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AGRICULTURAL ECONOMICS REPORT No. 33 MARCH 1964

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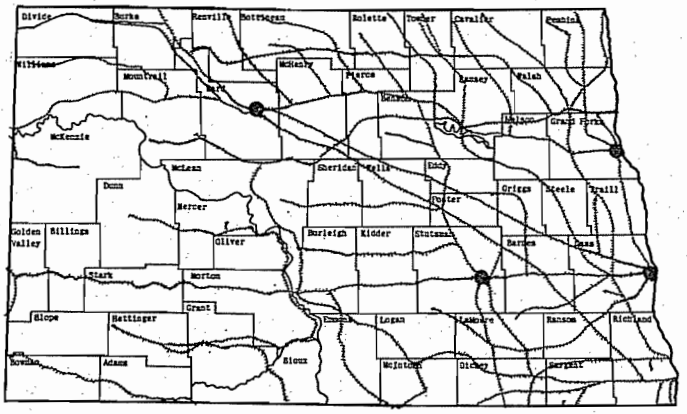
NORTH DAKOTA RAILROADS



● GRAIN INSPECTION POINTS

Market Factors of North Dakota

HARD RED SPRING WHEAT

1963 shipments

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FOREWORD

The intention of this publication is to illustrate the continued high quality of Hard Red Spring wheat shipments leaving North Dakota origins. This information has only been made possible through the continued support of the North Dakota State Wheat Commission.

This study was made possible by a grant provided by the North Dakota State Wheat Commission to the Department of Agricultural Economics for a study of the "Factors Affecting the Marketing of North Dakota Wheat." Previous releases from this study are listed below:

1. Wheat Statistics for North Dakota, Agricultural Economics Report No. 20, August 1961.

2. Protein Content of North Dakota Wheat, North Dakota Farm Research, March-April 1962.

3. Market Factors of North Dakota Hard Red Spring Wheat, Agricultural Economics Report No. 21, April 1962.

4. North Dakota Hard Red Spring Wheat Shipments, North Dakota Farm Research, September-October 1962.

5. Durum Market Factors, 1962, North Dakota Farm Research, January-February 1963.

6. Quality Factors of North Dakota Durum Shipments, 1960, 1961, 1962, Agricultural Economics Report No. 26, January 1963.

7. Durum Data, Agricultural Economics Report No. 27, February 1963.

8. Market Factors of North Dakota Hard Red Spring Wheat, 1962 Shipments, Agricultural Economics Report No. 28, February 1963.

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TABLE OF CONTENTS

	Page
Introduction	1
1963 Hard Red Spring Wheat Shipment Survey	2
Procedure	2
Findings	3
Protein Content	3
Test Weight	6
Moisture Content	7
Other Grade Factors	8
Damaged Kernels	
Foreign Material	
Wheat of Other Classes	
Shrunken and Broken Kernels	
Stones	
Dockage	8
Appendix A: Official Grade Standards for Hard Red Spring Wheat	10
Appendix B: Additional Data on Hard Red Spring Shipments	11

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MARKET FACTORS OF 1963 NORTH DAKOTA HARD RED SPRING WHEAT SHIPMENTS

Clinton D. Kurtz and Fred R. Taylor[1]

Farming today in North Dakota has become an area of rapidly increasing change. Farm size and capital investment have largely increased through the increased use of technology. This competitive nature has brought about increased wheat production on fewer acres along with increased quality through better seed varieties, timeliness of planting and harvesting, better storage and transportation, and greatly improved planting and harvesting innovations.

Progress from this change has brought about a very efficient producer of wheat. Farm size had increased from 452 acres in 1933 to 834 acres in 1964 with farm land remaining about constant. Wheat acreage has decreased due to wheat allotments since 1954. Planted wheat acreage has decreased from an average of 10,281,900 acres in 1943-1954 to some 5,901,000 acres in 1963. Along with this decline in acreage planted, yields per acre have increased. Hard Red Spring wheat yields in North Dakota have increased from 13.3 bushels in 1944-1953 to an average of 17 bushels in 1954-1960. In 1963, 82,594,000 bushels of Hard Red Spring wheat were produced from 4,029,000 acres, giving an average yield per harvested acre of 20.5 bushels, the third largest yield in history for the state of North Dakota.[2]

When marketing Hard Red Spring wheat, the principle involved is to market the wheat to its various uses in proportion to the relative need for this particular product. It is the pricing mechanism created at the "market place" which performs this role. The basic indicator of this price is the grade within each class of wheat. It provides a common language between buyers and sellers, providing added knowledge and confidence of the quality of product being bought and sold.

Protein, which is primarily a function of climate, is also a factor determining price. It is not a grading factor, but is quoted and priced separately as a premium to the basic price for each individual grade of wheat.

The individual grading factors within each grade of wheat are also of interest. These grading factors, such as damaged kernels, foreign material, wheats of other classes, other grains, shrunken and broken kernels and other minor factors, usually are not included on the grain inspection certificate unless that particular factor or factors determines the initial grade.

---

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[2]North Dakota Agricultural Statistics, Taylor, Engelking, and Heltemes, Department of Agricultural Economics, North Dakota State University and Statistical Reporting Service, United States Department of Agriculture, Fargo, North Dakota.

1963 Hard Red Spring Wheat Shipment Survey

The objective of the report is to give a complete breakdown of all North Dakota Hard Red Spring wheat shipments leaving the state from July 1 through December 31, 1963, by origin and grade for all grading factors including protein. An analysis will be made of the importance of each grading factor in determining each grade.

The survey is expected to be a representative sample of all carlots leaving the sample area enroute to the terminal markets in other states. Data were collected and analyzed in a manner similar to studies done for 1961 and 1962.[3] A comparison is then applicable with previous publications in establishing trends and consistencies of the various market factors by origin and grade.

Procedure

Similar to the 1961 and 1962 surveys, a 10 per cent sample of all carlot inspection reports leaving North Dakota origins was taken. The sample period was from July 1, 1963, through December 31, 1963, with 1,124 carlot samples in the total sample. A breakdown by hold point is found in Table 1. Because of the small number of samples inspected at the Fargo inspection point, all Hard Red Spring wheat samples inspected were included in the sample.

TABLE 1. NUMBER OF CARLOTS INCLUDED IN 1963, 10 PER CENT SAMPLE, BY GRADE AND INSPECTION CENTER, AND 1963, 1962 AND 1961 PERCENTAGE GRADE DISTRIBUTION

Grade	Inspection Center				STATE TOTAL	1963 Per Cent	1962 Per Cent	1961 Per Cent
	Minot	James-town	Grand Forks	Fargo				
	carlots							
No. 1 Heavy DNS	139	65	11	4	219	19.5	42.3	34.0
No. 1 DNS	146	97	69	14	326	29.0	36.2	44.6
No. 2 DNS	54	49	47	18	168	14.9	11.2	12.3
No. 3 DNS	62	109	81	39	291	25.9	7.1	6.6
No. 4 DNS	15	46	29	12	102	9.1	1.9	1.0
No. 5 DNS	4	6	4	2	16	1.4	0.2	0.1
Sam. G. DNS	--	1	1	--	2	0.2	0.5	1.3
No. 1 Heavy NS	--	--	--	--	--	----	0.2	----
No. 1 NS	--	--	--	--	--	----	0.4	0.1
ALL GRADES	420	373	242	89	1,124	100.0	100.0	100.0

[3] Market Factors of North Dakota Hard Red Spring Wheat, Agricultural Economics Report No. 21, April 1962,

Market Factors of North Dakota Hard Red Spring Wheat, 1962 Shipments, Agricultural Economics Report No. 28, February 1963.

Inspection records from the four inspection points supplied all information relating to the grade of the wheat sample, such as test weight, moisture content, dockage, damaged kernels, foreign material, shrunken and broken kernels, wheat of other classes, and other grains. The protein content for each sample was obtained from the protein laboratories in conjunction with the respective inspection points.

The origin of the carlot samples, by counties, crop reporting district, and inspection point, was taken from the railroad manifests for that day and hold point. The area sampled from each inspection point and the total sample are shown in Figure 1.

Findings

Twelve counties out of the 53 were not included in the total sample area. The railroads that facilitate the movement of wheat from these 12 counties do not normally market the wheat through one of the three North Dakota hold points.

A distribution of carlots sampled in the 1963 sample period by grade and inspection point is found in Table 1. Approximately 63 per cent of all Hard Red Spring wheat in the 1,124 samples graded No. 2 DNS or better, as compared to 90 per cent in 1962 and 91 per cent in 1961. An additional 25.9 per cent graded No. 3 DNS, leaving 10.7 per cent grading No. 4 DNS or less. The modal and median grades were No. 1 DNS and No. 2 DNS, respectively.

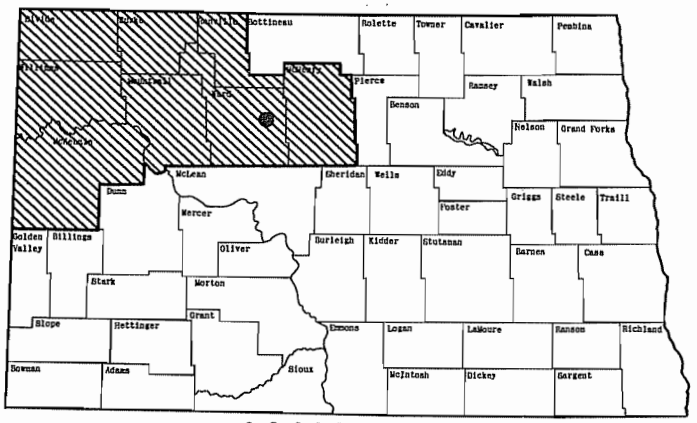
A percentage distribution and number of carlots by grade and crop reporting district are found in Table 2.

Protein Content

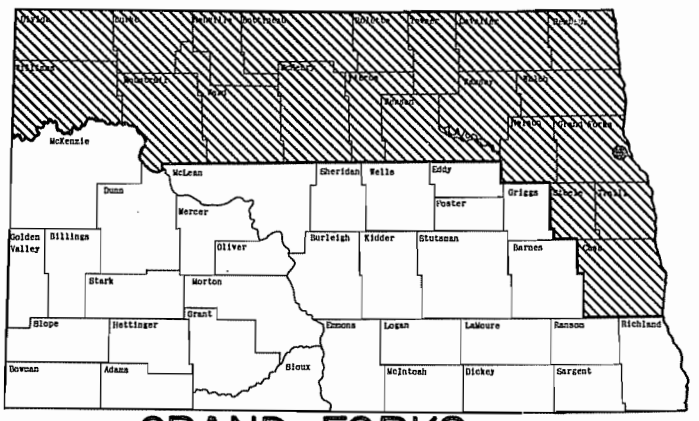
All crop reporting districts included in the sample had a higher protein content than the previous year. The average protein content for the state was 14.7 per cent in 1963 and 14.2 per cent in 1962 (Table 3).

