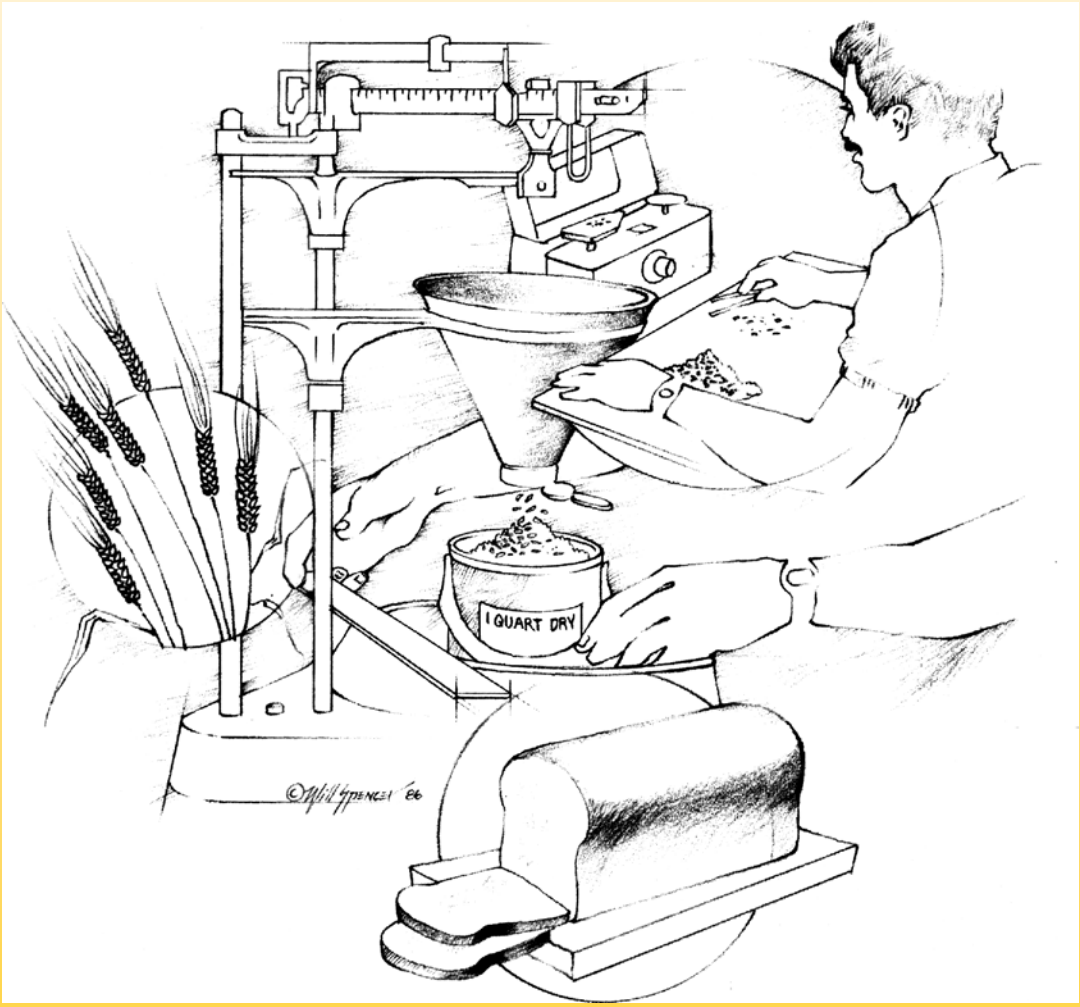
California Wheat Commission

Hard Red Wheat 2007
Hard White Wheat 2007



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CROP QUALITY REPORT 2007

California Wheat

California's wheat growing regions are defined by climate, value of alternative crops, and the distinct differences in variety selection. This system has led to an implied "identity preserved" program in California.

Over the past few years, Hard White (HW) wheat has become more prevalent in the varietal mix. Therefore, HW quality data is included in this hard wheat report. This trend of increased HW production is expected to continue in the upcoming years.

California hard wheats are harvested in the months of June and July. With the strong demand for new crop wheat in the domestic marketplace, export buyers are encouraged to express their interest in purchasing California wheat in early spring.

In normal growing conditions, California hard wheat varieties have low moisture and large and uniform kernel size. Because it is predominantly grown under irrigation, growers benefit from high yields and consistent quality. California wheat usually contains significantly less impurities than its counterparts elsewhere.

