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Measured Crop Performance

SMALL GRAIN

1968

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PERFORMANCE OF SMALL GRAIN VARIETIES IN NORTH CAROLINA

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INTRODUCTION

In the major small grain producing areas of the state, tests are conducted annually on varieties and breeding lines of oats, wheat and barley. These Official Variety Tests are conducted to determine the value and suitability of commercially available and prospective varieties of small grain for planting in North Carolina. The results of these tests are intended to aid the growers and agricultural workers throughout the Southeast in the selection of a variety best suited for their particular area of the state or region.

The importance of small grain in North Carolina is reflected in a 64 percent increase in wheat acreage, approximately the same oat acreage, and a 10 percent increase in barley acreage for 1967 compared with the year 1966.

Information on varietal performance is presented from eight test locations in the state, five in the Piedmont and three in the Coastal Plain Area. In comparing the performance of varieties, data from the area which most nearly represents the growers condition should be used.

[1/] Professor in Charge of Variety Testing, Agricultural Research Supervisor and Agricultural Research Assistants, Department of Crop Science, North Carolina State University at Raleigh, respectively.

Seasonal conditions differ from year to year; therefore a variety which looks superior for one year may not be consistently good, hence, varieties should be evaluated on the basis of performance over several years. Depending upon the release date of the entry, data is presented for performance fron one to five years. All available data[2/] were used in determining the pathologic and agronomic characteristics of the varieties.

2/ Special acknowledge is due Drs. T. T. Hebert, C. F. Murphy and J. G. Clapp for assistance in describing the characteristics of varieties.

EXPERIMENTAL PROCEDURE

Commercial varieties and experimental lines developed by public and private agencies are included in these tests. Any individual or firm may make application for having entries included by writing the Department of Crop Science, North Carolina State University at Raleigh. A fee is charged on an entry basis for all private entries. Personnel of the testing program may include entries about which further information is desired.

Agencies Sponsoring Entries

Arkansas Agricultural Experiment Sta.	Fayetteville, Ark.
Coker's Pedigreed Seed Company	Hartsville, S. C.
Georgia Agricultural Experiment Sta.	Experiment, Georgia
Indiana Agricultural Experiment Sta.	Lafayette, Indiana
McNair Seed Company, Inc.	Laurinburg, N. C.
North Carolina Agricultural Experiment Sta.	Raleigh, N. C.
South Carolina Agricultural Experiment Sta.	Clemson, S. C.
Virginia Agricultural Experiment Sta.	Blacksburg, Va.

Test Locations

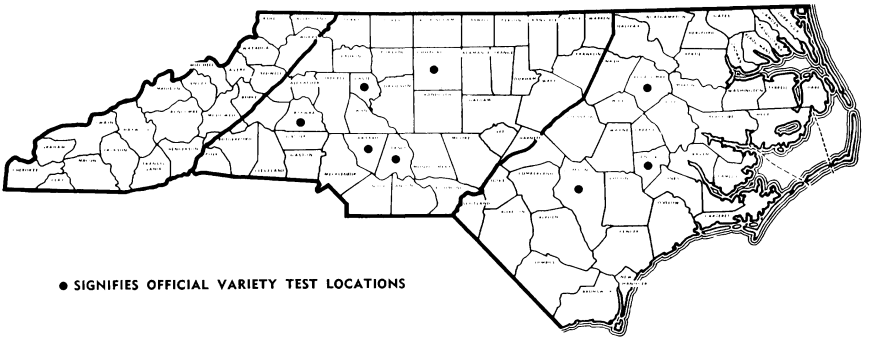
Eight locations were used in 1968 with five in the Piedmont and three in the Coastal Plain as shown in Figure 1. All tests were located on private farms with the exception of the Cabarrus County location. [1/] A randomized block design with four replications was used at each location. [2/]

[1/] The cooperative spirit and civic-minded service rendered by the farmers who provided land and the necessary cultural practices for these trials and the cooperation of the county agents are gratefully acknowledged.

[2/] Statistical analysis were made in the statistical laboratory under the supervision of Dr. L. A. Nelson and Joyce Villena. This assistance is gratefully acknowledged.

