Photo courtesy of Kurt Melville / Oregon Wheat

U.S. PACIFIC NORTHWEST

# 2025 HARVEST SOFT WHITE WHEAT QUALITY REPORT

**PROJECT FUNDED BY**

Washington Grain Commission | Oregon Wheat Commission
Idaho Wheat Commission | U.S. Wheat | Wheat Marketing Center

Photo courtesy of Kari Silcox / Oregon Wheat

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Photo courtesy of Jake Liening / Washington Grain



# Pacific Northwest EXECUTIVE SUMMARY

The 2025 Pacific Northwest (PNW) soft white and club wheat crop experienced adequate soil moisture at planting across most of the region, supporting strong emergence. Winter precipitation provided good conditions for crop development, though late spring and summer precipitation fell below normal. Milder temperatures through June compensated for the reduced moisture, allowing for healthy plant development for winter wheat. Hotter conditions arrived for crop maturity, enabling a timely harvest with low disease and pest pressure throughout the region.

This year's total estimated production of 6.63 MMT is slightly below last year's 6.71 MMT, but remains above the five-year average of 6.11 MMT. The overall crop grades as U.S. #1 with an average crop protein content of 10.0%, slightly below the five-year average and higher than 2024. Average test weights are consistent with 2024, with thousand kernel weights in line with the five-year average. Farinograph, Alveograph, and SRC values all indicate very weak to medium gluten strength appropriate to produce typical soft wheat flour products and those made with soft and hard wheat blends. End product tests show acceptable to good performance consistent with typical soft wheat quality.

## Pacific Northwest

**U.S. soft white wheat grown in the Pacific Northwest includes the states of Idaho, Oregon, and Washington.**



Photo courtesy of Jake Liening / Washington Grain

# Soft White Wheat Class and Subclasses

Pacific Northwest soft white (SW) wheat is valued for its white bran, low moisture content, and weak gluten characteristics. Consequently, SW is well suited for products such as cakes, cookies, pancakes, and snack foods. SW with stronger gluten can be used in crackers, flat breads, and Chinese southern-type steamed breads by itself or in blends with hard wheat.

The soft white wheat class includes the subclasses of white club (WC) wheat and western white wheat. WC wheat has very weak gluten characteristics. Western white wheat is a blend of WC and SW wheat. The amount of WC wheat in western white ranges from 10 to 90 percent. The minimum percentage of WC in western white is 10 percent; higher amounts are determined by contract specifications negotiated between buyers and sellers (typically 10-30%).

## 2025 Top Varieties Soft White Wheat

| Idaho | Oregon | Washington |
|---|---|---|
| AP Exceed | Appleby CL+ | LCS Kraken AX |
| AP Iliad | LCS Dagger AX | LCS Reaper AX |
| LCS Shine | LCS Hydra AX | LCS Scorpion AX |
| NW Tandem | LCS Jefe | LCS Shine |
| Stingray CL+ | LCS Reaper II AX | Piranha CL+ |
| SY Ovation | LCS Scorpion AX | Ryan |
| VI Voodoo CL+ | LCS Shine | Stingray CL+ |
| WB6430 | VI Voodoo CL+ | VI Voodoo CL+ |

*Listed alphabetically*

# Wheat Samples

Photo courtesy of Ryan Nelson / Idaho Wheat

At harvest, wheat samples were collected from a number of sources, including state and private grain inspection agencies and commercial wheat handling operations throughout the Pacific Northwest. Sample collection was based on wheat production in each location. For the 2025 harvest, Wheat Marketing Center (WMC) received and tested 411 SW and 38 WC samples from Idaho, Oregon, and Washington. Federal Grain Inspection Service (FGIS) graded and ran wheat protein on each sample. WMC conducted wheat, flour, solvent retention capacity (SRC), dough, and finished product tests on composites based on production zones and protein levels.

## Soft White & White Club Wheat Summary

| | Soft White | | White Club | |
|---|---|---|---|---|
| | **2025** | **5 Yr Avg** | **2025** | **5 Yr Avg** |
| Test Weight (lb/bu) | **61.0** | 60.7 | **61.6** | 60.6 |
| Hectoliter Weight (kg/hl) | **80.3** | 79.8 | **81.1** | 79.7 |
| Grade | **1SWH** | 1SWH | **1WHCB** | 1WHCB |
| Dockage (%) | **0.5** | 0.5 | **1.0** | 0.7 |
| Whole Kernel Moisture (%) | **9.3** | 9.0 | **9.4** | 8.3 |
| Wheat Protein (%, 12% mb) | **10.0** | 10.2 | **9.8** | 10.3 |
| Wheat Ash (%, 14% mb) | **1.32** | 1.41 | **1.25** | 1.31 |
| Thousand Kernel Weight (g, 14% mb) | **33.7** | 33.5 | **31.2** | 30.1 |
| Wheat Falling Number (seconds, 14% mb) | **317** | 334 | **330** | 336 |
| Flour Extraction (%) | **71.6** | 71.1 | **75.7** | 72.7 |
| Flour Ash (%, 14% mb) | **0.42** | 0.44 | **0.40** | 0.45 |
| Flour Wet Gluten (%, 14% mb) | **19.7** | 22.7 | **—** | — |
| Farinograph: Absorption (%, 14% mb) | **51.0** | 51.6 | **—** | — |
| Peak Time (minutes) | **1.2** | 1.8 | **—** | — |
| Stabililty (minutes) | **1.7** | 2.4 | **—** | — |
| Alveograph: P (mm) | **38** | 38 | **24** | 24 |
| L (mm) | **99** | 87 | **101** | 63 |
| W ($10^{-4}$ joules) | **86** | 84 | **40** | 32 |
| Production (mmt) | **6.51** | 5.79 | **0.12** | 0.23 |

