



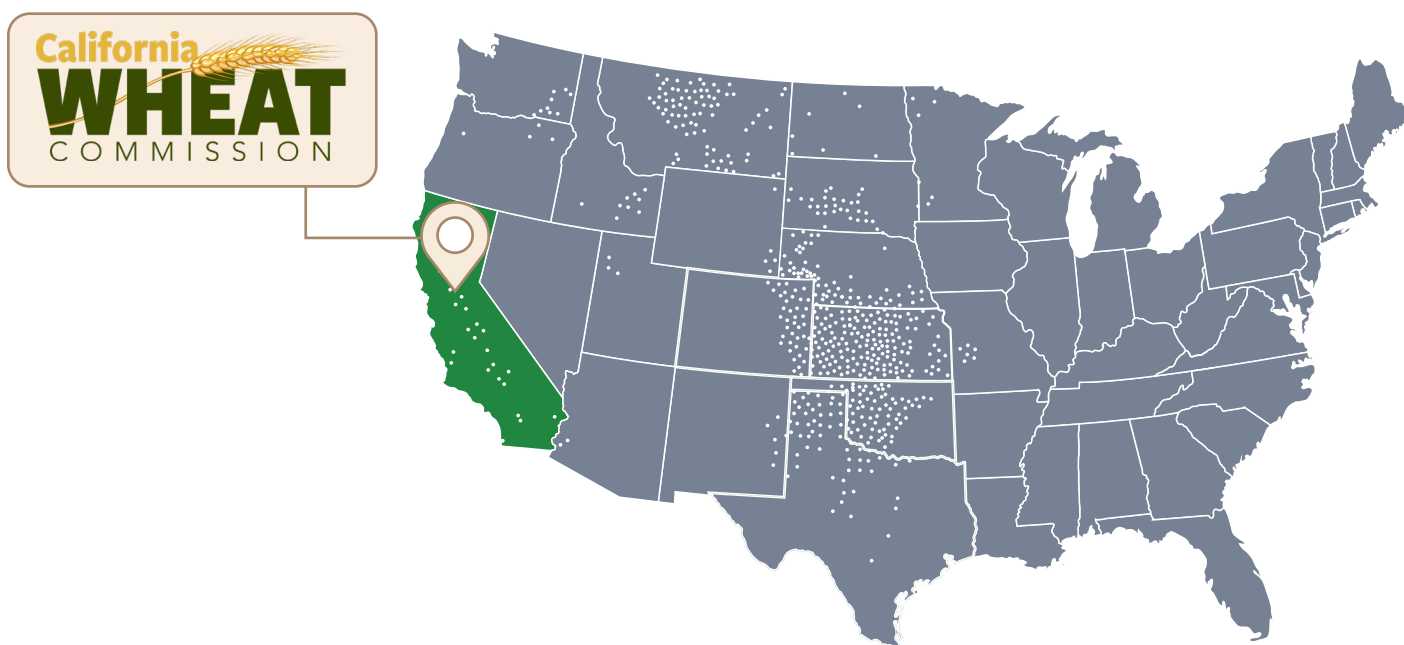
CALIFORNIA HARD RED WINTER

2025 QUALITY SURVEY



CALIFORNIA WHEAT COMMISSION

The California Wheat Commission Wheat Quality Laboratory, located in Woodland, California, began operating 30 years ago. It is capable of testing milling quality, chemical and physical analysis of wheat and flour, physical dough testing and semolina analysis. Final product testing is available for bread and cookie baking and noodle, tortilla and pasta analysis. The lab and its staff are respected in the domestic and international marketplace as a premiere source of technical information and assistance. The CWC is available to work for customers in the areas of quality assurance, problem solving, quality control training, product development and research.



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SAMPLES OF
HARD RED WINTER

collected from grain
elevators during
local harvest.

SAMPLE METHODOLOGY

SAMPLE TESTING

California Wheat Commission Laboratory and USDA's Federal Grain Inspection Service (FGIS) conducted test quality testing.

SAMPLE ANALYSIS

Official grade and non-grade factors and functionality tests were determined on each sample. Results are weighted averages. The methods are described in the Analysis Methods section of this booklet.

