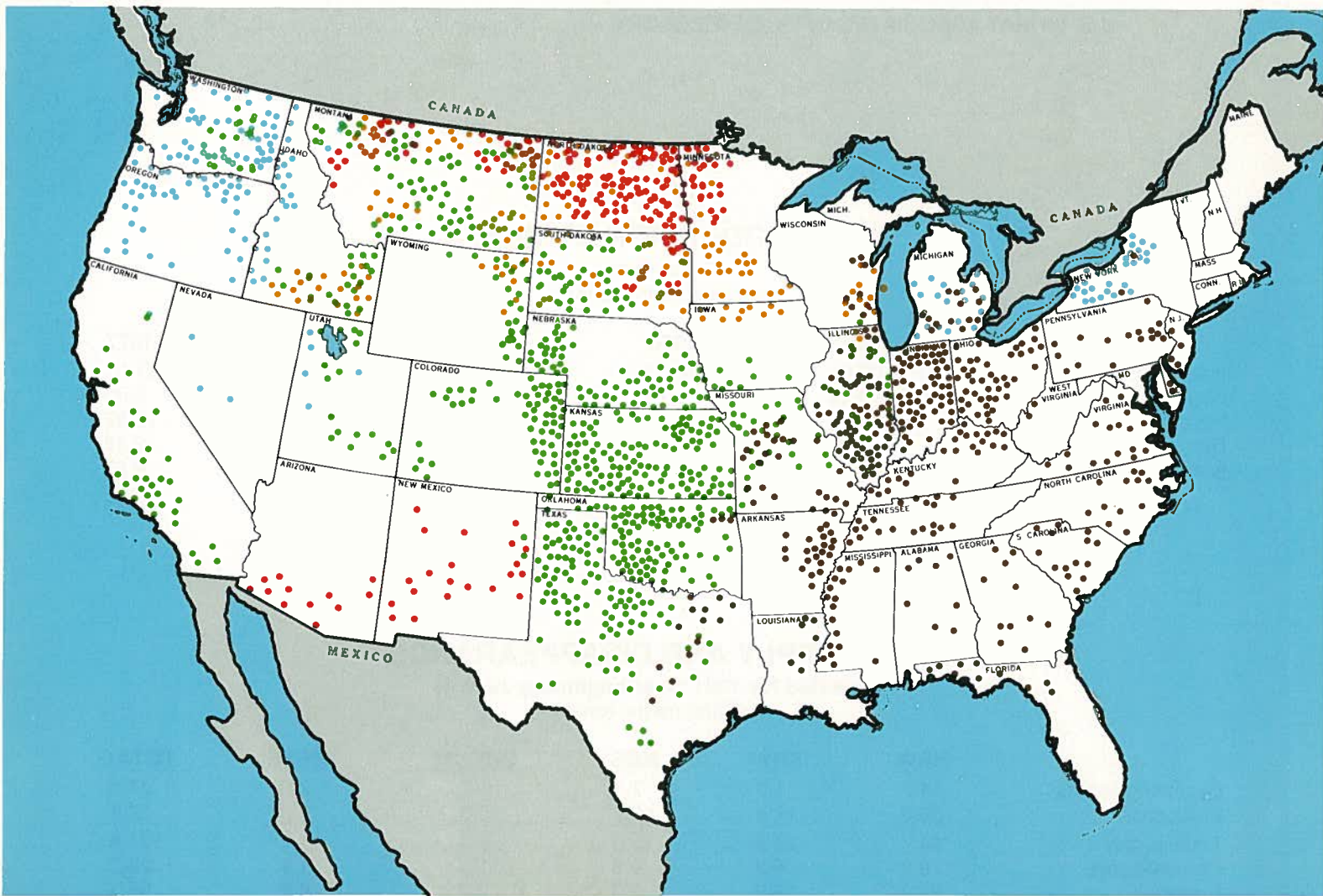




US WHEAT

1981 CROP QUALITY REPORT



HARD RED WINTER

High in protein, strong in gluten. Used for quality yeast breads and hard rolls.

HARD RED SPRING

Highest in protein for use in quality yeast breads and hard rolls.

DURUM

Used for macaroni and spaghetti.

WHITE

Used for quick breads, pastries, crackers and noodles.

SOFT RED WINTER

Used for quick breads, cakes and crackers.

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U. S. PRODUCTION BY CLASS

Crop Year
(Million metric tons)

	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>
Hard Red Winter	30.04	32.25	29.64	22.59	27.01
White (Total White)	9.24	9.19	7.05	6.63	5.88
Hard Red Spring	12.70	8.47	9.88	10.33	10.82
Durum	4.96	2.95	2.90	3.63	2.18
Soft Red Winter	<u>17.92</u>	<u>11.64</u>	<u>8.62</u>	<u>5.14</u>	<u>9.53</u>
TOTAL	74.86	64.50	58.09	48.32	55.42

U. S. SUPPLY AND DISAPPEARANCE

Projected for 1981 (year beginning June 1)
(million metric tons)

	<u>HRW</u>	<u>SRW</u>	<u>HRS</u>	<u>DURUM</u>	<u>WHITE</u>	<u>TOTAL</u>
Beginning stocks	14.7	1.0	7.1	1.7	2.5	27.0
Production	<u>30.0</u>	<u>17.9</u>	<u>12.7</u>	<u>5.0</u>	<u>9.2</u>	<u>74.8</u>
Total supply	44.7	18.9	19.8	6.7	11.7	101.8
Domestic use	9.9	5.2	4.8	1.5	1.9	23.3
Exports	<u>23.1</u>	<u>12.3</u>	<u>6.0</u>	<u>2.2</u>	<u>8.2</u>	<u>51.7</u>
Total use	33.0	17.5	10.8	3.7	10.1	75.0
Ending stocks	11.7	1.4	9.0	3.0	1.6	26.8

- 1) includes flour and wheat used for non-food uses.
- 2) total supply includes imports.
- 3) numbers may not total due to rounding.
- 4) USW estimates.

