U.S. DURUM WHEAT

• *Montana* • *North Dakota* •

2009 REGIONAL QUALITY REPORT

MAKING PREMIUM PASTA

DURUM—is the hardest of all wheats. Its density, combined with its high protein content and gluten strength, make durum the wheat of choice for producing premium pasta products. Pasta made from durum is firm with consistent cooking quality. Durum kernels are amber-colored and larger than those of other wheat classes. Also unique to durum is its yellow endosperm, which gives pasta its golden hue.

When durum is milled, the endosperm is ground into a granular product called semolina. A mixture of water and semolina forms a stiff dough. Pasta dough is then forced through dies, or metal discs with holes, to create hundreds of different shapes.

Durum production is geographically concentrated to the Northern Plains because it demands a special agronomic environment. The states of North Dakota and Montana in most years jointly produce 80 percent of the U.S. durum crop. Farmers in California and Arizona grow the remainder.

2009 OVERVIEW

The 2009 northern durum crop in the United States is nearly fifty percent larger than last year and features an excellent grade profile with some notable improvements in end-use quality. Regional yields tied the previous record high as a cooler than average growing season and improved subsoil moisture conditions provided optimal conditions in most areas. Little disease pressure was noted in this year's crop. The average grade is a #1 Hard Amber Durum, with seventy percent of the crop grading #1 HAD, up from only forty-three percent last year. Only eleven percent of the crop falls below a #2 grade.

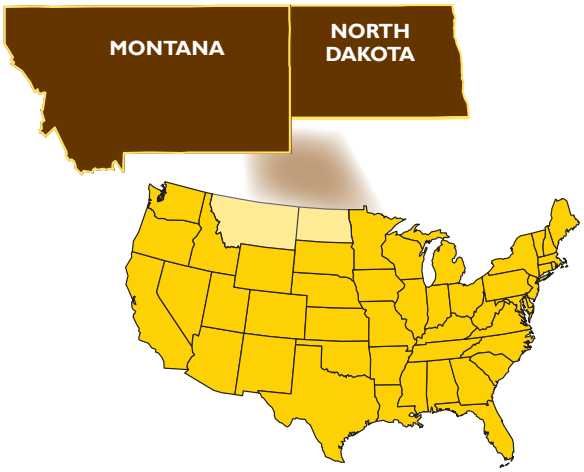
Average test weight for the regional crop is an outstanding 61.4 pounds per bushel (80.0 kg/hl). Nearly eighty-five percent of the crop is greater than 60 pounds per bushel (78.2 kg/hl), compared to sixty percent last year. Paralleling the improved test weight profile, the average thousand kernel weight is 42.4 grams, well above last year's 35 grams.

Protein levels are lower in the 2009 crop due to the cooler growing season temperatures and higher yields. Average protein is 13.5 percent, down from 14.8 percent last year and the five-year average of 14.4 percent. Still the distribution of protein shows that sixty-three percent of the crop is above the typical industry demand of 13 percent. Vitreous kernel counts on the crop are equal to last year with an average of 83 percent, but slightly below the five-year average of 90 percent. Still, nearly sixty percent of the 2009 crop is above 90 percent. Average falling number values are 398 seconds compared to 322 in 2008 and 362 for the five-year average as the delayed maturity in 2009 helped maintain kernel soundness during harvest rains.

Milling performance on the crop, based on a Buhler laboratory mill reveal higher total extractions and semolina extractions and lower ash levels. Total extraction is 72.7 percent and semolina extraction is 65.5 percent, both values are 4 to 5 percentage points higher than 2008. Ash content is 0.62 percent. The semolina is showing slightly higher speck counts and lower protein content, but gluten index values are up notably to 58.9 percent, compared to 41.4 percent last year. A shift in varieties is a contributing factor in the higher gluten index in the crop.

Semolina mixing properties are showing stronger scores, a 5.5 on a scale of 1-8, compared to 5.2 last year. Pasta quality factors are showing much improved color with a score of 9.5 compared to 8.7 last year and the five-year average of 9.0. Cooked spaghetti tests produced similar

TABLE OF CONTENTS



cooked weights to last year with a slightly higher percent of cooking loss. Cooked firmness is down from both last year and the five-year average, likely due to the lower overall protein in the crop.

Buyers will find a lot to appreciate in the larger, higher quality crop available in 2009. While protein content is lower and some areas of reduced vitreous kernel counts do exist, the crop as a whole is very sound with excellent kernel quality. Millers should find higher mill yields with the improved kernel sizes and weights and pasta manufacturers and other end-users should benefit from improved color scores and good processing performance. Diligent contract specifications are still encouraged to ensure buyers receive the wheat that best meets their needs.

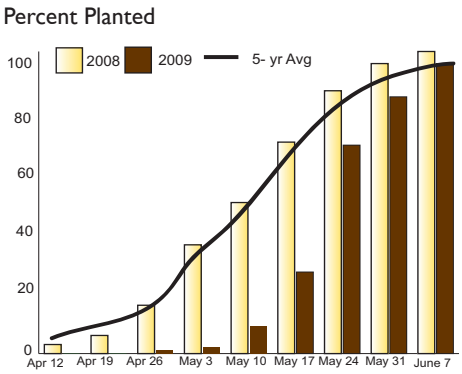
	2008	2009	2004-08 AVERAGE
MILLION BUSHELS			
Montana	10.8	17.0	12.7
North Dakota	42.3	62.0	47.6
Regional Total	53.1	79.0	60.3
U.S. Total	83.8	110.1	78.8
MILLION METRIC TON			
Montana	0.29	0.46	0.34
North Dakota	1.15	1.69	1.30
Regional Total	1.44	2.15	1.64
U.S. Total	2.28	3.0	2.14

Source: USDA • September 2009 Small Grains Summary

SEASONAL CONDITIONS

PLANTING of the durum crop got off to a later than normal start due to persistent cool, wet conditions caused by heavy snowfall, spring rain and flooding. The moisture situation at planting time was much improved compared to one year ago. Planting began in mid-May and drier conditions followed, allowing planting to be completed by the first week in June. Emergence was slower than normal due to the cool conditions, but crop development was aided by adequate soil moisture levels.

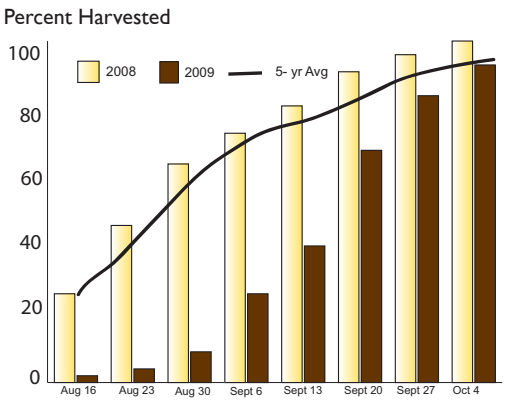
DURUM PLANTING PROGRESS



GROWING conditions remained favorable throughout June and July as temperatures were below normal, limiting stress to the developing crop. Precipitation was adequate, with only small areas of dryness causing some concern. Yield potential was promising because of the cooler temperatures and there was little to no disease pressure.

HARVEST was three to four weeks behind normal, beginning in late August. Harvest progress was slow due to cool, humid weather which did not allow for adequate drying conditions. Warmer temperatures and dry weather the last half of September permitted most of the harvest to be completed by the second week of October.

DURUM HARVEST PROGRESS



WHEAT CHARACTERISTICS

WHEAT GRADES, as defined by the Federal Grain Inspection Service (FGIS) of the USDA Grain Inspection, Packers and Stockyards Administration (GIPSA), reflect the general quality and condition of a representative sample. U.S. grades are based on test weight and include limits on damaged kernels, foreign material, shrunken and broken kernels, and wheat of contrasting classes. Each determination is made on the basis of the grain when free from dockage and shrunken and broken kernels.

SUBCLASSES

Subclass is a separate marketing factor based on the weight percentage of kernels with a complete, hard and vitreous endosperm, the portion that makes semolina. For durum wheat the subclasses are:

- Hard Amber Durum (HAD)—at least 75 percent or more hard, vitreous kernels;
- Amber Durum (AD)— between 60 and 74 percent hard, vitreous kernels;
- Durum (D)—less than 60 percent hard, vitreous kernels.

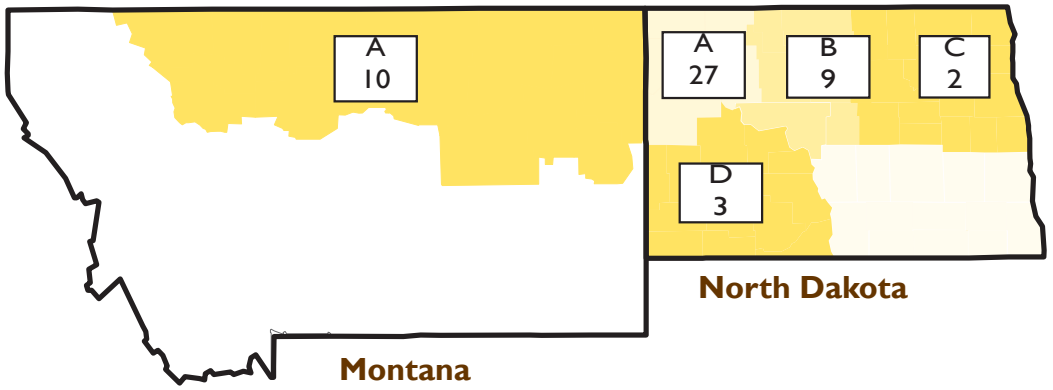
OFFICIAL U.S. GRADES AND GRADE REQUIREMENTS (Revised June 1993)

	U.S. Grades				
GRADING FACTORS	1	2	3	4	5
DURUM - MINIMUM TEST WEIGHTS					
Pounds per bushel	60.0	58.0	56.0	54.1	51.0
Kilograms per hectoliter	78.2	75.6	73.0	70.4	66.5
MAXIMUM PERCENT LIMITS OF:					
Damaged kernels					
Heat (part of total)	0.2	0.2	0.5	1.0	3.0
Total	2.0	4.0	7.0	10.0	15.0
Foreign material	0.4	0.7	1.3	3.0	5.0
Shrunken/broken kernels	3.0	5.0	8.0	12.0	20.0
Total [1]	3.0	5.0	8.0	12.0	20.0
Wheat of other classes [2]					
Contrasting classes	1.0	2.0	3.0	10.0	10.0
Total [3]	3.0	5.0	10.0	10.0	10.0
Stones	0.1	0.1	0.1	0.1	0.1
MAXIMUM COUNT LIMITS OF:					
Other material					
Animal filth	1	1	1	1	1
Castor beans	1	1	1	1	1
Crotalaria seeds	2	2	2	2	2
Glass	0	0	0	0	0
Stones	3	3	3	3	3
Unknown foreign material	3	3	3	3	3
Total [4]	4	4	4	4	4
Insect-damaged kernels in 100 grams	31	31	31	31	31

U.S. Sample grade is wheat that:
(a) Does not meet the requirements for U.S. Nos. 1, 2, 3, 4, or 5; or
(b) Has a musty, sour, or commercially objectionable foreign odor (except smut or garlic odor); or
(c) is heating or of distinctly low quality.
1 Includes damaged kernels (total), foreign material, and shrunken and broken kernels.
2 Unclassed wheat of any grade may contain not more than 10.0 percent of wheat of other classes.
3 Includes contrasting classes.
4 Includes any combination of animal filth, castor beans, crotalaria seeds, glass, stones, or unknown foreign substance.