A further analysis of protein content by grade distribution, crop reporting district, and county can be found in the appendix. Protein content of samples ranging from 15.0 to 15.4 per cent comprised 25.8 per cent, or 290 carlots, of the total number of shipments in the sample. Carlots with protein content of 16.0 per cent and more amounted to 6.4 per cent of the sample in 1963 and 8.0 per cent in 1962. The median for the 0.5 per cent ranges found in Appendix Table B-7 was 14.5 to 14.9 per cent versus the 14.0 to 14.4 per cent protein range in 1962.

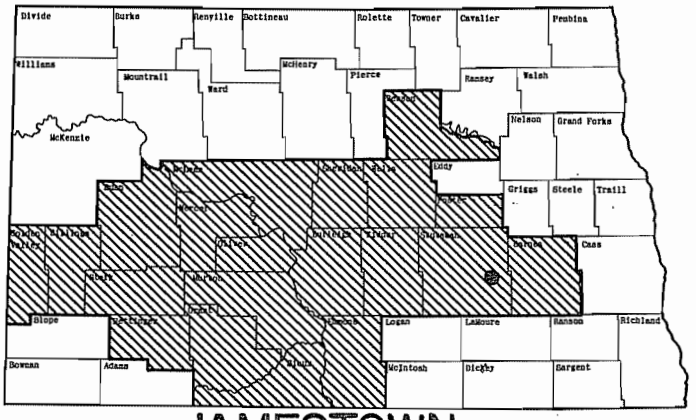
The range and average values for protein content, test weight, and moisture by county and crop reporting districts are indicated in Appendix Table B-1 through B-6.



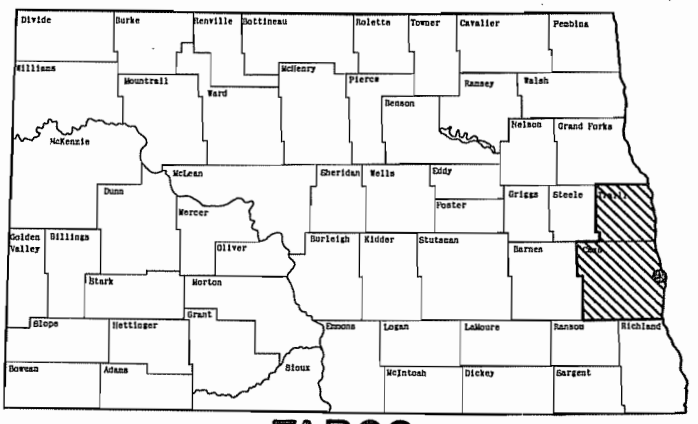
MINOT



GRAND FORKS

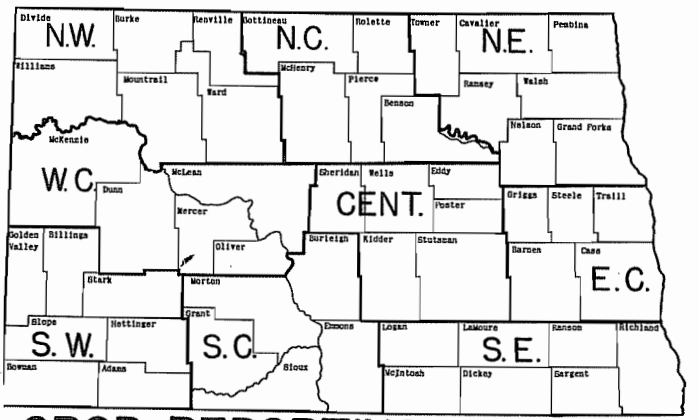


JAMESTOWN



FARGO

TOTAL SAMPLE AREA



CROP REPORTING DISTRICTS

Figure 1. Counties Included in 10 Per Cent Sample of Carlots Inspected at North Dakota Hold Points, Total Sample Area and North Dakota Crop Reporting Districts.

TABLE 2. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOTS INCLUDED IN 10 PER CENT SAMPLE SURVEY, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	Crop Reporting District									STATE TOTAL	Per cent
	South-west	West Cent.	North-west	South Cent.	Cent.	North Cent.	South-east	East Cent.	North-east		
	Number of Carlots										
No. 1 Heavy DNS	8	37	138	9	13	2	--	10	2	219	19.5
No. 1 DNS	48	49	135	7	8	13	--	28	38	326	29.0
No. 2 DNS	17	17	52	11	6	7	--	24	34	168	14.9
No. 3 DNS	15	13	62	55	26	17	--	51	52	291	25.9
No. 4 DNS	4	8	17	8	24	14	--	12	15	102	9.1
No. 5 DNS	--	--	4	--	6	3	--	2	1	16	1.4
Sample Grade DNS	--	--	--	1	--	1	--	--	--	2	0.2
ALL GRADES	92	124	408	91	83	57	--	127	142	1,124	100.0

TABLE 3. AVERAGE AND RANGE OF PROTEIN CONTENT OF CARLOT SAMPLES OF H.R.S. WHEAT SHIPMENTS, BY CROP REPORTING DISTRICT, AND STATE TOTALS FOR 1963, 1962 AND 1961

Crop Reporting District	Total Number of Shipments	Protein Content, Per Cent	
		Average	Range
Southwest	92	15.3	13.5 - 17.0
West Central	124	14.5	10.8 - 16.9
Northwest	408	15.0	13.2 - 17.0
South Central	91	14.7	13.1 - 16.2
Central	83	14.8	13.2 - 16.7
North Central	57	14.8	13.4 - 16.6
Southeast	---	----	---- ----
East Central	127	14.0	11.5 - 15.7
Northeast	142	14.0	12.1 - 16.2
NORTH DAKOTA, 1963	1,124	14.7	10.8 - 17.0
NORTH DAKOTA, 1962	1,159	14.2	10.7 - 18.4
NORTH DAKOTA, 1961	778	15.1	11.8 - 18.2

Test Weight

Test weight for all of the carlots was considerably lower than 1962 or 1961. The average test weight for all shipments in 1963 was 57.7 pounds, as compared to 59.3 pounds in 1962 (Table 4). Higher test weights were found in the western part of the state with the West Central crop reporting district having the highest average test weight of 58.7 pounds. The lowest average test weight of 56.1 pounds was found in the Central district.

Appendix Tables B-25, 26, and 27 indicate that test weight is the predominant market factor in determining the grade for all crop reporting districts for 1963. Test weight determined the grade 96.5 per cent of the time for all grades No. 1 DNS and less. Table 6 illustrates the importance of the specified grading factors by grade and a percentage distribution of the individual grading factors determining the grade for all grades for the total number of carlot shipments.

TABLE 4. AVERAGE AND RANGE OF BUSHEL WEIGHTS OF CARLOT SAMPLES OF H.R.S. WHEAT SHIPMENTS, BY CROP REPORTING DISTRICT, AND STATE TOTALS FOR 1963, 1962, AND 1961

Crop Reporting District	Total Number of Shipments	Bushel Weight, Pounds	
		Average	Range
Southwest	92	58.1	54.2 - 61.3
West Central	124	58.7	53.2 - 62.8
Northwest	408	58.6	51.8 - 63.0
South Central	91	56.6	53.3 - 61.8
Central	83	56.1	51.0 - 61.8
North Central	57	56.3	51.6 - 60.2
Southeast	---	----	---- ----
East Central	127	57.1	53.0 - 61.1
Northeast	142	56.8	52.0 - 60.7
NORTH DAKOTA, 1963	1,124	57.7	51.0 - 63.0
NORTH DAKOTA, 1962	1,159	59.3	51.2 - 63.2
NORTH DAKOTA, 1961	778	59.1	52.9 - 62.0

Moisture Content

The average moisture content for the 10 per cent sample was 11.4 per cent, ranging from 8.7 to 14.5 (Table 5). This was a 0.7 per cent decrease from 1962. Crop reporting districts having the lowest moisture content were the Northwest and East Central districts with an average of 11.2 per cent and a range of 8.7 to 13.4 per cent. The South Central district had the highest average moisture content with 12.3 per cent. Average moisture content and range by county can be found in Appendix Tables B-1 through B-6. Additional information regarding moisture content within grades by crop reporting district can be found in Appendix Tables B-15 through B-18.

No shipment included in the sample had a moisture content greater than 14.5 per cent. Therefore, the grade designation "tough" was not inherent to the sample.

TABLE 5. AVERAGE AND RANGE OF MOISTURE CONTENT OF CARLOT SAMPLES OF H.R.S. WHEAT SHIPMENTS, BY CROP REPORTING DISTRICT, AND STATE TOTALS FOR 1963, 1962, AND 1961

Crop Reporting District	Total Number of Shipments	Moisture Content, Per Cent	
		Average	Range
Southwest	92	11.8	9.1 - 13.5
West Central	124	11.7	9.9 - 13.5
Northwest	408	11.2	8.7 - 13.4
South Central	91	12.3	10.3 - 14.5
Central	83	11.6	10.2 - 13.1
North Central	57	11.4	10.4 - 12.9
Southeast	---	----	---- ----
East Central	127	11.2	9.0 - 13.1
Northeast	142	11.4	9.3 - 14.0
NORTH DAKOTA, 1963	1,124	11.4	8.7 - 14.5
NORTH DAKOTA, 1962	1,159	12.1	9.5 - 16.4
NORTH DAKOTA, 1961	778	11.2	9.1 - 13.9

Other Grade Factors

Other grade factors inherent to the sample include damaged kernels, foreign material, wheat of other classes, shrunken and broken kernels, and excessive stones. Only 4.2 per cent of the 905 carlots grading No. 1 DNS and less had its initial grade determined by these grading factors (Table 6).

Appendix Tables B-19 through B-23 list the distribution of the various grade factors within the specified ranges only for those listed on the inspection certificate. When the specified grading factor did not determine the grade, they were usually omitted from the inspection certificate.

Only two of the 1,124 carlot shipments graded Sample Grade. One carlot of Dark Northern Spring wheat originating from McHenry county in the North Central district was graded Sample Grade due to excessive stones. The other determining factor was foreign material. The sample came from Morton county in the South Central district.

Appendix Table B-28 gives the number of carlots in the sample survey containing the actual percentage amounts of specified grading factors by grade for the sample period, July 1 through December 31, 1963.

Dockage

In 1963, 61.6 per cent of all the carlots had less than 1 per cent dockage (Appendix Table B-24). Approximately 76 per cent of the carlots originating from the Southwest and Central districts had less than 1 per cent, or zero per cent dockage on the inspection certificate. The North Central and Northeast districts had 50 per cent of the samples, less than 1 per cent being the lowest of all crop reporting districts. Samples having 2 per cent or more dockage consisted of only 7.5 per cent of the total sample.