1981 SOFT RED WINTER WHEAT

The U.S. produced a record Soft Red Winter (SRW) wheat crop in 1981 and the crop is of very good quality. While the moisture content of the crop is above the five year average, the amylograph values of 400 and Falling Number values of 355 indicate there is no excess enzymatic activity. The 1981 SRW flour yields from commercial mills are said to be satisfactory and the flour color and ash content are considered normal. An average flour viscosity of 62 is observed in this crop which is about the same as the past few years. Layer and sponge cake performance is very good and cookie quality is also reported to be very good with an average spread factor of 8.5.

The milling and baking performance of the wheat is very good. Normal flour release, higher protein content, and very good cake and cookie performance characterize the quality of this year's SRW wheat crop. Garlic and sprout damage are not a problem in this year's bumper SRW wheat crop.

FAS:OAA:EC:E.LIEBE: 10/15/81

SOFT RED WINTER WHEAT QUALITY FACTORS

	1981	1980
Production	17.9 mmt	11.6 mmt
Test Weight	59.4 lb/bushel	60.4 lb/bushel
Hectoliter	76.5 kg/hectoliter	77.7 kg/hectoliter
Protein Content	11.0%	10.0%
Moisture Content	12.6%	13.2%

SOFT RED WINTER WHEAT FOR MAJOR PRODUCING STATES

Crop Year
(million metric tons)

	1981	1980	1979	1978
Missouri	3.07	2.42	1.92	0.77
Illinois	2.48	2.16	1.52	0.96
Ohio	1.87	1.76	1.72	1.19
Arkansas	1.84	0.87	—	—
Indiana	1.69	1.47	1.21	0.86
Georgia	1.17	0.57	0.15	0.11
Michigan	1.05	1.01	0.91	0.49
Tennessee	1.02	0.47	0.27	0.21
8 State Total	14.19	10.73	7.70	4.59
Total SRW Production	17.92	11.64	8.62	5.14

USDA Crop Production 10/9/81

1981 HARD RED WINTER WHEAT

Good gluten quality and very good baking performance characterize the 1981 Hard Red Winter (HRW) wheat harvest. The average test weight of this year's crop is slightly lower than last year, but flour yield is better on test weight basis. Despite some increase in moisture content of this year's HRW crop, no undesirable activity is apparent as the falling number averaged 385 units, an indication of sound grain. Last year's value was lower at 338 units. This year's increased sedimentation value reflects a higher protein content and a generally improved gluten strength.

The milling performance of this year's crop is very good. Flour yield averages 72.2 percent and flour color is mostly bright creamy, similar to that produced from last year's crop. Mixing strength of the 1981 wheat flour is mostly normal, and about the same as last year. The baking performance of the HRW is generally rated very good, reflecting an improved gluten quality and quantity of this crop. The overall evaluation of very good describes the milling, dough performance and baking characteristics of the 1981 HRW wheat crop. All quality factors considered, the U.S. has harvested another excellent Hard Red Winter wheat crop.

FAS:OAA:EC:E.LIEBE: 10/15/81

HARD RED WINTER WHEAT FOR MAJOR PRODUCING STATES

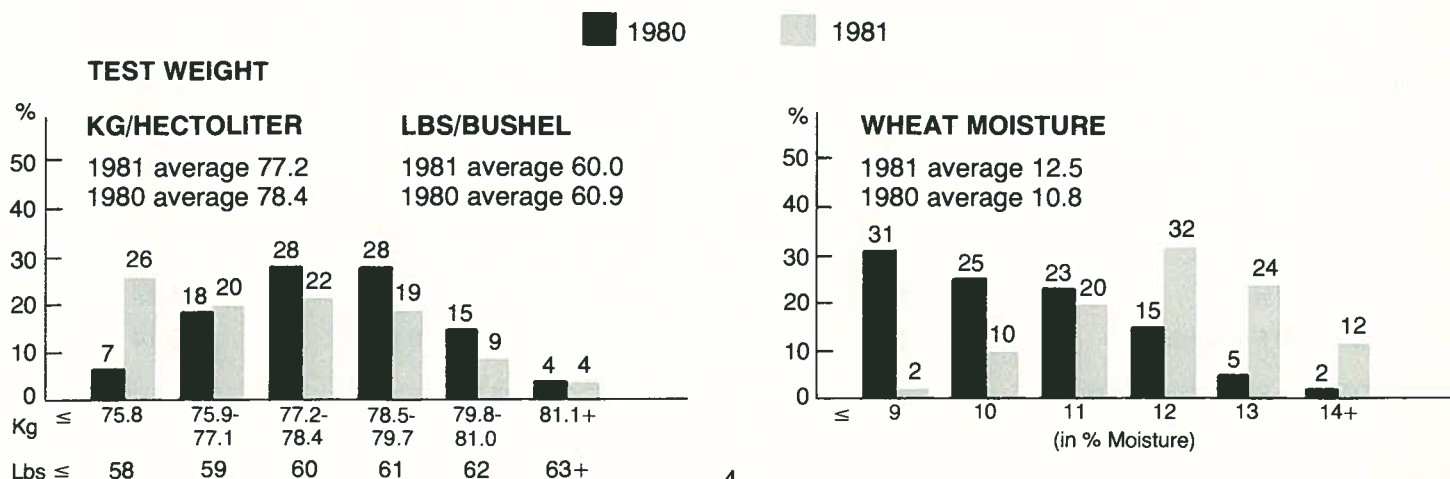
Crop Year
(million metric tons)

	1981	1980	1979	1978
Kansas	8.30	11.43	11.17	8.33
Oklahoma	4.70	5.31	5.89	3.97
Texas	4.99	3.54	3.76	1.47
Nebraska	2.82	3.05	2.36	2.22
Colorado	2.24	2.92	1.84	1.50
Montana	2.45	1.49	1.56	2.28
South Dakota	0.70	0.57	0.28	0.50
Wyoming	0.20	0.22	0.16	0.19
8 State Total	26.40	28.53	27.02	20.46
Total HRW Production	30.04	32.25	29.64	22.59

