

2017 Regional Crop Quality Report

Durum Wheat

XXIX Jornadas Técnicas de la
Asociación Española de
Técnicos Cerealistas (AETC)



U.S. WHEAT
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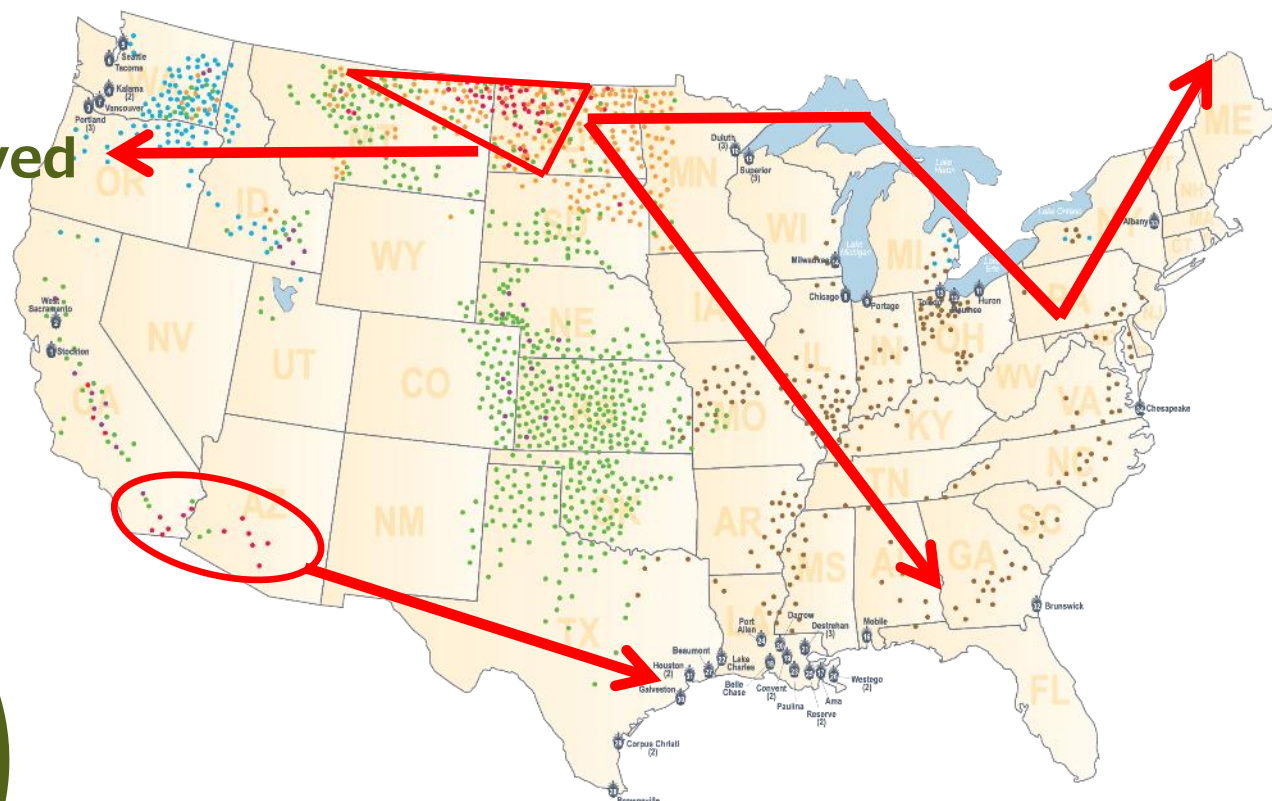
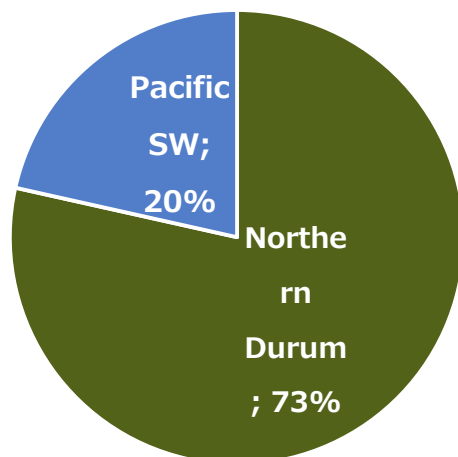


U.S. Durum Production Regions

4 States Surveyed

93%

of total Durum
production represented



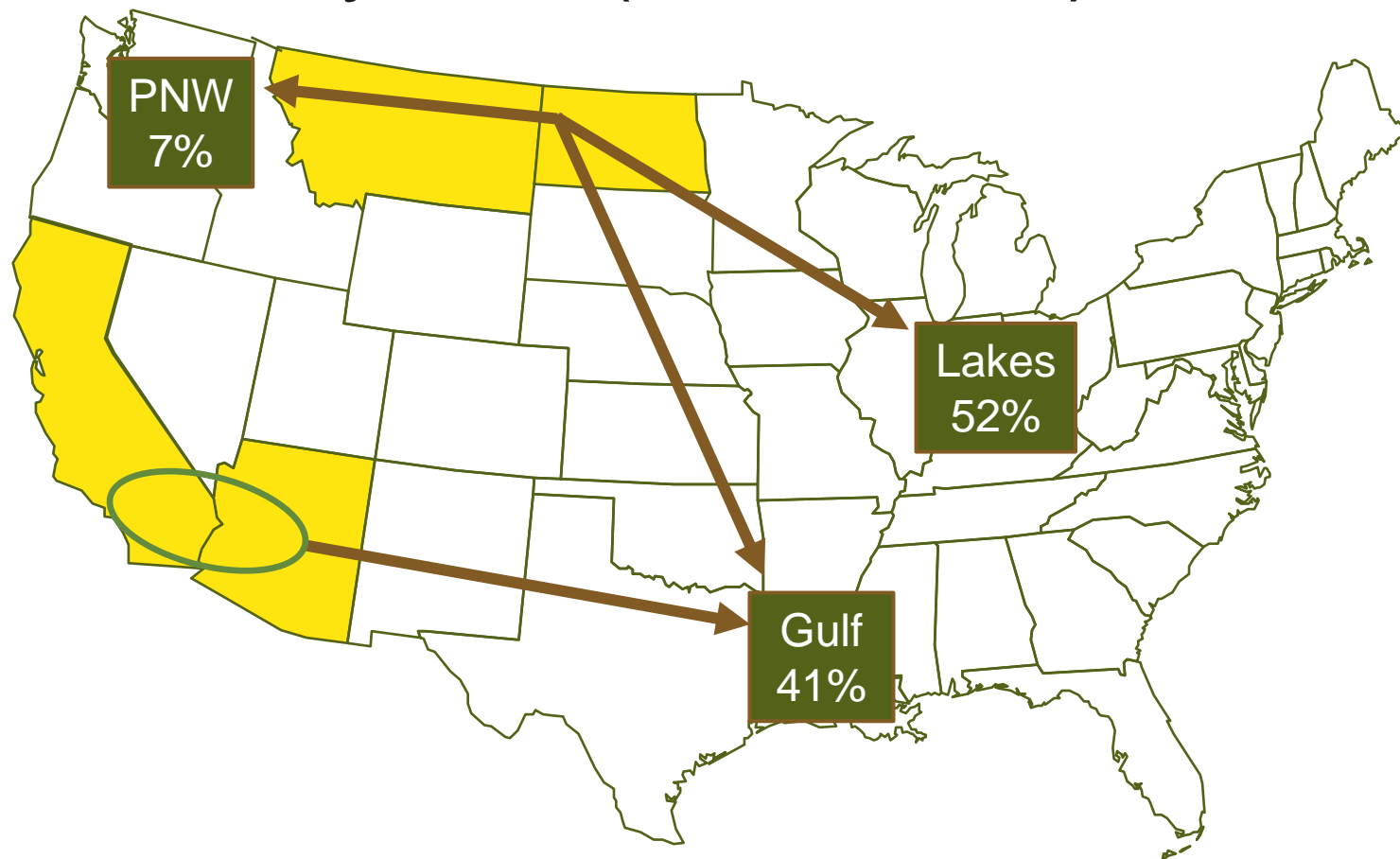
● HARD RED WINTER ● HARD RED SPRING ● SOFT RED WINTER ● SOFT WHITE ● HARD WHITE ● DURUM

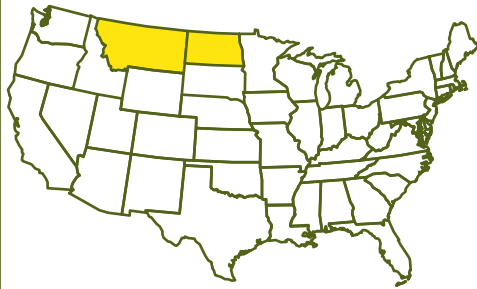
2017 Crop Quality



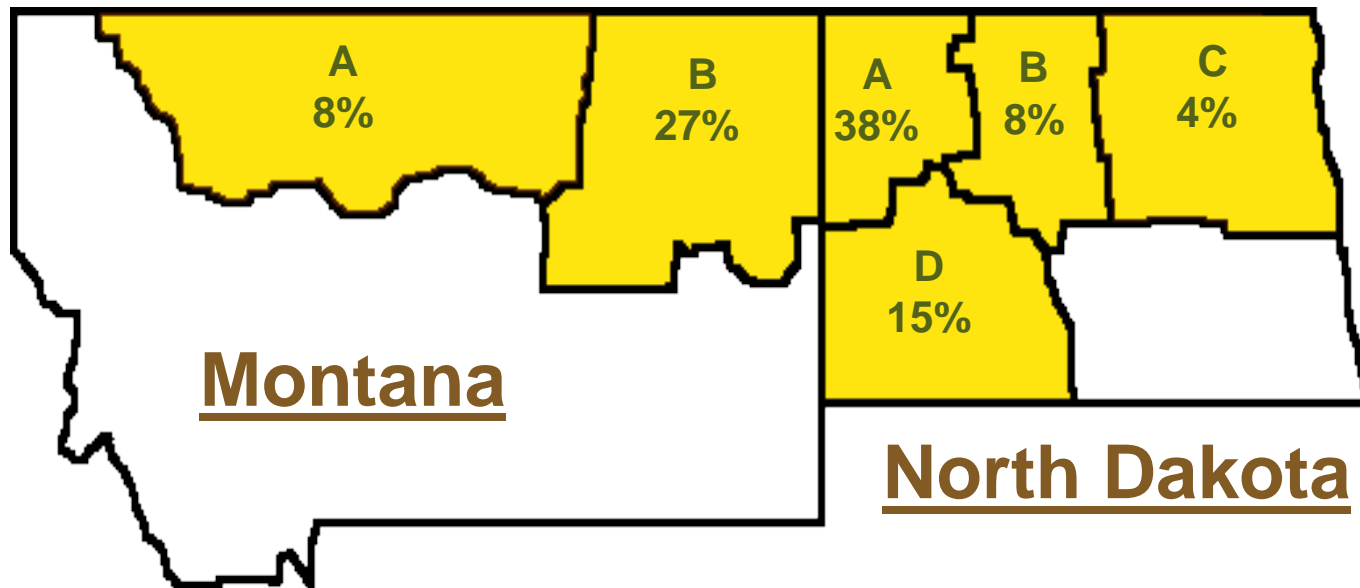
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Average Share of U.S. Durum Exports by Port (2013-2016)





Regional Production by Crop Reporting Area





- Montana
- North Dakota



2017 U.S. Northern Durum Quality

Survey based on collection of 211 producer samples during harvest.

