
Desert Durum[®]

• 2010 • CROP • QUALITY •

ARIZONA / CALIFORNIA COMBINED CROP ANALYSIS



Arizona Grain Research and
Promotion Council
Arizona Department of Agriculture
1688 W. Adams
Phoenix, AZ 85007
Telephone: (602) 542-3262
Fax: (602) 364-0830

California Wheat Commission
1240 Commerce Ave., Ste. A
Woodland, CA 95776
Telephone: (530) 661-1292
Fax: (530) 661-1332
Email: info@californiawheat.org
www.californiawheat.org

DESERT DURUM®

The phrase "DESERT DURUM" has been trademarked in the U.S. under the ownership of the Arizona Grain Research and Promotion Council and the California Wheat Commission. Only durum grown in the states of Arizona and California may qualify as DESERT DURUM®.

DESERT DURUM® wheat is produced under irrigation in the desert valleys and lowlands of Arizona and California. These are regions of high temperatures (May-June temperatures average 32C) and low rainfall (annual precipitation averages less than 200 mm). DESERT DURUM® wheat is planted in December through February and harvested in May and June. DESERT DURUM® grain enters the market up to three months ahead of the spring durum crops harvested in other North American durum-producing areas.

DESERT DURUM® wheat is usually delivered "identity preserved" to U.S. domestic and export markets. The identity preservation system allows buyers to purchase grain of varieties having intrinsic quality parameters specific to their needs. Annual production requirements can be contracted ahead to experienced growers using Certified seed and then stored by identity for season-long shipment at the buyer's schedule.

The data presented in this crop quality report are from samples that were traceable to known quantities of grain of each variety. Sampling techniques have been approved by an agricultural statistician and at least 80% of the crop was sampled. Thus, these data are intended to characterize the 2010 DESERT DURUM® crop by both variety and as an entire crop.

The milling, semolina and pasta analyses used to produce these data were conducted at the California Wheat Commission wheat quality laboratory. The laboratory staff works closely with breeding companies and buyers to provide an accurate assessment of current crop quality and breeding material.

Desert Durum® Production Metric Tons

Year	Arizona	California	Total
2010	251,474	*180,000	431,474
2009	337,476	299,374	636,850
2008	397,405	285,113	682,518
2007	227,633	127,588	355,221
2006	201,397	67,931	269,328
2005	215,005	92,752	307,757
2004	261,354	125,193	386,546

* Final data available February 2011 from USDA

Milling, Semolina, and Pasta Characteristics of Desert Durum Varieties

WHEAT	Desert King		Duraking		Havasu	
	'10 ¹	'09	'10 ¹	'09	'10	'09
Protein						
Dry (%)	15.6	15.0	14.6	14.9	14.4	14.5
As Is (%)	14.4	14.0	13.5	13.9	13.5	13.4
(12% mb)	13.7	13.2	12.8	13.1	12.7	12.7
Moisture (%)	7.3	7.1	7.3	7.0	6.3	7.3
1000 Kernel Weight (g)	47.2	48.2	46.5	42.5	49.9	48.7
Kernel Size Distribution						
Large (%)	93	91	89	85	92	91
Medium (%)	7	9	11	15	7	9
Small (%)	0	1	0	0	0	0
MILLING AND SEMOLINA						
Total Extraction (%)	75.9	77.2	74.7	76.1	76.6	77.7
Semolina Extraction (%)	63.1	62.8	62.5	62.7	62.6	61.6
Wheat Ash (As Is % mb)	1.83	1.94	1.91	1.96	1.82	1.82
Semolina Ash (As Is % mb)	0.78	0.86	.96	0.85	0.87	0.85
Semolina Protein (As Is % mb)	12.2	11.7	11.8	11.8	11.9	11.6
Falling Number (sec)	518	577	539	549	748	644
Specks (no/ 10 sq in)	4.2	8	5	5	6	10
Wet Gluten (%) (14% mb)	31.1	33.8	29.2	33.4	29.5	32.8
Dry Gluten (%) (As Is % mb)	11.3	13.2	10.2	12.3	10.4	12.6
Alveograph						
W	139.3	129.8	132.1	129.7	223	251.0
P/L	1.03	1.34	1.31	1.33	1.62	1.93
Color 'b' value	25.0	24.6	24.3	23.9	27.8	27.2
PASTA						
Color ²						
Score	8.2	8.4	7.0	6.5	9.3	9.1
'b' value	39.3	39.5	36.0	35.6	42.7	42.0
Cooked Weight (g)	29.5	29.7	29.1	29.9	31.2	29.5
Cooking Loss (%)	7.3	7.8	8.1	8.0	8.6	8.0
Firmness (g/ cm)	8.7	8.0	7.6	6.9	7.1	7.3

¹ Limited samples available for analysis; please contact the California Wheat Commission for more information. ² Pasta and semolina color—Milloita Chromameter Model CR-200. Note: Data represent weighted means calculated to characterize the Arizona/California southwestern desert crop. Weather, soils, and cultural practices can influence the quality of all varieties between years and of particular lots of any one variety. Wheat and semolina protein—Lecco Combustion Nitrogen Analyzer Model TruSpec. Manual adjustments to test mill may make year-to-year extraction results incomparable.

