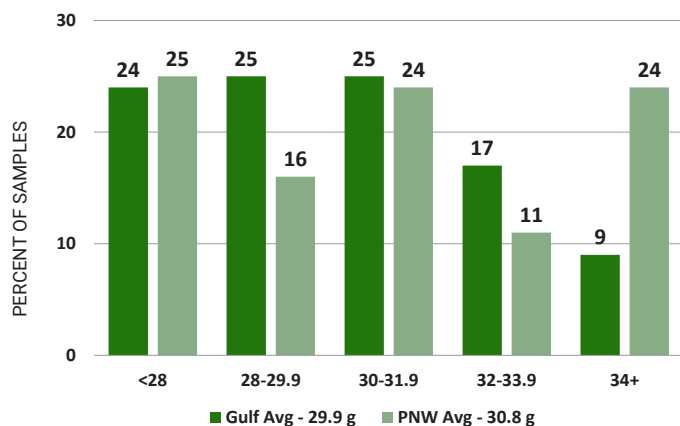
WHEAT MOISTURE | Percent



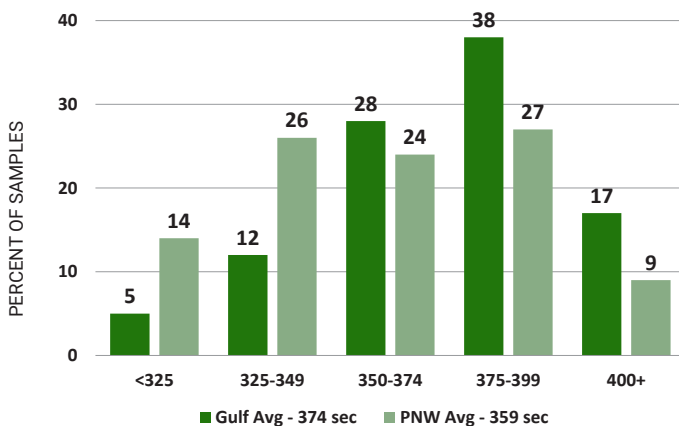
PROTEIN (12% MB) | Percent



THOUSAND KERNEL WEIGHT | Grams



FALLING NUMBER | Seconds



HARD RED SPRING



Grown primarily in the North Central region and shipped via the Pacific, Gulf and Great Lakes ports, hard red spring (HRS) wheat is the second largest class of U.S. wheat. It has high protein of 12.0 to 15.0% (12% mb), hard endosperm, red bran, strong gluten and high water absorption.

For the miller, the reward for incorporating HRS into the grist includes a higher-than-average flour yield from its harder, more compact endosperm. This creates excellent granulation through the break system, providing an abundance of stock to the purifiers producing the maximum amount of low ash, bright color flour.

For the baker, HRS delivers strong dough characteristics used alone or as part of a blend to improve the overall performance of the desired dough. In markets where consumers are demanding a “clean label,” HRS flour blended with HRW or other wheat flour can create better water absorption and loaf volume while reducing or eliminating the use of chemical improvers. And many pasta makers around the world know that when traditional durum wheat semolina is not needed, HRS wheat flour or semolina is a very acceptable alternative.



APPLICATIONS

The aristocrat of wheat when it comes to “designer” wheat foods like bagels, artisan hearth breads, pizza crust and other strong dough applications, HRS also has excellent milling and baking characteristics and is a valued improver in flour blends.

Applications include:

- Bagels
- Buns
- Croissants
- Frozen doughs
- Hard rolls
- Ramen noodles
- Pan breads
- Pizza crust
- Specialty/artisan breads
- Yeast breads and rolls
- Wide variety of other baked goods
- Blending improver
- Flours (general-purpose, bread)



SCAN THIS
QR CODE
to access the crop
quality testing
methods.

SURVEY METHODOLOGY

SAMPLE COLLECTION AND ANALYSIS

The HRS Wheat Quality Lab Department of Plant Sciences, North Dakota State University (NDSU) in Fargo, North Dakota, collected samples and conducted quality analyses.

SAMPLE TESTING

Official grade and non-grade factors were determined on 60% of samples. Functionality tests were conducted on 6 composite samples categorized by export region and protein ranges of <13.5%, 13.5 to 14.5% and >14.5%. Production-weighted results are presented as Overall, Gulf/Great Lakes-exportable and Pacific Northwest (PNW)-exportable averages based on composite samples. The methods are described in the Analysis Methods booklet.

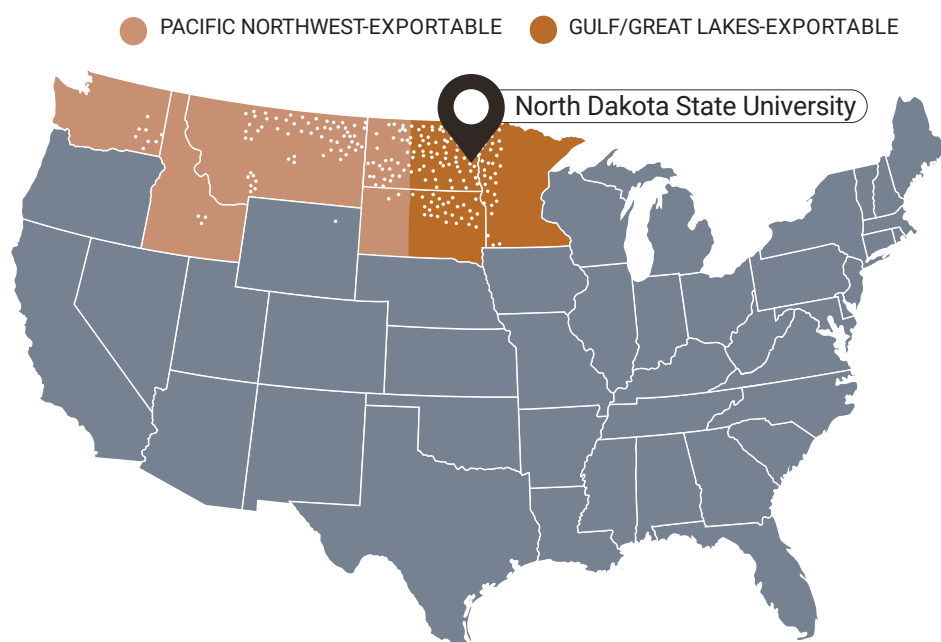
744

SAMPLES OF
HARD RED SPRING

collected from fields,
on-farm bins sites or
elevators, and separated by
export region.

6
STATES SURVEYED

100%
OF TOTAL HRS PRODUCTION
REPRESENTED



SUBCLASSES

Under the Official United States Standards for Grain, hard red spring wheat is divided into the three subclasses based on vitreous kernel content:

DARK NORTHERN SPRING (DNS)

- Contains at least 75% or more dark, hard, vitreous kernels.

NORTHERN SPRING (NS)

- Contains between 25-74% dark, hard, vitreous kernels.

RED SPRING (RS)

- Contains less than 25% dark, hard, vitreous kernels.



HARD RED SPRING PRODUCTION

FOR THE MAJOR PRODUCING STATES (MMT)

	2025	2024	2023	2022	2021
Idaho	0.4	0.4	0.3	0.3	0.3
Minnesota	2.1	2.2	2.1	2.0	1.5
Montana	1.5	1.7	2.1	1.7	1.0
North Dakota	7.5	8.4	7.2	7.2	4.8
South Dakota	0.9	0.8	0.8	0.9	0.5
Washington	0.1	0.1	0.1	0.1	0.1
Six-State Total	12.5	13.7	12.7	12.2	8.1
PNW-Exportable	5.7	6.8	6.1	5.5	3.9
Gulf/Great Lakes-Exportable	6.7	6.9	6.6	6.7	4.2
Total HRS Production	12.5	13.7	12.7	12.2	8.1

Based on USDA crop estimates as of September 30, 2025.



WEATHER AND HARVEST

Spring wheat **PLANTING** began in early April, ahead of average, with limited snowfall and warmer temperatures. Moisture conditions at planting were mostly drier than normal. Scattered precipitation fell throughout the planting period, replenishing soil moisture. Planting in some eastern areas was delayed due to overly wet conditions.

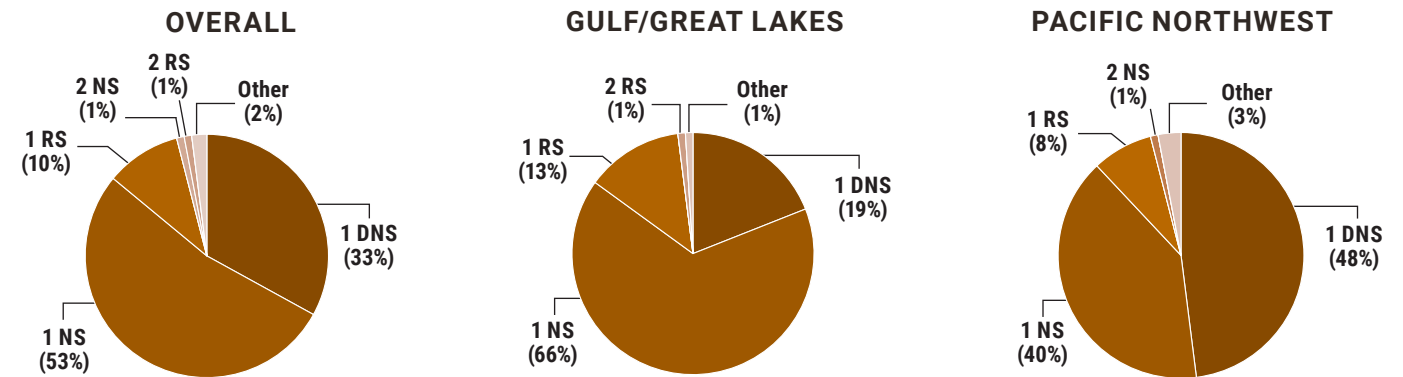
The crop **EMERGED** under variable conditions, with hot, dry and windy periods alternating with cold, wet and severe storms, resulting in variable emergence. As the season progressed, weather stabilized and the crop advanced near average pace, with western areas

drier and eastern regions receiving more moisture. Overall yields were good, with record highs in some areas, though dry regions saw below-average yields.

HARVEST began in late July and was initially slow due to moisture. Conditions improved mid-harvest, and most harvesting was finished by early September. The final portion of harvest was delayed once again by wet weather.

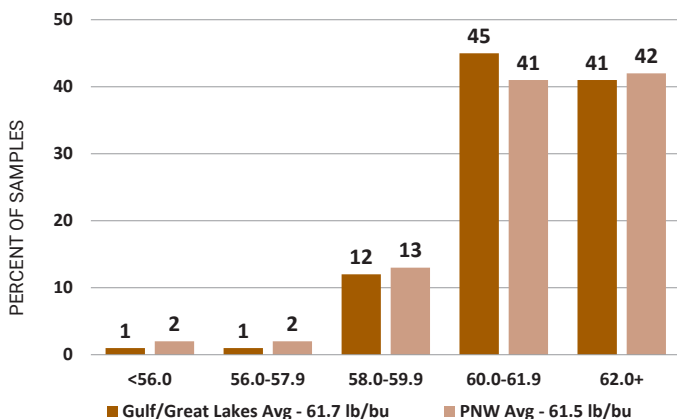
PRODUCTION of the 2025 U.S. HRS is estimated at 12.5 million metric tons (458 million bushels), down 9% from last year due to lower planted acreage.