CALIFORNIA HARD RED WINTER

California's wheat growing regions are defined by climate, value of alternative crops and distinct differences in variety selection. Most California hard wheat is planted from October to January and harvested in June and July. With the strong demand for new crop wheat in the domestic marketplace, importers are encouraged to express their interest in purchasing California wheat in early spring.

WEATHER AND HARVEST

Precipitation during the 2024–25 season was average in the Sacramento Valley and below average in the San Joaquin Valley. From October through June, the San Joaquin Valley received an average of 8.0 inches of rainfall, which is 73% of the 10-year average. In the Sacramento Valley, rainfall totaled 19.2 inches, or 99% of the average.

Early-season precipitation (October–February) accounted for 63% of the seasonal total in the San Joaquin Valley and 86% in the Sacramento Valley. These figures represent 115% and 64% of average, respectively. From March through June, rainfall was 52% of average in the Sacramento Valley and 96% of average in the San Joaquin Valley. Maximum daily temperatures during this period were near average.

According to USDA survey data, wheat acres planted declined slightly compared to the previous season, while total acres harvested for grain remained unchanged, representing approximately one-third of planted acres.

Disease pressure was consistent with previous years, with stripe rust-susceptible cultivars showing strong infection and sporulation. Samples submitted to USDA for race identification did not reveal any new pathogen races.

CROP SUMMARY

California hard red winter (HRW) wheat varieties are recognized for their low moisture content and large, uniform kernel size. Predominantly grown under irrigation, these varieties consistently deliver high yields and reliable quality. The 2025 crop is characterized by medium protein levels, low moisture, high flour extraction and strong baking performance, making California wheat well-suited for blending applications.

GRADE: The overall grade sample average for the 2025 HRW harvest survey is U.S. No. 1 HRW.

TEST WEIGHT: Averaged 63.7 lb/bu, slightly lower than last year and comparable to the five-year average of 63.8 lb/bu.

KERNEL DATA: Kernels were uniform and dense, with 88% classified as large – just below the five-year average of 90%.

MOISTURE: Averaged 9.7%, consistent with last year and the five-year average of 9.4%.

PROTEIN: Averaged 12.4% (12% mb), 0.4% higher than last year and slightly above the five-year average of 11.9%.

FALLING NUMBER: Averaged 353 seconds, indicating sound wheat, and consistent with both last year and the five-year average.

LABORATORY MILL FLOUR EXTRACTION: Averaged 67.6%, slightly below last year and the five-year average of 68.4%. Samples were milled on a Brabender Quad Senior.

SOLVENT RETENTION CAPACITY (GPI): Averaged 0.69, comparable to last year and the five-year average of 0.71, indicating good flour performance in baking.

DOUGH PROPERTIES: Indicate an acceptable crop, consistent with the five-year average.

ALVEOGRAPH: Average W value of 320, reflecting exceptional dough strength, and L value of 109 mm, indicating good extensibility.

FARINOGRAPH: Peak and stability times averaged 13.4 and 18.1 minutes, respectively – both higher than the five-year averages of 6.3 and 12.9 minutes.

BAKE ABSORPTION: Averaged 65.7%, higher than both last year and the five-year average of 62.2%.

LOAF VOLUME: Averaged 944 cc, exceeding both last year and the five-year average.