TABLE 6. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES DETERMINING THE GRADE BY VARIOUS GRADING FACTORS FOR THE TOTAL CARLOT SAMPLE OF HARD RED SPRING WHEAT LEAVING NORTH DAKOTA ORIGINS BY GRADE, JULY THROUGH DECEMBER, 1963

Grade and Percentage Distribution	Not Applicable	Grading Factors							No. of Samples
		Test Weight	Total Damage	Foreign Material	Wheat of Other Classes	Other Grains	Shrunken and Broken	Stones	
No. 1 Heavy DNS	219	--	--	--	--	--	--	--	219
Per Cent	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
No. 1 DNS		326	--	--	--	--	--	--	326
Per Cent	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
No. 2 DNS		158	--	10[1]	2[1]	--	--	--	168
Per Cent	0.0	94.0	0.0	5.9	1.1	0.0	0.0	0.0	100.0[4]
No. 3 DNS		281	2[2]	7[1]	4[3]	--	1	--	291
Per Cent	0.0	96.5	0.7	2.4	1.4	0.0	0.3	0.0	100.0[4]
No. 4 DNS		95	1	4	2	--	--	--	102
Per Cent	0.0	93.1	1.0	3.9	2.0	0.0	0.0	0.0	100.0
No. 5 DNS		13	--	3	--	--	--	--	16
Per Cent	0.0	81.3	0.0	18.7	0.0	0.0	0.0	0.0	100.0
S. G. DNS		--	--	1	--	--	--	1	2
Per Cent	0.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0	100.0
ALL GRADES	219	873	3	25	8	--	1	1	1,124
Per Cent	19.5	77.7	0.3	2.2	0.7	0.0	0.1	0.1	100.0[4]

[1]Test weight was also a factor determining the grade for one carlot sample.

[2]Test weight was also a factor determining the grade for two carlot samples.

[3]Foreign Material was also a factor determining the grade for one carlot sample.

[4]Summation of the Percentage Distribution does not equal 100.0 per cent. In some cases, two grading factors determined the grade for the carlot sample and therefore is included under both grading factors.

APPENDIX A

OFFICIAL GRAIN STANDARDS FOR HARD RED SPRING WHEAT[4]

Hard Red Spring Wheat: This class shall include all varieties of hard red spring wheat and may include not more than 10.0 per cent of wheats of other classes. This class shall be divided into the following three subclasses:

1. Dark Northern Spring Wheat: This subclass shall be hard red spring wheat with 75 per cent or more of dark, hard, and vitreous kernels.
2. Northern Spring Wheat: This subclass shall be hard red spring wheat with 25 per cent or more but less than 75 per cent of dark, hard, and vitreous kernels.
3. Red Spring Wheat: This subclass shall be hard red spring wheat with less than 25 per cent of dark, hard, and vitreous kernels.

A-1. MAXIMUM FACTOR ALLOWANCES FOR HARD RED SPRING WHEAT GRADES

Grade	Minimum test weight per bushel	Maximum limits of -				
		Damaged Kernels			Wheats of other Classes	
		Total	Heat-damaged kernels	Foreign material	Total	Durum and/or Red Durum
	Pounds	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
1 Heavy[a]	60	2.0	0.1	0.5	5.0	1.0
1[a]	58	2.0	0.1	0.5	5.0	1.0
2[a]	57	4.0	0.2	1.0	5.0	2.0
3[a]	55	7.0	0.5	2.0	10.0	3.0
4	53	10.0	1.0	3.0	10.0	10.0
5	50	15.0	3.0	5.0	10.0	10.0
Sample Grade	Sample grade shall be wheat which does not meet the requirements for any of the grades from No. 1 heavy to No. 5 inclusive; or which contains more than 16.0 per cent of moisture; or which contains stones; or which is musty, or sour, or heating; or which has any commercially objectionable foreign odor except of smut or garlic; or which contains a quantity of smut so great that any one or more of the grade requirements cannot be applied accurately; or which is otherwise of distinctly low quality.					

[a]The wheat in grades No. 1 heavy, No. 1, and No. 2 of this class may contain not more than 5.0 per cent, and in grade No. 3 not more than 8.0 per cent of shrunken and broken kernels.

[4]SOURCE: Official Grain Standards of the United States, Revised 1960 Edition, SRA-AMS-177, Grain Division, AMS, USDA.

APPENDIX B

Additional Data on Hard Red Spring Shipments

Table Number		Page
	Average Values and Ranges for Protein Content, Bushel Weight, and Moisture of Carlot Samples in:	
B-1	Western North Dakota, by County and Crop Reporting District. . .	13
B-2	Central North Dakota, by County and Crop Reporting District. . .	14
B-3	Eastern North Dakota, by County and Crop Reporting District. . .	15
B-4	Western North Dakota, by Grade and Crop Reporting District . . .	16
B-5	Central North Dakota, by Grade and Crop Reporting District . . .	17
B-6	Eastern North Dakota, by Grade and Crop Reporting District . . .	18
B-7	Percentage Distribution and Number of Carlot Samples Falling Within 0.5 Per Cent Protein Ranges, by Crop Reporting District. . .	19
	Number of Carlot Samples Falling Within 0.5 Per Cent Protein Ranges in:	
B-8	Western North Dakota, by Crop Reporting District	20
B-9	Central North Dakota, by Crop Reporting District	21
B-10	Eastern North Dakota, by Crop Reporting District	22
B-11	Percentage Distribution and Number of Carlot Samples Falling Within 1 Pound Bushel Weight Ranges, by Crop Reporting District . .	23
	Number of Carlot Samples Falling Within 1 Pound Bushel Weight Ranges in:	
B-12	Western North Dakota, by Crop Reporting District	24
B-13	Central North Dakota, by Crop Reporting District	25
B-14	Eastern North Dakota, by Crop Reporting District	26

APPENDIX B

Additional Data on Hard Red Spring Shipments

Table Number		Page
B-15	Percentage Distribution and Number of Carlot Samples Falling Within 0.5 Moisture Ranges, by Crop Reporting District.	27
	Number of Carlot Samples Falling Within 0.5 Per Cent Moisture Ranges in:	
B-16	Western North Dakota, by Grade and Crop Reporting District . . .	28
B-17	Central North Dakota, by Grade and Crop Reporting District . . .	29
B-18	Eastern North Dakota, by Grade and Crop Reporting District . . .	30
B-19	Percentage Distribution and Number of Carlots Falling Within 1 Per Cent Damage Ranges, by Crop Reporting District.	31
B-20	Percentage Distribution and Number of Carlots Falling Within 1 Per Cent Foreign Material Ranges, by Crop Reporting District. . .	32
B-21	Percentage Distribution and Number of Carlot Samples Falling Within 1 Per Cent Ranges of Wheat of Other Classes, by Crop Reporting District.	33
B-22	Percentage Distribution and Number of Carlot Samples Falling Within 1 Per Cent Other Grains, by Crop Reporting District.	34
B-23	Percentage Distribution and Number of Carlots Falling Within 1 Per Cent Shrunken and Broken Ranges, by Crop Reporting District .	35
B-24	Percentage Distribution and Number of Carlot Samples Falling Within 1 Per Cent Dockage Ranges, by Crop Reporting District. . . .	36
	Percentage Distribution and Number of Carlot Samples Determining the Grade by the Various Grading Factors in:	
B-25	Western North Dakota, by Grade and Crop Reporting District . . .	37
B-26	Central North Dakota, by Grade and Crop Reporting District . . .	38
B-27	Eastern North Dakota, by Grade and Crop Reporting District . . .	39
B-28	Number of Carlots in Sample Survey Containing Percentage Amounts of Specified Grading Factors, by Grade, Total North Dakota Sample Shipments	40

B-1. AVERAGE VALUES AND RANGES FOR PROTEIN CONTENT, BUSHEL WEIGHT AND MOISTURE OF CARLOT SAMPLES OF HARD RED SPRING WHEAT IN WESTERN NORTH DAKOTA, BY COUNTY AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District and County	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		No. of Samples
	Average	Range	Average	Range	Average	Range	
Adams	----	---- ----	----	---- ----	----	---- ----	--
Billings	15.0	---- ----	57.5	---- ----	12.0	---- ----	1
Bowman	----	---- ----	----	---- ----	----	---- ----	--
Golden Valley	16.0	14.6 - 17.0	58.8	57.5 - 60.6	11.1	9.1 - 13.4	18
Hettinger	15.5	15.0 - 16.0	57.4	56.6 - 58.5	11.8	10.8 - 12.6	5
Slope	----	---- ----	----	---- ----	----	---- ----	--
Stark	15.1	13.5 - 16.5	58.0	54.2 - 61.3	11.9	10.8 - 13.5	68
SOUTHWEST	15.3	13.5 - 17.0	58.1	54.2 - 61.3	11.8	9.1 - 13.5	92
Dunn	14.5	13.6 - 15.4	59.2	56.2 - 61.7	12.0	10.4 - 13.5	26
McKenzie	15.5	13.4 - 16.9	59.0	55.7 - 62.8	11.0	10.1 - 12.5	30
McLean	14.6	10.8 - 16.2	56.2	53.2 - 60.8	11.7	10.0 - 12.8	21
Mercer	13.8	12.5 - 15.5	59.6	55.5 - 62.5	12.2	10.7 - 13.4	39
Oliver	13.9	12.3 - 15.2	58.6	57.0 - 60.3	11.5	9.9 - 12.4	8
WEST CENTRAL	14.5	10.8 - 16.9	58.7	53.2 - 62.8	11.7	9.9 - 13.5	124
Burke	14.6	13.2 - 16.2	57.9	52.5 - 62.2	11.2	9.1 - 12.7	43
Divide	14.9	13.5 - 15.8	58.1	54.0 - 61.8	11.0	9.1 - 13.0	58
Mountrail	14.5	13.2 - 15.2	59.2	55.7 - 61.5	11.4	9.0 - 13.0	34
Renville	14.8	13.7 - 16.0	56.7	52.5 - 60.0	11.7	9.9 - 13.3	33
Ward	15.0	13.6 - 16.3	57.0	51.8 - 60.7	11.2	9.1 - 13.0	56
Williams	15.2	13.3 - 17.0	60.0	55.0 - 63.0	11.1	8.7 - 13.4	184
NORTHWEST	15.0	13.2 - 17.0	58.6	51.8 - 63.0	11.2	8.7 - 13.4	408