Analysis conducted by the Durum Quality Lab,
North Dakota State University in Fargo, N.D.



- California
- Arizona



2017 Desert Durum® Quality or Pacific SW

Survey based on 17 composite samples collected from Grain Handlers.

Quality analysis conducted by the California Wheat Commission Lab and milled by the Durum Quality Lab, NDSU in Fargo, N.D.

US Northern Durum

Planting, Growing and Harvesting Seasons

Durum production in the U.S. Northern Plains is down by more than 50% from 2016 due to a small decline in acreage and sharply lower yields caused by severe drought.

Planting:

Planting began slightly early in the third week of April, progressed rapidly due to warm conditions and few rain delays, and was finished by the end of May.

Growing:

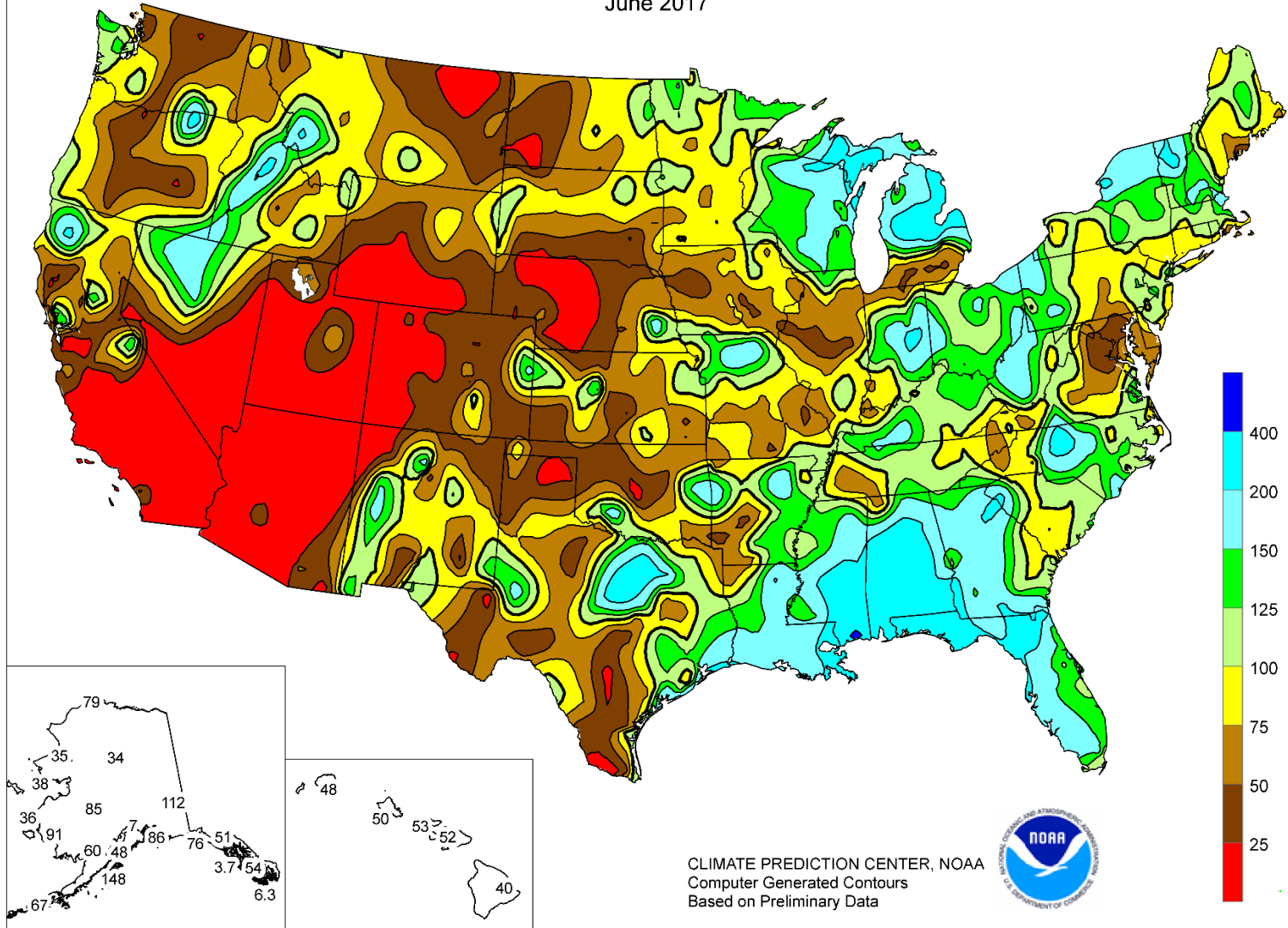
Emergence was slow in areas due to lack of moisture, and yield potential across the region was quite low with some acres abandoned. The dry conditions pushed crop development ahead of normal, but kept disease pressures minimal.

Harvesting:

Harvest began in early August, moved quickly due to dry conditions and lower yields, and finished by late September. **Scattered rain delays toward the end of harvest affected the color of a portion of the crop.**

Percent of Normal Precipitation

June 2017

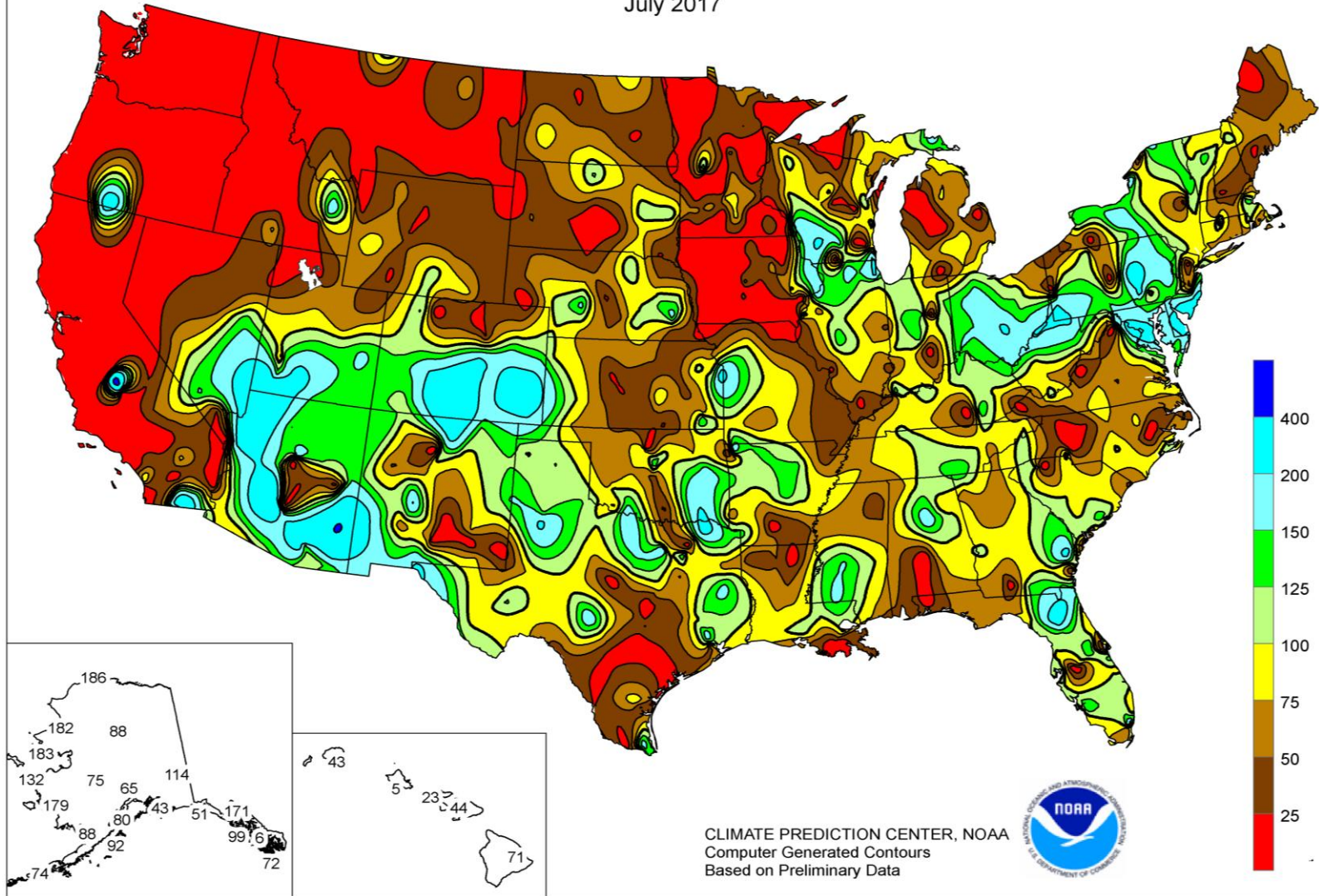


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Percent of Normal Precipitation
July 2017

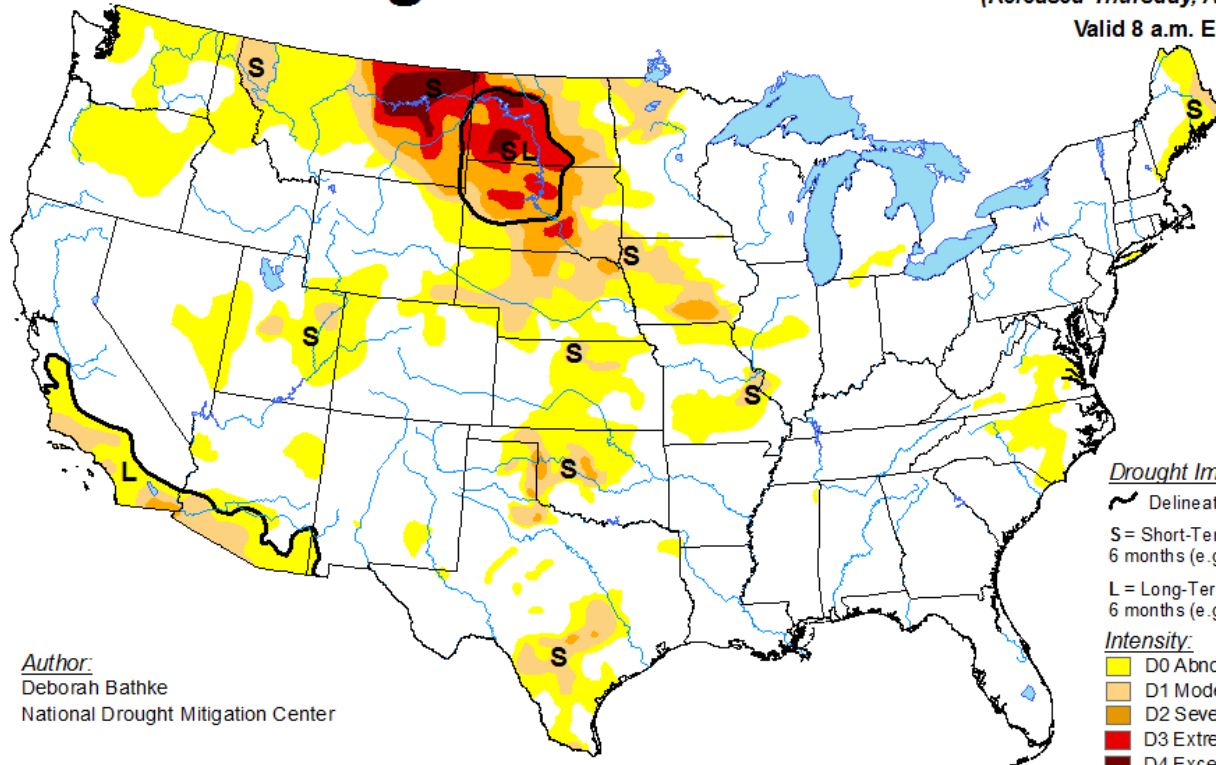


U.S. Drought Monitor

August 1, 2017

(Released Thursday, Aug. 3, 2017)