2007 Crop Conditions. Hard Red Wheat was again the predominant wheat class grown in California in 2007, although the most commonly planted wheat variety, Blanca Grande, is a Hard White wheat variety. Red and white wheat showed an approximately 20% increase in plantings over the previous year. There was an emergence of several new varieties across all classes of wheat grown in California. Disease pressure was low, perhaps due in part to much less rainfall for the state. Due to less rainfall, however, planted acres were greatly reduced in Eastern Riverside County, and much of the dryland wheat in the southern Central Valley was lost after planting.

Data in this report. Samples for this year's report were collected from grain handlers and producers. This program collects data throughout the harvest season, resulting in a crop quality report that is highly representative of the crop. Grade information is provided by the Federal Grain Inspection Service. Milling and end-use quality analysis was conducted by the California Wheat Commission Laboratory.

California Wheat Production

Production History

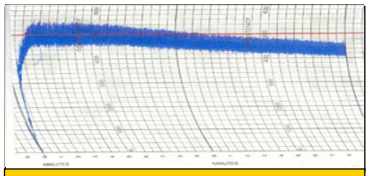
(Winter wheat -- all classes, excluding Durum)

YEAR	METRIC TONS (1,000 MT'S)
2007	523
2006	395
2005	568
2004	740
2003	614
2002	612
2001	724
2000	743

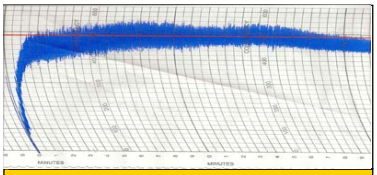
Hard Red Winter (Mixed Varieties)

WHEAT	Low Protein (10.9% & Below) 2007	Low Protein (10.9% & Below) 2006	Intermediate Protein (11.0% - 12.4%) 2007	Intermediate Protein (11.0% - 12.4%) 2006	High Protein (12.5% & Above) 2007	High Protein (12.5% & Above) 2006
Protein[1]						
Dry Basis	11.6	11.5	13.5	13.4	15.4	15.0
As - Is	10.6	10.5	12.3	12.3	14.1	13.8
12% MB	10.2	10.1	11.8	11.8	13.6	13.2
Moisture	7.8	8.8	8.5	8.5	8.4	8.2
Test Weight						
lb/bu	63.9	60.6	64.0	60.5	64.0	60.5
kg/hl[4]	83.9	79.7	84.1	79.6	84.1	79.5
1000 Kernel Weight (gr)	43.9	34.8	42.3	35.7	41.9	35.9
SKCS Hardness Score	64	74	70	71	70	68
Kernel Size Distribution						
Large (7W)	94	78	91	78	89	77
Medium (10W)	6	21	9	21	11	22
Small (12W)	0	1	0	1	0	1
MILLING						
Test Mill Yield[2] (%)	73.1	62.5	72.9	64.5	73.4	66.2
Wheat Protein (Dry-Basis)	11.6	11.5	13.5	13.4	15.4	15.0
Flour Protein[1] (Dry-Basis)	10.4	10.5	12.3	12.3	14.3	13.8
Wheat Ash (Dry-Basis)	1.66	1.83	1.66	1.83	1.73	1.90
Flour Ash (Dry-Basis)	0.52	0.55	0.53	0.54	0.52	0.54
FLOUR						
Flour Protein[1] (14% MB)	8.9	9.0	10.6	10.6	12.3	11.9
Flour Ash (14% MB)	0.45	0.48	0.45	0.46	0.45	0.46
Wet Gluten (14% MB)	21.4	21.3	26.4	26.1	31.8	29.9
Falling Number (sec.)	422	372	410	383	407	404
FARINOGRAM						
Arrival Time (min.)	1.2	1.9	1.9	2.5	2.9	3.4
Mixing Peak (min.)	2.4	4.6	4.9	9.7	6.9	10.9
Mixing Tolerance (min.)	10.4	14.2	13.7	21.2	15.2	24.1
Absorption (%)	58.2	58.0	60.3	59.1	62.4	59.7
BAKING RESULTS						
Bake Volume[3] (cc)	743	792	816	866	911	929

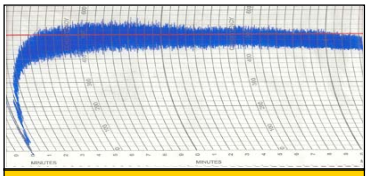
Wheat samples were collected by handlers. 1) Wheat and Flour Protein: Leco Combustion Nitrogen Analyzer Model TruSpec; 2) Test mill yield: Brabender Quadromat Senior Mill, modified in 1997; 3) Bake Volume = AACC Method 10-10B; 4) Test weight conversion from lb/bu to kg/hl according to FGIS-PN-97-5, {(1.292 x (lb/bu) + 1.419}.