CROP REPORTING AREAS & 2008 DURUM WHEAT PRODUCTION (million bushels)

Wheat samples were obtained in Montana and North Dakota in the crop reporting areas identified in color. Samples were gathered during harvest from growers, farm bins and country elevators.

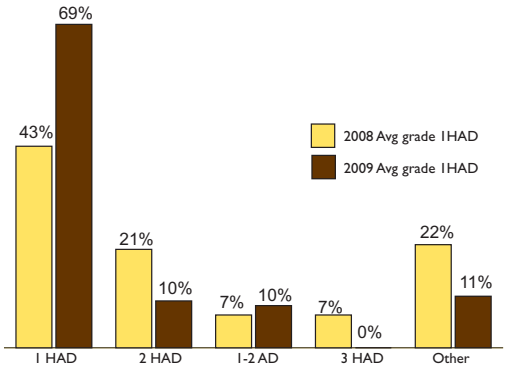


WHEAT GRADING DATA

OVERALL GRADE

The average grade for the region is 1 HAD. This grade represents average test weight of 61.4 pounds per bushel (80.0 kg/hl), total defects of 1.1 percent and vitreous kernel content of 83 percent.

REGIONAL GRADE DISTRIBUTION

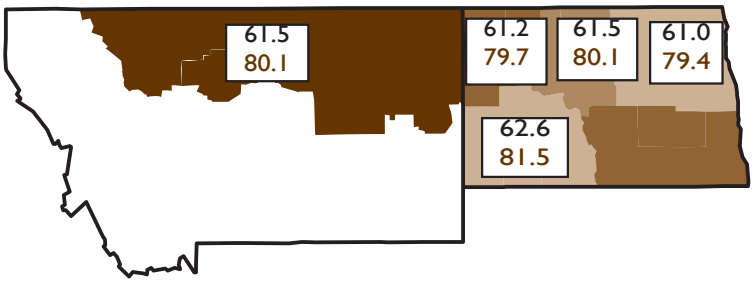


Seventy-nine percent of 2009 samples grade No. 2 HAD or better.

STATE AND CROP REPORTING AREA	Test Weight LBS/BU	Test Weight KG/HL	Damage %	Foreign Material %	Shrunken/ Broken Kernels %	Total Defects %	Contrasting Classes %	U.S. Grade	Vitreous Kernels %
MONTANA									
State Avg. 2009	61.5	80.1	0.0	0.0	0.5	0.5	0.5	1 HAD	91
State Avg. 2008	60.4	78.7	0.0	0.1	0.7	0.8	0.0	1 HAD	97
NORTH DAKOTA									
Area A	61.2	79.7	0.4	0.0	0.8	1.2	0.0	1 HAD	80
Area B	61.5	80.1	0.7	0.0	0.9	1.6	0.4	1 HAD	82
Area C	61.0	79.4	0.5	0.0	0.3	0.8	0.0	1 HAD	77
Area D	62.6	81.5	0.0	0.0	0.7	0.7	0.9	1 HAD	87
State Avg. 2009	61.4	80.0	0.4	0.0	0.8	1.2	0.2	1 HAD	81
State Avg. 2008	60.2	78.4	0.4	0.0	1.4	1.8	0.0	1 HAD	80
TWO-STATE REGION									
Avg. 2009	61.4	80.0	0.3	0.0	0.7	1.1	0.3	1 HAD	83
Avg. 2008	60.2	78.4	0.3	0.0	1.3	1.6	0.0	1 HAD	83
Five-Year Avg.	60.5	78.8	0.4	0.0	1.3	1.8	0.1	1 HAD	90

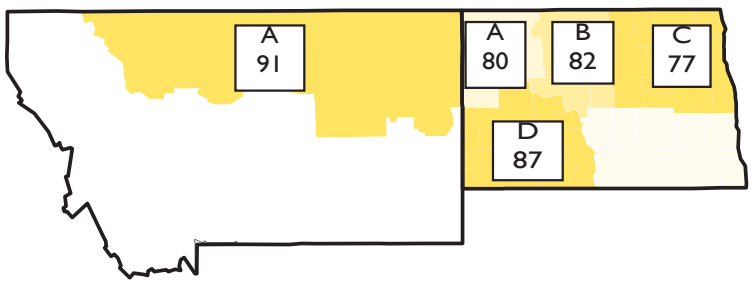
All state and regional averages have been weighted by historical and 2009 production.

TEST WEIGHT BY AREA

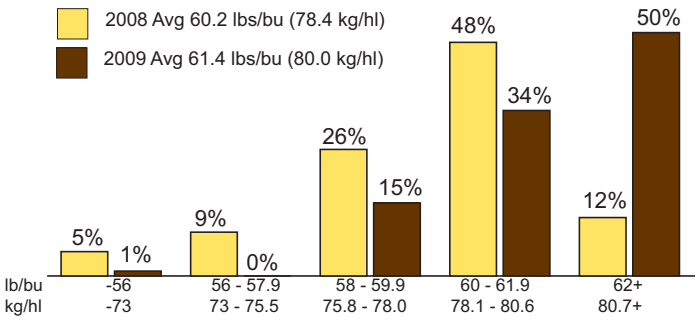


Black - pounds per bushel
Brown - kilograms per hectoliter

AVERAGE VITREOUS KERNELS BY AREA
(percent)

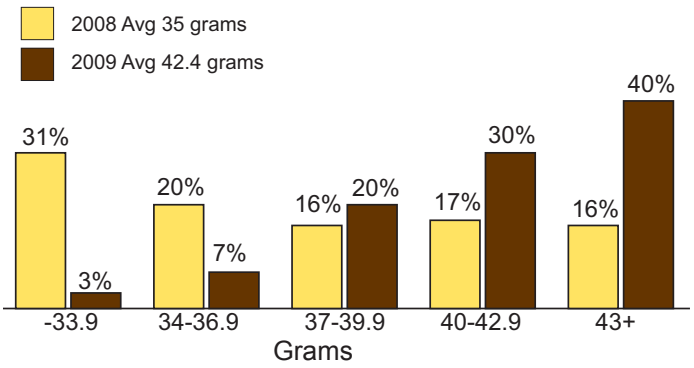


REGIONAL TEST WEIGHT DISTRIBUTION



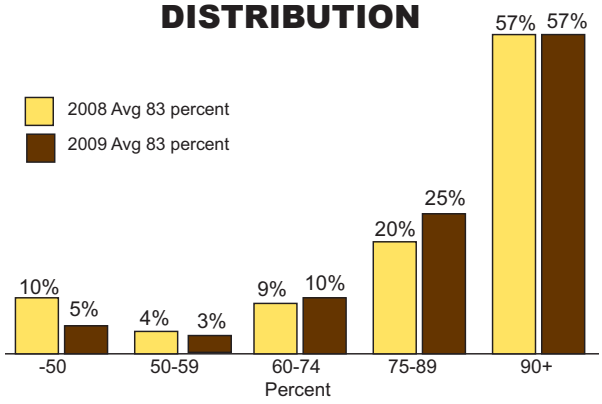
Eighty-four percent of 2009 samples have a test weight of 60 lb/bu (78.1kg/hl) or greater, compared to sixty percent in 2008.

REGIONAL 1000 KERNEL WEIGHT DISTRIBUTION



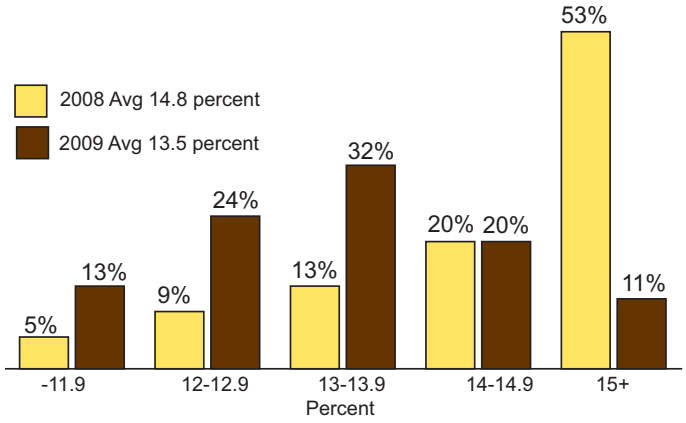
Ninety-seven percent of 2009 samples have a thousand kernel weight of 34 grams or more, higher than 2008.

REGIONAL VITREOUS KERNEL DISTRIBUTION



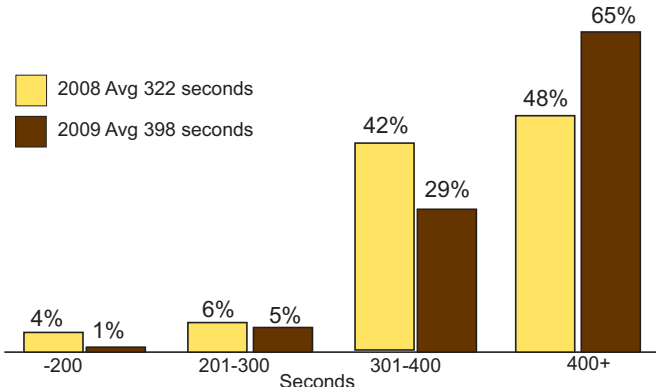
Eighty-two percent of 2009 samples have 75 percent or greater vitreous kernels, slightly higher than 2008.

