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Market Factors

OF NORTH DAKOTA

Hard Red Spring

Wheat Shipments

JULY - DECEMBER, 1965

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IN COOPERATION WITH
NORTH DAKOTA STATE WHEAT COMMISSION
BISMARCK, NORTH DAKOTA

FOREWORD

This publication represents a continuation of research into the factors affecting the marketing of North Dakota wheat. It illustrates the consistently high quality of North Dakota hard red spring wheat. This study was made possible by a grant provided by the North Dakota State Wheat Commission to the Department of Agricultural Economics. Reports published under this cooperative arrangement are:

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.
9. Market Factors of North Dakota Hard Red Spring Wheat, 1963 Shipments, Agricultural Economics Report No. 33, March, 1964.
10. Market Factors of North Dakota Durum Wheat, 1963 Shipments with Comparisons, Agricultural Economics Report No. 34, April, 1964.
11. Quality of Commodity Credit Corporation Wheat in North Dakota Country Warehouses and Subterminals, North Dakota Farm Research, May-June, 1964.
12. Movement of North Dakota Grain by Truck, October-November, 1963, North Dakota Farm Research, July-August, 1964.
13. Economic Implications of the Wheat Sedimentation Test on the North Dakota Economy, Clinton D. Kurtz, unpublished Master's thesis, Department of Agricultural Economics, North Dakota State University, Fargo, North Dakota, October, 1964.
14. Market Factors of North Dakota Durum Wheat Shipments, July-December, 1964, Agricultural Economics Report No. 42, June, 1965.
15. Market Factors of North Dakota Hard Red Spring Wheat Shipments, July-December, 1964, Agricultural Economics Report No. 43, June, 1965.

16. Trends in Shipping Grain by Motor Carrier From North Dakota Origins, 1956-57 Through 1963-64, Bulletin No. 462, December, 1965.
17. Addendum to Bulletin No. 462, Agricultural Economics Report No. 44, January, 1966.
18. Market Factors of North Dakota Durum Wheat Shipments, July-December, 1965, Agricultural Economics Report No. 45, April, 1966.

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MARKET FACTORS OF NORTH DAKOTA HARD RED SPRING WHEAT SHIPMENTS,
JULY - DECEMBER, 1965

David C. Nelson¹

The 1965 spring wheat production by most physical measurements represents another excellent year for North Dakota wheat farmers. The estimated 118,139,000 bushels produced exceeds the 1964 production by about 26,000,000 bushels and the 1959-63 average by some 31,000,000 bushels. Approximately 4,822,000 acres were harvested, which exceeds the 1964 crop by some 630,000 acres and the 1959-63 average by about 285,000 acres. The 1965 average yield per acre of 24.5 bushels was greater than the 1964 22 bushels per acre and the 1959-63 average of 18.8 bushels per acre.²

Continuing expanding production of hard red spring wheat by North Dakota farmers means that, as domestic and export demand increases, consistently sufficient quantity and quality will be available to satisfy the total market. It is constantly necessary, however, to maintain good records regarding the quality factors which determine the final return to farm producers. Good market information is vital to improvements in the marketing system for North Dakota's major product, hard red spring wheat.

The specific grading factors for spring wheat are of particular interest. Such factors as test weight, kernel damage, foreign material, shrunken and broken kernels, and contrasting classes will determine the final grade of any specific lot of wheat. This grade has a great deal to do with the price which a lot of wheat will attract in the market place.

In addition, the level of protein is significant. The protein measurement will determine the amount of premium paid for specific lots in conjunction with the basic grade price.

Objectives

The objectives of this report are the same as those of the previous reports in this series: To provide as complete a breakdown as possible of the 1965 hard red spring wheat crop leaving North Dakota via railroad during the period July through December, 1965. As in the previous publications, shipments are stratified by origin, by the various grading factors, and by protein moisture and dockage. Analysis is made of the importance of each grading factor in determining each grade.

Procedure

The survey sample is designed to represent the total volume of hard red spring wheat leaving the state via railroad during the second half of the 1965 calendar year.

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²Statistical Reporting Service, U. S. Department of Agriculture, Fargo, North Dakota.

Data were collected in a manner similar to the surveys for the 1961, 1962, 1963, and 1964 crop movements. Comparisons to determine variation between crops are thereby possible.

An approximate 10 per cent sample of all carlot inspection reports of carloads leaving North Dakota origins was taken. The sample period was from July 1, 1965, through December 31, 1965. The total usable sample contained 952 carload inspection records (Table 1).

TABLE 1. NUMBER OF CARLOTS INCLUDED IN 1965 SAMPLE, BY GRADE AND INSPECTION CENTER, AND 1965, 1964, 1963, 1962, AND 1961 PERCENTAGE GRADE DISTRIBUTION

	Minot	James- town	Grand Forks	Fargo	STATE TOTAL	1965 Per Cent	1964 Per Cent	1963 Per Cent	1962 Per Cent	1961 Per Cent
- - - - - carlots - - - - -										
No. 1 Heavy DNS	--	33	54	4	91	9.6	6.4	19.5	42.3	34.0
No. 1 DNS	115	64	47	10	236	24.7	34.9	29.0	36.2	44.6
No. 2 Heavy DNS	--	23	2	6	31	3.3	2.2	--	--	--
No. 2 DNS	71	130	44	--	245	25.7	30.4	14.9	11.2	12.3
No. 2 NS	--	--	1	--	1	0.1	--	--	--	--
No. 3 Heavy DNS	--	2	2	--	4	0.4	0.1	--	--	--
No. 3 DNS	63	51	120	3	237	24.9	18.4	25.9	7.1	6.6
No. 3 NS	--	--	31	1	32	3.4	0.1	--	--	--
No. 4 DNS	13	13	30	--	56	5.9	6.1	9.1	1.9	1.0
No. 4 NS	--	--	8	--	8	0.9	--	--	--	--
No. 5 DNS	--	4	6	--	10	1.0	0.8	1.4	0.2	0.1
No. 5 NS	--	--	1	--	1	0.1	--	--	--	--
S. G. DNS	--	--	--	--	--	--	0.4	0.2	0.5	1.3
No. 1 Heavy NS	--	--	--	--	--	--	--	--	0.2	--
No. 2 Heavy NS	--	--	--	--	--	--	0.1	--	--	--
No. 1 NS	--	--	--	--	--	--	0.1	--	0.4	0.1
ALL GRADES	262	320	346	24	952	100.0	100.0	100.0	100.0	100.0

Inspection records from the four inspection points supplied all the information relative to grading. This includes test weight, moisture content, dockage, damaged kernels, foreign material, shrunken and broken kernels, and contrasting classes.³ Protein content for each sample was obtained from the protein laboratory located at each hold point station.

³The 1965 samples did not indicate any grading of carloads restricted by this factor.

Origins were derived from railroad manifests. The area sampled is shown in Figure 1.

Findings

Only 12 of North Dakota's 53 counties were not included in the total sample area. The distribution of the results of the analysis of the hard red spring wheat shipped from these 41 counties shows the following pattern: about 63 per cent of the hard red spring wheat which was included in the sample graded No. 2 DNS or better, while about 89 per cent graded at least No. 3 DNS. In 1964 approximately 74 per cent graded No. 2 DNS or better, while in 1963 about 63 per cent fell within this grade. About 90 and 91 per cent fell within the grade in 1962 and 1961, respectively.

Three specific grades contained the largest number of samples: No. 1 DNS about 25 per cent of the total sample, No. 2 DNS about 26 per cent, and No. 3 DNS about 25 per cent. Fewer samples graded No. 1 DNS specifically than any other previous year studied. On the other hand, the proportion grading No. 2 DNS and No. 3 DNS specifically was exceeded only once in the previous years studied. A slightly higher proportion of the 1965 sample graded No. 1 Heavy DNS than in 1964. The 9.6 per cent was considerably less than the proportions of the 1963, 1962, and 1961 samples specifically obtaining this grade.

These general findings indicate that even though production was considerably high in 1965 the quality of the crop was slightly down compared to the 1964 and previous crops. The distribution profile, however, was roughly similar to the 1964 sample. The factors causing this distribution are highlighted in the appendix tables where each of the factors are analyzed concerning their single and collective effect on grade determination.

The percentage distribution and number of carlots by grade and crop reporting district indicate that the Northwest District had the highest proportion of shipments grading No. 1 DNS, while the Northeast District had the highest proportion grading No. 1 Heavy DNS (Table 2). This is the same pattern as was found in the 1964 sample.

In the lower grades (No. 3 DNS or less) the major portion of the total sample seemed to originate primarily from the Northeast District. Approximately 47 per cent of the sample grading No. 3 DNS or lower originated in this district. In 1964 about 41 per cent of the lower graded hard red spring wheat originated in this district.

PROTEIN

All crop reporting districts except the Central District had lower protein averages than in 1964 (Table 3). The averages for all districts ranged from a low of 13.9 per cent in the South Central District to a high of 15.4 per cent in the Central District. The 1964 averages ranged from a low of 14.3 per cent in the South Central District to a high of 15.4 per cent in the Southwest and East Central Districts. The overall average of the 1965 sample (952 carlots) was 14.7 per cent. Only the 1962 sample average was lower, 14.2 per cent.

More specific information regarding protein can be found in the appendix tables (B-1 through B-10). The highest county average was Eddy (Central District - 2 samples