## Production Zones

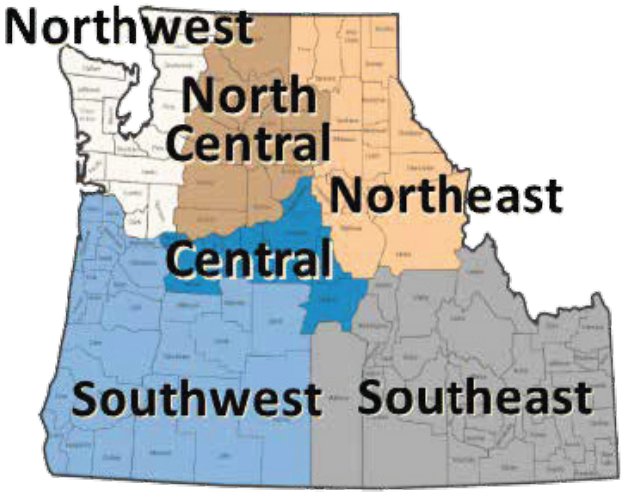



Photo courtesy of Jake Liening / Washington Grain

# Weather & Production

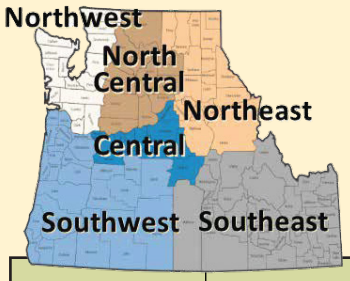
The 2024-2025 growing season in the Pacific Northwest began with adequate subsoil and topsoil moisture across most of the region at planting. Winter precipitation supported good emergence and development of the crop. While late spring and summer precipitation was below normal across the area, mild temperatures through June provided conditions for good plant development. Hotter conditions arrived for crop maturity and a timely harvest. USDA estimates PNW SW production at 6.63 MMT, slightly below the 2024 harvest.

## Soft White and Club Wheat Production by Region

| Production Zone | Million Bushels (MB) | Million Metric Tons (MMT) |
|---|---|---|
| North Central | 1.60 | 58.86 |
| Northeast | 2.29 | 84.15 |
| Central | 1.48 | 54.00 |
| Southeast | 0.93 | 34.29 |
| Southwest | 0.30 | 10.94 |
| Northwest | 0.03 | 1.22 |
| **Total Production** | **6.63** | **243.46** |