Valid 8 a.m. EDT



Author:

Deborah Bathke

National Drought Mitigation Center

Drought Impact Types:

~ Delineates dominant impacts

S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

Yellow D0 Abnormally Dry

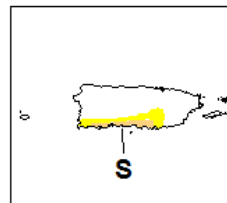
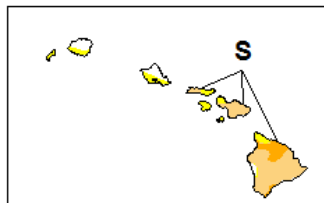
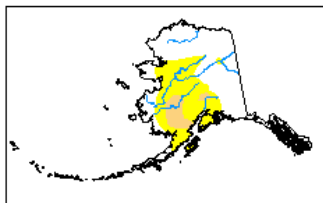
Light Orange D1 Moderate Drought

Dark Orange D2 Severe Drought

Red D3 Extreme Drought

Dark Red D4 Exceptional Drought

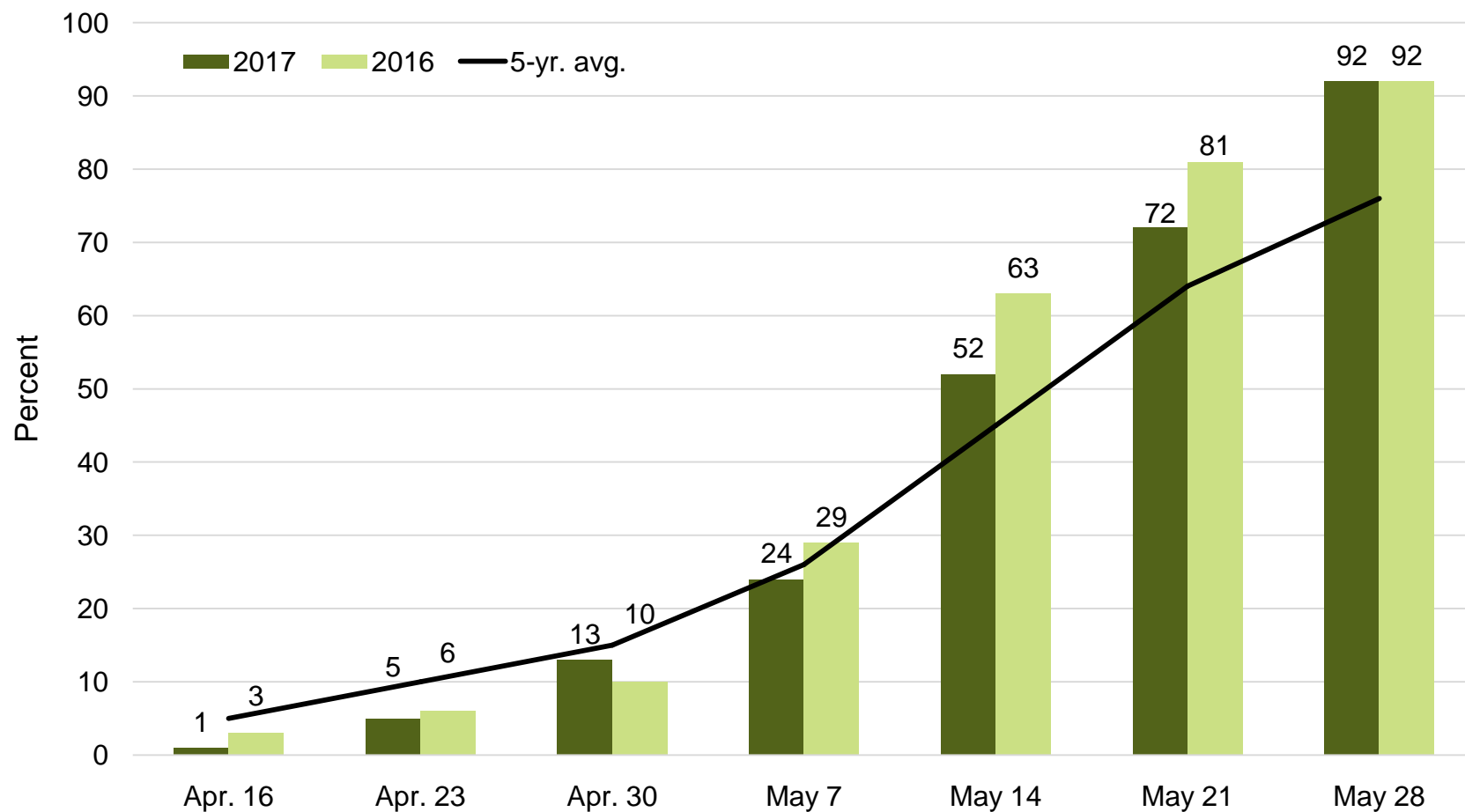
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