FIG. 1

LOCATION OF SMALL GRAIN PERFORMANCE TRIALS



CO-OPERATORS

PIEDMONT

Cabarrus County: Mr. James L. Query, Farm Manager, Jackson Training School, Concord, North Carolina
County Extension Chairman, J. R. Allen

Guilford County: Messrs. Paul and Carson Ingle, Route 1, Burlington, North Carolina
County Extension Chairman, W. H. Kimrey

Stanly County: Mr. D. G. Harwood, Route 1, New London, North Carolina
County Extension Chairman, V. A. Huneycutt

Davie County: Mr. Kenneth Hoots, Advance, North Carolina
County Extension Chairman, Leo F. Williams

Catawba County: Mr. Ray Weaver, Route 1, Hickory, North Carolina
County Extension Chairman, J. F. Giles

COASTAL PLAIN

Edgecombe County: Mr. Jesse Summerlin, Route 1, Tarboro, North Carolina
County Extension Chairman, Charles H. Lockhart

Lenoir County: Mr. Henry Brothers, Route 1, LaGrange, North Carolina
County Extension Chairman, F. J. Koonce

Sampson County: Mr. Maxton Bass, Newton Grove, North Carolina
County Extension Chairman, Worth Gurkin

Cultural Practices

Cultural practices, such as seed bed preparation, date of planting, fertilization and topdressing were in accord with good farming practices and were uniform for all entries at a given location, Table 1. Several months prior to planting each test location, soil samples were obtained from the test field and fertilizer requirements made in accordance with the soil analysis report. Lime was applied, if needed, to adjust the pH to a desirable level.

Starting in 1966, all tests have been mechanized for planting with a tractor-mounted Planter Jr. Planter. Tests were seeded in a small furrow with a Planter Jr. Planter mounted behind a tractor at the rate of one gram of seed per foot of row. The rows were spaced one foot apart. Each plot consisted of seven rows, 12 feet long with the two outside rows used as borders. The border rows were removed prior to harvest and only the five center rows were harvested. The date of planting and fertilization at planting is shown in Table 1 for each test location.

A seven foot combine was modified slightly for harvesting individual plots. Grain from individual plots was collected as it came from the elevator and weighed. The combine was stopped at the end of each plot for a short interval of time in order for the machine to clean out between plots prior to weighing the grain from the plot. A sample of grain was taken from each plot for the determination of test weight. All barley samples were taken from the combine and run through a small thresher to remove the awns prior to taking test weights. The combine was used to more nearly simulate the conditions under which these varieties would be harvested on farms and it appears to give very satisfactory results.

Seasonal Conditions

With eight locations for the 1968 Small Grain Official Variety Test, the seasonal conditions were conducive for good growth and high yields. October, normally the driest month of the year, was even drier than normal. Although the average rainfall for the month was short, the distribution was excellent. The dry weather continued into November with the longest period of consecutive days without rain being recorded for this month. The temperature in November averaged somewhat below normal for all areas of the state.

Rains were frequent in December with mild weather and average temperatures about four degrees above the long time average. A great deal of rough weather occurred in January. There were several periods when ice storms affected some parts of the state and total precipitation measured by water equivalent was normal. Sleet and snow continued into February but this month was the driest of record. Temperatures in February were five to ten degrees below normal with some areas reporting February 1968 the lowest average temperature on record.

Sunshine was an outstanding feature of March weather and in accord with tradition, March was rather a windy month. Precipitation was normal but varied from place to place in the state. In April the temperatures averaged close to normal with an absence of extremes. There was a high degree of cloudiness with frequent rains and in most cases the daily amounts were small. May was cooler than normal in North Carolina, as three of the four previous months of 1968, and in most areas the low for the month was 40 degrees. Precipitation in May was more plentiful than during the other months of 1968. Tropical Storm Abby was a very persistent

influence on June weather. Rain fell in all sections as the storm bogged down over the state. Heavy cloudiness kept the greater part of North Carolina shaded during most of the first half of the month. Since the storm came inland before coming to this state, the Coastal Area was least affected. High humidity and heavy clouds delayed harvest for approximately ten days.

The Coastal Plain locations were planted in October at the recommended seeding date for small grain crops. All locations in the Piedmont were planted in October depending upon the soil moisture for each test. A good seed bed was present at each location and this resulted in good stands. The specific planting dates, fertilizer, topdressing and harvest dates are shown in Table 1.

Generally speaking, the 1967-68 growing season was very satisfactory for good grain yields for oats, wheat and barley. At some locations wind damage was evident and lodging data was obtained on all entries in a specific location. All tests were harvested approximately on schedule. The ten-day rainy period in early June delayed harvest for all tests except barley which was cut prior to the wet weather.

