U.S. DURUM WHEAT

MONTANA | NORTH DAKOTA

2011 REGIONAL QUALITY REPORT

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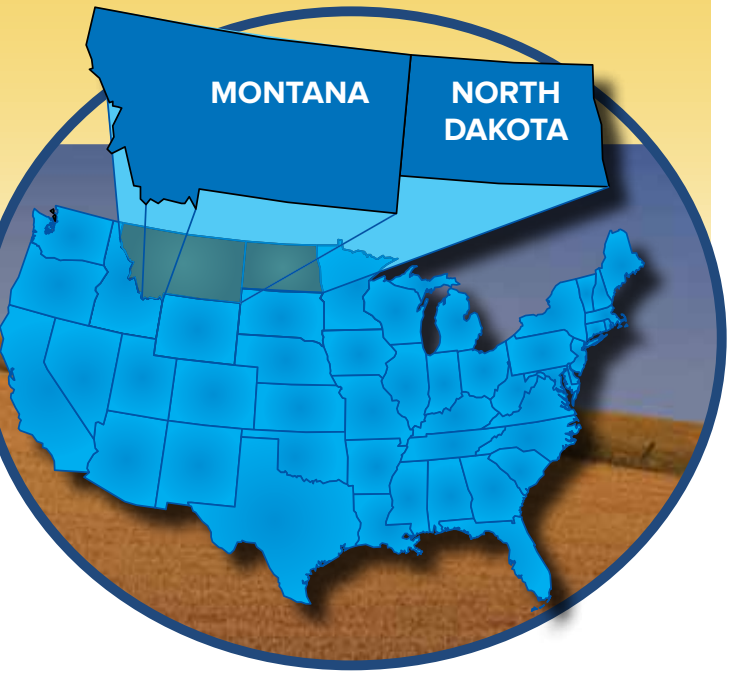
TABLE OF CONTENTS



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.

2011 OVERVIEW

Excessive moisture and flooding reduced planted acreage by over one million acres in Montana and North Dakota combined. The early season wet conditions, combined with hot, dry conditions towards the end of the growing season adversely affected yields, which were lower than the record to near record levels producers saw the past two years. The combination of significantly lower acreage and smaller yields resulted in a northern durum crop that is about two-thirds smaller than it was one year ago.

Overall, the crop grades a #2 Hard Amber Durum (HAD), due to an average test weight value of 59.9 pounds per bushel (78 kg/hl) that falls just below the minimum requirement of 60 pounds per bushel (78.2 kg/hl) for a #1 grade. Nearly three-fourths of the crop grades a #2 HAD or higher with 44 percent grading a #1 HAD. Test weights are slightly below both last year and the five-year average. Average thousand kernel weight is lower than last year at 36.6 grams, but very similar to the five-year average of 36.9 grams. Protein is higher than last year with an average of 13.6 percent and about three-fourths of the crop is above the typical minimum industry demand of 13 percent.

Damage levels are lower at 0.4 percent, primarily due to no

untimely rains at harvest. Damage is mostly related to disease pressures and portions of the crop have elevated DON levels. At 1.8 percent, total defects are slightly higher than average due to more shrunken and broken kernels caused by hot, dry conditions during part of the growing season. The average falling number value is 372 seconds, indicating a sound crop. About 94 percent of the crop had a falling number value of 300 seconds or higher.

PRODUCTION DATA	2010	2011	2006-2010 AVERAGE
MILLION BUSHELS			
Montana	18.0	11.7	12.7
North Dakota	66.8	18.7	49.0
Regional Total	84.8	30.4	61.7
U.S. Total	107.2	52.1	85.1
MILLION METRIC TON			
Montana	0.49	0.32	0.35
North Dakota	1.82	0.51	1.33
Regional Total	2.31	0.83	1.68
U.S. Total	2.92	1.42	2.32

Vitreous kernel counts are higher this year with an average of 88 percent vitreous, up from 82 percent last year. The vast majority of the crop is above the HAD minimum of 75 percent and over half of the crop is over the 90 percent level.

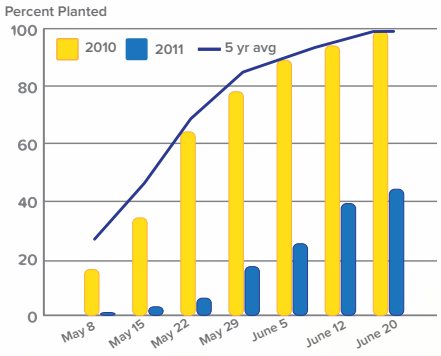
Milling performance of the crop, based on a Buhler laboratory mill, indicates total and semolina extraction levels lower than last year, but near the five-year average. Average total extraction is 70.4 percent and semolina extraction is 64.5 percent compared to the five-year averages of 70.7 percent and 64.4, percent respectively. Average semolina ash value of 0.66 percent is lower than both last year and the five-year average.

Semolina mixing values are similar to last year with a mixogram score of 5.4 (scale 1-8). The average gluten index value is slightly higher than last year and nearly 3 percentage points higher than the five-year average at 55.5 percent, with a range of 49 to 93 percent. The higher vitreous kernel counts and sound crop resulted in lower speck counts and better pasta color compared to last year. Average pasta color score is 9.3 (scale 1-12), compared to 8.3 last year. Cooked firmness values are higher this year, likely due to the slightly higher protein and lack of sprout damage.

The 2011 crop can be considered to be of average to good quality, with some improvements in pasta quality factors compared to last year. Customers will enjoy a strong grading, sound crop with improved kernel and pasta color. The spread in quality parameters is narrower than the 2010 crop, but diligent contract specifications, including DON limits, are still encouraged to ensure buyers receive the quality durum they need, especially with smaller than normal production this year which will constrain supply levels.

SEASONAL CONDITIONS

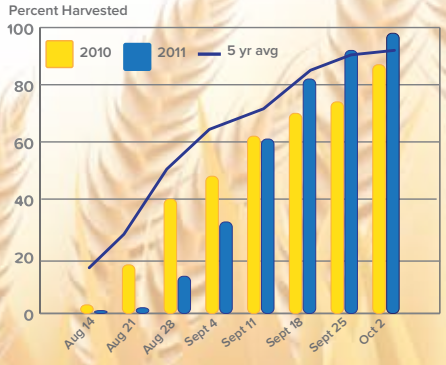
NORTH DAKOTA DURUM PLANTING PROGRESS



PLANTING began in earnest in mid-May, significantly behind last year and the five-year average pace. Extremely wet conditions and flooding delayed planting and prohibited significant acreage from getting planted. Planting did not finish until the third week of June.

GROWING conditions were favorable during the first part of the season with ample soil moisture promoting plant growth. Some disease pressure was noted due to the wet conditions. Conditions became dry and hot at the end of the growing season which adversely affected yield.

NORTH DAKOTA DURUM HARVEST PROGRESS



HARVEST began for most producers at the end of August, well behind average. Harvest weather was mostly favorable with warm, dry conditions allowing for good progress throughout most of September. The above average temperatures and mostly dry conditions allowed harvest pace to catch up to average by the end of September and the majority of harvest was completed by the beginning of October.

U.S. DURUM WHEAT

MONTANA | NORTH DAKOTA

WHEAT CHARACTERISTICS

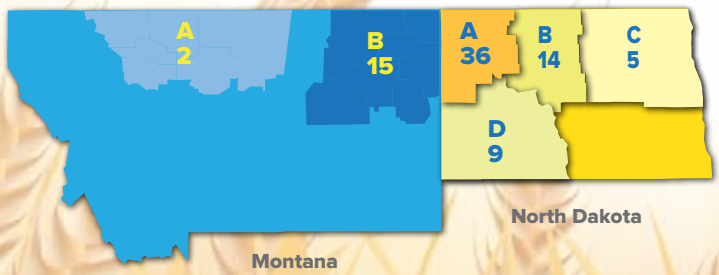
WHEAT GRADES as defined by the Federal Grain Inspection Service (FGIS) of the USDA Grain Inspection, Packers and Stockyards Administration (GIPSA), reflect the general quality and condition of a representative sample. U.S. grades are based on test weight and include limits on damaged kernels, foreign 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.

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.

GRADING FACTORS	U.S. Grades 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

Crop Reporting Areas & 2010 Durum Wheat Production in Million Bushels



(1 metric ton = 36.74 bushels)

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.