REGIONAL PROTEIN DISTRIBUTION



Sixty-three percent of 2009 samples have a protein content of 13.0 percent or greater, lower than 2008.

REGIONAL FALLING NUMBER DISTRIBUTION



Ninety-four percent of 2009 samples have a falling number of 300 seconds or better, similar to 2008.

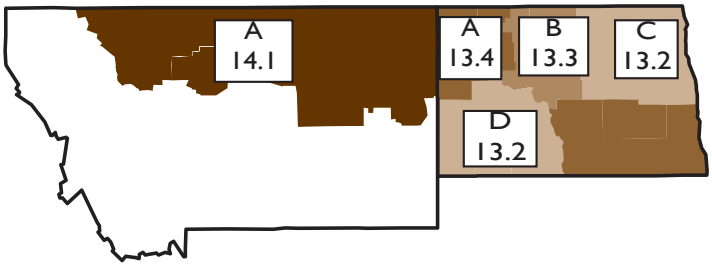
OTHER KERNEL QUALITY DATA

STATE AND CROP REPORTING AREA	Dockage %	Moisture %	1000 Kernel Weight G	Kernel Dist. Medium %	Kernel Dist. Large %	Protein (Dry Matter) %	Protein (12% Moisture) %	Wheat Ash %	Falling Number (Sec)	Sedimentation (CC)
MONTANA										
State Avg. 2009	0.9	11.1	42.2	42	55	16.0	14.1	1.32	432	55
State Avg. 2008	1.0	10.5	36.4	65	29	16.6	14.6	1.35	407	47
NORTH DAKOTA										
Area A	1.9	11.9	42.0	43	54	15.2	13.4	1.45	396	49
Area B	0.7	12.3	43.1	40	57	15.1	13.3	1.41	363	50
Area C	0.4	12.4	43.9	32	67	15.0	13.2	1.58	357	49
Area D	1.1	12.1	43.1	39	57	15.0	13.2	1.52	399	47
State Avg. 2009	1.5	12.0	42.4	42	55	15.2	13.4	1.45	388	49
State Avg. 2008	1.1	12.0	35.0	57	36	16.9	14.8	1.54	300	49
TWO-STATE REGION										
Avg. 2009	1.4	11.8	42.4	42	55	15.4	13.5	1.42	398	50
Avg. 2008	1.1	11.7	35.0	58	34	16.8	14.8	1.50	322	49
Five-Year Avg.	1.5	12.0	35.5	52	40	16.3	14.4	1.57	362	50

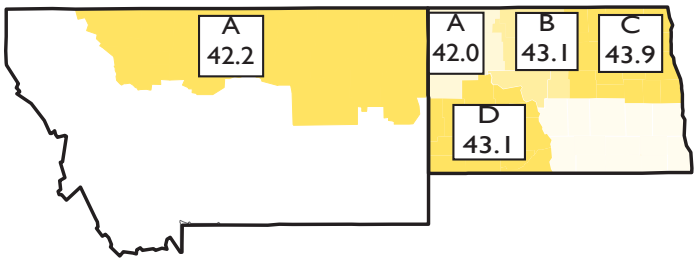
All state and regional averages have been weighted by historical and 2009 production.

more STATISTICS

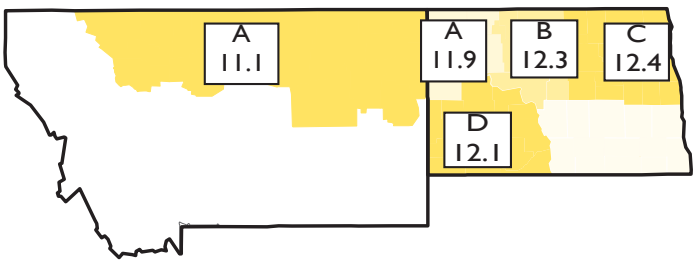
PROTEIN BY AREA
(12% moisture basis - percent)



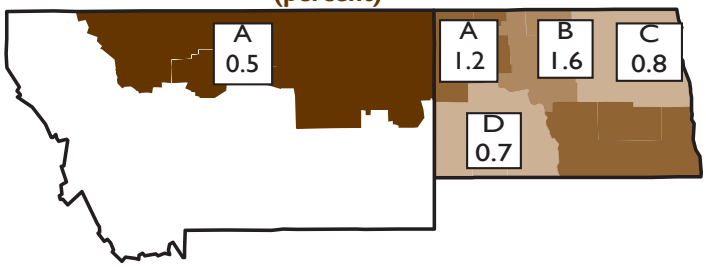
1000 KERNEL WEIGHT BY AREA
(grams)



MOISTURE BY AREA
(percent)



TOTAL DEFECTS BY AREA
(percent)



MILLING CHARACTERISTICS

Total extraction represents the portion of the kernel that can be milled into flour and semolina. **Semolina** extraction is the portion milled into semolina only.

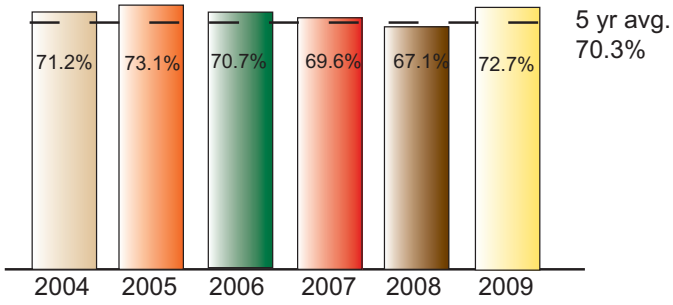
Ash content in the endosperm of durum is inherently higher than in the endosperm of other hard wheats, but can still be used as a relative measure of bran or mineral content in the flour and semolina.

Specks appear in semolina when small particles of bran or other material escape the cleaning and purifying process. Millers can control speck count by selecting durum that is free of disease and foreign material, thoroughly cleaning the durum, properly tempering and conditioning the wheat before milling, and by using purifiers to remove small bran particles from the semolina.

Protein content in semolina has a high correlation with gluten content and, in turn, mechanical strength and cooking quality. Wet gluten is a quantitative measure of the gluten forming proteins in semolina that are primarily responsible for its mechanical strength and pasta quality.

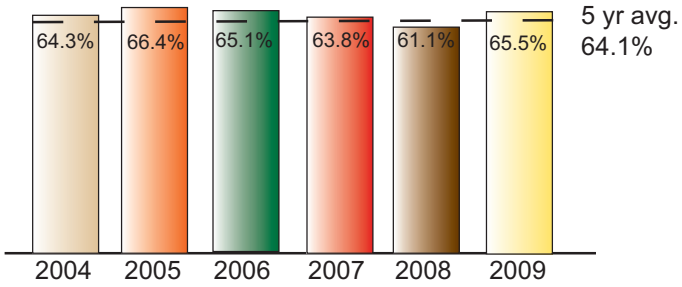
Mixogram curves reveal important information about the gluten quality of semolina and ultimately about the potential cooked firmness of pasta. Mixograms are rated on a scale of 1 to 8, with the higher values indicating strong mixing characteristics.

REGIONAL AVERAGE: TOTAL EXTRACTION



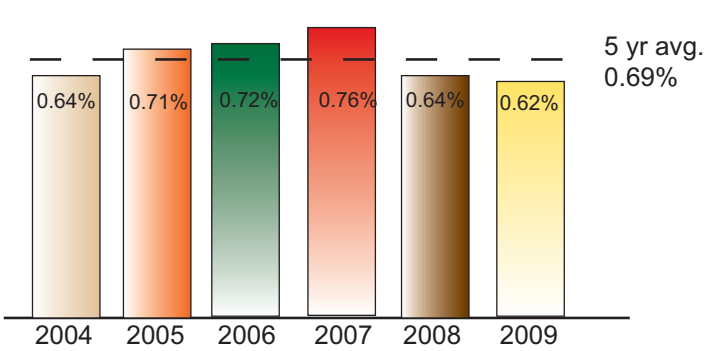
The regional average is 72.7 percent, higher than last year and the five-year average.

REGIONAL AVERAGE: SEMOLINA EXTRACTION



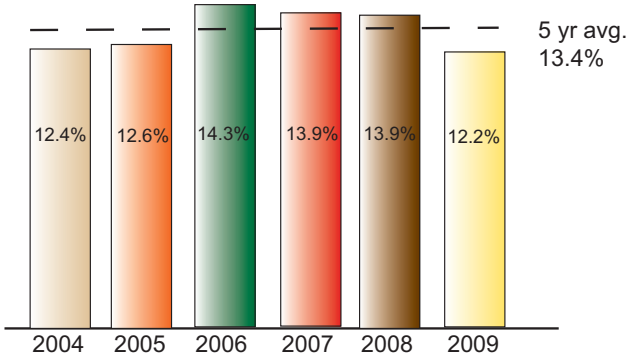
The regional average is 65.5 percent, higher than last year and the five year average.

REGIONAL AVERAGE: ASH CONTENT



The 2009 crop produced semolina with an average ash content of 0.62 percent, lower than last year and the five-year average.

REGIONAL AVERAGE: SEMOLINA PROTEIN CONTENT

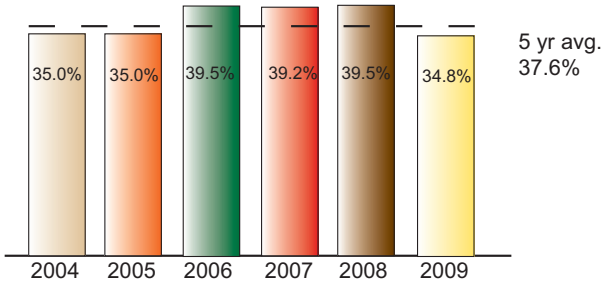


The 2009 average semolina protein content is 12.2 percent, lower than last year and the five-year average.