Photo courtesy of Idaho Wheat Commission

Photo courtesy of Amanda Spoo / Oregon Wheat




# Wheat Quality

| Production Zone | Wheat Protein Range 12% mb % | Grade | Test Weight lb/bu | Dockage % | Whole Kernel Moisture % | Wheat Falling Number 14% mb seconds | Wheat Ash 14% mb % | Thousand Kernel Weight 14% mb g | SKCS Kernel Hardness | Whole Meal Wet Gluten 14% mb % |
|---|---|---|---|---|---|---|---|---|---|---|
| **North Central** | 8.5-9.4 | 1SWH | 60.8 | 0.3 | 8.6 | 297 | 1.21 | 32.9 | 24 | 20.5 |
| | 9.5-10.4 | 1SWH | 61.1 | 0.6 | 9.3 | 320 | 1.22 | 33.9 | 23 | 24.6 |
| | 10.5-12.0 | 1SWH | 61.2 | 0.4 | 8.7 | 330 | 1.24 | 32.2 | 23 | 26.8 |
| | >12.0 | 1SWH | 58.4 | 0.7 | 8.6 | 345 | 1.31 | 27.1 | 28 | 35.3 |
| | **2025 Average** | **1SWH** | **60.9** | **0.5** | **9.0** | **319** | **1.23** | **32.8** | **23** | **24.9** |
| | 2024 Average | 1SWH | 60.9 | 0.5 | 8.4 | 333 | 1.29 | 34.3 | 26 | 23.0 |
| | 5 Year Average | 1SWH | 60.8 | 0.5 | 8.5 | 342 | 1.31 | 33.0 | 29 | 25.0 |
| **Northeast** | 8.5-9.4 | 1SWH | 61.0 | 0.4 | 9.6 | 319 | 1.26 | 31.9 | 22 | 20.3 |
| | 9.5-10.4 | 1SWH | 61.1 | 0.4 | 9.5 | 328 | 1.25 | 32.4 | 23 | 23.5 |
| | 10.5-12.0 | 1SWH | 60.8 | 0.5 | 9.2 | 341 | 1.32 | 30.9 | 22 | 27.4 |
| | >12.0 | 1SWH | 59.2 | 0.4 | 8.9 | 343 | 1.45 | 28.0 | 28 | 33.5 |
| | **2025 Average** | **1SWH** | **60.9** | **0.4** | **9.4** | **330** | **1.28** | **31.7** | **23** | **24.4** |
| | 2024 Average | 1SWH | 60.6 | 0.4 | 8.8 | 337 | 1.34 | 33.5 | 23 | 19.7 |
| | 5 Year Average | 1SWH | 60.9 | 0.5 | 9.1 | 343 | 1.40 | 32.8 | 27 | 22.9 |
| **Central** | 8.5-9.4 | 1SWH | 60.8 | 0.5 | 9.3 | 307 | 1.30 | 33.2 | 15 | 19.3 |
| | 9.5-10.4 | 1SWH | 60.7 | 0.5 | 9.4 | 316 | 1.32 | 34.3 | 14 | 22.0 |
| | 10.5-12.0 | 1SWH | 60.8 | 0.4 | 9.2 | 321 | 1.31 | 32.5 | 15 | 24.5 |
| | **2025 Average** | **1SWH** | **60.7** | **0.5** | **9.3** | **314** | **1.31** | **33.6** | **14** | **21.6** |
| | 2024 Average | 1SWH | 60.8 | 0.4 | 8.9 | 314 | 1.36 | 35.7 | 19 | 16.3 |
| | 5 Year Average | 1SWH | 60.6 | 0.5 | 8.9 | 331 | 1.44 | 33.1 | 27 | 22.6 |
| **Southeast** | <8.5 | 1SWH | 62.6 | 0.5 | 9.5 | 289 | 1.47 | 39.4 | 21 | 12.7 |
| | 8.5-9.4 | 1SWH | 61.9 | 0.4 | 9.6 | 300 | 1.54 | 40.4 | 19 | 17.4 |
| | 9.5-10.4 | 1SWH | 62.2 | 0.4 | 9.2 | 296 | 1.54 | 39.2 | 22 | 19.5 |
| | 10.5-12.0 | 1SWH | 61.2 | 0.6 | 8.6 | 305 | 1.55 | 35.2 | 25 | 22.1 |
| | **2025 Average** | **1SWH** | **62.0** | **0.4** | **9.3** | **298** | **1.53** | **39.2** | **21** | **18.0** |
| | 2024 Average | 1SWH | 61.6 | 0.4 | 10.7 | 320 | 1.56 | 39.0 | 21 | 19.3 |
| | 5 Year Average | 1SWH | 60.1 | 0.5 | 10.2 | 322 | 1.56 | 37.1 | 23 | 20.1 |
| **Southwest** | <8.5 | 1SWH | 60.9 | 0.6 | 11.3 | 323 | 1.38 | 41.2 | 23 | 17.0 |
| | **2025 Average** | **1SWH** | **60.9** | **0.6** | **11.3** | **323** | **1.38** | **41.2** | **23** | **17.0** |
| | 2024 Average | 1SWH | 60.6 | 0.6 | 10.5 | 330 | 1.46 | 40.1 | 23 | 18.6 |
| | 5 Year Average | 1SWH | 60.5 | 0.5 | 10.7 | 332 | 1.44 | 37.3 | 27 | 18.5 |
| **White Club** | **2025 Average** | **1WHCB** | **61.6** | **1.0** | **9.4** | **330** | **1.25** | **31.2** | **24** | **—** |
| | 2024 Average | 1WHCB | 60.5 | 1.1 | 8.4 | 332 | 1.31 | 31.2 | 26 | — |
| | 5 Year Average | 1WHCB | 60.6 | 0.7 | 8.3 | 336 | 1.30 | 31.2 | 29 | — |