Low Protein (10.7%)



Intermediate Prot. (12.4%)



High Protein (14.0%)

2007 Hard Red Variety Specific Information

	CAL ROJO			DASH 12	
WHEAT	High[6] Protein	Intermediate[5] Protein	Low[7] Protein	High Protein*	Intermediate Protein*
Protein[1]					
Dry Basis	15.4	13.5	11.6	15.0	13.9
As Is	14.2	12.3	10.7	13.6	12.8
12% MB	13.6	11.8	10.2	13.2	12.3
Moisture	8.2	8.3	7.6	9.6	8.0
Test Weight					
lb/bu	63.5	64.0	63.8	63.5	63.8
kg/hl[4]	83.5	84.1	83.9	83.4	83.8
1000 Kernel Weight (gr)	41.3	43.4	44.2	37.7	35.7
SKCS Hardness Score	65.0	65.2	63.1	76.4	78.0
Kernel Size Distribution					
Large (7w)	88	92	95	86	85
Medium (10W)	12	8	5	14	15
Small (12W)	0	0	0	0	0
MILLING					
Test Mill Yield[2] (%)	73.2	73.8	73.3	72.2	72.7
Wheat Protein (Dry Basis)	15.4	13.5	11.6	15.0	13.9
Flour Protein[1] (Dry Basis)	14.2	12.3	10.4	13.9	12.7
Wheat Ash (Dry Basis)	1.69	1.68	1.66	1.76	1.53
Flour Ash (Dry Basis)	0.53	0.53	0.52	0.54	0.53
FLOUR					
Flour Protein[1] (14% MB)	12.2	10.6	9.0	12.0	10.9
Flour Ash (14% MB)	0.46	0.45	0.45	0.46	0.46
Wet Gluten (14% MB)	31.0	26.1	21.2	31.0	25.5
Falling Number (sec.)	429	421	425	429	400
FARINOGRAM					
Arrival Time (min.)	2.9	1.9	1.2	2.3	1.5
Mixing Peak (min.)	7.7	5.5	2.6	5.3	5.0
Mixing Tolerance (min.)	14.5	15.9	11.1	17.8	12.5
Absorption (%)	61.2	59.0	57.8	61.2	60.4
BAKING RESULTS					
Bake Volume[3] (cc)	905	815	746	860	825

For protein ranges not indicated, please contact the California Wheat Commission.
* Limited samples were available for analysis.
1) Wheat and Flour Protein: Leco Combustion Nitrogen Analyzer Model TruSpec.
2) Test mill yield: Brabender Quadromat Senior Mill, modified in 1997.
3) Bake Volume = AACC Method 10-10B.
4) Test weight conversion from lb/bu to kg/hl according to FGIS-PN-97-5, (1.292 x lb/bu) + 1.419.
5) Intermediate Protein: (11.0-12.4%).
6) High Protein: (12.5% & Above).
7) Low Protein (10.9% & Below)

2007 Hard Red Variety Specific Information

EXPRESSO		JOAQUIN		SUMMIT		
High Protein*	Intermediate Protein*	High Protein	Intermediate Protein*	High Protein	Intermediate Protein	**WHEAT**
						Protein[1]
15.4	13.6	15.5	14.0	15.3	13.4	Dry Basis
14.0	12.4	14.3	12.9	13.8	12.2	As Is
13.6	12.0	13.7	12.3	13.4	11.8	12% MB
9.3	9.3	8.0	7.8	9.5	8.9	Moisture
						Test Weight
64.4	65.9	64.7	63.3	63.0	63.8	lb/bu
84.6	86.5	85.0	83.2	82.8	83.8	kg/hl[4]
36.6	41.1	43.8	41.9	41.4	40.9	1000 Kernel Weight (gr)
83.7	80.0	71.4	75.0	69.2	77.0	SKCS Hardness Score
						Kernel Size Distribution
85	93	91	92	88	89	Large (7W)
15	7	9	8	12	11	Medium (10W)
0	0	0	0	0	0	Small (12W)
						MILLING
71.6	69.5	74.2	72.5	73.0	71.7	Test Mill Yield[2] (%)
15.4	13.6	15.5	14.0	15.3	13.4	Wheat Protein (Dry Basis)
14.2	12.4	14.4	13.0	14.2	12.2	Flour Protein[1] (Dry Basis)
1.69	1.32	1.78	1.77	1.73	1.62	Wheat Ash (Dry Basis)
0.54	0.39	0.50	0.53	0.57	0.56	Flour Ash (Dry Basis)
						FLOUR
12.2	10.7	12.4	11.2	12.2	10.5	Flour Protein[1] (14% MB)
0.46	0.34	0.43	0.46	0.49	0.48	Flour Ash (14% MB)
33.0	27.7	32.7	28.0	31.6	26.6	Wet Gluten (14% MB)
418	389	410	429	407	390	Falling Number (sec.)
						FARINOGRAM
3.3	2.1	3.2	2.3	2.4	1.7	Arrival Time (min.)
6.9	4.5	7.1	7.5	5.0	3.6	Mixing Peak (min.)
12.8	10.3	16.7	19.8	11.8	9.4	Mixing Tolerance (min.)
66.2	64.9	63.5	64.0	61.9	61.9	Absorption (%)
						BAKING RESULTS
918	832	929	800	895	815	Bake Volume[3] (cc)