Semolina Quality Data

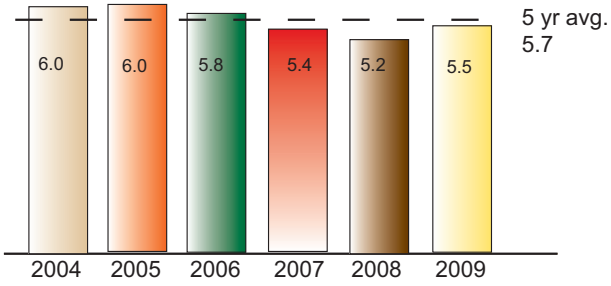
STATE AND CROP REPORTING AREA	Total Extraction %	Semolina Extraction %	Ash %	Specks No/10 Sq In %	Protein %	Wet Gluten %	Gluten Index %	Mixogram Classification Scale 1-8
MONTANA								
State Avg. 2009	72.9	66.4	0.64	23	12.7	36.3	63.0	6
State Avg. 2008	65.5	60.5	0.63	17	13.8	39.2	34.0	6
NORTH DAKOTA								
Area A	72.9	65.7	0.61	27	12.0	34.3	54.0	5
Area B	71.9	64.6	0.60	23	12.2	35.0	65.0	6
Area C	71.6	65.6	0.66	20	12.0	33.5	71.0	6
Area D	72.3	64.2	0.63	33	12.0	34.2	63.0	6
State Avg. 2009	72.6	65.3	0.61	27	12.0	34.4	57.8	5.3
State Avg. 2008	67.4	61.3	0.64	23	13.9	39.6	43.3	5
TWO-STATE REGION								
Avg. 2009	72.7	65.5	0.62	26	12.2	34.8	58.9	5.5
Avg. 2008	67.1	61.1	0.64	22	13.9	39.5	41.4	5.2
Five-Year Avg.	70.3	64.1	0.69	21	13.4	37.6	45.3	5.7

REGIONAL AVERAGE: WET GLUTEN



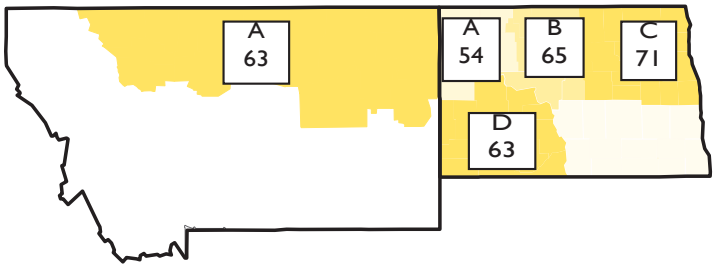
Average wet gluten content for the 2009 crop is 34.8 percent, down from last year and the five-year average.

REGIONAL AVERAGE: MIXOGRAM CLASSIFICATION (scale of 1to 8)

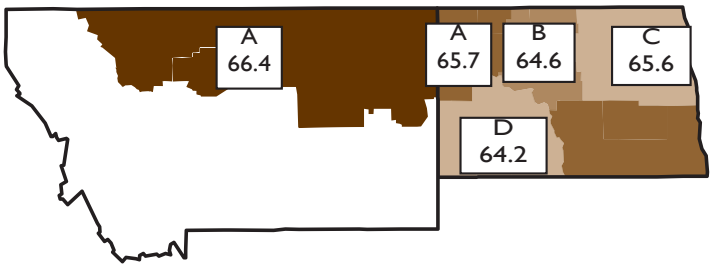


The regional average mixogram score is 5.5 (on a scale of 1 to 8), higher than last year, but lower than the five-year average.

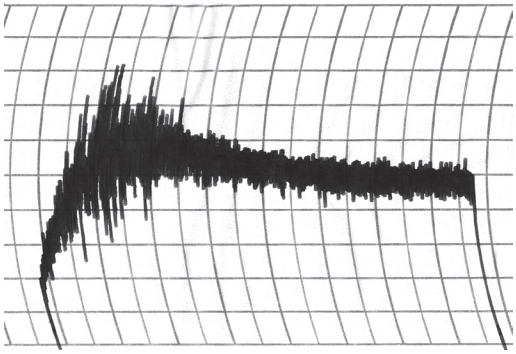
AVERAGE GLUTEN INDEX BY AREA (percent)



AVERAGE SEMOLINA EXTRACTION BY AREA (percent)



REGIONAL AVERAGE MIXOGRAM



The 2009 crop has a 5.5 mixogram classification on a scale of 1 to 8. Reference on pg. 15.

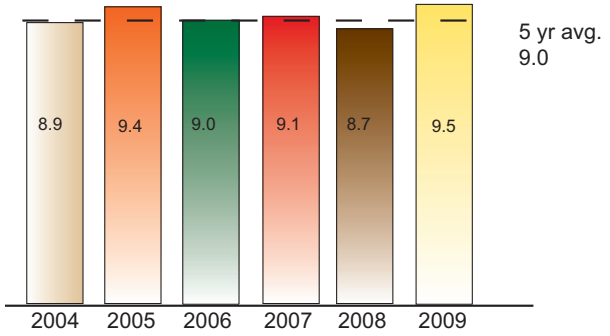
PASTA CHARACTERISTICS

Dry pasta processors want a finished product that is visually appealing, elastic and strong enough to resist breakage during cutting, packaging, handling and shipping, able to withstand the rigors of cooking, and satisfying to the consumer palate.

Yellow color in semolina and pasta is a traditional, rather than functional, mark of quality. In the early days of the pasta industry, before sophisticated testing evolved, consumers assumed that a yellow pasta was made from durum wheat, which is known to make pasta with superior cooking quality compared to that made from other hard wheats.

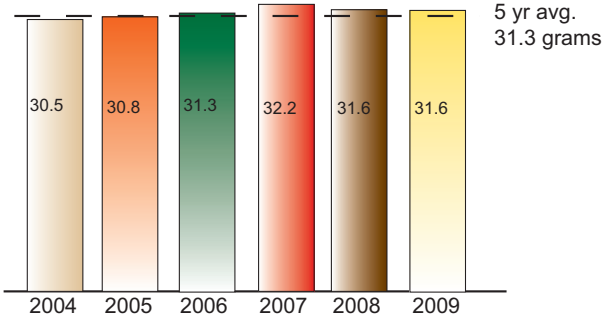
Most consumers prefer pasta that is **"al dente,"** meaning it has some firmness to the bite. Good quality pasta that is cooked according to package directions should not be sticky or mushy when eaten.

REGIONAL AVERAGE: COLOR SCORE (scale of 1-12)



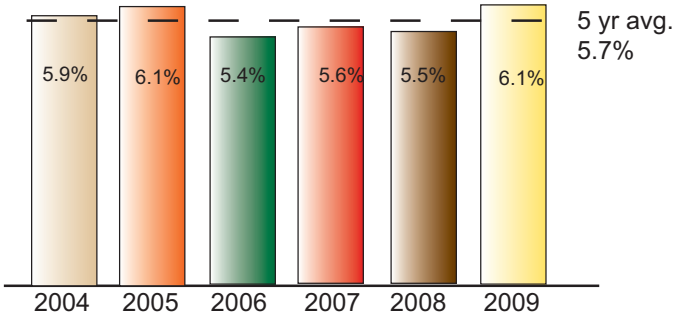
The regional average color score is 9.5 higher than last year and the five-year average. Pasta samples with scores of 8.0 or higher have good color.

REGIONAL AVERAGE: COOKED WEIGHT (grams)



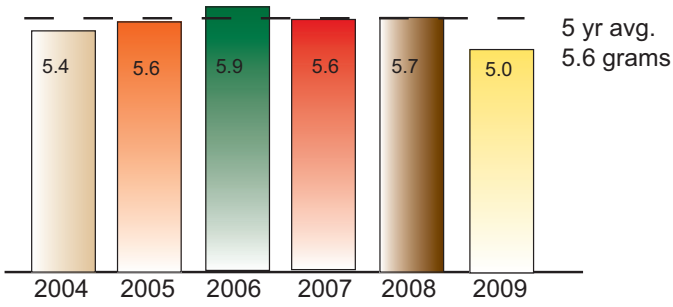
The regional average cooked weight is 31.6 grams, the same as last year and slightly above the five-year average.

REGIONAL AVERAGE: COOKING LOSS



The regional average cooking loss is 6.1 percent, higher than last year and the five-year average.

REGIONAL AVERAGE: COOKED FIRMNESS (g cm)

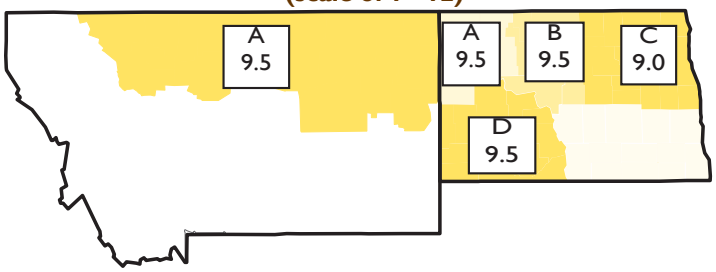


The regional average cooked firmness is 5.0 g cm, lower than last year and the five-year average.

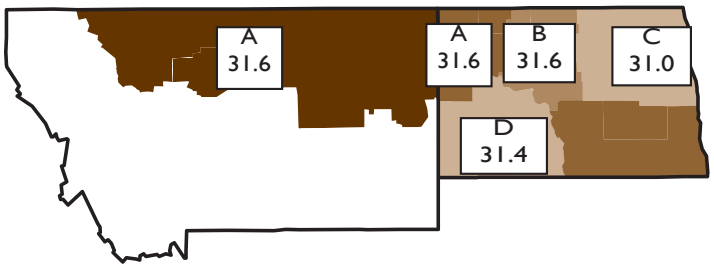
SPAGHETTI PROCESSING PROPERTIES

STATE AND CROP REPORTING AREA	Color Score (1-12)	Cooked Weight G	Cooking Loss %	Cooked Firmess G CM
MONTANA				
State Avg. 2009	9.5	31.6	6.1	5.0
State Avg. 2008	9.5	31.6	5.5	5.7
NORTH DAKOTA				
Area A	9.5	31.6	5.9	5.0
Area B	9.5	31.6	6.2	4.8
Area C	9.0	31.0	6.5	5.0
Area D	9.5	31.4	6.4	5.0
State Avg. 2009	9.5	31.6	6.0	5.0
State Avg. 2008	8.5	31.6	5.5	5.7
TWO-STATE REGION				
Avg. 2009	9.5	31.6	6.1	5.0
Avg. 2008	8.7	31.6	5.5	5.7
Five-Year Avg.	9.0	31.3	5.7	5.6