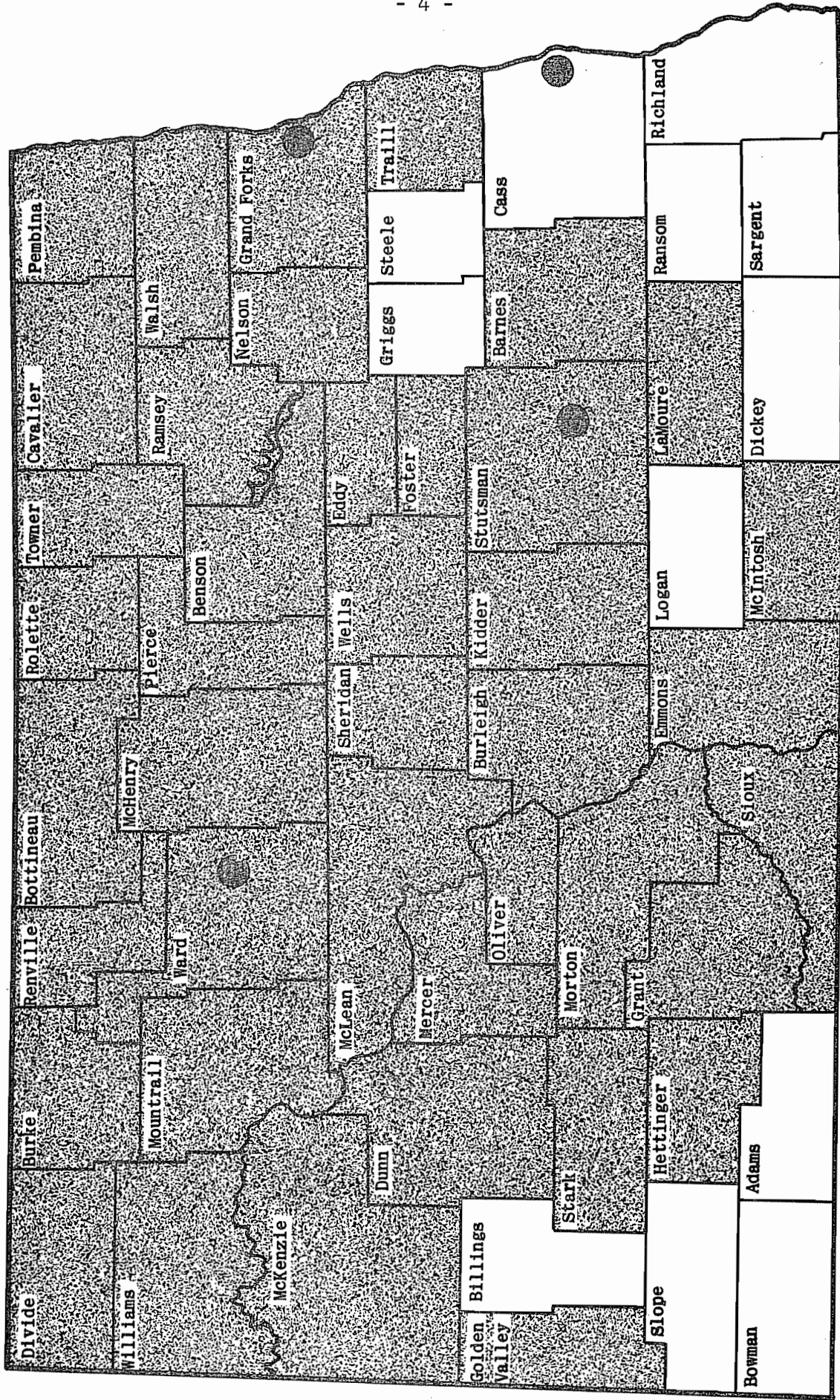


Figure 1. Counties Included in 1965 Sample of Carlots Inspected at North Dakota Hold Points.

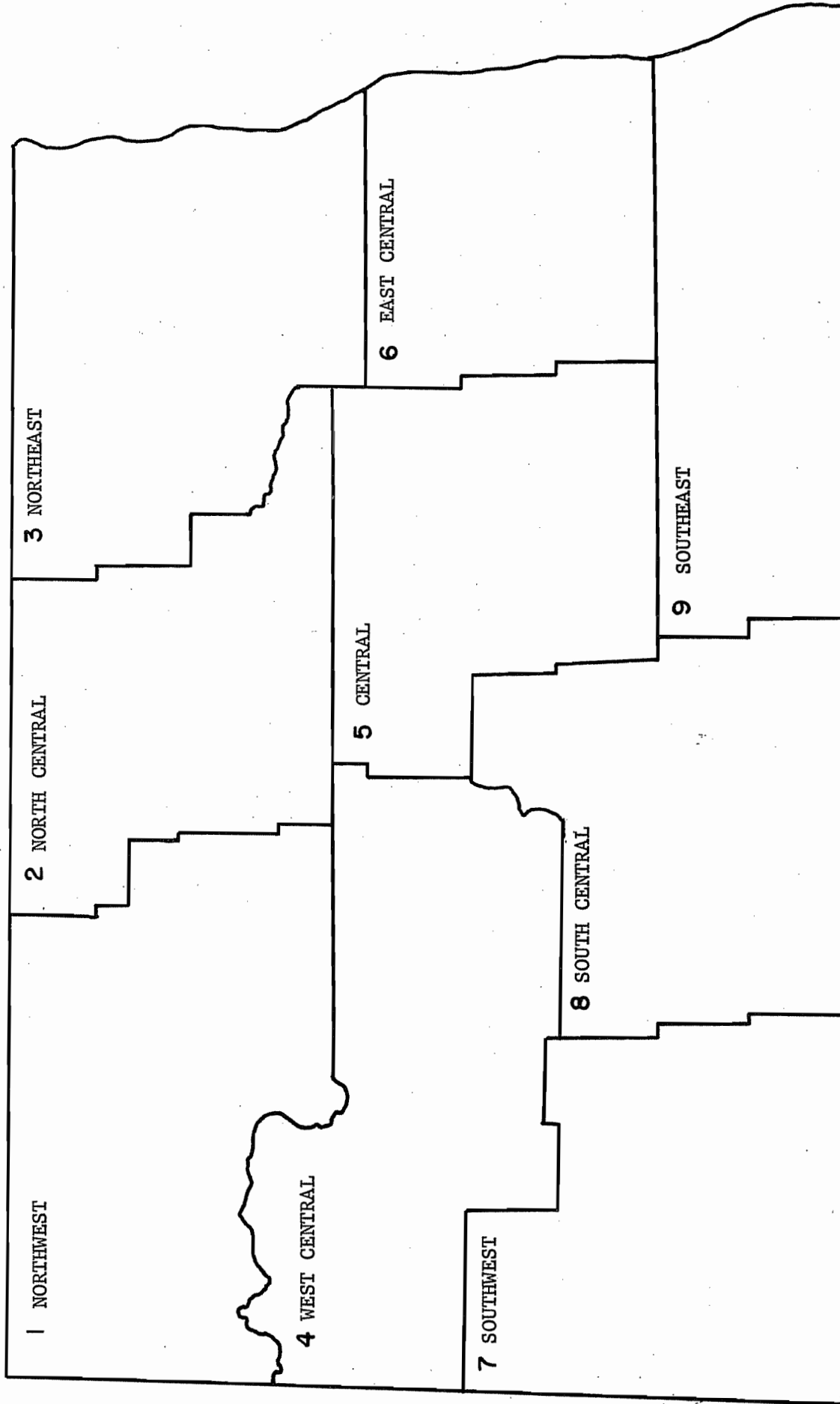


Figure 2. North Dakota Crop Reporting Districts.

TABLE 2. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOTS INCLUDED IN SAMPLE SURVEY, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1965

Grade	Crop Reporting District										STATE TOTAL	Per Cent
	South-west	West Cent.	North-west	South Cent.	North Cent.	East Cent.	North-east	South-east	number of carlots			
No. 1 Heavy DNS	3	22	23	--	1	9	2	31	--	91	9.6	
No. 1 DNS	30	41	53	39	23	20	5	25	--	236	24.8	
No. 2 Heavy DNS	2	17	7	--	1	2	--	2	--	31	3.3	
No. 2 DNS	35	38	40	29	42	18	11	30	2	245	25.7	
No. 2 NS	--	--	--	--	--	--	--	1	--	1	0.1	
No. 3 Heavy DNS	1	2	1	--	--	--	--	--	--	4	0.4	
No. 3 DNS	11	7	47	5	27	25	17	96	2	237	24.9	
No. 3 NS	--	--	2	--	--	1	2	27	--	32	3.3	
No. 4 DNS	1	--	7	1	9	9	5	24	--	56	5.9	
No. 4 NS	--	--	1	--	--	--	--	7	--	8	0.9	
No. 5 DNS	--	--	--	--	3	1	--	6	--	10	1.0	
No. 5 NS	--	--	--	--	--	1	--	--	--	1	0.1	
ALL GRADES	83	127	181	74	106	86	42	249	4	952	100.0	

with 16.5 per cent, while the lowest was Sioux County (South Central - 5 samples) with 13.3 per cent. Protein content of samples ranging from 14.0 to 14.4 per cent accounted for 236 carlots or 24.7 per cent of the total sample. This category accounted for only 14 per cent of the 1964 sample. Approximately 79 per cent of the 1965 sample measured 14 per cent or better, while about 86 per cent of the 1964 sample measured 14 per cent or better.

TABLE 3. AVERAGE AND RANGE OF PROTEIN CONTENT OF CARLOT SAMPLES OF HARD RED SPRING WHEAT SHIPMENTS, BY CROP REPORTING DISTRICT, AND STATE TOTALS FOR 1965, 1964, 1963, 1962, AND 1961

Crop Reporting District	Total Number of Shipments	Protein Content, Per Cent	
		Average	Range
Southwest	83	14.6	13.0 - 16.4
West Central	127	14.5	12.8 - 16.0
Northwest	181	14.6	12.3 - 16.5
South Central	74	13.9	12.3 - 16.1
Central	106	15.4	12.7 - 17.2
North Central	86	14.9	11.0 - 16.8
Southeast	4	14.4	13.5 - 14.2
East Central	42	15.2	14.0 - 16.4
Northeast	<u>249</u>	<u>14.4</u>	<u>12.3 - 16.6</u>
NORTH DAKOTA, 1965	952	14.7	11.0 - 17.2
NORTH DAKOTA, 1964	829*	15.0	11.5 - 17.3
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

*Protein tests not available for all samples tested.

TEST WEIGHT

Test weight or average weight in pounds per bushel for the total sample was 57.5 pounds (Table 4). This is the lowest average test weight of any of the sample years (1961-1965). As was true of the 1964 and 1963 samples, the highest test weights occurred in the western part of the state.

The highest county test weight average was found in Mercer County (West Central District) with an average of 59.9 pounds per bushel (Appendix Tables B-1 through B-3). The lowest average test weight was 54.9 pounds per bushel in Eddy County. About 54 per cent of the total 1965 sample weighed 58 pounds per bushel or better, while 64 per

cent of the 1964 sample fell within this category (Appendix Table B-11). Appendix Tables B-23, 24, and 25 indicate that even though test weight is an important determinant of grade, it was not as important in the 1965 crop movement as in the movements prior to 1964. Overall, test weight accounted for the grade in about 63 per cent of the samples (Table 6). In the 1964 sample it accounted for the grade in about 66 per cent of the total sample, while in 1963 it accounted for the grade in about 78 per cent of the total sample.

TABLE 4. AVERAGE AND RANGE OF BUSHEL WEIGHTS OF CARLOT SAMPLES OF HARD RED SPRING WHEAT SHIPMENTS, BY CROP REPORTING DISTRICT, AND STATE TOTALS FOR 1965, 1964, 1963, 1962, AND 1961

Crop Reporting District	Total Number of Shipments	Bushel Weight, Pounds	
		Average	Range
Southwest	83	58.0	54.0 - 60.3
West Central	127	59.1	55.0 - 62.0
Northwest	181	58.1	53.5 - 61.5
South Central	74	58.0	55.0 - 59.5
Central	106	56.3	52.6 - 60.6
North Central	86	56.8	52.5 - 61.7
Southeast	4	56.7	57.6 - 58.5
East Central	42	57.5	54.0 - 61.0
Northeast	<u>249</u>	<u>57.0</u>	<u>53.0 - 62.6</u>
NORTH DAKOTA, 1965	952	57.5	52.5 - 62.6
NORTH DAKOTA, 1964	836	58.1	52.0 - 62.8
NORTH DAKOTA, 1963	1,124	57.7	51.1 - 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 1965 total sample was about 12.2 per cent, which was the highest for any of the sample years (Table 5). As in the 1964 sample the highest average appeared in the Northeast District, while the lowest average appeared in the Southwest District. The western part of the state had the lowest moisture content.