RESULTS AND DISCUSSION

The performance of the 1968 tests along with the previous four years are presented by crop and area in a tabular form in this report. Since the genetic expression of a variety is influenced greatly by the environment, it is best to have several years' data from which to draw conclusions. For example, if a variety appeared in the two-year average but not in the three-year average, then it must be compared only within the two years and not with the data in the three-year average since it is possible that the third year could have been extremely good or poor and not comparable.

The 1968 data presented in this report have been analyzed statistically and the least significant difference (L.S.D.), in terms of bushels per acre and pounds per bushel is given. Unless the difference between two varieties is greater than the L.S.D., the varieties should not be considered as being any different statistically.

Barley

Table 5 shows the performance of barley in the Piedmont. The yields varied from a high of 96.0 bushels per acre for the variety Keowee to 65.3 bushels for the variety, Davie, for the 1968 season. A five-year average also showed the variety Harrison to have the highest yield at 75.4 bushels per acre.

The test weight of 48.2 pounds per bushel for the varieties, Harrison and Wade was the highest for the 1968 season. Harrison also had the highest five-year average with 47.2 pounds per bushel, however, Keowee was very close with a 46.5 average for five years.

In the Coastal Plain area, Table 6, there was no statistical difference in yield between varieties. The varieties Wade and Keowee yielded quite well with an average of 98.9 and 102.7 bushels per acre respectively for the 1968 season. Five of the ten varieties yielded better than the mean of 91.8 bushels per acre. The Wade variety had the highest test weight with an average of 46.9 pounds per bushel. All test weight data was lower than for the 1967 season.

Over the five-year average, the variety Keowee had the highest yield at 76.6 bushels per acre and the highest test weight with an average of 46.3 pounds per bushel.

Oats

The data from the oat trials in the Piedmont are presented in Table 7. The yields for 1968 were very good with all but two of the sixteen entries yielding better than 100 bushels per acre. The Coker line 67-19 was the highest yielding with an average of 125.8 bushels per acre. The test weights were generally good with the Nora variety having a top of 37.0 pounds per bushel. This was somewhat less than in 1967.

Carolee had the highest five-year yield with 99.0 bushels per acre while Roanoke had the highest test weight of 35.9 pounds per bushel.

In the Coastal Plain area, Table 8, the oat yields varied from a high of 127.1 bushels per acre for Va. 65-32-21 to 88.6 bushels for Roanoke. Statistically there was some difference between varieties with a LSD of 12.3 (.05 level) and a difference of 38.5 bushels per acre between the high and low yielding entries. Moregrain 211 had the highest test weight of 39.0 pounds per bushel. Over a five-year average, Coker 242 had the highest yield of 96.2 and also the highest test weight of 36.4.

Wheat

Table 9 shows the data on the wheat trials in the Piedmont. Exceptionally high yields were obtained for 1968 with all entries yielding above 54.9 bushels per acre. The Blueboy variety had the highest yield with 76.0 bushels per acre. Knox 62, with an average of 60.9 pounds per bushel, had the highest test weight.

Over a five-year period, Blueboy had the highest yield of 62.2 and Knox 62 had the highest test weight of 59.9 pounds per bushel.

The Coastal Plain data are presented in Table 10. Blueboy led the test with an average of 77.3 bushels per acre. Five entries had yields above the mean of the test of 63.2 bushels per acre. Andnox had the best test weight with 58.1 but all test weight data was below the 1967 season. There was a minimum of bird damage in 1968.

Blueboy, Wakeland and Ga. 1123 were the only three varieties tested for five years. Blueboy had an average of 60.7 bushels per acre and Ga. 1123 had an average test weight of 57.3 pounds per bushel.

Lodging

Lodging data are given in Table 11. A one-year, two-year, three-year and four-year comparison are shown with notations giving the number of locations where lodging occurred. In 1968 a total of six locations were used for lodging data.

Milling Tests

Grain from the wheat entries at all locations was obtained for milling tests. Samples of seed for each entry from the four Piedmont locations were composited and thoroughly mixed. Subsamples were secured,

coded and submitted to individual commercial wheat laboratories for analyses. The same procedure was followed for wheat entries from the three Coastal Plain locations. Results of these milling tests are given in Table 12 to 15 for wheat protein, test weight, flour yield and flour protein.

The method used in milling the entries was the American Association of Cereal Chemists Method 26-20.

