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# *Desert Durum*<sup>®</sup>

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• 2011 • 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](mailto:info@californiawheat.org)  
[www.californiawheat.org](http://www.californiawheat.org)

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## 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, this data is intended to characterize the 2011 DESERT DURUM® crop by both variety and as an entire crop.

The milling, semolina and pasta analyses used to produce this 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
2011	217,155	*253,000	470,155
2010	247,256	223,170	470,426
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

\* Final data available February 2012 from USDA

## Milling, Semolina, and Pasta Characteristics of Desert Durum® Varieties

	Desert King		Duraking		Havasu	
	'11 <sup>1</sup>	'10 <sup>1</sup>	'11 <sup>1</sup>	'10 <sup>1</sup>	'11	'10
WHEAT Protein						
Dry (%)	15.6	15.6	14.8	14.6	15.3	14.4
As Is (%)	14.4	14.4	13.8	13.5	14.3	13.5
(12% mb)	13.7	13.7	13.0	12.8	13.4	12.7
Moisture (%)	7.7	7.3	6.8	7.3	6.2	6.3
1000 Kernel Weight (g)	47.0	47.2	47.0	46.5	49.7	49.9
Kernel Size Distribution						
Large (%)	88	93	84	89	91	92
Medium (%)	12	7	16	11	9	7
Small (%)	0	0	0	0	0	0
MILLING AND SEMOLINA						
Total Extraction (%)	76.8	75.9	76.6	74.7	74.2	76.6
Semolina Extraction (%)	63.5	63.1	67.9	62.5	62.5	62.6
Wheat Ash (As Is % mb)	1.94	1.83	1.80	1.91	2.01	1.82
Semolina Ash (As Is % mb)	0.84	0.78	0.88	0.96	0.91	0.87
Semolina Protein (As Is % mb)	12.6	12.2	11.7	11.8	12.4	11.9
Falling Number (sec)	628	518	528	539	660	748
Specks (no/10 sq in)	7	4	5	5	5	6
Wet Gluten (%) (14% mb)	29.5	31.1	27.7	29.2	30.0	29.5
Dry Gluten (%) (As Is % mb)	10.7	11.3	9.8	10.2	15.9	10.4
Alveograph						
W	129.2	139.3	111.8	132.1	230.8	223
P/L	1.03	1.03	1.57	1.31	1.49	1.62
Color 'b' value	22.9	25.0	22.4	24.3	26.5	27.8
PASTA						
Color <sup>2</sup>						
Score	6.5	8.2	6.0	7.0	9.3	9.3
'b' value	35.8	39.3	34.4	36.0	42.0	42.7
Cooked Weight (g)	29.4	29.5	30.3	29.1	30.1	31.2
Cooking Loss (%)	6.7	7.3	8.1	8.1	7.5	8.6
Firmness (g/cm)	7.5	8.7	7.2	7.6	7.9	7.1

<sup>1</sup> Limited samples available for analysis; please contact the California Wheat Commission for more information. <sup>2</sup> Pasta and semolina color—Minolta 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—Leco 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