B-2. AVERAGE VALUES AND RANGES FOR PROTEIN CONTENT, BUSHEL WEIGHT AND MOISTURE OF CARLOT SAMPLES OF HARD RED SPRING WHEAT IN CENTRAL NORTH DAKOTA, BY COUNTY AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District and County	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		No. of Samples
	Average	Range	Average	Range	Average	Range	
Burleigh	14.8	13.1 - 16.2	55.9	53.3 - 60.1	12.3	11.4 - 13.1	9
Emmons	14.6	13.5 - 15.0	56.0	55.0 - 58.6	13.2	12.8 - 14.5	8
Grant	14.8	14.0 - 15.3	57.5	55.3 - 60.0	11.8	10.5 - 12.5	8
Morton	14.8	13.2 - 16.2	56.6	54.0 - 61.8	12.3	10.3 - 14.0	64
Sioux	15.1	15.0 - 15.2	57.1	56.0 - 58.2	13.3	13.0 - 13.5	2
SOUTH CENTRAL	14.7	13.1 - 16.2	56.6	53.3 - 61.8	12.3	10.3 - 14.5	91
Eddy	----	---- ----	----	---- ----	----	---- ----	--
Foster	15.4	15.3 - 15.4	55.7	54.6 - 56.3	11.4	11.2 - 11.6	3
Kidder	13.9	13.3 - 14.4	58.0	57.0 - 59.0	12.4	12.1 - 12.7	2
Sheridan	14.7	13.6 - 15.3	55.8	53.5 - 58.7	12.0	11.0 - 13.1	9
Stutsman	14.8	13.2 - 16.6	56.1	51.0 - 61.8	11.6	10.2 - 13.0	61
Wells	15.2	13.8 - 16.7	56.1	54.0 - 59.0	11.3	10.8 - 11.8	8
CENTRAL	14.8	13.2 - 16.7	56.1	51.0 - 61.8	11.6	10.2 - 13.1	83
Benson	15.1	13.7 - 16.2	56.3	53.2 - 59.3	11.0	10.7 - 11.5	9
Bottineau	14.8	14.0 - 15.4	55.9	52.5 - 59.5	11.6	10.4 - 12.9	15
McHenry	15.0	13.4 - 16.6	55.4	51.6 - 60.0	11.4	10.6 - 12.0	15
Pierce	14.6	13.4 - 15.5	57.5	54.3 - 60.2	11.3	10.5 - 11.7	17
Rolette	14.7	---- ----	56.7	---- ----	11.6	---- ----	1
NORTH CENTRAL	14.8	13.4 - 16.6	56.3	51.6 - 60.2	11.4	10.4 - 12.9	57

B-3. AVERAGE VALUES AND RANGES FOR PROTEIN CONTENT, BUSHEL WEIGHT AND MOISTURE OF CARLOT SAMPLES OF HARD RED SPRING WHEAT IN EASTERN NORTH DAKOTA, BY COUNTY AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District and County	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		No. of Samples
	Average	Range	Average	Range	Average	Range	
Barnes	13.9	13.0 - 15.3	58.8	55.6 - 60.5	10.5	9.8 - 12.2	6
Cass	13.9	11.5 - 15.7	57.1	53.0 - 61.1	11.3	9.0 - 13.1	98
Griggs	----	---- ----	----	---- ----	----	---- ----	--
Steele	14.8	14.3 - 15.2	56.6	56.0 - 57.2	10.1	9.3 - 10.8	2
Traill	14.1	12.8 - 14.8	56.8	55.0 - 59.2	11.1	9.7 - 12.2	21
EAST CENTRAL	14.0	11.5 - 15.7	57.1	53.0 - 61.1	11.2	9.0 - 13.1	127
Cavalier	14.4	12.8 - 15.5	55.8	53.5 - 59.2	11.6	10.4 - 14.0	27
Grand Forks	14.2	12.9 - 15.1	57.6	54.5 - 60.5	11.3	9.9 - 13.1	37
Nelson	13.9	13.5 - 14.2	56.1	52.0 - 58.2	11.9	11.2 - 12.2	3
Pembina	13.6	12.1 - 14.7	56.8	53.0 - 60.7	11.5	9.3 - 13.9	41
Ramsey	15.2	13.7 - 16.2	56.6	55.5 - 57.2	11.1	10.9 - 12.4	3
Towner	13.5	---- ----	59.0	---- ----	12.2	---- ----	1
Walsh	13.9	13.1 - 15.0	57.0	54.0 - 59.5	11.0	9.9 - 12.4	30
NORTHEAST	14.0	12.1 - 16.2	56.8	52.0 - 60.7	11.4	9.3 - 14.0	142

B-4. AVERAGE VALUES AND RANGES FOR PROTEIN CONTENT, BUSHEL WEIGHT AND MOISTURE OF CARLOT SAMPLES OF HARD RED SPRING WHEAT IN WESTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		No. of Samples
	Average	Range	Average	Range	Average	Range	
SOUTHWEST DISTRICT							
1 Heavy DNS	14.6	13.5 - 16.1	60.6	60.0 - 61.3	11.5	9.1 - 12.3	8
1 DNS	15.4	14.0 - 17.0	58.7	58.0 - 59.7	11.6	9.8 - 13.4	48
2 DNS	15.2	14.4 - 16.6	57.3	57.0 - 57.7	12.1	9.7 - 13.4	17
3 DNS	15.5	14.4 - 16.4	56.4	55.0 - 60.8	11.9	11.0 - 12.6	15
4 DNS	15.2	14.6 - 15.8	55.6	54.2 - 59.0	12.4	11.7 - 13.5	4
5 DNS	----	---- ----	----	---- ----	----	---- ----	--
Sample Grade DNS	----	---- ----	----	---- ----	----	---- ----	--
ALL GRADES	15.3	13.5 - 17.0	58.1	54.2 - 61.3	11.8	9.1 - 13.5	92
WEST CENTRAL DISTRICT							
1 Heavy DNS	13.9	12.5 - 16.0	61.1	60.0 - 62.8	11.7	9.9 - 13.2	37
1 DNS	14.6	10.8 - 16.6	58.9	58.0 - 59.7	11.7	10.0 - 13.5	49
2 DNS	14.6	13.4 - 16.9	57.3	57.0 - 57.7	12.0	10.2 - 13.0	17
3 DNS	15.2	13.8 - 16.6	56.1	55.0 - 58.7	11.9	10.4 - 13.4	13
4 DNS	15.4	14.7 - 16.2	54.1	53.2 - 54.6	11.5	10.6 - 12.2	8
5 DNS	----	---- ----	----	---- ----	----	---- ----	--
Sample Grade DNS	----	---- ----	----	---- ----	----	---- ----	--
ALL GRADES	14.5	10.8 - 16.9	58.7	53.2 - 62.8	11.7	9.9 - 13.5	124
NORTHWEST DISTRICT							
1 Heavy DNS	14.9	13.2 - 16.3	60.7	60.0 - 63.0	11.2	9.8 - 12.6	138
1 DNS	15.0	13.6 - 16.8	58.8	58.0 - 59.7	11.0	8.7 - 12.9	135
2 DNS	15.0	13.9 - 16.6	57.5	57.0 - 60.0	11.0	9.1 - 13.4	52
3 DNS	15.0	13.5 - 17.0	55.9	55.0 - 58.3	11.5	9.8 - 13.0	62
4 DNS	15.0	14.3 - 16.3	54.3	53.0 - 58.0	11.8	10.4 - 13.3	17
5 DNS	15.1	14.6 - 15.5	52.3	51.8 - 52.5	12.1	11.1 - 12.8	4
Sample Grade DNS	----	---- ----	----	---- ----	----	---- ----	--
ALL GRADES	15.0	13.2 - 17.0	58.6	51.8 - 63.0	11.2	8.7 - 13.4	408

B-5. AVERAGE VALUES AND RANGES FOR PROTEIN CONTENT, BUSHEL WEIGHT AND MOISTURE OF CARLOT SAMPLES OF HARD RED SPRING WHEAT IN CENTRAL NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		No. of Samples
	Average	Range	Average	Range	Average	Range	
SOUTH CENTRAL DISTRICT							
1 Heavy DNS	13.8	13.1 - 14.8	60.5	60.0 - 61.8	11.6	10.9 - 12.4	9
1 DNS	14.6	13.5 - 15.2	58.5	58.0 - 59.6	12.5	11.8 - 13.5	7
2 DNS	14.7	13.7 - 16.0	57.8	57.0 - 61.1	12.0	10.3 - 13.2	11
3 DNS	14.9	13.3 - 16.2	55.8	55.0 - 60.6	12.5	10.5 - 14.5	55
4 DNS	15.3	14.6 - 16.2	54.6	53.3 - 58.0	12.3	11.0 - 13.4	8
5 DNS	----	---- ----	----	---- ----	----	---- ----	--
Sample Grade DNS	15.0	---- ----	54.0	---- ----	12.0	---- ----	1
ALL GRADES	14.7	13.1 - 16.2	56.6	53.3 - 61.8	12.3	10.3 - 14.5	91
CENTRAL DISTRICT							
1 Heavy DNS	13.7	13.2 - 14.8	61.0	60.2 - 61.8	12.0	11.5 - 13.0	13
1 DNS	14.1	13.3 - 15.7	58.6	58.0 - 59.0	11.5	10.3 - 12.8	8
2 DNS	14.0	13.3 - 15.0	58.0	57.0 - 60.0	12.2	11.4 - 13.0	6
3 DNS	15.0	13.8 - 16.7	55.6	55.0 - 56.7	11.6	10.4 - 13.0	26
4 DNS	15.5	14.1 - 16.6	53.7	53.0 - 54.6	11.4	10.4 - 13.1	24
5 DNS	15.4	14.0 - 16.5	52.4	51.0 - 54.0	11.5	10.2 - 12.7	6
Sample Grade DNS	----	---- ----	----	---- ----	----	---- ----	--
ALL GRADES	14.8	13.2 - 16.7	56.1	51.0 - 61.8	11.6	10.2 - 13.1	83
NORTH CENTRAL DISTRICT							
1 Heavy DNS	13.9	13.6 - 14.1	60.1	60.0 - 60.2	11.5	11.3 - 11.7	2
1 DNS	14.3	13.4 - 15.3	58.8	58.0 - 59.5	11.3	10.7 - 12.2	13
2 DNS	14.5	14.0 - 15.1	57.4	57.0 - 57.5	11.5	10.5 - 11.9	7
3 DNS	14.8	13.4 - 16.6	56.3	55.0 - 58.7	11.4	10.4 - 12.9	17
4 DNS	15.4	14.5 - 16.3	53.9	53.0 - 54.7	11.3	10.6 - 12.2	14
5 DNS	15.9	15.3 - 16.4	52.0	51.6 - 52.5	11.4	10.6 - 12.5	3
Sample Grade DNS	15.1	---- ----	56.5	---- ----	12.2	---- ----	1
ALL GRADES	14.8	13.4 - 16.6	56.3	51.6 - 60.2	11.4	10.4 - 12.9	57

