

# Protein Content of North Dakota Wheat in 1950

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Because protein content of wheat is highly related to baking quality it is of general interest in each crop season. Substantial premiums are usually paid for wheat higher than average in protein content, especially when the average is below normal. For this reason this department obtained data from the 1950 wheat crop in

**Table I. PROTEIN TESTS MADE BY TRI-STATE LABORATORIES, GRAND FORKS, N. D., ON CARLOAD SAMPLES OF HARD RED SPRING WHEAT GROWN IN NORTH DAKOTA—1950 CROP.**

Station	Date Tested	Protein Content <sup>1</sup>
Williams County		%
Hanks	October 17	14.7
Hanks	October 17	14.6
Appam	October 17	14.5
Grenora	October 17	14.5
Grenora	October 17	14.5
Grenora	October 17	14.3
Epping	October 16	14.2
Grenora	October 17	14.0
Williston	October 17	13.7
Ray	October 17	13.6
Wildrose	October 17	13.5
Alamo	October 17	13.4
Alamo	October 17	13.2
Wildrose	October 14	13.2
Williston	October 17	13.1
Alamo	October 17	13.1
Trenton	October 14	13.0
Trenton	October 14	13.0
Tioga	October 14	12.8
Tioga	October 14	12.8
McKenzie County		
Alexander	October 17	13.7
Arnegard	October 17	13.3
Alexander	October 17	13.0
Mountrail County		
Stanley	October 17	13.8
Ross	October 17	13.5
Stanley	October 13	13.0
Stanley	October 13	13.0
Stanley	October 17	12.9
Burke County		
Powers Lake	October 17	13.0
Powers Lake	October 17	12.8
Powers Lake	October 14	12.5
Ward County		
Berthold	October 13	12.5
Berthold	October 13	12.2
Minot	October 13	12.2

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Station	Date Tested	Protein Content <sup>1</sup>
		%
Renville County		
Glenburn	October 17	12.5
Glenburn	October 17	12.5
Bottineau County		
Maxbass	October 14	12.2
Rolette County		
Nanson	October 17	13.5
Grand Forks County		
Northwood	October 13	14.0
Northwood	October 13	13.3
Northwood	October 17	11.7
Grand Forks	October 14	10.5
Nelson County		
Lakota	October 16	12.2
Pekin	October 17	12.0
Walsh County		
Minto	October 14	11.0
Pembina County		
Walhalla	October 17	12.0
Backoo	October 14	11.9
Cavalier	October 17	11.7
Hamilton	October 14	11.7
Hamilton	October 17	11.6
Walhalla	October 17	11.3
Trail County		
Portland	October 14	12.0
Portland	October 17	11.6
Hatton	October 14	10.6

<sup>1</sup>Reported on "as is" moisture basis.

North Dakota, including four samples from western Minnesota, as well as results from the 1949 crop in North Dakota and Montana. Maximum, minimum and mean values only are shown for the latter samples. One group of results, including the 1949 data, were from carlots of grain and were secured through the cooperation of W. G. Coulter of the Tri-State Laboratories in Grand Forks. The other group of results came from samples tested in our own laboratory. These samples were secured through the cooperation of members of the Alpha Gamma Rho fraternity from their respective farms. An attempt was made to cover the state as well as possible by this method.

Table I shows in detail the protein content of carloads of wheat shipped from different points in the state in 1950. While substantial variations in protein content are shown for each county, it is apparent that the western portion of the state is highest and generally the protein tended to decrease in the southeastern portion. Carlots from Grand Forks county showed the greatest range in protein content. This might not be apparent in a more extensive survey including a larger number of samples. There are too few samples in many of the counties to yield much information regarding their protein content.