# Flour Quality

| Production Zone | Wheat Protein Range 12% mb | Flour Yield | Flour Ash 14% mb | Flour Protein 14% mb | Flour Color | | | Flour Wet Gluten 14% mb | Flour Falling Number 14% mb | Amylograph Peak Viscosity |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | L* | a* | b* | | | |
| | % | % | % | % | | | | % | seconds | BU |
| **North Central** | 8.5-9.4 | 69.8 | 0.34 | 7.6 | 92.7 | -2.1 | 7.6 | 17.6 | 341 | 493 |
| | 9.5-10.4 | 70.3 | 0.36 | 8.5 | 92.7 | -2.1 | 7.5 | 21.9 | 343 | 557 |
| | 10.5-12.0 | 70.4 | 0.38 | 9.3 | 92.6 | -2.0 | 7.4 | 21.9 | 385 | 703 |
| | >12.0 | 65.5 | 0.39 | 11.3 | 92.3 | -2.0 | 7.5 | 41.0 | 381 | 677 |
| | **2025 Average** | **69.9** | **0.36** | **8.7** | **92.7** | **-2.1** | **7.5** | **22.2** | **355** | **582** |
| | 2024 Average | 70.4 | 0.42 | 8.2 | 93.0 | -2.3 | 8.4 | 22.8 | 365 | 552 |
| | 5 Year Average | 70.7 | 0.44 | 9.5 | 93.0 | -2.2 | 8.2 | 25.0 | 369 | 560 |
| **Northeast** | 8.5-9.4 | 65.9 | 0.38 | 7.7 | 92.5 | -2.1 | 7.7 | 15.4 | 365 | 556 |
| | 9.5-10.4 | 70.5 | 0.43 | 8.8 | 92.6 | -2.0 | 7.5 | 17.3 | 385 | 522 |
| | 10.5-12.0 | 70.9 | 0.36 | 9.4 | 92.2 | -2.0 | 7.5 | 24.4 | 347 | 537 |
| | >12.0 | 67.9 | 0.48 | 11.4 | 92.3 | -1.8 | 7.5 | 29.7 | 394 | 546 |
| | **2025 Average** | **69.5** | **0.40** | **8.9** | **92.5** | **-2.0** | **7.6** | **19.5** | **371** | **534** |
| | 2024 Average | 70.9 | 0.43 | 7.6 | 93.0 | -2.3 | 8.6 | 18.3 | 379 | 554 |
| | 5 Year Average | 71.6 | 0.44 | 8.9 | 92.9 | -2.2 | 8.4 | 22.1 | 367 | 556 |
| **Central** | 8.5-9.4 | 69.1 | 0.41 | 8.1 | 92.5 | -2.0 | 7.5 | 16.9 | 355 | 478 |
| | 9.5-10.4 | 71.3 | 0.44 | 8.9 | 92.3 | -1.9 | 7.1 | 21.3 | 349 | 576 |
| | 10.5-12.0 | 68.1 | 0.44 | 9.3 | 92.5 | -1.8 | 7.0 | 23.8 | 379 | 595 |
| | **2025 Average** | **70.1** | **0.43** | **8.7** | **92.4** | **-1.9** | **7.2** | **20.4** | **356** | **549** |
| | 2024 Average | 71.8 | 0.47 | 7.1 | 93.2 | -2.3 | 8.3 | 15.7 | 356 | 542 |
| | 5 Year Average | 71.6 | 0.44 | 9.1 | 93.0 | -2.1 | 8.0 | 22.5 | 362 | 551 |
| **Southeast** | <8.5 | 71.2 | 0.47 | 6.6 | 92.7 | -2.0 | 7.4 | 13.3 | 336 | 421 |
| | 8.5-9.4 | 74.6 | 0.47 | 7.6 | 92.6 | -1.9 | 7.0 | 16.5 | 360 | 408 |
| | 9.5-10.4 | 72.9 | 0.47 | 8.5 | 92.8 | -1.8 | 6.6 | 22.6 | 341 | 402 |
| | 10.5-12.0 | 71.1 | 0.49 | 9.5 | 92.3 | -1.9 | 7.5 | 23.9 | 379 | 439 |
| | **2025 Average** | **73.1** | **0.47** | **8.0** | **92.6** | **-1.9** | **7.0** | **18.9** | **353** | **412** |
| | 2024 Average | 71.5 | 0.46 | 7.7 | 93.1 | -2.2 | 8.2 | 17.8 | 340 | 422 |
| | 5 Year Average | 71.9 | 0.47 | 8.6 | 93.0 | -2.1 | 7.9 | 20.6 | 345 | 466 |
| **Southwest** | <8.5 | 71.1 | 0.49 | 6.9 | 92.8 | -2.1 | 7.7 | 11.9 | 336 | 456 |
| | **2025 Average** | **71.1** | **0.49** | **6.9** | **92.8** | **-2.1** | **7.7** | **11.9** | **336** | **456** |
| | 2024 Average | 73.0 | 0.54 | 7.1 | 93.2 | -2.2 | 8.3 | 13.5 | 345 | 432 |
| | 5 Year Average | 71.9 | 0.50 | 7.6 | 92.7 | -2.3 | 8.8 | 18.5 | 345 | 447 |
| **White Club** | **2025 Average** | **75.7** | **0.40** | **7.9** | **92.7** | **-1.9** | **7.1** | **—** | **347** | **475** |
| | 2024 Average | 71.7 | 0.45 | 7.9 | 93.4 | -2.2 | 8.1 | — | 383 | 500 |
| | 5 Year Average | 72.7 | 0.45 | 9.2 | 93.1 | -2.0 | 7.8 | — | 372 | 501 |