Table 1. Cultural Practices for small grain tests - 1968.

Area and cooperator	Fertilizer lbs./A	Topdress 1/ lbs./A and date	Date of planting	Date of harvesting
Piedmont Area				
Stanly Co. D. G. Harwood	500 lbs. 5-10-10	50 N. Feb. 14	Oct. 11	Barley - June 5 Oats & Wheat - June 19
Guilford Co. Carson Ingle	500 2-12-12	70 N. Feb. 15	Oct. 11	Barley, Oats Wheat - June 20
Catawba Co. Ray Weaver	600 5-10-10	60 N. Feb. 15	Oct. 16	Barley, Oats Wheat - June 17
Cabarrus Co. James L. Query	600 5-10-10	60 N. Feb. 15	Oct. 30	Barley, Oats Wheat - June 19
Davie Co. Kenneth Hoots	600 5-10-10	60 N. Feb. 15	Oct. 3	Barley, Oats Wheat - June 20
Coastal Plain Area				
Edgecombe Co. Jesse Summerlin	500 5-10-10	50 N. Feb. 26	Oct. 26	Barley, Oats Wheat - June 21
Lenoir Co. Henry Brothers	600 5-10-10	50 N. Feb. 26	Oct. 12	Barley - May 31 Oats & Wheat - June 21
Sampson Co. Maxton Bass	600 5-10-10	50 N. Feb. 27	Oct. 27	Test Discarded Livestock Damage - May

1/ All tests sprayed with 1/3 qt./Acre of 2, 4-D and 1/4 pt. of Banvel for weed control at the time of topdressing with liquid nitrogen.

Table 2. Characteristics of barley varieties*

Variety	Loose smut resist-ance	Mildew resist-ance	Leaf rust resist-ance	Scald resist-ance	Lodging resist-ance	Winter hardi-ness	Maturity	Test Weight lb/bu.
Wade	Poor	Poor	Excellent	Fair	Good	Good	Early	High
Davie	Poor	Poor	Excellent	Fair	Good	Good	Early	Low
Harrison	Poor	Good	Fair	Fair	Excellent	Excellent	Early	High
Colonial 2	Poor	Poor	Fair	Poor	Fair	Good	Early	Low
McNair 601	Poor	Good	Fair	Fair	Good	Good	Early	Low
Clayton	Poor	Good	Excellent	Fair	Good	Good	Early	Med.
Jefferson	Poor	Good	Fair	Fair	Excellent	Excellent	Early	Med.
Keowee	Poor	Good	Fair	Fair	Good	Good	Early	High

Table 3. Characteristics of oat varieties*

Variety	Crown rust resist-ance	Smut resist-ance	Blight resist-ance	Mosaic resist-ance	Maturity	Winter Hard-iness	Lodging resist-ance	Height of Straw	Test Weight lb/bu.
Bruce	Fair	Good	Good	Good	Med.	Good	Good	Med.	Med. High
Carolee**	Fair	Good	Good	Fair	Med.	Good	Good	Med.	Med.
Yancey	Fair	Good	Good	Fair	Med.	Good	Excellent	Med.	Med. High
Ora	Good	Good	Good	Poor	Late	Excellent	Excellent	Med.	High
Sumter 3	Fair	Good	Good	Good	Med.	Good	Good	Med.	Med. High
Nora	Good	Good	Good	Poor	Late	Excellent	Excellent	Med.	High
Coker 242	Good	Good	Good	Fair	Med.	Fair	Good	Med.	High
Moregrain 211	Good	Good	Good	Fair	Early	Fair	Good	Med.	High
Roanoke	Fair	Poor	Good	Good	Late	Good	Fair	Tall	High
Blount	Fair	Good	Good	Fair	Late	Excellent	Good	Med.	Med. High

*These characteristics based upon all available observations.
**Appears to have tolerance to barley yellow dwarf virus.