Information appearing in the appendix indicates that samples from Cavalier County (Northeast District) had the highest average moisture content, 14.5 per cent, while the lowest appeared in samples from McIntosh County (Southeast District) where the average was 10.6 per cent (Appendix Tables B-1 through B-3). Approximately 14

per cent of the samples fell within the 11.0 to 11.4 per cent moisture category, while about 15 per cent fell within the 11.5 to 11.9 per cent category (Appendix Table B-15). About 43 per cent of the total sample was below 12 per cent moisture. About 67 per cent of the 1964 sample was below 12 per cent moisture, while about 73 per cent of the 1963 sample fell below this moisture level.

TABLE 5. AVERAGE AND RANGE OF MOISTURE CONTENT OF CARLOT SAMPLES OF HARD RED SPRING WHEAT SHIPMENTS, BY CROP REPORTING DISTRICT, AND STATE TOTALS FOR 1965, 1964, 1963, 1962, AND 1961

Crop Reporting District	Total Number of Shipments	Moisture Content, Per Cent	
		Average	Range
Southwest	83	11.6	9.7 - 13.6
West Central	127	11.7	9.9 - 13.5
Northwest	181	11.7	9.7 - 19.4
South Central	74	11.7	9.8 - 13.5
Central	106	12.1	9.8 - 13.5
North Central	86	12.2	10.2 - 15.2
Southeast	4	11.8	10.0 - 11.5
East Central	42	13.2	10.2 - 15.9
Northeast	<u>249</u>	<u>14.1</u>	<u>10.4 - 16.7</u>
NORTH DAKOTA, 1965	952	12.2	9.7 - 19.4
NORTH DAKOTA, 1964	836	11.5	8.8 - 15.6
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

DOCKAGE

Approximately 70 per cent of the total sample of the 1965 crop measured less than 1 per cent dockage (Appendix Table B-22). The 1964 crop survey sample indicated that about 80 per cent measured 1 per cent dockage or less, while 92.5 per cent of the 1963 crop sample fell below this level. Approximately 45 per cent of the samples measuring less than 1 per cent dockage originated in the western part of the state, while about 30 per cent originated in the eastern part of the state. The remainder came from the central part of the state. The Northeast District originated about 25 per cent of the total amount having less than 1 per cent dockage, while the Northwest District shipped 19 per cent of this amount.

GRADING FACTORS

The grading factors to be considered here include: Total kernel damage, foreign material, shrunken and broken kernels, and total defects.⁴ Under the grade standard's system these are the major components of the grade determination (Appendix Table A-1). Of the 861 carloads graded No. 1 DNS or less, 27 per cent or 257 carloads had the initial grade determined by one or more of these particular grading factors (Table 6).

As in the 1964 sample, the impact of the various grading factors is rather evenly distributed. Considering all the grading factors, including test weight, 10.6 per cent of the sample had its grade determined by shrunken and broken kernels, 7 per cent by total kernel damage, 6 per cent by total defects, and 3.4 per cent by the presence of excess foreign material. Considering the grading factors other than test weight, about 39 per cent of the samples which were initially determined by one of these factors were determined by shrunken and broken kernels, about 26 per cent by total kernel damage, 22 per cent by total defects, and 13 per cent by foreign material.

More detailed information is available in the several appendix tables. Each of the grading factors is analyzed separately by grade and by origin.

⁴No samples indicated sufficient levels of contrasting classes to determine a lower than maximum grade.

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, 1965

Grade and Percentage Distribution	Not Applicable	Test Weight	Grading Factors				Shrunken and Broken	TOTAL DEFECTS	Number of Samples
			Total Damage	Foreign Material	Shrunken and Broken	TOTAL DEFECTS			
No. 1 Heavy DNS	91	--	--	--	--	--	--	91	
Per Cent	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	
No. 1 DNS	--	236	--	--	--	--	--	236	
Per Cent	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
No. 2 Heavy DNS	--	--	--	5	22	4	4	31	
Per Cent	0.0	0.0	0.0	16.1	71.0	12.9	12.9	100.0	
No. 2 DNS	--	123	8	13	67	34	34	245	
Per Cent	0.0	50.2	3.3	5.3	27.3	13.9	13.9	100.0	
No. 2 NS	--	1	--	--	--	--	--	1	
Per Cent	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
No. 3 Heavy DNS	--	--	--	4	--	--	--	4	
Per Cent	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	
No. 3 DNS	--	176	25	9	11	16	16	237	
Per Cent	0.0	74.3	10.5	3.8	4.6	6.8	6.8	100.0	
No. 3 NS	--	22	10	--	--	--	--	32	
Per Cent	0.0	68.8	31.2	0.0	0.0	0.0	0.0	100.0	
No. 4 DNS	--	35	16	1	1	3	3	56	
Per Cent	0.0	62.5	28.5	1.8	1.8	5.4	5.4	100.0	
No. 4 NS	--	6	2	--	--	--	--	8	
Per Cent	0.0	75.0	25.0	0.0	0.0	0.0	0.0	100.0	
No. 5 DNS	--	4	6	--	--	--	--	10	
Per Cent	0.0	40.0	60.0	0.0	0.0	0.0	0.0	100.0	
No. 5 NS	--	1	--	--	--	--	--	1	
Per Cent	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	
ALL GRADES	91	604	67	32	101	57	57	952	
Per Cent	9.6	63.4	7.0	3.4	10.6	6.0	6.0	100.0	

APPENDIX A

OFFICIAL GRADE STANDARDS FOR HARD RED SPRING WHEAT

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

Grade	Minimum Test Weight Per Bushel	Maximum Limits of Defects					Wheat of Other Classes		TOTAL
		Heat-Damaged Kernels	TOTAL Damaged Kernels	Foreign Material	Shrunken and Broken Kernels	TOTAL Defects	Contrasting Classes	TOTAL	
1-	58.0	0.1	2.0	0.5	3.0	3.0	0.5	3.0	
2-	57.0	0.2	4.0	1.0	5.0	5.0	1.0	5.0	
3-	55.0	0.5	7.0	2.0	8.0	8.0	2.0	10.0	
4-	53.0	1.0	10.0	3.0	12.0	12.0	10.0	10.0	
5-	50.0	3.0	15.0	5.0	20.0	20.0	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 to No. 5, inclusive; or which contains stones; or which is musty, 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.

APPENDIX B

DETAILED INFORMATION FROM THE 1965 CROP SURVEY SAMPLE

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TABLE 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, 1965

Crop Reporting District and County	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		Number of Protein Samples	TOTAL Number of Samples
	Average	Range	Average	Range	Average	Range		
Stark	14.6	13.4 - 15.8	58.7	55.2 - 60.3	11.5	9.7 - 13.6	57	57
Golden Valley	13.7	13.0 - 14.8	57.6	54.0 - 59.5	12.2	11.2 - 13.2	11	11
Hettinger	15.5	15.0 - 16.4	57.9	56.7 - 59.0	11.2	9.9 - 12.6	15	15
Adams	--	--	--	--	--	--	--	--
Billings	--	--	--	--	--	--	--	--
Slope	--	--	--	--	--	--	--	--
SOUTHWEST	14.6	13.0 - 16.4	58.0	54.0 - 60.3	11.6	9.7 - 13.6	83	83
Dunn	14.2	13.1 - 15.5	58.9	55.5 - 61.1	11.9	10.4 - 13.5	37	37
Mercer	14.5	13.8 - 15.1	59.9	58.2 - 61.0	11.3	9.9 - 12.7	26	26
McLean	14.7	12.9 - 15.8	58.6	55.0 - 62.0	11.7	10.0 - 13.5	47	47
McKenzie	14.6	12.8 - 16.0	59.5	57.5 - 60.8	12.1	10.7 - 13.5	10	10
Oliver	14.5	13.6 - 15.6	58.9	57.5 - 60.2	11.5	10.6 - 12.2	7	7
WEST CENTRAL	14.5	12.8 - 16.0	59.1	55.0 - 62.0	11.7	9.9 - 13.5	127	127
Ward	14.5	12.9 - 16.2	57.0	54.0 - 61.5	11.8	10.0 - 14.6	97	97
Renville	14.7	13.8 - 15.2	56.7	53.5 - 59.7	12.2	9.9 - 13.5	13	13
Divide	14.7	14.2 - 15.0	58.3	57.0 - 60.5	11.9	10.5 - 12.5	6	6
Williams	15.0	13.2 - 16.5	59.8	58.5 - 61.0	11.7	9.7 - 13.5	18	18
Mountrail	14.8	13.6 - 16.4	58.4	55.0 - 61.3	11.9	10.4 - 19.4	38	38
Burke	14.2	12.3 - 15.2	58.5	55.2 - 60.5	11.0	10.6 - 13.3	9	9
NORTHWEST	14.6	12.3 - 16.5	58.1	53.5 - 61.5	11.7	9.7 - 19.4	181	181

TABLE 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, 1965

Crop Reporting District and County	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		Number of Protein Samples	TOTAL Number of Samples
	Average	Range	Average	Range	Average	Range		
Emmons	13.4	12.6 - 14.3	58.6	55.0 - 59.5	11.7	9.8 - 13.3	17	17
Burleigh	14.2	12.3 - 16.1	57.9	55.0 - 59.2	11.9	11.2 - 13.0	14	14
Sioux	13.3	13.0 - 13.7	57.5	57.0 - 58.0	12.2	11.4 - 12.5	5	5
Grant	14.3	13.4 - 15.1	57.5	54.2 - 59.0	11.3	11.0 - 12.0	8	8
Morton	14.5	13.2 - 15.6	58.8	57.1 - 59.5	11.6	10.6 - 13.5	30	30
SOUTH CENTRAL	13.9	12.3 - 16.1	58.0	55.0 - 59.5	11.7	9.8 - 13.5	74	74
Sheridan	15.1	13.2 - 15.7	57.2	55.1 - 58.5	12.0	11.2 - 12.6	7	7
Stutsman	16.1	13.1 - 17.2	57.1	53.5 - 59.7	11.6	9.9 - 13.5	47	47
Foster	15.7	14.3 - 16.6	56.5	52.7 - 58.8	12.2	11.0 - 12.4	3	3
Kidder	14.4	14.1 - 15.2	58.2	56.6 - 60.6	12.1	10.7 - 13.0	12	12
Eddy	16.5	16.3 - 16.6	54.9	53.2 - 56.6	13.2	13.0 - 13.4	2	2
Wells	15.1	12.7 - 17.0	54.3	53.5 - 60.0	11.8	9.8 - 13.5	35	35
CENTRAL	15.4	12.7 - 17.2	56.3	52.6 - 60.6	12.1	9.8 - 13.5	106	106
Benson	15.6	12.8 - 16.8	56.7	54.0 - 59.2	12.4	11.0 - 13.7	15	15
Bottineau	14.9	13.4 - 16.0	56.7	52.5 - 59.2	12.6	10.2 - 14.7	19	19
McHenry	14.2	11.0 - 15.8	57.9	53.0 - 61.7	11.8	10.5 - 15.2	49	49
Pierce	15.6	15.1 - 16.0	56.3	55.0 - 57.5	11.4	11.2 - 11.6	2	2
Rolette	14.4	--	56.5	--	13.2	--	1	1
NORTH CENTRAL	14.9	11.0 - 16.8	56.8	52.5 - 61.7	12.2	10.2 - 15.2	86	86