Hard Red Wheat Grade Data

	HARVEST DATA			EXPORT CARGO AVERAGE	
	2007	2006	2005	06/07*	05/06[1]
Test Weight					
lb/bu	62.3	59.8	60.7	*	62.5
kg/hl[2]	83.0	78.7	79.8	*	82.1
Moisture (%)	9.4	9.1	10.1	*	10.1
Damage (%)	0.0	0.0	0.0	*	0.4
*Foreign Material (%)	0.2	0.2	0.1	*	0.2
*Shrunken/Broken (%)	0.6	1.1	0.4	*	0.6
Total Defects (%)	0.8	1.3	0.5	*	1.2
*Dockage (%)	0.7	1.0	0.8	*	0.4
Total Screenings (%)	1.5	2.3	1.3	*	1.2
Moisture (%)	9.4	9.1	10.1	*	10.1
Net Wheat (%)[3]	89.2	88.8	88.7	*	88.8
CTW (%)[4]	106.2	105.7	105.6	*	105.7
MWVI (%)[5]	94.2	94.6	94.7	*	94.6

*Data not available. [1] Limited samples. Cargo data represents information obtained from official export inspection certificates. Export year = June 1-July 30. Harvest year = Calendar year. *Total Screenings are those factors represented on the grade certificate that are cleaned out in the flour mill. [2]Test weight conversion from lb/bu to kg/hl according to FGIS-PN-97-5, (1.292 x lb/bu) + 1.419. [3]Net Wheat = (100%- (FM+SHBN+Dockage)) x (100%-Moisture)/100%. [4] Clean, Tempered Wheat (CTW%) =(100%-(FM+SHBN+Dockage)) x (100%-Moisture)/(100%-16%(temper moisture)). [5] Millable Wheat Value Index (MWVI) = 100%/CTW.

Varietal Descriptions

Cal Rojo - (HRW) Cal Rojo is a widely adapted, high yielding variety for both the San Joaquin and Sacramento Valleys. It has exhibited excellent tolerance to stripe rust in University of California yield trials, and received high scores for grain quality, milling, and baking. Cal Rojo is mid-early maturing, short-statured, and has excellent straw strength and standability.

Dash 12 - (HRW) Dash 12 is a stripe rust resistant and Septoria tritici Leaf Blotch tolerant variety adapted to the Sacramento Valley and rain fed areas. Dash 12's mixing tolerance makes it a good blending wheat.

Expresso (HRW**) -** Expresso is very similar to the former variety Express but has two added stripe rust resistance genes. The quality of Expresso is identical to Express, having high flour water absorption and good baking quality.

Summit - (HRW) Based on its grain yield, quality, and overall agronomic performance, Summit has been the predominant wheat variety in the Sacramento Valley, and was also grown in the San Joaquin Valley. Due to its susceptibility to stripe rust, limited quantities will be grown in the future.

Joaquin - (HRW) Joaquin is a stripe rust resistant variety that is adapted to the San Joaquin Valley. In the University of California Extension Field Trials, Joaquin had the highest overall three-year yield average of any wheat variety tested in the San Joaquin Valley. Joaquin has high percent protein and test weight, with very good mixing and baking properties.