Table 4. Characteristics of wheat varieties*

Variety	Leaf rust resist-ance	Mildew resist-ance	Mosaic resist-ance	Maturity	Winter Hardi-ness	Lodging resist-ance	Height of Straw	Test Weight lb/bu.	Soft Wheat Milling Quality
Blueboy	Fair	Good	Good	Med.	Good	Excellent	Semi-dwarf	Low	Good
Ga. 1123	Fair	Poor	Good	Med.	Fair	Good	Med.	Med.	Fair
Andnox	Good	Fair	Good	Early	Good	Good	Short	High	Good
Wakeland	Good	Fair	Poor	Early	Fair	Poor	Short	Med.	Fair
Coker 65-20	Fair	Good	Fair	Med.	Fair	Good	Med.	Med.	Good
Knox 62**	Good	Fair	Good	Early	Good	Poor	Med.	High	Fair
Hadden	Good	Good	Poor	Early	Fair	Fair	Short	Med.	Fair
Arthur	Good	Good	Good	Med.	Good	Good	Short	High	Good

*These characterizations based upon all available observations.

**Resistant to Hessian Fly.

Table 5. Summary of barley performance trials in the Piedmont.

Variety or Line	1 yr. avg.[1] 1968		2 yr. avg.[2] 1967-1968		3 yr. avg.[3] 1966-1968		4 yr. avg.[4] 1965-1968		5 yr. avg.[5] 1964-1968	
	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu
Harrison	84.6	48.2	80.6	48.2	76.3	48.0	75.5	47.2	75.4	47.2
Wade	73.3	48.2	66.6	47.8	66.9	47.6	65.7	46.4	64.6	46.0
Davie	65.3	45.3	60.2	45.4	62.9	44.8	60.1	43.5	57.8	43.2
Keowee(SC59-1018)	96.0	48.0	87.0	48.6	80.6	48.1	76.0	47.1	73.2	46.5
Colonial 2	69.4	45.0	66.6	44.7	67.8	44.4	65.5	43.2	64.1	42.9
Clayton(N.C.2116)	80.4	46.2	73.2	46.6	73.8	46.3	70.4	45.4		
McNair 601	82.3	45.4	74.2	46.2	74.7	45.9				
N. C. 35[6]	73.4	46.8	66.7	46.2						
Va. 64-14-8[6]	88.2	45.1	78.9	45.3						
Jefferson	88.2	46.2								
Mean of Test	80.1	46.4								
L.S.D. (.05)	14.5	0.9								
(.01)	19.5	1.3								
C.V. (%)	15	2								

[1] Average of Davie, Stanly, Guilford, Cabarrus and Catawba County locations.

[2] Average of nine locations.

[3] Average of thirteen locations.

[4] Average of seventeen locations.

[5] Average of twenty-one locations.

[6] Experimental lines.

Table 6. Summary of barley performance trials in the Coastal Plain

Variety or Line	1 yr. avg.[1/] 1968		2 yr. Avg.[2/] 1967-1968		3 yr. avg.[3/] 1966-1968		4 yr. Avg.[4/] 1965-1968		5 yr. avg.[5/] 1964-1968	
	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu
Wade	98.9	46.9	88.9	48.0	84.2	47.2	76.0	46.0	74.4	46.0
Keowee(SC 59-1018)	102.7	46.8	89.9	47.7	85.8	47.2	79.0	46.3	76.6	46.3
Davie	90.2	42.8	79.2	44.1	77.5	44.3	68.5	43.0	67.1	42.9
Colonial 2	90.8	43.1	81.6	44.0	77.7	44.2	71.7	43.2	69.5	43.0
Clayton(N.C.2116)	95.8	44.9	86.4	46.0	84.1	45.7	76.3	44.4		
McNair 601	97.0	45.2	81.9	46.4	82.6	45.8				
N. C. 35[6/]	95.3	45.6	81.0	46.0						
Harrison	79.6	46.6	78.9	47.7						
Va. 64-14-8[6/]	87.7	44.4	77.0	45.4						
Jefferson	80.3	46.4								
Mean of Test	91.8	45.3								
L.S.D. (.05)	N.S.	1.2								
(.01)	N.S.	1.7								
C.V. (%)	10	3								

1/ Average of Lenoir and Edgecombe County locations.

2/ Average of four locations.

3/ Average of seven locations.

4/ Average of nine locations.

5/ Average of twelve locations.

6/ Experimental lines.