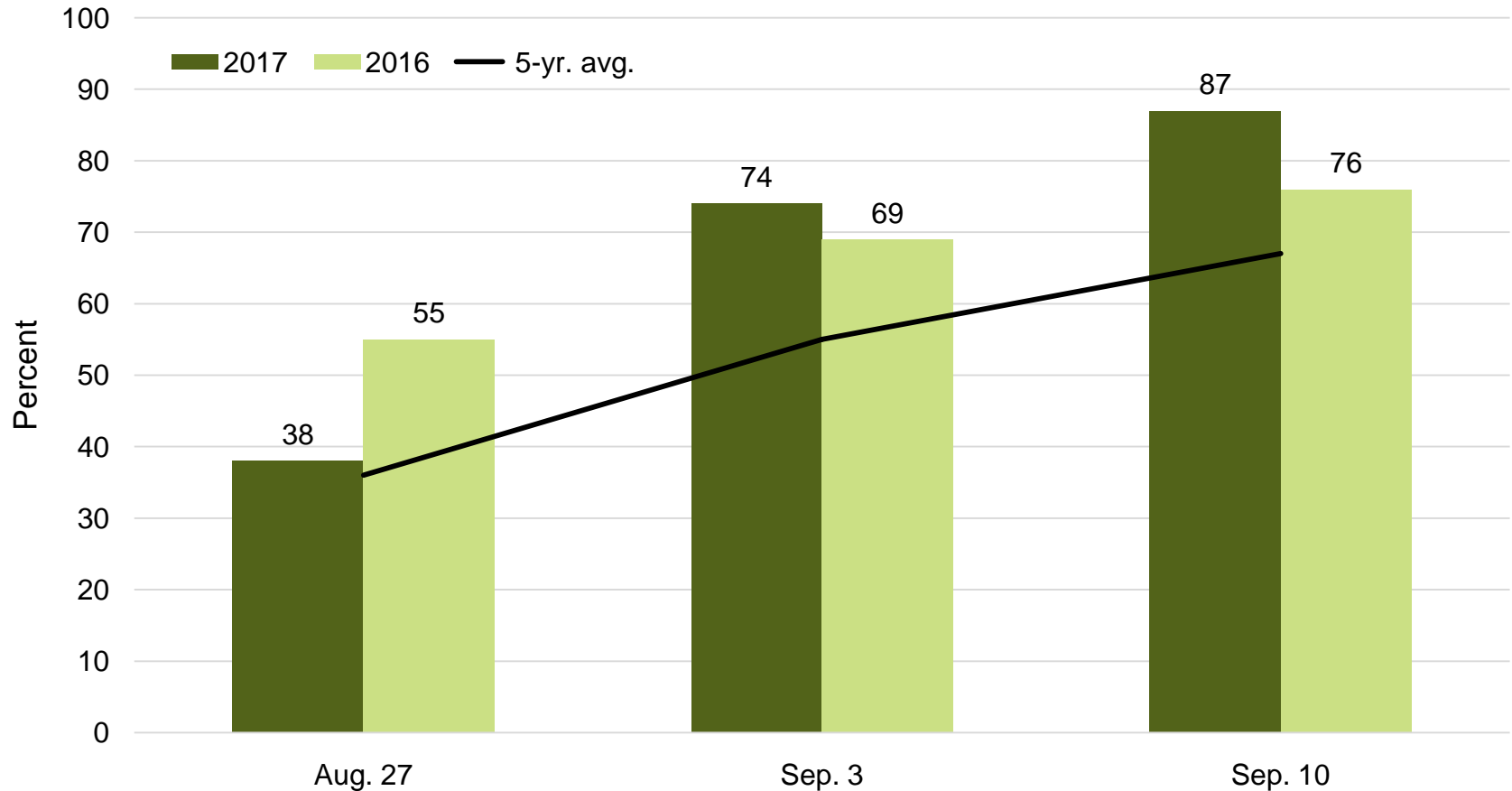
<http://droughtmonitor.unl.edu/>



North Dakota Durum Planting Progress



North Dakota Durum Harvest Progress



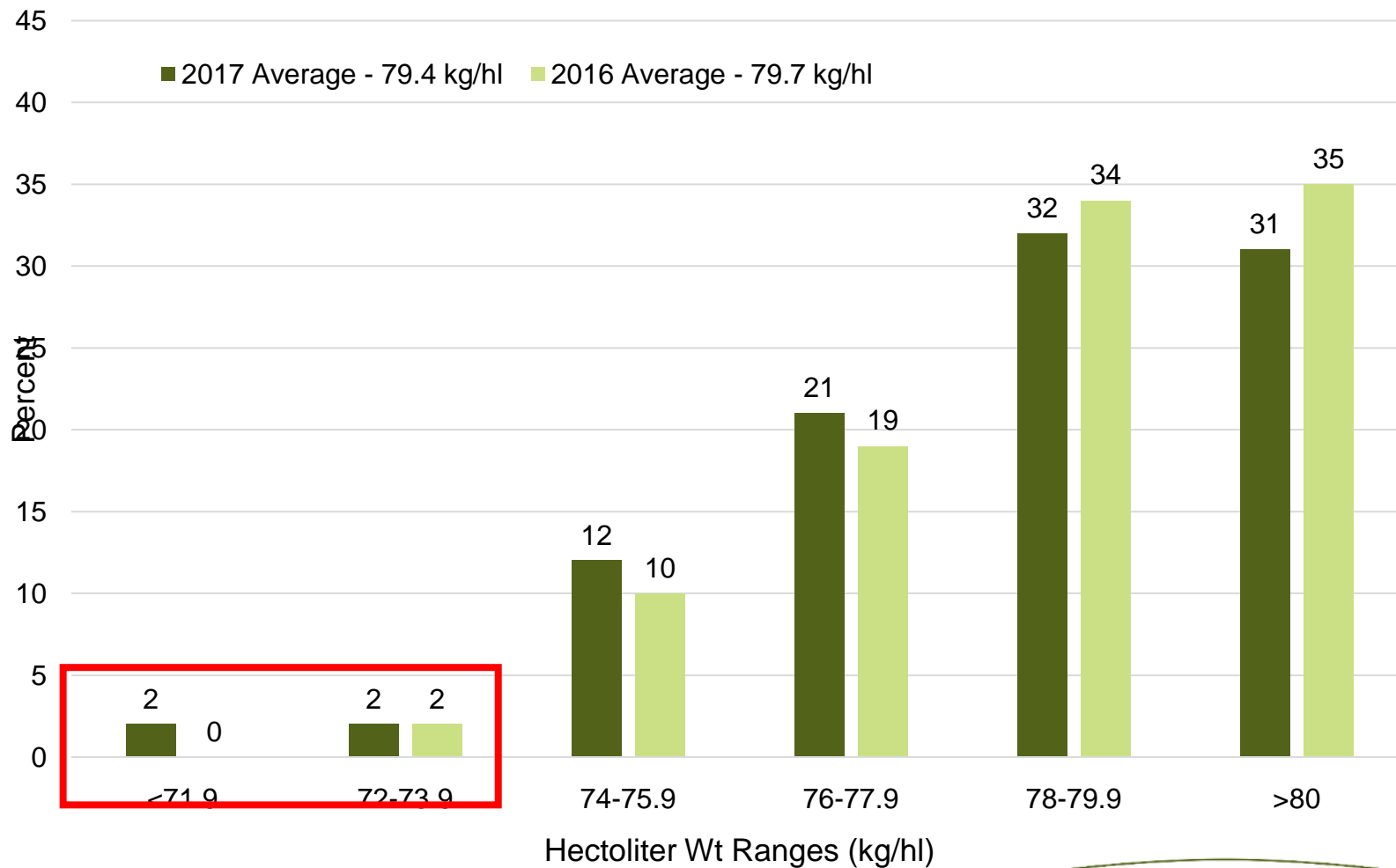
Durum – Wheat Grade Data

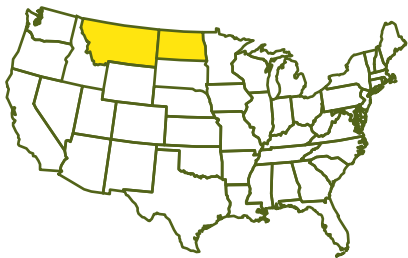
	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Test Weight (lb/bu)	60.9	61.2	60.4	62.2	62.9
(kg/hl)	79.4	79.7	78.7	81.0	81.9
Damaged Kernels (%)	0.1	0.4	0.4	0.2	0.2
Foreign Material (%)	0.0	0.0	0.0	0.1	0.1

Durum – Wheat Grade Data

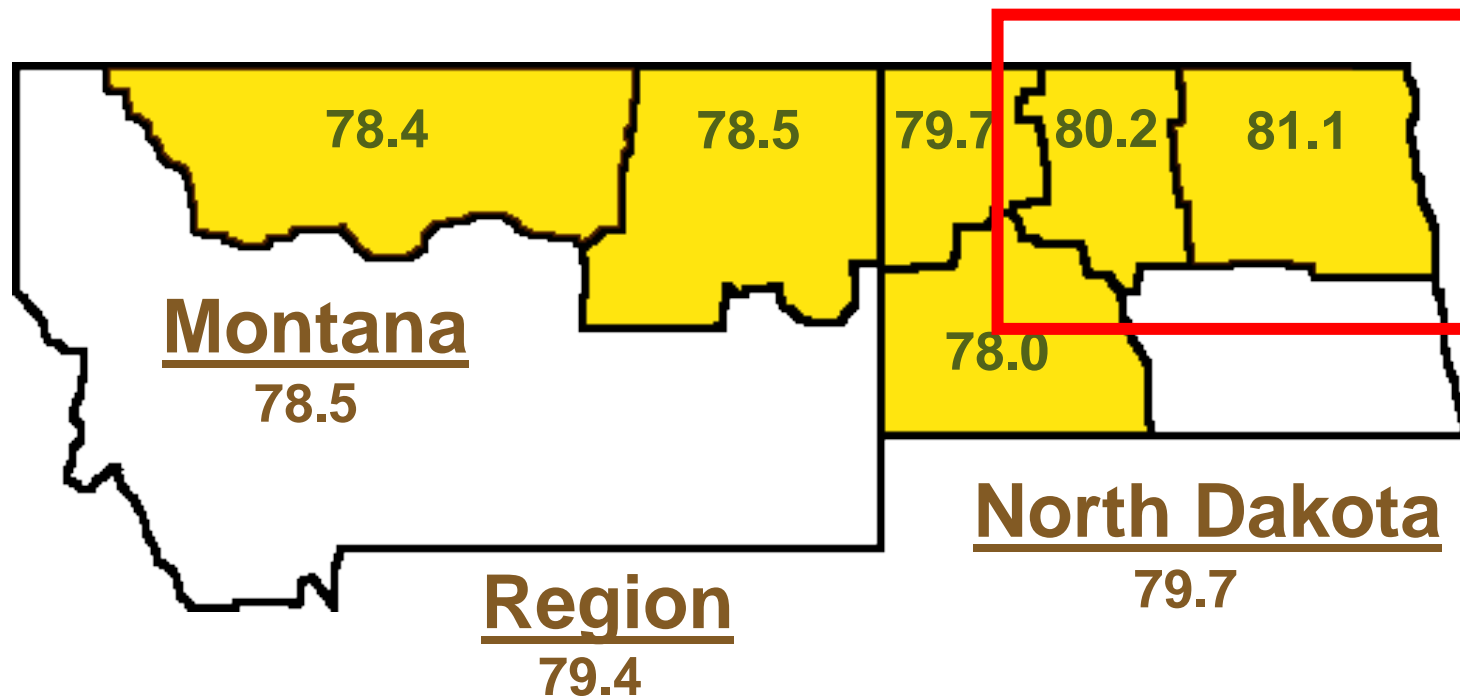
	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Shrunken & Broken, %	1.1	0.8	1.0	0.7	0.4
Total Defects, %	1.2	1.2	1.4	1.0	0.8
Vitreous Kernels, %	88	90	86	98	97
Grade	1HAD	1HAD	1HAD	1HAD	1HAD

Durum – Hectoliter Weight Distribution

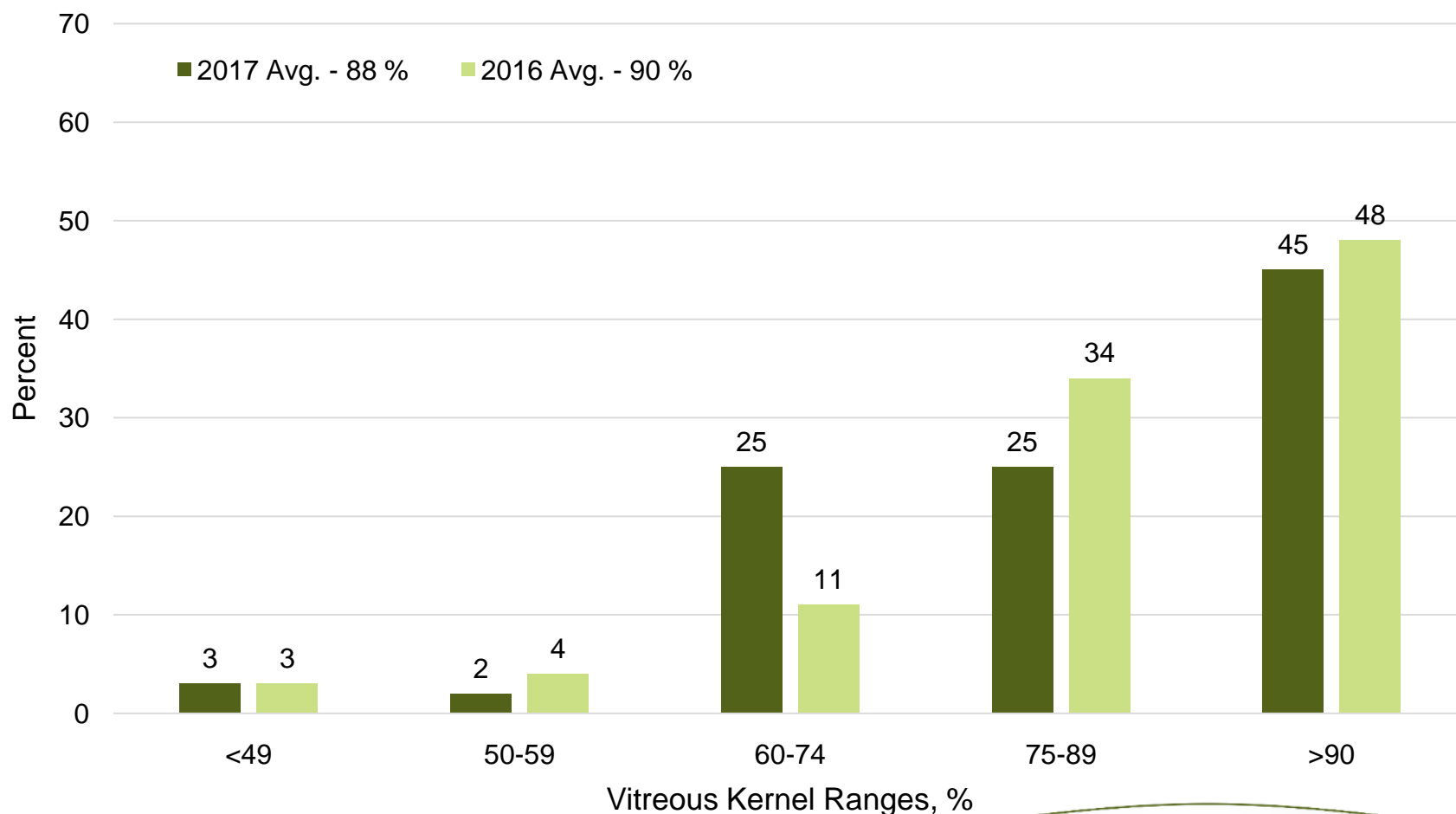


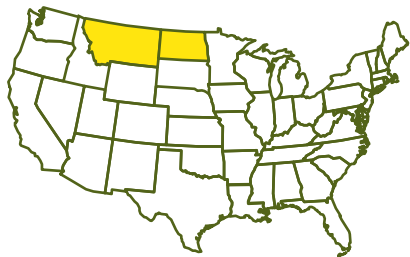


Northern Durum Hectoliter Weight by Region (kg/hl)