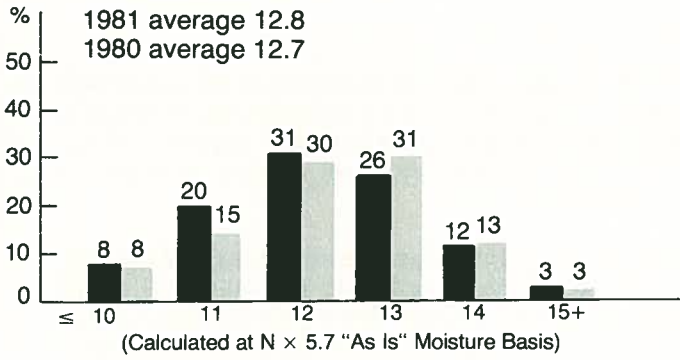
*USDA Crop Production Estimate 10/9/81

GRADING AND QUALITY FACTORS

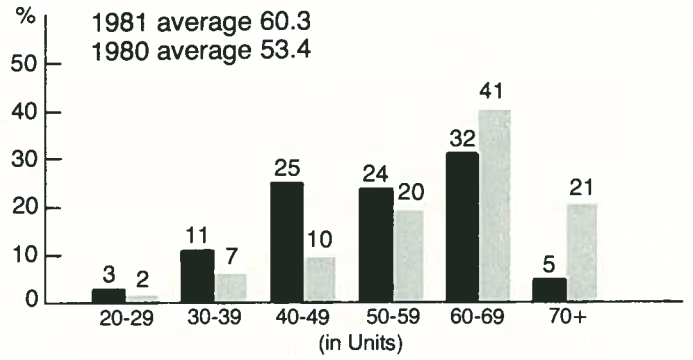
The laboratory analyses below are compiled by Doty Laboratories, Kansas City, Missouri, and compare the grading and quality factors of the 1981 crop to those of the 1980 crop produced in the eight (8) major Hard Red Winter states.



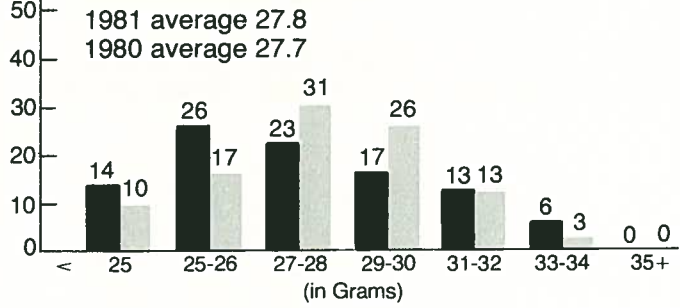
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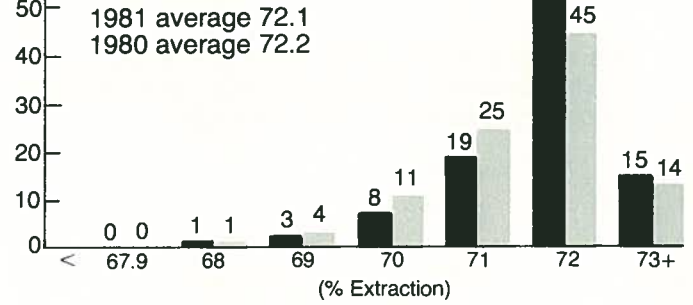
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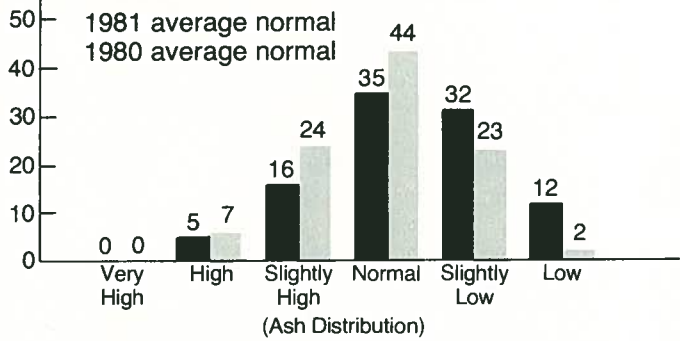
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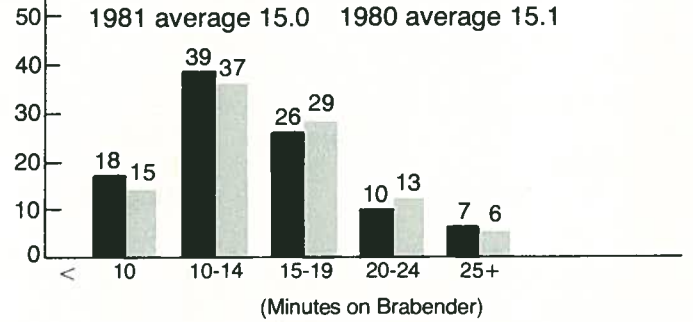
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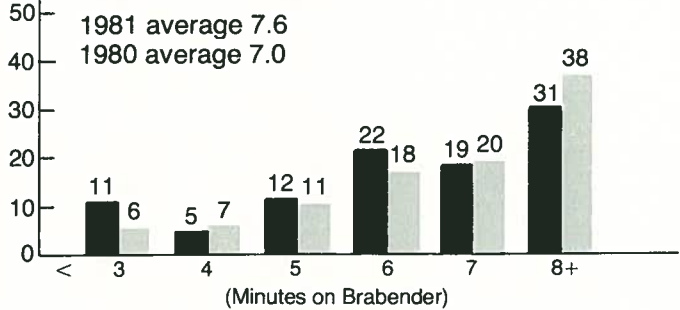
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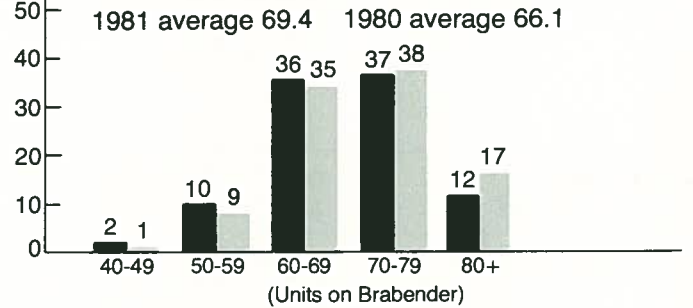
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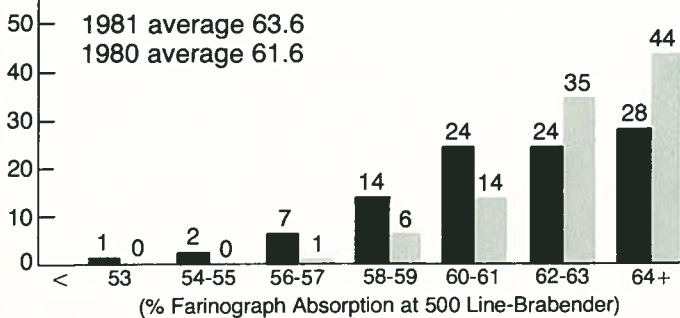
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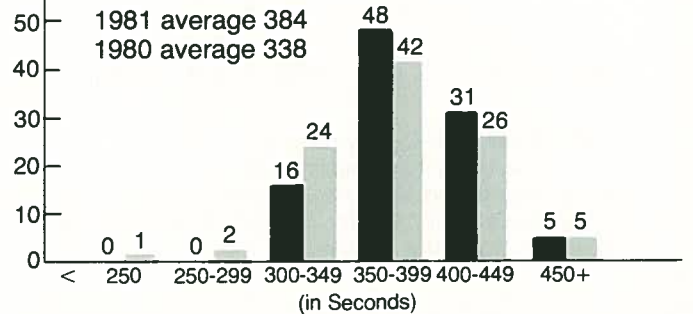
FARINOGRAPH VALORIMETER



