
DESERT DURUM[®]

• 2009 • CROP • QUALITY •

ARIZONA / CALIFORNIA COMBINED CROP ANALYSIS



Arizona Grain Research and
Promotion Council
Arizona Department of Agriculture
1688 W. Adams
Phoenix, AZ 85007
Telephone: (520) 305-3586
Fax: (520) 305-3587

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. and Mexico 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 2009 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) * estimated

Year	Arizona	California	Total
2009	337,476	*289,000	626,476
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
2003	312,982	167,105	480,087
2002	242,983	137,413	380,396

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

WHEAT	Alamo		Crown		Desert King	
	'09	'08	'09 ¹	'08 ¹	'09	'08
Protein						
Dry (%)	15.2	15.3	15.1	16.1	15.0	15.0
As Is (%)	14.2	14.3	14.0	15.0	14.0	14.0
(12% mb)	13.4	13.5	13.3	14.2	13.2	13.2
Moisture (%)	6.5	6.5	7.4	6.9	7.1	6.9
1000 Kernel Weight (g)	48.9	52.3	49.3	48.1	48.2	48.9
Kernel Size Distribution						
Large (%)	95	95	94	91	91	90
Medium (%)	5	5	6	9	9	10
Small (%)	0	0	0	0	1	0
MILLING AND SEMOLINA						
Total Extraction (%)	78.1	73.1	77.7	73.3	77.2	68.9
Semolina Extraction (%)	63.6	62.7	62.5	62.1	62.8	59.3
Wheat Ash (As Is % mb)	1.80	1.73	1.64	1.70	1.94	2.00
Semolina Ash (As Is % mb)	0.99	0.79	0.74	0.68	0.86	0.87
Semolina Protein (As Is % mb)	12.2	12.8	11.8	13.5	11.7	11.9
Falling Number (sec)	723	704	615	597	577	584
Specks (no/10 sq in)	9	12	5	9	8	23
Wet Gluten (%) (14% mb)	37.2	36.6	36.1	32.7	33.8	33.1
Dry Gluten (%) (As Is % mb)	13.9	14.0	12.6	13.3	13.2	13.0
Alveograph						
W	222.0	209.7	136.7	107.9	129.8	145.8
P/L	1.67	1.09	1.09	1.09	1.34	0.77
Color 'b' value	25.3	26.5	24.4	25.1	24.6	24.4
PASTA						
Color ²						
Score	8.4	9.4	8.5	9.0	8.4	8.8
'b' value	40.0	41.4	40.0	40.1	39.5	40.4
Cooked Weight (g)	29.9	30.2	30.6	28.4	29.7	29.0
Cooking Loss (%)	7.3	7.9	7.1	8.1	7.8	7.5
Firmness (g/cm)	7.6	7.2	7.0	7.3	8.0	6.9

¹Limited samples available for analysis; please contact the California Wheat Commission for more information. ²Pasta 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

	Duraking		Havasu		Kronos		Ocotillo		Orita		Sky		Westmore
WHEAT	'09 ¹	'08	'09	'08	'09	'08	'09 ¹	'08	'09	'08	'09	'08	'09
Protein													
Dry (%)	14.9	14.6	14.5	15.0	14.8	15.4	14.1	15.0	15.4	15.7	15.1	15.5	15.6
As Is (%)	13.9	13.6	13.4	14.0	13.8	14.3	13.0	13.9	14.4	14.7	14.1	14.4	14.6
(12% mb)	13.1	12.9	12.7	13.2	13.0	13.5	12.4	13.2	13.6	13.9	13.3	13.7	13.7
Moisture (%)	7.0	6.8	7.3	6.7	6.9	6.8	8.0	7.1	6.7	6.8	6.9	7.1	6.7
1000 Kernel Weight (g)	42.5	45.3	48.7	47.9	52.6	53.6	52.6	48.7	64.8	53.6	43.6	45.7	41.2
Kernel Size Distribution													
Large (%)	85	84	91	92	95	95	93	91	97	96	89	90	79
Medium (%)	15	16	9	8	7	5	6	9	3	4	10	10	21
Small (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLING AND SEMOLINA													
Total Extraction (%)	76.1	74.6	77.7	74.4	77.9	72.4	74.3	72.5	77.5	71.9	78.4	73.0	77.4
Semolina Extraction (%)	62.7	63.8	61.6	62.3	61.7	61.9	61.1	62.2	63.9	62.1	62.1	62.8	62.7
Wheat Ash (As Is % mb)	1.96	1.83	1.82	1.80	1.83	1.83	1.73	1.77	1.83	1.79	1.86	1.71	1.85
Semolina Ash (As Is % mb)	0.85	0.88	0.85	0.87	0.88	0.89	0.84	0.76	0.87	0.78	0.91	0.85	0.93
Semolina Protein (As Is % mb)	11.8	11.4	11.6	12.9	11.9	12.7	11.2	12.7	12.2	12.9	11.9	12.7	12.6
Falling Number (sec)	549	531	644	641	656	671	539	585	648	702	676	686	655
Specks (no/10 sq in)	5	8	10	10	6	14	8	15	6	11	5	15	6
Wet Gluten (%) (14 % mb)	33.4	36.1	32.8	32.5	33.4	33.8	32.1	37.0	36.2	38.0	33.3	32.6	37.5
Dry Gluten (%) (As Is % mb)	12.3	13.5	12.6	12.9	13.0	13.3	13.2	14.1	13.6	14.9	12.3	15.6	13.2
Alveograph													
W	129.7	144.4	251.0	224.0	175.8	192.1	83.7	119.6	133.7	145.2	257.0	241.8	195.6
P/L	1.33	1.45	1.93	1.47	1.82	1.41	0.41	0.52	1.20	0.96	2.08	1.66	2.04
Color 'b' value	23.9	23.3	27.2	29.4	25.7	26.2	24.0	25.0	24.7	26.2	25.4	26.3	26.9
PASTA													
Color ²													
Score	6.5	6.5	9.1	9.6	8.7	9.3	8.5	9.1	8.4	8.4	9.0	9.9	9.0
'b' value	35.6	35.1	42.0	43.7	40.7	41.0	38.6	40.3	39.4	41.6	41.1	42.8	41.0
Cooked Weight (g)	29.9	30.4	29.5	29.7	30.2	30.2	29.6	30.0	29.6	30.4	29.8	30.2	29.8
Cooking Loss (%)	8.0	8.0	8.0	7.4	8.0	7.4	8.0	7.0	7.7	6.9	8.0	7.6	7.8
Firmness (g/cm)	6.9	5.9	7.3	7.1	7.1	7.1	7.7	7.6	7.5	7.1	7.8	7.5	8.0