# Solvent Retention Capacity (SRC)

| Production Zone | Wheat Protein Range 12% mb % | Water % | 50% Sucrose % | 5% Lactic Acid % | 5% Sodium Carbonate % | Gluten Performance Index |
|---|---|---|---|---|---|---|
| **North Central** | 8.5-9.4 | 54 | 99 | 94 | 71 | 0.55 |
| | 9.5-10.4 | 53 | 101 | 93 | 71 | 0.54 |
| | 10.5-12.0 | 55 | 104 | 109 | 73 | 0.62 |
| | >12.0 | 57 | 117 | 103 | 77 | 0.49 |
| | **2025 Average** | **54** | **102** | **97** | **72** | **0.56** |
| | 2024 Average | 55 | 99 | 93 | 71 | 0.55 |
| | 5 Year Average | 54 | 98 | 109 | 71 | 0.65 |
| **Northeast** | 8.5-9.4 | 56 | 102 | 94 | 75 | 0.53 |
| | 9.5-10.4 | 57 | 104 | 94 | 77 | 0.52 |
| | 10.5-12.0 | 59 | 105 | 101 | 78 | 0.55 |
| | >12.0 | 60 | 114 | 120 | 81 | 0.62 |
| | **2025 Average** | **57** | **104** | **97** | **77** | **0.54** |
| | 2024 Average | 54 | 98 | 98 | 70 | 0.58 |
| | 5 Year Average | 52 | 97 | 101 | 70 | 0.61 |
| **Central** | 8.5-9.4 | 57 | 104 | 103 | 77 | 0.57 |
| | 9.5-10.4 | 58 | 110 | 106 | 77 | 0.56 |
| | 10.5-12.0 | 58 | 109 | 109 | 77 | 0.59 |
| | **2025 Average** | **57** | **108** | **105** | **77** | **0.57** |
| | 2024 Average | 54 | 98 | 99 | 73 | 0.58 |
| | 5 Year Average | 53 | 97 | 106 | 70 | 0.64 |
| **Southeast** | <8.5 | 58 | 96 | 68 | 74 | 0.42 |
| | 8.5-9.4 | 55 | 93 | 72 | 72 | 0.43 |
| | 9.5-10.4 | 55 | 96 | 76 | 73 | 0.43 |
| | 10.5-12.0 | 56 | 100 | 70 | 75 | 0.40 |
| | **2025 Average** | **56** | **95** | **72** | **73** | **0.42** |
| | 2024 Average | 53 | 97 | 79 | 71 | 0.47 |
| | 5 Year Average | 51 | 93 | 79 | 68 | 0.49 |
| **Southwest** | <8.5 | 57 | 101 | 80 | 78 | 0.44 |
| | **2025 Average** | **57** | **101** | **80** | **78** | **0.44** |
| | 2024 Average | 54 | 94 | 83 | 73 | 0.49 |
| | 5 Year Average | 55 | 97 | 89 | 74 | 0.52 |
| **White Club** | **2025 Average** | **52** | **96** | **72** | **72** | **0.43** |
| | 2024 Average | 53 | 92 | 73 | 68 | 0.46 |
| | 5 Year Average | 52 | 92 | 74 | 68 | 0.46 |


# Physical Dough Properties

| Production Zone | Wheat Protein Range 12% mb % | Farinograph | | | Alveograph | | | |
|---|---|---|---|---|---|---|---|---|
| | | Absorption 14%mb % | Peak Time minutes | Stabililty minutes | P mm | L mm | P/L | W 10-4 joules |
| **North Central** | 8.5-9.4 | — | — | — | 40 | 97 | 0.41 | 91 |
| | 9.5-10.4 | 50.7 | 1.2 | 2.2 | 39 | 104 | 0.38 | 92 |
| | 10.5-12.0 | 50.6 | 1.3 | 2.4 | 39 | 128 | 0.30 | 122 |
| | >12.0 | 53.0 | 2.0 | 2.4 | 40 | 124 | 0.32 | 98 |
| | **2025 Average** | **50.8** | **1.3** | **2.2** | **39** | **109** | **0.36** | **99** |
| | 2024 Average | 51.8 | 1.4 | 2.4 | 43 | 77 | 0.56 | 88 |
| | 5 Year Average | 52.4 | 2.2 | 3.1 | 42 | 100 | 0.45 | 102 |
| **Northeast** | 8.5-9.4 | — | — | — | 41 | 65 | 0.63 | 79 |
| | 9.5-10.4 | 50.5 | 1.4 | 1.5 | 36 | 75 | 0.48 | 68 |
| | 10.5-12.4 | 53.0 | 1.3 | 2.2 | 50 | 90 | 0.56 | 120 |
| | >12.0 | 52.4 | 2.3 | 2.6 | 41 | 152 | 0.27 | 131 |
| | **2025 Average** | **51.4** | **1.4** | **1.8** | **41** | **81** | **0.52** | **88** |
| | 2024 Average | 50.6 | 1.3 | 3.3 | 41 | 84 | 0.50 | 95 |
| | 5 Year Average | 51.5 | 1.7 | 2.7 | 37 | 89 | 0.44 | 84 |
| **Central** | 8.5-9.4 | — | — | — | 35 | 103 | 0.34 | 93 |
| | 9.5-10.4 | 49.5 | 1.3 | 2.3 | 37 | 127 | 0.29 | 109 |
| | 10.5-12.0 | 50.2 | 1.2 | 2.4 | 41 | 115 | 0.36 | 118 |
| | **2025 Average** | **49.7** | **1.3** | **2.3** | **37** | **118** | **0.32** | **106** |
| | 2024 Average | 49.8 | 1.2 | 2.4 | 39 | 76 | 0.55 | 86 |
| | 5 Year Average | 51.0 | 1.6 | 2.5 | 36 | 98 | 0.41 | 91 |
| **Southeast** | <8.5 | — | — | — | 29 | 75 | 0.39 | 37 |
| | 8.5-9.4 | — | — | — | 32 | 82 | 0.39 | 47 |
| | 9.5-10.4 | 51.2 | 1.0 | 1.3 | 32 | 57 | 0.56 | 44 |
| | 10.5-12.0 | 52.0 | 1.1 | 1.1 | 32 | 56 | 0.57 | 43 |
| | **2025 Average** | **51.5** | **1.0** | **1.2** | **32** | **70** | **0.47** | **44** |
| | 2024 Average | 50.0 | 0.7 | 1.3 | 37 | 41 | 0.91 | 44 |
| | 5 Year Average | 51.2 | 1.3 | 1.8 | 32 | 68 | 0.55 | 47 |
| **Southwest** | <8.5 | — | — | — | 41 | 53 | 0.77 | 59 |
| | **2025 Average** | **—** | **—** | **—** | **41** | **53** | **0.77** | **59** |
| | 2024 Average | — | — | — | 42 | 53 | 0.79 | 60 |
| | 5 Year Average | — | — | — | 38 | 77 | 0.53 | 69 |
| **White Club** | **2025 Average** | — | — | — | **24** | **101** | **0.24** | **40** |
| | 2024 Average | — | — | — | 26 | 42 | 0.62 | 29 |
| | 5 Year Average | — | — | — | 24 | 63 | 0.45 | 32 |