TABLE 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, 1965

Crop Reporting District and County	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		Number of Protein Samples	TOTAL Number of Samples
	Average	Range	Average	Range	Average	Range		
Traill	14.9	14.0 - 15.8	57.3	55.0 - 61.0	13.8	11.3 - 15.9	33	33
Barnes	15.5	14.5 - 16.4	56.7	54.0 - 59.0	12.6	10.2 - 14.3	9	9
Cass	--	--	--	--	--	--	--	--
Griggs	--	--	--	--	--	--	--	--
Steele	--	--	--	--	--	--	--	--
EAST CENTRAL	15.2	14.0 - 16.4	57.5	54.0 - 61.0	13.2	10.2 - 15.9	42	42
Walsh	14.2	13.0 - 15.3	59.1	55.0 - 62.6	13.8	10.7 - 16.7	51	51
Pembina	13.6	12.3 - 16.3	56.9	54.3 - 61.7	14.5	11.2 - 16.3	92	92
Grand Forks	14.8	13.3 - 16.1	57.3	54.0 - 61.6	13.7	10.4 - 16.6	52	52
Cavalier	14.3	13.1 - 15.5	55.9	54.0 - 60.0	14.5	13.0 - 16.0	29	29
Towner	15.1	13.6 - 16.6	55.6	54.0 - 58.0	14.0	12.3 - 16.0	10	10
Nelson	14.9	14.5 - 15.2	58.4	55.0 - 60.2	14.1	13.5 - 14.8	6	6
Ramsey	15.2	14.2 - 16.5	57.1	53.0 - 60.2	13.0	11.8 - 14.8	9	9
NORTHEAST	14.4	12.3 - 16.6	57.0	53.0 - 62.6	14.1	10.4 - 16.7	249	249
McIntosh	13.8	13.5 - 14.2	57.9	57.6 - 58.5	10.6	10.0 - 11.5	3	3
LaMoure	15.1	--	55.6	--	13.0	--	1	1
SOUTHEAST	14.4	13.5 - 14.2	56.7	57.6 - 58.5	11.8	10.0 - 11.5	4	4

TABLE 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, 1965

Grade	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		Number of Samples
	Average	Range	Average	Range	Average	Range	
SOUTHWEST DISTRICT							
1 Heavy DNS	14.8	14.1 - 15.5	60.0	-- --	11.4	11.0 - 12.0	3
1 DNS	14.7	13.4 - 15.7	58.6	56.0 - 59.6	11.8	10.0 - 13.6	30
2 Heavy DNS	14.9	14.7 - 15.1	60.1	60.0 - 60.3	10.4	10.0 - 10.8	2
2 DNS	14.7	13.0 - 16.4	58.3	57.0 - 59.5	11.5	9.9 - 13.2	35
3 Heavy DNS	14.5	-- --	60.6	-- --	10.4	-- --	1
3 DNS	14.7	13.6 - 15.8	57.5	55.2 - 59.5	11.3	9.7 - 13.3	11
4 DNS	13.6	-- --	54.0	-- --	11.9	-- --	1
ALL GRADES	14.6	13.0 - 16.4	58.4	55.2 - 60.3	11.2	9.7 - 13.6	83
WEST CENTRAL DISTRICT							
1 Heavy DNS	14.4	13.6 - 15.6	60.4	60.0 - 62.0	11.1	10.0 - 13.5	22
1 DNS	14.5	12.9 - 16.0	58.9	58.0 - 59.7	12.0	10.0 - 13.5	41
2 Heavy DNS	14.6	13.3 - 15.7	60.3	60.0 - 61.1	11.9	9.9 - 12.0	17
2 DNS	14.6	12.8 - 15.8	58.5	57.0 - 59.6	11.8	10.4 - 13.2	38
3 Heavy DNS	14.7	14.5 - 14.8	60.2	60.0 - 60.5	11.2	11.2 - 13.4	2
3 DNS	14.5	14.0 - 15.4	55.9	55.0 - 57.1	12.8	11.6 - 13.5	7
ALL GRADES	14.5	12.8 - 16.0	59.0	55.0 - 62.0	11.8	9.9 - 13.5	127
NORTHWEST DISTRICT							
1 Heavy DNS	14.6	13.2 - 16.1	60.5	60.0 - 61.5	11.9	9.7 - 19.4	23
1 DNS	14.9	12.3 - 16.2	58.8	58.0 - 59.7	11.7	10.4 - 13.5	53
2 Heavy DNS	15.0	13.9 - 16.5	60.4	60.0 - 61.0	11.2	10.3 - 12.5	7
2 DNS	14.5	12.0 - 15.9	56.6	57.0 - 59.7	11.5	10.4 - 13.5	40
3 Heavy DNS	15.1	-- --	60.2	-- --	11.8	-- --	1
3 DNS	14.4	13.0 - 16.4	56.2	55.0 - 59.7	12.1	9.0 - 14.6	47
3 NS	14.6	14.5 - 14.6	55.0	-- --	12.8	12.6 - 13.0	2
4 DNS	13.1	13.5 - 15.1	54.4	53.5 - 55.5	12.8	11.6 - 14.3	7
4 NS	14.8	-- --	54.2	-- --	13.5	-- --	1
ALL GRADES	14.5	12.3 - 16.5	57.3	55.0 - 61.5	12.1	9.0 - 19.4	181

TABLE 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, 1965

Grade	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		Number of Samples
	Average	Range	Average	Range	Average	Range	
SOUTH CENTRAL DISTRICT							
1 DNS	14.4	12.3 - 16.1	58.9	58.0 - 59.5	11.8	9.8 - 13.5	39
2 DNS	13.9	13.0 - 14.7	58.3	57.0 - 59.7	11.5	10.0 - 12.7	29
3 DNS	14.4	14.0 - 15.0	55.9	55.0 - 57.5	11.9	10.7 - 13.0	5
4 DNS	14.0	--	54.2	--	11.9	--	1
ALL GRADES	14.2	12.3 - 16.1	56.8	55.0 - 59.7	11.8	9.8 - 13.5	74
CENTRAL DISTRICT							
1 Heavy DNS	14.5	--	60.0	--	11.9	--	1
1 DNS	15.3	13.1 - 17.2	58.7	58.0 - 59.7	11.6	10.0 - 12.9	23
2 Heavy DNS	13.8	--	60.0	--	9.8	--	1
2 DNS	15.5	13.7 - 17.1	57.8	57.0 - 59.7	11.3	9.9 - 13.0	42
3 DNS	15.7	13.2 - 16.8	56.5	55.1 - 59.0	12.2	10.2 - 13.5	27
4 DNS	15.1	15.3 - 16.6	54.2	53.4 - 54.7	12.5	11.4 - 13.5	9
5 DNS	16.5	16.2 - 17.0	51.9	51.2 - 52.6	13.3	13.3 - 13.4	3
ALL GRADES	15.2	13.1 - 17.2	57.0	51.2 - 59.7	11.8	9.9 - 13.5	106
NORTH CENTRAL DISTRICT							
1 Heavy DNS	13.8	11.0 - 14.6	60.7	60.0 - 61.7	11.2	10.5 - 12.5	9
1 DNS	14.7	13.2 - 16.6	58.8	58.0 - 59.7	11.8	10.6 - 13.0	20
2 Heavy DNS	14.2	13.9 - 14.5	60.3	60.0 - 60.5	11.2	11.1 - 11.3	2
2 DNS	14.9	13.8 - 16.0	57.9	57.2 - 59.3	11.5	10.2 - 13.5	18
3 DNS	14.8	13.6 - 16.0	56.2	55.0 - 59.0	12.6	10.2 - 14.7	25
3 NS	13.4	--	55.2	--	14.7	--	1
4 DNS	14.3	12.8 - 15.3	54.0	53.0 - 54.6	13.4	12.9 - 15.2	9
5 DNS	16.0	--	52.7	--	13.5	--	1
5 NS	14.5	--	52.5	--	13.2	--	1
ALL GRADES	14.5	11.0 - 16.6	56.4	52.5 - 61.7	12.5	10.2 - 15.2	86

TABLE 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, 1965

Grade	Protein Content, %		Bushel Weight, lb.		Moisture Content, %		Number of Samples
	Average	Range	Average	Range	Average	Range	
	EAST CENTRAL DISTRICT						
1 Heavy DNS	15.2	14.3 - 15.8	60.9	60.7 - 61.0	11.5	11.3 - 11.7	2
1 DNS	15.0	14.2 - 15.7	58.9	58.2 - 59.5	12.2	11.4 - 12.7	5
2 DNS	15.1	13.5 - 16.4	58.3	57.0 - 59.7	12.8	10.2 - 14.6	11
3 DNS	15.1	14.0 - 16.2	56.2	55.1 - 59.0	14.3	11.7 - 15.9	17
3 NS	15.3	15.0 - 15.5	56.2	55.5 - 56.6	14.2	14.0 - 14.4	2
4 DNS	15.2	14.7 - 15.5	54.9	54.0 - 55.7	15.0	14.3 - 15.8	5
ALL GRADES	15.1	13.5 - 16.4	57.6	54.0 - 61.0	13.3	10.2 - 15.9	42
NORTHEAST DISTRICT							
1 Heavy DNS	14.5	12.5 - 16.1	60.7	60.0 - 62.6	11.9	10.7 - 14.0	31
1 DNS	14.6	12.4 - 16.3	58.7	54.5 - 59.6	13.0	11.7 - 14.8	25
2 Heavy DNS	15.1	14.8 - 15.3	61.4	61.2 - 61.5	10.9	10.4 - 11.4	2
2 DNS	14.3	13.3 - 15.8	57.6	56.0 - 59.7	14.2	11.8 - 16.2	30
2 NS	14.1	--	57.0	--	14.8	--	1
3 DNS	14.1	12.3 - 16.6	56.7	55.0 - 59.7	14.5	12.3 - 16.7	96
3 NS	14.0	12.5 - 15.0	55.9	55.0 - 57.6	14.9	13.5 - 16.2	27
4 DNS	14.1	12.6 - 16.0	55.7	54.0 - 59.4	14.4	12.2 - 16.0	24
4 NS	14.2	12.6 - 15.3	54.6	53.0 - 56.5	15.0	13.5 - 16.0	7
5 DNS	14.1	13.7 - 14.6	55.2	54.0 - 56.6	14.5	13.9 - 15.3	6
ALL GRADES	14.3	12.3 - 16.6	57.4	53.0 - 62.6	13.8	10.4 - 16.7	249
SOUTHEAST DISTRICT							
2 DNS	14.3	13.5 - 15.1	56.7	55.6 - 57.7	12.3	11.5 - 13.0	2
3 DNS	13.9	13.6 - 14.2	58.0	57.6 - 58.5	10.2	10.0 - 10.4	2
ALL GRADES	14.1	13.5 - 15.1	57.4	55.6 - 58.5	11.3	10.0 - 13.0	4