¹Limited samples available for analysis; please contact the California Wheat Commission for more information. ²Pasta 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		
	2009	2008	2007	08/09	07/08	06/07
Protein (%) (12% MB)	13.3	13.5	13.8	----	----	----
Graded No. 1 (%)	Over 90% of samples graded No.1			93	93	97
HVAC (%)	95.4	94.1	95.9	92.5	94.3	92.6
Moisture (%)	6.8	6.8	6.6	7.3	7.4	7.3
Test Weight						
lb/bu	62.7	62.9	62.7	62.5	62.8	62.6
kg/hl	81.7	81.9	81.7	81.4	81.8	81.5
Damage (%)	0.3	0.1	0.5	0.5	0.6	0.6
*Foreign Material (%)	0.1	0.1	0.1	0.2	0.2	0.2
*Shrunken/Broken (%)	0.4	0.4	0.3	0.6	0.6	0.5
Total Defects (%)	0.7	0.5	0.9	1.3	1.3	1.3
*Dockage (%)	0.2	0.2	0.2	0.5	0.5	0.5
*Total Screenings (%)	0.7	0.7	0.6	1.3	1.3	1.2
Moisture (%)	6.8	6.8	6.6	7.3	7.4	7.3
Net Wheat (%) ¹	92.5	92.5	92.8	91.5	91.4	91.6
CTW (%) ²	110.2	110.2	110.5	108.9	108.8	109.0
MWVI ³	90.7	90.7	90.5	91.8	91.9	91.7

*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 is 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%) = $(100\% - (\text{FM} + \text{SHBN} + \text{Dockage})) \times (100\% - \text{Moisture}) / (100\% - 16\%(\text{temper moisture}))$. ³ Millable Wheat Value Index (MWVI) = $100\% / \text{CTW}$.

2009 Desert Durum® : Average Grade Results by Variety

	Alamo	Crown*	Desert King	Duraking*	Havasus	Kronos	Ocotillo*	Orita	Sky	Westmore
Protein (%) (12% mb)	13.8	12.0	13.2	13.0	13.3	13.2	13.3	13.8	13.4	13.6
Graded No.1 (%)	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/
HVAC (%)	95	84	98	97	98	94	94	96	98	98
Moisture (%)	6.7	7.1	7.4	7.1	7.8	6.9	8.2	6.5	7.1	7.0
Test Weight										
lb/bu	63.2	61.8	63.2	62.1	63.8	62.4	62.2	62.2	61.4	62.3
kg/hl	82.5	80.7	82.4	81.0	83.3	81.5	81.2	81.2	80.2	81.3
Damage (%)	0.7	0.5	0.0	0.3	0.0	0.1	0.6	0.3	0.5	0.2
Foreign Material (%)	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0
Shrunken/Broken (%)	0.4	0.2	0.5	0.8	0.5	0.4	0.2	0.3	0.3	0.8
Total Defects (%)	1.1	0.7	0.6	1.1	0.6	0.5	0.8	0.6	0.9	1.1
Dockage	0.1	0.1	0.4	0.4	0.3	0.2	0.1	0.2	0.1	0.1

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-PN-97-5, $\{(1.292 \times \text{lb/bu}) + 0.630\}$. Graded No. 1 (%) reflects composite sample data. 1/. Over 90% of all samples collected through this program graded No. 1.