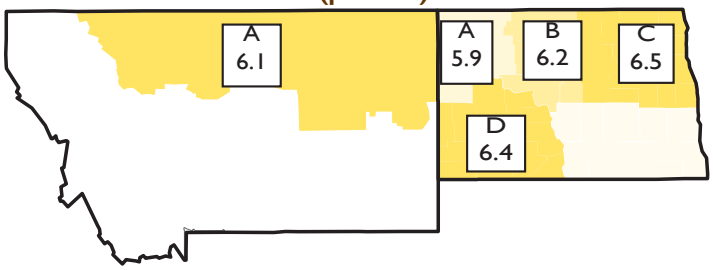
AVERAGE COLOR SCORE BY AREA
(scale of 1 - 12)



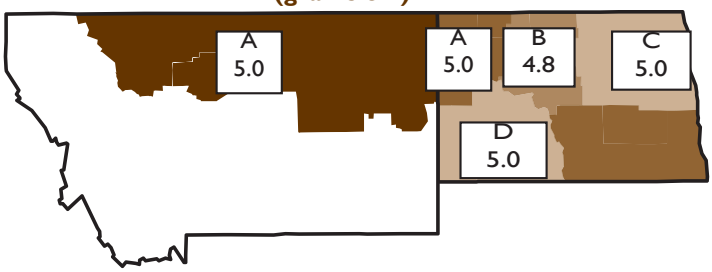
AVERAGE COOKED WEIGHT BY AREA
(grams)



AVERAGE COOKING LOSS BY AREA
(percent)



AVERAGE COOKED FIRMNESS BY AREA
(grams cm)



SUMMARY INFORMATION

AVERAGE QUALITY FACTORS FOR THE REGIONAL DURUM WHEAT CROP

	2004	2005	2006	2007	2008	Five-Year Average	2009
GRADING AND WHEAT DATA							
Test Weight (lbs/bu)	61.7	60.8	59.9	59.9	60.2	60.5	61.4
Test Weight (kg/hl)	80.3	79.2	78.0	78.0	78.4	78.8	80.0
Total Defects (%)	1.2	2.2	2.0	1.8	1.6	1.8	1.1
Vitreous Kernels (%)	89	91	90	95	83	90	83
Grade	1 HAD	1 HAD	2 HAD	2 HAD	1 HAD	1 HAD	1 HAD
OTHER WHEAT DATA							
Dockage (%)	1.2	1.5	2.3	1.6	1.1	1.5	1.4
Protein: 12% moisture	13.4	13.4	15.1	15.1	14.8	14.4	13.5
1000 Kernel Weight (gm)	40.2	35.5	33.2	33.8	35.0	35.5	42.4
Moisture (%)	12.5	12.5	11.3	11.8	11.7	12.0	11.8
Ash (%)	1.50	1.67	1.53	1.67	1.50	1.57	1.42
Falling Number (sec)	356	378	385	367	322	362	398
Sedimentation (mm)	49	45	55	52	49	50	50
SEMOLINA DATA							
Total Extraction (%)	71.2	73.1	70.7	69.6	67.1	70.3	72.7
Semolina Extraction (%)	64.3	66.4	65.1	63.8	61.1	64.1	65.5
Ash (%)	0.64	0.71	0.72	0.76	0.64	0.69	0.62
Wet Gluten (%)	35.0	35.0	39.5	39.2	39.5	37.6	34.8
Specks (no/10 sq in)	20	19	21	23	22	21	26
Protein (%)	12.4	12.6	14.3	13.9	13.9	13.4	12.2
Gluten Index (%)	43.7	45.4	56.7	48.0	41.4	45.3	58.9
Mixograph Classification	6.0	6.0	5.8	5.4	5.2	5.7	5.5
SPAGHETTI PROCESSING DATA							
Color Score (scale of 1-12)	8.9	9.4	9.0	9.1	8.7	9.0	9.5
Cooked Weight (gm)	30.5	30.8	31.3	32.2	31.6	31.3	31.6
Cooking Loss (%)	5.9	6.1	5.4	5.6	5.5	5.7	6.1
Cooked Firmness (g cm)	5.4	5.6	5.9	5.6	5.7	5.6	5.0

EXPORT CARGO SAMPLING

Export Cargo Data

SAMPLE COUNT	2007 (21)	2008 (9)
GRADING DATA		
Test Weight (lbs/bu)	61.0	60.9
Test Weight (kg/hl)	79.4	79.3
Damaged Kernels (%)	1.2	1.3
Foreign Material (%)	0.2	0.2
Shrunken & Broken (%)	1.7	1.6
Total Defects(%)	3.0	3.1
Vitreous Kernels (%)	85.8	80.0
Grade	2 HAD	2 HAD
OTHER WHEAT DATA		
Dockage (%)	0.5	0.6
Moisture (%)	11.9	11.3
Protein: 12% Moisture (%)	14.7	15.1
Protein: Dry (%)	16.7	17.2
Ash: 14% Moisture (%)	1.65	1.59
Ash: Dry (%)	1.92	1.85
1000 Kernel Weight (g)	34.7	35.3
Kernel Size (%) lg/md/sm	27/61/10	35/57/7
Falling Number (sec)	419	353
SEMOLINA DATA		
Total Extraction (%)	71.5	71.8
Semolina Extraction (%)	64.7	65.4
Ash 14% Moisture (%)	0.71	0.66
Ash: Dry (%)	0.82	0.76
Specks (no/10 sq in)	25.3	32.8
Protein: 14% Moisture (%)	13.8	13.7
Protein: Dry (%)	16.0	15.9
Gluten Index (%)	50	56
Mixograph Classification (scale of 1-8)	5.4	5.7
Color: L (white-black)	84.7	85.0
a (red-green)	- 2.4	- 2.7
b (yellow-blue)	27.0	26.9
SPAGHETTI PROCESSING DATA		
Color Scale (scale of 1-12)	8.5	8.8
Cooked Weight (gm)	32.6	32.1
Cooking Loss (%)	5.6	5.3
Cooked Firmness (g cm)	6.0	5.3

Data contained in previous sections of this report are derived from the testing of samples gathered during harvest from origination points throughout the northern U.S. durum growing region. The results provide and assessment of the overall quality of the crop produced in a given year.

U.S. Wheat Associates, the export market development arm for American wheat growers, furthers this information by commissioning an export cargo sampling program. The program provides an accurate representation of the supplies moving through the grain marketing and transportation system and actually reaching export points. Results show the quality levels at which U.S. wheat is realistically traded and are useful to customers in developing reasonable purchase specifications.

The Federal grain Inspection service oversees the program whereby all export inspection agencies at all ports collect every tenth sub lot sample from every vessel of U.S. wheat shipped during three two-month time periods annually.

The durum wheat samples are sent for analysis to the Durum Wheat Quality and Pasta Processing Laboratory in the North Dakota State University Plant Science Department.

LABORATORY ANALYSIS

All quality data contained in this report is the result of testing and analysis conducted by or under the supervision of Dr. Frank Manthey, associate professor and Nancy Hillen and Reena Dash, food technologists of the Durum Wheat Quality and Pasta Processing Laboratory in the Department of Plant Science at North Dakota State University, Fargo, North Dakota, USA.

COLLECTION • The North Dakota and Montana state offices of the National Agricultural Statistics Service obtained durum wheat samples during harvest directly from growers, farm bins and local elevators. These samples reflect the condition of the grain at the point of origin. Collection began in mid August when approximately 5 percent of North Dakota's durum crop had been harvested and continued until the beginning of October when harvest was mostly complete. A total of 216 samples were collected during harvest from Montana (55) and North Dakota (161).

ANALYSIS • Half of the total wheat samples collected were analyzed for grade and other physical kernel characteristics. The data obtained from the analyses were used to generate frequency distributions as a percentage of the harvested crop. Distribution results may differ from data presented in the various tables, because the latter are derived from production adjusted averages, rather than simple averages.

All samples received in the laboratory were sub-sampled to obtain one composite sample for each of the five areas in North Dakota and one composite for Montana. These were analyzed for grade and physical characteristics as well as milling performance and spaghetti processing qualities. Again, all state and regional averages have been adjusted to reflect production as opposed to simple averaging.

METHODS, TERMS, SYMBOLS

WHEAT

SAMPLE COLLECTION • Each sample contained approximately 2 to 3 pounds of wheat, stored in securely closed, moisture proof plastic bags.

MOISTURE • Official USDA procedure using Motomco Moisture Meter.

GRADE • Official United States Standards for Grain, as determined by a licensed grain inspector. North Dakota Grain Inspection Service, Fargo, ND, provided grades for composite wheat samples representing each crop reporting area.

VITREOUS KERNELS • Approximate percentage of kernels having vitreous endosperm, based on weights.

DOCKAGE • Official USDA procedure. All matter other than wheat which can be removed readily from a test portion of the original sample by use of an approved device (Carter Dockage Tester). Dockage may also include underdeveloped, shriveled and small pieces of wheat kernels removed in properly separating the material other than wheat and which cannot be recovered by properly rescreening or recleaning.

TEST WEIGHT • American Association of Cereal Chemists Method 55-10 approved April 1961, revised October 1999. Measured as pounds per bushel (lb/bu), kilograms per hectoliter (kg/hl) = (lbs/bu X 1.292) + 0.630. Approved Methods of the American Association of Cereal Chemists, Cereal Laboratory Methods (10th Edition), St. Paul, MN (2000).

THOUSAND KERNEL WEIGHT • Based on 10 gram sample of cleaned wheat (free of foreign material and broken kernels) counted by electronic seed counter.

KERNEL SIZE DISTRIBUTION • Determinations made according to the procedure described in Cereal Science Today 5:(3), 71 (1960). Kernels remaining over a Tyler No. 7 (2.92 mm opening) are classified as "large;" kernels passing through the top sieve but remaining on a Tyler No. 9 (2.24 mm opening) are classified as "medium" size kernels. Kernels passing through the second sieve are classed as "small." Size is reported as percentage of large, medium, and small kernels.

PROTEIN • American Association of Cereal Chemists (AAC) Method: 46-30 (Combustion Method), expressed on dry basis and 12 percent moisture basis.

ASH • American Association of Cereal Chemists Method 08-01, approved April 1961, revised October 1999; expressed on a 14 percent moisture basis.

FALLING NUMBER • American Association of Cereal Chemists Method 56-81B, approved November 1972, revised September 1999; units of seconds (14 percent moisture basis).

MICRO SEDIMENTATION • Determined as described by Dick, J.W. and Quick, J.S. Cereal Chem. 60(4):315-318, 1983.

WET GLUTEN • American Association of Cereal Chemists Method 38-12, approved October 1999; expressed on a 14 percent moisture basis determined with the glutomatic instrument.