	Kronos		Ocotillo		Orita		RSI 59		Saragolla		Sky		WB Mead	Westmore	
	'11	'10	'11 <sup>1</sup>	'10 <sup>1</sup>	'11	'10	'11 <sup>1</sup>	'10 <sup>1</sup>	'11 <sup>1</sup>	'10 <sup>1</sup>	'11 <sup>1</sup>	'10 <sup>1</sup>	'11 <sup>1</sup>	'11	'10
<b>WHEAT</b>															
Protein															
Dry (%)	15.5	14.8	16.6	16.0	15.7	15.4	13.1	14.2	14.8	15.1	14.4	14.6	15.3	16.1	14.5
As Is (%)	14.6	13.8	15.5	14.9	14.7	14.4	12.1	13.2	13.7	14.1	13.6	13.7	14.4	15.1	13.6
(12% mb)	13.7	13.0	14.7	14.0	13.8	13.6	11.5	12.5	13.1	13.3	12.7	12.9	13.5	14.1	12.8
Moisture (%)	6.3	6.7	7.1	6.7	6.5	6.6	7.9	7.3	7.4	6.4	6.0	6.3	5.9	5.9	6.3
1000 Kernel Weight (g)	52.5	51.8	50.0	45.7	53.7	55.3	48.0	49.4	49.0	50.8	50.0	45.1	51.1	43.1	40.3
Kernel Size Distribution															
Large (%)	94	95	92	90	93	97	94	96	86	93	87	91	87	71	87
Medium (%)	6	5	8	11	7	3	6	4	13	7	13	9	13	29	16
Small (%)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
<b>MILLING AND SEMOLINA</b>															
Total Extraction (%)	71.4	73.0	74.3	76.1	74.2	74.9	77.4	76.9	74.2	75.9	73.8	74.6	72.6	74.0	74.3
Semolina Extraction (%)	60.3	60.4	63.1	61.6	64.4	62.2	66.7	61.5	64.5	62.5	63.6	61.8	64.4	61.0	61.4
Wheat Ash (As Is % mb)	1.86	1.83	1.77	1.88	1.90	1.88	2.04	1.73	1.90	1.88	1.89	1.77	2.14	1.94	1.73
Semolina Ash (As Is % mb)	0.87	0.82	0.77	0.81	0.82	0.79	0.65	0.84	0.88	0.83	0.75	0.89	0.85	0.87	0.87
Semolina Protein (As Is % mb)	12.5	11.9	13.3	12.9	12.7	12.6	10.7	11.7	11.5	12.3	11.6	11.7	12.4	13.1	11.8
Falling Number (sec)	667	650	551	652	646	821	621	572	536	621	550	706	561	622	676
Specks (no/10 sq in)	5	8	5	4	6	8	4	2	5	6	7	6	5	3	6
Wet Gluten (%) (14% mb)	32.2	30.5	35.8	33.9	33.2	32.7	26.1	31.0	28.2	33.1	28.1	30.2	29.4	32.0	30.2
Dry Gluten (%) (As Is % mb)	12.0	10.8	12.7	12.1	11.9	11.9	9.6	11.4	9.8	11.4	10.4	10.5	10.6	11.9	10.7
Alveograph															
W	181.5	162.3	77.9	83.6	142.3	130.1	96.8	110.1	159.5	117.7	168.1	209.2	163.6	181.3	155.0
P/L	1.38	1.42	0.45	0.41	0.93	1.05	1.20	0.90	0.91	0.96	1.74	1.55	1.46	1.73	1.56
Color <sup>b</sup> value	25.8	26.1	24.3	24.7	25.1	24.6	24.6	24.7	23.7	23.2	26.2	26.2	28.0	27.5	27.9
<b>PASTA</b>															
Color <sup>2</sup>															
Score	8.9	8.9	8.5	9.0	8.3	8.2	7.5	8.7	8.0	7.5	9.5	8.7	8.7	8.7	9.0
<sup>b</sup> value	41.5	41.5	40.6	40.7	38.9	39.2	37.3	39.3	38.5	37.2	42.3	41.1	40.4	41.0	42.6
Cooked Weight (g)	30.7	29.3	29.7	31.4	28.5	30.4	30.3	32.5	30.4	29.5	30.8	30.8	30.9	29.7	29.8
Cooking Loss (%)	7.3	7.2	7.5	8.7	6.6	7.5	7.8	8.0	8.8	7.7	7.2	8.0	8.1	7.3	8.4
Firmness (g/cm)	7.5	7.8	7.8	7.6	7.5	7.6	7.5	7.2	7.0	7.5	7.8	7.6	7.1	8.0	7.7