GRADE DISTRIBUTION

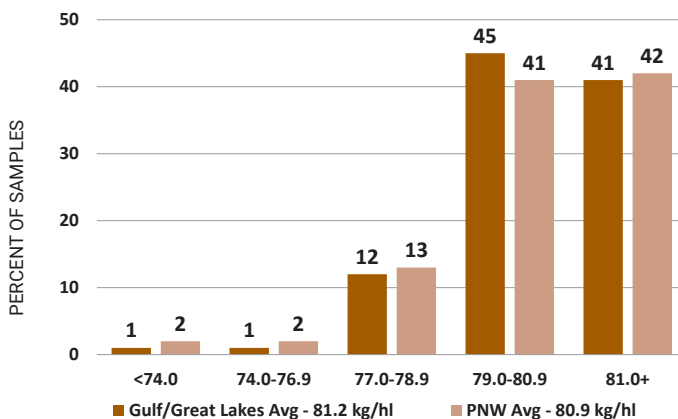


DISTRIBUTIONS

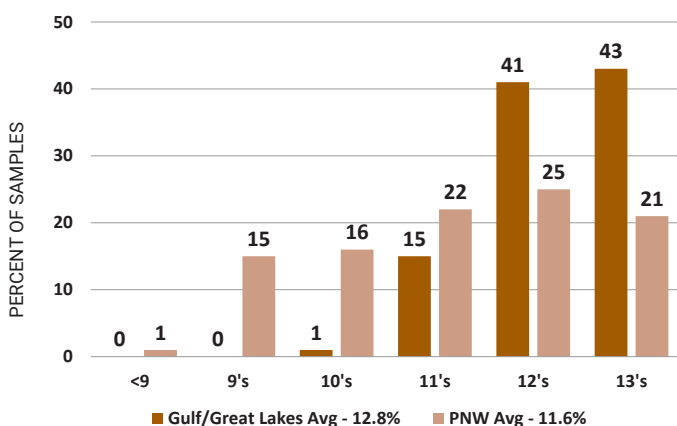
TEST WEIGHT | Pounds/Bushel



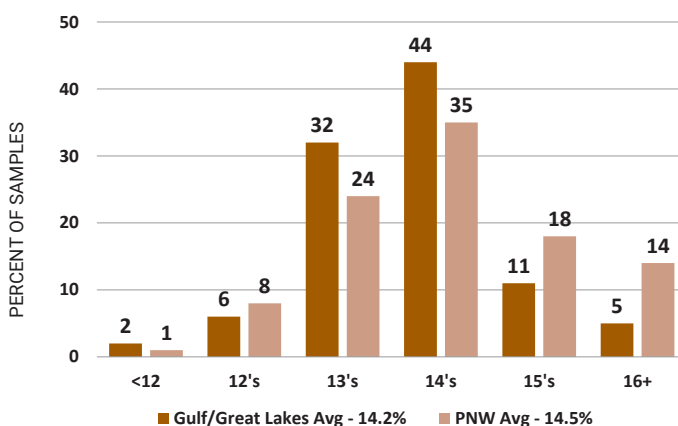
TEST WEIGHT | Kilograms/Hectoliter



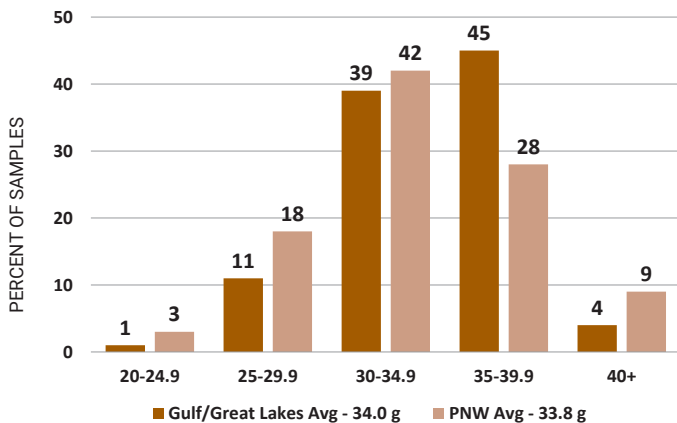
WHEAT MOISTURE | Percent



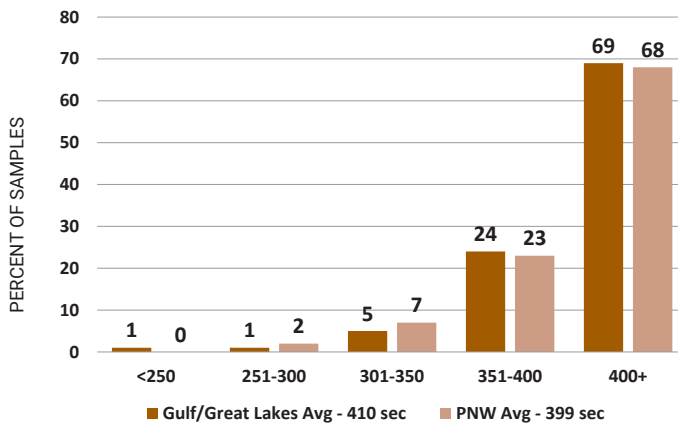
PROTEIN (12% MB) | Percent



THOUSAND KERNEL WEIGHT | Grams



FALLING NUMBER | Seconds



OVERALL HARVEST DATA

	2025 BY PROTEIN ¹			2025	2024	5-Year
	Low	Med	High	Avg	Avg	Avg
WHEAT GRADE DATA:						
Test Weight (lb/bu)	61.9	61.9	61.2	61.6	61.1	61.5
(kg/hl)	81.4	81.3	80.5	81.0	80.4	80.9
Damaged Kernels (%)	0.3	0.4	0.3	0.3	0.7	0.3
Foreign Material (%)	0.0	0.0	0.0	0.0	0.0	0.0
Shrunken & Broken (%)	0.6	0.5	0.5	0.5	0.8	0.9
Total Defects (%)	0.9	0.9	0.8	0.9	1.5	1.2
Vitreous kernels (%)	47	62	69	62	67	69
Grade	1 NS	1 NS	1 NS	1 NS	1 NS	1 NS
WHEAT NON-GRADE DATA:						
Dockage (%)	0.5	0.5	0.8	0.6	0.6	0.6
Moisture (%)	12.3	12.3	12.0	12.2	12.2	11.9
Protein (%), 12%/0% mb	12.7/14.5	14.2/16.1	15.4/17.6	14.4/16.3	14.1/16.0	14.5/16.4
Ash (%), 14%/0% mb	1.55/1.80	1.52/1.77	1.53/1.78	1.53/1.78	1.54/1.80	1.54/1.79
1000 Kernel Weight (g)	32.6	34.7	33.7	33.9	32.0	31.5
Kernel Size (%) lg/md/sm	52/46/02	59/40/01	50/47/03	54/44/02	47/50/03	44/53/03
Sedimentation (cc)	56.7	65.6	68.8	65.0	66.0	65.8
Falling Number (sec)	415	408	394	404	414	386
DON (ppm)	0.3	0.3	0.2	0.3	0.8	0.2
FLOUR DATA:						
Lab Mill Extraction (%)	68.1	68.4	67.6	68.0	67.8	66.8
Color: L*	89.7	89.3	89.1	89.3	90.1	90.3
a*	-1.9	-1.8	-1.7	-1.8	-2.1	-1.4
b*	9.4	9.3	9.2	9.3	9.7	9.6
Protein (%), 14%/0% mb	11.8/13.7	13.0/15.1	14.5/16.8	13.3/15.5	12.6/14.7	13.2/15.3
Ash (%), 14%/0% mb	0.54/0.62	0.52/0.60	0.53/0.62	0.53/0.61	0.47/0.55	0.49/0.57
Wet Gluten (%), 14% mb	29.2	33.6	37.9	34.3	33.5	34.3
Falling Number (sec)	413	411	396	406	394	393
Amylograph Viscosity: 65g (BU)	564	582	566	573	609	662
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	87.2/2230	87.2/2214	87.4/2164	87.3/2199	87.8/2262	81.5/2178
Hot Paste Visc. (cP)/Final Visc. (cP)	1494/2375	1465/2379	1441/2291	1462/2346	1521/2418	1683/2521
Damaged Starch (%)	7.5	7.2	6.7	7.1	6.6	6.6
SRC: Water/50% Sucrose (%)	72/117	72/119	73/122	72/120	68/113	71/118
5% Lactic Acid/5% Na ₂ CO ₃ (%)	137/103	146/102	155/102	147/102	154/93	150/99
Gluten Performance Index (GPI)	0.62	0.66	0.69	0.66	0.75	0.69
DOUGH PROPERTIES:						
Farinograph: Peak Time (min)	6.0	7.2	8.5	7.4	7.2	8.0
Stability (min)	11.3	11.7	13.1	12.1	13.0	14.0
Absorption (%)	61.9	63.6	65.1	63.8	61.8	62.3
Alveograph: P (mm)	96	95	92	94	92	90
L (mm)	112	127	145	131	124	131
P/L Ratio	0.86	0.75	0.64	0.72	0.74	0.68
W (10 ⁻⁴ J)	363	409	444	413	399	399
Extensograph (45/135 min): Resistance ₅₀ (BU)	321/424	303/457	325/553	315/486	—	—
Resistance max (BU)	522/712	526/769	555/891	536/802	502/863	561/997
Extensibility (cm)	17.2/16.4	17.6/16.3	18.4/17.5	17.8/16.8	17.6/15.2	16.3/13.6
Area (cm ²)	115/142	116/156	131/186	121/164	108/154	117/167
R ₅₀ /E Ratio	18.7/26.5	17.3/28.5	17.8/32.1	17.7/29.4	—	—
Rmax/E Ratio	30.4/44.5	30.0/47.6	30.3/51.5	30.2/48.4	—	—
BAKING EVALUATION:						
Pan Bread: Bake Absorption (%)	63.5	65.1	67.3	65.6	63.8	66.7
Loaf Volume (cc)	865	936	1056	966	971	963
Specific Volume (cc/g)	6.8	7.3	8.2	7.5	7.9	—
SPAGHETTI EVALUATION:						
Color: L*	57.3	56.0	55.4	56.0	59.0	58.4
a*	5.3	5.4	5.4	5.4	3.8	4.7
b*	26.2	25.9	25.6	25.9	28.5	27.8
Cooked Weight (g)	32.1	31.6	31.8	31.8	29.4	31.1
Cooking Loss (%)	6.6	6.0	6.2	6.2	5.1	6.5
Cooked Firmness (g*cm)	6.9	7.6	7.4	7.4	5.9	4.0
% OF SAMPLES:	20	44	36	100		

¹Protein Range: Low, <13.5%; Med, 13.5 - 14.5%; High, >14.5%.

GULF/GREAT LAKES-EXPORTABLE HARVEST SURVEY

The 2025 U.S. hard red spring (HRS) wheat crop grown in the eastern (Gulf/Great Lakes-exportable) region has high grades, well-balanced protein levels and functional properties expected of HRS wheat. Although vitreous kernel levels are somewhat lower this year, and isolated pockets experienced variability due to harvest conditions, the crop maintains solid performance for milling and baking. Dough properties show moderate strength and good extensibility, with baking results that are reliable and consistent with historical trends. Buyers can purchase with confidence, but diligent contract specifications remain the best way to secure the desired quality.

GULF/GREAT LAKES-EXPORTABLE CROP HIGHLIGHTS

GRADE: The average grade of the 2025 Gulf/Great Lakes-exportable crop is U.S. No. 1 Northern Spring (NS), with 98% of samples grading U.S. No. 1.

TEST WEIGHT: Averages are similar to last year and the five-year average.

DAMAGED KERNELS: Levels are much lower than last year and similar to the five-year average.

SHRUNKEN AND BROKEN: Levels are similar to last year and lower than the five-year average.

VITREOUS KERNEL (DHV): Levels are slightly lower than last year and the five-year average, reflecting the impact of harvest-time moisture.

WHEAT PROTEIN: Levels are higher and more balanced across the region compared to last year, though slightly below the five-year average.

DON: Disease pressures were less widespread than last year, resulting in lower DON levels.

1000 KERNEL WEIGHT (TKW): Values are similar to last year and higher than the five-year average.

WHEAT FALLING NUMBER: Values are notably higher than last year; 93% of samples exceed 350 seconds. Untimely rains did impact values in isolated areas.

BUHLER LABORATORY MILL: Flour extraction is higher than last year and the five-year average; flour ash and damaged starch are also trending higher. Please note that results were obtained using a new Buhler Laboratory Mill, which should be considered when directly comparing to 2024 figures and historical averages. Calculations are based on tempered wheat.

AMYLOGRAPH: Average is notably higher than last year but below the five-year average.

DOUGH PROPERTIES: Physical dough tests indicate a crop with moderate strength and good extensibility.

FARINOGRAPH: Peak time and stability are both similar to last year, with absorption levels trending higher.

ALVEOGRAPH: Results show dough with good resistance and extensibility, with L and W values higher than last year and consistent with the five-year average.

EXTENSOGRAPH: Data indicate steady resistance and improved extensibility at longer rest times, with area values in line with historical trends.

BREAD: Bake absorption is higher than last year, while loaf volume and specific volume are slightly lower, but remain within the expected range for high-quality bread.

“The wheat we harvested early in the season had much-improved yields compared to last year, so we were very pleased. The quality was above average, too, with good color and protein. Timing of rains made yields of the later wheat about even with last year. Other farmers in Minnesota, especially in the northern regions, had tremendous harvests, some with near-record yields.”

— Scott Lee, Minnesota wheat farmer

GULF/GREAT LAKES-EXPORTABLE HARVEST DATA

	2025 BY PROTEIN ¹			2025	2024	5-Year
	Low	Med	High	Avg	Avg	Avg
WHEAT GRADE DATA:						
Test Weight (lb/bu)	61.7	61.9	61.4	61.7	61.7	61.9
(kg/hl)	81.1	81.4	80.7	81.2	81.1	81.4
Damaged Kernels (%)	0.2	0.4	0.4	0.4	1.2	0.4
Foreign Material (%)	0.0	0.0	0.0	0.0	0.0	0.0
Shrunken & Broken (%)	0.5	0.4	0.4	0.4	0.4	0.6
Total Defects (%)	0.7	0.8	0.8	1.6	1.6	1.0
Vitreous kernels (%)	41	60	52	54	55	59
Grade	1 NS	1 NS	1 NS	1 NS	1 NS	1 NS
WHEAT NON-GRADE DATA:						
Dockage (%)	0.3	0.5	0.4	0.4	0.5	0.5
Moisture (%)	12.8	12.8	12.8	12.8	13.0	12.7
Protein (%), 12%/0% mb	12.7/14.4	14.2/16.1	15.2/17.3	14.2/16.1	13.7/15.5	14.3/16.2
Ash (%), 14%/0% mb	1.57/1.83	1.53/1.78	1.57/1.83	1.55/1.80	1.55/1.80	1.55/1.80
1000 Kernel Weight (g)	31.9	35.1	33.6	34.0	34.1	33.2
Kernel Size (%) lg/md/sm	53/45/02	63/36/01	57/41/02	59/39/01	62/37/01	55/43/02
Sedimentation (cc)	54.0	64.0	67.0	62.8	64.1	65.1
Falling Number (sec)	412	411	405	410	366	377
DON (ppm)	0.3	0.4	0.3	0.3	1.2	0.3
FLOUR DATA:						
Lab Mill Extraction (%)	68.6	68.9	68.2	68.6	68.0	67.4
Color: L*	89.5	89.3	89.1	89.3	90.2	90.3
a*	-1.9	-1.8	-1.7	-1.8	-2.0	-1.3
b*	9.6	9.4	9.3	9.4	9.5	9.3
Protein (%), 14%/0% mb	11.8/13.7	13.0/15.1	14.1/16.4	13.1/15.2	12.3/14.3	13.0/15.1
Ash (%), 14%/0% mb	0.55/0.64	0.52/0.60	0.56/0.65	0.54/0.62	0.47/0.55	0.49/0.57
Wet Gluten (%), 14% mb	29.1	33.9	35.8	33.4	32.6	33.8
Falling Number (sec)	404	409	395	404	374	382
Amylograph Viscosity: 65g (BU)	511	548	534	536	481	600
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	87.2/2139	87.1/2201	88.0/2125	87.4/2167	87.6/2054	81.4/2118
Hot Paste Visc. (cP)/Final Visc. (cP)	1392/2264	1486/2416	1424/2309	1449/2355	1299/2147	1574/2417
Damaged Starch (%)	7.6	7.2	6.8	7.2	6.8	6.3
SRC: Water/50% Sucrose (%)	71/115	71/117	72/118	71/117	67/110	70/115
5% Lactic Acid/5% Na ₂ CO ₃ (%)	133/100	143/100	146/98	142/99	151/91	148/97
Gluten Performance Index (GPI)	0.62	0.66	0.67	0.65	0.75	0.70
DOUGH PROPERTIES:						
Farinograph: Peak Time (min)	6.1	7.1	7.8	7.1	6.3	7.5
Stability (min)	10.7	10.5	12.2	11.0	11.2	14.0
Absorption (%)	61.4	63.3	63.8	63.0	61.3	61.8
Alveograph: P (mm)	88	94	90	92	90	89
L (mm)	120	120	141	126	119	130
P/L Ratio	0.73	0.78	0.64	0.73	0.76	0.69
W (10 ⁻⁴ J)	351	389	428	392	373	396
Extensograph (45/135 min): Resistance ₅₀ (BU)	293/345	292/390	349/478	308/405	—	—
Resistance max (BU)	483/595	523/710	560/809	525/713	468/766	566/958
Extensibility (cm)	17.3/17.6	16.7/17.3	17.0/19.2	16.9/17.9	17.9/15.3	16.8/14.2
Area (cm ²)	107/130	107/153	123/195	111/160	102/138	121/167
R ₅₀ /E Ratio	16.9/19.6	17.5/22.5	20.5/24.9	18.2/22.6	—	—
Rmax/E Ratio	27.9/33.8	31.3/41.0	32.9/42.1	31.0/39.8	—	—
BAKING EVALUATION:						
Pan Bread: Bake Absorption (%)	62.5	64.1	65.9	64.3	62.7	66.0
Loaf Volume (cc)	865	938	1030	948	978	965
Specific Volume (cc/g)	6.8	7.4	8.1	7.4	7.9	—
SPAGHETTI EVALUATION:						
Color: L*	57.2	55.5	54.4	55.6	58.8	58.2
a*	5.5	5.5	5.7	5.5	3.9	4.8
b*	26.0	25.5	25.0	25.4	27.4	27.0
Cooked Weight (g)	32.3	31.5	31.1	31.5	29.5	31.0
Cooking Loss (%)	6.7	5.7	5.6	5.9	5.1	6.5
Cooked Firmness (g*cm)	6.8	8.0	7.9	7.7	5.8	4.2
% OF SAMPLES:	11	27	14	51		

¹Protein Range: Low, <13.5%; Med, 13.5 - 14.5%; High, >14.5%.

PACIFIC NORTHWEST-EXPORTABLE HARVEST SURVEY

The 2025 U.S. hard red spring (HRS) wheat crop grown in the western (PNW-exportable) region has consistently high grades, balanced kernel protein levels and functional properties typical of the HRS class. While some variability exists due to untimely harvest rains, and vitreous kernel levels are lower, the crop continues to offer reliable milling and baking performance. Overall, buyers will find good value in the 2025 crop, with dependable blending opportunities and suitability for a range of high-end baked products. Buyers can purchase with confidence, but diligent contract specifications remain the best way to secure the desired quality.