Table 7. Summary of oat performance trials in the Piedmont

Variety or Line	1 yr. avg.[1] 1968		2 yr. avg.[2] 1967-1968		3 yr. avg.[3] 1966-1968		4 yr. avg.[4] 1965-1968		5 yr. avg.[5] 1964-1968	
	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu
Carolee	120.3	34.0	113.8	33.7	106.6	33.5	105.7	33.0	99.0	32.9
Roanoke	99.6	35.8	100.2	36.9	95.4	36.2	92.3	36.0	88.1	35.9
Sumter 3	110.4	35.0	107.9	35.8	101.0	35.2	98.0	34.9	92.6	34.6
Bruce	113.3	36.0	106.0	36.0	99.4	35.5	96.3	35.0	91.8	34.8
Coker 242	115.8	36.1	111.0	36.6	106.6	36.2	101.2	35.9	96.6	35.7
Yancey(NC 2534)	114.0	35.0	111.8	34.6	105.1	34.5	102.8	34.2		
Ora	117.1	36.3	112.2	36.9						
Nora	123.6	37.0	117.3	37.7						
Coker 66-22[6]	115.8	35.8	115.0	36.6						
N. C. 85[6]	115.6	34.0								
N. C. 1945[6]	111.0	35.2								
Coker 67-19[6]	125.8	35.0								
Va. 65-32-21[6]	116.4	35.2								
N. C. 8[6]	114.4	33.2								
Moregrain 211	112.3	36.9								
SC 60-C16[6]	99.3	33.7								
Mean of Test	114.0	35.3								
L.S.D. (.05)	12.7	0.8								
(.01)	16.9	1.1								
C.V. (%)	11	2								

[1] Average of Davie, Stanly, Guilford, Cabarrus and Catawba County locations.

[2] Average of eight locations.

[3] Average of twelve locations.

[4] Average of sixteen locations.

[5] Average of nineteen locations.

[6] Experimental lines.

Table 8. Summary of oat performance trials in the Coastal Plain

Variety or Line	1 yr. avg.[1/] 1968		2 yr. avg.[2/] 1967-1968		3 yr. avg.[3/] 1966-1968		4 yr. avg.[4/] 1965-1968		5 yr. avg.[5/] 1964-1968	
	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu
Carolee	118.8	36.2	111.6	35.6	106.0	34.4	101.3	34.1	92.4	34.5
Roanoke	88.6	37.8	82.8	36.6	79.5	35.7	75.8	35.2	70.4	35.7
Sumter 3	100.0	37.9	98.6	37.1	94.4	36.2	94.8	35.9	91.5	36.2
Bruce	108.3	37.0	100.8	36.3	93.2	35.0	88.7	35.0	85.6	34.9
Coker 242	111.5	37.9	106.1	37.4	104.8	36.9	99.8	36.7	96.2	36.4
Yancey(NC 2534)	116.1	37.1	110.3	36.2	100.3	35.3	96.5	35.2		
Ora	125.8	38.5	118.8	38.0						
Nora	126.7	38.8	117.6	38.2						
N. C. 85[6/]	114.3	35.6								
N. C. 1945[6/]	110.6	37.2								
Coker 67-19[6/]	118.8	36.3								
Va. 65-32-21[6/]	127.1	36.9								
N. C. 8[6/]	102.7	35.5								
Moregrain 211	110.8	39.0								
Coker 66-22[6/]	115.8	36.9								
SC 60-C16[6/]	92.9	36.8								
Coker 67-22[6/]	96.4	37.8								
Blount	95.4	36.4								
Mean of Test	110.0	37.2								
L.S.D. (.05)	12.3	.7								
(.01)	16.3	.9								
C.V. (%)	11	2								

1/ Average of Lenoir and Edgecombe County locations.

2/ Average of four locations.

3/ Average of seven locations.

4/ Average of ten locations.

5/ Average of thirteen locations.

6/ Experimental lines.

Table 9. Summary of wheat performance trials in the Piedmont

Variety or Line	1 yr. avg.[1] 1968		2 yr. avg.[2] 1967-1968		3 yr. avg.[3] 1966-1968		4 yr. avg.[4] 1965-1968		5 yr. avg.[5] 1964-1968	
	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu
Wakeland	58.9	59.5	52.4	59.4	50.8	58.8	48.1	58.7	46.4	58.6
Ga. 1123	62.0	59.4	53.2	59.4	53.9	59.1	52.1	59.1	51.6	58.9
Knox 62	56.4	60.9	52.8	61.2	51.1	60.2	50.3	60.2	49.0	59.9
Blueboy	76.0	57.5	68.2	58.2	67.1	57.2	64.0	57.0	62.2	57.0
Andnox	54.9	60.8	48.6	60.6	48.7	60.5	47.1	60.4		
Coker 65-20	67.6	59.8	61.4	59.6	59.1	59.2				
N. C. 4719[6]	61.0	56.6	54.5	57.2						
McNair 2203[6]	61.8	58.5								
Va.66-54-10+12+15[6]	67.7	57.0								
McNair 312[6]	56.8	58.5								
Hadden	58.0	60.2								
Arthur	67.2	59.7								
Mean of Test	62.4	59.0								
L.S.D. (.05)	7.4	1.2								
(.01)	9.8	1.6								
C.V. (%)	9	1								

[1] Average of Davie, Stanly, Guilford, Cabarrus and Catawba County locations.