B-6. AVERAGE VALUES AND RANGES FOR PROTEIN CONTENT, BUSHEL WEIGHT AND MOISTURE OF CARLOT SAMPLES OF HARD RED SPRING WHEAT IN EASTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		No. of Samples
	Average	Range	Average	Range	Average	Range	
EAST CENTRAL DISTRICT							
1 Heavy DNS	13.7	11.5 - 15.3	60.3	60.0 - 61.1	11.0	9.8 - 12.4	10
1 DNS	14.1	13.3 - 15.4	58.7	58.0 - 59.7	11.4	10.4 - 12.6	28
2 DNS	14.1	13.1 - 15.7	57.5	57.0 - 59.6	11.4	9.3 - 12.6	24
3 DNS	13.9	12.3 - 15.2	56.0	55.0 - 58.9	11.0	9.0 - 13.1	51
4 DNS	14.0	13.1 - 14.9	54.6	53.0 - 58.6	11.0	9.8 - 12.1	12
5 DNS	13.7	13.5 - 13.9	57.0	---- ----	11.5	---- ----	2
Sample Grade DNS	----	---- ----	----	---- ----	----	---- ----	--
ALL GRADES	14.0	11.5 - 15.7	57.1	53.0 - 61.1	11.2	9.0 - 13.1	127
NORTHEAST DISTRICT							
1 Heavy DNS	13.4	13.2 - 13.6	60.5	---- ----	12.3	12.0 - 12.5	2
1 DNS	13.8	12.3 - 14.6	58.6	58.0 - 59.6	11.6	9.9 - 13.3	38
2 DNS	13.9	13.0 - 15.6	57.3	57.0 - 57.7	11.1	9.9 - 12.4	34
3 DNS	14.2	12.1 - 16.2	55.9	55.0 - 60.7	11.4	9.3 - 13.9	52
4 DNS	14.6	13.0 - 15.5	54.3	53.0 - 58.0	11.4	10.5 - 14.0	15
5 DNS	13.5	---- ----	52.0	---- ----	12.2	---- ----	1
Sample Grade DNS	----	---- ----	----	---- ----	----	---- ----	--
ALL GRADES	14.0	12.1 - 16.2	56.8	52.0 - 60.7	11.4	9.3 - 14.0	142

B-7. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT PROTEIN RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

	Protein Range, Per Cent																
C.R.D.	10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	15.5 to 15.9	16.0 to 16.4	16.5 to 16.9	17.0 to 17.4	17.5 to 17.9	18.0 to 18.4	TOTAL
S.W.	--	--	--	--	--	--	2	6	10	43	13	10	7	1	--	--	92
W.C.	1	--	--	1	4	12	16	25	20	22	11	7	5	--	--	--	124
N.W.	--	--	--	--	--	6	17	56	107	136	62	18	5	1	--	--	408
S.C.	--	--	--	--	--	5	5	10	31	31	6	3	--	--	--	--	91
Cent.	--	--	--	--	--	7	9	14	10	23	11	5	4	--	--	--	83
N.C.	--	--	--	--	--	2	3	15	10	17	4	5	1	--	--	--	57
S.E.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E.C.	--	--	1	3	2	16	41	40	16	7	1	--	--	--	--	--	127
N.E.	--	--	--	2	2	26	27	45	26	11	2	1	--	--	--	--	142
TOTAL	1	--	1	6	8	74	120	211	230	290	110	49	22	2	--	--	1,124
Percentage Distribution	0.1	---	0.1	0.5	0.7	6.6	10.7	18.8	20.5	25.8	9.8	4.3	1.9	0.2	---	---	100.0

B-8. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT PROTEIN RANGES IN WESTERN NORTH DAKOTA, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	15.5 to 15.9	16.0 to 16.4	16.5 to 16.9	17.0 to 17.4	17.5 to 17.9	18.0 to 18.4	TOTAL
SOUTHWEST DISTRICT																	
	Protein Range, Per Cent																
1 Heavy DNS	--	--	--	--	--	--	2	1	2	2	--	1	--	--	--	--	8
1 DNS	--	--	--	--	--	--	--	3	2	25	8	4	5	1	--	--	48
2 DNS	--	--	--	--	--	--	--	1	5	7	1	1	2	--	--	--	17
3 DNS	--	--	--	--	--	--	--	1	--	8	2	4	--	--	--	--	15
4 DNS	--	--	--	--	--	--	--	--	1	1	2	--	--	--	--	--	4
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	--	--	--	--	2	6	10	43	13	10	7	1	--	--	92
WEST CENTRAL DISTRICT																	
1 Heavy DNS	--	--	--	--	4	10	8	5	4	4	1	1	--	--	--	--	37
1 DNS	1	--	--	1	--	1	6	11	7	11	8	1	2	--	--	--	49
2 DNS	--	--	--	--	--	1	1	7	4	2	--	1	1	--	--	--	17
3 DNS	--	--	--	--	--	--	1	2	2	3	2	1	2	--	--	--	13
4 DNS	--	--	--	--	--	--	--	--	3	2	--	3	--	--	--	--	8
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	1	--	--	1	4	12	16	25	20	22	11	7	5	--	--	--	124
NORTHWEST DISTRICT																	
1 Heavy DNS	--	--	--	--	--	6	8	20	26	51	24	3	--	--	--	--	138
1 DNS	--	--	--	--	--	--	5	19	34	47	20	7	3	--	--	--	135
2 DNS	--	--	--	--	--	--	1	8	15	17	7	3	1	--	--	--	52
3 DNS	--	--	--	--	--	--	3	8	23	14	8	4	1	1	--	--	62
4 DNS	--	--	--	--	--	--	--	1	8	5	2	1	--	--	--	--	17
5 DNS	--	--	--	--	--	--	--	--	1	2	1	--	--	--	--	--	4
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	--	--	--	6	17	56	107	136	62	18	5	1	--	--	408

B-9. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT PROTEIN RANGES IN CENTRAL NORTH DAKOTA, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	15.5 to 15.9	16.0 to 16.4	16.5 to 16.9	17.0 to 17.4	17.5 to 17.9	18.0 to 18.4	TOTAL
SOUTH CENTRAL DISTRICT																	
	Protein Range, Per Cent																
1 Heavy DNS	--	--	--	--	--	4	1	3	1	--	--	--	--	--	--	--	9
1 DNS	--	--	--	--	--	--	2	--	2	3	--	--	--	--	--	--	7
2 DNS	--	--	--	--	--	--	1	2	5	2	--	1	--	--	--	--	11
3 DNS	--	--	--	--	--	1	1	5	21	22	4	1	--	--	--	--	55
4 DNS	--	--	--	--	--	--	--	--	2	3	2	1	--	--	--	--	8
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	1
TOTAL	--	--	--	--	--	5	5	10	31	31	6	3	--	--	--	--	91
CENTRAL DISTRICT																	
1 Heavy DNS	--	--	--	--	--	5	4	3	1	--	--	--	--	--	--	--	13
1 DNS	--	--	--	--	--	1	2	3	1	1	--	--	--	--	--	--	8
2 DNS	--	--	--	--	--	1	2	2	--	1	--	--	--	--	--	--	6
3 DNS	--	--	--	--	--	--	1	4	6	9	4	1	1	--	--	--	26
4 DNS	--	--	--	--	--	--	--	1	2	9	7	3	2	--	--	--	24
5 DNS	--	--	--	--	--	--	--	1	--	3	--	1	1	--	--	--	6
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	--	--	--	7	9	14	10	23	11	5	4	--	--	--	83
NORTH CENTRAL DISTRICT																	
1 Heavy DNS	--	--	--	--	--	--	1	1	--	--	--	--	--	--	--	--	2
1 DNS	--	--	--	--	--	1	2	6	2	2	--	--	--	--	--	--	13
2 DNS	--	--	--	--	--	--	--	4	1	2	--	--	--	--	--	--	7
3 DNS	--	--	--	--	--	1	--	4	5	4	2	--	1	--	--	--	17
4 DNS	--	--	--	--	--	--	--	--	2	7	2	3	--	--	--	--	14
5 DNS	--	--	--	--	--	--	--	--	--	1	--	2	--	--	--	--	3
S.G. DNS	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	1
TOTAL	--	--	--	--	--	2	3	15	10	17	4	5	1	--	--	--	57

B-10. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT PROTEIN RANGES IN EASTERN NORTH DAKOTA, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

EAST CENTRAL DISTRICT

Grade	Protein Range, Per Cent 10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	15.5 to 15.9	16.0 to 16.4	16.5 to 16.9	17.0 to 17.4	17.5 to 17.9	18.0 to 18.4	TOTAL
1 Heavy DNS	--	--	1	--	--	4	1	1	1	2	--	--	--	--	--	--	10
1 DNS	--	--	--	--	--	2	10	10	4	2	--	--	--	--	--	--	28
2 DNS	--	--	--	--	--	5	8	5	3	2	1	--	--	--	--	--	24
3 DNS	--	--	--	3	2	4	16	19	6	1	--	--	--	--	--	--	51
4 DNS	--	--	--	--	--	1	4	5	2	--	--	--	--	--	--	--	12
5 DNS	--	--	--	--	--	--	2	--	--	--	--	--	--	--	--	--	2
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	1	3	2	16	41	40	16	7	1	--	--	--	--	--	127

NORTHEAST DISTRICT

1 Heavy DNS	--	--	--	--	--	1	1	--	--	--	--	--	--	--	--	--	2
1 DNS	--	--	--	1	1	7	11	16	2	--	--	--	--	--	--	--	38
2 DNS	--	--	--	--	--	13	4	9	4	3	1	--	--	--	--	--	34
3 DNS	--	--	--	1	1	4	10	17	13	5	--	1	--	--	--	--	52
4 DNS	--	--	--	--	--	1	--	3	7	3	1	--	--	--	--	--	15
5 DNS	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	1
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	--	2	2	26	27	45	26	11	2	1	--	--	--	--	142

B-14. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 POUND BUSHEL WEIGHT RANGES IN EASTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	Bushel Weight, lb.													TOTAL
	51	52	53	54	55	56	57	58	59	60	61	62	63	
EAST CENTRAL DISTRICT														
1 Heavy DNS	--	--	--	--	--	--	--	--	--	9	1	--	--	10
1 DNS	--	--	--	--	--	--	--	19	9	--	--	--	--	28
2 DNS	--	--	--	--	--	--	22	1	1	--	--	--	--	24
3 DNS	--	--	--	--	22	26	2	1	--	--	--	--	--	51
4 DNS	--	--	2	8	1	--	--	1	--	--	--	--	--	12
5 DNS	--	--	--	--	--	--	2	--	--	--	--	--	--	2
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	2	8	23	26	26	22	10	9	1	--	--	127
NORTHEAST DISTRICT														
1 Heavy DNS	--	--	--	--	--	--	--	--	--	2	--	--	--	2
1 DNS	--	--	--	--	--	--	--	27	11	--	--	--	--	38
2 DNS	--	--	--	--	--	--	34	--	--	--	--	--	--	34
3 DNS	--	--	--	--	25	26	--	--	--	1	--	--	--	52
4 DNS	--	--	5	8	1	--	--	1	--	--	--	--	--	15
5 DNS	--	1	--	--	--	--	--	--	--	--	--	--	--	1
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	1	5	8	26	26	34	28	11	3	--	--	--	142