**Table II. PROTEIN TESTS MADE BY DEPARTMENT OF CEREAL TECHNOLOGY ON FARM SAMPLES GROWN IN NORTH DAKOTA AND MINNESOTA—1950 CROP.**

Sent from:	Variety or Kind of Wheat	Protein content (13.5% m. b.)
Golden Valley County		%
Sentinel Butte	Cadet	14.7
Sentinel Butte	Redman	14.2
Trotters	Hard red spring	14.5
Stark County		
Dickinson	Hard red spring	13.5
McKenzie County		
Charlson	Newthatch	14.3
Williams County		
Hanks	Thatcher	15.2
Hanks	Thatcher	13.5
McHenry County		
Denbigh	Mida	12.4
Denbigh	Durum	10.1
Ramsey County		
Churchs Ferry	Mida	13.3
Churchs Ferry	Stewart	11.3
Pembina County		
Walhalla	Regent	11.4
Grand Forks County		
Northwood	Mida	12.4
Barnes County		
Kathryn	Mida	12.5
Kathryn	Stewart	10.1
Lucca	Hard red spring	11.7
Lucca	Durum	9.1
Cass County		
Amenia	Mida	10.0
Clay County, Minnesota		
Vicinity of Moorhead	Hard red spring	11.7
Vicinity of Moorhead	Durum	10.2
Georgetown	Mida	10.8
Norman County, Minnesota		
Borup	Hard red spring	10.6

Table II shows the results obtained from the samples secured through the cooperation of Alpha Gamma Rho members and tested in our own laboratory. As for the carlots, the protein content was higher in the western portion of the state. More samples would be needed to determine if a north-south trend was present in this group. There are also too few samples to justify statements regarding the effect of wheat variety on protein content. These samples also show marked variability in protein content, with a number being lower in protein content than is usual for the state.

As a general rule the effect of location of growth on protein content is quite marked, as is the influence of the season. Most grain growers realize that the protein content of wheat grown in the same locality will vary from one year to another, so the variability in the present data is probably no more than one would expect.

**Table III. MAXIMUM, MINIMUM AND MEAN PROTEIN CONTENT (%) OF WHEAT IN 1949 and 1950**

	1950 Data			1949 Data	
	Carloads (54) Hard Red Spring	Farmers' Hard red Samples spring (17)	Durum (5)	Carloads hard red spring No. Dak. (159)	Montana (148)
Maximum	14.7	15.2	11.3	14.9	15.9
Minimum	10.5	10.0	9.1	13.7	14.7
Mean	12.9	12.7	10.2	14.4	15.3

Table III provides maximum, minimum and mean values for the protein content of the two groups of hard red spring samples tested for 1950, for five durum samples included in the series tested in this laboratory, and for two series of North Dakota and Montana samples tested by the Tri-State Laboratories in 1949. The North Dakota values for the two years are not strictly comparable because the samples originated in different locations. The number of samples tested in each series is indicated in parenthesis. While the maximum values for North Dakota wheat are approximately the same in the two years, the minimum was much lower in 1950 than in 1949—10.5 to 13.7% respectively. These lower values reduced the mean in 1950 to 12.9% as compared with 14.4% in 1949. The 1949 Montana data are substantially higher, as would be expected from prior knowledge of respective protein contents of wheats from the two states. The group of farmers' samples from 1950 gave results quite similar to those of the carlots. The maximum was 0.5% higher than for the carloads while the minimum was 0.5% lower. For the means there are no significant differences. The durum samples from 1950 are too few in number to justify any conclusions, although they do show that durum wheat tends to be low in protein in 1950.

The data presented in this report indicate that the hard red spring wheat in this state is substantially lower than the average in protein content for 1950. Further, the very limited data obtained for the durums show still lower protein percentages than for the hard red spring wheats.

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#### CHEMICALS INCREASE CORN STAND

By treating sweet corn seed with chemicals, growers can increase germination and eliminate poor stands. Plant pathologists at the Louisiana State University recently completed tests over a period of several years with various chemicals. Where soil was extremely moist and cold, a 72.2 percent increase in germination was recorded in one instance. Among chemicals used in these tests were Arasan, Spergon, Phygon XL, Dow 9 B and Barbak C. All gave significant increases in stand count or germination over the seeds which were not treated.—USDA.