Milling, Semolina, and Pasta Characteristics of Desert Durum Varieties

WHEAT	Kronos		Maestrale		Ocotillo		Orita		RSI 59	Saragolla		Sky		Westmore	
	'10	'09	'10 ¹	'10 ¹	'09	'10	'09	'10 ¹	'10 ¹	'10 ¹	'09	'10	'09	'10	'09
Protein															
Dry (%)	14.8	14.8	14.5	16.0	14.1	15.4	15.4	14.2	15.1	14.6	15.1	14.5	15.6		
As Is (%)	13.8	13.8	13.5	14.9	13.0	14.4	14.4	13.2	14.1	13.7	14.1	13.6	14.6		
(12% mb)	13.0	13.0	12.8	14.0	12.4	13.6	13.6	12.5	13.3	12.9	13.3	12.8	13.7		
Moisture (%)	6.7	6.9	6.7	6.7	8.0	6.6	6.7	7.3	6.4	6.3	6.9	6.3	6.7		
1000 Kernel Weight (g)	51.8	52.6	50.0	45.7	52.6	55.3	64.8	49.4	50.8	45.1	43.6	40.3	41.2		
Kernel Size Distribution															
Large (%)	95	95	91	90	93	97	97	96	93	91	89	87	79		
Medium (%)	5	7	9	11	6	3	3	4	7	9	10	16	21		
Small (%)	0	0	0	0	0	0	0	0	0	0	0	0	0		
MILLING AND SEMOLINA															
Total Extraction (%)	73.0	77.9	73.7	76.1	74.3	74.9	77.5	76.9	75.9	74.6	78.4	74.3	77.4		
Semolina Extraction (%)	60.4	61.7	60.6	61.6	61.1	62.2	63.9	61.5	62.5	61.8	62.1	61.4	62.7		
Wheat Ash (As Is % mb)	1.83	1.83	1.78	1.88	1.73	1.88	1.83	1.73	1.88	1.77	1.86	1.73	1.85		
Semolina Ash (As Is % mb)	0.82	0.88	0.91	0.81	0.84	0.79	0.87	0.84	0.83	0.89	0.91	0.87	0.93		
Semolina Protein (As Is % mb)	11.9	11.9	11.8	12.9	11.2	12.6	12.2	11.7	12.3	11.7	11.9	11.8	12.6		
Falling Number (sec)	650	656	581	652	539	821	648	572	621	706	676	676	655		
Specks (no/ 10 sq in)	8	6	6	4	8	8	6	2	6	6	5	6	6		
Wet Gluten (%) (14% mb)	30.5	33.4	29.5	33.9	32.1	32.7	36.2	31.0	33.1	30.2	33.3	30.2	37.5		
Dry Gluten (%) (As Is % mb)	10.8	13.0	10.9	12.1	13.2	11.9	13.6	11.4	11.4	10.5	12.3	10.7	13.2		
Alveograph															
W	162.3	175.8	151.7	83.6	83.7	130	133.7	110.1	117.7	209.2	257.0	155.0	195.6		
P/L	1.42	1.82	1.33	0.41	0.41	1.05	1.20	0.90	0.96	1.55	2.08	1.56	2.04		
Color ^b value	26.1	25.7	25.2	24.7	24.0	24.6	34.7	24.7	23.2	26.2	25.4	27.9	26.9		
PASTA															
Color ²															
Score	8.9	8.7	8.0	9.0	8.5	8.2	8.4	8.7	7.5	8.7	9.0	9.0	9.0		
^b value	41.5	40.7	39.5	40.7	38.6	39.2	39.4	39.3	37.2	41.1	41.1	42.6	41.0		
Cooked Weight (g)	29.3	30.2	29.0	31.4	29.6	30.4	29.6	32.5	29.5	30.8	29.8	29.8	29.8		
Cooking Loss (%)	7.2	8.0	7.8	8.7	8.0	7.5	7.7	8.0	7.7	8.0	8.0	8.4	7.8		
Firmness (g/ cm)	7.8	7.1	8.4	7.6	7.7	7.6	7.5	7.2	7.5	7.6	7.8	7.7	8.0		

¹ Limited samples available for analysis; please contact the California Wheat Commission for more information. ² Pasta and semolina color—Millotha Chromameter Model CR-200. Note: Data represent weighted means calculated to characterize the Arizona/California southwestern desert crop. Weather, soils, and cultural practices can influence the quality of all varieties between years and of particular lots of any one variety. Wheat and semolina protein—Lecco Combustion Nitrogen Analyzer Model TruSpec. Manual adjustments to test mill may make year-to-year extraction results incomparable.