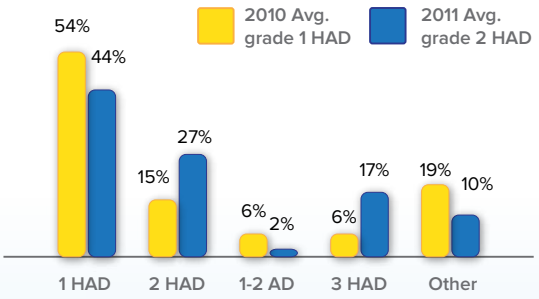
WHEAT GRADING DATA

OVERALL GRADE

The average grade for the region is 2 HAD. This grade represents average test weight of 59.9 pounds per bushel (78.0 kg/hl), total defects of 1.8 percent and vitreous kernel content of 88 percent.

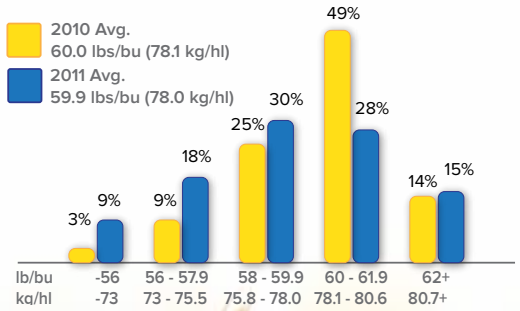
Seventy-one percent of the 2011 samples grade 2 HAD or better.

REGIONAL GRADE DISTRIBUTION



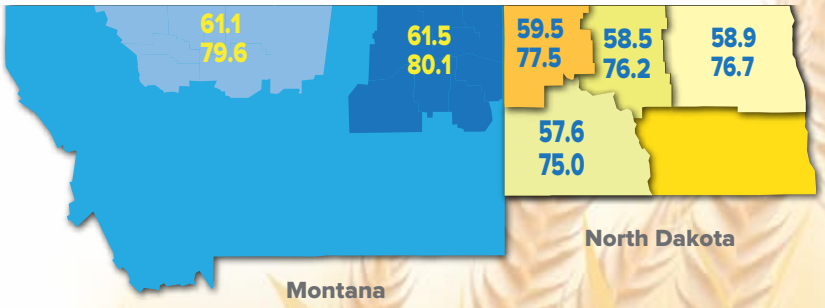
STATE AND CROP REPORTING AREA	TEST WEIGHT LBS/BU	TEST WEIGHT KG/HL	DAMAGE %	FOREIGN MATERIAL %	SHRUNKEN/ BROKEN KERNELS %	TOTAL DEFECTS %	CONTRASTING CLASSES %	U.S. GRADE	VITREOUS KERNELS %
MONTANA									
Area A	61.1	79.6	0.0	0.0	1.0	1.0	0.0	1 HAD	98
Area B	61.5	80.1	0.2	0.0	0.8	1.0	0.0	1 HAD	87
State Avg. 2011	61.4	80.0	0.2	0.0	0.8	1.0	0.0	1 HAD	89
State Avg. 2010	61.2	79.6	0.2	0.0	0.8	1.0	0.0	1 HAD	86
NORTH DAKOTA									
Area A	59.5	77.5	0.6	0.0	1.6	2.2	0.0	2 HAD	88
Area B	58.5	76.2	0.2	0.0	1.9	2.1	0.0	2 HAD	90
Area C	58.9	76.7	0.6	0.0	1.9	2.5	0.0	2 HAD	86
Area D	57.6	75.0	1.0	0.0	1.8	2.8	0.0	3 HAD	84
State Avg. 2011	58.9	76.8	0.6	0.0	1.7	2.3	0.0	2 HAD	88
State Avg. 2010	59.7	77.8	1.5	0.0	0.8	2.3	0.9	2 HAD	81
TWO-STATE REGION									
Avg. 2011	59.9	78.0	0.4	0.0	1.4	1.8	0.0	2 HAD	88
Avg. 2010	60.0	78.1	1.3	0.0	0.8	2.0	0.7	1 HAD	82
Five-Year Avg.	60.3	78.5	0.5	0.0	1.2	1.7	0.3	1 HAD	87

REGIONAL TEST WEIGHT DISTRIBUTION



Forty-three percent of the 2011 samples have a test weight of 60 lb/bu (78.1 kg/hl) or greater.

TEST WEIGHT BY AREA

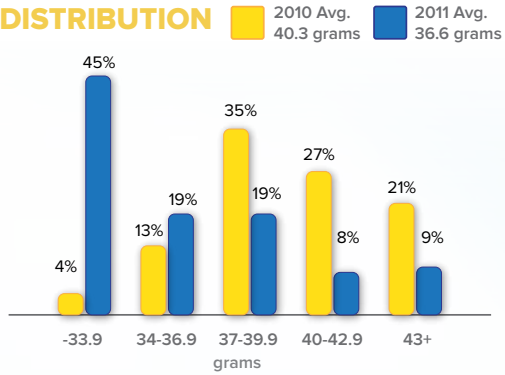


pounds per bushel - top
kilograms per hectoliter - bottom

U.S. DURUM WHEAT

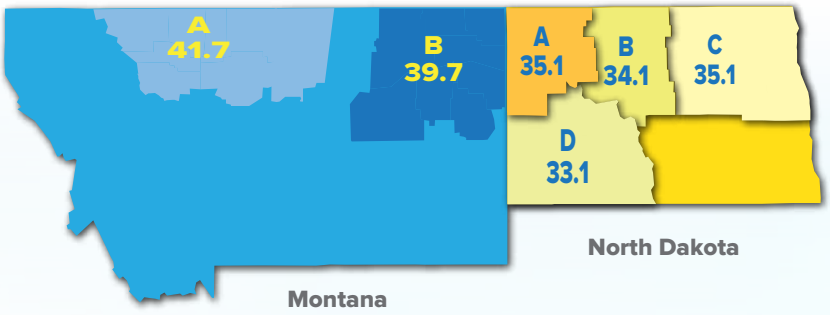
MONTANA | NORTH DAKOTA

REGIONAL 1000 KERNEL WEIGHT DISTRIBUTION

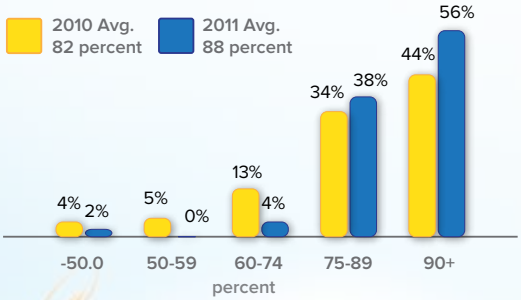


Thirty-six percent of the 2011 samples have a thousand kernel weight of 37 grams or more.

1000 KERNEL WEIGHT BY AREA (grams)

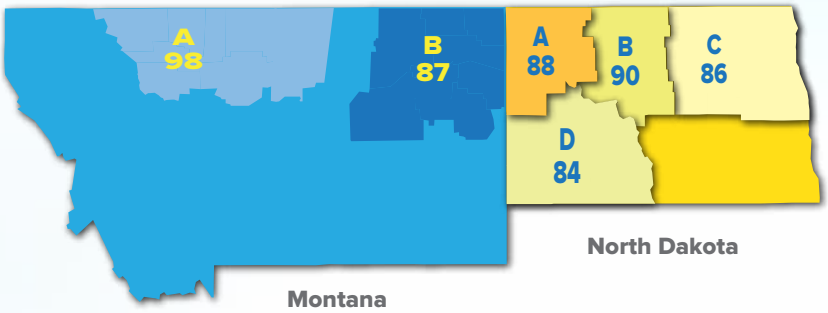


REGIONAL VITREOUS KERNEL DISTRIBUTION

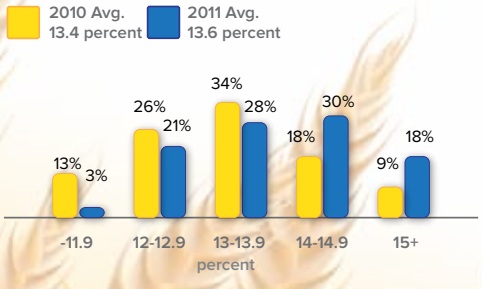


Ninety-four percent of the 2011 samples have 75 percent or greater vitreous kernels.