TABLE 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, 1965

Crop Reporting District	Protein Range, Per Cent																TOTAL
	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				
Southwest	--	--	--	--	4	9	21	16	22	9	2	--	--	83			
West Central	--	--	--	2	8	11	37	30	27	11	1	--	--	127			
Northwest	--	--	1	1	5	19	46	45	41	15	6	2	--	181			
South Central	--	--	1	1	15	10	22	16	7	1	1	--	--	74			
Central	--	--	--	--	3	4	12	14	16	13	19	20	5	106			
North Central	1	--	--	--	1	15	18	21	17	5	6	2	--	86			
Southeast	--	--	--	--	--	2	1	--	1	--	--	--	--	4			
East Central	--	--	--	--	--	1	6	9	14	9	3	--	--	42			
Northeast	--	--	<u>2</u>	<u>6</u>	<u>35</u>	<u>46</u>	<u>73</u>	<u>32</u>	<u>35</u>	<u>12</u>	<u>6</u>	<u>2</u>	--	<u>249</u>			
TOTAL	1	--	4	10	71	117	236	183	180	75	44	26	5	952			
Percentage Distribution	0.1	--	0.4	1.0	7.5	12.3	24.7	19.2	19.1	7.9	4.6	2.7	0.5	100.0			

TABLE 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, 1965

SOUTHWEST DISTRICT														
Grade	Protein Range, Per Cent													
	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	TOTAL
1 Heavy DNS	--	--	--	--	--	2	--	--	1	--	--	--	--	3
1 DNS	--	--	--	--	1	9	9	6	4	--	--	--	--	30
2 Heavy DNS	--	--	--	--	--	--	1	1	--	--	--	--	--	2
2 DNS	--	--	--	--	3	4	5	11	2	2	2	--	--	35
3 Heavy DNS	--	--	--	--	--	--	1	--	--	--	--	--	--	1
3 DNS	--	--	--	--	--	2	--	4	2	--	--	--	--	11
4 DNS	--	--	--	--	--	1	--	--	--	--	--	--	--	1
TOTAL	--	--	--	2	4	9	16	22	9	2	2	--	--	83
WEST CENTRAL DISTRICT														
1 Heavy DNS	--	--	--	--	1	2	9	6	1	--	--	--	--	22
1 DNS	--	--	--	1	3	7	10	5	2	1	1	--	--	42
2 Heavy DNS	--	--	--	--	1	1	4	7	2	--	--	--	--	17
2 DNS	--	--	--	1	3	1	11	7	6	--	--	--	--	38
3 Heavy DNS	--	--	--	--	--	--	--	2	--	--	--	--	--	2
3 DNS	--	--	--	--	--	--	3	1	--	--	--	--	--	7
TOTAL	--	--	--	2	8	11	37	30	11	1	1	--	--	127
NORTHWEST DISTRICT														
1 Heavy DNS	--	--	--	--	1	--	3	7	5	1	1	--	--	23
1 DNS	--	--	1	--	--	7	13	14	3	4	4	--	--	53
2 Heavy DNS	--	--	--	--	--	1	1	1	1	--	--	1	--	7
2 DNS	--	--	--	1	1	2	12	10	4	--	--	1	--	40
3 Heavy DNS	--	--	--	--	--	--	--	--	--	--	--	--	--	1
3 DNS	--	--	--	--	3	8	15	9	2	1	--	--	--	47
3 NS	--	--	--	--	--	--	--	2	--	--	--	--	--	2
4 DNS	--	--	--	--	1	1	2	1	--	--	--	--	--	7
4 NS	--	--	--	--	--	--	--	1	--	--	--	--	--	1
TOTAL	--	--	1	1	5	19	46	45	15	6	2	--	--	181

TABLE 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, 1965

SOUTHEAST DISTRICT																
Grade	Protein Range, Per Cent															
	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	TOTAL		
2 DNS	--	--	--	--	--	1	--	--	1	--	--	--	--	2		
3 DNS	--	--	--	--	--	1	1	--	--	--	--	--	--	2		
TOTAL	--	--	--	--	--	2	1	--	1	--	--	--	--	4		
EAST CENTRAL DISTRICT																
1 Heavy DNS	--	--	--	--	--	--	1	--	--	1	--	--	--	2		
1 DNS	--	--	--	--	--	--	1	2	--	--	--	--	--	5		
2 DNS	--	--	--	--	1	--	--	2	6	1	1	--	--	11		
3 DNS	--	--	--	--	--	4	3	3	6	2	2	--	--	17		
3 NS	--	--	--	--	--	--	--	--	1	1	--	--	--	2		
4 DNS	--	--	--	--	--	--	2	2	1	2	--	--	--	5		
TOTAL	--	--	--	--	--	1	6	9	14	9	3	--	--	42		
NORTHEAST DISTRICT																
1 Heavy DNS	--	--	--	1	4	5	7	3	5	3	3	--	--	31		
1 DNS	--	--	1	1	2	2	5	5	4	3	2	--	--	25		
2 Heavy DNS	--	--	--	--	--	--	--	1	1	--	--	--	--	2		
2 DNS	--	--	--	--	2	9	8	5	5	1	--	--	--	30		
2 NS	--	--	--	--	--	--	1	--	--	--	--	--	--	1		
3 DNS	--	--	1	1	19	14	35	7	14	3	--	2	--	96		
3 NS	--	--	--	1	5	6	7	5	3	--	--	--	--	27		
4 DNS	--	--	--	1	3	6	6	4	1	2	1	--	--	24		
4 NS	--	--	--	1	--	1	2	1	2	--	--	--	--	7		
5 DNS	--	--	--	--	--	3	2	1	--	--	--	--	--	6		
TOTAL	--	--	2	6	35	46	73	32	35	12	6	2	--	249		

TABLE B-11. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN ONE POUND BUSHEL WEIGHT RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1965

Crop Reporting District	Bushel Weight, lb.												TOTAL
	51	52	53	54	55	56	57	58	59	60	61	62	
Southwest	--	--	--	1	1	3	13	34	25	6	--	--	83
West Central	--	--	--	--	4	2	10	29	41	37	3	1	127
Northwest	--	--	1	6	23	19	24	37	40	24	7	--	181
South Central	--	--	--	1	3	1	12	28	29	--	--	--	74
Central	2	1	3	6	7	18	27	27	13	2	--	--	106
North Central	--	2	3	6	8	16	10	18	12	7	4	--	86
Southeast	--	--	--	--	1	--	2	1	--	--	--	--	4
East Central	--	--	--	2	9	10	5	6	8	1	1	--	42
Northeast	--	--	<u>1</u>	<u>14</u>	<u>56</u>	<u>73</u>	<u>32</u>	<u>19</u>	<u>21</u>	<u>15</u>	<u>17</u>	<u>1</u>	<u>249</u>
STATE TOTAL	2	3	8	36	112	142	135	199	189	92	32	2	952
Percentage Distribution	0.2	0.3	0.9	3.8	11.8	14.9	14.2	20.9	19.8	9.6	3.4	0.2	100.0

TABLE B-12. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN ONE POUND BUSHEL WEIGHT RANGES IN WESTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1965

SOUTHWEST DISTRICT													
Grade	Bushel Weight, lb.												
	51	52	53	54	55	56	57	58	59	60	61	62	TOTAL
1 Heavy DNS	--	--	--	--	--	--	--	--	--	3	--	--	3
1 DNS	--	--	--	--	--	--	19	11	11	--	--	--	30
2 Heavy DNS	--	--	--	--	--	--	--	--	--	2	--	--	2
2 DNS	--	--	--	--	--	12	11	12	12	--	--	--	35
3 Heavy DNS	--	--	--	--	--	--	--	--	--	1	--	--	1
3 DNS	--	--	--	--	1	3	4	2	2	--	--	--	11
4 DNS	--	--	--	1	--	--	--	--	--	--	--	--	1
TOTAL	--	--	--	1	1	3	13	34	25	6	--	--	83
WEST CENTRAL DISTRICT													
1 Heavy DNS	--	--	--	--	--	--	--	--	--	20	1	1	22
1 DNS	--	--	--	--	--	--	17	24	24	--	--	--	41
2 Heavy DNS	--	--	--	--	--	--	--	--	--	15	2	--	17
2 DNS	--	--	--	--	--	9	12	17	17	--	--	--	38
3 Heavy DNS	--	--	--	--	--	--	--	--	--	2	--	--	2
3 DNS	--	--	--	--	4	2	1	--	--	--	--	--	7
TOTAL	--	--	--	--	4	2	10	29	41	37	3	1	127
NORTHWEST DISTRICT													
1 Heavy DNS	--	--	--	--	--	--	--	--	--	17	6	--	23
1 DNS	--	--	--	--	--	--	27	26	26	--	--	--	53
2 Heavy DNS	--	--	--	--	--	--	--	--	--	6	1	--	7
2 DNS	--	--	--	--	--	22	7	11	11	--	--	--	40
3 Heavy DNS	--	--	--	--	--	--	--	--	--	1	--	--	1
3 DNS	--	--	--	--	20	19	2	3	3	--	--	--	47
3 NS	--	--	--	--	2	--	--	--	--	--	--	--	2
4 DNS	--	--	1	5	1	--	--	--	--	--	--	--	7
4 NS	--	--	--	1	--	--	--	--	--	--	--	--	1
TOTAL	--	--	1	6	23	19	24	37	40	24	7	--	181

TABLE B-13. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN ONE POUND BUSHEL WEIGHT RANGES IN CENTRAL NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1965