GLUTEN INDEX • American Association of Cereal Chemists Method 38-12, approved October 1999; determined with the glutomatic instrument as an indication of gluten strength.

SEMOLINA

EXTRACTION • AACC Method 26-41 (modified for the Buhler Mill). Expressed on a total product basis.

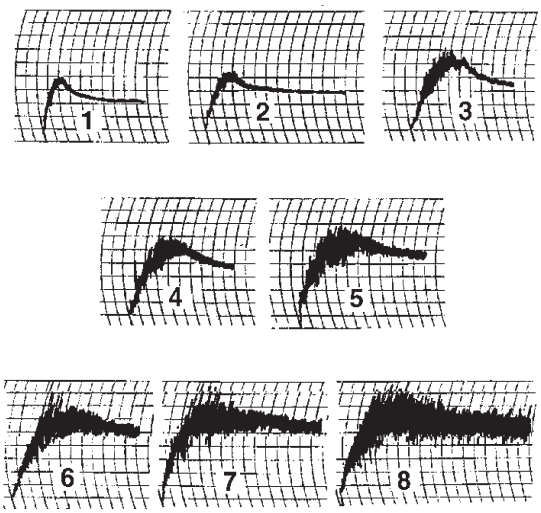
ASH • AACC Method 08-01, approved April 1961, revised October 1999; expressed on a 14 percent moisture basis.

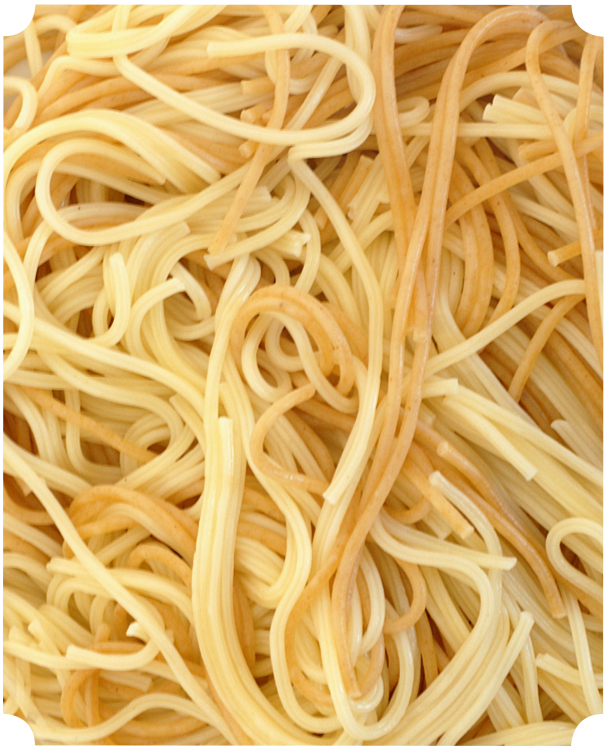
PROTEIN • AACC Method 46-30 (combustion method), approved September 1995, revised October 1999, N x 5.7, expressed on a 14 percent moisture basis.

SPECKS • The number of specks in semolina was determined on a flat surface under a constant light source, and counting the visible specks (brown and black particles) in three different one-inch square areas. The average of the three readings was converted to the number of specks per 10 square inches.

MIXOGRAPH • Mixograph evaluation of semolina was performed according to the AACC Method 54-40A with some modifications: Ten grams of semolina (weighed on 14 percent moisture basis) were mixed for 8 min at constant water absorption of 5.8 ml, using a spring setting of 8. The mixograms were scored by comparing them to reference mixograms. A scale of 1 to 8 is employed, higher values indicate strong mixing characteristics (see reference mixogram chart).

REFERENCE MIXOGRAMS FOR DURUM WHEAT





SPAGHETTI

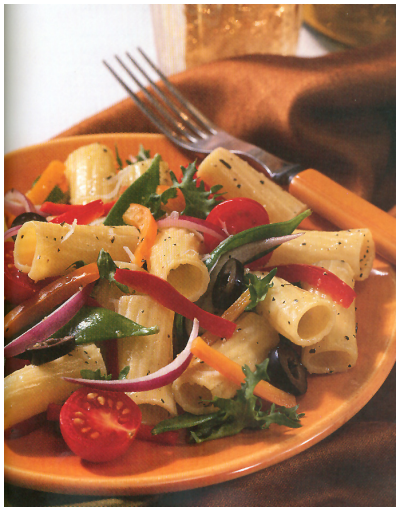
PROCESSING • Pasta was made using the laboratory procedure described by Walsh, Ebeling, and Dick, *Cereal Sci. Today*: 16(11) 385, 1971. A 1-Kg semolina was mixed with the appropriate amount of water that gave a dough consistency of 32 percent total water absorption. The other processing conditions used were: Water temperature, 40 C, extruder shaft speed, 25 rpm and vacuum, 18 in. Hg; the dough was pressed through an 84-strand teflon-coated spaghetti die with 0.157 cm openings. The extruded spaghetti samples were dried at high temperature for 12 hrs, using maximum temperature and relative humidity of 73 C and 83 percent respectively.

COLOR • Color scores were determined by light reflectance (AACC Method 14-22, 1983), using a Minolta Color Difference Meter (Model CR 310, Minolta Camera Co., Japan). The scores were generated according to the new color map designed by Debbouz (Pasta J. vol 6, No 6, 1994). A spaghetti sample with a score of 8.0 or higher is considered to have good color.

COOKED WEIGHT • AACC Method 66-50 with some modifications: 10 g of dry spaghetti were placed in 300 ml boiling distilled water and cooked for 12 min. The cooked and drained spaghetti sample was weighed and the results were reported in grams.

COOKING LOSS • AACC Method 66-50. Solids lost to the cooking water. After drying the residue was weighed and reported as percentage of the original dry sample.

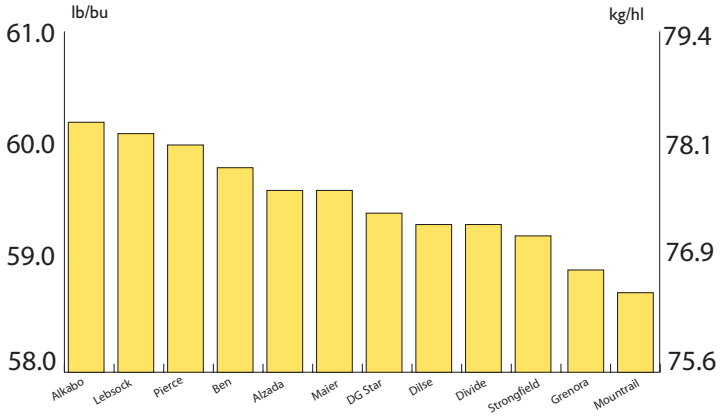
FIRMNESS • AACC Method 66-50 with a plexiglass tooth attached to a Texture Analyzer (Model TA-XT2, Texture Technology Corp., Scarsdale, New York).



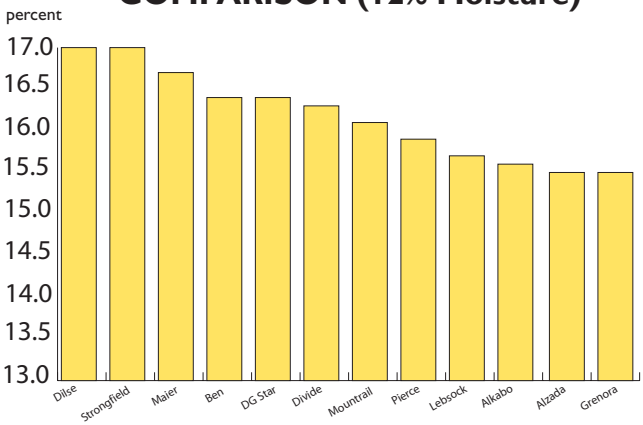
VARIETAL INFORMATION

Quality products begin with quality ingredients. In the case of wheat, quality begins with the varieties planted. Within the durum class of wheat, there are different varieties available—all with relatively uniform characteristics. A public plant breeder at North Dakota State University in Fargo develops and releases most of the durum varieties grown in the northern region, although some private firms also have durum breeding programs. Before any durum variety is released to the public, it must meet or exceed current standards for the class. Prospective releases are evaluated for milling and pasta characteristics as well as for yield, protein content, test weight, resistance to diseases and insects, and straw strength.

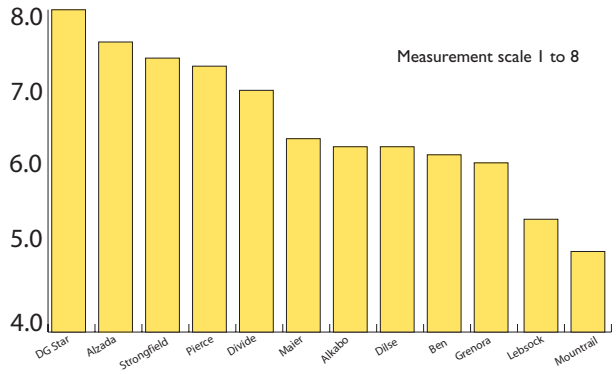
TEST WEIGHT COMPARISON



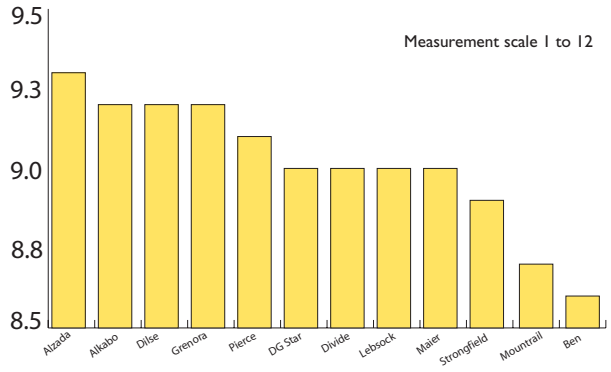
WHEAT PROTEIN CONTENT COMPARISON (12% Moisture)