AVERAGE VITREOUS KERNELS BY AREA (percent)

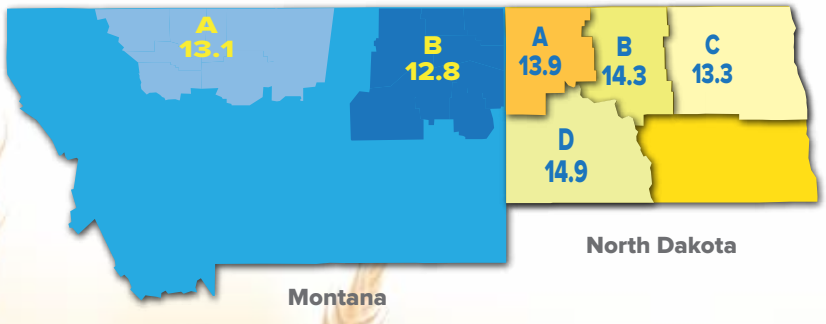


REGIONAL PROTEIN DISTRIBUTION



Seventy-six percent of the 2011 samples have a protein content of 13.0 percent or greater.

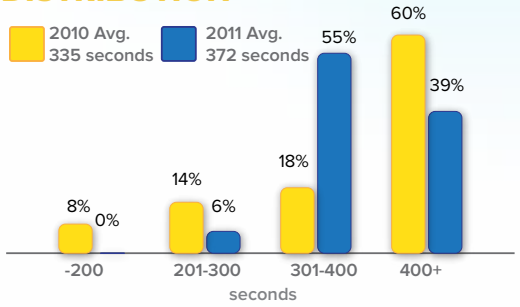
PROTEIN BY AREA - 12% moisture basis (percent)



OTHER KERNEL QUALITY DATA

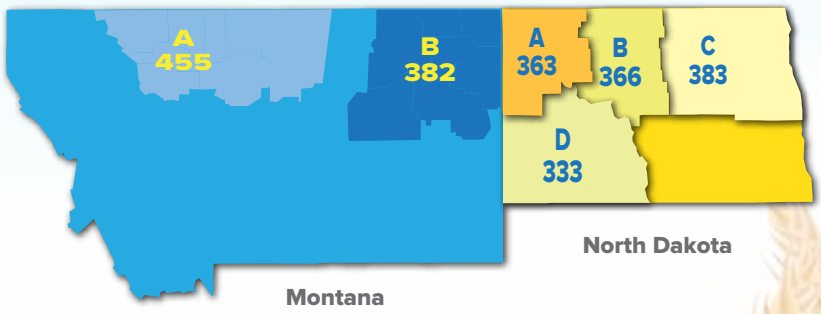
STATE AND CROP REPORTING AREA	DOCKAGE %	MOISTURE %	1000 KERNEL WEIGHT G	KERNEL DIST MEDIUM %	KERNEL DIST LARGE %	PROTEIN (DRY) MATTER %	PROTEIN (12 % MOISTURE) %	DON (PPM)	WHEAT ASH %	FALLING NUMBER (SEC)	SED (CC)
MONTANA											
Area A	0.6	10.0	41.7	44	52	14.9	13.1	<0.25	1.48	455	59
Area B	1.4	11.3	39.7	59	37	14.5	12.8	<0.25	1.64	382	43
State Avg. 2011	1.3	11.1	40.0	57	39	14.6	12.8	<0.25	1.62	392	45
State Avg. 2010	0.6	11.3	42.3	57	40	14.9	13.1	n/a	1.40	416	40
NORTH DAKOTA											
Area A	1.4	12.0	35.1	53	38	15.8	13.9	1.15	1.71	363	41
Area B	1.6	11.7	34.1	56	34	16.3	14.3	2.83	1.81	366	40
Area C	1.6	11.8	35.1	55	40	15.1	13.3	3.03	1.82	383	44
Area D	1.7	11.8	33.1	68	21	16.9	14.9	0.95	1.87	333	45
State Avg. 2011	1.5	11.9	34.6	56	34	16.1	14.1	1.56	1.76	360	42
State Avg. 2010	0.9	11.5	39.8	53	43	15.4	13.5	n/a	1.61	313	44
TWO-STATE REGION											
Avg. 2011	1.4	11.6	36.6	57	36	15.5	13.6	0.96	1.71	372	43
Avg. 2010	0.9	11.5	40.3	54	43	15.3	13.4	n/a	1.56	335	43
Five-Year Avg.	1.5	11.6	36.9	56	37	16.3	14.4	0.16	1.54	361	50

REGIONAL FALLING NUMBER DISTRIBUTION

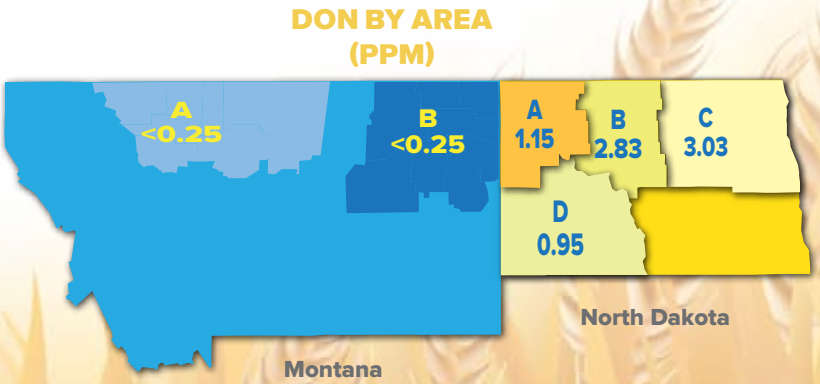


Ninety-four percent of the 2011 samples have a falling number of 300 seconds or better.

FALLING NUMBER BY AREA (seconds)



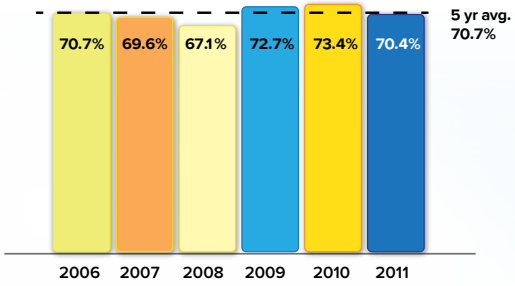
DON BY AREA (PPM)



U.S. DURUM WHEAT

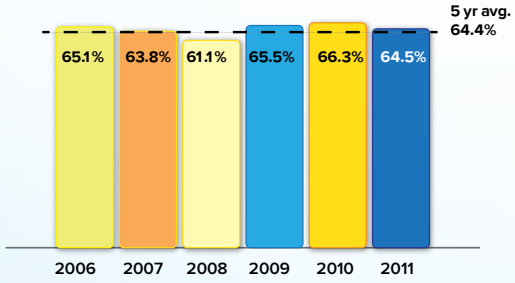
MONTANA | NORTH DAKOTA

REGIONAL AVERAGE TOTAL EXTRACTION



The regional average is 70.4 percent, similar to the five-year average.

REGIONAL AVERAGE SEMOLINA EXTRACTION



The regional average is 64.5 percent, lower than last year but similar to the five-year average.

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.

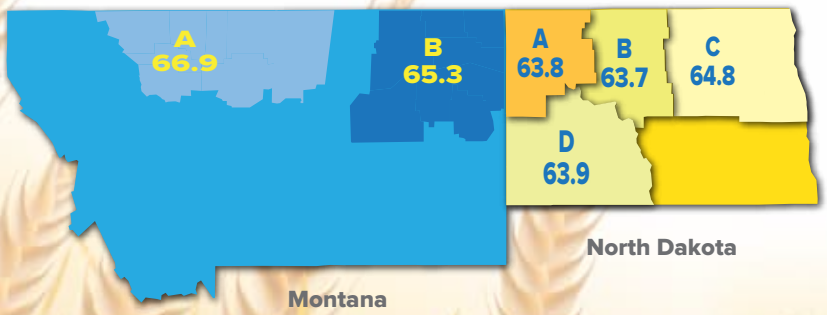
ASH CONTENT in the endosperm of durum is inherently higher than in the endosperm of other hard wheats, but can still be used as a relative measure of bran or mineral content in the flour and semolina.

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.

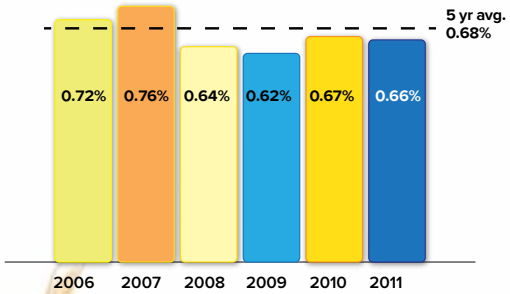
PROTEIN CONTENT in semolina has a high correlation with gluten content and, in turn, mechanical strength and cooking quality. Wet gluten is a quantitative measure of the gluten forming proteins in semolina that are primarily responsible for its mechanical strength and pasta quality.

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 stronger mixing characteristics.