PNW-EXPORTABLE CROP HIGHLIGHTS

GRADE: The average grade of the 2025 PNW-exportable crop is U.S. No. 1 Northern Spring (NS), with 96% of samples grading U.S. No. 1.

TEST WEIGHT: Averages improved over last year and the five-year average.

DAMAGED KERNELS: Levels remain low and consistent with last year.

SHRUNKEN AND BROKEN: Values are slightly reduced compared to the previous crop.

VITREOUS KERNEL (DHV): Levels are lower than last year and the five-year average, mainly due to rain and humidity during harvest.

WHEAT PROTEIN: Protein levels are similar to the average and are balanced across the growing region.

DON: Disease pressure was less widespread than last year, resulting in lower average DON levels.

1000 KERNEL WEIGHT (TKW): Kernel size is noticeably larger, especially in western production areas where heat stress was less intensive compared to the 2024 growing season.

WHEAT FALLING NUMBER: Values are lower than last year and similar to the five-year average; 91% of samples exceed 350 seconds. Untimely rains did impact values in isolated areas.

BUHLER LABORATORY MILL: Flour extraction is consistent with last year and above the five-year average; flour ash and starch damage are higher. Please note that results were obtained using a new Buhler Laboratory Mill, which should be considered when directly comparing to 2024 figures and historical averages. Calculations are based on tempered wheat.

AMYLOGRAPH: Average is lower than last year and the five-year average, reflecting sound kernels. Notably, the high-protein segment showed lower values than the historical baseline, indicating reduced flour viscosity.

DOUGH PROPERTIES: Physical dough tests indicate a crop with moderately lower strength and notably higher absorption compared to last year.

FARINOGRAPH: Peak time is similar to last year, while stability is lower, suggesting the dough may be less tolerant to extended mixing. Absorption values are higher than last year.

ALVEOGRAPH: Results show dough that is both more extensible and stronger, with higher L and W values compared to last year and the five-year average.

EXTENSOGRAPH: Data reveal higher resistance and extensibility at both short and extended rest times, and larger area values.

BREAD: Bake absorption is higher than last year, and loaf volume is strong, consistent with historical performance, though specific volume is slightly lower than last year.

“Despite some dry areas, we had another year of strong yields – just shy of last year’s record. Disease pressure was low, and harvest was sometimes challenging, but we produced a high-quality crop with near-average protein, strong test weights and high grades. Like every year, we work hard to deliver quality spring wheat for our customers.”

— Don Hardy, North Dakota wheat farmer

PACIFIC NORTHWEST-EXPORTABLE HARVEST DATA

	2025 BY PROTEIN ¹			2025	2024	5-Year
	Low	Med	High	Avg	Avg	Avg
WHEAT GRADE DATA:						
Test Weight (lb/bu)	62.1	61.8	61.1	61.5	60.7	61.1
(kg/hl)	81.7	81.3	80.4	80.9	79.8	80.4
Damaged Kernels (%)	0.4	0.4	0.2	0.3	0.3	0.2
Foreign Material (%)	0.0	0.0	0.0	0.0	0.0	0.0
Shrunken & Broken (%)	0.8	0.7	0.6	0.7	1.2	1.3
Total Defects (%)	1.2	1.1	0.8	1.0	1.5	1.5
Vitreous kernels (%)	55	66	79	70	78	79
Grade	1 NS	1 NS	1 DNS	1 NS	1 DNS	1DNS
WHEAT NON-GRADE DATA:						
Dockage (%)	0.6	0.6	1.1	0.8	0.7	0.7
Moisture (%)	11.8	11.6	11.5	11.6	11.6	11.2
Protein (%), 12%/0% mb	12.8/14.5	14.1/16.0	15.6/17.7	14.5/16.5	14.4/16.4	14.6/16.6
Ash (%), 14%/0% mb	1.52/1.77	1.51/1.76	1.51/1.76	1.51/1.76	1.54/1.79	1.53/1.78
1000 Kernel Weight (g)	33.4	34.0	33.7	33.8	30.0	29.9
Kernel Size (%) Ig/md/sm	51/47/02	53/45/02	46/51/03	49/48/02	34/61/05	33/62/05
Sedimentation (cc)	60.0	68.0	70.0	67.5	67.6	66.4
Falling Number (sec)	419	403	387	399	458	394
DON (ppm)	0.2	0.2	0.1	0.2	0.4	0.1
FLOUR DATA:						
Lab Mill Extraction (%)	67.6	67.6	67.2	67.4	67.6	66.3
Color: L*	89.9	89.4	89.1	89.4	90.1	90.4
a*	-1.9	-1.9	-1.7	-1.8	-2.1	-1.4
b*	9.2	9.2	9.2	9.2	9.8	9.8
Protein (%), 14%/0% mb	11.8/13.7	13.0/15.1	14.7/17.1	13.6/15.8	12.9/15.0	13.3/15.5
Ash (%), 14%/0% mb	0.52/0.60	0.52/0.60	0.51/0.59	0.52/0.60	0.47/0.55	0.49/0.57
Wet Gluten (%), 14% mb	29.3	33.2	39.3	35.3	34.2	34.8
Falling Number (sec)	423	413	397	408	412	403
Amylograph Viscosity: 65g (BU)	627	632	587	611	725	721
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	87.3/2339	87.3/2233	87.1/2189	87.2/2232	88.0/2448	78.8/2161
Hot Paste Visc. (cP)/Final Visc. (cP)	1616/2507	1434/2323	1452/2279	1475/2336	1721/2662	1712/2543
Damaged Starch (%)	7.3	7.1	6.7	7.0	6.4	6.3
SRC: Water/50% Sucrose (%)	73/120	73/123	74/124	73/123	69/116	71/121
5% Lactic Acid/5% Na ₂ CO ₃ (%)	142/106	151/106	160/104	153/105	157/95	151/101
Gluten Performance Index (GPI)	0.63	0.66	0.70	0.67	0.74	0.68
DOUGH PROPERTIES:						
Farinograph: Peak Time (min)	5.8	7.3	8.9	7.8	8.0	8.5
Stability (min)	12.0	13.4	13.7	13.3	14.7	14.0
Absorption (%)	62.6	64.1	65.9	64.7	62.3	62.8
Alveograph: P (mm)	105	97	94	97	93	90
L (mm)	102	138	148	136	129	132
P/L Ratio	1.03	0.70	0.64	0.71	0.72	0.69
W (10 ⁻⁴ J)	377	438	454	434	422	401
Extensograph (45/135 min): Resistance ₅₀ (BU)	355/518	320/558	310/601	322/570	—	—
Resistance max (BU)	568/852	531/857	552/943	547/895	532/950	554/1034
Extensibility (cm)	17.0/14.9	18.9/14.9	19.3/16.4	18.7/15.6	17.5/15.1	15.8/13.0
Area (cm ²)	124/156	130/160	136/181	132/169	114/168	113/166
R ₅₀ /E Ratio	20.9/34.8	16.9/37.4	16.1/36.6	17.3/36.6	—	—
Rmax/E Ratio	33.4/57.2	28.1/57.5	28.6/57.5	29.3/57.4	—	—
BAKING EVALUATION:						
Pan Bread: Bake Absorption (%)	64.6	66.5	68.2	66.9	64.9	67.4
Loaf Volume (cc)	865	933	1073	985	965	962
Specific Volume (cc/g)	6.8	7.2	8.3	7.6	7.9	—
SPAGHETTI EVALUATION:						
Color: L*	57.4	56.7	56.0	56.5	59.1	58.6
a*	5.1	5.1	5.3	5.2	3.7	4.6
b*	26.5	26.6	26.0	26.3	29.6	28.4
Cooked Weight (g)	31.9	31.9	32.3	32.1	29.2	31.0
Cooking Loss (%)	6.5	6.4	6.5	6.5	5.2	6.4
Cooked Firmness (g*cm)	7.0	7.0	7.0	7.0	5.9	4.1
% OF SAMPLES:	9	18	22	49		

¹Protein Range: Low, <13.5%; Med, 13.5 - 14.5%; High, >14.5%.

SOFT WHITE



Grown primarily in the Pacific Northwest (PNW) and shipped via Pacific ports, approximately 80% of soft white (SW) wheat is exported from the United States. It typically has a low protein of 8.5 to 10.5% (12% mb), low moisture and weak gluten. SW includes winter and spring varieties that provide a wide range of protein and functionality within the class.

For the miller, SW delivers excellent results. Arriving at the mill with an average moisture of less than 10%, an average test weight of more than 79 hectoliter mass and a low quantity of screenings, SW wheat provides the millers every opportunity for high flour extraction. The lower wheat moisture provides numerous financial and processing opportunities to the miller.

For the baker, the finer particle size may increase the rate of water absorption, decrease mix time and improve production efficiencies. With the fine particle size and starch characteristics, SW flour creates a unique and tender texture for many end-products.



APPLICATIONS

From specialty products such as sponge cakes to blending with HRS for improving bread color, U.S. SW wheat flour has the versatility to improve the quality of a wide variety of products.

Applications include:

- Biscuits
- Sugar snap cookies
- Cakes
- Muffins
- Pastries
- Wafers/Ice cream cones
- Other confectionary products
- Cereals and cereal bars
- Crackers
- Snack foods
- Fried Spring Rolls
- Steamed bread, Chinese southern-type
- Tempura batter
- Quick breads
- Flat Breads
- Flours (cake, pastry, self-rising)



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to access the crop
quality testing
methods.

SURVEY METHODOLOGY

SAMPLE COLLECTION AND ANALYSIS

The Wheat Marketing Center (WMC) in Portland, Oregon, conducted wheat and flour quality testing and analyses. Federal Grain Inspection Service (FGIS) graded and tested wheat protein content.

SAMPLE TESTING

Official grade, protein, moisture, 1000 kernel weight and falling number tests were determined on each sample. The remaining tests were conducted on 3 composite samples categorized by protein ranges of <9.0%, 9.0 to 10.5%, >10.5% and one composite of all White Club (Club) samples. The methods are described in the Analysis Methods booklet.

411

SAMPLES OF
SOFT WHITE

38

SAMPLES OF
WHITE CLUB

collected from state, private grain
inspection agencies and commercial
wheat handling operations.

3

STATES SURVEYED

95%

OF TOTAL SW PRODUCTION
REPRESENTED



SOFT WHITE PRODUCTION

FOR THE MAJOR PRODUCING STATES (MMT)

	2025		2024		2023		2022		2021	
	SW	CLUB	SW	CLUB	SW	CLUB	SW	CLUB	SW	CLUB
Washington	3.4	0.1	3.4	0.1	2.6	0.1	3.3	0.3	1.9	0.1
Oregon	1.3	0.0	1.3	0.0	1.0	0.0	1.3	0.0	0.8	0.0
Idaho	1.8	0.0	1.7	0.0	1.5	0.0	1.7	0.0	1.4	0.0
Three-State Total	6.5	0.1	6.4	0.1	5.1	0.2	6.3	0.3	4.1	0.2
Three-State SW Total	6.6		6.5		5.3		6.6		4.3	
Total SW Production	7.0		6.7		5.8		6.9		4.8	

Based on USDA crop estimates as of September 30, 2025.

HARVEST SURVEY

The 2025 soft white (SW) Pacific Northwest (PNW) wheat crop experienced good moisture and moderate temperatures during the first part of the growing season, followed by drier conditions later in the year. This resulted in a wheat crop with a more typical protein distribution. This year's SW crop has appropriately weak to medium gluten strength and produces finished products with acceptable to good characteristics. SW wheat is used in cakes, pastries, cookies and snack foods. The higher protein portion of the SW crop can be used in blends for crackers, Asian noodles, steamed breads, flat breads and pan breads. Club wheat, which has very weak gluten strength, is generally blended with SW wheat in Western White varieties for cakes and delicate pastries.

WEATHER AND HARVEST

Winter **PLANTING** conditions significantly improved from the prior year, with ample moisture helping crops establish well. Winter moisture and mild temperatures further supported crop growth after dormancy.

Spring **PLANTING** started with good soil moisture and was aided by rain and cool weather.

As the crop **DEVELOPED**, prolonged hot, dry weather stressed spring-planted fields impacting yields, while mature winter-planted fields were less affected. Harvest was generally on time for the PNW with average to above average yields.

PRODUCTION of the 2025 U.S. SW crop is estimated at 7.0 million metric tons (259 million bushels), up 5% over last year.

CROP HIGHLIGHTS

GRADE: The 2025 SW and Club averages are both U.S. No. 1.

TEST WEIGHT: SW and Club values trended higher, with all protein composites above 78.9 kg/hl (60 lb/bu).

WHEAT PROTEIN (12% mb): SW and Club averages are slightly higher than last year due to less moisture late in the growing season; both remain within normal range.

WHEAT ASH (14% mb): Ash is significantly lower in both SW and Club compared to last year and the five-year average, likely due to drier conditions late in the growing season.

WHEAT FALLING NUMBER: Averages exceed 300 seconds. SW is slightly below the five-year average due to localized freeze events during grain filling; Club matches the five-year average.

BUHLER LABORATORY MILL: Straight grade extractions are up for SW and Club, with slightly lower ash. Both show lower L* values and higher damaged starch compared to last year and the five-year average. Extraction comparisons to the five-year average are not applicable due to calculation change in 2023.

WET GLUTEN: SW flour wet gluten is slightly higher than in 2024, reflecting the slightly higher protein.

SOLVENT RETENTION CAPACITY (SRC): SW lactic acid SRC values are normal for weak to medium gluten. SW composites have SRC profiles suitable for cookie and cracker

performance, with low water SRC and a range of lactic SRC values. Club lactic acid and water SRC values are consistent with very weak gluten and low water holding capacity. Sodium carbonate SRC values are slightly elevated, possibly due to slightly higher damaged starch levels. Sucrose SRC values also appear slightly elevated; however, an automated shaker was used for SRC testing this year, so results may not be directly comparable to previous years.

STARCH PASTING PROPERTIES: Amylograph and RVA viscosities for SW and Club are suitable for batter-based products, with averages similar to last year and the five-year average.

DOUGH PROPERTIES: SW and Club show typical dough properties, ranging from very weak to medium gluten strength and low water absorption. Both SW and Club have greater Alveograph L values (extensibility) and slightly lower P values (strength) compared to the average.

SPONGE CAKE: SW volumes are similar to 2024 and the five-year average, with slightly harder textures. Club volume is slightly larger than last year and comparable to the five-year average. Club cake texture is similar to 2024. All cakes were baked from experimentally milled straight grade flour; selecting appropriate short patent flour streams should improve performance.

COOKIE: SW cookie diameters and spread ratios are smaller than last year, possibly due to higher damaged starch and/or sucrose SRC values. Club diameters are unchanged, with a slightly reduced spread ratio. Cookie values are not comparable to the five-year average due to a method change in 2023.

PAN BREAD: SW pan bread absorption, volume and scores are normal, trending with protein content and bake absorption, and show better performance than last year. Blends of hard wheat with up to 20% SW should produce acceptable pan breads, especially at higher SW protein.

CHINESE SOUTHERN-TYPE STEAMED BREAD: SW and Club specific volumes are similar to last year and above the five-year average, with firmer textures. Low and medium SW composites showed surface shrinkage; high protein composites had poor symmetry, possibly due to increased extensibility. Club had poor definition and a more open crumb.