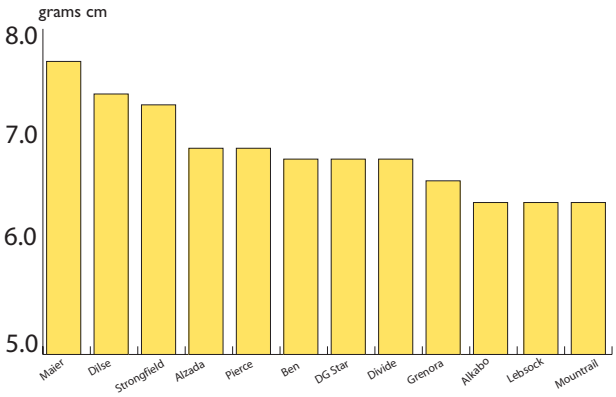
MIXOGRAPH COMPARISON



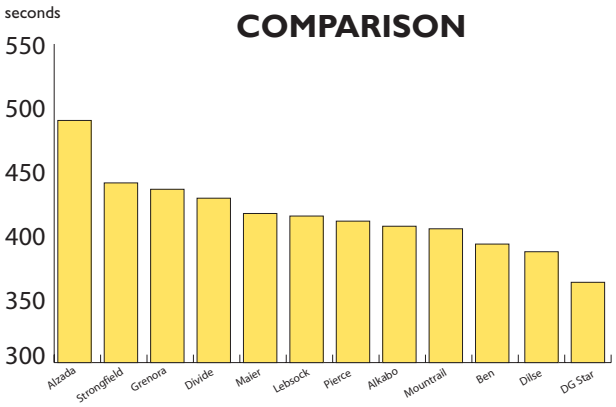
PASTA COLOR COMPARISON



COOKED FIRMNESS COMPARISON



WHEAT FALLING NUMBER COMPARISON



Environment influences the quality of varieties across growing areas and planting years. For this reason, wheat breeders use "check" or reference varieties to evaluate quality in experimental varieties. They test and analyze quality data from multiple years and growing locations before a variety is released.

VARIETAL INFORMATION

GROWN & TESTED IN NORTH DAKOTA • AGRONOMIC FACTORS

		AGRONOMIC DESCRIPTION			REACTION TO DISEASE[2]			AVERAGE YIELD Eastern[3] North Dakota		AVERAGE YIELD Western[4] North Dakota	
Variety	AGENT[1] OR ORIGIN	YEAR RELEASED	STRAW STRENGTH	MATURITY	LEAF RUST	FOLIAR DISEASE	HEAD SCAB	BU/ACRE	MT/HA	BU/ACRE	MT/HA
Alkabo	ND	2005	v.strong	medium	R	M	MS	68.5	4.61	40.4	2.72
Alzada	WB	2004	strong	early	R	S	VS	61.0	4.10	39.7	2.67
Ben	ND	1996	strong	medium	R	MR	S*	67.4	4.53	35.7	2.40
DG Star	DGP	2007	strong	early	R	M	N/A	66.5	4.47	35.0	2.35
Dilse	ND	2002	strong	late	R	M	MS	70.4	4.73	34.8	2.34
Divide	ND	2005	strong	medium	R	M	MR	71.5	4.81	40.0	2.69
Grenora	ND	2005	strong	medium	R	M	MS	72.6	4.88	38.3	2.57
Lebsock	ND	1999	strong	medium	R	M	MS	72.5	4.87	37.9	2.55
Maier	ND	1998	strong	medium late	R	M	S*	71.5	4.81	38.6	2.6
Mountrail	ND	1998	strong	late	R	M	S*	67.7	4.55	37.6	2.53
Pierce	ND	2001	m. strong	medium	R	MS	S	65.0	4.37	36.5	2.45
Strongfield	CAN	2004	medium	medium	R	MS	N/A	60.8	4.09	37.7	2.53

Source: 2009 North Dakota Durum Wheat Variety Performance Descriptions

1 ND–North Dakota State University, WB–Westbred, CAN-Canada, DGP-Dakota Growers Pasta Co.

2 Reaction to Disease: resistant (R), moderately resistant (MR), intermediate (M), moderately susceptible (MS), susceptible (S), very susceptible (VS).
*Indicates yield and/or quality have often been higher than would be expected based on visual head blight symptoms alone.

3 2008 data from Carrington and Langdon locations in North Dakota.

4 2008 data from Dickinson, Hettinger, Minot and Williston, North Dakota.

5 Based on NDSU Durum Quality Lab testing of samples grown at multiple North Dakota locations during 2006-2008.

6 2008 data only.

7 Based on kernel attributes, milling and semolina processing, pasta color, and spaghetti cooking performance.

GROWN & TESTED ACROSS NORTH DAKOTA • QUALITY & END-USE FACTORS

QUALITY FACTORS[5]

VARIETY	TEST WEIGHT LB/BU	TEST WEIGHT KG/HL	WHEAT PROTEIN %	WHEAT FALLING # SECONDS	MIXOGRAM SCORE (SCALE 1-8)	PASTA COLOR	GLUTEN INDEX	COOKED FIRMNESS G CM	OVERALL QUALITY RATING [7]
Alkabo	60.2	78.4	15.6	407	6.3	9.2	68.7	6.4	good
Alzada	59.6	77.6	15.5	490	7.6	9.3	92.6	6.9	excellent
Ben	59.8	77.9	16.4	393	6.2	8.6	63.6	6.8	good
DG Star[6]	59.4	77.4	16.4	363	8.0	9.0	87.9	6.8	good
Dilse	59.3	77.2	17.0	387	6.3	9.2	66.4	7.4	excellent
Divide	59.3	77.2	16.3	429.0	7.0	9.0	79.0	6.8	good
Grenora	58.9	76.7	15.5	436	6.1	9.2	71.2	6.6	good
Lebsock	60.1	78.3	15.7	415	5.4	9.0	54.2	6.4	average
Maier	59.6	77.6	16.7	417	6.4	9.0	72.7	7.7	excellent
Mountrail	58.7	76.5	16.1	405	5.0	8.7	34.7	6.4	average
Pierce	60.0	78.2	15.9	411	7.3	9.1	80.6	6.9	excellent
Strongfield	59.2	77.1	17.0	441	7.4	8.9	79.9	7.3	good

Environment influences the quailty of varieties across growing areas and planting years. For this reason, wheat breeders use "check" or reference varieties to evaluate quality in experimental varieties. They usually test and analyze quality data from multiple years and growing locations before a variety is released.

Breeders are working towards future varieties that have enhanced color and gluten strength, all important quality factors for end-users.

NORTH DAKOTA

The North Dakota Agricultural Statistics Service reports leading varieties in 2009 are Divide, Mountrail, Lebsock, Pierce and Alkabo. Of the 1.65 million acres of durum wheat planted in North Dakota, the top five varieties account for 73 percent.

DIVIDE made big gains in 2009, moving into first place with 21 percent of the acres, up from only 8 percent in 2008 and replacing the longtime dominance of Lebsock and Mountrail. Compared to these varieties, Divide offers end-users notable improvements in gluten strength and provides producers increased yield potential and a higher level of disease resistance. It is rated as good for end-use quality.

LEBSOCK is tied for second in North Dakota with 17 percent of the acres and is third in Montana with 8 percent. It has been a significant variety in the region since 2002 and remains popular with producers because of its yield and high test weight. Lebsock is rated good for end-use quality.

PIERCE gained in acres in 2009 and moved back into fourth place with nearly a 10 percent share. It is a variety that ranks high for gluten strength and color with an excellent end-use quality rating. Pierce is most popular in west central and north central parts of the state.

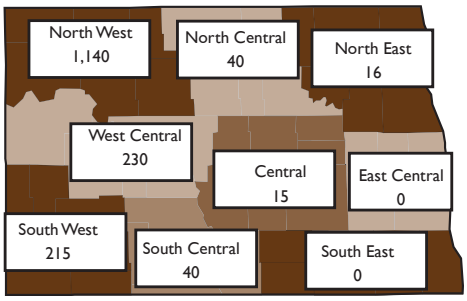
ALKABO made notable gains in 2009, approaching 9 percent of the acres in North Dakota. This recent release is increasing in popularity because of its improved agronomics and yield potential. In addition, Alkabo is rated as good for end-use quality with important gains in base quality traits such as gluten strength and pasta color.

DURUM WHEAT VARIETIES PLANTED ACRES IN NORTH DAKOTA

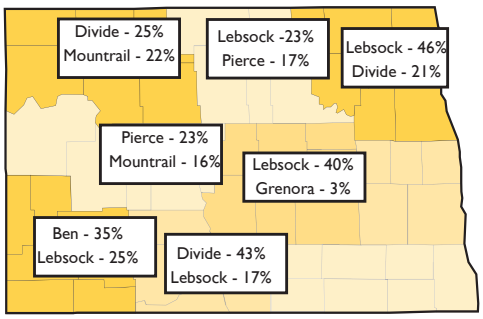
Variety	2008%[1]	2009%[1]	2009 Acres (1,000)
Divide	7.6	20.6	350.8
Mountrail	21.0	16.9	287.8
Lebsock	26.7	16.9	286.8
Pierce	7.5	9.4	159.9
Alkabo	2.2	8.9	152.1
Ben	10.3	6.3	106.7
Grenora	3.9	4.6	78.5
Dilse	2.6	2.1	35.9
Maier	3.8	1.5	25.8
DG Star	0.0	1.4	24.6
Alzada	0.0	1.0	17.7
Plaza	1.3	0.9	14.8
Other[2]	13.1	9.3	158.6
All Varieties	100.0	100.0	1,700.0[3]

1. Percentages may not add to 100 due to rounding.
2. Includes varieties with less than 1% of acreage in 2009 and unknown varieties.
3. June 2009 estimate. September 30, 2009 estimate was 1.65 million acres.

NORTH DAKOTA AGRICULTURAL STATISTICS DISTRICTS 2009 PLANTED AREA (1,000 ACRES)



NORTH DAKOTA AGRICULTURAL STATISTICS DISTRICTS 2009 TOP TWO VARIETIES % OF ACRES



DURUM WHEAT VARIETIES IN NORTH DAKOTA SHARE OF 2009 SEEDED ACRES BY CROP DISTRICT

Variety	North West	North Central	North East	West Central	Central	South West	South Central	State
				Percentage (%)[1]				
Divide	25.4	13.5	21.3	12.2	0.0	3.3	43.0	20.6
Mountrail	21.8	0.0	0.0	16.3	0.0	0.8	0.0	16.9
Lebsock	14.8	22.8	45.6	15.5	40.0	24.7	16.5	16.9
Pierce	8.9	17.0	0.0	22.5	0.0	0.0	0.0	9.4
Alkabo	9.0	1.3	0.0	9.4	0.0	12.9	0.0	8.9
Ben	1.7	0.0	0.0	2.3	0.0	35.3	14.0	6.3
Grenora	4.9	10.5	0.0	5.6	3.3	2.5	0.0	4.6
Dilse	2.4	0.0	0.0	2.7	0.0	1.0	0.0	2.1
Maier	0.5	0.0	0.0	4.5	0.0	4.7	0.0	1.5
DG Star	1.6	12.0	0.0	0.0	0.0	0.7	0.0	1.4
Alzada	0.0	0.0	0.0	0.0	0.0	6.2	10.0	1.0
Plaza	0.1	0.0	0.0	5.8	0.0	0.0	0.0	0.9
Other[2]	8.8	23.0	33.1	3.2	56.7	7.9	16.5	9.3
				1,000 Acres				
All Varietes	1,140	40	16	230	15	215	40	1,700[3]

1. Columns may not add to 100 due to rounding.
2. Other includes varieties not listed and unknown varieties.
3. September 30, 2009 small grains estimate was 1.65 million acres.