SEMOLINA EXTRACTION BY AREA (percent)



REGIONAL AVERAGE ASH CONTENT

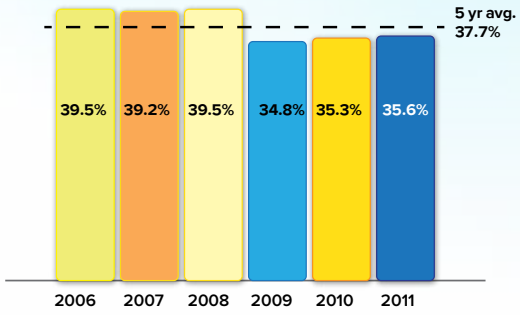


The 2011 crop produced semolina with an average ash content of 0.66 percent, lower than last year and the five-year average.

SEMOLINA QUALITY DATA

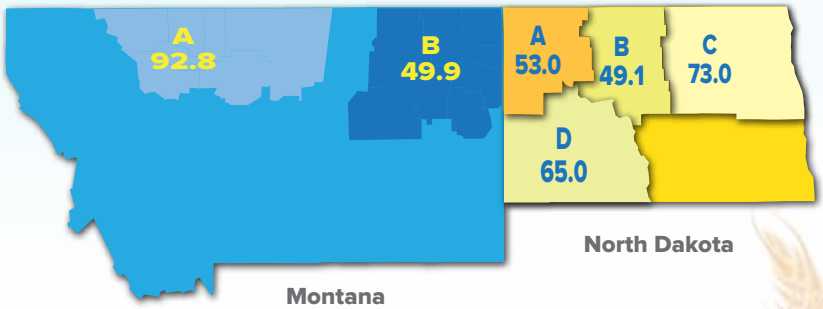
STATE AND CROP REPORTING AREA	TOTAL EXTRACTION %	SEMOLINA EXTRACTION %	ASH %	SPECKS NO/10 SQ IN %	PROTEIN %	WET GLUTEN %	GLUTEN INDEX %	MIXOGRAM CLASSIFICATION SCALE 1-8
MONTANA								
Area A	72.0	66.9	0.62	23	12.1	32.1	92.8	8.0
Area B	71.5	65.3	0.61	27	11.7	34.1	49.9	5.0
State Avg. 2011	71.6	65.5	0.61	26	11.8	33.8	55.9	5.4
State Avg. 2010	73.2	66.7	0.61	31	12.2	34.9	52.3	5.3
NORTH DAKOTA								
Area A	69.3	63.8	0.66	33	12.7	36.3	53.0	5.0
Area B	70.3	63.7	0.73	37	12.8	37.2	49.1	5.0
Area C	70.6	64.8	0.69	27	12.2	33.0	73.0	6.5
Area D	70.2	63.9	0.79	37	13.5	38.5	65.0	6.5
State Avg. 2011	69.7	63.8	0.70	34	12.8	36.7	55.2	5.3
State Avg. 2010	73.5	66.2	0.69	43	12.5	35.4	56.0	5.4
TWO-STATE REGION								
Avg. 2011	70.4	64.5	0.66	31	12.4	35.6	55.5	5.4
Avg. 2010	73.4	66.3	0.67	41	12.4	35.3	55.2	5.4
Five-Year Avg.	70.7	64.4	0.68	27	13.3	37.7	52.0	5.5

REGIONAL AVERAGE WET GLUTEN



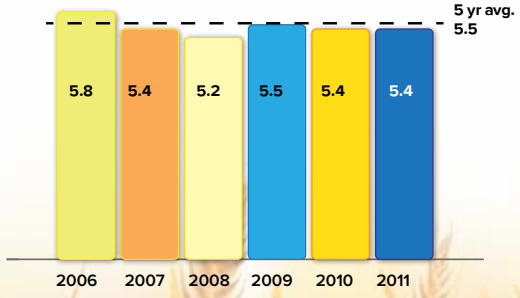
Average wet gluten content for the 2011 crop is 35.6 percent, similar to 2010.

GLUTEN INDEX BY AREA (percent)



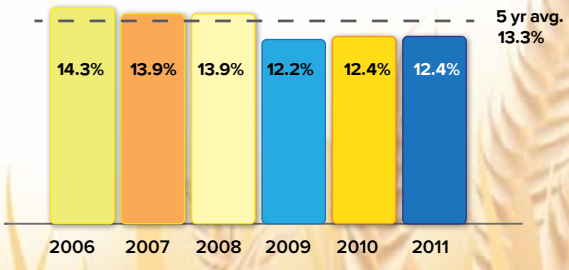
REGIONAL AVERAGE MIXOGRAM CLASSIFICATION

(scale of 1 to 8)



The average mixogram score is 5.4 (scale 1-8).

REGIONAL AVERAGE SEMOLINA PROTEIN CONTENT



The 2011 average semolina protein content is 12.4 percent, the same as last year.

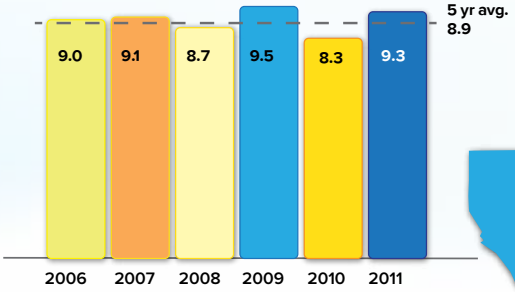
PASTA CHARACTERISTICS

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.

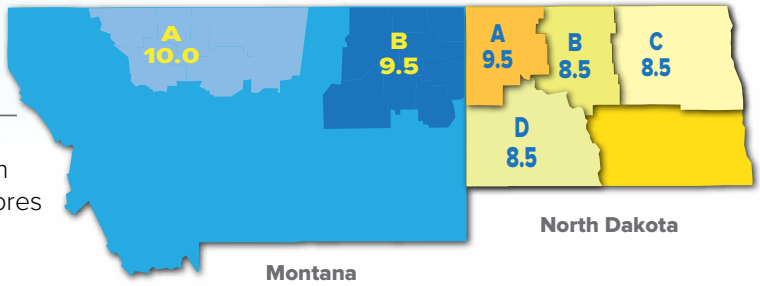
Most consumers prefer pasta that is "al dente," meaning it has some firmness to the bite. Good quality pasta that is cooked according to package directions should not be sticky or mushy when eaten.

REGIONAL AVERAGE COLOR SCORE (scale of 1-12)

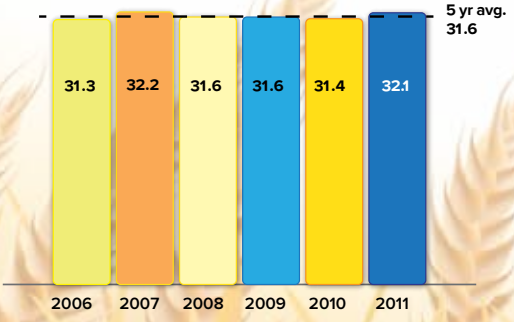


The 2011 average color score is 9.3, much higher than 2010. Pasta samples with scores of 8.0 or higher have good color.

COLOR SCORE BY AREA (scale of 1-12)

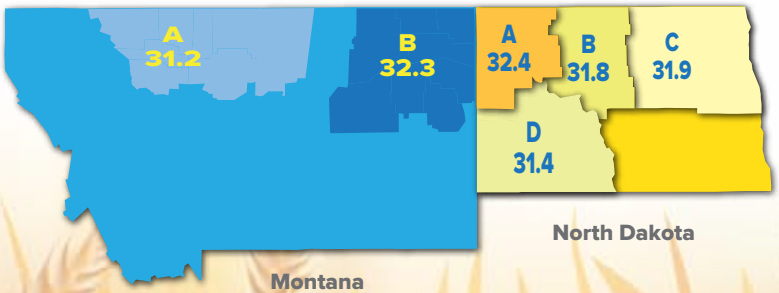


REGIONAL AVERAGE COOKED WEIGHT (grams)



The 2011 average cooked weight is 32.1 grams, higher than last year and the five-year average.