Average Grade Results

	HARVEST DATA			EXPORT CARGO DATA		
	2010	2009	2008	09/10	08/09	07/08
Protein (%) (12% MB)	13.0	13.3	13.5	---	---	---
Graded No. 1 (%)	Over 90% of samples graded No.1			92	93	93
HVAC (%)	96.1	95.4	94.1	91.9	92.5	94.3
Moisture (%)	7.0	6.8	6.8	7.5	7.3	7.4
Test Weight						
lb/bu	63.2	62.7	62.9	62.2	62.5	62.8
kg/hl	82.3	81.7	81.9	80.9	81.4	81.8
Damage (%)	0.4	0.3	0.1	0.5	0.5	0.6
*Foreign Material (%)	0.1	0.1	0.1	0.2	0.2	0.2
*Shrunken/Broken (%)	0.4	0.4	0.4	0.7	0.6	0.6
Total Defects (%)	0.9	0.7	0.5	1.4	1.3	1.3
*Dockage (%)	0.3	0.2	0.2	0.7	0.5	0.5
*Total Screenings (%)	0.8	0.7	0.7	1.6	1.3	1.3
Moisture (%)	7.0	6.8	6.8	7.5	7.3	7.4
Net Wheat (%) ¹	92.3	92.5	92.5	91.0	91.5	91.4
CWT (%) ²	109.9	110.2	110.2	108.4	108.9	108.8
MWVI ³	91.0	90.7	90.7	92.2	91.8	91.9

*Total Screenings are those factors represented on the grade certificate that are cleaned out in the flour mill. Note: All samples were collected through and graded by authorized Federal Grain Inspection sites (Farwell Grain Inspection Co.). Desert Durum® cargo data represents information obtained from official export inspection certificates. Test weight conversions from lb/bu to kg/hl according to FGIS-PN-97-5, $\{(1.292 \times \text{lb/bu}) + 0.630\}$. ¹Net Wheat = $(100\% - (\text{FM} + \text{SHBN} + \text{Dockage})) \times (100\% - \text{Moisture}) / 100\%$. ²Clean Tempered Wheat (CTW%) = $(100\% - (\text{FM} + \text{SHBN} + \text{Dockage})) \times (100\% - \text{Moisture}) / (100\% - 16\%$ (temper moisture)). ³Millable Wheat Value Index (MWVI) = $100\% / \text{CTW}$.

2010 Desert Durum® : Average Grade Results by Variety

	Desert King*	Duraking*	Havasu	Kronos	Maestrale*	Ocotillo*	Orita	RSI 59*	Saragolla*	Sky*	Westmore
Protein (%) (12% mb)	13.3	13.3	12.9	13.0	13.2	13.4	13.5	12.6	13.9	12.7	12.6
Graded No. 1 (%)	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/
HVAC (%)	98	98	99	94	98	98	95	97	98	97	93
Moisture (%)	7.4	8.2	6.9	7.1	6.6	6.8	7.0	7.8	6.7	6.9	6.9
Test Weight											
lb/bu	63.8	63.0	63.7	62.7	62.7	63.5	63.0	63.5	64.7	62.8	63.5
kg/hl	83.2	82.2	83.1	81.9	81.9	82.9	82.2	82.8	84.4	81.9	82.8
Damage (%)	0.0	0.0	0.3	0.5	0.5	0.3	0.4	0.0	0.0	0.4	0.6
Foreign Material (%)	0.1	0.3	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.0	0.0
Shrunken/Broken (%)	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.6	0.5	0.3	0.5
Total Defects (%)	0.7	0.8	0.8	1.0	1.0	0.6	0.8	0.7	0.8	0.7	1.1
Dockage	0.5	0.1	0.5	0.2	0.2	0.0	0.2	0.3	0.3	0.1	0.0

Note: *Limited samples available for analysis. All samples were collected through and graded by authorized Federal Grain Inspection sites (Farwell Grain Inspection Co.). Test weight conversions from lb/bu to kg/hl according to FGIS-PN97-5, $\{(1.292 \times \text{lb/bu}) + 0.630\}$. Graded No. 1 (%) reflects composite sample data. 1/. Over 90% of all samples collected through this program graded No. 1.