HARVEST DATA

	2025					2024		5-Year	
	SW BY PROTEIN ¹			SW	Club	SW	Club	SW	Club
	Low	Med	High	Avg	Avg	Avg	Avg	Avg	Avg
WHEAT GRADE DATA:									
Test Weight (lb/bu)	61.2	61.5	60.5	61.2	61.6	60.9	60.5	60.7	60.6
(kg/hl)	80.5	80.9	79.7	80.5	81.1	80.0	79.6	79.8	79.7
Damaged Kernels (%)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Foreign Material (%)	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1
Shrunken & Broken (%)	0.6	0.6	0.8	0.6	0.9	0.5	1.0	0.6	1.1
Total Defects (%)	0.6	0.7	1.0	0.7	0.9	0.6	1.1	0.7	1.2
Grade	1 SW	1 SW	1 SW	1 SW	1 WC	1 SW	1 WC	1 SW	1 WC
WHEAT NON-GRADE DATA:									
Dockage (%)	0.3	0.4	0.4	0.4	1.0	0.4	1.1	0.5	0.7
Moisture (%)	9.6	9.4	9.0	9.3	9.4	9.0	8.4	9.0	8.3
Protein (%), 12%/0% mb	8.6/9.8	9.7/11.0	11.1/12.6	9.9/11.2	9.8/11.1	9.2/10.5	9.5/10.8	10.2/11.5	10.3/11.6
Ash (%), 14%/0% mb	1.32/1.53	1.26/1.47	1.29/1.50	1.28/1.48	1.25/1.45	1.40/1.63	1.31/1.52	1.42/1.63	1.31/1.51
1000 Kernel Weight (g), 14% mb	35.2	37.3	32.1	35.8	31.2	35.7	31.2	33.6	30.1
Kernel Size (%) Ig/md/sm	88/12/00	85/15/00	76/24/00	83/17/00	72/28/00	88/12/00	79/20/01	83/16/01	72/27/01
Single Kernel: Hardness	17.8	17.4	21.0	18.3	23.7	22.6	26.4	27.2	29.9
Weight (mg)	37.2	39.1	34.6	37.8	34.6	38.0	34.7	36.6	33.6
Diameter (mm)	2.67	2.73	2.57	2.68	2.56	2.71	2.60	2.69	2.53
Sedimentation (cc)	9.8	13.2	17.6	13.8	8.3	11.1	7.8	16.0	10.4
Falling Number (sec)	313	306	352	317	330	339	332	336	336
FLOUR DATA:									
Lab Mill Extraction (%) ²	71.3	71.5	72.0	71.6	75.7	70.5	71.7	71.1	72.7
Color: L*	92.8	92.7	92.7	92.7	92.7	93.2	93.4	93.0	93.1
a*	-2.1	-2.0	-2.0	-2.0	-1.9	-2.3	-2.2	-2.1	-2.0
b*	7.5	7.4	7.4	7.4	7.1	8.4	8.1	8.0	7.8
Protein (%), 14%/0% mb	7.2/8.4	8.2/9.5	9.5/11.0	8.3/9.7	7.9/9.2	7.8/9.1	7.8/9.1	9.0/10.5	9.1/10.6
Ash (%), 14%/0% mb	0.43/0.50	0.41/0.48	0.43/0.50	0.42/0.49	0.40/0.47	0.45/0.53	0.45/0.52	0.44/0.51	0.45/0.53
Wet Gluten (%), 14% mb	11.3	19.3	25.9	19.7	—	18.9	—	22.7	—
Falling Number (sec)	336	372	370	366	347	368	379	369	371
Amylograph Viscosity: 65g (BU)	453	587	516	552	475	522	500	534	512
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	82.2/2107	71.1/2444	81.5/2303	75.0/2364	71.8/2194	76.7/2291	69.4/2235	81.4/2249	74.6/2251
Hot Paste Visc. (cP)/Final Visc. (cP)	1420/2746	1654/3098	1613/2978	1612/3021	1543/2883	1620/3049	1608/2970	1644/3011	1659/2989
Damaged Starch (%)	3.9	4.6	3.9	4.3	3.9	4.2	4.0	4.0	3.6
SRC: Water/50% Sucrose (%)	57/102	54/101	56/107	55/103	52/96	55/99	53/92	53/97	52/92
5% Lactic Acid/5% Na ₂ CO ₃ (%)	82/75	94/73	106/76	95/74	72/76	96/71	73/68	100/71	74/68
Gluten Performance Index (GPI)	0.47	0.54	0.58	0.54	0.42	0.56	0.46	0.57	0.46
DOUGH PROPERTIES:									
Farinograph: Peak Time (min)	—	1.2	1.4	1.2	—	1.3	—	1.8	—
Stability (min)	—	1.5	2.2	1.7	—	2.1	—	2.4	—
Absorption (%)	—	50.8	51.5	51.0	—	51.2	—	51.6	—
Alveograph: P (mm)	36	37	40	38	24	41	26	38	24
L (mm)	73	101	110	99	101	72	42	87	63
P/L Ratio	0.49	0.37	0.36	0.38	0.24	0.59	0.62	0.46	0.45
W (10 ⁻⁴ J)	62	85	102	86	40	79	29	84	32
Extensograph (45 min): Resistance ₅₀ (BU)	—	208	207	208	—	—	—	—	—
Resistance Max (BU)	—	238	248	241	—	256	—	251	—
Extensibility (cm)	—	17.4	19.0	17.8	—	15.5	—	17.0	—
Area (cm ²)	—	63	71	65	—	60	—	64	—
R ₅₀ /E Ratio	—	1.2	1.1	1.2	—	—	—	—	—
R _{max} /E Ratio	—	1.4	1.3	1.4	—	—	—	—	—
BAKING EVALUATION:									
Sponge Cake: Volume (cc)	1160	1083	1076	1092	1107	1099	1081	1105	1108
Hardness (g)	301	328	378	336	287	302	287	—	—
Cookie: Diameter (cm)	8.2	8.2	8.0	8.1	8.4	8.5	8.4	8.4	8.7
Spread Factor (diameter/height)	8.7	8.8	8.5	8.7	9.7	9.2	10.0	9.2	10.5
Pan Bread: Bake Absorption (%)	55.2	55.8	56.7	55.9	—	55.5	—	—	—
Loaf Volume (cc)	579	706	750	698	—	635	—	—	—
Specific Volume (cc/g)	4.2	5.0	5.3	5.0	—	4.7	—	—	—
CHINESE SOUTHERN-TYPE STEAMED BREAD EVALUATION:									
Specific Volume (cc/g)	2.5	2.6	2.8	2.6	2.7	2.6	2.7	2.4	2.5
Hardness (g)	1905	1936	1900	1923	1802	1748	1621	—	—
% OF SAMPLES:	14	63	23	100	100				

¹ Protein Range: Low, <9.0%; Medium, 9.0 - 10.5%; High, >10.5%.

² The lab mill extraction calculation changed in 2023; values are not comparable to the 5-year average. See analysis methods.

³ The cookie methodology changed in 2023; values are not comparable to the 5-year average. See analysis methods.

SUBCLASSES

Under the Official United States Standards for Grain, soft white (SW) wheat is divided into the following three subclasses:

SOFT WHITE (SW)

- Contains not more than 10% of white club wheat.
- SW, *Triticum aestivum* (common wheat), also known as “Common Soft White,” has a white bran and soft endosperm. Soft white is often used for typical soft wheat applications and has low to medium-low gluten strength.

WHITE CLUB (WC, CLUB)

- Contains not more than 10% of other soft white wheats.
- *Triticum compactum* (white club wheat) has a white bran and very soft endosperm and is known as the softest class of U.S. wheat. Club wheat has very weak gluten and its use results in excellent cake quality (high ratio sponge cake). It is normally exported as a component of Western White but can also be purchased separately.

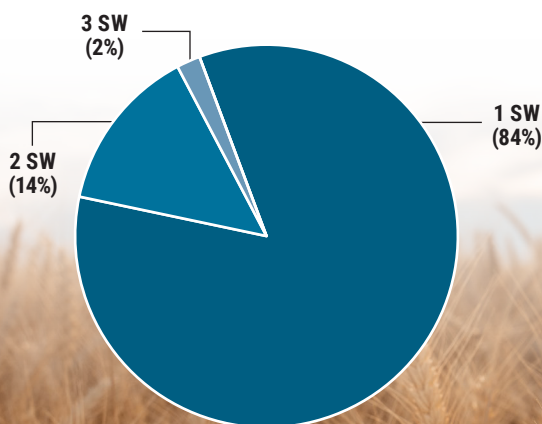
WESTERN WHITE (WW)

- Contains more than 10% of white club wheat and more than 10% of other soft white wheats.
- Some customers specify varying levels of the SW wheat and white club wheat blend to take advantage of club wheat’s weaker gluten characteristics for sponge cake and other confections. Western White is prized for its cake baking quality.

“This year, our soft white (SW) wheat had good quality and good yields. Despite rising input costs, which are a big challenge for all farmers right now, our consistent production allows us to stand as the world’s most reliable supplier of high-quality wheat. We encourage buyers to take advantage of the value we deliver – from low moisture to overall U.S. No. 1 grade wheat.”

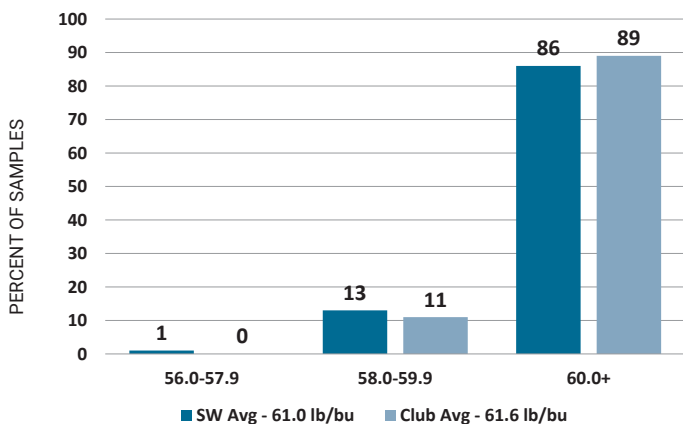
— Tyler “TJ” Hansell,
Oregon wheat farmer

DISTRIBUTION BY GRADE

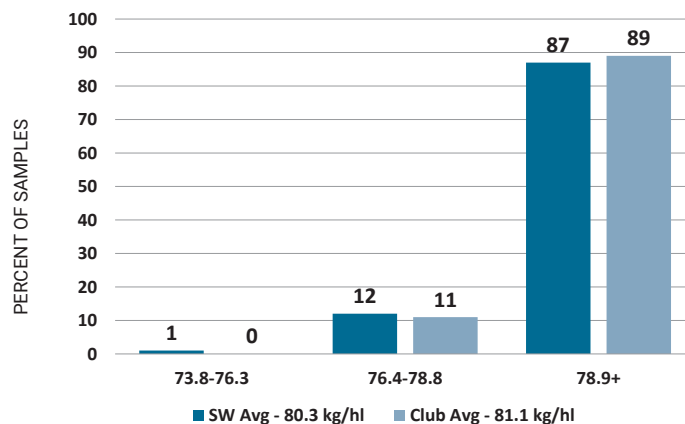


DISTRIBUTIONS

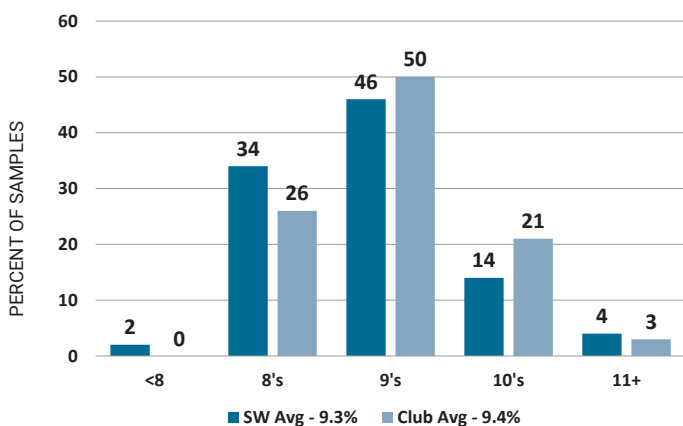
TEST WEIGHT | Pounds/Bushel



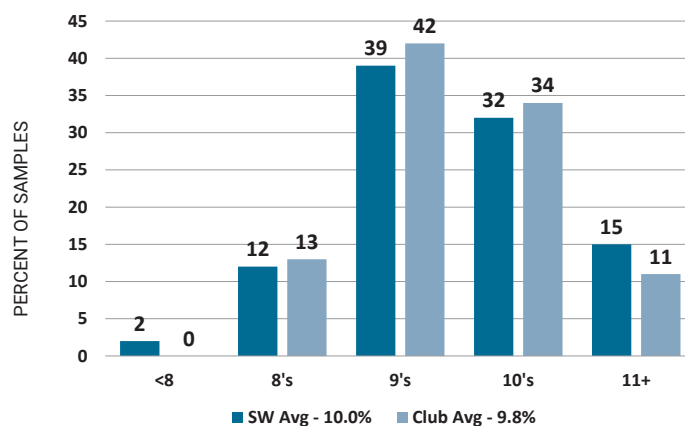
TEST WEIGHT | Kilograms/Hectoliter



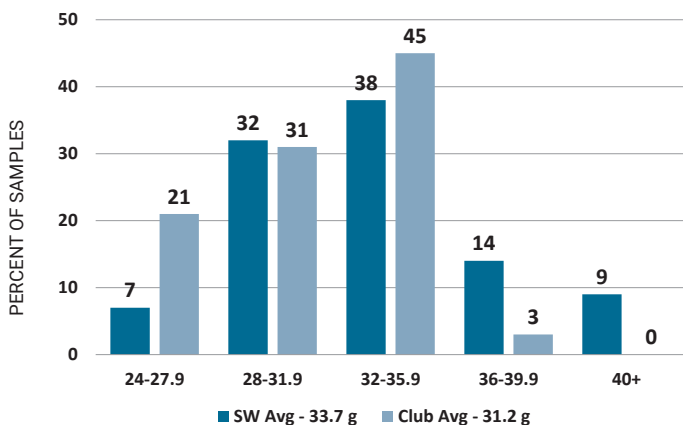
WHEAT MOISTURE | Percent



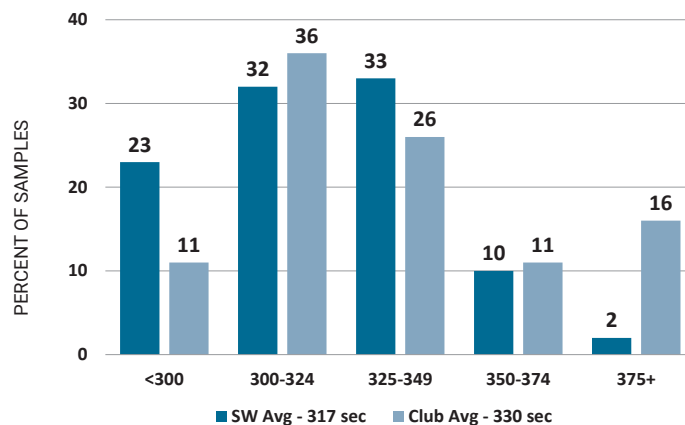
PROTEIN (12% MB) | Percent



THOUSAND KERNEL WEIGHT | Grams



FALLING NUMBER | Seconds



SOFT RED WINTER



Grown in the eastern third of the United States and shipped via Gulf, Atlantic and Great Lakes ports, soft red winter (SRW) wheat is the third largest class of wheat grown in the United States. SRW is a high-yielding wheat with low protein of 8.5 to 10.5% (12% mb), soft endosperm, red bran and weak gluten. It is used in pastries, cakes, cookies, crackers, pretzels, flat breads and for blending flours.