COOKED WEIGHT BY AREA (grams)

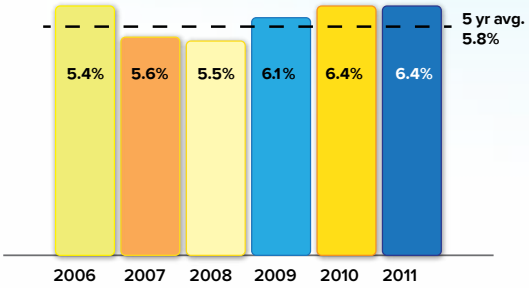


SEMOLINA AND SPAGHETTI QUALITY DATA

STATE AND CROP REPORTING AREA	SEMOLINA COLOR L (black-white)	SEMOLINA COLOR a (red-green)	SEMOLINA COLOR b (yellow-blue)	SPAGHETTI COLOR SCORE (1-12)	SPAGHETTI COOKED WEIGHT G	SPAGHETTI COOKING LOSS %	SPAGHETTI COOKED FIRMNESS G CM
MONTANA							
Area A	84.6	-2.87	33.1	10.0	31.2	7.1	5.9
Area B	84.6	-2.68	29.4	9.5	32.3	6.3	5.1
State Avg. 2011	84.6	-2.71	29.9	9.6	32.2	6.4	5.2
State Avg. 2010	85.8	-3.00	28.6	8.9	31.1	5.5	4.7
NORTH DAKOTA							
Area A	84.6	-2.79	29.6	9.5	32.4	6.3	5.6
Area B	84.3	-2.67	29.9	8.5	31.8	6.6	5.0
Area C	84.7	-2.73	28.9	8.5	31.9	6.6	5.1
Area D	84.4	-2.74	29.6	8.5	31.4	6.6	5.0
State Avg. 2011	84.5	-2.75	29.6	9.1	32.1	6.4	5.3
State Avg. 2010	85.0	-2.86	28.5	8.1	31.4	6.6	4.4
TWO-STATE REGION							
Avg. 2011	84.6	-2.74	29.7	9.3	32.1	6.4	5.3
Avg. 2010	84.2	-2.67	25.9	8.3	31.4	6.4	4.5
Five-Year Avg.	84.7	-2.81	26.8	8.9	31.6	5.8	5.3

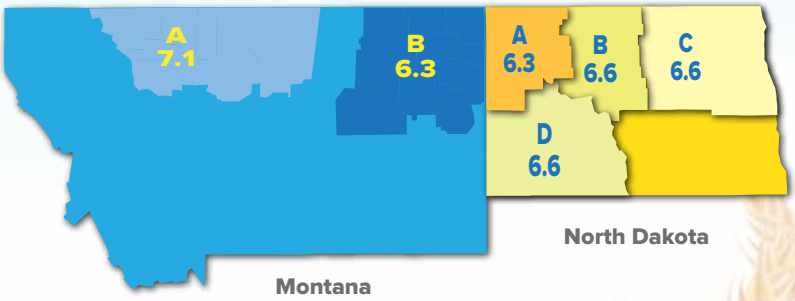
Semolina color performed on CIE color scale. Granulation size is approximately 40 percent above 425 microns and 12 percent below 180 microns.

REGIONAL AVERAGE COOKING LOSS

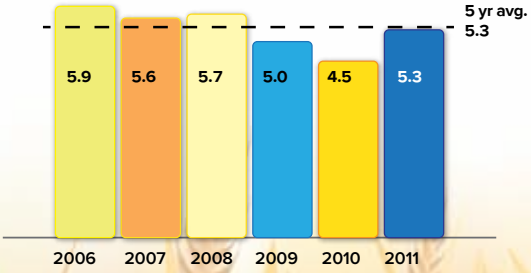


The 2011 average cooking loss is 6.4 percent, the same as last year and higher than the five-year average.

COOKING LOSS BY AREA (percent)

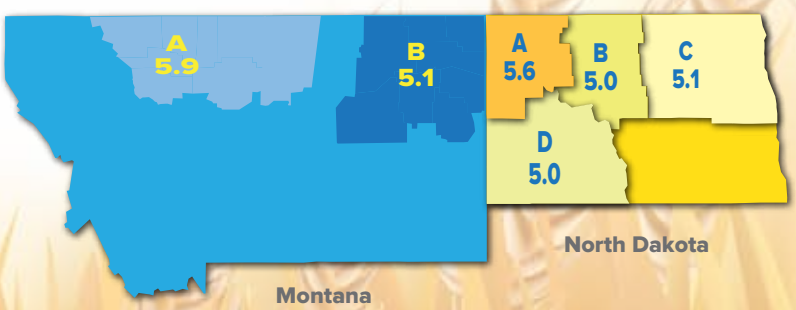


REGIONAL AVERAGE COOKED FIRMNESS (g cm)



The 2011 average cooked firmness is 5.3 grams, higher than last year and the same as the five-year average.

COOKED FIRMNESS BY AREA (g cm)



AVERAGE QUALITY FACTORS FOR THE REGIONAL DURUM WHEAT CROP

	2006	2007	2008	2009	2010	Five-Year Average	2011
GRADING AND WHEAT DATA							
Test Weight (lbs/bu)	59.9	59.9	60.2	61.4	60.0	60.3	59.9
Test Weight (kg/hl)	78.0	78.0	78.4	80.0	78.1	78.5	78.0
Total Defects (%)	2.0	1.8	1.6	1.1	2.0	1.7	1.8
Vitreous Kernels (%)	90	95	83	83	82	87	88
Grade	2 HAD	2 HAD	1 HAD	1 HAD	1 HAD	1 HAD	2 HAD
OTHER WHEAT DATA							
Dockage (%)	2.3	1.6	1.1	1.4	0.9	1.5	1.4
Protein: 12% moisture	15.1	15.1	14.8	13.5	13.4	14.4	13.6
1000 Kernel Weight (gm)	33.2	33.8	35.0	42.4	40.3	36.9	36.6
Moisture (%)	11.3	11.8	11.7	11.8	11.5	11.6	11.6
DON	0.18	0.30	0.01	0.16	n/a	0.16	0.96
Ash (%)	1.53	1.67	1.50	1.42	1.56	1.54	1.71
Falling Number (sec)	385	367	322	398	335	361	372
Sedimentation (mm)	55	52	49	50	43	50	43
SEMOLINA DATA							
Total Extraction (%)	70.7	69.6	67.1	72.7	73.4	70.7	70.4
Semolina Extraction (%)	65.1	63.8	61.1	65.5	66.3	64.4	64.5
Ash (%)	0.72	0.76	0.64	0.62	0.67	0.68	0.66
Wet Gluten (%)	39.5	39.2	39.5	34.8	35.3	37.7	35.6
Specks (no/10 sq in)	21	23	22	25	41	27	31
Protein (%)	14.3	13.9	13.9	12.2	12.4	13.3	12.4
Gluten Index (%)	56.7	48.0	41.4	58.9	55.2	52.0	55.5
Mixograph Classification	5.8	5.4	5.2	5.5	5.4	5.5	5.4
Color: L (black-white)	84.5	85.0	84.9	84.7	84.2	84.7	84.6
a (red-green)	-2.78	-2.87	-2.94	-2.80	-2.67	-2.81	-2.74
b (yellow-blue)	27.6	26.1	25.9	28.4	25.9	26.8	29.7
SPAGHETTI PROCESSING DATA							
Color Score (scale of 1-12)	9.0	9.1	8.7	9.5	8.3	8.9	9.3
L (black-white)	55.6	n/a	55.0	56.4	55.2	55.2	55.2
b (yellow-blue)	26.5	n/a	27.0	27.4	26.9	26.8	27.3
Cooked Weight (gm)	31.3	32.2	31.6	31.6	31.4	31.6	32.1
Cooking Loss (%)	5.4	5.6	5.5	6.1	6.4	5.8	6.4
Cooked Firmness (g cm)	5.9	5.6	5.7	5.0	4.5	5.3	5.3

Semolina color performed on CIE color scale. Granulation size is approximately 40 percent above 425 microns and 12 percent below 180 microns. Spaghetti color is performed on Hunter color scale.