FARINOGRAPH ABSORPTION



HAGBERG (FALLING) NUMBER



1981 PACIFIC NOF

Extremely favorable growing conditions coupled with warm dry harvesting weather have resulted in a new record soft white wheat harvest in the Pacific Northwest. For the second year in a row, the crop benefited greatly from good weather both in quantity and quality. No problems in milling or end product usage can be foreseen. Supplies of Club wheat are adequate to meet the usual demand for the Western White sub-class, however if major increases in demand for Western White occur, Club wheat supplies could be diminished.

Flour color of both Soft White and Club is judged white and excellent. Flour yield in this year's crop averaged 72.4%, up slightly from 71.5% in 1980. The crop average test weight of 61 lbs./bushel is equivalent to last year while wheat protein level is down somewhat from 1980 at 9.5% for Soft White and 8.4% for Club. Overall, performance of this year's Soft White, Club and Western White classes should be equivalent or superior to the previous year's crop in nearly every factor. Although no unleaven bread scoring has been done on samples of the crop, informal tests have shown excellent performance from the 1981 crop.

This report compiled from the Wheat Quality Survey Final Report of the Pacific Northwest Grain Standards and Quality Committee October 2, 1981, and Milling and Baking Tests performed by The Western Wheat Quality Laboratory, USDA, Pullman, Washington.

GRADING AND

Region	Moisture %	Falling Numbers (Hagberg)	Test Weight (lbs/bu)	Wheat Protein %	Flour Yield %	Flour Ash %	I P
Idaho	9.6	372	61.1	9.6	72.9	.43	
Oregon	10.1	327	61.4	9.3	73.1	.39	
Washington	8.9	352	60.9	9.5	71.8	.41	
CROP AVG.	9.4	349	61.0	9.5	72.4	.41	
Oregon	9.4	301	60.2	7.3	73.0	.36	
Washington	8.8	326	60.4	8.7	73.2	.38	
CROP AVG.	8.9	321	60.4	8.4	73.2	.38	
							Wester
CROP AVG.	9.35	346	60.9	9.4	72.5	.41	

Source: PNW Crop Quality Survey
Western Wheat Quality Lab.

¹Finney, Morris and Yamazaki, *Cereal Chemistry*, Volume 27, 42-49, 1950.

²S. Nagao, *Cereal Chemistry*, Volume 53, 988-997, 1976.

³Japanese Style Udon Noodle.

NEST WHITE WHEAT

SOFT WHITE WHEAT FOR MAJOR PRODUCING STATES

Crop Year
(million metric tons)

		1981		1980		1979	
		SW	Club	SW	Club	SW	Club
Washington	SW	3.70		3.42		2.63	
	Club		.65		.34		.27
Oregon	SW	2.00		1.80		1.29	
	Club		.21		.07		.05
Idaho	SW	1.41		2.02		1.64	
3 State Totals		7.11	.86	7.21	.42	5.56	.32
3 State Total							
White Wheat Production		7.97		7.63		5.88	
Total U.S. White							
Wheat Production		9.24		9.19		7.05	

(Totals may not add due to rounding)

QUALITY FACTORS

White

	Farinograph Absorption %	Viscosity Degrees (McMichael units)	Cookie Diameter ¹	Sponge Cake Volume (cc) ¹	Sponge Cake Score	Noodle Yield % ^{2,3}	Noodle Score
	54.8	43	9.0	1300	85.3	343	70
	53.7	39	8.8	1225	79.5	348	73
	54.4	50	8.8	1235	79.2	340	75
	54.3	46	8.8	1245	80.5	343	73

b

	51.3	33	9.0	1270	80.0	340	74
	51.5	39	9.1	1285	83.0	353	76
	51.5	38	9.1	1280	82.0	350	76

White Wheat

	54.0	45	8.8	1250	81.0	344	73
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1981 HARD RED SPRING WHEAT

The 1981 Hard Red Spring (HRS) wheat crop has very good milling and baking properties. These fine qualities are reflective of the generally favorable weather conditions that supported the crop's development. Normal harvesting weather provided the wheat with a most desirable low enzymatic activity. This is evidenced by the wheat's low diastatic activity and high falling number values. The average protein content of the HRS wheat is 14.4 percent—slightly higher than last year. The excellent gluten strength of HRS is also reflected by the higher sedimentation value of 67 found in this year's crop. Flour yield of this year's HRS crop averages a credible 72 percent extraction and the flour is a very acceptable creamy color.