[2] Average of nine locations.

[3] Average of eleven locations.

[4] Average of fourteen locations.

[5] Average of sixteen locations.

[6] Experimental lines.

able 10. Summary of wheat performance trials in the Coastal Plain

Variety or Line	1 yr. Avg.[1] 1968		2 yr. Avg.[2] 1967-1968		3 yr. Avg.[3] 1966-1968		4 yr. Avg.[4] 1965-1968		5 yr. Avg.[5] 1964-1968	
	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu
akeland	61.3	57.1	50.5	57.9	45.9	56.7	46.4	57.2	45.8	57.2
a. 1123	64.2	57.8	48.7	58.6	48.2	57.6	47.7	57.6	47.5	57.3
lueboy	77.3	56.1	70.0	57.4	64.0	56.2	61.5	56.2	60.7	56.0
ndnox	53.8	58.1	45.2	59.6	43.0	58.7	42.3	58.7		
oker 65-20	63.6	57.9	52.4	58.4	49.4	57.2				
. C. 4719[6]	60.9	56.7	57.0	57.4						
cNair 2203[6]	62.2	55.4								
a.66-54-10+12+15[6]	63.6	56.5								
cNair 312[6]	58.0	57.1								
adden	66.7	57.9								
ean of Test	63.2	57.1								
.S.D. (.05)	7.0	1.2								
(.01)	9.3	1.7								
.V. (%)	11	1								

[1] Average of Lenoir and Edgecombe County locations.

[2] Average of four locations.

[3] Average of seven locations.

[4] Average of ten locations.

[5] Average of thirteen locations.

[6] Experimental lines.

Table 11. Lodging Data

Variety or Line	1 yr. avg.	2 yr. avg.	3 yr. avg.	4 yr. avg.
BARLEY	1968[1]	1967-1968[2]	1966-1968[3]	1965-1968[4]
Wade	34.2	22.1	32.0	26.8
Harrison	8.6	4.3	6.0	8.0
Clayton (N.C. 2116)	35.3	18.9	27.8	26.8
Colonial 2	71.6	69.6	77.7	76.4
Davie	48.4	43.0	58.5	55.8
Keowee (SC 59-1018)	33.6	20.6	20.6	21.0
McNair 601	41.8	27.8	35.1	
Va. 64-18-6+8	29.8	16.8		
N. C. 35	40.5	42.2		
Jefferson	9.2			
OATS	1968[5]	1967-1968[7]	1966-1968[8]	1965-1968[9]
Roanoke	48.2	54.5	53.0	46.6
Bruce	37.0	51.1	51.9	46.6
Coker 242	21.3	24.4	32.2	30.2
Carolee	31.7	34.1	40.9	40.2
Yancey (N.C. 2534)	21.7	18.4	21.9	21.7
Sumter 3	39.7	27.4	41.8	41.1
Coker 66-22	50.7	55.4		
Nora	15.6	15.1		
Ora	17.3	19.0		
N. C. 8	46.7			
Va. 65-32-21	16.7			
Moregrain 211	43.2			
Coker 67-19	24.0			
SC 60-C16	19.4			
N. C. 1945	23.4			
N. C. 85	13.4			
Coker 67-22	74.4[6]			
Blount	33.8[6]			
WHEAT	1968[10]	1967-1968[12]	1966-1968[13]	1965-1968[14]
Wakeland	29.3	26.6	37.3	34.8
Ga. 1123	9.5	12.2	12.6	11.6
Blueboy	7.0	4.1	3.3	2.9
Coker 65-20	15.5	17.2	14.4	
N. C. 4719	8.7	10.0		
Andnox	11.9	12.8		
McNair 2203	10.0			
Va. 66-54-10+12+15	.2			
McNair 312	5.5			
Hadden	15.5			
Knox 62	27.2[11]			
Arthur	13.2[11]			

[1] Average of six locations.
[2] Average of seven locations.
[3] Average of nine locations.
[4] Average of thirteen locations.
[5] Average of six locations.
[6] Average of two locations.
[7] Average of nine locations.
[8] Average of fourteen locations.
[9] Average of twenty locations.
[10] Average of seven locations.
[11] Average of five locations.
[12] Average of eight locations.
[13] Average of thirteen locations.
[14] Average of sixteen locations.