MONTANA

Montana Agricultural Statistics Service reports the most popular varieties of durum wheat planted in the state in 2009 are Mountrail, Kyle, Lebsock and Strongfield. The top four varieties account for 70 percent of acres.

MOUNTRAIL remains the dominant variety in Montana with 35 percent of the acres, and is tied for second in North Dakota with 17 percent. It has been the leading variety in Montana for four straight years and has been a dominant variety in North Dakota since 2002. Mountrail has proven to be the elite variety for yield for many producers but is declining from its peak with the release of newer higher yielding lines.

KYLE remains the second most popular variety with 9 percent of the acres. It is rated as good for end-use quality and is popular with producers for its ability to hold color during harvest rains.

STRONGFIELD is the number four variety in the state with 8 percent of the acres, down slightly from 2008. Released in 2004, it is a low cadmium variety which shows good disease tolerance and has good overall quality.

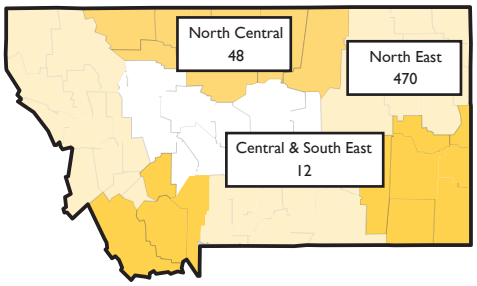
ALZADA is the fifth most popular variety with 7 percent of the acres, up slightly from 2008. A 2004 release from Westbred, LLC it is a variety that has excellent end-use quality with especially high color scores. Alzada is a high yielding variety but it's susceptibility to disease limits production to more arid areas in the state.

DURUM WHEAT VARIETIES IN MONTANA SHARE OF 2009 SEEDED ACRES BY CROP DISTRICT

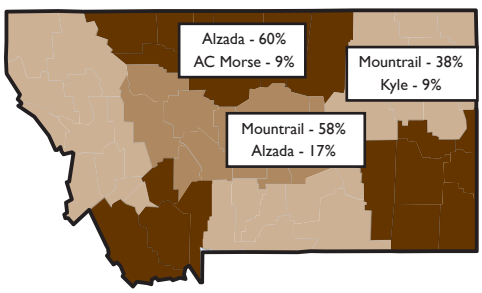
Variety	North Central	North East	Central & South East	Total State
	Percentage (%)[1]			
Mountrail	0.2	37.8	58.3	35.0
Kyle	4.8	9.2	0.0	8.6
Strongfield	1.4	8.3	2.5	7.5
Alzada	59.9	1.7	16.5	7.3
Lebsock	0.0	8.6	0.0	7.6
Grenora	0.0	6.7	0.0	5.9
Divide	0.0	6.3	0.0	5.6
Pierce	0.0	2.2	0.0	1.9
Monroe	3.3	2.3	0.0	2.3
Alkabo	0.0	5.2	0.0	4.6
AC Avonlea	8.8	2.6	0.0	4.6
Other	21.6	9.1	22.7	10.6
	1,000 Acres			
All Varieties	48	470	12	590[3]

1/Columns may not add to 100 due to rounding.
2/Includes varieties with less than 1% of acreage in 2009 and unknown varieties.
3/September 30, 2009 small grains estimate was 570 thousand acres.

MONTANA AGRICULTURAL STATISTICS DISTRICTS 2009 PLANTED AREA (1,000 ACRES)



MONTANA AGRICULTURAL STATISTICS DISTRICTS 2009 TOP TWO VARIETIES % of ACRES



DURUM WHEAT VARIETIES PLANTED ACRES IN MONTANA

Variety	2008%[1]	2009%[1]	2009 Acres (1,000)
Mountrail	40.8	35.0	184.8
Kyle	14.2	8.6	45.5
Lebsock	6.0	7.6	40.4
Strongfield	8.6	7.5	40.0
Alzada	6.4	7.3	38.8
Grenora	4.0	5.9	31.5
Divide	4.0	5.6	29.6
Alkabo	1.5	4.6	24.4
AC Avonlea	1.3	3.1	16.4
Monroe	2.1	2.3	12.4
Pierce	2.7	1.9	10.3
AC Morse	0.3	0.8	4.3
Other[2]	8.1	9.8	51.6

1. Percentages may not add to 100 due to rounding.
2. Includes varieties with less than 1% of acreage in 2009 and unknown varieties.

HANDLING & TRANSPORTATION

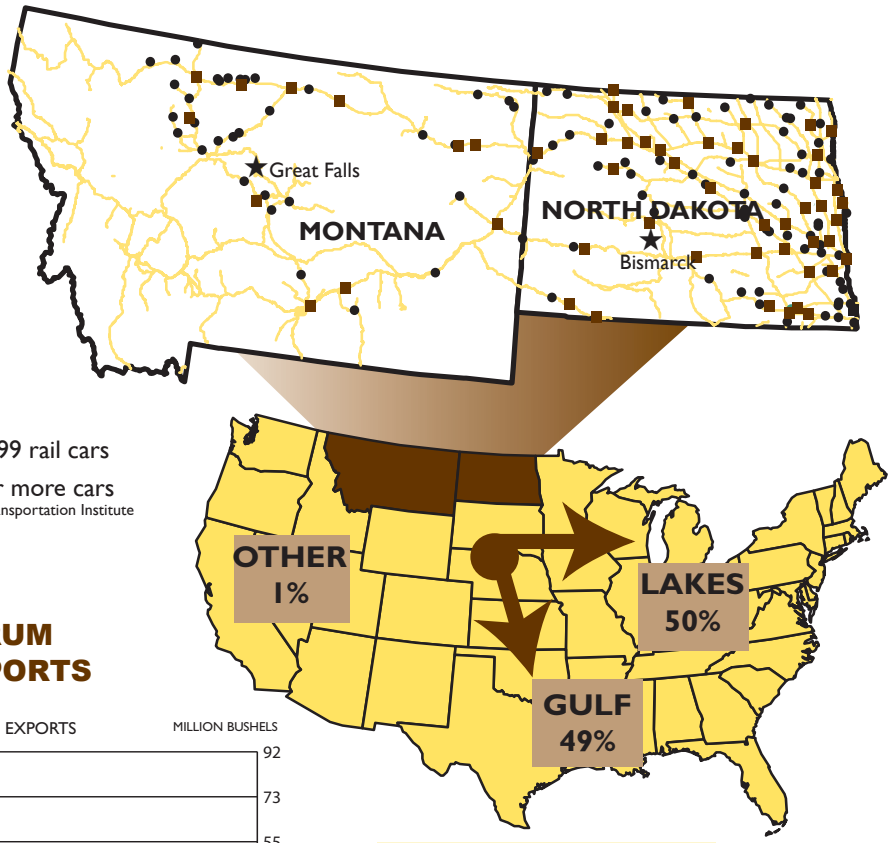
The durum wheat growing region in the Northern Plains has a vast network of country elevators to facilitate efficient and precise movement to domestic and export markets. On average, nearly 80 percent of the region's wheat moves to markets by rail. Duluth is the only export market easily serviced by trucks. Shipments to the Pacific Northwest and Gulf export markets are almost entirely by rail, with some barge movement to the Gulf. The dominant railroad is the Burlington Northern Santa Fe, followed by the Canadian Pacific.

A growing number of elevators in the region are investing to ship 100 car units. Each rail car holds approximately 3,500 bushels (95 metric tons) of wheat. Some of the 100-car shippers have invested in "shuttle" capabilities. Shuttle-equipped facilities receive the lowest rates, sharing volume and transaction efficiencies with the railroad.

The diverse rail shipping capacities and widespread network of elevators are strengths buyers can capitalize on, especially as their demand heightens for more precise quality specifications and consistency between shipments. Buyers are increasingly exploring origin-specific shipments. Many international buyers now find it possible to request wheat from certain locations to optimize the quality and value of wheat they purchase.

The rail and elevator network in the U.S. northern grown durum region is well suited for meeting the increasing quality demands of both domestic and international customers.

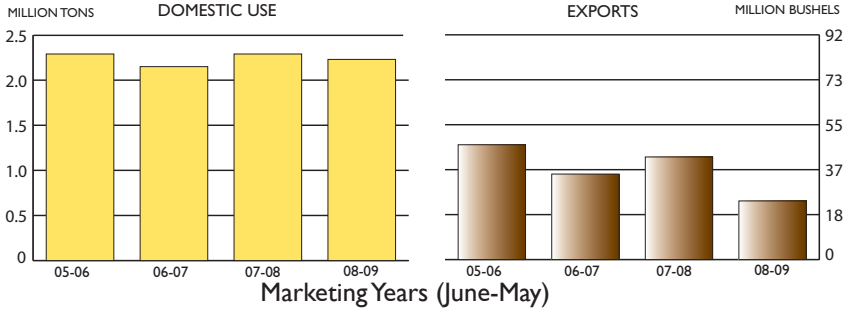
Grain Handling and Transportation Facilities in the U.S. Northern Grown Durum Region



● Track for 50 to 99 rail cars
■ Track for 100 or more cars
Source: Upper Great Plains Transportation Institute

Average Share of U.S. Durum Exports by Port
(2005-2008 Average)

2005-2008 U.S. DURUM DOMESTIC USE & EXPORTS



FUNDING & SUPPORT

PROVIDED BY

U.S. Wheat Associates

North Dakota Wheat Commission

Montana Wheat and Barley Committee

North Dakota State University Plant Sciences Department