B-15. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT MOISTURE CONTENT RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District	Moisture Range, Per Cent														
	8.5 to 8.9	9.0 to 9.4	9.5 to 9.9	10.0 to 10.4	10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	TOTAL
Southwest	--	1	2	2	6	15	31	20	11	3	1	--	--	--	92
West Central	--	--	1	7	14	22	24	33	16	6	1	--	--	--	124
Northwest	2	6	18	45	76	121	73	48	12	7	--	--	--	--	408
South Central	--	--	--	1	3	7	14	30	16	15	3	1	1	--	91
Central	--	--	--	4	7	20	29	11	8	4	--	--	--	--	83
North Central	--	--	--	1	10	22	16	6	2	--	--	--	--	--	57
Southeast	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
East Central	--	3	6	13	20	37	28	13	6	1	--	--	--	--	127
Northeast	--	1	2	12	25	38	33	23	4	2	1	1	--	--	142
STATE TOTAL	2	11	29	85	161	282	248	184	75	38	6	2	1	--	1,124
Percentage Distribution	0.2	1.0	2.6	7.5	14.3	25.1	22.0	16.4	6.7	3.4	0.5	0.2	0.1	0.0	100.0

B-16. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT MOISTURE CONTENT RANGES IN WESTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	8.5 to 8.9	9.0 to 9.4	9.5 to 9.9	10.0 to 10.4	10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	TOTAL
SOUTHWEST DISTRICT (Moisture Range, Per Cent)															
1 Heavy DNS	--	1	--	--	--	2	2	3	--	--	--	--	--	--	8
1 DNS	--	--	1	2	6	8	18	10	2	1	--	--	--	--	48
2 DNS	--	--	1	--	--	2	4	3	5	2	--	--	--	--	17
3 DNS	--	--	--	--	--	3	5	3	4	--	--	--	--	--	15
4 DNS	--	--	--	--	--	--	2	1	--	--	1	--	--	--	4
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	1	2	2	6	15	31	20	11	3	1	--	--	--	92
WEST CENTRAL DISTRICT															
1 Heavy DNS	--	--	1	2	3	6	9	10	5	1	--	--	--	--	37
1 DNS	--	--	--	3	7	9	9	14	4	2	1	--	--	--	49
2 DNS	--	--	--	1	1	3	2	5	3	2	--	--	--	--	17
3 DNS	--	--	--	1	2	1	2	2	4	1	--	--	--	--	13
4 DNS	--	--	--	--	1	3	2	2	--	--	--	--	--	--	8
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	1	7	14	22	24	33	16	6	1	--	--	--	124
NORTHWEST DISTRICT															
1 Heavy DNS	--	--	5	12	28	47	32	13	1	--	--	--	--	--	138
1 DNS	2	3	10	20	28	34	17	17	4	--	--	--	--	--	135
2 DNS	--	3	--	7	12	19	5	3	1	2	--	--	--	--	52
3 DNS	--	--	3	5	8	15	14	10	5	2	--	--	--	--	62
4 DNS	--	--	--	1	--	5	5	3	--	3	--	--	--	--	17
5 DNS	--	--	--	--	--	1	--	2	1	--	--	--	--	--	4
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	2	6	18	45	76	121	73	48	12	7	--	--	--	--	408

B-17. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT MOISTURE CONTENT RANGES IN CENTRAL NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	Moisture Range, Per Cent														
	8.5 to 8.9	9.0 to 9.4	9.5 to 9.9	10.0 to 10.4	10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	TOTAL
SOUTH CENTRAL DISTRICT															
1 Heavy DNS	--	--	--	--	1	3	2	3	--	--	--	--	--	--	9
1 DNS	--	--	--	--	--	--	1	4	1	--	1	--	--	--	7
2 DNS	--	--	--	1	1	--	2	3	2	2	--	--	--	--	11
3 DNS	--	--	--	--	1	3	7	17	12	11	2	1	1	--	55
4 DNS	--	--	--	--	--	1	2	2	1	2	--	--	--	--	8
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	1	--	--	--	--	--	--	1
TOTAL	--	--	--	1	3	7	14	30	16	15	3	1	1	--	91
CENTRAL DISTRICT															
1 Heavy DNS	--	--	--	--	--	--	7	5	--	1	--	--	--	--	13
1 DNS	--	--	--	1	1	1	3	--	2	--	--	--	--	--	8
2 DNS	--	--	--	--	--	1	2	1	1	1	--	--	--	--	6
3 DNS	--	--	--	1	2	8	8	4	2	1	--	--	--	--	26
4 DNS	--	--	--	1	4	8	7	1	2	1	--	--	--	--	24
5 DNS	--	--	--	1	--	2	2	--	1	--	--	--	--	--	6
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	--	4	7	20	29	11	8	4	--	--	--	--	83
NORTH CENTRAL DISTRICT															
1 Heavy DNS	--	--	--	--	--	1	1	--	--	--	--	--	--	--	2
1 DNS	--	--	--	--	4	4	3	2	--	--	--	--	--	--	13
2 DNS	--	--	--	--	1	2	4	--	--	--	--	--	--	--	7
3 DNS	--	--	--	1	2	7	5	1	1	--	--	--	--	--	17
4 DNS	--	--	--	--	2	7	3	2	--	--	--	--	--	--	14
5 DNS	--	--	--	--	1	1	--	--	1	--	--	--	--	--	3
S.G. DNS	--	--	--	--	--	--	--	1	--	--	--	--	--	--	1
TOTAL	--	--	--	1	10	22	16	6	2	--	--	--	--	--	57

B-18. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT MOISTURE CONTENT RANGES IN EASTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

EAST CENTRAL DISTRICT

Grade	Moisture Range, Per Cent														
	8.5 to 8.9	9.0 to 9.4	9.5 to 9.9	10.0 to 10.4	10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	TOTAL
1 Heavy DNS	--	--	1	2	1	2	3	1	--	--	--	--	--	--	10
1 DNS	--	--	--	1	4	11	6	5	1	--	--	--	--	--	28
2 DNS	--	1	--	2	3	6	7	2	3	--	--	--	--	--	24
3 DNS	--	2	4	6	10	14	9	3	2	1	--	--	--	--	51
4 DNS	--	--	1	2	2	4	1	2	--	--	--	--	--	--	12
5 DNS	--	--	--	--	--	--	2	--	--	--	--	--	--	--	2
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	3	6	13	20	37	28	13	6	1	--	--	--	--	127

NORTHEAST DISTRICT

1 Heavy DNS	--	--	--	--	--	--	--	1	1	--	--	--	--	--	2
1 DNS	--	--	1	2	3	12	6	11	1	2	--	--	--	--	38
2 DNS	--	--	1	7	6	7	9	4	--	--	--	--	--	--	34
3 DNS	--	1	--	3	12	13	15	5	2	--	1	--	--	--	52
4 DNS	--	--	--	--	4	6	3	1	--	--	--	1	--	--	15
5 DNS	--	--	--	--	--	--	--	1	--	--	--	--	--	--	1
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	1	2	12	25	38	33	23	4	2	1	1	--	--	142

B-19. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 PER CENT DAMAGE RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District	Not Listed as a Grading[1] Factor	Damage Range, Per Cent											TOTAL
		0.0 to 0.9	1.0 to 1.9	2.0 to 2.9	3.0 to 3.9	4.0 to 4.9	5.0 to 5.9	6.0 to 6.9	7.0 to 7.9	8.0 to 8.9	9.0 to 9.9	10.0 to 10.9	
Southwest	92	--	--	--	--	--	--	--	--	--	--	--	92
West Central	124	--	--	--	--	--	--	--	--	--	--	--	124
Northwest	402	--	--	--	5	--	1	--	--	--	--	--	408
South Central	91	--	--	--	--	--	--	--	--	--	--	--	91
Central	83	--	--	--	--	--	--	--	--	--	--	--	83
North Central	57	--	--	--	--	--	--	--	--	--	--	--	57
Southeast	---	--	--	--	--	--	--	--	--	--	--	--	---
East Central	127	--	--	--	--	--	--	--	--	--	--	--	127
Northeast	139	--	--	1	--	--	--	--	1	--	1	--	142
STATE TOTAL	1,115	--	--	1	5	--	1	--	1	--	1	--	1,124
Percentage Distribution	99.2	0.0	0.0	0.1	0.4	0.0	0.1	0.0	0.1	0.0	0.1	0.0	100.0

[1]Content of Damaged Kernels unknown. This grade requirement did not determine the grade, therefore was not listed as a grading factor on the Inspection Certificate.

B-20. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT FOREIGN MATERIAL RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District	Foreign Material Range, Per Cent														
	Not Listed as a Grading[1] Factor	0.1 to 0.4	0.5 to 0.9	1.0 to 1.4	1.5 to 1.9	2.0 to 2.4	2.5 to 2.9	3.0 to 3.4	3.5 to 3.9	4.0 to 4.4	4.5 to 4.9	5.0 to 5.4	5.5 to 5.9	6.0 to 6.4	6.5 to 6.9	TOTAL
Southwest	90	--	--	--	1	--	1	--	--	--	--	--	--	--	--	92
West Central	124	--	--	--	--	--	--	--	--	--	--	--	--	--	--	124
Northwest	402	--	2	4	--	--	--	--	--	--	--	--	--	--	--	408
South Central	86	--	2	--	--	1	--	1	--	--	--	--	--	1	--	91
Central	80	--	1	1	--	--	--	--	--	1	--	--	--	--	--	83
North Central	57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57
Southeast	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	---
East Central	113	1	4	3	1	1	1	1	--	2	--	--	--	--	--	127
Northeast	140	--	--	1	1	--	--	--	--	--	--	--	--	--	--	142
STATE TOTAL	1,092	1	9	9	3	2	2	2	--	3	--	--	--	1	--	1,124
Percentage Distribution	97.0	0.1	0.8	0.8	0.3	0.2	0.2	0.2	0.0	0.3	0.0	0.0	0.0	0.1	0.0	100.0

[1]Content of Foreign Material unknown. Foreign Material did not determine the grade, therefore was not listed as a grading factor on the Inspection Certificate.