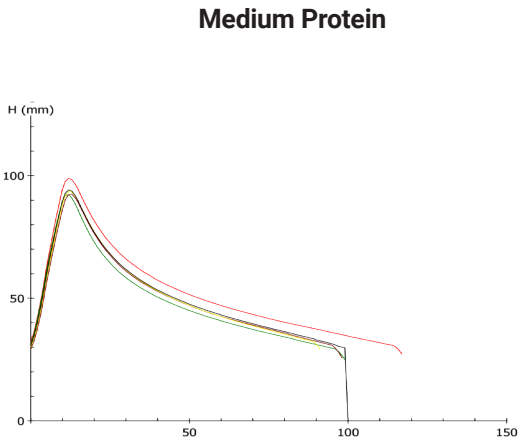
2025 HARVEST DATA

	Medium Protein		High Protein	
	2025 Avg	2024 Avg	2025 Avg	2024 Avg
WHEAT GRADE DATA:				
Test Weight (lb/bu)	64.1	63.8	62.6	63.5
(kg/hl)	84.2	83.8	82.3	83.5
Damaged Kernels (%)	0.0	0.0	0.0	0.0
Foreign Material (%)	0.0	0.0	0.1	0.1
Shrunken & Broken (%)	0.4	0.4	0.6	0.4
Total Defects (%)	0.4	0.4	0.7	0.4
Grade	1.0	1.0	1.0	1.0
WHEAT NON-GRADE DATA:				
Dockage (%)	0.5	0.8	1.0	1.0
Moisture (%)	9.7	9.3	9.8	9.5
Protein (%) 12%/0% mb	11.6/13.2	11.6/13.2	13.2/14.9	12.6/14.4
Ash (%) 14%/0% mb	1.42/1.65	1.47/1.71	1.48/1.73	1.52/1.76
1000 Kernel Weight (g) 14% mb	42.1	41.4	41.1	41.1
Kernel Size (%) lg/md/sm	93/07/00	92/08/00	88/12/00	92/08/00
Single Kernel: Hardness	65.9	62.3	64.9	63.6
Weight (mg)	45.1	42.3	41.2	42.4
Diameter (mm)	3.08	3.06	3.09	3.09
Sedimentation (cc)	54	43	56	46
Falling Number (sec)	308	378	355	408
DON (ppm)	<0.25	<0.25	<0.25	<0.25
FLOUR DATA:				
Lab Mill Extraction (%)	68.5	68.0	68.4	69.0
Color: L*	92.5	92.7	92.5	92.6
a*	-1.5	-1.2	-1.4	-1.3
b*	8.4	8.8	8.1	9.3
Protein (%) 14%/0% mb	10.2/11.9	10.3/12.0	11.9/13.8	11.7/13.6
Ash (%) 14%/0% mb	0.43/0.49	0.43/0.50	0.40/0.47	0.43/0.50
Wet Gluten (%)	26.2	28.4	32.0	32.5
Falling Number (sec)	308	378	355	408
Amylograph Viscosity: 65g (BU)	682	875	939	936
RVA: Pasting Temp. (°C)/Peak Viscosity (cP)	70.3/2643	71.9/2732	71.0/3061	70.2/2992
Hot Paste Viscosity (cP)/Final Viscosity (cP)	1659/2598	2036/2803	2056/2939	2118/2984
Damaged Starch (%)	6.6	7.0	7.9	7.4
SRC: Water/50% Sucrose (%)	66/100	63/102	67/112	66/107
5% Lactic Acid/5% Na ₂ CO ₃ (%)	139/90	132/81	152/88	140/82
Gluten Performance Index (GPI)	0.73	0.72	0.76	0.74
DOUGH PROPERTIES:				
Farinograph: Peak Time (min)	5.8	6.3	7.0	8.4
Stability (min)	10.1	12.0	26.0	20.0
Absorption (%)	62.3	61.6	65.0	63.4
Alveograph: P (mm)	104	96	117	104
L (mm)	100	109	105	114
P/L Ratio	1.0	0.9	1.1	0.9
W (10 ⁻⁴ J)	334	340	401	389
Extensograph (45/135 min): Resistance ₉₀ (BU)	328/376	268/359	252/312	271/364
Resistance Max (BU)	592/685	478/576	556/621	530/654
Extensibility (cm)	18.5/17.5	19.2/16.9	23.4/21.8	21.4/18.5
Area (cm ²)	139/148	120/126	167/177	148/154
R ₅₀ /E Ratio	1.8/2.1	1.4/2.1	1.1/1.4	1.3/2.0
R _{max} /E Ratio	3.2/3.9	2.5/3.4	2.4/2.8	2.5/3.6
BAKING EVALUATION:				
Pan Bread: Bake Absorption (%)	64.0	62.5	66.5	63.4
Loaf Volume (cc)	965	920	980	955
Specific Volume (cc/g)	6.92	6.52	6.99	6.95