The average loaf volume developed from the 1981 HRS crop is very good. The texture of the bread is identified as silky good while its crumb grain characteristics are close even.

In general the milling, dough handling and baking performance of the 1981 HRS wheat crop is very good. It is a sound wheat that has good gluten quality and quantity. The low enzymatic activity in the crop enables the flour to perform normally and will enhance the development of good loaf volumes. The bakers will appreciate the strength of the gluten, the fine water absorption properties of the dough and the very good baking performance of this year's HRS wheat flour.

FAS:OAA:EC:E.LIEBE: 10/15/81

HARD RED SPRING WHEAT FOR MAJOR PRODUCING STATES

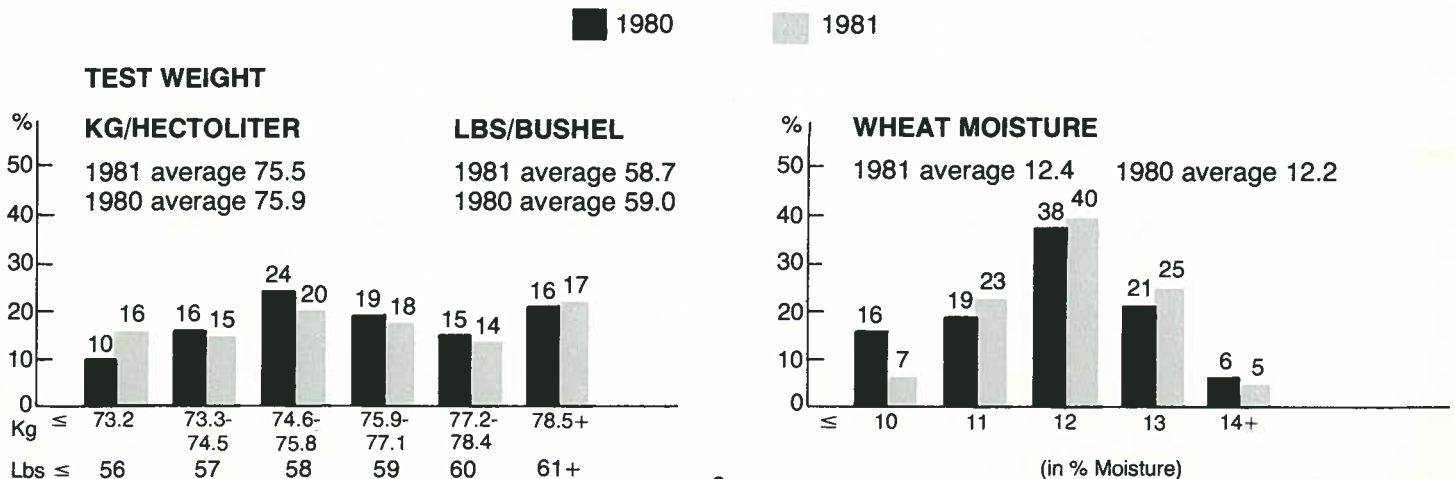
Crop Year
(million metric tons)