For the miller, SRW helps diversify the types of flour produced to improve the quality of many products. SRW blended with hard red spring (HRS) and hard red winter (HRW) wheat can lower grist cost and improve bread crumb texture or improve the quality and appearance of a wide variety of products.

For the baker, the lower moisture content of the flour produced with SRW creates an advantage by increasing the added water volume while optimizing water absorption and product quality to the consumer.

APPLICATIONS

U.S. SRW wheat, commonly used for specialty products such as sponge cakes, cookies, crackers and other confectionary products, also adds value to the miller and baker as a blending wheat.

Applications include:

- Cookies
- Pastries
- Cakes
- Cereals or cereal bars
- Crackers
- Pretzels
- Snack foods
- Fried Spring Rolls
- Mooncake
- Baguettes
- Empanadas
- Flat breads
- Flours (cake, pastry, self-rising, wafer)
- Blending wheat to improve extensibility



SCAN THIS
QR CODE
to access the crop
quality testing
methods.

SAMPLE COLLECTION AND ANALYSIS

Great Plains Analytical Laboratory (GPAL) in Kansas City, Missouri, collected the samples and conducted the quality analyses.

SAMPLE TESTING

Test weight, moisture, protein, 1000 kernel weight, wheat ash and falling number were determined on each sample, and DON on a portion of the samples. The remaining tests were determined on 18 composite samples. Results were weighted by estimated production for each reporting area and combined into Overall, East Coast-exportable and Gulf-exportable averages. The methods are described in the Analysis Methods booklet.

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SAMPLES OF
SOFT RED WINTER

collected from elevators
in 18 reporting areas.

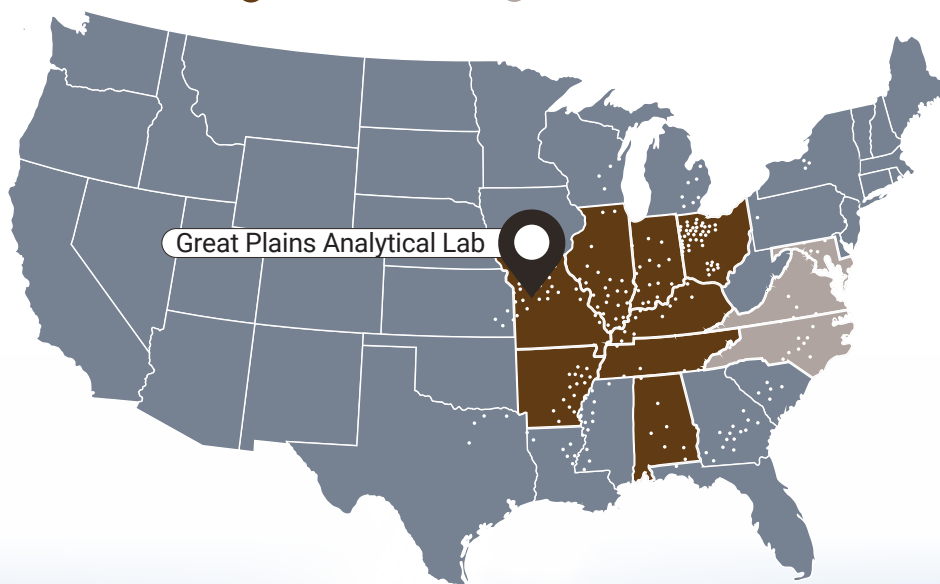
11

STATES SURVEYED

71%

OF TOTAL SRW
PRODUCTION
REPRESENTED

● GULF-EXPORTABLE ● EAST COAST-EXPORTABLE



HARVEST SURVEY

The SRW wheat crop is grown over a wide area of the eastern United States. Plentiful spring rain increased yield potential but led to quality concerns in some areas. Despite the environmental challenges, the crop exhibits good milling characteristics. Processors will find a versatile crop with good qualities for cookies, crackers and for blending opportunities. Isolated pockets of higher enzymatic activity (reflected in lower falling numbers) will naturally be directed into animal feed channels rather than milling supplies. Overall, buyers should find good quality in the 2025 SRW crop and are encouraged to review their specifications to ensure the wheat meets their needs for traditional soft wheat products or blending with stronger wheat.

WEATHER AND HARVEST

PLANTING began in mid-September 2024 and progressed at a typical pace under dry conditions. USDA estimated the area seeded to SRW wheat in fall 2024 for the 2025 harvest at 2.46 million hectares (6.09 mil acres) – a slight decrease of less than 1% from the previous year and 5% below the five-year average.

As the crop **DEVELOPED**, much of the SRW growing region experienced a mild and mostly dry winter, with brief cold snaps. As winter ended, seasonably cool temperatures and increased rainfall helped improve soil moisture and supported crop development. April and May were among the wettest months on record for much of the eastern U.S.

HARVEST began in mid-May but progressed slower than average due to high humidity and rain. By early July, conditions began to dry out, with only isolated showers reported. The harvest concluded under hot, mostly dry conditions, and no major disease or pest outbreaks were reported.

PRODUCTION of the 2025 U.S. SRW crop is estimated at 9.6 million metric tons (353 million bushels). Although planted acreage declined, higher yields helped offset the reduction, resulting in production levels comparable to the previous year.

CROP HIGHLIGHTS

GRADE: The overall crop and Gulf grade averages are U.S. No. 2 SRW. The East Coast graded U.S. No. 3 SRW.

TEST WEIGHT: Gulf region values remained stable; East Coast samples showed a decline due to rainfall at harvest.

TOTAL DEFECTS: Averages were higher, driven by more damaged and broken kernels. Foreign material levels remained similar, reflecting consistent growing practices.

WHEAT MOISTURE: Gulf region moisture levels were consistent with last year; East Coast moisture was lower.

WHEAT PROTEIN (12% MB): Gulf region values were lower, likely due to higher yields. East Coast wheat showed higher protein, likely due to decreased starch production.

WHEAT FALLING NUMBERS: Gulf region values were slightly below average, indicating minimal amylase activity. East Coast values were significantly lower, reflecting higher amylase activity.

VOMITOXIN (DON): Averages were higher than last year across both regions, but still below the USDA threshold of 2.0 ppm. Gulf samples showed moderate increases; East Coast levels were elevated, consistent with increased rainfall and *Fusarium* presence.

AMYLOGRAPH VISCOSITY: Values dipped slightly in the Gulf, while East Coast samples dropped sharply due to higher amylase activity.

SOLVENT RETENTION CAPACITY: Gulf SRC profiles were generally consistent with the average and supported traditional uses such as cookies, crackers and cakes. East Coast values were slightly higher than last year and suggested suitability for low-moisture products.

DOUGH PROPERTIES: Gulf crop values were similar to last year and the five-year average, and typical for SRW. East Coast dough showed functional protein with no major shifts in rheology.

ALVEOGRAPH: Gulf samples were stable and aligned with previous years. East Coast samples demonstrated greater extensibility than last year.

PAN BREAD: The Gulf region was similar to last year and the five-year average, with lower volumes attributed to reduced protein but no significant functional concerns. East Coast pan bread had higher absorption and lower loaf volumes compared to last year, likely due to lower falling number values and reduced protein functionality.

COOKIE: Gulf cookies remained similar to last year, with consistent spread and appearance. East Coast cookies had smaller diameters than last year, likely due to higher protein content. Composites with reduced falling numbers showed a slightly darker color.

SPONGE CAKE: Gulf samples performed well, with slightly improved quality due to lower protein. East Coast sponge cakes had higher volumes compared to last year.

HARVEST DATA

	TOTAL			EAST COAST ¹			GULF ¹		
	2025 Avg	2024 Avg	5-Year Avg	2025 Avg	2024 Avg	5-Year Avg	2025 Avg	2024 Avg	5-Year Avg
WHEAT GRADE DATA:									
Test Weight (lb/bu)	59.0	59.2	59.8	57.7	59.5	59.4	59.2	59.2	59.9
(kg/hl)	77.7	78.0	78.7	76.0	78.3	78.1	77.9	77.9	78.8
Damaged Kernels (%)	1.2	0.5	0.3	1.5	0.5	0.5	1.1	0.5	0.3
Foreign Material (%)	0.2	0.2	0.1	0.3	0.2	0.1	0.2	0.2	0.1
Shrunken & Broken (%)	0.9	0.6	0.6	1.0	0.6	0.5	0.9	0.6	0.6
Total Defects (%)	2.3	1.3	1.0	2.7	1.3	1.1	2.2	1.3	0.9
Grade	2 SRW	2 SRW	2 SRW	3 SRW	2 SRW	2 SRW	2 SRW	2 SRW	2 SRW
WHEAT NON-GRADE DATA:									
Dockage (%)	0.5	0.3	0.3	0.5	0.3	0.3	0.5	0.3	0.3
Moisture (%)	12.8	12.9	13.1	12.8	13.2	13.5	12.8	12.9	13.0
Protein (%), 12%/0% mb	9.3/10.5	9.8/11.1	9.5/10.8	10.2/11.6	9.8/11.1	9.6/11.0	9.1/10.4	9.8/11.1	9.4/10.7
Ash (%), 14%/0% mb	1.21/1.41	1.41/1.64	1.39/1.61	1.22/1.41	1.39/1.62	1.34/1.55	1.21/1.40	1.41/1.64	1.40/1.63
1000 Kernel Weight (g)	32.9	32.7	34.0	31.7	32.7	35.2	33.1	32.7	33.7
Kernel Size (%) lg/md/sm	87/13/01	86/13/01	87/12/01	84/15/01	85/14/01	88/12/01	87/12/01	86/13/01	87/12/01
Single Kernel: Hardness	23.3	25.1	24.4	20.2	22.3	24.7	23.7	25.6	24.3
Weight (mg)	33.2	33.4	34.2	30.9	33.3	35.1	33.5	33.4	34.0
Diameter (mm)	2.63	2.63	2.64	2.53	2.59	2.65	2.65	2.64	2.64
Sedimentation (cc)	13.2	13.5	11.7	16.7	12.9	12.3	12.7	13.6	11.5
Falling Number (sec)	301	316	316	262	317	297	308	316	321
DON (ppm)	1.1	0.7	0.6	1.1	0.4	0.3	1.1	0.8	0.7
FLOUR DATA:									
Lab Mill Extraction (%)	69.5	70.1	67.5	68.4	68.8	66.9	69.7	70.4	67.7
Color: L*	91.5	90.8	91.1	91.5	90.9	91.0	91.4	90.8	91.1
a*	-2.2	-2.1	-2.3	-2.1	-2.1	-2.2	-2.2	-2.1	-2.3
b*	9.3	9.2	9.1	8.7	9.0	8.8	9.3	9.2	9.1
Protein (%), 14%/0% mb	7.6/8.8	8.0/9.3	7.6/8.8	8.4/9.7	8.1/9.4	7.7/9.0	7.4/8.6	8.0/9.3	7.5/8.8
Ash (%), 14%/0% mb	0.41/0.47	0.43/0.50	0.42/0.48	0.43/0.50	0.42/0.49	0.41/0.48	0.40/0.47	0.43/0.50	0.41/0.48
Wet Gluten (%), 14% mb	19.7	22.4	20.8	22.3	23.2	21.6	19.3	22.3	20.6
Falling Number (sec)	291	313	312	253	320	294	297	312	316
Amylograph Viscosity: 65g (BU)	438	560	597	279	605	438	462	552	637
RVA: Pasting Temp. (°C)/Peak Visc. (cP)	80.2/2011	83.5/2452	—	80.3/1697	80.8/2429	—	80.2/2059	84.0/2456	—
Hot Paste Visc. (cP)/Final Visc. (cP)	1241/2258	1469/2645	—	823/1574	1508/2688	—	1305/2363	1462/2638	—
Damaged Starch (%)	3.4	3.8	3.9	3.6	3.5	4.0	3.3	3.8	3.9
SRC: Water/50% Sucrose (%)	54/96	51/86	52/86	55/105	51/92	52/89	53/94	51/85	52/85
5% Lactic Acid/5% Na ₂ CO ₃ (%)	108/72	100/69	102/71	121/75	111/69	106/72	106/72	99/69	101/70
Gluten Performance Index (GPI)	0.64	0.65	0.65	0.67	0.68	0.66	0.64	0.64	0.65
DOUGH PROPERTIES:									
Farinograph: Peak Time (min)	1.1	1.2	1.2	1.4	1.0	1.2	1.1	1.2	1.2
Stability (min)	1.4	1.9	1.7	1.7	1.4	1.7	1.4	2.0	1.7
Absorption (%)	53.0	52.7	52.2	53.5	52.0	52.5	52.9	52.8	52.1
Alveograph: P (mm)	45	41	41	42	40	42	45	41	41
L (mm)	75	90	74	102	97	79	71	89	73
P/L Ratio	0.63	0.45	0.55	0.48	0.41	0.54	0.66	0.46	0.56
W (10 ⁻⁴ J)	101	98	86	113	109	93	99	96	85
Extensograph (45 min): Resistance ₅₀ (BU)	204	206	200	254	245	198	196	199	198
Resistance max (BU)	252	238	230	305	291	231	225	226	226
Extensibility (cm)	14.7	14.5	15.1	15.6	15.2	16.1	14.5	14.4	15.1
Area (cm ²)	52	51	52	68	64	55	49	49	52
R ₅₀ /E Ratio	1.5	1.4	1.3	1.7	1.7	1.3	1.3	1.3	1.3
BAKING EVALUATION:									
Cookie: Diameter (cm)	8.9	8.9	9.0	8.8	9.1	9.0	8.9	8.9	9.0
Spread Factor (diameter/height)	9.3	9.4	10.1	9.3	10.0	10.2	9.3	9.2	10.1
Pan Bread: Bake Absorption (%)	56.5	54.8	54.2	57.2	54.5	53.8	56.3	54.9	54.2
Loaf Volume (cc)	605	634	613	610	672	612	604	627	614
Specific Volume (cc/g)	4.0	4.6	—	4.1	4.9	—	4.0	4.5	—
Sponge Cake: Volume (cc)	1154	1049	—	1147	1054	—	1155	1048	—
Hardness (g)	279	345	—	317	389	—	274	337	—
% OF SAMPLES:	100	100		25	22		75	78	

¹East Coast - Maryland, Virginia and North Carolina; Gulf - Alabama, Arkansas, Illinois, Indiana, Kentucky, Missouri, Ohio and Tennessee.

SOFT RED WINTER PRODUCTION

FOR THE MAJOR PRODUCING STATES (MMT)

	2025	2024	2023	2022	2021
Alabama	0.1	0.1	0.3	0.2	0.2
Arkansas	0.1	0.1	0.3	0.2	0.2
Georgia	0.1	0.1	0.1	0.2	0.2
Illinois	1.7	1.6	1.8	1.2	1.3
Indiana	0.6	0.6	0.8	0.5	0.6
Kentucky	0.7	0.8	1.1	0.8	0.8
Maryland	0.3	0.4	0.5	0.4	0.3
Michigan	0.8	0.6	0.9	0.6	0.8
Missouri	1.0	1.0	1.1	0.7	0.9
North Carolina	0.4	0.5	0.8	0.7	0.5
New York	0.2	0.2	0.2	0.2	0.2
Ohio	1.2	1.1	1.4	1.0	1.2
Pennsylvania	0.4	0.4	0.5	0.4	0.4
Tennessee	0.5	0.7	0.8	0.7	0.6
Virginia	0.1	0.2	0.3	0.3	0.2
Wisconsin	0.5	0.5	0.5	0.5	0.5
Surveyed-States Total*	6.9	7.0	9.3	6.6	7.0
East Coast-Exportable	0.9	1.0	1.5	1.3	1.1
Gulf-Exportable	6.0	6.0	7.8	5.3	5.9
Sixteen-State Total	8.9	8.8	11.4	8.5	9.1
Total SRW Production	9.6	9.4	12.2	9.1	9.8

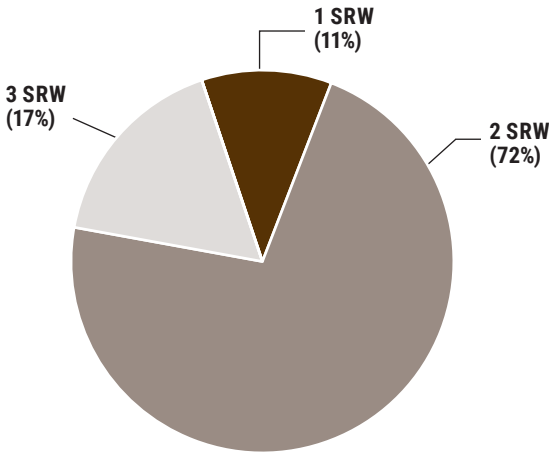
Based on USDA crop estimates as of September 30, 2025.