SOUTH CENTRAL DISTRICT													
Grade	Bushel Weight, lb.												
	51	52	53	54	55	56	57	58	59	60	61	62	TOTAL
1 DNS	--	--	--	--	--	--	--	17	22	--	--	--	39
2 DNS	--	--	--	--	--	--	11	11	7	--	--	--	29
3 DNS	--	--	--	--	3	1	1	--	--	--	--	--	5
4 DNS	--	--	--	1	--	--	--	--	--	--	--	--	1
TOTAL	--	--	--	1	3	1	12	28	29	--	--	--	74
CENTRAL DISTRICT													
1 Heavy DNS	--	--	--	--	--	--	--	--	--	1	--	--	1
1 DNS	--	--	--	--	--	--	--	14	9	--	--	--	23
2 Heavy DNS	--	--	--	--	--	--	--	--	--	1	--	--	1
2 DNS	--	--	--	--	--	--	27	11	4	--	--	--	42
3 DNS	--	--	--	--	7	18	--	2	--	--	--	--	27
4 DNS	--	--	3	6	--	--	--	--	--	--	--	--	9
5 DNS	2	1	--	--	--	--	--	--	--	--	--	--	3
TOTAL	2	1	3	6	7	18	27	27	13	2	--	--	106
NORTH CENTRAL DISTRICT													
1 Heavy DNS	--	--	--	--	--	--	--	--	--	5	4	--	9
1 DNS	--	--	--	--	--	--	--	10	10	--	--	--	20
2 Heavy DNS	--	--	--	--	--	--	--	--	--	2	--	--	2
2 DNS	--	--	--	--	--	--	9	8	1	--	--	--	18
3 DNS	--	--	--	--	7	16	1	--	1	--	--	--	25
3 NS	--	--	--	--	1	--	--	--	--	--	--	--	1
4 DNS	--	--	3	6	--	--	--	--	--	--	--	--	9
5 DNS	--	1	--	--	--	--	--	--	--	--	--	--	1
5 NS	--	1	--	--	--	--	--	--	--	--	--	--	1
TOTAL	--	2	3	6	8	16	10	18	12	7	4	--	86

TABLE B-14. NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN ONE POUND BUSHEL WEIGHT RANGES IN EASTERN NORTH DAKOTA, BY GRADE AND CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1965

SOUTHEAST DISTRICT													
Bushel Weight lb.													
Grade	51	52	53	54	55	56	57	58	59	60	61	62	TOTAL
2 DNS	--	--	--	--	1	--	1	--	--	--	--	--	2
3 DNS	--	--	--	--	--	--	1	1	--	--	--	--	2
TOTAL	--	--	--	--	1	--	2	1	--	--	--	--	4
EAST CENTRAL DISTRICT													
1 Heavy DNS	--	--	--	--	--	--	--	--	--	1	1	--	2
1 DNS	--	--	--	--	--	--	--	2	3	--	--	--	5
2 DNS	--	--	--	--	--	--	4	3	4	--	--	--	11
3 DNS	--	--	--	--	5	9	1	1	1	--	--	--	17
3 NS	--	--	--	--	1	1	--	--	--	--	--	--	2
4 DNS	--	--	--	2	3	--	--	--	--	--	--	--	5
TOTAL	--	--	--	2	9	10	5	6	8	1	1	--	42
NORTHEAST DISTRICT													
1 Heavy DNS	--	--	--	--	--	--	--	--	--	15	15	1	31
1 DNS	--	--	--	1	--	--	--	12	12	--	--	--	25
2 Heavy DNS	--	--	--	--	--	--	--	--	--	--	2	--	2
2 DNS	--	--	--	--	--	1	21	2	6	--	--	--	30
2 NS	--	--	--	--	--	--	1	--	--	--	--	--	1
3 DNS	--	--	--	--	33	50	7	4	2	--	--	--	96
3 NS	--	--	--	--	12	14	1	--	--	--	--	--	27
4 DNS	--	--	--	7	8	5	2	1	1	--	--	--	24
4 NS	--	--	1	4	1	1	--	--	--	--	--	--	7
5 DNS	--	--	--	2	2	2	--	--	--	--	--	--	6
TOTAL	--	--	1	14	56	73	32	19	21	15	17	1	249

TABLE 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, 1965

Crop Reporting District	Moisture Range, Per Cent																		TOTAL
	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	15.5 to 15.9	16.0 to 16.4	16.5 to 16.9	17.0 to 17.4	19.0 to 19.4	
Southwest	--	2	9	12	16	13	16	6	8	1	--	--	--	--	--	--	--	83	
West Central	--	2	9	15	28	28	14	14	10	7	--	--	--	--	--	--	--	127	
Northwest	1	2	10	29	21	27	28	31	21	6	3	1	--	--	--	--	1	181	
South Central	--	1	3	6	17	17	15	9	5	1	--	--	--	--	--	--	--	74	
Central	--	1	9	11	16	21	20	14	11	3	--	--	--	--	--	--	--	106	
North Central	--	--	1	9	22	11	12	8	12	8	1	1	1	--	--	--	--	86	
Southeast	--	--	2	--	--	1	--	--	1	--	--	--	--	--	--	--	--	4	
East Central	--	--	1	--	2	5	3	3	4	5	10	1	5	3	--	--	--	42	
Northeast	--	--	1	3	9	15	18	10	24	30	32	34	30	24	17	2	--	249	
STATE TOTAL	1	8	45	85	131	138	126	95	96	61	46	37	36	27	17	2	1	952	
Percentage Distribution	0.1	0.9	4.7	8.9	13.7	14.6	13.3	10.0	10.1	6.4	4.8	3.9	3.7	2.8	1.8	0.2	--	0.1	

TABLE 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, 1965

		SOUTHWEST DISTRICT																	
		Moisture Range, Per Cent																	
Grade		9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	19.0
		to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
		9.4	9.9	10.4	10.9	11.4	11.9	12.4	12.9	13.4	13.9	14.4	14.9	15.4	15.9	16.4	16.9	18.9	19.4
		TOTAL																	
1 Heavy DNS		--	--	--	--	2	--	1	--	--	--	--	--	--	--	--	--	--	3
1 DNS		--	--	3	4	3	5	8	3	3	1	--	--	--	--	--	--	--	30
2 Heavy DNS		--	--	--	1	1	--	--	--	--	--	--	--	--	--	--	--	--	2
2 DNS		--	1	2	7	9	5	5	2	4	--	--	--	--	--	--	--	--	35
3 Heavy DNS		--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1
3 DNS		--	1	3	--	1	2	2	1	1	--	--	--	--	--	--	--	--	11
4 DNS		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	1
TOTAL		--	2	9	12	16	13	16	6	8	1	--	--	--	--	--	--	--	83
		WEST CENTRAL DISTRICT																	
1 Heavy DNS		--	1	4	5	6	3	1	--	1	1	--	--	--	--	--	--	--	22
1 DNS		--	--	1	3	8	9	5	6	6	3	--	--	--	--	--	--	--	41
2 Heavy DNS		--	1	3	2	6	4	1	--	--	--	--	--	--	--	--	--	--	17
2 DNS		--	--	1	5	6	11	7	6	1	1	--	--	--	--	--	--	--	38
3 Heavy DNS		--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	2
3 DNS		--	--	--	--	--	1	--	2	2	2	--	--	--	--	--	--	--	7
TOTAL		--	2	9	15	28	28	14	14	10	7	--	--	--	--	--	--	--	127
		NORTHWEST DISTRICT																	
1 Heavy DNS		--	1	5	9	2	1	1	2	1	--	--	--	--	--	--	--	--	1
1 DNS		--	--	1	11	11	10	6	6	6	2	--	--	--	--	--	--	--	53
2 Heavy DNS		--	--	1	1	2	--	2	1	--	--	--	--	--	--	--	--	--	7
2 DNS		--	--	1	8	3	11	7	7	2	1	--	--	--	--	--	--	--	40
3 Heavy DNS		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	1
3 DNS		1	1	2	--	2	4	11	12	10	1	2	1	--	--	--	--	--	47
3 NS		--	--	--	--	--	--	--	1	1	--	--	--	--	--	--	--	--	2

(continued)

TABLE 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, 1965 (continued)

		SOUTHWEST DISTRICT																
		Moisture Range, Per Cent																
Grade		9.0 to 9.4	9.5 to 10.0	10.0 to 10.5	10.5 to 11.0	11.0 to 11.5	11.5 to 12.0	12.0 to 12.5	12.5 to 13.0	13.0 to 13.5	13.5 to 14.0	14.0 to 14.5	14.5 to 15.0	15.0 to 15.5	15.5 to 16.0	16.0 to 16.5	16.5 to 17.0	17.0 to 19.0
4 DNS	--	--	--	--	1	--	1	2	1	1	1	--	--	--	--	--	--	7
4 NS	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	1
TOTAL	1	2	10	29	21	27	28	31	21	6	3	1	--	--	--	--	1	181

TABLE 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, 1965

		SOUTH CENTRAL DISTRICT															CENTRAL DISTRICT															NORTH CENTRAL DISTRICT																								
		Moisture Range, Per Cent																																																						
		9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	19.0	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	19.0	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	19.0	
Grade		to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	
1 DNS		--	1	--	1	10	11	8	4	3	1	--	--	--	--	--	--	--	39	--	--	3	6	17	15	9	5	1	--	--	--	--	--	--	--	74	--	--	1	9	11	16	21	20	14	11	3	--	--	--	--	--	--	--	106	
2 DNS		--	--	3	3	7	5	6	4	1	--	--	--	--	--	--	--	--	1	--	--	3	6	4	3	4	--	--	--	--	--	--	--	--	--	--	23	--	--	1	3	5	9	12	5	4	3	--	--	--	--	--	--	--	--	1
3 DNS		--	--	--	2	--	--	1	1	1	--	--	--	--	--	--	--	--	5	--	--	1	3	5	8	4	4	2	--	--	--	--	--	--	--	--	27	--	--	1	3	5	9	12	5	4	3	--	--	--	--	--	--	--	--	9
4 DNS		--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	1	--	--	2	1	1	--	--	--	--	--	--	--	--	3	--	--	1	1	--	--	3	--	--	--	--	--	--	--	--	--	--	--	3
TOTAL		--	1	3	6	17	17	15	9	5	1	--	--	--	--	--	--	--	74	--	--	3	6	17	15	9	5	1	--	--	--	--	--	--	--	74	--	--	1	9	11	16	21	20	14	11	3	--	--	--	--	--	--	--	106	
1 Heavy DNS		--	--	--	2	4	2	--	1	--	--	--	--	--	--	--	--	--	9	--	--	2	4	5	3	4	1	--	--	--	--	--	--	--	--	20	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	--	2	
1 DNS		--	--	--	4	5	3	5	--	3	--	--	--	--	--	--	--	--	20	--	--	4	5	2	--	--	--	--	--	--	--	--	--	--	--	--	25	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	--	1
2 Heavy DNS		--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	18	--	--	2	4	3	4	2	3	3	--	--	--	--	--	--	--	--	9	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	--	9
2 DNS		--	--	1	2	8	3	3	--	--	--	--	--	--	--	--	--	--	1	--	--	1	2	3	4	5	3	3	--	--	--	--	--	--	--	--	1	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	25	
3 DNS		--	--	--	1	3	3	4	5	--	--	--	--	--	--	--	--	--	1	--	--	1	2	3	4	5	3	3	--	--	--	--	--	--	--	--	1	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	1	
3 NS		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	2	3	4	5	3	3	--	--	--	--	--	--	--	--	1	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	1	
4 DNS		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	2	3	4	5	3	3	--	--	--	--	--	--	--	--	1	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	1	
5 DNS		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	2	3	4	5	3	3	--	--	--	--	--	--	--	--	1	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	1	
5 NS		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	2	3	4	5	3	3	--	--	--	--	--	--	--	--	1	--	--	1	2	4	8	3	3	5	3	1	--	--	--	--	--	--	1	
TOTAL		--	--	1	9	22	11	12	8	12	8	1	1	1	--	--	--	--	86	--	--	1	9	22	11	12	8	1	1	1	1	--	--	--	--	86	--	--	1	9	22	11	12	8	1	1	1	1	1	--	--	--	--	86		