<sup>1</sup> Limited samples available for analysis; please contact the California Wheat Commission for more information. <sup>2</sup> Pasta and semolina color—Minolta 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—Leco 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		
	2011	2010	2009	10/11	09/10	08/09
Protein (%) (12% MB)	13.3	13.0	13.3	12.7	13.0	12.7
Graded No. 1 (%)	Over 90% of samples graded No.1			96	92	93
HVAC (%)	97.2	96.1	95.4	95.1	91.9	92.5
Moisture (%)	6.6	7.0	6.8	7.2	7.5	7.3
Test Weight: lb/bu	62.5	63.2	62.7	62.6	62.2	62.5
kg/hl	81.4	82.3	81.6	81.5	81.0	81.4
Damage (%)	0.3	0.4	0.3	0.4	0.5	0.5
*Foreign Material (%)	0.0	0.1	0.1	0.1	0.2	0.2
*Shrunken/Broken (%)	0.5	0.4	0.4	0.7	0.7	0.6
Total Defects (%)	0.8	0.9	0.7	1.2	1.4	1.3
*Dockage (%)	0.4	0.3	0.2	0.5	0.7	0.5
*Total Screenings (%)	0.9	0.8	0.7	1.3	1.6	1.3
Moisture (%)	6.6	7.0	6.8	7.2	7.5	7.3
Net Wheat (%) <sup>1</sup>	92.6	92.3	92.5	91.5	91.0	91.5
CTW (%) <sup>2</sup>	110.2	109.9	110.2	108.9	108.4	108.9
MWVI <sup>3</sup>	90.8	91.0	90.7	91.8	92.2	91.8

\*Total Screenings are those factors represented on the grade certificate that are cleaned out in the flour mill. Note: Samples were either official samples collected by a licensee of FGIS or submitted by handlers to a licensee for grading. Desert Durum® cargo data represents information obtained from official export inspection certificates. Test weight conversions from lb/bu to kg/hl is according to FGIS-PN-97-5,  $\{(1.292 \times \text{lb/bu}) + 0.630\}$ . <sup>1</sup>Net Wheat =  $(100\% - (\text{FM} + \text{SHBN} + \text{Dockage})) \times (100\% - \text{Moisture}) / 100\%$ . <sup>2</sup>Clean Tempered Wheat (CTW%) =  $(100\% - (\text{FM} + \text{SHBN} + \text{Dockage})) \times (100\% - \text{Moisture}) / (100\% - 16\%(\text{temper moisture}))$ . <sup>3</sup>Millable Wheat Value Index (MWVI) =  $100\% / \text{CTW}$ .

## 2011 Desert Durum® : Average Grade Results by Variety

	<u>Duraking*</u>	<u>Havasu</u>	<u>Kronos</u>	<u>Ocotillo*</u>	<u>Orita</u>	<u>RSI 59*</u>	<u>Saragolla*</u>	<u>Sky*</u>	<u>WB Mead*</u>	<u>Westmore</u>
Protein (%) (12% mb)	13.0	13.2	13.1	13.9	13.4	11.5	12.1	12.0	12.8	13.8
Graded No. 1 (%)	Over 90% of samples graded No.1									
HVAC (%)	98	98	95	98	98	95	95	95	96	98
Moisture (%)	6.6	6.6	6.3	7.3	6.8	10.5	7.8	6.5	6.5	6.0
Test Weight: lb/bu	62.7	63.1	62.6	63.7	62.1	63.0	63.3	62.9	62.6	61.2
kg/hl	81.6	82.1	81.5	82.9	80.2	82.0	82.4	81.9	81.5	79.7
Damage (%)	0.6	0.3	0.6	0.0	0.2	0.0	0.0	0.5	0.4	0.1
Foreign Material (%)	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0
Shrunken/Broken (%)	0.8	0.3	0.3	0.3	0.5	0.6	0.7	0.2	0.3	1.3
Total Defects (%)	1.4	0.7	0.9	0.3	0.8	0.7	0.8	0.7	0.7	1.4
Dockage	0.0	0.1	0.1	0.0	0.8	0.3	1.0	0.0	0.4	0.1

Note: \*Limited samples available for analysis. Samples were either official samples collected by a licensee of FGIS or submitted by handlers to a licensee for grading. Test weight conversions from lb/bu to kg/hl according to FGIS-PN97-5,  $\{(1.292 \times \text{lb/bu}) + 0.630\}$ . Desert King samples were not submitted for grading.