*Eleven states denoted by italics were surveyed accounting for 71% of 2025 SRW production.



DISTRIBUTION BY GRADE

(BASED ON 18 COMPOSITE SAMPLES)

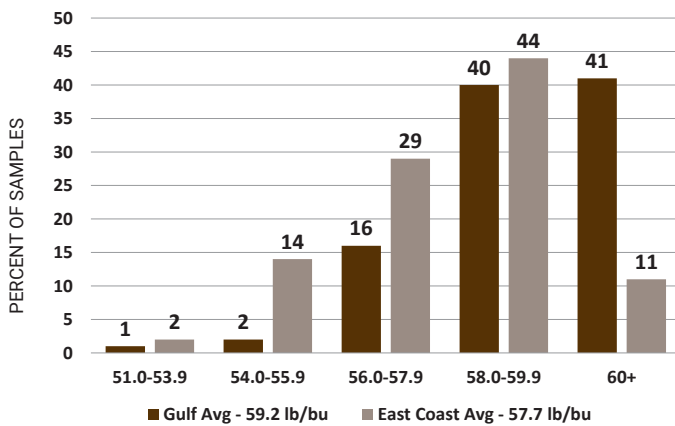


“Yield was pretty good – not a record, but what we hoped for in both volume and quality. Statewide averages were around 86 bushels per acre. Test weights varied, which was expected given conditions. Despite a wet May and June in Ohio, disease pressure was low and overall soft red winter (SRW) wheat quality was considered very good.”

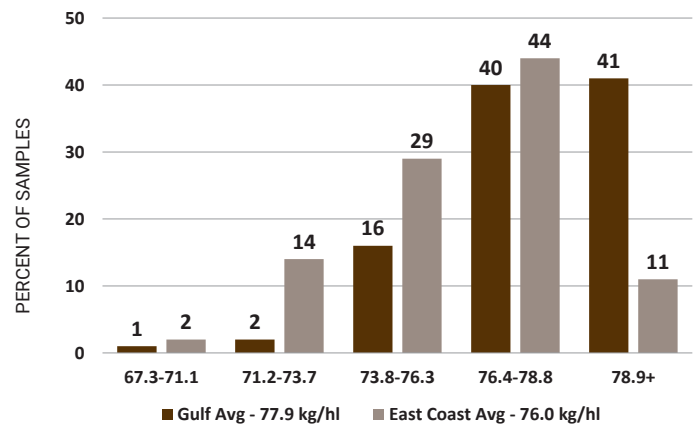
— Joe McCandlish, Ohio wheat farmer

DISTRIBUTIONS

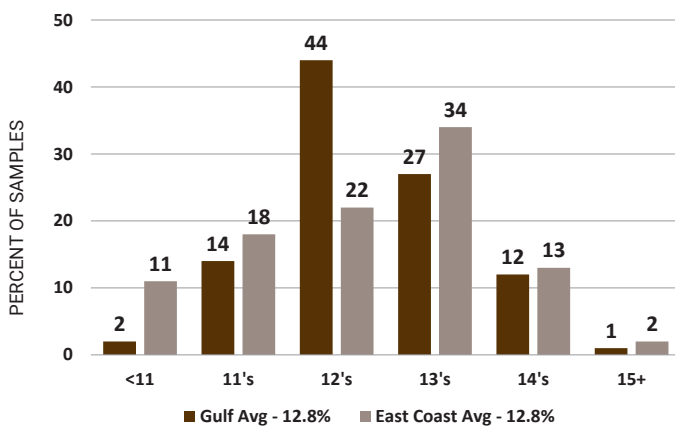
TEST WEIGHT | Pounds/Bushel



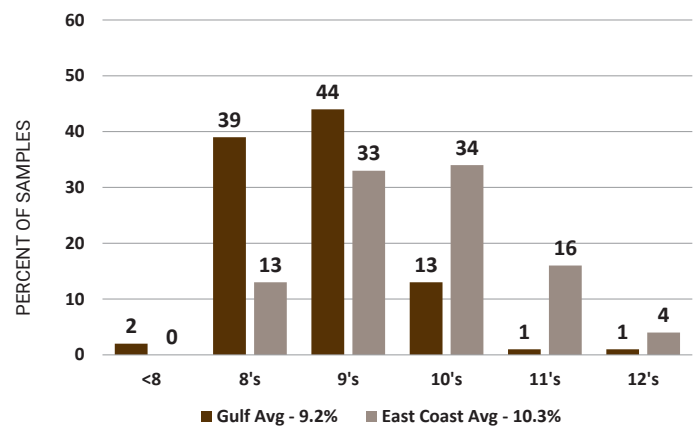
TEST WEIGHT | Kilograms/Hectoliter



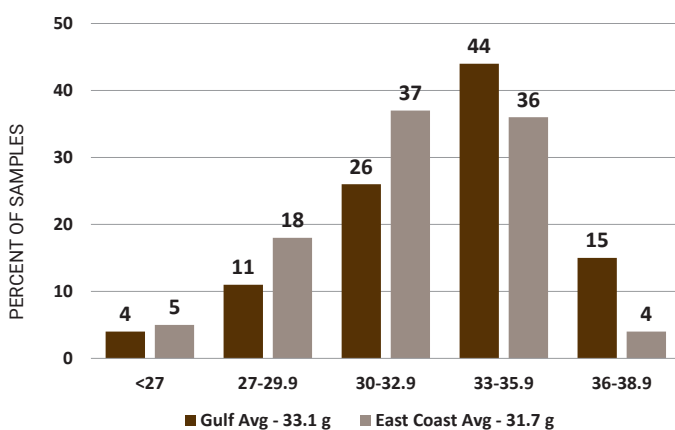
WHEAT MOISTURE | Percent



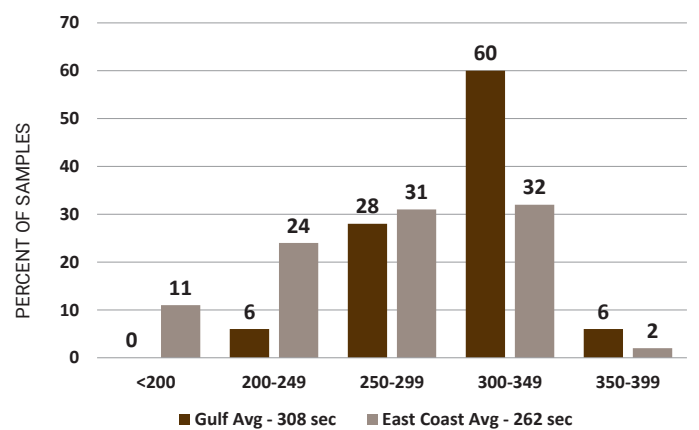
PROTEIN (12% MB) | Percent



THOUSAND KERNEL WEIGHT | Grams



FALLING NUMBER | Seconds



DURUM



Northern Durum is grown primarily in the North Central region and shipped via Gulf, Great Lakes and Pacific ports, while Desert Durum®, is grown primarily under contract in the desert Southwest (Arizona and California) and shipped via the Gulf or West Coast. Durum is the fifth largest class of wheat grown in the United States and has a high protein content of 12.0 to 15.0% (12% mb), rich amber color, yellow endosperm, high gluten and white bran.

For the miller, durum is a large, very hard kernel with the potential for very high extraction of high quality, low ash semolina that is ideal for fine pasta. Desert Durum® is harvested and shipped at a very low moisture content, an advantage to millers that contributes to efficient transportation costs and high extraction rates.

For consumers of pasta, couscous and Mediterranean breads, durum helps deliver excellent color and texture.

APPLICATIONS

Hard Amber Durum (HAD) sets the "gold standard" for premium pasta products, couscous and some Mediterranean breads and cakes.

Applications include:

- Premium quality long and short goods pasta
- Blends (with HRS) for pizza doughs
- Durum semolina
- Couscous
- Mediterranean breads and cakes



SCAN THIS
QR CODE
to access the crop
quality testing
methods.

SURVEY METHODOLOGY

NORTHERN DURUM SAMPLE COLLECTION AND ANALYSIS

The Durum Quality Lab, North Dakota State University, Fargo, North Dakota, conducted the quality analyses.

NORTHERN DURUM SAMPLE TESTING

Official grade, test weight, vitreous kernel, 1000 kernel weight, protein and falling number were determined on each sample. The remaining tests were conducted on six composite samples categorized by growing region for Northern Durum. The methods are described in the Analysis Methods booklet.

251

SAMPLES OF
NORTHERN DURUM

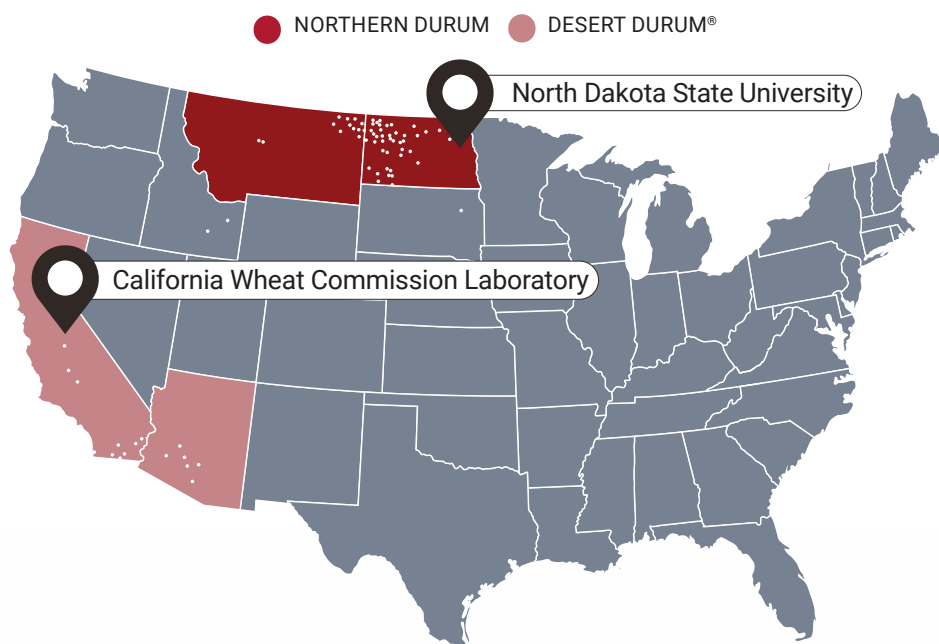
collected from fields, farm
bins and local elevators by
the National Agricultural
Statistics Service.

4

STATES SURVEYED

100%

OF TOTAL DURUM
PRODUCTION REPRESENTED



22

SAMPLES OF
DESERT DURUM®

collected by a Federal Grain Inspection
Service (FGIS) licensed inspection agency or
submitted by handlers to a licensed agency.

DESERT DURUM® SAMPLE COLLECTION AND ANALYSIS

California Wheat Commission Laboratory conducted the quality analyses.

DESERT DURUM® SAMPLE TESTING

All tests were conducted on each sample. Production-weighted results are reported. The Desert Durum® production area is highlighted on the map above. The methods are described in the Analysis Methods section of this booklet.



DURUM PRODUCTION

FOR THE MAJOR PRODUCING STATES (MMT)

	2025	2024	2023	2022	2021
Arizona	0.2	0.2	0.1	0.3	0.1
California	0.0	0.1	0.1	0.1	0.1
Montana	0.7	0.5	0.6	0.5	0.3
North Dakota	1.4	1.4	0.9	0.8	0.5
Four-State Total	2.3	2.2	1.6	1.7	1.0
Northern Durum	2.1	1.9	1.4	1.4	0.8
Desert Durum®	0.2	0.2	0.2	0.4	0.2
Total Durum Production	2.3	2.2	1.6	1.7	1.0

Based on USDA crop estimates as of September 30, 2025.

SUBCLASSES

Under the Official United States Standards for Grain, durum wheat is divided into the following three subclasses based on vitreous kernel content:

HARD AMBER DURUM (HAD)

- Contains at least 75% hard, vitreous kernels of amber color.

AMBER DURUM (AD)

- Contains between 60-74% hard, vitreous kernels of amber color.

DURUM (D)

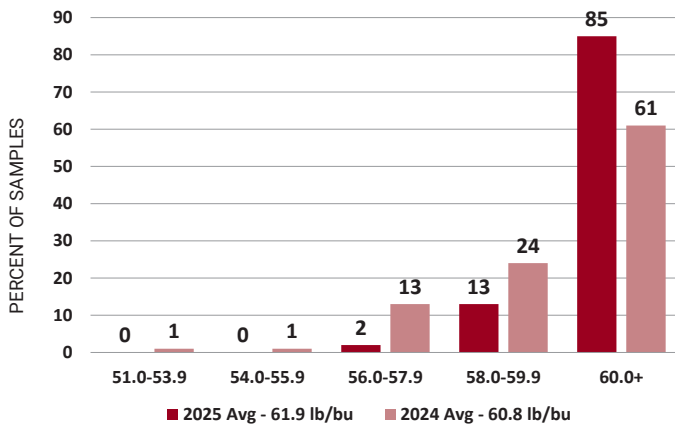
- Contains less than 60% hard, vitreous kernels of amber color.

"This year's growing season brought dry conditions, extreme weather and storms, but we still saw strong, above-average yields and generally good quality. Disease pressure was minimal across the durum region. While wet harvest weather led to some variability, I believe we have the quality needed to meet most customers' specifications."