EXPORT CARGO SAMPLING

SAMPLE COUNT	2009 (41)	2010 (23)
GRADING AND WHEAT DATA		
Test Weight (lbs/bu)	62.1	60.3
Test Weight (kg/hl)	80.8	78.5
Damaged Kernels (%)	1.2	4.0
Foreign Material (%)	0.2	0.2
Shrunken & Broken (%)	1.0	1.3
Total Defects (%)	2.3	5.4
Vitreous Kernels (%)	81	65
Grade	1 HAD	3 AD
OTHER WHEAT DATA		
Dockage (%)	0.5	0.6
Moisture (%)	11.5	12.1
Protein: 12% moisture (%)	13.3	13.3
Protein: Dry (%)	15.1	15.1
Ash: 14% moisture (%)	1.49	1.54
Ash: Dry (%)	1.73	1.79
1000 Kernel Weight (gm)	42	39
Kernel Size (%) lg/md/sm	52/45/3	48/48/4
Falling Number (sec)	385	273
DON (ppm)	0.5	n.d.
SEMOLINA DATA		
Total Extraction (%)	73.0	72.2
Semolina Extraction (%)	66.1	65.0
Ash: 14% moisture (%)	0.62	0.70
Ash: Dry (%)	0.72	0.82
Gluten Index	59	54
Specks (no/10 sq in)	29.1	34.7
Protein: 14% moisture (%)	12.0	12.2
Protein: Dry (%)	13.9	14.1
Mixograph Classification (scale of 1-8)	5.5	6.1
Color: L (black-white)	85.2	84.8
A (red-green)	-2.8	-2.7
B (yellow-blue)	27.0	26.4
SPAGHETTI PROCESSING DATA		
Color Score (scale of 1-12)	9.1	8.2
Cooked Weight (gm)	32.3	31.8
Cooking Loss (%)	6.0	6.4
Cooked Firmness (g cm)	4.7	4.6

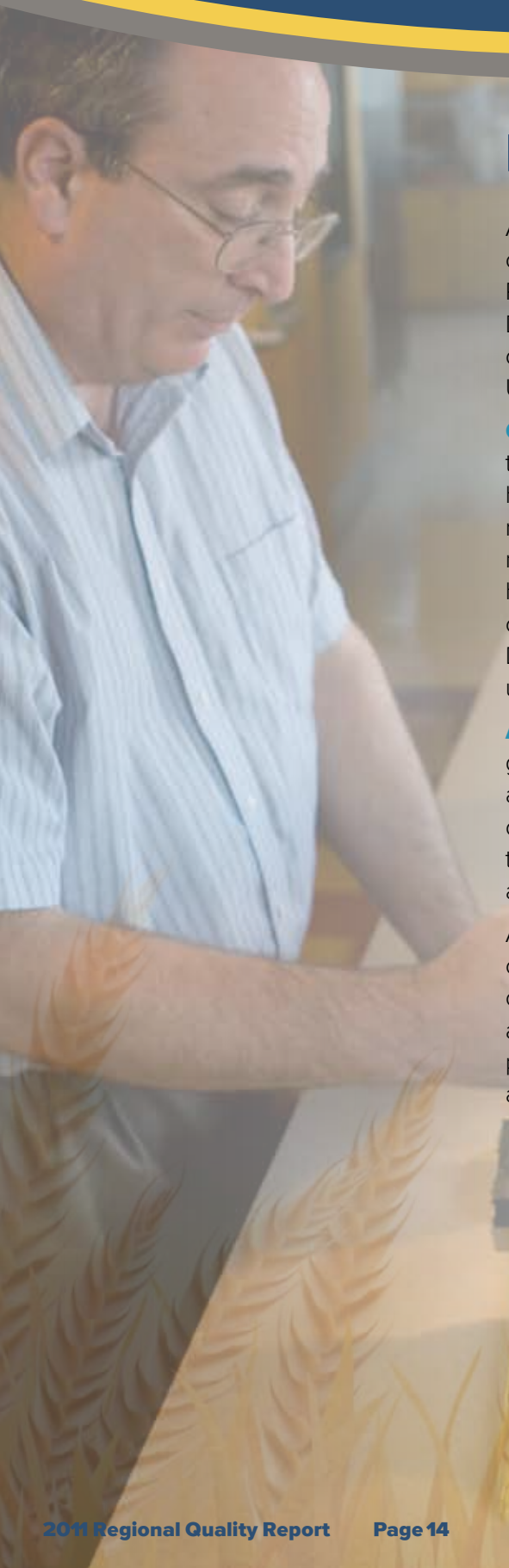
Semolina color performed on CIE color scale. Granulation size is approximately 40 percent above 425 microns and 12 percent below 180 microns.

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. The samples represented here are based on samples collected from October 2009 - June 2010 for crop year 2009, and from October 2010 - April 2011 for crop year 2010. Grade data in the table is the actual official grade on individual sublots.



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, professor and Reena Dash, Hiroshi Ando and Claudia Carter, 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. A total of 193 samples were collected during harvest from Montana (52) and North Dakota (141). Adjustments were made this year to areas that had significant unplanted durum acres.

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 four areas in North Dakota and one composite each of two areas 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 (AACC) 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.

DON • Analysis was done on ground wheat using a gas chromatograph with an electron capture detector as described in J. Assoc. Official Anal. Chem 79,472 (1996)

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).

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.

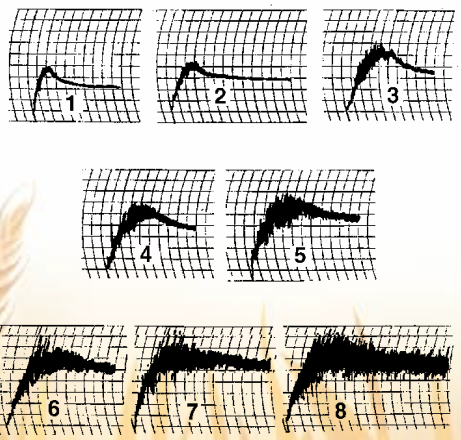
COLOR • Color scores were determined by light reflectance (AACC Method 14-22, 1983), using a Minolta Color Difference Meter (Model CR 310, Minolta Camera Co., Japan). The scores were generated according to the new color map designed by Debbouz (Pasta J. vol 6, No 6, 1994). A spaghetti sample with a score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

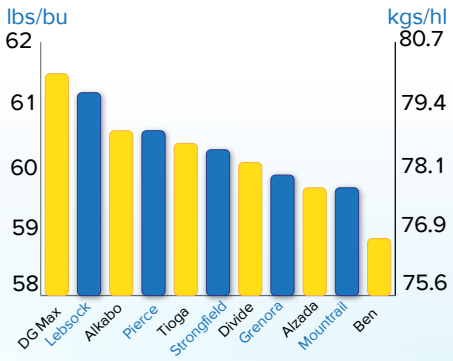
FIRMNESS • AACC Method 66-50 with a plexiglass tooth attached to a Texture Analyzer (Model TA-XT2, Texture Technology Corp., Scarsdale, New York).

REFERENCE MIXOGRAMS FOR DURUM WHEAT

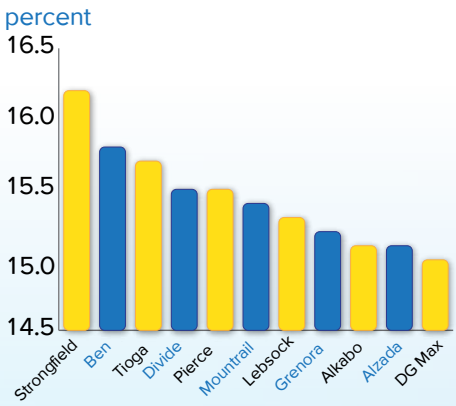


VARIETAL INFORMATION

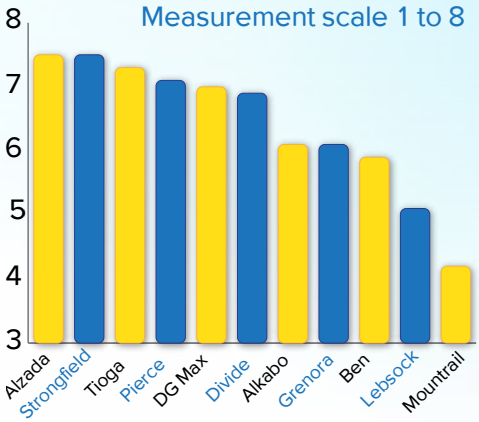
TEST WEIGHT



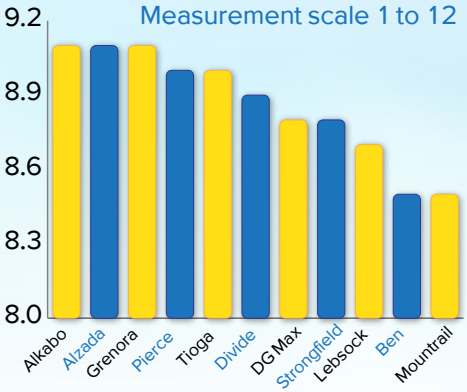
KERNEL PROTEIN



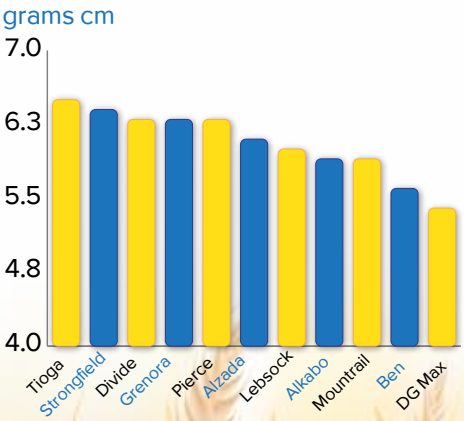
MIXOGRAPH



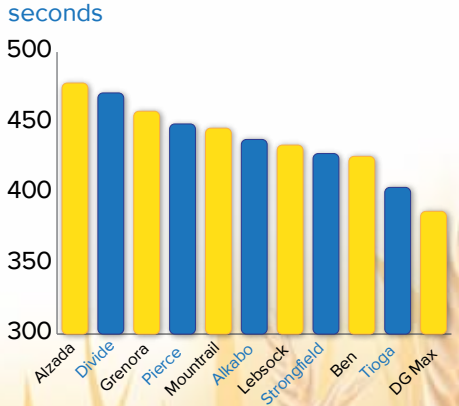
PASTA COLOR



COOKED FIRMNESS



WHEAT FALLING NUMBER



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.