B-21. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 PER CENT RANGES OF WHEAT OF OTHER CLASSES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District	One Per Cent Range of Wheat of Other Classes											
	Not Listed as a Grading[1] Factor	1.0 to 1.9	2.0 to 2.9	3.0 to 3.9	4.0 to 4.9	5.0 to 5.9	6.0 to 6.9	7.0 to 7.9	8.0 to 8.9	9.0 to 9.9	10.0 to 10.9	TOTAL
Southwest	91	--	--	1	--	--	--	--	--	--	--	92
West Central	124	--	--	--	--	--	--	--	--	--	--	124
Northwest	405	1	1	--	1	--	--	--	--	--	--	408
South Central	91	--	--	--	--	--	--	--	--	--	--	91
Central	83	--	--	--	--	--	--	--	--	--	--	83
North Central	56	--	--	1	--	--	--	--	--	--	--	57
Southeast	---	--	--	--	--	--	--	--	--	--	--	---
East Central	125	--	2	--	--	--	--	--	--	--	--	127
Northeast	140	--	1	--	--	--	--	--	1	--	--	142
STATE TOTAL	1,115	1	4	2	1	--	--	--	1	--	--	1,124
Percentage Distribution	99.2	0.1	0.3	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	100.0

[1]Content of Wheat of Other Classes unknown. This grade requirement did not determine the grade, therefore was not listed as a grading factor on the Inspection Certificate.

B-22. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 PER CENT RANGES OF OTHER GRAINS, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District	Other Grain Content Range, Per Cent										
	Not Listed as a Grading[1] Factor	1.0 to 1.9	2.0 to 2.9	3.0 to 3.9	4.0 to 4.9	5.0 to 5.9	6.0 to 6.9	7.0 to 7.9	8.0 to 8.9	9.0 to 9.9	10.0 to 10.9	TOTAL
Southwest	92	--	--	--	--	--	--	--	--	--	--	92
West Central	124	--	--	--	--	--	--	--	--	--	--	124
Northwest	408	--	--	--	--	--	--	--	--	--	--	408
South Central	91	--	--	--	--	--	--	--	--	--	--	91
Central	83	--	--	--	--	--	--	--	--	--	--	83
North Central	57	--	--	--	--	--	--	--	--	--	--	57
Southeast	---	--	--	--	--	--	--	--	--	--	--	---
East Central	126	1	--	--	--	--	--	--	--	--	--	127
Northeast	142	--	--	--	--	--	--	--	--	--	--	142
STATE TOTAL	1,123	1	--	--	--	--	--	--	--	--	--	1,124
Percentage Distribution	99.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

[1]Content of Other Grains unknown. This grade requirement did not determine the grade, therefore was not listed as a grading factor on the Inspection Certificate.

B-23. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 PER CENT SHRUNKEN AND BROKEN RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Crop Reporting District	Shrunken and Broken Range, Per Cent											
	Not Listed as a Grading[1] Factor	0.0 to 0.9	1.0 to 1.9	2.0 to 2.9	3.0 to 3.9	4.0 to 4.9	5.0 to 5.9	6.0 to 6.9	7.0 to 7.9	8.0 to 8.9	9.0 to 9.9	10.0 to 10.9	TOTAL
Southwest	92	--	--	--	--	--	--	--	--	--	--	--	92
West Central	123	--	--	--	--	--	1	--	--	--	--	--	124
Northwest	408	--	--	--	--	--	--	--	--	--	--	--	408
South Central	91	--	--	--	--	--	--	--	--	--	--	--	91
Central	83	--	--	--	--	--	--	--	--	--	--	--	83
North Central	57	--	--	--	--	--	--	--	--	--	--	--	57
Southeast	---	--	--	--	--	--	--	--	--	--	--	--	---
East Central	127	--	--	--	--	--	--	--	--	--	--	--	127
Northeast	142	--	--	--	--	--	--	--	--	--	--	--	142
STATE TOTAL	1,123	--	--	--	--	--	1	--	--	--	--	--	1,124
Percentage Distribution	99.9	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	100.0

[1]Content of Shrunken and Broken Kernels unknown. This grade requirement did not determine the grade, therefore was not listed as a grading factor on the Inspection Certificate.

B-24. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 PER CENT DOCKAGE RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963[1]

Crop Reporting District	Dockage								
	Less than 1 Per Cent[2]	1 Per Cent	2 Per Cent	3 Per Cent	4 Per Cent	5 Per Cent	6 Per Cent	7 Per Cent	TOTAL
Southwest	70	20	2	--	--	--	--	--	92
West Central	75	40	4	4	1	--	--	--	124
Northwest	251	143	11	3	--	--	--	--	408
South Central	55	30	4	1	1	--	--	--	91
Central	63	8	8	3	1	--	--	--	83
North Central	28	22	4	3	--	--	--	--	57
Southeast	--	--	--	--	--	--	--	--	---
East Central	78	39	9	1	--	--	--	--	127
Northeast	72	45	10	6	8	1	--	--	142
STATE TOTAL	692	347	52	21	11	1	--	--	1,124
Percentage Distribution	61.6	30.9	4.6	1.8	1.0	0.1	--	--	100.0

[1]All percentages are calculated on basis of weight. According to the Official Grain Standards of the United States, all percentages are stated in terms of a whole per cent. Fractions of a per cent are disregarded. When a sample has less than 1 per cent dockage, it is classified on the Inspection Certificate as zero per cent.

[2]These samples are listed as zero per cent dockage on the Inspection Certificate.

B-25. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT DETERMINING THE GRADE BY THE VARIOUS GRADING FACTORS IN WESTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963[1]

Grade	Test Weight	Total Damage	Foreign Material	Wheat of Other Classes	Other Grains	Shrunken and Broken	Stones	TOTAL
				SOUTHWEST DISTRICT				
No. 1 DNS	48	--	--	--	--	--	--	48
No. 2 DNS	17	--	--	--	--	--	--	17
No. 3 DNS	13	--	1	1	--	--	--	15
No. 4 DNS	3	--	1	--	--	--	--	4
No. 5 DNS	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--
ALL GRADES	81	--	2	1	--	--	--	84
PER CENT	96.4	0.0	2.4	1.2	0.0	0.0	0.0	100.0
				WEST CENTRAL DISTRICT				
No. 1 DNS	49	--	--	--	--	--	--	49
No. 2 DNS	17	--	--	--	--	--	--	17
No. 3 DNS	12	--	--	--	--	1	--	13
No. 4 DNS	8	--	--	--	--	--	--	8
No. 5 DNS	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--
ALL GRADES	86	--	--	--	--	1	--	87
PER CENT	98.9	0.0	0.0	0.0	0.0	1.1	0.0	100.0
				NORTHWEST DISTRICT				
No. 1 DNS	135	--	--	--	--	--	--	135
No. 2 DNS	48	--	3	1	--	--	--	52
No. 3 DNS	61	1[2]	1	--	--	--	--	62
No. 4 DNS	16	--	--	1	--	--	--	17
No. 5 DNS	4	--	--	--	--	--	--	4
S.G. DNS	--	--	--	--	--	--	--	--
ALL GRADES	264	1	4	2	--	--	--	270
PER CENT	97.8	0.4	1.4	0.7	0.0	0.0	0.0	100.0[3]

[1]Percentage distribution is of all carlots grading No. 1 DNS and less. This illustrates the importance of each specific grading factor in determining the grade by Crop Reporting District.

[2]Test weight was also a factor determining the grade for one carlot sample.

[3]Summation of the Percentage Distribution does not equal 100.0 per cent. In some cases two grading factors determined the grade for the carlot sample and therefore is included under both grading factors.

B-26. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT DETERMINING THE GRADE BY THE VARIOUS GRADING FACTORS IN CENTRAL NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963[1]

Grade	Test Weight	Total Damage	Foreign Material	Wheat of Other Classes	Other Grains	Shrunken and Broken	Stones	TOTAL
			SOUTH CENTRAL DISTRICT					
No. 1 DNS	7	--	--	--	--	--	--	7
No. 2 DNS	9	--	2	--	--	--	--	11
No. 3 DNS	54	--	1	--	--	--	--	55
No. 4 DNS	7	--	1	--	--	--	--	8
No. 5 DNS	--	--	--	--	--	--	--	--
S.G. DNS	--	--	1	--	--	--	--	1
ALL GRADES	77	--	5	--	--	--	--	82
PER CENT	93.9	0.0	6.1	0.0	0.0	0.0	0.0	100.0
			CENTRAL DISTRICT					
No. 1 DNS	8	--	--	--	--	--	--	8
No. 2 DNS	4	--	2	--	--	--	--	6
No. 3 DNS	26	--	--	--	--	--	--	26
No. 4 DNS	24	--	--	--	--	--	--	24
No. 5 DNS	5	--	1	--	--	--	--	6
S.G. DNS	--	--	--	--	--	--	--	--
ALL GRADES	67	--	3	--	--	--	--	70
PER CENT	95.7	0.0	4.3	0.0	0.0	0.0	0.0	100.0
			NORTH CENTRAL DISTRICT					
No. 1 DNS	13	--	--	--	--	--	--	13
No. 2 DNS	7	--	--	--	--	--	--	7
No. 3 DNS	16	--	--	1	--	--	--	17
No. 4 DNS	14	--	--	--	--	--	--	14
No. 5 DNS	3	--	--	--	--	--	--	3
S.G. DNS	--	--	--	--	--	--	1	1
ALL GRADES	53	--	--	1	--	--	1	55
PER CENT	96.4	0.0	0.0	1.8	0.0	0.0	1.8	100.0

[1]Percentage distribution is of all carlots grading No. 1 DNS and less. This illustrates the importance of each specific grading factor in determining the grade by Crop Reporting District.

B-27. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT DETERMINING THE GRADE BY THE VARIOUS GRADING FACTORS IN EASTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963[1]

Grade	Test Weight	Total Damage	Foreign Material	Wheat of Other Classes	Other Grains	Shrunken and Broken	Stones	TOTAL
			EAST CENTRAL DISTRICT					
No. 1 DNS	28	--	--[2]	--	--	--	--	28
No. 2 DNS	22	--	3[2]	--[3]	--	--	--	24
No. 3 DNS	48	--	3[2]	2[3]	--	--	--	51
No. 4 DNS	10	--	2	--	--	--	--	12
No. 5 DNS	--	--	2	--	--	--	--	2
S.G. DNS	--	--	--	--	--	--	--	--
ALL GRADES	108	--	10	2	--	--	--	117
PER CENT	92.3	0.0	8.5	1.7	0.0	0.0	0.0	100.0[4]
			NORTHEAST DISTRICT					
No. 1 DNS	38	--	--	--[2]	--	--	--	38
No. 2 DNS	34	--[2]	--	1[2]	--	--	--	34
No. 3 DNS	51	1[2]	1	--	--	--	--	52
No. 4 DNS	13	1	--	1	--	--	--	15
No. 5 DNS	1	--	--	--	--	--	--	1
S.G. DNS	--	--	--	--	--	--	--	--
ALL GRADES	137	2	1	2	--	--	--	140
PER CENT	97.9	1.4	0.7	1.4	0.0	0.0	0.0	100.0[4]

[1]Percentage distribution is of all carlots grading No. 1 DNS and less. This illustrates the importance of each specific grading factor in determining the grade by Crop Reporting District.