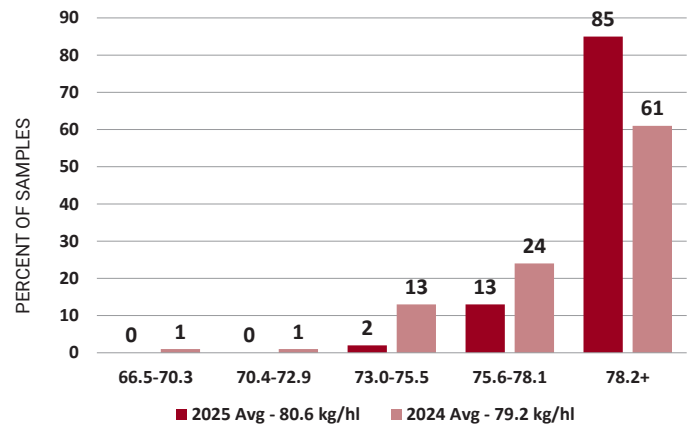
— Glendon Slaubaugh, North Dakota wheat farmer

NORTHERN DURUM DISTRIBUTIONS

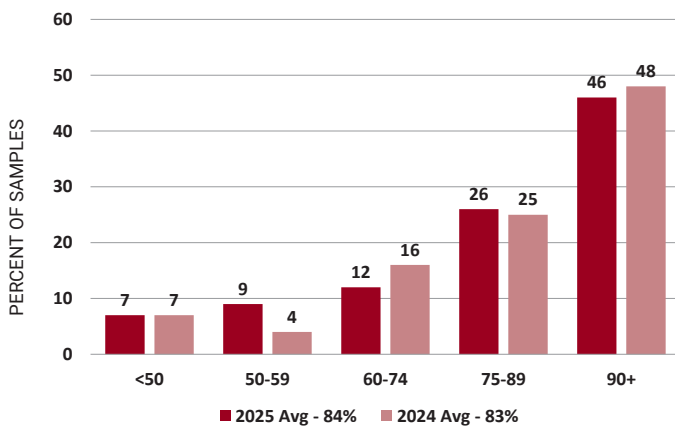
TEST WEIGHT | Pounds/Bushel



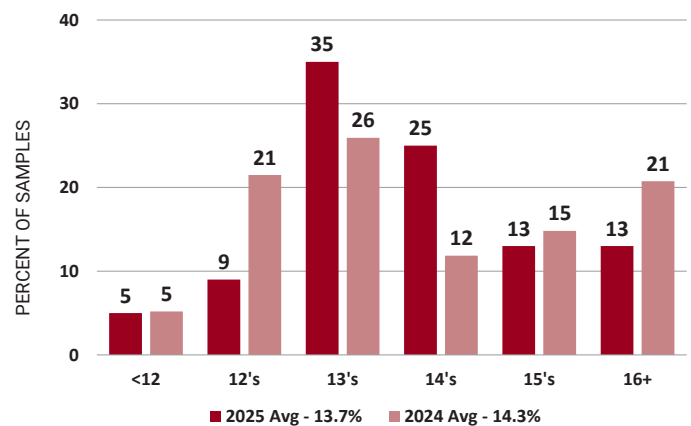
TEST WEIGHT | Kilograms/Hectoliter



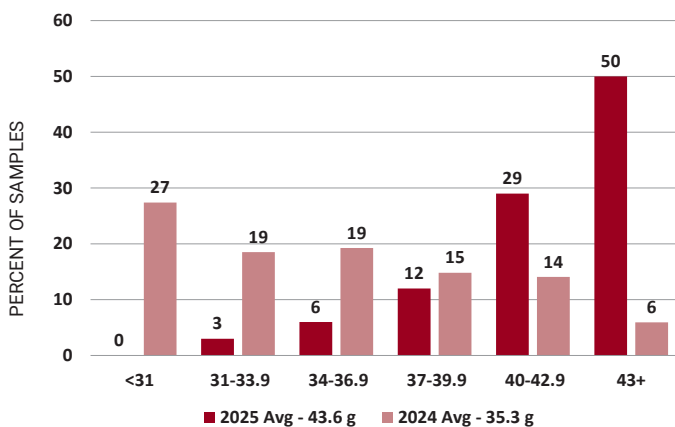
VITREOUS KERNELS | Percent



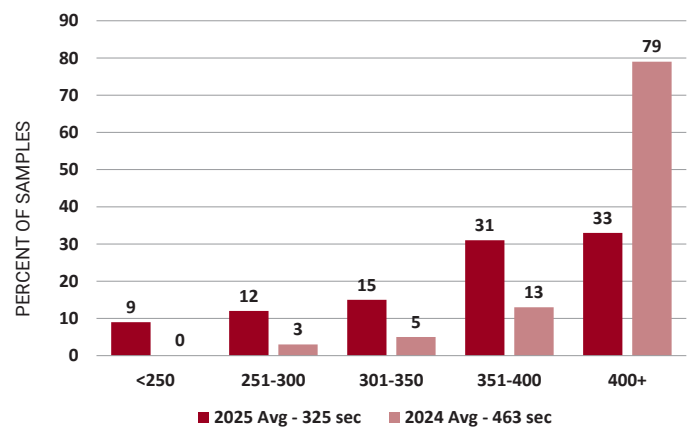
PROTEIN (12% MB) | Percent



THOUSAND KERNEL WEIGHT | Grams



FALLING NUMBER | Seconds



NORTHERN DURUM HARVEST SURVEY

The 2025 Northern Plains durum crop has many positive attributes including high protein, strong test weights and thousand kernel weights and good pasta quality performance. As with most years, buyers should consider the variance across quality parameters, including grades, falling numbers, vitreous kernel content and damage, and adjust contract specifications as needed. Due to significantly delayed harvest in areas, the last portion of the crop is not represented in this year's data, and there is greater than normal variability across the surveyed crop. Overall, the performance of this year's crop aligns with the average outcomes typical for Northern Durum and should meet buyers' specifications. Buyers will find the crop will meet their quality demands for producing pasta, couscous and bread products.

WEATHER AND HARVEST

PLANTING season began earlier than usual due to low winter snowfall and dry conditions. While mid-season rainfall caused some planting delays, the moisture was beneficial, and the majority of the crop was planted by early June.

Crop **EMERGENCE** was initially delayed by cooler weather but soon moved ahead of average. Dry conditions dominated much of the growing season, but timely rains during planting and early growth helped sustain the crop. Later in the growing season, a lack of moisture caused conditions to decline, especially in Montana. Overall, disease pressure was low.

HARVEST began slowly because of rain and humidity. Conditions improved in mid-August, speeding up progress for several weeks. However, late-season wet weather again delayed the final portion of harvest and affected crop quality.

Durum **PRODUCTION** in the U.S. Northern Plains is estimated at 2.1 million metric tons (79 million bushels), 11% higher than last year, due to more planted acres and higher yields.

CROP HIGHLIGHTS

GRADE: The average overall average for the 2025 Northern Plains is U.S. 1 Hard Amber Durum (HAD); 40% of the crop grades U.S. No. 1 HAD. This crop shows a wider grade distribution due to localized weather conditions.

TEST WEIGHTS: Values are strong with an overall average higher than last year and the five-year average.

DAMAGED KERNELS: Values are slightly higher compared to last year, attributable to environmental conditions.

VITREOUS KERNEL (HVAC): Content levels are comparable to the previous year; some samples indicate much lower levels, which may be attributed to rainfall during maturity or at harvest.

WHEAT PROTEIN (12% MB): Values are similar to last year. Distribution data indicates a more uniform range

of protein content between 13.0% and 15.0%, with only a small number of samples exceeding 15.0%.

1000 KERNEL WEIGHT (TKW): Averages are much higher than last year, due to overall better growing conditions without extended heat stress.

KERNEL MOISTURE: Averages trended lower than last year, but higher than the five-year average due to wetter conditions at harvest.

WHEAT FALLING NUMBER: Values were lower this year compared to last year and the five-year average, due to wet conditions at harvest. Distribution data indicates that most of the crop is above 300 seconds, with a smaller proportion exceeding 400 seconds.

DON: Values are slightly higher this year, due to isolated instances of disease pressure, mainly in eastern production areas. Nonetheless, the overall average is well below commercial limits.

LABORATORY MILLING: Semolina extraction is slightly lower than last year, but still higher than the five-year average. Samples were milled on a Quadromat Junior mill; laboratory milling is not indicative of commercial milling performance.

SEMOLINA PROTEIN: Content is similar to last year and slightly below the five-year average.

SEMOLINA ASH: Content is lower than last year and the five-year average.

SPECKS: Counts are higher than last year and the five-year average.

SEMOLINA COLOR: The b* value (a measure of yellow color) is slightly lower than last year and the five-year average.

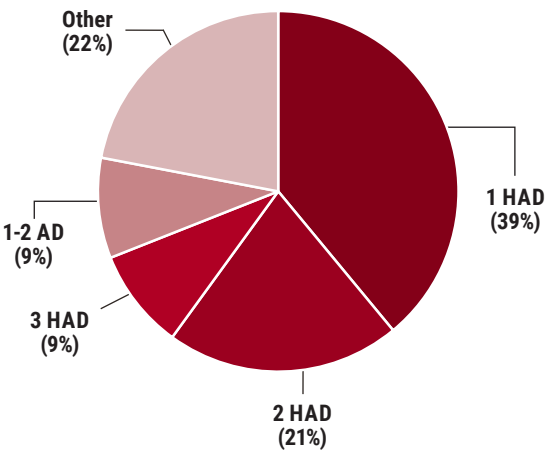
DOUGH STRENGTH: Parameters show strength comparable to the previous year and consistent with an average durum crop.

SPAGHETTI: Dry spaghetti evaluations show improved characteristics compared to last year with increased cooked weight, lower cooking loss and increased firmness when compared to both last year's results and the five-year averages.

NORTHERN DURUM HARVEST DATA

	2025 Avg	2024 Avg	5-Year Avg
WHEAT GRADE DATA:			
Test Weight (lb/bu)	61.9	60.8	61.3
(kg/hl)	80.6	79.2	79.8
Damaged Kernels (%)	1.8	0.6	0.4
Foreign Material (%)	0.0	0.1	0.0
Shrunken & Broken (%)	0.5	0.7	0.8
Total Defects (%)	2.3	1.4	1.2
Vitreous kernels (%)	84	83	86
Grade	1HAD	1 HAD	1 HAD
WHEAT NON-GRADE DATA:			
Dockage (%)	0.6	0.8	0.9
Moisture (%)	11.6	12.2	11.2
Protein (%), 12%/0% mb	14.2/16.2	14.3/16.3	14.2/16.2
Ash (%), 14%/0% mb	1.55/1.80	1.58/1.84	1.58/1.80
1000 Kernel Weight (g)	43.6	35.3	40.9
Kernel Size (%) lg/md/sm	64/34/02	42/53/05	47/49/04
Falling Number (sec)	325	463	427
Sedimentation (cc)	80	79	72
DON (ppm)	0.6	0.3	0.1
SEMOLINA DATA:			
Lab Mill Extraction (%)	—	—	—
Semolina Extraction (%)	58.8	60.7	55.9
Color: L*	80.9	81.1	83.0
a*	-3.0	-3.1	-2.6
b*	28.7	30.0	30.4
Protein (%), 14%/0% mb	12.6/14.7	12.3/14.3	12.6/14.7
Ash (%), 14%/0% mb	0.61/0.71	0.68/0.79	0.65/0.76
Specks (no/10 in²)	33	25	26
Wet Gluten (%), 14% mb	34.5	31.7	33.5
Gluten Index (%), 14% mb	82	89	81
SPAGHETTI EVALUATION:			
Color: L*	57.7	58.9	60.3
a*	4.6	3.7	3.6
b*	40.1	41.0	44.2
Cooked Weight (g)	32.1	30.1	31.0
Cooking Loss (%)	6.9	7.2	7.3
Cooked Firmness (g*cm)	8.4	6.7	4.7
SAMPLE COUNT:	252	251	

NORTHERN DURUM GRADE DISTRIBUTION



DESERT DURUM® HARVEST SURVEY

Desert Durum® is a registered certification mark of the Arizona Grain Research and Promotion Council and the California Wheat Commission, which authorize its use only to designate durum grown under irrigation in the desert valleys and lowlands of Arizona and California.

Desert Durum® can be produced and delivered “identity preserved” to domestic and export markets, which allows customers to purchase grain with quality traits specific to their processing needs. Annual requirements can be pre-contracted with grain merchandisers ahead of the fall-winter planting season for harvest in late May through early July. Varietal identity is maintained by experienced growers planting certified seed and merchandisers who store and ship according to customers’ preferred delivery schedules.

Desert Durum® production acreage in 2025 was lower than 2024. According to USDA, production of the 2025 Desert Durum® crop is estimated at 0.2 million metric tons (7 million bushels).

CROP HIGHLIGHTS

Desert Durum® exhibits consistently large kernels and low moisture, traits that contribute to efficient transportation costs and high extraction rates. The 2025 crop will deliver the valuable milling, semolina and pasta quality traits that customers have learned to expect and appreciate.

GRADE: The overall sample average for the 2025 Desert Durum® harvest survey is U.S. No. 1 Hard Amber Durum (HAD).

TEST WEIGHT: Average value was strong and comparable to both last year and the five-year average, reflecting a high average typical of Desert Durum®.

VITREOUS KERNEL (HVAC) CONTENT: The average value was both comparable to last year and the five-year average, reflecting high average typical of Desert Durum®.

DAMAGE KERNELS AND TOTAL DEFECTS: Averages were both low and comparable to both last year and the five-year average.

WHEAT MOISTURE: Levels stayed low, characteristic of Desert Durum®. More water can be added to the grain prior to milling adding additional value to millers.

WHEAT PROTEIN (12% MB): The average was comparable to last year and the five-year average, reflecting a high average typical of Desert Durum®.

1000 KERNEL WEIGHT (TKW): The average was within typical range and reflects a high average characteristic of Desert Durum®.

WHEAT FALLING NUMBER: Values were slightly higher than last year and the five-year average, reflecting sound wheat and a high average typical of Desert Durum®.

SEMOLINA ASH: Content was lower than last year and the five-year average.

WET GLUTEN: The average was slightly above last year and also higher than the five-year average.

GLUTEN INDEX: Values remained stable and close to historical levels.

SEMOLINA COLOR: The b* value (a measure of yellow color) was slightly lower than last year and the 5-year average and indicates a bright yellow semolina color.

SPAGHETTI: Cooked firmness was comparable to last year and slightly higher than the five-year average, indicating good cooking tolerance and eating quality.

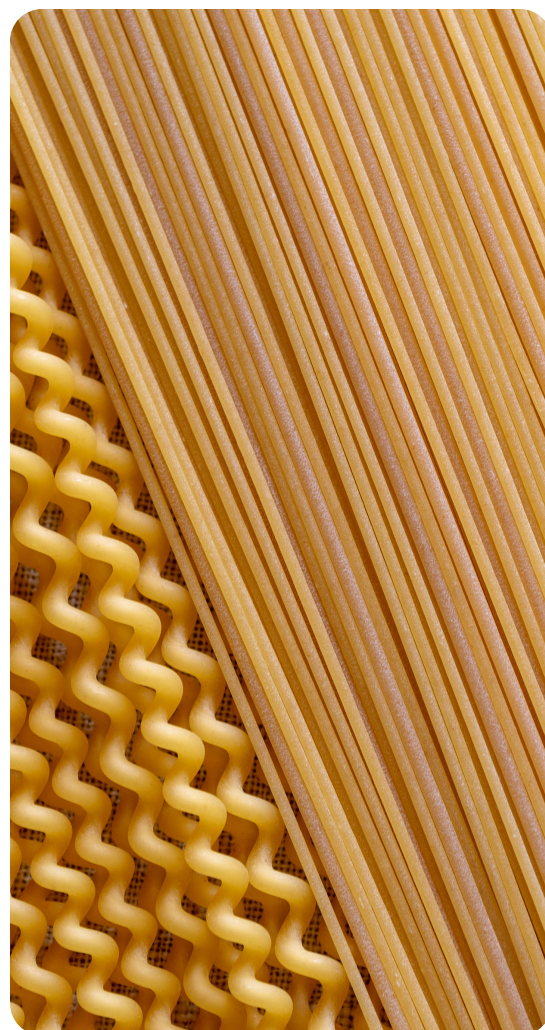
“Arizona’s 2025 Desert Durum® wheat crop reflects both the resilience and challenges of desert farming. With acreage down sharply but yields holding steady at about three tons per acre, growers continue to deliver a high-quality product that meets global demand, even in the face of shifting markets and tighter water supplies.”