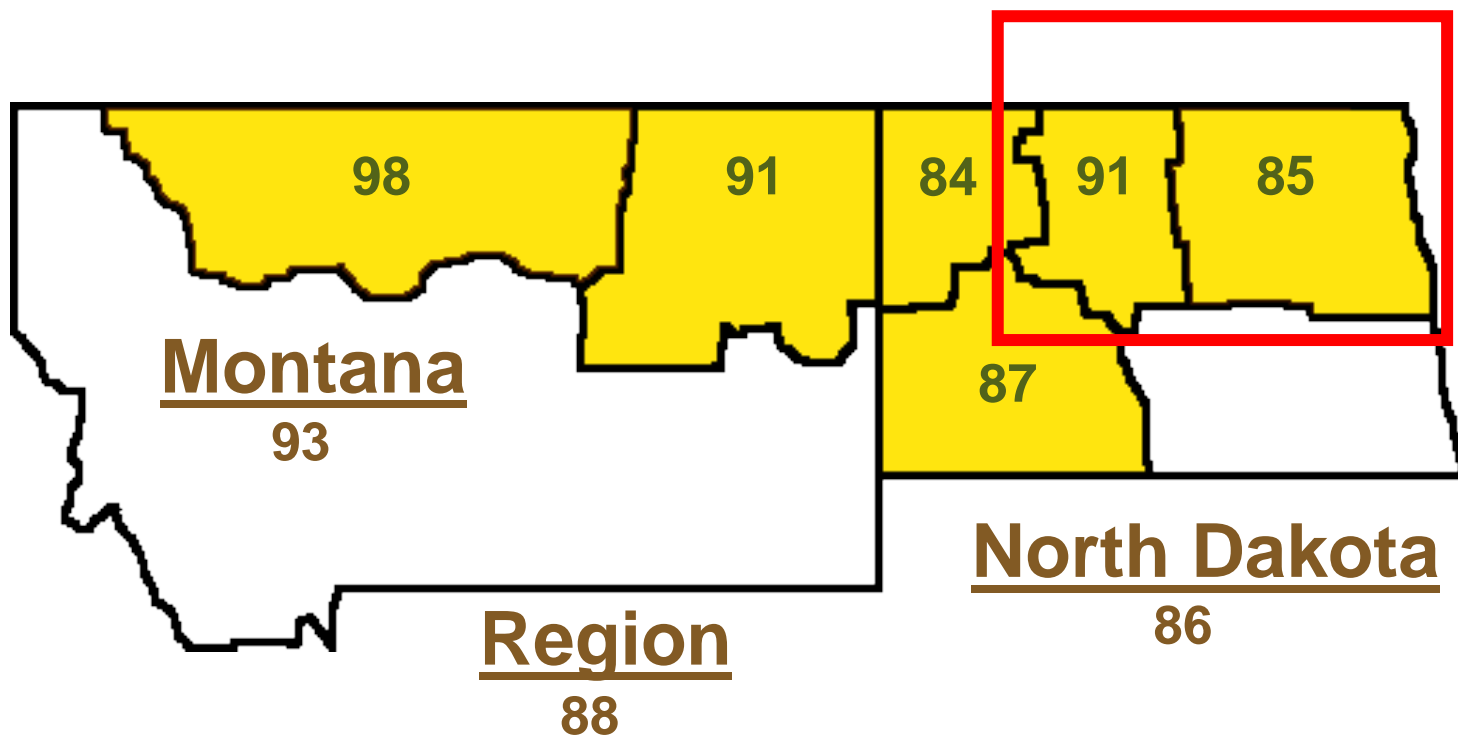


Northern Durum Vitreous Kernel Distribution

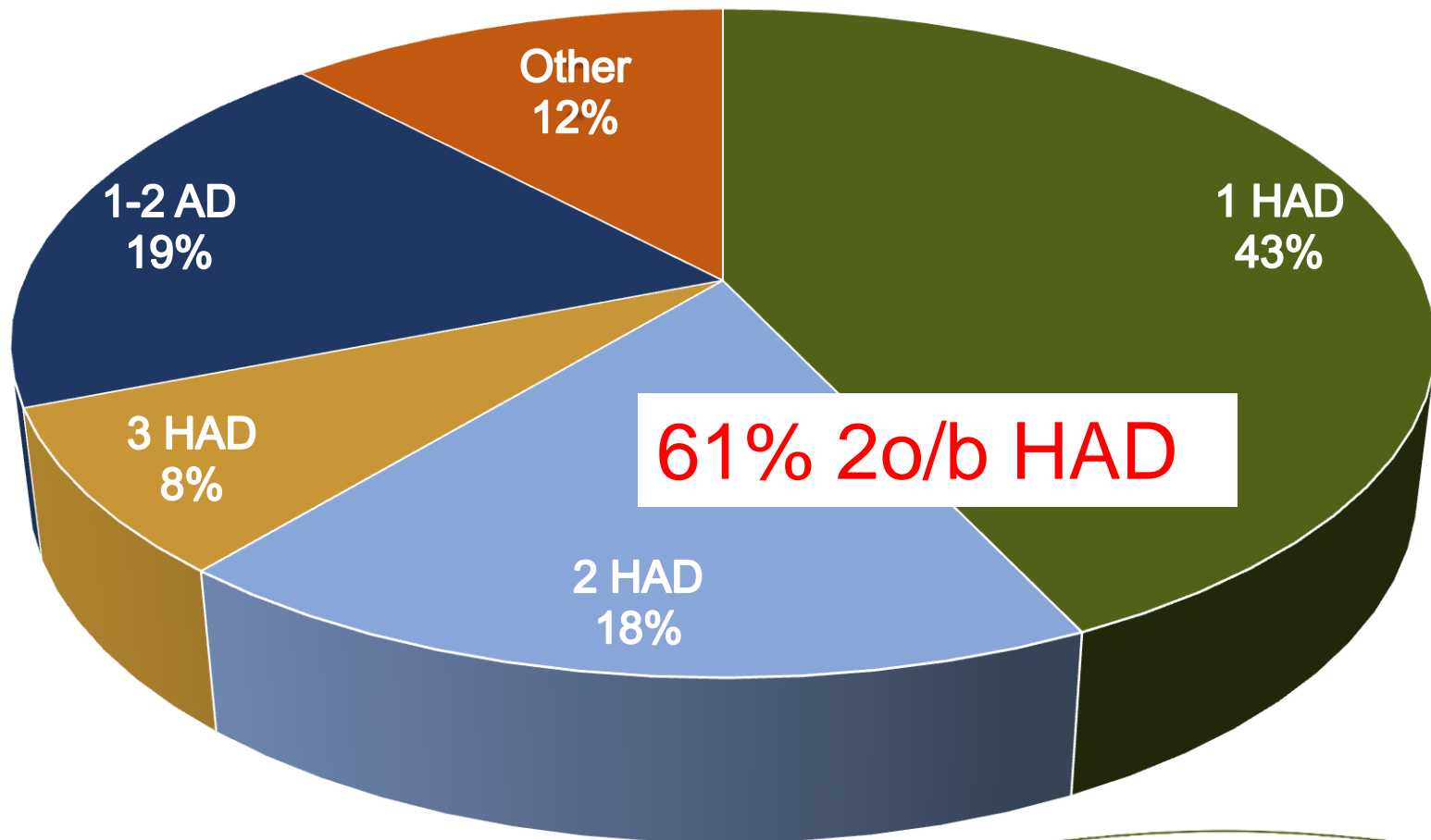




Northern Durum Vitreous Kernel by Region (%)



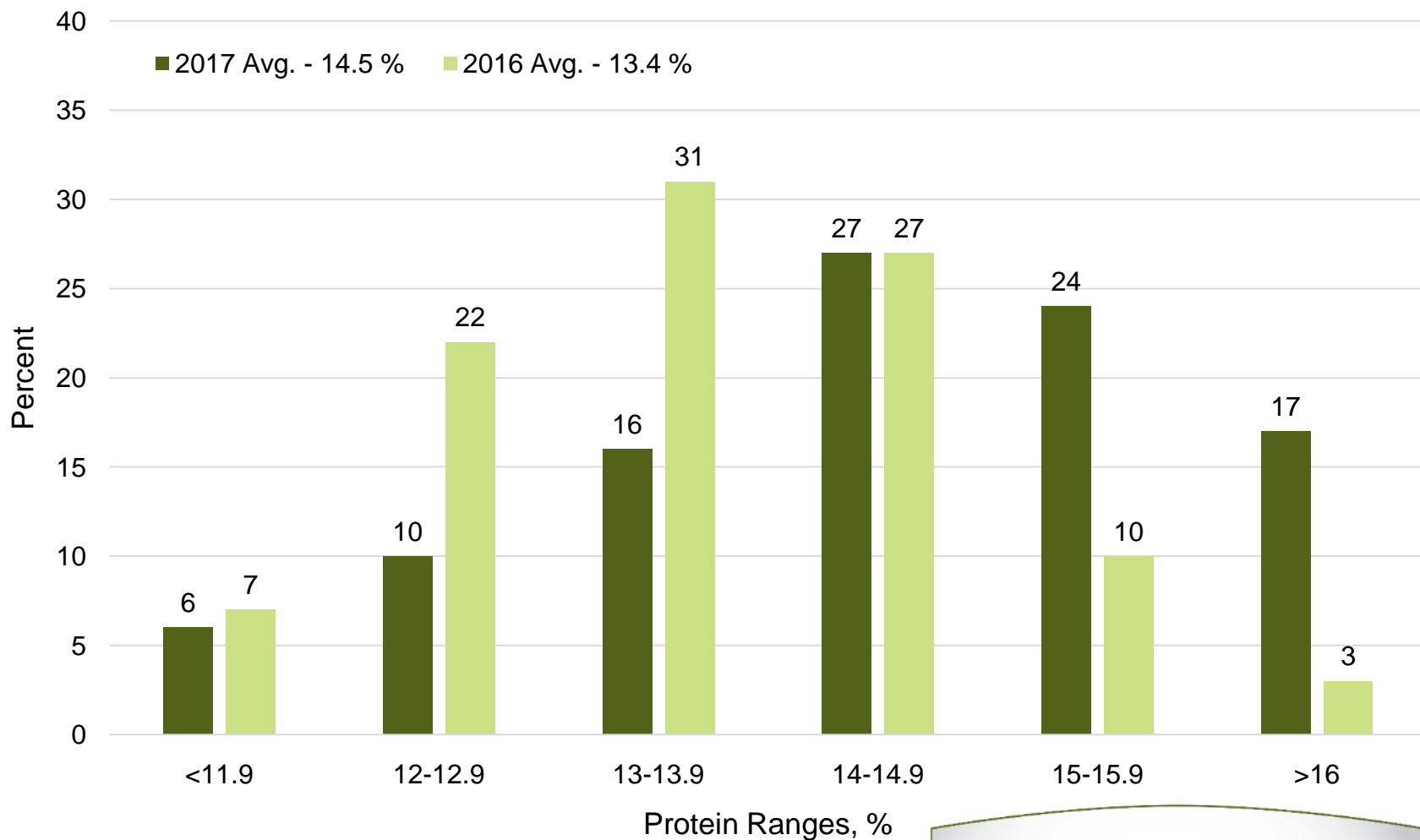
Northern Durum Grade Distribution



Durum Wheat Non Grade Data

	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Dockage, %	1.1	0.2	0.7	0.5	0.5
Moisture, %	11.3	11.4	11.5	6.6	6.8
Protein, %(12% mb)	14.5	13.4	13.6	13.5	13.9
(0% mb)	16.5	15.2	15.4	15.3	15.8