# Sponge Cake

| Production Zone | Wheat Protein Range 12% mb % | Sponge Cake | |
|---|---|---|---|
| | | Volume cc | Firmness g |
| **North Central** | 8.5-9.4 | 1121 | 392 |
| | 9.5-10.4 | 1092 | 402 |
| | 10.5-12.0 | 1050 | 436 |
| | >12.0 | 1092 | 468 |
| | **2025 Average** | **1090** | **412** |
| | 2024 Average | 1041 | 306 |
| | 5 Year Average | 1079 | — |
| **Northeast** | 8.5-9.4 | 1107 | 433 |
| | 9.5-10.4 | 1047 | 496 |
| | 10.5-12.0 | 1019 | 470 |
| | >12.0 | 1004 | 562 |
| | **2025 Average** | **1050** | **479** |
| | 2024 Average | 1075 | 293 |
| | 5 Year Average | 1096 | — |
| **Central** | 8.5-9.4 | 1145 | 397 |
| | 9.5-10.4 | 1103 | 439 |
| | 10.5-12.0 | 1036 | 485 |
| | **2025 Average** | **1104** | **434** |
| | 2024 Average | 1079 | 283 |
| | 5 Year Average | 1082 | — |
| **Southeast** | <8.5 | 1088 | 337 |
| | 8.5-9.4 | 1127 | 356 |
| | 9.5-10.4 | 1102 | 362 |
| | 10.5-12.0 | 1030 | 386 |
| | **2025 Average** | **1101** | **359** |
| | 2024 Average | 1087 | 241 |
| | 5 Year Average | 1103 | — |
| **Southwest** | <8.5 | 1048 | 418 |
| | **2025 Average** | **1048** | **418** |
| | 2024 Average | 1093 | 280 |
| | 5 Year Average | 1110 | — |
| **White Club** | **2025 Average** | **1055** | **463** |
| | 2024 Average | 1081 | 287 |
| | 5 Year Average | 1115 | — |

Photos courtesy of Wheat Marketing Center


# Cookies

| Production Zone | Wheat Protein Range 12% mb % | Sugar Snap Cookie | | |
|---|---|---|---|---|
| | | Spread cm | Spread Ratio width/height | Top Grain Score |
| **North Central** | 8.5-9.4 | 9.2 | 12.5 | 8.5 |
| | 9.5-10.4 | 8.9 | 11.9 | 7.5 |
| | 10.5-12.0 | 8.9 | 11.5 | 7.0 |
| | >12.0 | 8.5 | 10.0 | 4.0 |
| | **2025 Average** | **8.9** | **11.8** | **7.4** |
| | 2024 Average | 9.4 | 12.0 | 4.4 |
| | 5 Year Average | 8.7 | 10.4 | 3.4 |
| **Northeast** | 8.5-9.4 | 9.0 | 12.4 | 8.0 |
| | 9.5-10.4 | 8.7 | 10.9 | 6.5 |
| | 10.5-12.0 | 8.9 | 10.8 | 7.0 |
| | >12.0 | 8.4 | 9.3 | 3.5 |
| | **2025 Average** | **8.8** | **11.1** | **6.8** |
| | 2024 Average | 9.4 | 12.6 | 5.1 |
| | 5 Year Average | 8.7 | 10.5 | 3.7 |
| **Central** | 8.5-9.4 | 8.9 | 11.9 | 2.0 |
| | 9.5-10.4 | 8.6 | 10.8 | 5.5 |
| | 10.5-12.0 | 8.9 | 10.7 | 7.5 |
| | **2025 Average** | **8.7** | **11.1** | **4.8** |
| | 2024 Average | 9.4 | 12.2 | 6.4 |
| | 5 Year Average | 8.7 | 10.3 | 4.0 |
| **Southeast** | <8.5 | 9.1 | 12.2 | 7.5 |
| | 8.5-9.4 | 9.2 | 12.3 | 8.0 |
| | 9.5-10.4 | 9.0 | 12.0 | 7.5 |
| | 10.5-12.0 | 8.8 | 10.3 | 7.0 |
| | **2025 Average** | **9.1** | **11.9** | **7.6** |
| | 2024 Average | 9.4 | 11.9 | 6.8 |
| | 5 Year Average | 8.8 | 10.4 | 4.5 |
| **Southwest** | <8.5 | 8.8 | 10.3 | 7.0 |
| | **2025 Average** | **8.8** | **10.3** | **7.0** |
| | 2024 Average | 9.4 | 11.7 | 6.5 |
| | 5 Year Average | 8.6 | 9.7 | 4.1 |
| **White Club** | **2025 Average** | **9.1** | **13.1** | **4.0** |
| | 2024 Average | 9.8 | 14.0 | 6.5 |
| | 5 Year Average | 9.1 | 12.1 | 5.3 |