— Richard Heiden, Arizona wheat farmer



DESERT DURUM® HARVEST DATA

	2025 Avg	2024 Avg	5-Year Avg
WHEAT GRADE DATA:			
Test Weight (lb/bu)	62.5	63.1	63.3
(kg/hl)	81.4	82.2	82.4
Damaged Kernels (%)	0.0	0.2	0.1
Foreign Material (%)	0.1	0.0	0.0
Shrunken & Broken (%)	0.5	0.5	0.4
Total Defects (%)	0.6	0.7	0.6
Vitreous kernels (%)	97	98	98
Grade	1 HAD	1 HAD	1 HAD
WHEAT NON-GRADE DATA:			
Dockage (%)	0.5	0.4	0.3
Moisture (%)	7.2	7.1	7.3
Protein (%), 12%/0% mb	13.8/16.6	13.7/16.4	13.8/15.9
Ash (%), 14%/0% mb	1.70/1.97	1.66/1.94	1.65/1.92
1000 Kernel Weight (g)	48.2	46.3	48.7
Kernel Size (%) lg/md/sm	95/05/00	94/06/00	93/07/00
Falling Number (sec)	772	646	652
Sedimentation (cc)	70	61	63
DON (ppm)	-	-	-
SEMOLINA DATA:			
Lab Mill Extraction (%)	80.7	82.1	78.9
Semolina Extraction (%)	68.9	70.7	72.3
Color: L*	86.2	85.8	85.9
a*	-4.0	-3.8	-4.0
b*	31.6	32.2	32.2
Protein (%), 14%/0% mb	12.7/14.7	12.5/14.6	12.9/15.1
Ash (%), 14%/0% mb	0.80/0.93	0.85/0.98	0.81/0.94
Specks (no/10 in ²)	20	23	22
Wet Gluten (%), 14% mb	34.8	32.8	34.3
Gluten Index (%), 14% mb	73	72	74
SPAGHETTI EVALUATION:			
Color: L*	56.7	56.3	56.2
a*	-0.1	-0.2	0.0
b*	43.7	43.6	43.6
Cooked Weight (g)	29.4	29.5	29.7
Cooking Loss (%)	5.5	5.8	6.0
Cooked Firmness (g*cm)	7.4	7.3	7.2
SAMPLE COUNT:	22	6	7



DEPENDABLE PEOPLE. RELIABLE WHEAT.

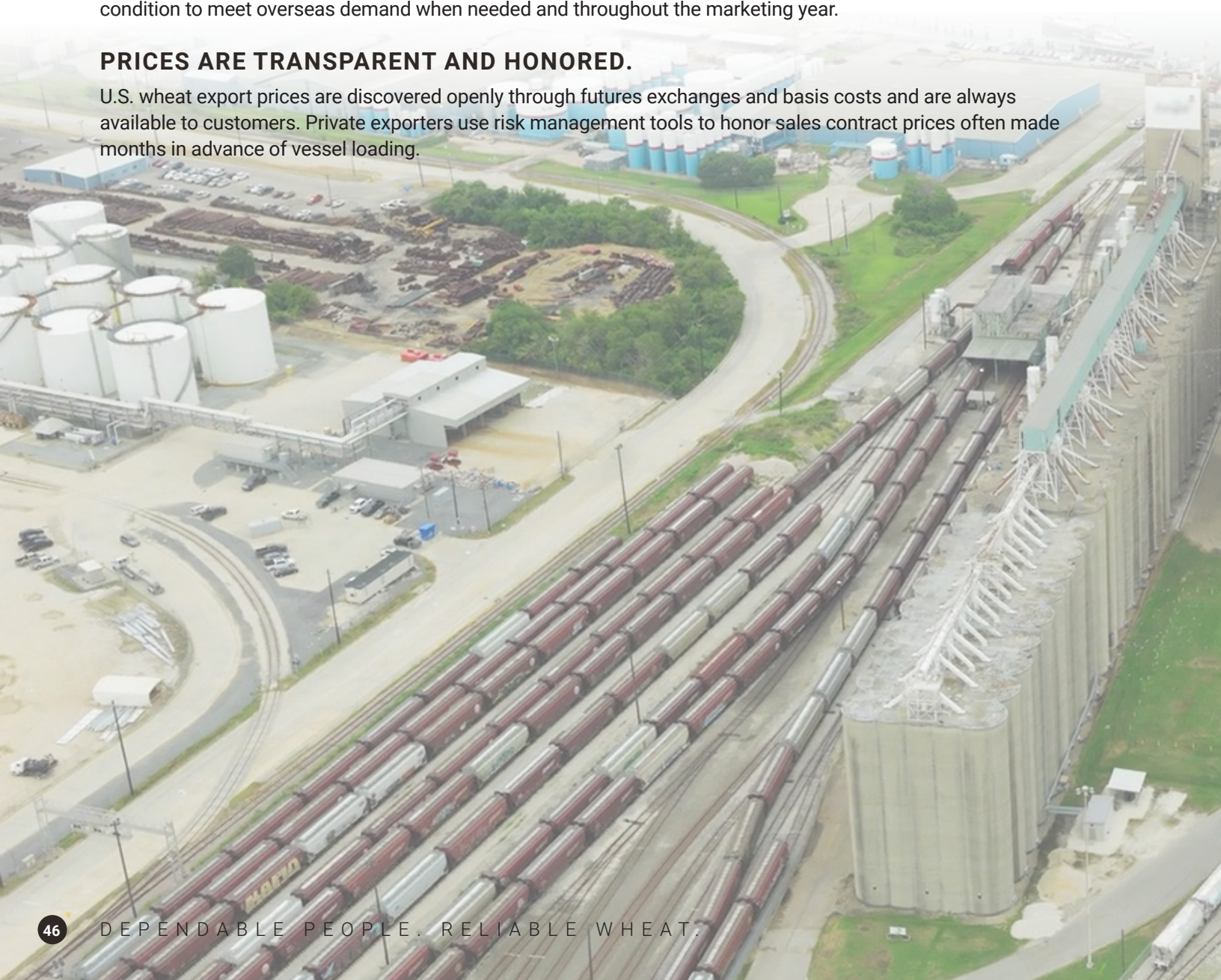
The U.S. farm families who produce the wheat and the industry that supplies it remain committed to operating a transparent and open market. Here are some of the reasons why our overseas customers know they can depend on the integrity of our supply chain, the quality of U.S. wheat and our unmatched reliability as a supplier.

THE U.S. WHEAT “STORE” IS ALWAYS OPEN.

U.S. farmers overcome significant risk every year to meet domestic wheat demand and still provide half their crop for export markets. Farmers and commercial warehouses can store and efficiently transport wheat in top condition to meet overseas demand when needed and throughout the marketing year.

PRICES ARE TRANSPARENT AND HONORED.

U.S. wheat export prices are discovered openly through futures exchanges and basis costs and are always available to customers. Private exporters use risk management tools to honor sales contract prices often made months in advance of vessel loading.



QUALITY IS ASSURED.

USW publishes weekly reports during harvest that summarize initial wheat quality findings. USW works with several organizations and laboratories to analyze hundreds of wheat samples for all six U.S. wheat classes and publishes all results in the annual Crop Quality Report. Our staff, farmers and industry experts then travel the world to present the results to our customers and end users. U.S. country elevators and export elevators inspect and test wheat as it arrives and segregates each class by quality to meet customer requirements. The USDA's Federal Grain Inspection Service (FGIS) independently inspects wheat at vessel loading to certify that the quality loaded matches the customer's specifications.

EXPORT LOGISTICS DEEMED ESSENTIAL.

In the COVID-19 outbreak, all farmers and food distribution industries were deemed essential. Export grain systems and FGIS inspections have continued operating with little or no interruption.

DIRECT GOVERNMENT EXPORT INTERVENTION IS BANNED.

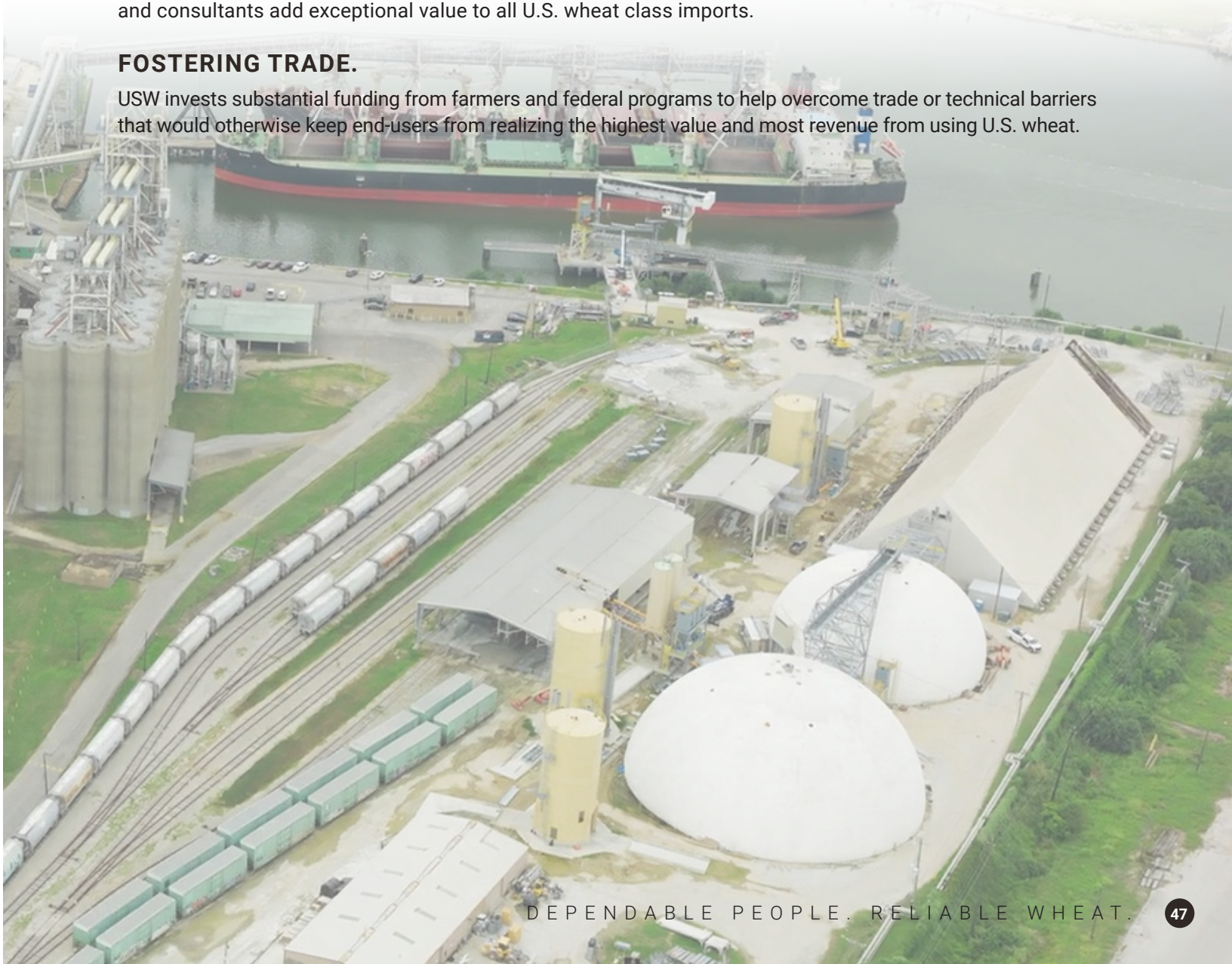
Several U.S. federal laws protect the sanctity of all export contracts. The only exception is a declared national emergency.

BUYERS RECEIVE UNMATCHED TRADE SERVICING AND TECHNICAL SUPPORT.

With funding from U.S. wheat farm families and USDA's Foreign Agricultural Service, experienced USW staff and consultants add exceptional value to all U.S. wheat class imports.

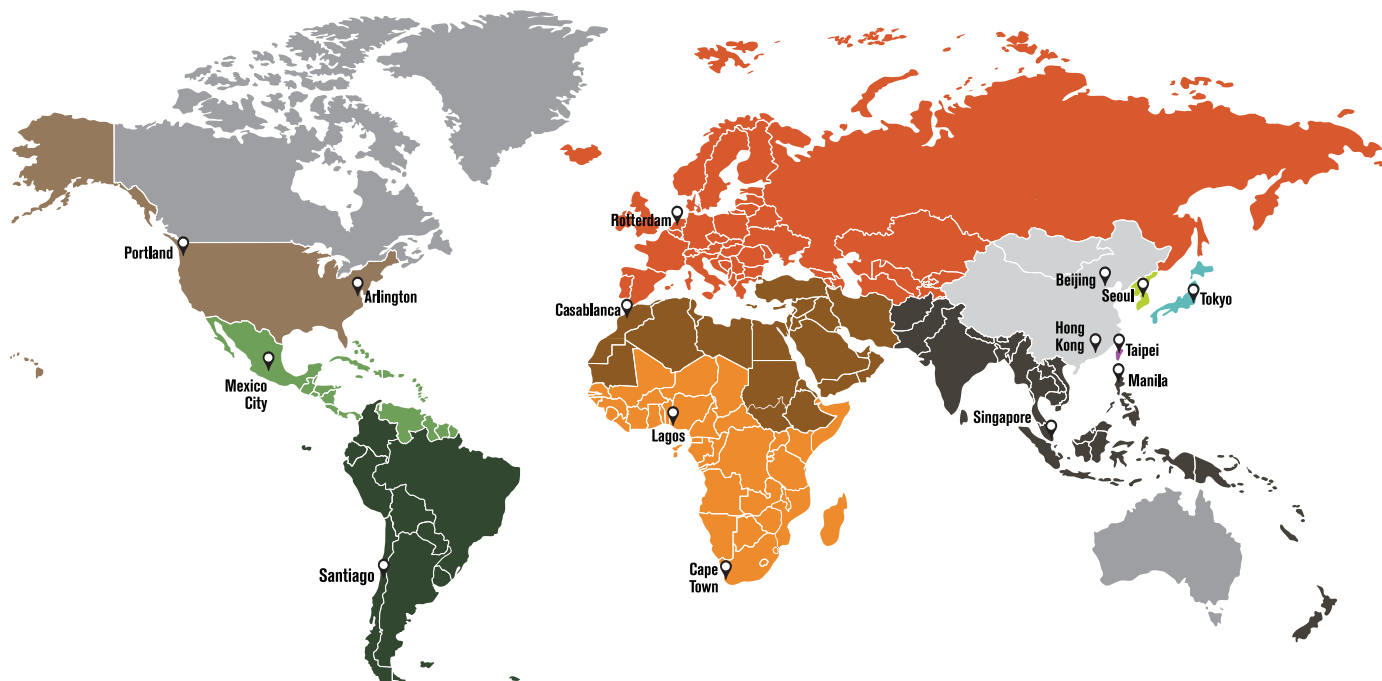
FOSTERING TRADE.

USW invests substantial funding from farmers and federal programs to help overcome trade or technical barriers that would otherwise keep end-users from realizing the highest value and most revenue from using U.S. wheat.





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U.S. Wheat Associates (USW) is the industry's market development organization working in more than 100 countries. Its mission is to "develop, maintain and expand international markets to enhance wheat's profitability for U.S. wheat producers and its value for their customers." USW activities are funded by producer checkoff dollars managed by 17 state wheat commissions and USDA Foreign Agricultural Service cost-share programs. For more information, visit www.uswheat.org or contact your state wheat commission.

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