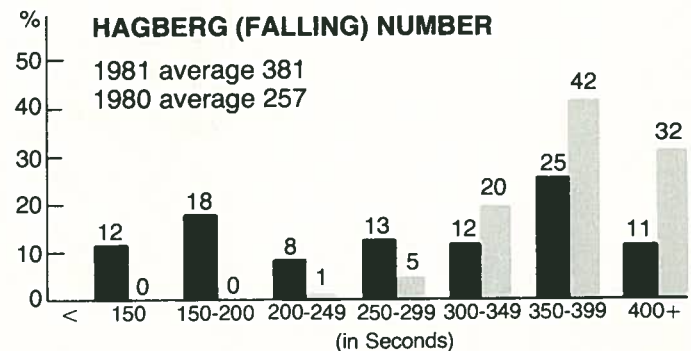
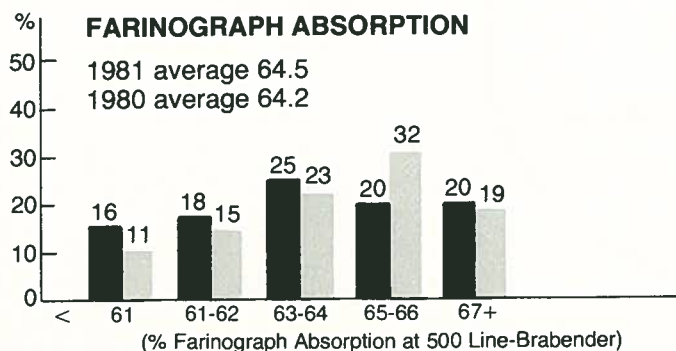
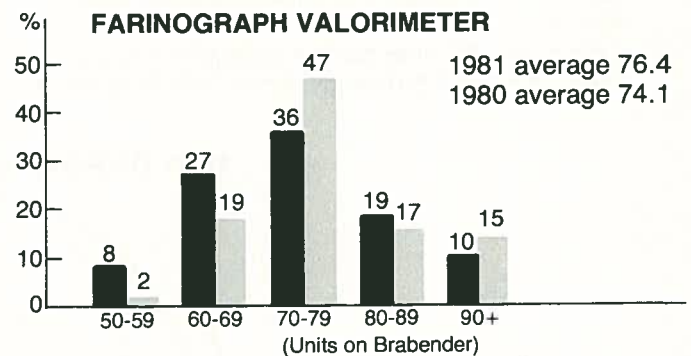
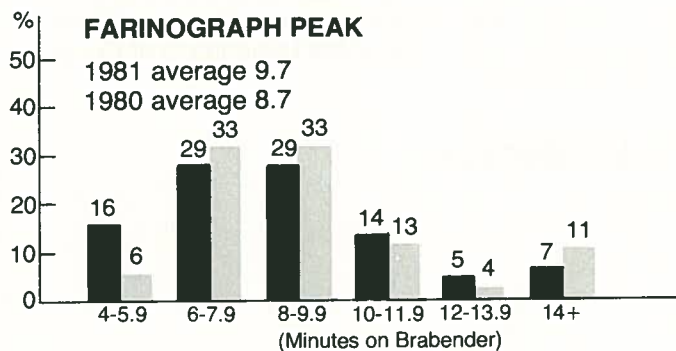
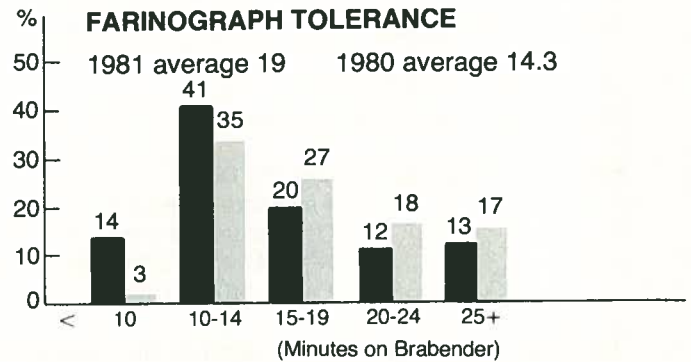
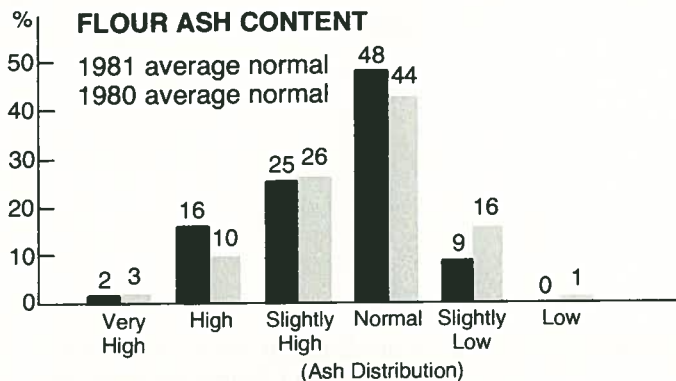
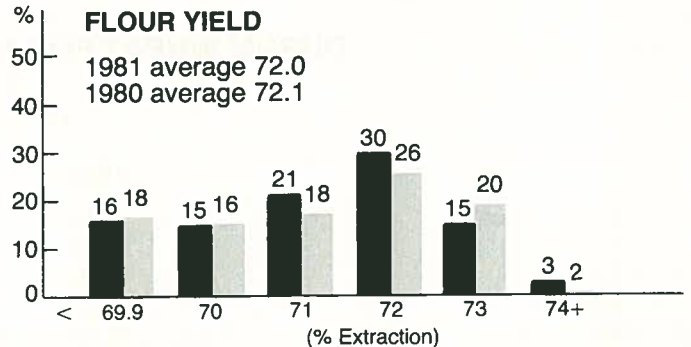
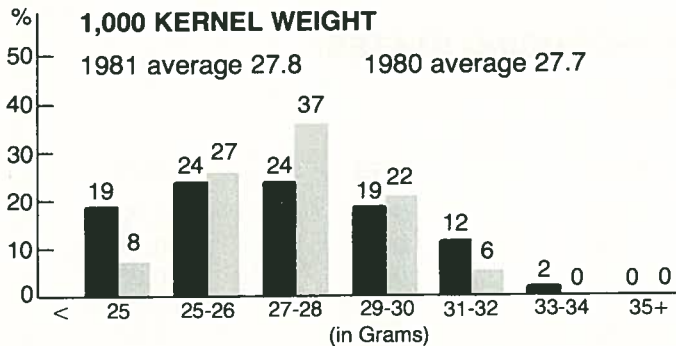
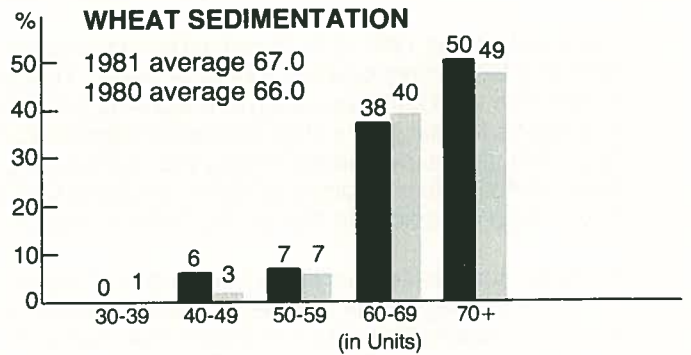
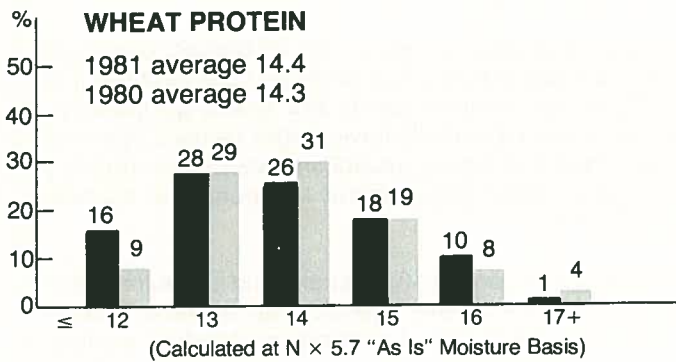
	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>
North Dakota	5.49	2.87	4.49	4.90
Minnesota	3.68	2.64	2.33	2.39
Montana	1.95	1.56	1.42	1.46
South Dakota	1.29	1.02	1.25	1.20
4 State Total	12.41	8.09	9.49	9.95
Total HRS Production	12.70	8.47	9.88	10.33

*USDA Crop Production 10/9/81

GRADING AND QUALITY FACTORS

Laboratory analyses below were compiled by Doty Laboratories, Kansas City, Missouri, and compare the grading factors of the 1981 crop to those of the 1980 crop produced in the four (4) major Hard Red Spring States.