2007 Hard White Wheat

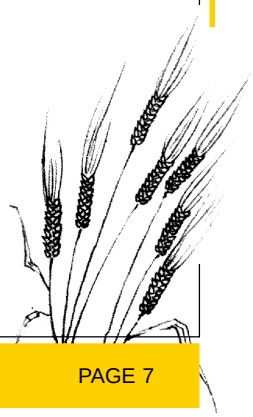
BLANCA GRANDE

WHEAT	High Protein (12.5% & Above) 2007	High Protein (12.5% & Above) 2006	Intermediate Protein (11.0% - 12.4%) 2007	Intermediate Protein (11.0% - 12.4%) 2006
Protein				
Dry Basis	15.1	14.8	13.7	13.5
As - Is	13.8	13.6	12.5	12.3
12% MB	13.3	13.1	12.1	11.8
Moisture	8.2	8.3	9.0	8.6
Test Weight				
lb/bu	64.6	62.1	65.6	63.2
kg/hl[4]	84.9	81.6	86.2	83.0
1000 Kernel Weight (gr)	40.8	35.1	43.4	38.1
SKCS Hardness Score	68.5	69.4	68.6	69.0
Kernel Size Distribution				
Large (7w)	90	74	91	83
Medium (10W)	10	25	9	17
Small (12W)	0	1	0	0
MILLING				
Test Mill Yield[2] (%)	72.8	66.9	73.9	66.7
Wheat Protein (Dry Basis)	15.1	14.8	13.7	13.5
Flour Protein[1] (Dry Basis)	13.8	13.7	12.4	12.4
Wheat Ash (Dry Basis)	1.63	1.83	1.60	1.82
Flour Ash (Dry Basis)	0.46	0.47	0.47	0.50
FLOUR				
Flour Protein[1] (14% MB)	11.9	11.8	10.7	10.7
Flour Ash (14% MB)	0.39	0.40	0.41	0.43
Wet Gluten (14% MB)	30.6	26.1	28.3	25.9
Falling Number (sec.)	382	363	357	354
FARINOGRAM				
Arrival Time (min.)	3.2	12.5	1.8	4.5
Mixing Peak (min.)	9.1	18.6	5.1	14.3
Mixing Tolerance (min.)	14.8	15.9	22.0	24.9
Absorption (%)	63.9	62.5	62.9	60.8
BAKING RESULTS				
Bake Volume[3] (cc)	927	965	886	898

1) Wheat and Flour Protein: Leco Combustion Nitrogen Analyzer Model TruSpec. 2) Test mill yield: Brabender Quadromat Senior Mill, modified in 1997. 3) Bake Volume = AACC Method 10-10B. 4) Test weight conversion from lb/bu to kg/hl according to FGIS-PN-97-5, (1.292 x lb/bu) + 1.419.

Variety Descriptions *continued...*

Blanca Grande- (HW) Blanca Grande has become a benchmark for high end-use quality. It remains a top yielding variety in both the San Joaquin and Sacramento Valleys when not affected by stripe rust, to which it is susceptible.



Technical and Laboratory Services

The California Wheat Commission laboratory has the equipment necessary for evaluation of wheat and durum milling quality, chemical analysis of wheat and flour, physical dough testing, semolina analysis, bake and noodle production tests, and pasta analysis.

The Commission's staff is available to work for customers in the area of quality assurance, problem solving, quality control training, and research. The price list for laboratory services is available on the California Wheat Commission website at www.californiawheat.org.

Customer Assistance and Support

• The Commission is available to answer *technical questions* about California's wheat quality, including recommendations for blending and appropriate end-use.

• The Commission conducts *specialized training programs* in milling, baking, semolina, pasta, and quality control. These specific programs may be customized to meet the customer's needs.

Crop and Export Survey

California produces five classes of wheat: Hard Red Winter (HRW), Desert Durum®, Hard White, Soft White Wheat, and Hard Red Spring. While HRW and Durum are the predominately produced and exported classes, all wheat classes are surveyed and information is available at the Commission office. Every effort is extended to make sure that an accurate assessment of quality is made available to buyers. With greater amounts of wheat being sold by variety, varietal specific information is emphasized in Commission surveys.

Research

The Commission laboratory is available for flour, semolina, milling, end-product, and new-product research. Technical expertise is available in hearth breads, pasta, Asian food products, standard loaf bread, steamed bread, Asian noodles, cookies, tortillas and middle-eastern flat breads.

Varietal Development

Private and public breeding programs play an important role in the development of new varieties available to California wheat producers. The Commission analyzes over 1,000 samples each year to support these programs and encourages the release of new varieties that will meet the customers' needs.

Advanced varieties are evaluted by commercial mills through the California Wheat Collaborator program.

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