Photos courtesy of Wheat Marketing Center


# Steamed Bread

| Production Zone | Wheat Protein Range 12% mb % | Chinese Southern Type Steamed Bread | |
|---|---|---|---|
| | | Specific Volume cc/g | Hardness g |
| **North Central** | 8.5-9.4 | 2.56 | 2224 |
| | 9.5-10.4 | 2.62 | 2219 |
| | 10.5-12.0 | 2.61 | 1882 |
| | >12.0 | 2.79 | 2095 |
| | **2025 Average** | **2.62** | **2138** |
| | 2024 Average | 2.64 | 1934 |
| | 5 Year Average | 2.37 | — |
| **Northeast** | 8.5-9.4 | 2.54 | 1732 |
| | 9.5-10.4 | 2.69 | 1962 |
| | 10.5-12.0 | 2.76 | 1839 |
| | >12.0 | 2.81 | 1938 |
| | **2025 Average** | **2.68** | **1880** |
| | 2024 Average | 2.57 | 1790 |
| | 5 Year Average | 2.40 | — |
| **Central** | 8.5-9.4 | 2.53 | 2115 |
| | 9.5-10.4 | 2.65 | 1836 |
| | 10.5-12.0 | 2.67 | 2149 |
| | **2025 Average** | **2.62** | **1976** |
| | 2024 Average | 2.54 | 1608 |
| | 5 Year Average | 2.34 | — |
| **Southeast** | <8.5 | 2.33 | 2131 |
| | 8.5-9.4 | 2.41 | 2062 |
| | 9.5-10.4 | 2.48 | 1930 |
| | 10.5-12.0 | 2.56 | 2157 |
| | **2025 Average** | **2.44** | **2044** |
| | 2024 Average | 2.49 | 1774 |
| | 5 Year Average | 2.33 | — |
| **Southwest** | <8.5 | 2.37 | 2180 |
| | **2025 Average** | **2.37** | **2180** |
| | 2024 Average | 2.40 | 1964 |
| | 5 Year Average | 2.27 | — |
| **White Club** | **2025 Average** | **2.68** | **1802** |
| | 2024 Average | 2.67 | 1621 |
| | 5 Year Average | 2.51 | — |

Photos courtesy of Wheat Marketing Center

# Summary

These results were derived from composite samples from the 2025 Pacific Northwest soft white (SW) and white club (WC) wheat harvest. SW composites were prepared by production zone and protein levels. All WC samples were blended into one composite. The composite samples were analyzed for wheat quality, flour quality, solvent retention capacity, physical dough properties, and finished product characteristics. Please note that some production zones did not have low or high protein samples this year. Harvest results are summarized as follows:

## Wheat Quality

### Test Weight

- SW weighted average test weights are ≥ 60.7 pounds per bushel (lbs/bu) across all production zones.
- WC test weight is 61.6 lbs/bu.

### Wheat Moisture

- SW wheat weighted average moistures are ≤ 9.4% with the exception of the Southwest Zone at a weighted average of 11.3% moisture. Low wheat moisture is characteristic of the class.
- WC wheat moisture is 9.4%.

### Falling Number

- SWSW weighted average falling number values are ≥ 314 sec with the exception of the Southeast Zone at a weighted average of 298 sec. Lower falling number values in the Southeast Zone are likely due to localized freeze events during grain filling rather than preharvest sprouting.
- WC falling number is 330 sec.

Photo courtesy of Jake Liening / Washington Grain

Photo courtesy of Amanda Spoo / Oregon Wheat

### Wheat Ash

- SW weighted average wheat ash values are between 1.23% to 1.53% (14% mb) across all production zones, with all zones reporting lower wheat ash values compared to last year. This may be a reflection of less moisture in the second half of the growing season.
- WC wheat ash average is 1.25% (14% mb).

### Thousand Kernel Weight (TKW)

- SW weighted average TKW ranges from 31.7 g to 41.2 g across the production zones.
- WC TKW is 31.2 g.

### SKCS Kernel Hardness Index

- SW SKCS hardness weighted averages range from 14 to 23 across all production zones.
- WC SKCS hardness average is 24.

### Whole Meal Wet Gluten

- SW weighted average whole meal wet gluten values range from 17.0% to 24.9%, with lower values from lower protein composites across all production zones. North Central, Northeast, and Central zones show greater values than last year, whereas Southeast and Southwest zones are lower than last year.
- WC whole meal wet gluten has been discontinued.

## Flour Quality

### Flour Yields

- SW weighted average flour yields range from 69.5% to 73.1%. These yields are based on tempered wheat weight and should not be compared to the 5-year average, which has been partially based on total product weight. Lower flour yields are more typical for higher protein composites that have a combination of lower test weight and TKW.
- WC flour yield is 75.7%.

## Flour Ash

- SW weighted average straight grade flour ash values are ≤ 0.49% (14% mb) across all production zones. Most zones show lower flour ash values than last year. The Southeast zone is the exception with a flour ash similar to 2024.
- WC straight grade flour ash is 0.40% (14% mb).