1981 DURUM WHEAT

The quality of the 1981 U.S. Durum crop is quite good with 45 percent grading U.S. No. 1 HAD, 29 percent grading 2 HAD and 82 percent grading 3 HAD or better. Test weight at 60.4 lbs. per bushel (77.7 kilograms per hectoliter) is higher than the 1980 crop which averaged 59.3 lbs. per bushel. Thousand kernel weight is 39.7 grams compared to 42.0 grams for last year's crop. Kernel size distribution is smaller (8 percentage points fewer larger kernels) than last year. Although experimental milling was satisfactory, commercial millers at higher extraction levels have reported lower semolina extractions and higher semolina speck counts this year. Higher wheat ash at 1.69 percent in the new crop is also an indication that milling potential could be down somewhat.

Average moisture content of the new crop is 12.3 percent. Protein content is good at 13.7 percent and is manifested in the good cooking quality obtained on composite samples. Falling number values averaged 351, up significantly from last year. Spaghetti quality is excellent this year with a very bright yellow product and cooking quality which exhibits low cooking loss and high cooked firmness.

DURUM WHEAT FOR MAJOR PRODUCING STATES

Crop Year
(million metric tons)

	1981	1980	1979	1978
North Dakota	3.51	1.99	2.30	2.78
Arizona	0.44	0.34	0.14	0.17
California	0.40	0.21	0.10	0.23
Montana	0.32	0.21	0.19	0.24
Minnesota	0.14	0.09	0.08	0.10
South Dakota	0.14	0.11	0.10	0.10
Total U.S. Production	4.96	2.95	2.90	3.63