TABLE 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, 1965

SOUTHEAST DISTRICT																	
Moisture Range, Per Cent																	
Grade	9.0 to 9.4	9.5 to 10.0	10.0 to 10.5	10.5 to 11.0	11.0 to 11.5	11.5 to 12.0	12.0 to 12.5	12.5 to 13.0	13.0 to 13.5	13.5 to 14.0	14.0 to 14.5	14.5 to 15.0	15.0 to 15.5	15.5 to 16.0	16.0 to 16.5	16.5 to 17.0	17.0 to 19.0
	9.4 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	15.5 to 15.9	16.0 to 16.4	16.5 to 16.9	17.0 to 18.9	19.0 to 19.4
2 DNS	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--	--	2
3 DNS	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2
TOTAL	--	2	--	--	1	--	--	1	--	--	--	--	--	--	--	--	4
EAST CENTRAL DISTRICT																	
1 Heavy DNS	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	2
1 DNS	--	--	--	1	--	2	--	--	--	--	--	--	--	--	--	--	5
2 DNS	--	1	--	--	3	1	1	1	2	1	1	--	--	--	--	--	11
3 DNS	--	--	--	--	1	--	--	3	3	5	--	3	2	--	--	--	17
3 NS	--	--	--	--	--	--	--	--	--	2	--	--	--	--	--	--	2
4 DNS	--	--	--	--	--	--	--	--	--	2	--	2	1	--	--	--	5
TOTAL	--	1	--	2	5	3	3	4	5	10	1	5	3	--	--	--	42
NORTHEAST DISTRICT																	
1 Heavy DNS	--	--	3	8	9	2	4	3	1	1	--	--	--	--	--	--	31
1 DNS	--	--	--	--	5	3	1	9	3	1	3	--	--	--	--	--	25
2 Heavy DNS	--	1	--	1	--	--	--	--	--	--	--	--	--	--	--	--	2
2 DNS	--	--	--	--	1	--	2	3	5	7	3	6	1	2	--	--	30
2 NS	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	1
3 DNS	--	--	--	--	--	1	2	7	13	12	13	23	16	7	2	--	96
3 NS	--	--	--	--	--	--	--	--	3	5	5	6	4	4	--	--	27
4 DNS	--	--	--	--	--	2	1	2	3	3	6	2	3	2	--	--	24
4 NS	--	--	--	--	--	--	--	--	1	--	2	2	--	2	--	--	7
5 DNS	--	--	--	--	--	--	--	--	1	3	1	1	--	--	--	--	6
TOTAL	--	1	3	9	15	8	10	24	30	32	34	40	24	17	2	--	249

TABLE B-19. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN ONE PER CENT DAMAGE RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1965

Crop Reporting District	Not Listed as a Grading 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	11.0 to Over	
Southwest	79	4	--	--	--	--	--	--	--	--	--	--	--	--	83
West Central	125	2	--	--	--	--	--	--	--	--	--	--	--	--	127
Northwest	174	4	1	1	--	--	1	--	--	--	--	--	--	--	181
South Central	73	1	--	--	--	--	--	--	--	--	--	--	--	--	74
Central	98	5	--	1	1	--	1	--	1	--	--	--	--	--	106
North Central	69	4	3	7	1	--	1	--	--	--	1	--	--	--	86
Southeast	3	1	--	--	--	--	--	--	--	--	--	--	--	--	4
East Central	17	2	1	3	5	3	2	2	3	1	--	3	--	--	42
Northeast	86	3	6	19	25	31	25	17	12	10	7	2	6	6	249
STATE TOTAL	724	26	11	31	31	35	28	21	15	11	7	6	6	6	952
Percentage Distribution	76.1	2.7	1.2	3.3	3.3	3.6	2.9	2.2	1.6	1.2	0.7	0.6	0.6	0.6	100.0

TABLE 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, 1965

Crop Reporting District	Not Listed as a Grading Factor	Foreign Material Range, Per Cent										TOTAL	
		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			
Southwest	72	7	4	--	--	--	--	--	--	--	--	--	83
West Central	102	13	9	2	--	1	--	--	--	--	--	--	127
Northwest	159	7	10	1	4	--	--	--	--	--	--	--	181
South Central	68	4	2	--	--	--	--	--	--	--	--	--	74
Central	91	7	4	4	--	--	--	--	--	--	--	--	106
North Central	61	19	5	1	--	--	--	--	--	--	--	--	86
Southeast	1	1	2	--	--	--	--	--	--	--	--	--	4
East Central	16	24	2	--	--	--	--	--	--	--	--	--	42
Northeast	<u>91</u>	<u>141</u>	<u>9</u>	<u>5</u>	<u>1</u>	<u>1</u>	--	--	--	--	--	<u>1</u>	<u>249</u>
STATE TOTAL	661	223	47	13	5	2	--	--	--	--	--	1	952
Percentage Distribution	69.5	23.4	4.9	1.4	0.5	0.2	--	--	--	--	--	0.1	100.0

TABLE B-21. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN ONE PER CENT SHRUNKEN AND BROKEN RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1965

Crop Reporting District	Not Listed as a Grading Factor	Shrunken and Broken 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	52	--	--	1	22	6	2	--	--	--	--	--	--	--	83
West Central	81	--	1	10	29	5	1	--	--	--	--	--	--	--	127
Northwest	152	--	3	6	12	5	3	--	--	--	--	--	--	--	181
South Central	57	--	--	2	13	1	1	--	--	--	--	--	--	--	74
Central	85	--	2	9	7	3	--	--	--	--	--	--	--	--	106
North Central	62	--	8	11	5	--	--	--	--	--	--	--	--	--	86
Southeast	1	--	--	1	--	1	1	--	--	--	--	--	--	--	4
East Central	15	11	11	3	1	--	1	--	--	--	--	--	--	--	42
Northeast	85	<u>117</u>	<u>43</u>	<u>3</u>	<u>1</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>249</u>
STATE TOTAL	590	128	68	46	90	21	9	--	--	--	--	--	--	--	952
Percentage Distribution	62.0	13.4	7.1	4.8	9.5	2.2	1.0	--	--	--	--	--	--	--	100.0

TABLE B-22. PERCENTAGE DISTRIBUTION AND NUMBER OF CARLOT SAMPLES OF HARD RED SPRING WHEAT FALLING WITHIN ONE PER CENT DOCKAGE RANGES, BY CROP REPORTING DISTRICT, JULY THROUGH DECEMBER, 1965

Crop Reporting District	Less Than 0.5 Per Cent	Dockage Range, Per Cent										TOTAL	
		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 and Over			
Southwest	31	46	5	--	--	1	--	--	--	--	--	--	83
West Central	35	61	15	6	3	3	--	--	2	--	--	--	127
Northwest	51	75	34	9	3	3	4	1	--	1	--	1	181
South Central	24	31	9	3	3	2	1	--	--	--	--	1	74
Central	16	46	10	4	11	9	3	4	2	4	2	1	106
North Central	16	33	14	4	4	4	6	3	1	3	1	1	86
Southeast	--	4	--	--	--	--	--	--	--	--	--	--	4
East Central	13	21	6	1	--	--	--	1	--	1	--	--	42
Northeast	<u>87</u>	<u>76</u>	<u>55</u>	<u>8</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>1</u>	<u>249</u>
STATE TOTAL	273	393	148	35	25	17	9	5	5	9	5	5	952
Percentage Distribution	28.7	41.3	15.5	3.7	2.6	1.8	1.0	0.5	0.5	1.0	0.5	0.5	100.0

TABLE B-23. 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, 1965

Grade	Test Weight	Total Damage	Foreign Material	Shrunken and Broken	Total Defects	TOTAL
No. 1 Heavy DNS	3	--	--	--	--	3
No. 1 DNS	30	--	--	--	--	30
No. 2 Heavy DNS	--	--	--	1	1	2
No. 2 DNS	12	--	--	20	3	35
No. 3 Heavy DNS	--	--	1	--	--	1
No. 3 DNS	4	--	1	--	6	11
No. 4 DNS	<u>1</u>	--	--	--	--	<u>1</u>
ALL GRADES	50	--	2	21	10	83
PER CENT	60.2	--	2.4	25.3	12.1	100.0
WEST CENTRAL DISTRICT						
No. 1 Heavy DNS	22	--	--	--	--	22
No. 1 DNS	41	--	--	--	--	41
No. 2 Heavy DNS	--	--	2	14	1	17
No. 2 DNS	7	--	3	16	12	38
No. 3 Heavy DNS	--	--	2	--	--	2
No. 3 DNS	<u>5</u>	--	--	<u>1</u>	<u>1</u>	<u>7</u>
ALL GRADES	75	--	7	31	14	127
PER CENT	59.1	--	5.5	24.4	11.0	100.0
NORTHWEST DISTRICT						
No. 1 Heavy DNS	23	--	--	--	--	23
No. 1 DNS	53	--	--	--	--	53
No. 2 Heavy DNS	--	--	2	5	--	7
No. 2 DNS	27	--	4	7	2	40
No. 3 Heavy DNS	--	--	1	--	--	1
No. 3 DNS	39	--	3	4	1	47
No. 3 NS	2	--	--	--	--	2
No. 4 DNS	7	--	--	--	--	7
No. 4 NS	<u>1</u>	--	--	--	--	<u>1</u>
ALL GRADES	152	--	10	16	3	181
PER CENT	84.0	--	5.5	8.8	1.7	100.0