## Flour Color

- SW flour L* (whiteness) values exceed 92.2 across all protein composites and production zones. Weighted average values range from 92.4 to 92.8. L* values for all zones are slightly lower than those observed last year.
- WC flour L* is 92.7.

## Wet Gluten

- SW wet gluten ranges from 11.9% to 41.0% with weighted averages of ≥ 11.9% across all production zones, with most zones having greater weighted average values than last year. These values are typical for samples with very weak to medium gluten strength.
- WC wet gluten has been discontinued.

## Flour Falling Number

- SW flour falling number weighted average values are all ≥ 336 sec.
- WC flour falling number is 347 sec.

## Amylograph

- SW weighted average Amylograph peak viscosities are all ≥ 412 BU, comparable to the 5-year average.
- WC Amylograph peak viscosity is 475 BU.

Photo courtesy of Jake Liening / Washington Grain

Photo courtesy of Jessie Fields / Oregon Wheat

# Solvent Retention Capacity (SRC)

*All SRC tests were completed using a Poolphol auto-shaker unit in lieu of hand shaking this year. Results may not be comparable to last year or the 5-year average.*

## Water SRC

- SW water SRC weighted average values are ≤ 57% across all production zones.
- WC water SRC is 52%.

## Sucrose SRC

- SW sucrose SRC weighted average values are ≤ 108% across all production zones.
- WC sucrose SRC is 96%.

## Lactic Acid SRC

- SW lactic acid SRC values range from 68% to 120% for all protein composites in all production zones. These values are typical for very weak to medium gluten strength.
- WC lactic acid SRC is 72%, indicative of very weak gluten.

## Sodium Carbonate SRC

- SW sodium carbonate SRC weighted average values are ≤ 78% across all production zones.
- WC sodium carbonate SRC is 72%.

## Gluten Performance Index (GPI)

- SW GPI values range from 0.40 to 0.62. This is in line with the lactic acid SRC results and indicates that gluten strength is very weak to medium.
- WC GPI is 0.43, which is typical for very weak gluten.


Photo courtesy of Saydee Longhurst / Idaho Wheat


Photo courtesy of Jake Liening / Washington Grain

## Physical Dough Properties

### Farinograph

- SW Farinograph water absorption values are ≤ 53.0% for all protein composites across all production zones with weighted average peak times and stabilities of ≤ 1.4 min and ≤ 2.3 min, respectively. Peak times and stabilities were generally longer for higher protein composites. Low water absorption values are desirable for products like cookies and crackers. Farinograph testing for low protein composites (< 9.5%) have been discontinued.
- WC Farinograph testing has been discontinued.

### Alveograph

- SW Alveograph P value weighted averages range from 32 mm to 41 mm with L value weighted averages of 53 mm to 118 mm and P/L ratio weighted averages of 0.32 to 0.77. W value weighted averages range from 44 (10-4 J) to 106 (10-4 J). These values align with Farinograph data for gluten strength ranging from very weak to medium.
- WC Alveograph P, L, P/L and W values are 24 mm, 101 mm, 0.24 and 40 (10-4 J), respectively. These values are typical for very weak gluten strength.

Photos courtesy of Wheat Marketing Center

## Finished Products

### Sponge Cake

- SW sponge cake volume weighted averages range from 1048 cc to 1104 cc across all production zones. Weighted averages for firmness values range from 359 g to 479 g which are harder for all production zones this year compared to 2024 weighted averages. All cakes were baked from an experimentally milled straight grade flour. Selecting appropriate short patent flour streams should improve performance. Control cakes from a commercially milled short patent cake flour from the 2024 harvest year have an average volume of 1218 cc and a firmness value of 327 g.
- WC sponge cake volume is 1055 cc with a firmness value of 463 g. The volume is smaller than last year and the texture is harder.

### Sugar Snap Cookies

- SW cookie diameter weighted averages range from 8.7 cm to 9.1 cm with spread ratios of 10.3 to 11.9, slightly smaller than last year. Weighted average top grain scores were 4.8 to 7.6, a general improvement over last year with the exception of the Central production zone. All composites show acceptable to good cookie quality.
- WC has an average cookie diameter of 9.1 cm with a spread ratio of 13.1 and a top grain score of 4.0, all of which are slightly lower than in 2024. These values are indicative of acceptable cookie quality.

### Steamed Bread

- SW steamed bread specific volume weighted averages are 2.37 cc/g or greater in all production zones with hardness values ranging from 1880 g to 2180 g. Selecting appropriate flour streams should improve performance. Control steamed breads have a volume of 2.52 cc/g with a hardness of 2158 g.
- WC steamed bread specific volume is 2.68 g/cc with a hardness of 1802 g.

In summary, the overall quality of the crop can be described as acceptable to good, characterized by very weak to medium gluten strength. WC and SW in the lower to mid-protein ranges show good potential in cakes, pastries, and other weak gluten applications while SW in the mid- to higher protein ranges show acceptable to good potential in cookies, crackers, hard and soft wheat blends, and other moderate gluten strength applications.

**Wheat Marketing Center thanks the many individuals and organizations that provided samples for the 2025 Annual Pacific Northwest Crop Quality Survey, and recognizes with gratitude the project's funding partners:**

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