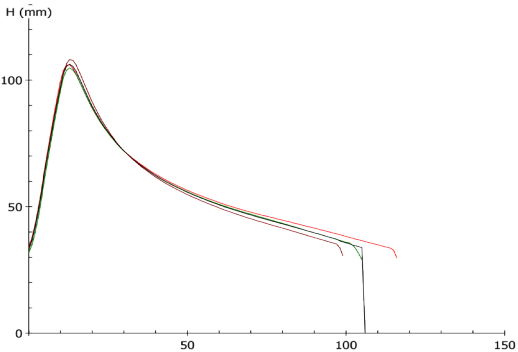


COMPOSITE DOUGH PROPERTIES

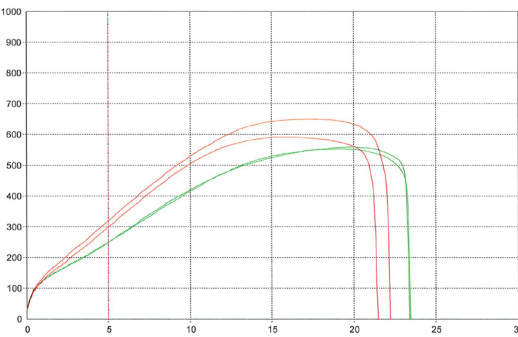
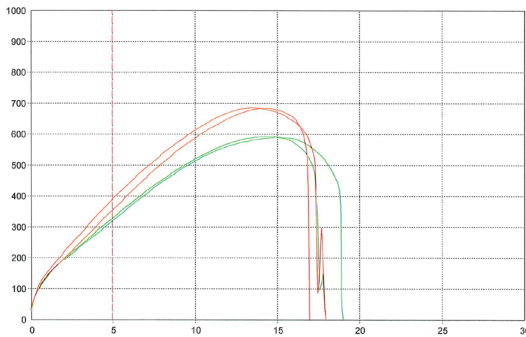
Alveograph



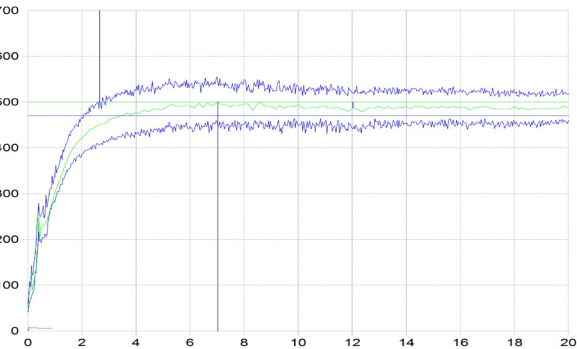
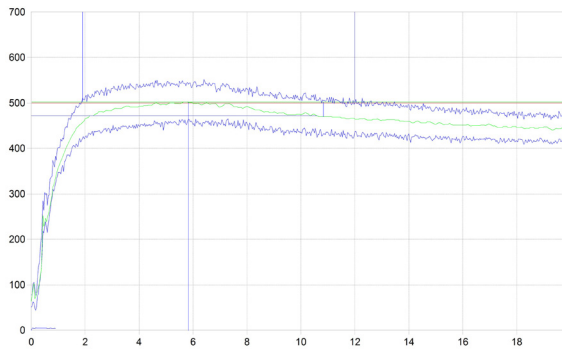
High Protein



Extensograph



Farinograph



High Protein



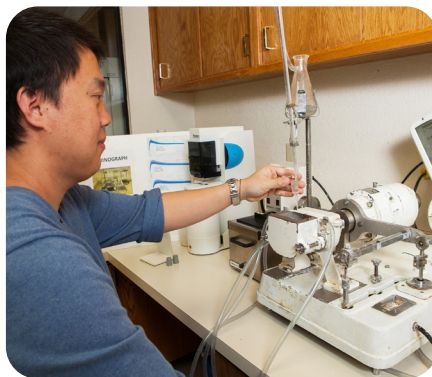
Medium Protein

ANALYSIS METHODS

CALIFORNIA WHEAT COMMISSION LABORATORY TESTING

All quality data contained in this report is the result of testing and/or analysis conducted by the California Wheat Commission Laboratory.