[2]Test weight was also a factor determining the grade for one carlot sample.

[3]Foreign Material was also a factor determining the grade for one carlot sample.

[4]Summation of the Percentage Distribution does not equal 100.0 per cent. In some cases two grading factors determined the grade for the carlot sample and therefore is included under both grading factors.

B-28. NUMBER OF CARLOTS IN SAMPLE SURVEY CONTAINING PERCENTAGE AMOUNTS OF SPECIFIED GRADING FACTORS, BY GRADE, TOTAL NORTH DAKOTA SAMPLE SHIPMENTS, JULY THROUGH DECEMBER, 1963

Grades													
No. 1 Heavy D.N.S.		No. 1 D.N.S.		No. 2 D.N.S.		No. 3 D.N.S.		No. 4 D.N.S.		No. 5 D.N.S.		Sample Grade D.N.S.	
No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
						DOCKAGE[1]							
152	0.0-0.9	231	0.0-0.9	99	0.0-0.9	157	0.0-0.9	51	0.0-0.9	2	0.0-0.9	1	1.0
61	1.0	87	1.0	52	1.0	52	1.0	42	1.0	9	1.0	1	3.0
4	2.0	5	2.0	12	2.0	23	2.0	4	2.0	4	2.0		
2	3.0	2	3.0	3	3.0	9	3.0	4	3.0	1	4.0		
		1	4.0	2	4.0	6	4.0	1	4.0				
						1	5.0						
						FOREIGN MATERIAL[2]							
1	0.5	1	0.3	1	0.6	1	0.6	1	1.3	1	4.0	1	6.0
		1	0.5	1	0.8	1	1.0	1	1.5	1	4.3		
				4	0.9	2	1.3	1	2.5	1	4.4		
				4	1.0	1	1.4	1	2.9				
						1	1.5	2	3.0				
						1	1.6						
						2	2.0						
						SHRUNKEN AND BROKEN[2]							
						1	5.7						

(continued)

B-28. (Continued)

Grades												
No. 1 Heavy D.N.S.		No. 1 D.N.S.		No. 2 D.N.S.		No. 3 D.N.S.		No. 4 D.N.S.		No. 5 D.N.S.		Sample Grade D.N.S.	
No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
						DAMAGED KERNELS[2]							
		1	2.0			1	3.0	2	3.0				
						1	7.0	1	3.3				
								1	3.5				
								1	5.0				
								1	9.0				
						WHEAT OF OTHER CLASSES[2,3]							
		1	1.0	2	2.0	1	2.5	1	4.0				
						1	2.6	1	8.0				
						2	3.0						
						OTHER GRAINS[2,4]							
						1	1.0						
						STONES[2]							
												1	Sample

[1]The 692 carlot samples for all grades that had less than 1 per cent dockage were listed as zero per cent on the Inspection Certificate.

[2]For the balance of the 1,124 carlot samples, this grade requirement was not a factor in determining the grade and therefore not included on the Inspection Certificate.

[3]The Wheat of Other Classes contained in each of the nine carlots was durum except one of the carlots grading No. 2 DNS which contained hard red winter wheat.

[4]The other grain contained in the one carlot was flax.

B-10. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 0.5 PER CENT PROTEIN RANGES IN EASTERN NORTH DAKOTA, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

EAST CENTRAL DISTRICT

Grade	Protein Range, Per Cent 10.5 to 10.9	11.0 to 11.4	11.5 to 11.9	12.0 to 12.4	12.5 to 12.9	13.0 to 13.4	13.5 to 13.9	14.0 to 14.4	14.5 to 14.9	15.0 to 15.4	15.5 to 15.9	16.0 to 16.4	16.5 to 16.9	17.0 to 17.4	17.5 to 17.9	18.0 to 18.4	TOTAL
1 Heavy DNS	--	--	1	--	--	4	1	1	1	2	--	--	--	--	--	--	10
1 DNS	--	--	--	--	--	2	10	10	4	2	--	--	--	--	--	--	28
2 DNS	--	--	--	--	--	5	8	5	3	2	1	--	--	--	--	--	24
3 DNS	--	--	--	3	2	4	16	19	6	1	--	--	--	--	--	--	51
4 DNS	--	--	--	--	--	1	4	5	2	--	--	--	--	--	--	--	12
5 DNS	--	--	--	--	--	--	2	--	--	--	--	--	--	--	--	--	2
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	1	3	2	16	41	40	16	7	1	--	--	--	--	--	127

NORTHEAST DISTRICT

1 Heavy DNS	--	--	--	--	--	1	1	--	--	--	--	--	--	--	--	--	2
1 DNS	--	--	--	1	1	7	11	16	2	--	--	--	--	--	--	--	38
2 DNS	--	--	--	--	--	13	4	9	4	3	1	--	--	--	--	--	34
3 DNS	--	--	--	1	1	4	10	17	13	5	--	1	--	--	--	--	52
4 DNS	--	--	--	--	--	1	--	3	7	3	1	--	--	--	--	--	15
5 DNS	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	1
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	--	2	2	26	27	45	26	11	2	1	--	--	--	--	142

B-11. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 POUND BUSHEL WEIGHT RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1962

Crop Reporting District	Bushel Weight, lb.													
	51	52	53	54	55	56	57	58	59	60	61	62	63	TOTAL
Southwest	--	--	--	3	4	9	17	26	24	6	3	--	--	92
West Central	--	--	3	5	5	7	17	26	24	17	15	5	--	124
Northwest	1	3	6	10	27	33	48	70	71	98	34	6	1	408
South Central	--	--	3	5	31	23	9	6	2	9	3	--	--	91
Central	1	4	13	12	17	9	4	6	3	9	5	--	--	83
North Central	1	2	6	8	4	13	7	6	8	2	--	--	--	57
Southeast	--	--	--	--	--	--	--	--	--	--	--	--	--	--
East Central	--	--	2	8	23	26	26	22	10	9	1	--	--	127
Northeast	--	1	5	8	26	26	34	28	11	3	--	--	--	142
STATE TOTAL	3	10	38	59	137	146	162	190	153	153	61	11	1	1,124
Percentage Distribution	0.3	0.9	3.4	5.2	12.2	13.0	14.4	16.9	13.6	13.6	5.4	1.0	0.1	100.0

B-12. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 POUND BUSHEL WEIGHT RANGES IN WESTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	Bushel Weight, lb.													
	51	52	53	54	55	56	57	58	59	60	61	62	63	TOTAL
SOUTHWEST DISTRICT														
1 Heavy DNS	--	--	--	--	--	--	--	--	--	5	3	--	--	8
1 DNS	--	--	--	--	--	--	--	26	22	--	--	--	--	48
2 DNS	--	--	--	--	--	--	17	--	--	--	--	--	--	17
3 DNS	--	--	--	--	4	9	--	--	1	1	--	--	--	15
4 DNS	--	--	--	3	--	--	--	--	1	--	--	--	--	4
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	--	3	4	9	17	26	24	6	3	--	--	92
WEST CENTRAL DISTRICT														
1 Heavy DNS	--	--	--	--	--	--	--	--	--	17	15	5	--	37
1 DNS	--	--	--	--	--	--	--	25	24	--	--	--	--	49
2 DNS	--	--	--	--	--	--	17	--	--	--	--	--	--	17
3 DNS	--	--	--	--	5	7	--	1	--	--	--	--	--	13
4 DNS	--	--	3	5	--	--	--	--	--	--	--	--	--	8
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	3	5	5	7	17	26	24	17	15	5	--	124
NORTHWEST DISTRICT														
1 Heavy DNS	--	--	--	--	--	--	--	--	--	97	34	6	1	138
1 DNS	--	--	--	--	--	--	--	65	70	--	--	--	--	135
2 DNS	--	--	--	--	--	--	48	2	1	1	--	--	--	52
3 DNS	--	--	--	--	27	33	--	2	--	--	--	--	--	62
4 DNS	--	--	6	10	--	--	--	1	--	--	--	--	--	17
5 DNS	1	3	--	--	--	--	--	--	--	--	--	--	--	4
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	1	3	6	10	27	33	48	70	71	98	34	6	1	408

B-13. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN 1 POUND BUSHEL WEIGHT RANGES IN CENTRAL NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1963

Grade	Bushel Weight, lb.													
	51	52	53	54	55	56	57	58	59	60	61	62	63	TOTAL
SOUTH CENTRAL DISTRICT														
1 Heavy DNS	--	--	--	--	--	--	--	--	--	7	2	--	--	9
1 DNS	--	--	--	--	--	--	--	5	2	--	--	--	--	7
2 DNS	--	--	--	--	--	--	9	--	--	1	1	--	--	11
3 DNS	--	--	--	--	31	23	--	--	--	1	--	--	--	55
4 DNS	--	--	3	4	--	--	--	1	--	--	--	--	--	8
5 DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S.G. DNS	--	--	--	1	--	--	--	--	--	--	--	--	--	1
TOTAL	--	--	3	5	31	23	9	6	2	9	3	--	--	91
CENTRAL DISTRICT														
1 Heavy DNS	--	--	--	--	--	--	--	--	--	8	5	--	--	13
1 DNS	--	--	--	--	--	--	--	6	2	--	--	--	--	8
2 DNS	--	--	--	--	--	--	4	--	1	1	--	--	--	6
3 DNS	--	--	--	--	17	9	--	--	--	--	--	--	--	26
4 DNS	--	--	13	11	--	--	--	--	--	--	--	--	--	24
5 DNS	1	4	--	1	--	--	--	--	--	--	--	--	--	6
S.G. DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	1	4	13	12	17	9	4	6	3	9	5	--	--	83
NORTH CENTRAL DISTRICT														
1 Heavy DNS	--	--	--	--	--	--	--	--	--	2	--	--	--	2
1 DNS	--	--	--	--	--	--	--	5	8	--	--	--	--	13
2 DNS	--	--	--	--	--	--	7	--	--	--	--	--	--	7
3 DNS	--	--	--	--	4	12	--	1	--	--	--	--	--	17
4 DNS	--	--	6	8	--	--	--	--	--	--	--	--	--	14
5 DNS	1	2	--	--	--	--	--	--	--	--	--	--	--	3
S.G. DNS	--	--	--	--	--	1	--	--	--	--	--	--	--	1
TOTAL	1	2	6	8	4	13	7	6	8	2	--	--	--	57