Environment influences the quality of varieties across growing areas and planting years. For this reason, wheat breeders us “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.

Footnote: This is from 2008-2010 crop years across multiple North Dakota locations. DG Max data is 2009-2010.

VARIETAL INFORMATION

GROWN & TESTED IN NORTH DAKOTA • AGRONOMIC FACTORS

		AGRONOMIC DESCRIPTION		REACTION TO DISEASE[2]			AVERAGE YIELD 2010[3] North Dakota		AVERAGE YIELD 3-YEAR[4] North Dakota	
Variety	AGENT[1] OR ORIGIN	YEAR RELEASED	STRAW STRENGTH	LEAF RUST	FOLIAR DISEASE	HEAD SCAB	BU/ ACRE	MT/HA	BU/ ACRE	MT/HA
Alkabo	ND	2005	v.strong	R	M	MS	59.9	4.03	54.1	3.64
Alzada	WB	2004	medium	R	S	VS	53.8	3.62	49.6	3.33
Ben	ND	1996	strong	R	MR	S*	57.6	3.87	50.2	3.37
DG Max	DGP	2008	medium	MR	MR	MS	59.1	3.97	53.0	3.56
Divide	ND	2005	medium	R	M	MR	57.9	3.89	54.4	3.66
Grenora	ND	2005	medium	R	M	MS	60.6	4.07	53.6	3.60
Lebsock	ND	1999	strong	R	M	MS	59.6	4.01	52.0	3.50
Mountrail	ND	1998	medium	R	M	S*	61.7	4.15	55.8	3.75
Pierce	ND	2001	medium	R	MS	S	60.2	4.05	53.5	3.60
Strongfield	CAN	2004	medium	R	MS	S	59.5	4.00	52.3	3.52
Tioga	ND	2010	strong	R	M	MS	59.8	4.02	53.8	3.62

Source: 2011 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. 2010 data from Dickinson, Hettinger, Minot and Williston. North Dakota.
4. Three year average 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 2008-2010. DG Max data is from 2009-2010.
6. 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 (SCALE 1-12)	GLUTEN INDEX %	COOKED FIRMNESS G CM	OVERALL PASTA QUALITY RATING [6]
Alkabo	60.6	79.0	15.1	438	6.1	9.1	69	5.9	good
Alzada	59.7	77.8	15.1	478	7.5	9.1	94	6.1	excellent
Ben	58.9	76.7	15.8	426	5.9	8.5	65	5.6	average
DG Max	61.5	80.0	15.0	387	7.0	8.8	74	5.4	good
Divide	60.1	78.3	15.5	471	6.9	8.9	80	6.3	good
Grenora	59.9	78.1	15.2	458	6.1	9.1	77	6.3	good
Lebsock	61.2	79.7	15.3	434	5.1	8.7	55	6.0	average
Mountrail	59.7	77.8	15.4	446	4.2	8.5	32	5.9	average
Pierce	60.6	79.0	15.5	449	7.1	9.0	80	6.3	excellent
Strongfield	60.3	78.5	16.2	428	7.5	8.8	79	6.4	good
Tioga	60.4	78.6	15.7	404	7.3	9.0	83	6.5	good

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 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 that the top five durum varieties in 2011 are Divide, Mountrail, Alkabo, Lebsock and Grenora. These varieties account for 73 percent of the estimated 1.0 million acres (405,000 hectares) planted to durum, up slightly from last year.

DIVIDE is the top planted variety in North Dakota for the third year in a row, accounting for 32.5 percent of total acres, up 6 percent from last year. For the last 3 years, Divide has made gains in its acreage share of more than 6 percent annually. It is also the third most popular variety planted in Montana with 12 percent of the acreage. A 2005 release from NDSU, Divide has good agronomic traits such as high yield potential and resistance to Fusarium headblight. It also has improved quality traits such as gluten strength, good color and excellent end use quality traits.

ALKABO is the third most popular variety in North Dakota, moving up a spot from last year. Approximately 12 percent of the acres were planted to Alkabo, and it accounts for 5 percent of the acreage in Montana. A 2005 release, Alkabo scores very high for pasta color and is gaining favor with producers for its high yield potential and strong straw.

GRENORA rounded out the top five varieties planted in North Dakota, accounting for 6 percent of the total acreage. It is also a top ten variety in Montana, accounting for 4 percent of the total planted acreage. Grenora is a 2005 release from NDSU with good yield potential, strong mixing characteristics and good overall pasta quality.

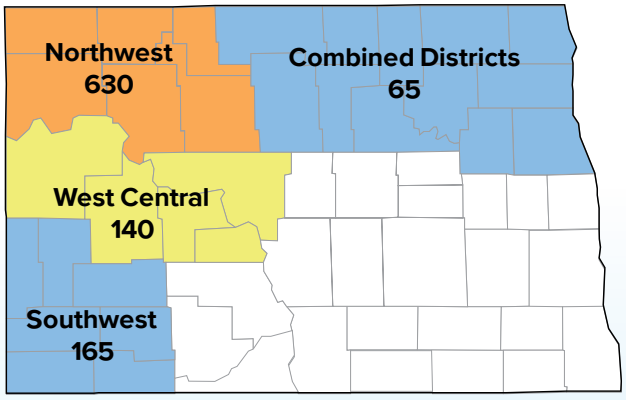
TIOGA is the newest release from NDSU and shows potential to make strong acreage gains in future years. It is a 2010 release and accounts for just over 2 percent of total acreage. It has good agronomic characteristics and shows marked improvements in dough strength and end use quality characteristics.

North Dakota
Varieties Planted Acres

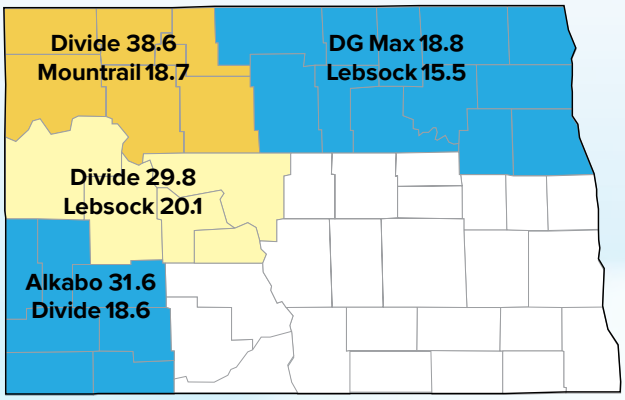
Variety	2010%[1]	2011%[1]	2011 Acres (1,000)
Divide	26.6	32.5	324.9
Mountrail	12.9	13.0	129.5
Alkabo	9.5	11.7	117.4
Lebsock	12.7	9.5	95.3
Grenora	7.0	6.2	61.5
Ben	4.6	2.9	29.1
Pierce	7.9	2.8	27.8
DG Max	2.0	2.4	23.6
Tioga	0.0	2.1	21.0
Strongfield	0.5	1.4	14.0
Other[2]	16.3	15.5	155.9

1. Percentages may not add to 100 due to rounding.
2. Includes varieties with less than 1% of acreage in 2011 and unknown varieties.