TABLE B-24. 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, 1965

Grade	Test Weight	Total Damage	Foreign Material	Shrunken and Broken		Total Defects	TOTAL
				Foreign Material	Shrunken and Broken		
SOUTH CENTRAL DISTRICT							
No. 1 DNS	39	--	--	--	--	--	39
No. 2 DNS	12	--	2	12	3	3	29
No. 3 DNS	4	--	--	1	--	--	5
No. 4 DNS	1	--	--	--	--	--	1
ALL GRADES	56	--	2	13	3	3	74
PER CENT	75.7	--	2.7	17.6	4.0	4.0	100.0
CENTRAL DISTRICT							
No. 1 Heavy DNS	1	--	--	--	--	--	1
No. 1 DNS	23	--	--	--	--	--	23
No. 2 Heavy DNS	--	--	--	1	--	--	1
No. 2 DNS	29	--	1	7	5	5	42
No. 3 DNS	24	1	2	--	--	--	27
No. 4 DNS	7	--	--	1	1	1	9
No. 5 DNS	3	--	--	--	--	--	3
ALL GRADES	87	1	3	9	6	6	106
PER CENT	82.1	.9	2.8	8.5	5.7	5.7	100.0
NORTH CENTRAL DISTRICT							
No. 1 Heavy DNS	9	--	--	--	--	--	9
No. 1 DNS	20	--	--	--	--	--	20
No. 2 Heavy DNS	--	--	1	1	--	--	2
No. 2 DNS	9	--	2	4	3	3	18
No. 3 DNS	19	--	1	3	2	2	25
No. 3 NS	1	--	--	--	--	--	1
No. 4 DNS	9	--	--	--	--	--	9
No. 5 DNS	1	--	--	--	--	--	1
No. 5 NS	1	--	--	--	--	--	1
ALL GRADES	69	--	4	8	5	5	86
PER CENT	80.2	--	4.7	9.3	5.8	5.8	100.0

TABLE B-25. 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, 1965

Grade	Test Weight	Total Damage	Foreign Material	Shrunken and Broken		Total Defects	TOTAL
				SOUTHEAST DISTRICT	EAST CENTRAL DISTRICT		
No. 2 DNS	1	1	--	--	--	--	2
No. 3 DNS	--	--	--	1	1	1	2
ALL GRADES	1	1	--	1	1	1	4
PER CENT	25.0	25.0	--	25.0	25.0	25.0	100.0
EAST CENTRAL DISTRICT							
No. 1 Heavy DNS	2	--	--	--	--	--	2
No. 1 DNS	5	--	--	--	--	--	5
No. 2 DNS	4	3	1	1	2	2	11
No. 3 DNS	12	3	--	--	2	2	17
No. 3 NS	1	1	--	--	--	--	2
No. 4 DNS	1	3	--	--	1	1	5
ALL GRADES	25	10	1	1	5	5	42
PER CENT	59.5	23.8	2.4	2.4	11.9	11.9	100.0
NORTHEAST DISTRICT							
No. 1 Heavy DNS	31	--	--	--	--	--	31
No. 1 DNS	25	--	--	--	--	--	25
No. 2 Heavy DNS	--	--	--	--	2	2	2
No. 2 DNS	22	4	--	--	4	4	30
No. 2 NS	1	--	--	--	--	--	1
No. 3 DNS	69	21	2	1	3	3	96
No. 3 NS	18	9	--	--	--	--	27
No. 4 DNS	9	13	1	--	1	1	24
No. 4 NS	5	2	--	--	--	--	7
No. 5 DNS	--	6	--	--	--	--	6
ALL GRADES	180	55	3	1	10	10	249
PER CENT	72.3	22.1	1.2	.4	4.0	4.0	100.0

TABLE B-26. NUMBER OF CARLOTS IN SAMPLE SURVEY CONTAINING PERCENTAGE AMOUNTS OF SPECIFIED GRADING FACTORS, BY GRADE, TOTAL NORTH DAKOTA SHIPMENTS, JULY THROUGH DECEMBER, 1965

Grades																					
No. 1 Heavy DNS	No. 1		No. 2		No. 2		No. 3		No. 3		No. 4		No. 4		No. 5						
	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.					
45	0.0	85	0.0	9	0.0	56	0.0	1	0.0	54	0.0	10	0.0	11	0.0	1	0.0	5	0.5	1	1.0
29	0.5	95	0.5	14	0.5	117	0.5	1	0.5	95	0.5	12	0.5	20	0.5	4	0.5	2	1.0	--	--
11	1.0	17	1.0	4	1.0	43	1.0	2	2.0	49	1.0	6	1.0	14	1.0	1	1.0	1	1.5	--	--
1	1.5	7	1.5	1	1.5	10	1.5	--	--	12	1.5	4	1.5	4	1.5	2	1.5	2	3.5	--	--
5	2.0	10	2.5	2	2.0	5	2.0	--	--	10	2.0	--	--	1	2.0	--	--	--	--	--	--
--	--	10	2.5	1	2.5	5	2.5	--	--	7	2.5	--	--	2	2.5	--	--	--	--	--	--
--	--	4	3.0	--	--	4	3.0	--	--	7	3.0	--	--	2	3.0	--	--	--	--	--	--
--	--	4	3.5	--	--	1	3.5	--	--	1	3.5	--	--	1	3.5	--	--	--	--	--	--
--	--	1	4.0	--	--	2	4.0	--	--	1	4.0	--	--	1	4.0	--	--	--	--	--	--
--	--	2	4.5	--	--	1	4.5	--	--	1	5.5	--	--	--	--	--	--	--	--	--	--
--	--	1	6.0	--	--	1	5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<u>DOCKAGE</u>																					
1	0.1	2	0.2	3	0.3	7	0.1	1	0.2	5	0.1	13	0.2	17	0.2	4	0.2	4	0.3	1	0.3
--	--	1	0.4	1	0.4	15	0.2	--	--	35	0.2	10	0.3	14	0.3	3	0.3	1	0.6	--	--
--	--	--	--	2	0.5	29	0.3	--	--	38	0.3	3	0.4	3	0.5	--	--	--	--	--	--
--	--	--	--	2	0.6	6	0.4	--	--	11	0.4	1	0.6	1	1.3	--	--	--	--	--	--
--	--	--	--	1	1.0	4	0.5	--	--	6	0.5	--	--	1	2.4	--	--	--	--	--	--
--	--	--	--	--	--	5	0.6	--	--	4	0.7	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	9	0.7	--	--	3	0.9	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	6	0.9	--	--	4	1.2	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	2	1.0	--	--	3	1.4	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	4	1.6	--	--	--	--	--	--	--	--	--	--
<u>FOREIGN MATERIAL</u>																					
1	1.5	1	1.2	1	1.7	5	3.0	1	0.9	1	2.6	5	0.3	3	0.2	--	--	--	--	--	--
1	3.0	1	1.4	1	1.9	3	3.1	--	--	--	--	8	0.4	1	0.3	--	--	--	--	--	--
1	4.3	1	4.1	--	--	2	3.2	--	--	--	--	3	0.7	5	0.5	--	--	--	--	--	--
<u>SHRUNKEN AND BROKEN</u>																					
1	1.5	1	1.2	1	1.7	5	3.0	1	0.9	1	2.6	5	0.3	3	0.2	--	--	--	--	--	--
1	3.0	1	1.4	1	1.9	3	3.1	--	--	--	--	8	0.4	1	0.3	--	--	--	--	--	--
1	4.3	1	4.1	--	--	2	3.2	--	--	--	--	3	0.7	5	0.5	--	--	--	--	--	--

(continued)

TABLE B-26. NUMBER OF CARLOTS IN SAMPLE SURVEY CONTAINING PERCENTAGE AMOUNTS OF SPECIFIED GRADING FACTORS, BY GRADE, TOTAL NORTH DAKOTA SHIPMENTS, JULY THROUGH DECEMBER, 1965 (continued)

No. 1		No. 2		No. 3		No. 4		No. 5													
		No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.	No. Amt.												
Heavy		Heavy		Heavy		Heavy		Heavy													
DNS		DNS		DNS		DNS		DNS													
No. 1		No. 2		No. 3		No. 4		No. 5													
DNS		DNS		DNS		DNS		DNS													
No. 1		No. 2		No. 3		No. 4		No. 5													
DNS		DNS		DNS		DNS		DNS													
No. 1		No. 2		No. 3		No. 4		No. 5													
DNS		DNS		DNS		DNS		DNS													
No. 1		No. 2		No. 3		No. 4		No. 5													
DNS		DNS		DNS		DNS		DNS													
--	--	--	--	--	--	--	--	--	--												
--	--	6	3.5	13	0.6	9	0.8	2	0.6												
--	--	5	3.8	9	0.8	5	0.9	1	0.8												
--	--	2	4.4	14	0.9	3	1.2	3	1.0												
--	--	--	--	5	1.0	--	--	5	1.3												
--	--	--	--	4	1.2	--	--	2	1.5												
--	--	--	--	7	1.3	--	--	5	1.6												
--	--	--	--	3	1.6	--	--	3	1.8												
--	--	--	--	6	1.8	--	--	2	2.4												
--	--	--	--	1	2.0	--	--	2	2.7												
--	--	--	--	3	2.3	--	--	1	3.5												
--	--	--	--	4	2.6	--	--	--	--												
--	--	--	--	3	2.8	--	--	--	--												
--	--	--	--	2	3.2	--	--	--	--												
--	--	--	--	4	4.3	--	--	--	--												
--	--	--	--	6	5.4	--	--	--	--												
--	--	--	--	5	5.7	--	--	--	--												
<u>DAMAGED KERNELS</u>																					
1	0.4	1	0.6	1	1.4	3	0.3	1	3.0	--	--	--	--	--	--	--	--	--	--		
--	--	1	1.3	1	2.6	2	0.5	--	--	2	0.6	1	2.6	1	1.0	2	7.0	3	12.0	--	--
--	--	--	--	--	--	6	0.7	--	--	2	0.8	2	3.0	3	2.0	2	7.8	2	14.0	--	--
--	--	--	--	--	--	2	0.8	--	--	4	1.0	1	3.4	2	2.6	1	9.0	--	--	--	--
--	--	--	--	--	--	2	0.9	--	--	2	1.6	3	3.8	3	4.0	1	10.0	--	--	--	--
--	--	--	--	--	--	2	1.3	--	--	3	2.0	6	4.0	1	5.0	--	--	--	--	--	--
--	--	--	--	--	--	4	2.0	--	--	1	2.4	4	4.6	3	6.0	--	--	--	--	--	--
--	--	--	--	--	--	2	2.3	--	--	3	2.8	4	5.0	2	7.0	--	--	--	--	--	--
--	--	--	--	--	--	3	2.6	--	--	3	3.0	3	5.4	3	7.6	--	--	--	--	--	--
--	--	--	--	--	--	2	2.8	--	--	4	3.3	3	6.0	4	8.0	--	--	--	--	--	--

(continued)