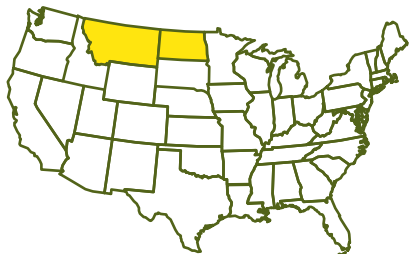
Northern Durum Wheat Protein Distribution



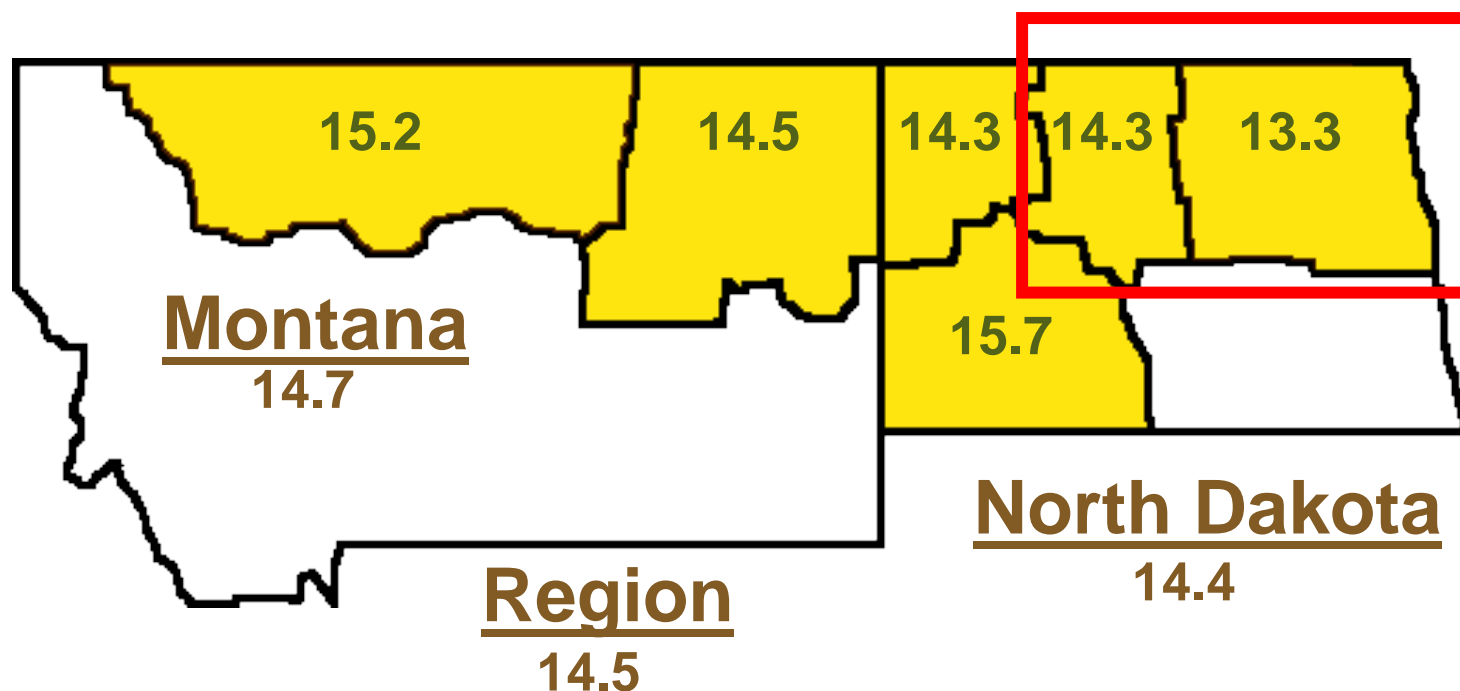
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Northern Durum Protein by Region (% 12% m.b.)



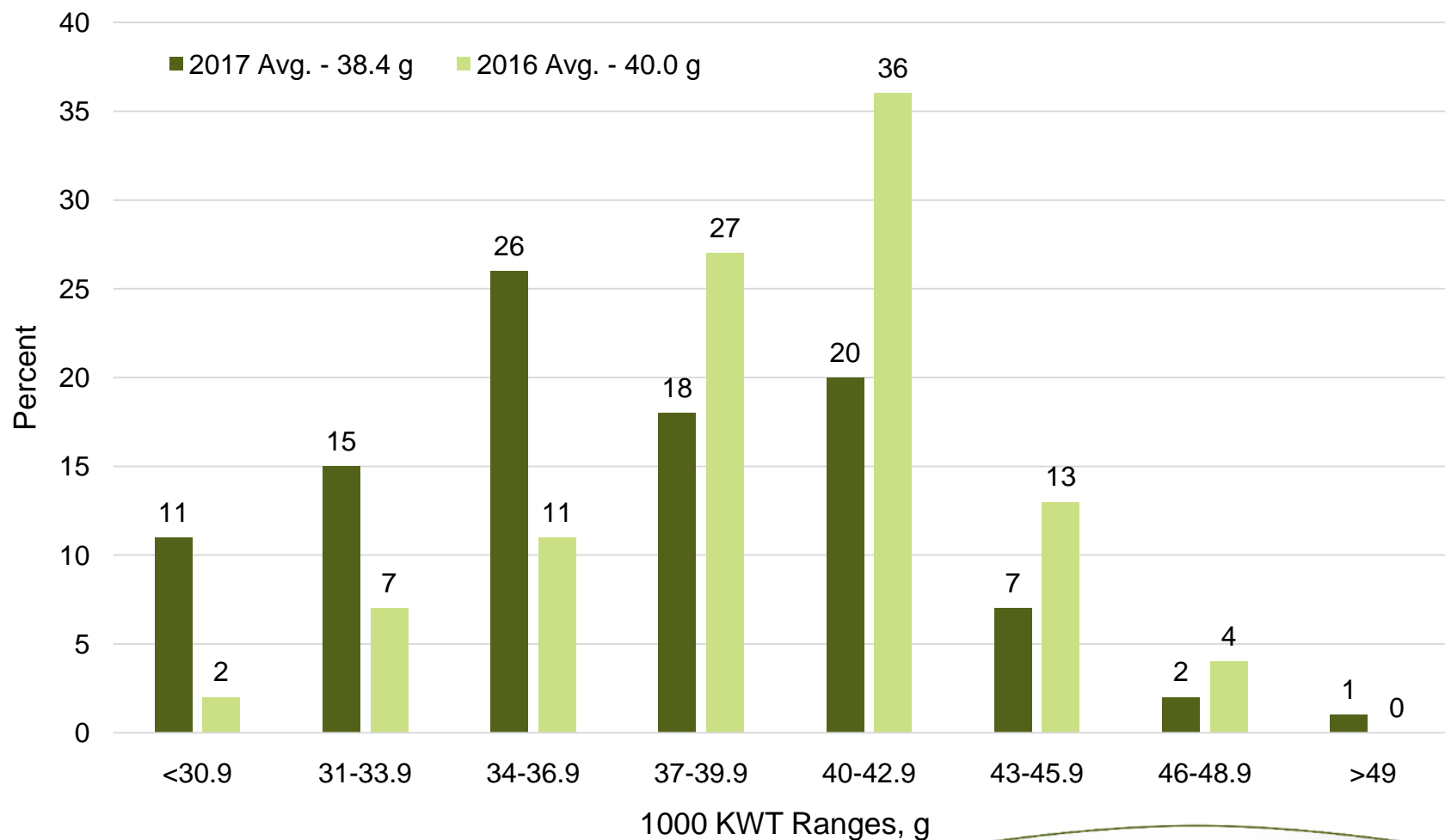
Durum – Wheat Non Grade Data

	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
1000 Kernel Wt, g	38.4	40.0	39.6	49.0	49.6
Kernel Size, %*					
Large	40	52	55	91	91
Medium	55	44	41	9	9
Small	5	4	4	0	0

*Large, medium and small kernels on 2.82, 2.00 and thru, respectively.