TEST:	METHODOLOGY:
WHEAT GRADE FACTORS	
Grade	Official U.S. Standards for Grain.
Test Weight	AACCI 55-10.01.
Damaged Kernels	Official U.S. Standards for Grain.
Foreign Material	Official U.S. Standards for Grain.
Shrunken and Broken	Official U.S. Standards for Grain.
Total Defects	Official U.S. Standards for Grain.
WHEAT NON-GRADE FACTORS	
Dockage	Official USDA procedures.
Moisture	AACCI 44-15.01, Air oven method.
Protein (12% mb)	AACCI 46-30.01 expressed on a 12% mb. Dumas combustion nitrogen analysis (CNA) method, ground wheat.
Ash (14% mb)	AACCI 08-01.01 expressed on a 14% mb. Methodology is same for wheat and flour.
1000 Kernel Weight	Based on a 10 g clean wheat sample counted by an electronic counter, results converted to express weight by 1000 kernels.
Kernel Size	Cereal Foods World (Cereal Science Today) 5:(3), 71 (1960). Wheat is sifted with a RoTap sifter using U.S. No. 7 (2.82 mm) and No. 10 (2.00 mm) screens.
Single Kernel Characterization System (SKCS)	AACCI 54-31.01 using Perten SKCS 4100.
Sedimentation	AACCI 56-63.01, Micro sedimentation.
Falling Number	AACCI 56-81.04. Methodology is same for flour and wheat falling number.
DON	Neogen ELISA. All analysis is on ground wheat.



ANALYSIS METHODS

CALIFORNIA WHEAT COMMISSION LABORATORY TESTING

TEST:	METHODOLOGY:
FLOUR FACTORS	
Laboratory Milling Extraction	Laboratory samples are cleaned and tempered according to AACCI 26-10.02. All extraction rates are calculated against total products on an “as is” mb. Brabender® Quadrumat Senior Mill using the Brabender® procedure.
Color	CIE 1976 L*a*b* color system. Minolta Chroma Meter with Granular-Materials attachment CR- A50 and CR-200 colorimeter.
Protein (14% mb)	AACCI 46-30.01 expressed on a 14% mb. Dumas combustion nitrogen analysis (CNA) method.
Ash (14% mb)	AACCI 08-01.01 expressed on a 14% mb. Methodology is same for wheat and flour.
Wet Gluten	AACCI 38-12.02 (Glutomatic procedure).
Falling Number	AACCI 56-81.04. Methodology is same for flour and wheat falling number.
Amylograph Viscosity	AACCI 22-10.01.
Damaged Starch	AACCI 76-30.02 (Enzymatic hydrolysis).
Solvent Retention Capacity	AACCI 56-11.02.
DOUGH PROPERTY FACTORS	
Farinograph	AACCI 54-21.02.
Alveograph	AACCI 54-30.02 (Chopin-Alveolab).
Extensograph	AACCI 54-10.01, modified 45 and 135-min rest.
EVALUATION OF END-PRODUCTS	
Bread	AACCI 10-10.03 (“pup loaf” method). - Producing two loaves per batch. 200 g flour at 14% mb with optimized water absorption is mixed to optimum development with other ingredients (6% sugar, 3% shortening, 1.5% salt, 2.12% instant dry yeast and 0.02% Doh-Tone®) in a 200 g Swanson pin mixer with head speed of 100 to 120 rpm and 90 min fermentation. - Loaf volume is measured 1 hour after baking. - Grain and texture are scored on a scale of 1 to 10 with higher numbers indicating preferred quality.



ABOUT U.S. WHEAT ASSOCIATES: 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 the profitability of U.S. wheat producers and their customers." USW activities are funded by producer checkoff dollars managed by 17 state wheat commissions and through cost-share USDA Foreign Agricultural Service market development programs. For more information, visit www.uswheat.org or contact your state wheat commission.

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