WHEAT PROTEIN

Table 12. Comparisons of Wheat entries for percent wheat protein. Average of three Coastal Plain and four Piedmont locations in North Carolina for 1967.

Entry	Lab. A	Lab. B	Lab. C	Lab. D	Average
Blueboy	12.23	13.02	13.05	13.03	12.83
N. C. 4136	12.56	14.54	14.20	14.46	13.94
N. C. 4719	12.79	13.10	13.10	12.88	12.97
N. C. 4877	13.22	14.78	14.55	14.67	14.30
Riley	13.05	12.96	13.65	13.53	13.30
Wakeland	14.37	15.02	15.35	15.23	14.99
Ga. 1123	13.56	13.90	14.30	14.29	14.01
McNair 631	13.23	14.54	14.95	14.55	14.32
Coker 65-20	12.36	14.06	13.70	13.58	13.42
Andnox	13.86	13.98	13.60	12.82	13.56
L.S.D. (.05)					.6
(.01)					.8
C.V. (%)					3

TEST WEIGHT

Table 13. Comparisons of wheat entries for test weight (lbs./bu.). Average of three Coastal Plain and four Piedmont locations in North Carolina for 1967.

Entry	Lab. A	Lab. B	Lab. C	Lab. D	Average
Blueboy	60.5	60.0	59.3	60.1	60.0
N. C. 4136	59.8	58.0	58.0	58.7	58.6
N. C. 4719	60.8	59.0	58.9	60.2	59.7
N. C. 4877	59.9	58.0	58.1	59.2	58.8
Riley	62.3	61.0	60.6	61.7	61.4
Wakeland	60.7	59.0	59.5	60.3	59.9
Ga. 1123	60.5	59.5	59.8	59.9	59.9
McNair 631	60.8	60.0	60.8	60.1	60.4
Coker 65-20	60.7	60.0	60.1	58.9	59.9
Andnox	62.5	61.0	61.2	61.9	61.6
L.S.D. (.05)					.6
(.01)					.8
C.V. (%)					1

FLOUR YIELD

Table 14. Comparisons of wheat entries for percent flour yield. Average of three Coastal Plain and four Piedmont locations in North Carolina for 1967.

Entry	Lab. A	Lab. B	Lab. C	Lab. D	Average
Blueboy	72.64	63.40	68.03	74.08	69.54
N. C. 4136	71.08	68.90	67.11	70.50	69.40
N. C. 4719	73.43	63.10	67.11	74.03	69.42
N. C. 4877	69.15	64.80	67.72	71.47	68.28
Riley	72.72	65.30	70.42	71.21	69.91
Wakeland	70.06	63.10	68.97	68.89	67.76
Ga. 1123	69.77	62.80	66.67	68.18	66.86
McNair 631	70.03	61.00	66.67	69.01	66.68
Coker 65-20	72.16	65.90	68.49	67.61	68.54
Andnox	71.94	65.30	68.97	71.01	69.30
L.S.D. (.05)					N.S.
(.01)					N.S.
C.V. (%)					2

FLOUR PROTEIN

Table 15. Comparisons of wheat entries for percent flour protein. Average of three Coastal Plain and four Piedmont locations in North Carolina for 1967.

Entry	Lab. A	Lab. B	Lab. C	Lab. D	Average
Blueboy	10.93	11.10	11.25	11.80	11.27
N. C. 4136	11.37	12.92	13.05	13.56	12.72
N. C. 4719	10.94	10.94	10.78	12.05	11.18
N. C. 4877	12.06	13.90	12.93	13.27	13.04
Riley	12.03	12.22	13.35	12.78	12.60
Wakeland	13.07	13.90	14.07	14.30	13.84
Ga. 1123	12.43	12.18	13.00	13.54	12.79
McNair 631	12.35	12.02	13.22	13.71	12.82
Coker 65-20	11.04	11.92	12.17	13.78	12.23
Andnox	12.44	12.40	12.10	12.50	12.36
L.S.D. (.05)					.7
(.01)					1.0
C.V. (%)					4