Northern Durum 1000 KWT Distribution

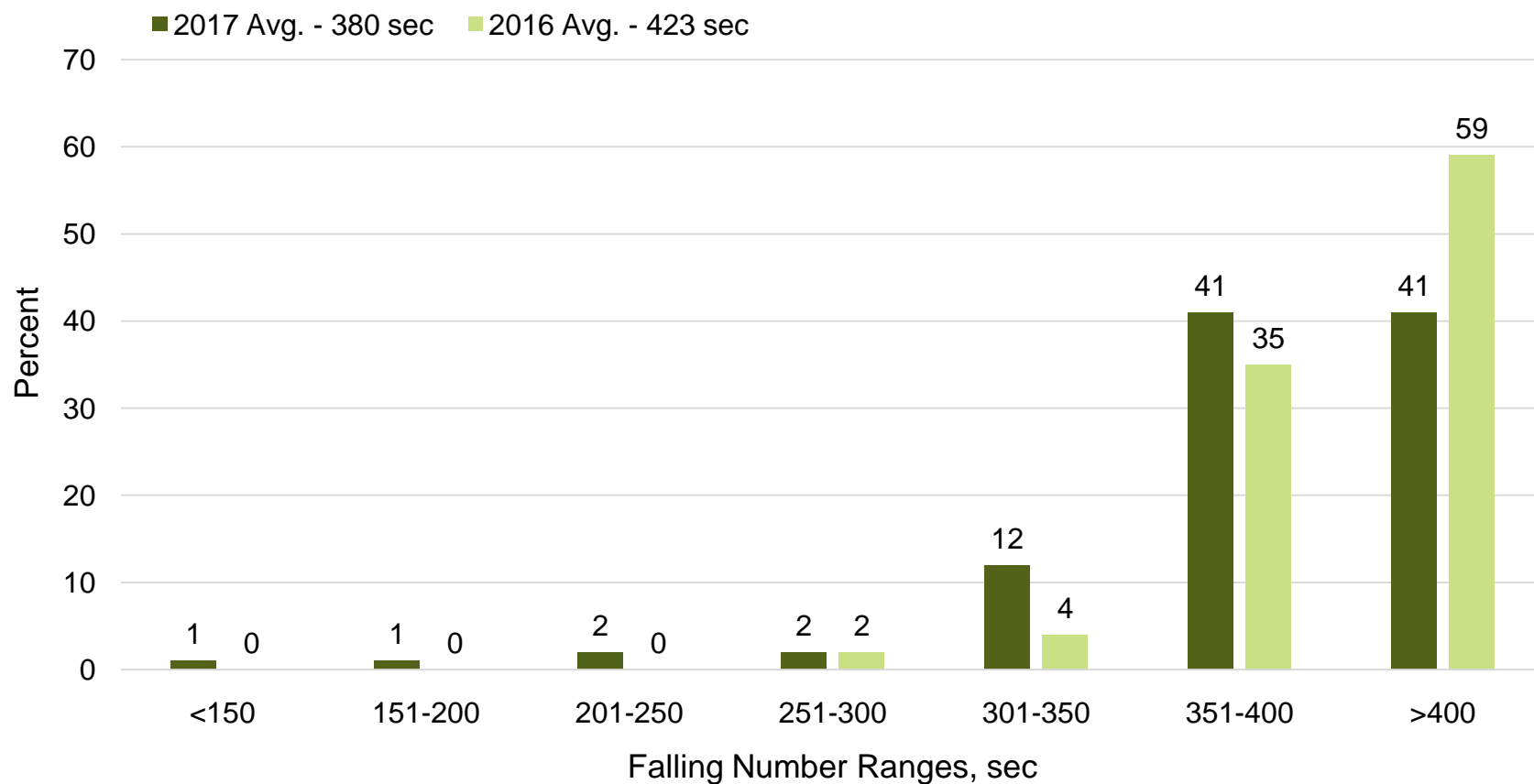


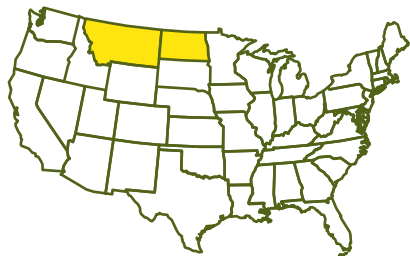
Durum – Wheat Non Grade Data

	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Ash, % (14% mb)	1.46	1.61	1.59	1.66	1.76
% (0% mb)	1.70	1.87	1.85	1.93	2.04
Falling Number, sec	380	423	380	712	612
Sedimentation, cc	87	54	54	61	65
DON, ppm	<0.5	0.7	1.2	N/A	N/A

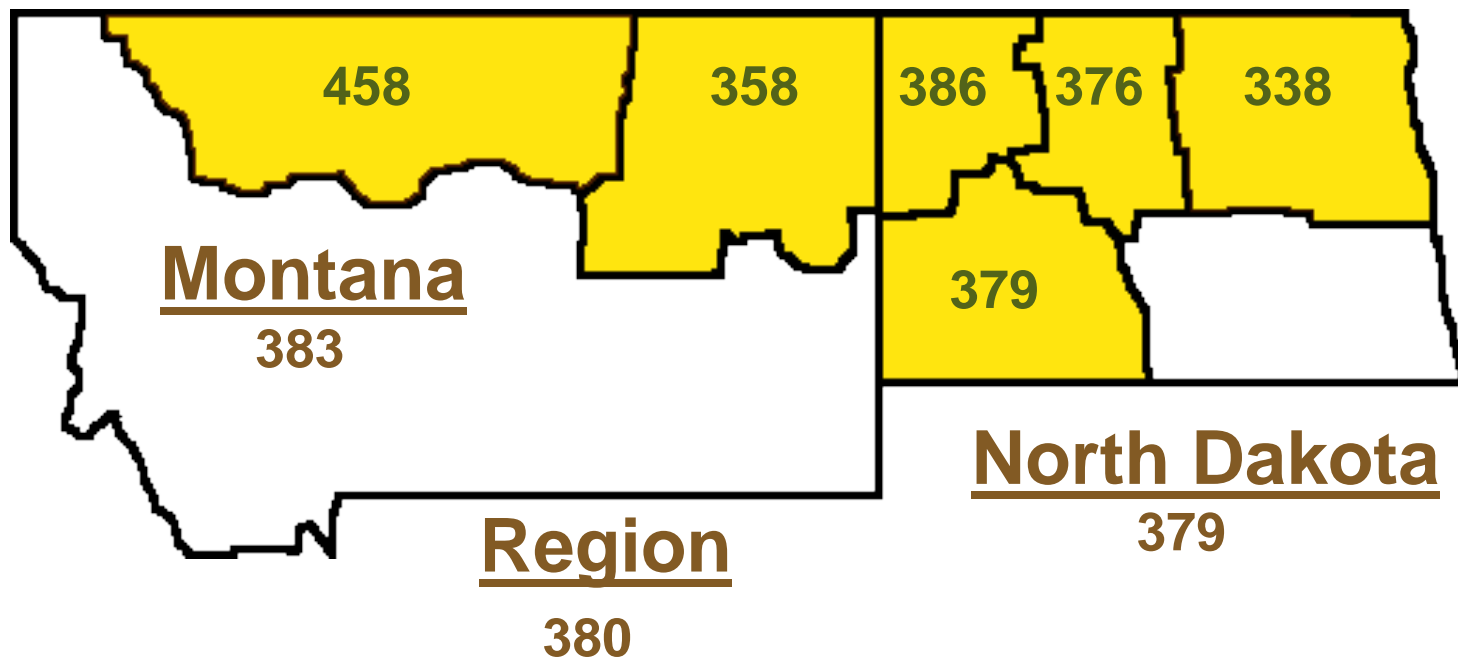


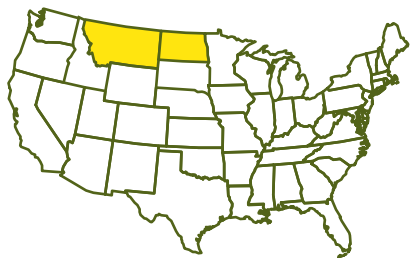
Northern Durum Falling Number Distribution



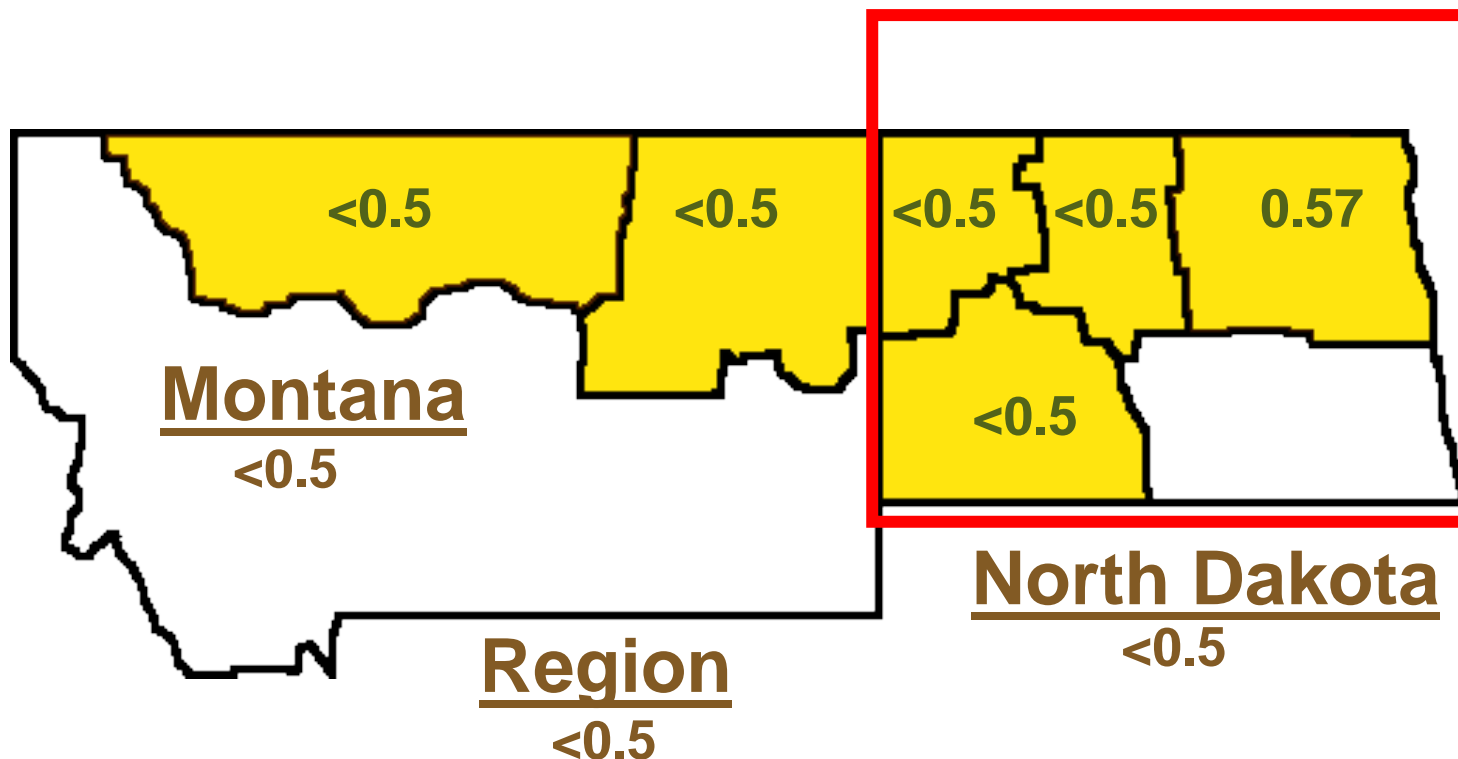


Northern Durum Falling Number by Region (sec)





Northern Durum DON by Region (ppm)



Durum Semolina Data

	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Total Extraction, %	72.2	73.6	70.7	75.0	76.0
Semolina Extraction, %	68.5	67.9	65.2	70.0	61.9
Ash, % (14% mb)	0.69	0.71	0.68	0.80	0.87
% (0% mb)	0.80	0.83	0.79	0.93	1.02

Durum Semolina Data

	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Protein, % (14% mb)	13.8	12.6	12.6	12.4	12.9
%, (0% mb)	16.0	14.7	14.7	14.4	15.0
Wet Gluten, %	34.5	32.4	34.8	33.0	33.2
Gluten Index	86	61	54	76	76



Durum Semolina Data

	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Alveograph: P (mm)	60	45	47	101	107
L (mm)	99	121	113	76	65
P/L ratio	0.6	0.4	0.4	1.3	1.7
W (10^{-4} joules)	180	136	135	266	230



Durum – Flour Data

	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Mixograph Class*	5.7	5.1	5.4	7.0	8.0
Color: L(black-white)** <small>White = 100, Black = 0</small>	83.3	84.3	84.6	86.9	85.3
a(red-green)** <small>A negative number is green and a positive is red</small>	-2.3	-2.8	-3.2	-2.8	-3.2
b(yellow-blue)** <small>A negative number is blue and a positive is yellow</small>	29.4	30.3	29.2	<u>30.9</u>	28.6

