California AG Industry

>76,000 Farms and Ranches

>$54 Billion

>$100 Billion

>400 crops
California Wheat

Presented by CLAUDIA CARTER
carter@californiawheat.org
About us

The California Wheat Commission (CWC) was established in 1983, expressly to support research that improves California wheat quality and marketability; and to develop and maintain domestic and international markets for California wheat.
CA Wheat Growers

Top farm state both in value of production and export
  • Wheat is a valuable rotation crop with tomatoes = Improves soil health and breaks disease and weed cycles
  • CWC collects $1.50/ton in assessments on wheat produced in CA
  • Growers vote, referendum every 5 years on whether to continue CWC
  • >40% of our budget supports wheat research
Wheat Research

UC Davis Wheat Breeding - Dr. Jorge Dubcovsky
- Stripe Rust Resistance (Yr5, Yr15)
- Increase Protein Content and Quality - varieties with High Grain Protein genes
- Increase grain size
- Increase grain Resistant Starch
- Durum: reduce cadmium levels, increase yellow pigment and gluten strength.
Wheat Research

Lipoxygenase activity

Dry Pasta Color

b value

Present Null
Present Null
Wheat Research

California WHEAT

UC DAVID

UNIVERSITY OF CALIFORNIA

DESER T D URUM

©
Marketing our Mark...
Marketing:
High Resistant Starch Wheat
Wheat Quality Lab

Only Wheat Commission with a on-site Quality Lab

- Quality testing for end-use functionality
- Annual crop quality reports
- Testing new varieties for both public and private breeders
- Product development
- Technical training for bakers and millers
California Wheat

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California Wheat

- CA wheat production is centered in the SJ Valley.
- CA grows five of the six wheat classes:
  - Hard Red - 76%
  - Durum - 11%
  - Hard White - 7%
  - Soft White - 6%
- 80% of wheat is "irrigable"
- Low disease pressure
- Yields and protein good > Average
- Production in 2018 ~ 400,000 MT
California Wheat Quality Traits

Test Weight 5-year Avg. >63 lbs/bu
Grain size with >90% Large kernels
High flour yield
Low grain moisture

Medium to High Protein Content. **HRW 12.5%**

High Water Absorption > 64%, some varieties >68%

Loaf Volumes > 900 cc

Crumb Color - White (Flour color L-value > 93)
### Wheat

<table>
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<th></th>
<th>Joaquin Oro</th>
<th>WB-9112</th>
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<tbody>
<tr>
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<td>San Joaquin Valley</td>
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<td>5% Lactic Acid/5% Na₂CO₃</td>
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<td>BAKING RESULTS</td>
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<td>Baking Absorption (%)</td>
<td>67.2</td>
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<td>Bread Volume (cc)</td>
<td>986</td>
<td>990</td>
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### Wheat Test Results

#### Wheat
- Protein: 13.6% vs. 12.7%
- Ash: 1.6% vs. 1.53%
- Moisture: 6.4% vs. 6.5%
- Falling Number (sec): 563 vs. 546
- Micro Sedimentation (CC): 43 vs. 46

#### Test Weight
- lb/bu: 63.7 vs. 65.0
- kg/hl: 83.8 vs. 85.4

#### Hardness Score
- SKCS: 64 vs. 71
- 1000 Kernel Weight (g): 44.8 vs. 41.5

#### Kernel Size Distribution
- Large/Medium/Small: 93/7/0 vs. 89/10/1

#### Flour
- Lab Mill Yield (%): 72.0 vs. 71.1%
- Protein (1.4% MB): 12.3 vs. 11.5%
- Ash (14% MB): 0.48 vs. 0.37%
- Gluten Index: 80.4 vs. 85.8
- Wet Gluten (14% MB): 36.9 vs. 33.3
- SRC: 0.69 vs. 0.79
- Water/50% Sucrose: 71/112 vs. 71/110
- 5% Lactic Acid/5% Na₂CO₃: 137/88 vs. 154/85

#### Alveograph
- P (mm): 132 vs. 127
- L (mm): 83 vs. 81
- P/L ratio: 1.59 vs. 1.57
- W (10⁴ J/100 g): 366 vs. 354.5

#### Mixograph
- Absorption (%): 71.0 vs. 68.5
- Peak Time (min): 4 vs. 4
- Peak Height (mm): 55 vs. 51
- M.T. Score (1-8): 4 vs. 5

#### Farinograph
- Absorption (%): 68.1 vs. 67.8
- Peak Time (min): 16.4 vs. 18.4
- Stability (min): 19.6 vs. 16.7

#### Baking Results
- Baking Absorption (%): 67.2 vs. 66.8
- Bread Volume (cc): 986 vs. 990

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Note: grain moisture > 68%
Crop Quality Reports

- Wheat collected from Elevators
- Analyzed by Class, Variety, and Location
  - HRW and HW
  - Soft White - Northern CA
  - San Joaquin Durum
  - Desert Durum®
- Use our **Variety Survey**, major varieties grown in CA for each location Sacramento and SJV
- Check our **Crop Quality Reports**
California Wheat

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California Market

California is the largest wheat milling state by capacity

Wheat mills grind ~ 1.9 MMT*

Ardent Mills

Broad Portfolio
- Ancient & Heirloom Grains
- Organic

Farmer Relationships & Custom Growing
- Pulses
- Barley
- Sprouted

Resources
- Insights
- R&D
- Food Safety
- Customization
- And More!
Consumers are asking a lot of questions...
We are telling them...
California Wheat

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Our Mark...

California WHEAT

California WHEAT
Marketing strategy...
Marketing strategy...
California Wheat
Preferred Variety List

- Based on Quality - end-product
- Location
- Yield potential
Best Management practices
Sagouspe Farms - Los Banos, CA
<table>
<thead>
<tr>
<th>Customer Sample ID#</th>
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<td>Protein (%) 12% MB</td>
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Planning for the future...

- Research
- Best management practices
- Communication

- Partnership
- Innovation

- Deliver quality
California Wheat

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Welcome

About the CWC

California Wheat

California Market

What's next?