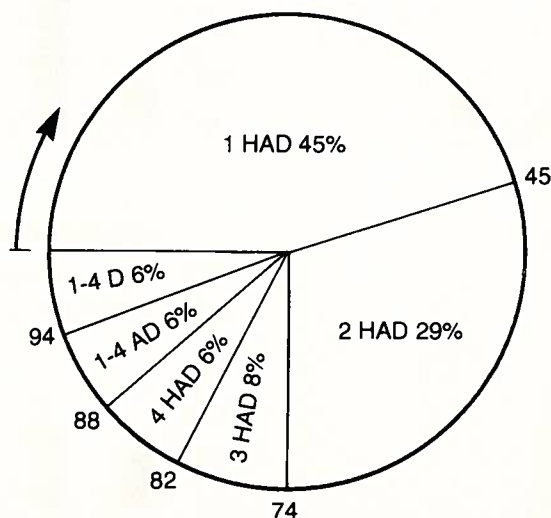
USDA Crop Production 10/9/81

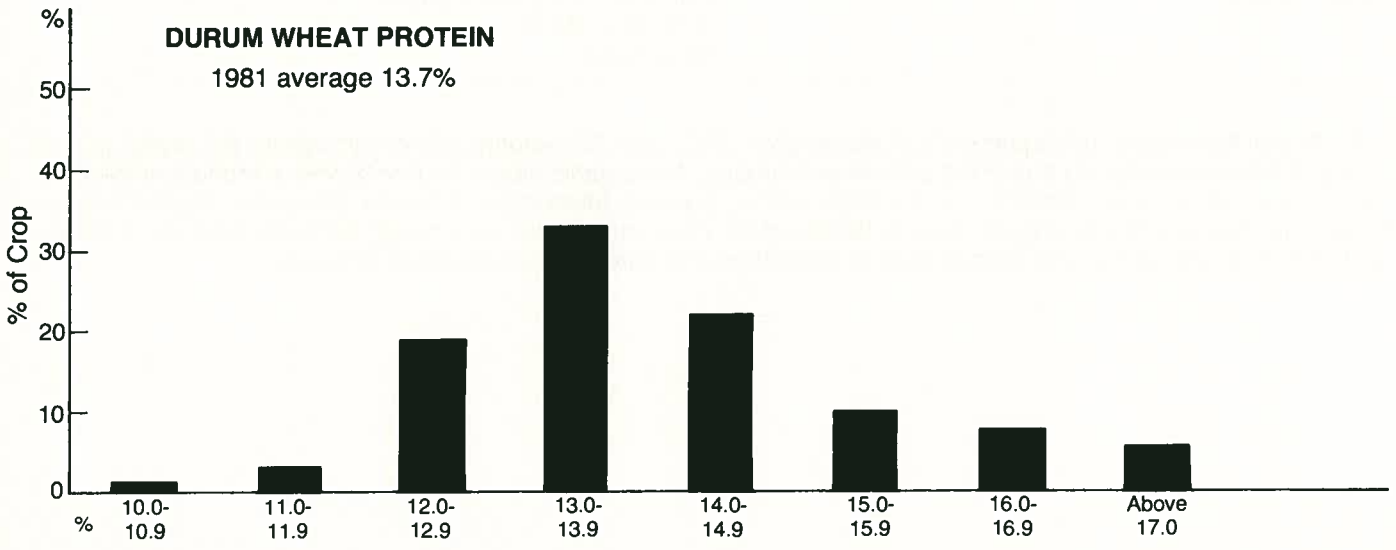
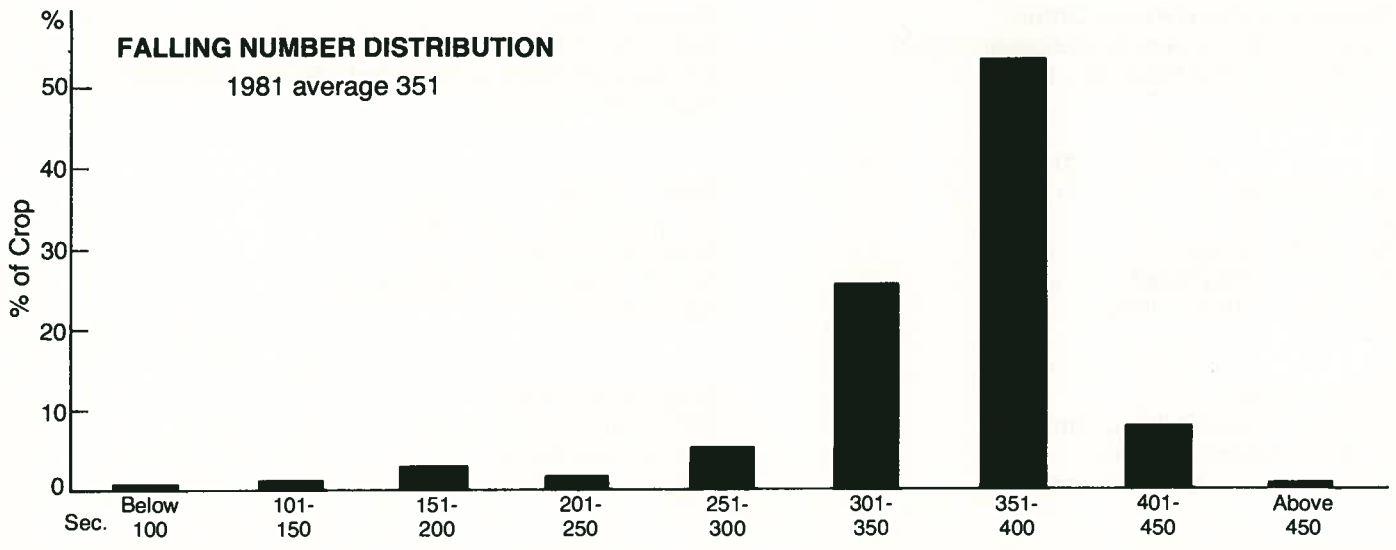
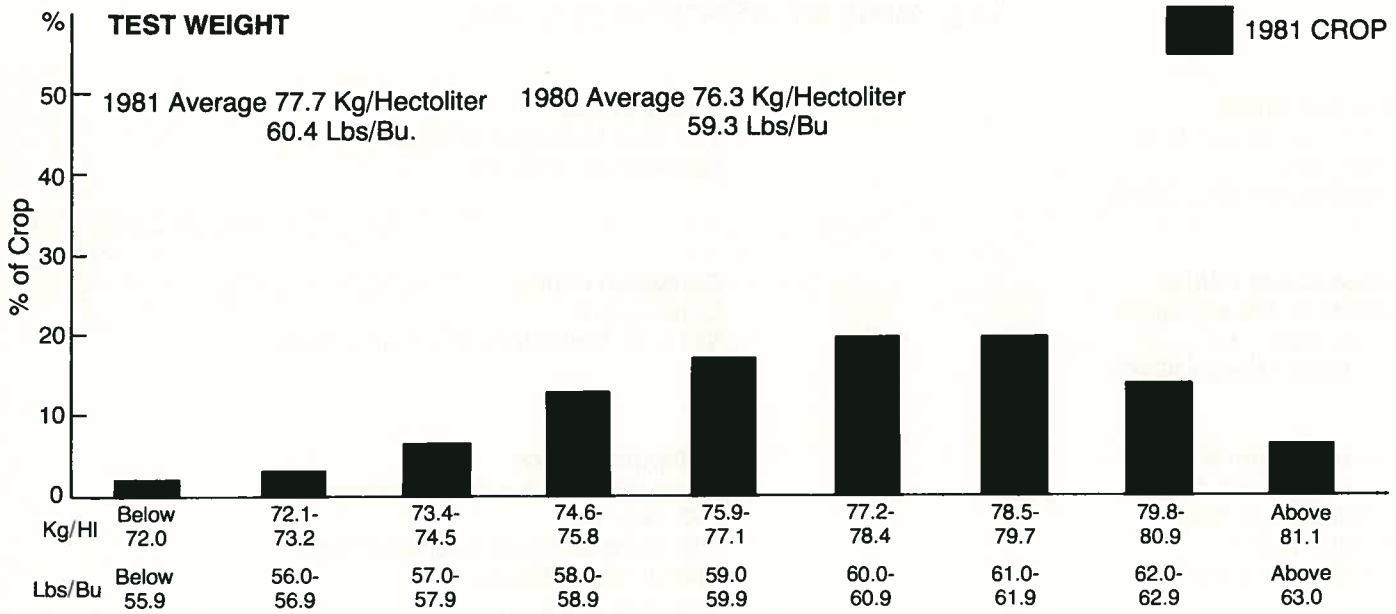
Totals may not add due to rounding.

Report prepared by: Joel W. Dick
Associate Professor
Department of Cereal Chemistry and Technology
North Dakota State University
Fargo, ND 58105

This report extracted from the regional (Minnesota, Montana, North Dakota and South Dakota) 1981 Durum crop survey report funded by the North Dakota State Wheat Commission, the South Dakota Wheat Commission and the Minnesota Wheat Research and Promotion Council. Montana samples were supplied by the Montana Wheat Committee. All other sample collection and quality testing were performed by the staff of the Department of Cereal Chemistry and Technology, North Dakota State University, Fargo, ND 58105.

1981 DURUM GRADE DISTRIBUTION





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