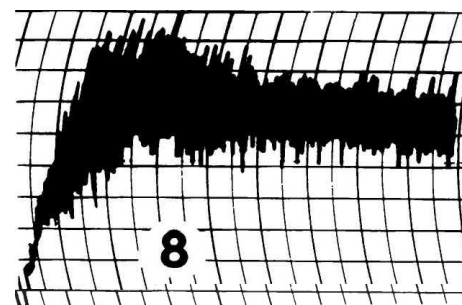
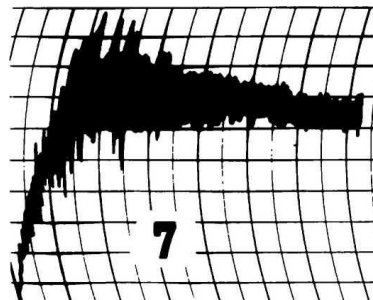
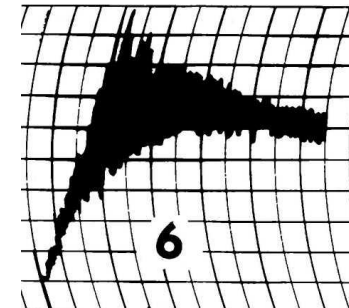
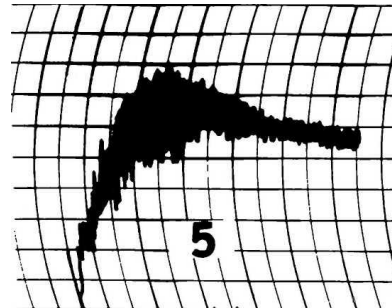
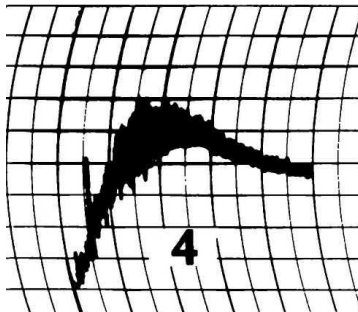
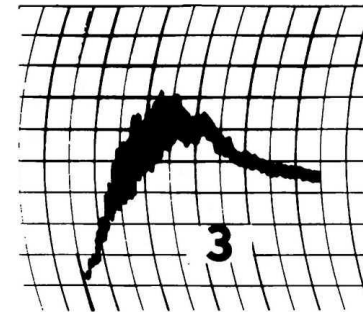
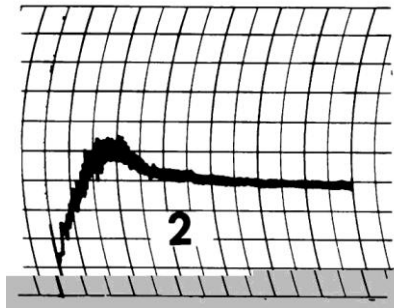
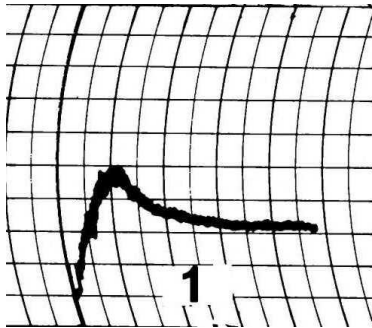
*Scale 1-8

**CIE color scale

2017 Crop Quality



Mixograph Class



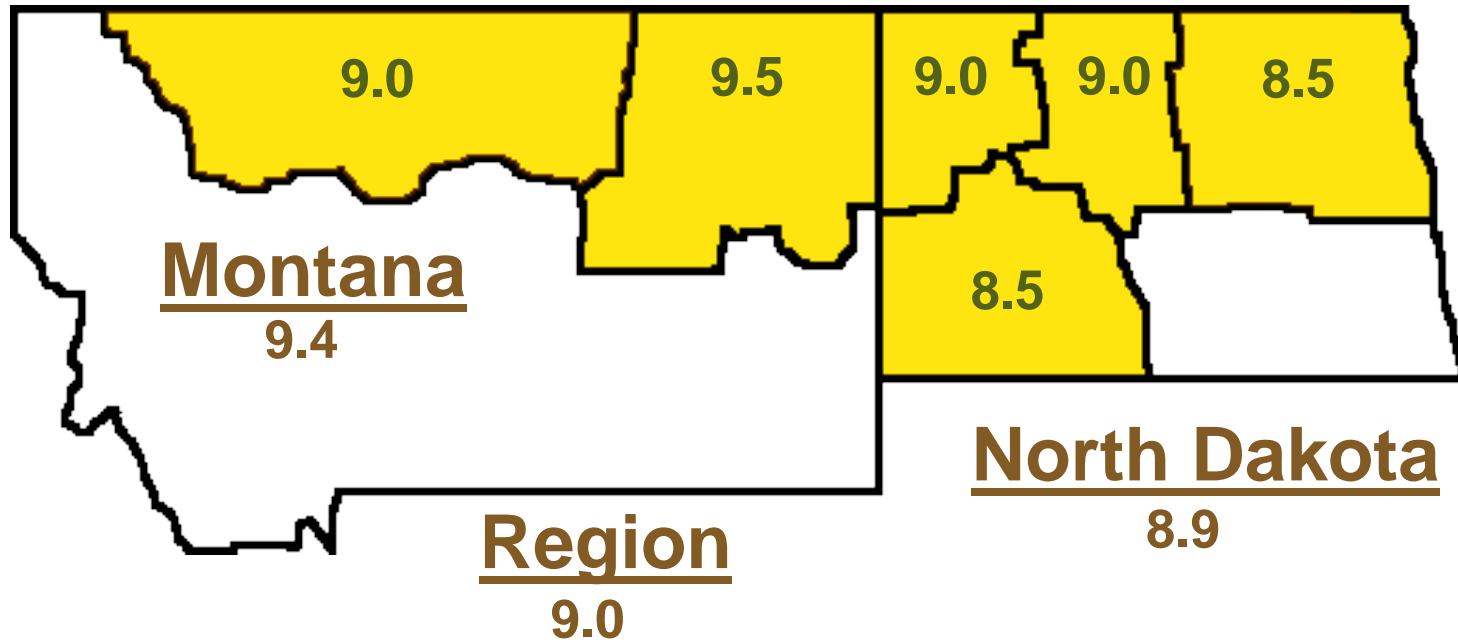
Durum Spaghetti Evaluation

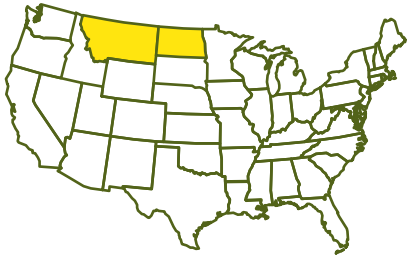
	Northern			Pacific SW	
	2017	2016	5-Year	2017	2016
Color Score*	9.0	8.5	8.9	9.8	8.3
Cooked Weight (gm)	31.0	31.0	31.3	29.1	29.3
Cooking Loss, %	5.9	6.3	6.2	5.0	5.6
Cooked Firmness, g cm	4.9	4.2	4.4	5.5	6.4

*Scale 1-12

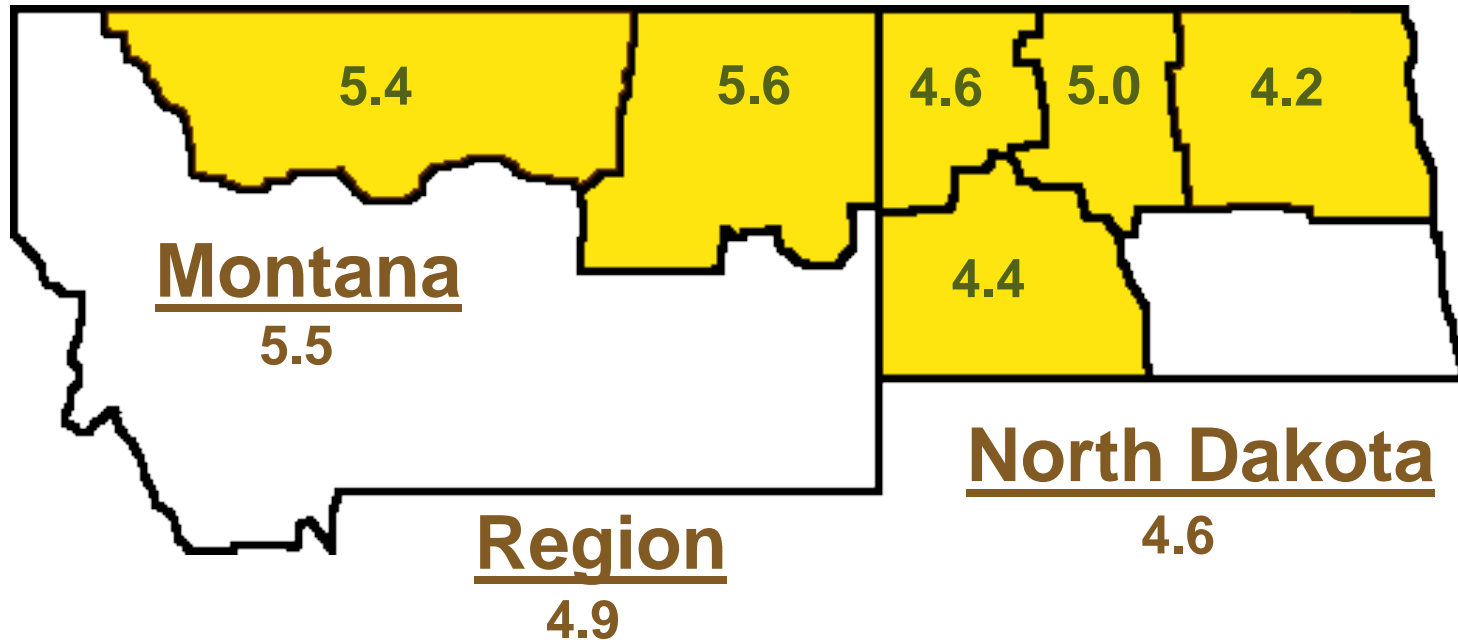


Northern Durum Pasta Color Score by Region (scale 1-12)





Northern Durum Pasta Cooked Firmness by Region (g cm)



Durum Wheat Summary

Grade: Average grade No. 1 Hard Amber Durum

Vitreous kernel level: Average 88% HVAC with 45% of samples having levels of **90% or higher**.

Kernel protein content (12% m.b.): Higher than 2016 and 5-yr average at 14.5%.

DON: Due to limited disease pressure, average level is 0.04 ppm, well below from 2016 levels.

Pasta cooking quality: Improved over 2016 and 5-yr with lower cooking loss, higher cooked firmness, and higher color scores.



Durum Wheat Summary

- excellent grading
- strong protein levels,
- overall high vitreous kernel levels,
- higher semolina extraction and
- improved mixing and pasta quality characteristics.

With **reduced supply** and **isolated areas with lower vitreous** kernel levels, lighter thousand kernel weights and some DON detections, buyers should always remain diligent in their contract specifications.



Thank you for your attention

This survey was supported by

**Arizona Research and Promotion Council
California Wheat Commission
Montana Wheat and Barley Committee
North Dakota Wheat Commission
Plant Science Department, NDSU
U.S. Wheat Associates**