North Dakota 2011 Planted Acres by NASS Districts (1,000 Acres)



North Dakota 2011 NASS Districts Top Two Varieties (% of Acres)



North Dakota Varieties Share of 2011 Planted Acres by Crop District

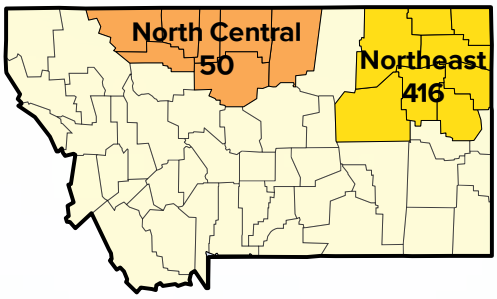
Variety	North West	West Central	South West	Combined Districts[1]	Total State
			percentage (%)[2]		
Divide	38.6	29.8	18.6	14.0	32.5
Mountrail	18.7	8.4	0.0	0.0	13.0
Alkabo	8.1	10.1	31.6	0.0	11.7
Lebsock	7.2	20.1	7.0	15.5	9.5
Grenora	8.0	3.6	2.3	2.9	6.2
Ben	0.7	4.9	10.8	0.0	2.9
Pierce	3.5	0.0	0.0	8.9	2.8
DG Max	0.7	0.0	4.1	18.8	2.4
Tioga	1.1	1.8	6.4	1.5	2.1
Strongfield	2.2	0.0	0.0	0.0	1.4
Other[3]	11.1	21.3	19.1	38.3	15.5
			1,000 acres (1 acre = 0.4 hectares)		
Total Acres[3]	630	140	165	65	1,000[4]

1. Data from North Central, Northeast, Central, East Central South Central and Southeast districts are combined to avoid disclosure of individual operations.
2. Percentages may not add to 100 due to rounding.
3. Includes varieties with less than 1% acreage in 2011 and unknown varieties.
4. September 30, 2011 small grain estimate was 750 thousand acres.

U.S. DURUM WHEAT

MONTANA | NORTH DAKOTA

Montana 2011 Planted Acres by Crop District (1,000 acres)



Montana Varieties Share of 2011 Planted Acres by Crop District

Variety	North Central	North East	Total State
	percentage (%)[1]		
Mountrail	0.0	31.3	27.1
Strongfield	13.5	15.2	14.8
Divide	2.6	13.4	11.9
Alzada	71.9	2.5	9.8
Lebsock	0.0	5.7	4.9
Kyle	2.0	5.4	4.9
Alkabo	0.0	5.3	4.6
Grenora	0.0	4.6	4.0
Westhope	0.0	2.4	2.1
Pierce	0.0	2.2	1.9
Other[2]	10.0	12.0	14.0
1,000 acres (1 acre = 0.4 hectares)			
Total Acres	50	416	480[3]

1. Percentages may not add to 100 due to rounding.
2. Includes varieties with less than 1% of acreage in 2011 and unknown varieties.
3. September 30, 2011 small grain estimate was 400 thousand acres.

MONTANA

Montana Agricultural Statistics Service reports the five most popular durum varieties in Montana in 2011 are Mountrail, Strongfield, Divide, Alzada and Lebsock, virtually unchanged from last year. The top five varieties account for just under 70 percent of the acres.

MOUNTRAIL remains the top variety planted in the state for the eighth straight year with 27 percent of the acreage. It also remains the second most popular variety in North Dakota with 13 percent of the acreage. Released in 1998, Mountrail continues to be a reliable, good yielding variety for producers. Although percent of acreage held steady compared to last year, long term total acreage planted to Mountrail has declined as newer varieties with improved quality are chosen by producers.

STRONGFIELD was the second most popular durum variety in Montana with nearly 15 percent of the acreage; it is also making small acreage gains in North Dakota. It is a 2004 release from Ag Canada that has low grain cadmium, good end-use quality and good disease tolerance. Its acreage is most concentrated in northeast Montana.

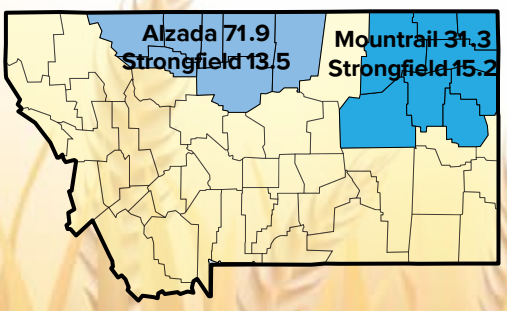
ALZADA accounts for approximately 10 percent of the durum acreage in Montana, making it the fourth most popular variety. A 2004 release from WestBred, Alzada has excellent end-use quality traits, especially semolina color and gluten strength. It is mainly concentrated in north central parts of the state due to lower levels of disease tolerance.

Montana Varieties Planted Acres

Variety	2010[1]	2011[1]	2011 Acres (1,000)
Mountrail	25.2	27.1	130.2
Strongfield	13.4	14.8	71.1
Divide	10.1	11.9	57.0
Alzada	9.2	9.8	47.2
Lebsock	6.0	4.9	23.7
Kyle	8.3	4.9	23.5
Alkabo	4.6	4.6	22.0
Grenora	5.9	4.0	19.1
Westhope	0.0	2.1	10.0
Pierce	1.2	1.9	9.2
Other[2]	16.1	14.0	67.0

1. Percentages may not add to 100 due to rounding.
2. Includes varieties with less than 1% of acreage in 2011 and unknown varieties.

Montana 2011 NASS Districts Top Two Varieties (% of Acres)



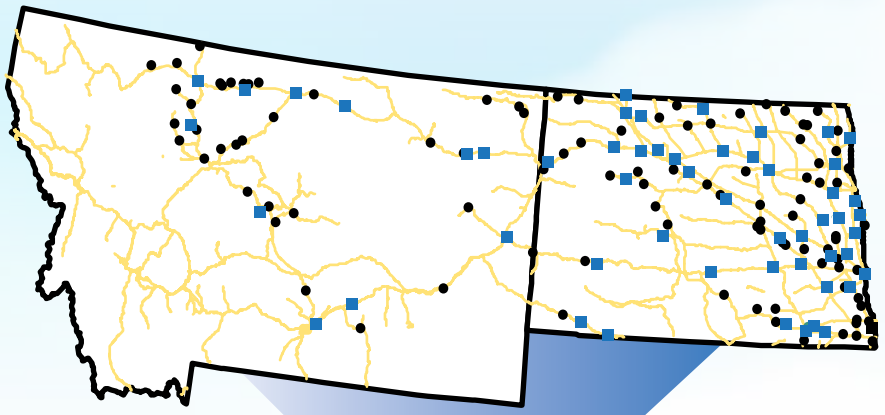
HANDLING & TRANSPORTATION

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.

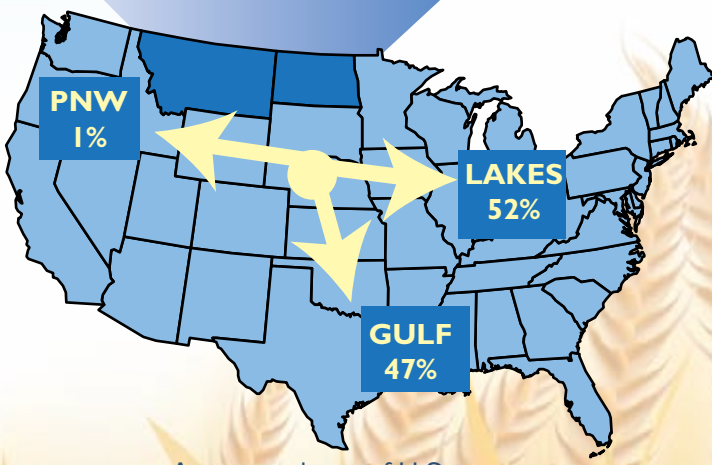
The rail and elevator network in the U.S. northern grown durum region is well suited for meeting the increasing quality demands of both domestic and international customers.



● Track for 50 to 99 rail cars
■ Track for 100 or more cars

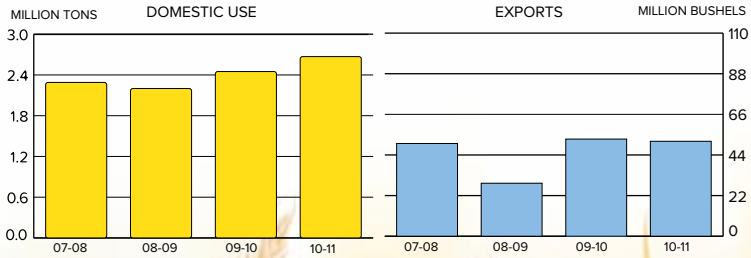
Source: Upper Great Plains Transportation Institute

Grain Handling and Transportation Facilities in the Four-State Region



Average share of U.S. Durum exports by port (2007-2010)

2007-10 U.S. Durum Domestic Use & Exports



Marketing Years (June-May)

FUNDING & SUPPORT PROVIDED BY

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