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Measured Crop Performance

Small Grain

1986

**D. T. BOWMAN, Associate Professor
In Charge of Variety Testing**

**DEPARTMENT OF CROP SCIENCE
NORTH CAROLINA STATE UNIVERSITY
RALEIGH, N.C. 27695-8604**

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1986

PERFORMANCE OF SMALL GRAIN VARIETIES IN NORTH CAROLINA^{1/}

INTRODUCTION

Across the state of North Carolina during the fall of 1985, growers planted 58,000 acres of barley, 107,000 acres of oats, and 600,000 acres of wheat. This is down from previous years; a wet fall may have contributed substantially to the decline. Some small grains were planted as late as January. A relatively dry winter and spring reduced yields.

With the large number of commercially available and prospective varieties of barley, oats, and wheat, it becomes difficult for growers to select a superior variety suited for their particular area of the state. To make this decision, the grower needs up-to-date, unbiased, reliable information. The Official Variety Testing Program, through this report, seeks to provide that type of information.

Information on varietal performance is presented from three test locations in the state. Also included are multiple-year performance data on a selected number of varieties.

^{1/}

Research technicians, Ray Adams, G. C. Oliver, and Dwight Parrish assisted in conducting these tests along with Hope Thompson. Carey Parsons prepared the text and tables for this bulletin.

COMPARING VARIETIES

Performance of a variety cannot be determined with absolute precision. Even though the tests are conducted in a uniform manner, as much as possible, uncontrollable variability exists among experimental plots due to soil, fertility, moisture, insects, diseases, and other sources of variation. Because this variability exists, statistics are used as a tool to determine differences among varieties. The size of difference among varieties which may have been due to chance variation is listed in each table as the B.L.S.D. (least significant difference). Those varieties which do not differ by more than the B.L.S.D. are not statistically different.

Varietal performance may appear inconsistent among locations within an area or among years at a particular location, thus it is important for the reader to examine results from more than one location within an area or more than one year at a particular location, to obtain a more accurate picture of relative varietal performance. An effort has been made to facilitate comparisons among locations and years in this report.

The varieties which do not yield significantly less than the highest yielding variety are denoted by an asterisk (*) next to their yields. The relative performance of a variety across locations within an area can be easily evaluated by going across the table; those varieties which

are most frequently marked by an asterisk would be highly desirable. Other agronomic characteristics may be as equally important as yield. All available data regarding pathologic and agronomic characteristics of the varieties are found in Tables 1, 2, and 3 for barley, oats, and wheat, respectively.^{2/}

It is suggested that the grower plant a small number of acres in a new variety when first determining if it is adapted to his farm.

HYBRIDS VERSUS VARIETIES

Hybrid wheats are now available for the grower. Entries in the tables have been footnoted to indicate if they are hybrids. Genetically, hybrid wheat is similar to other hybrids (e.g. corn) in that they are the first generation of a cross between two parents. Seeding rate, management practices, etc. may be different for hybrid wheat than for normal wheat varieties; one should contact the sales representative regarding this. The seeding rate, management practices, etc. used in the Official Variety Tests are those recommended by the North Carolina Agricultural Extension Service and not necessarily ideal for

^{2/}

Special acknowledgment is due Drs. Paul Murphy and Ron Jarrett for their assistance in describing the characteristics of the varieties.

maximum yield or hybrid wheat. Hybrid wheat seed must not be saved in the grower's field due to the genetic nature of hybrids just as growers would not save hybrid corn seed from their field; i.e. it is absolutely necessary to purchase new seed each season and not follow the practice of saving seed as some growers do with their wheat varieties. If growers are not willing to put extra inputs into growing hybrid wheat then their varietal/hybrid selection should be based on data published in this report.

Table 1. Characteristics of barley varieties.*

Brand-Variety or Variety	Mildew resistance	Rust resistance	Scald resistance	Lodging resistance	Winter hardiness	Maturity	Test Weight lb/bu	Length of awns
Anson	Fair	Good	Poor	Good	Good	Medium	Medium	Awnless
Boone	Fair	Good	Fair	Fair	Good	Medium	Medium	Short
Clayton	Good	Excellent	Good	Good	Good	Early	Medium	Awnless
Milton	Fair	Good	Good	Excellent	Good	Early	Low	Short
Redhill	Good	Good	Good	Good	Good	V. Early	Medium	Awnless
Sussex	Excellent	Poor	Excellent	Good	Fair	V. Early	Medium	Short
Wysor	Good	Good	Good	Fair	Good	Early	Medium	Short

Table 2. Characteristics of oat varieties.*

Brand-Variety or Variety	Rust resistance	Smut resistance	Mosaic resistance	Maturity	Winter hardiness	Lodging resistance	Test Weight lb/bu
Brooks	Fair	Good	Fair	Early	Fair	Good	Med. High
Coker 716	Fair	Good	Good	Medium	Good	Good	Med. High
Madison	Fair	Good	Fair	Medium	Fair	Excellent	Medium
Simpson	Fair		Excellent	Medium	Good	Good	Med. High

*These characteristics based upon all available observations.

Table 3. Characteristics of wheat varieties.*

Brand-Variety or Hybrid/ 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
Becker	Poor	Poor		Medium			Semi-Dwarf	Medium	Good
Caldwell	Good	Poor	Good	Medium	Good	Fair	Medium	High	Good
Coker 747	Poor	Fair	Good	Medium	Good	Good	Semi-Dwarf	High	Fair
Coker 762	Good	Poor	Good	Medium	Fair	Fair	Semi-Dwarf	Medium	Fair
Coker 916	Good	Good	Good	Med-Early	Good	Excellent	Semi-Dwarf	High	Good
Coker 983	Good	Good	Good	Med-Early	Fair	Excellent	Semi-Dwarf	Medium	Good
Coker 9227	Poor	Poor	Good	Early			Semi-Dwarf	Medium	Good
Coker 9323	Poor	Poor		Medium	Fair	Good	Semi-Dwarf	Medium	
Florida 302	Good	Good		Early	Good	Good	Semi-Dwarf	High	Good
Hunter	Poor	Poor	Good	Early	Fair	Excellent	Semi-Dwarf	High	Good
†HW 3021	Poor	Poor		Medium	Good	Medium	High	Good	
Massey	Poor	Good	Good	Medium	Good	Good	Medium	Medium	Fair
Pioneer 2550	Good	Fair	Good	Medium	Good	Good	Medium	High	Fair
Pioneer 2551	Good	Fair	Good	Medium	Good	Good	Medium	Medium	
Saluda	Poor	Poor	Fair	Medium	Good	Fair	Medium	Medium	Good
Tyler	Poor	Fair	Good	Late	Good	Good	Medium	High	Good
Williams	Poor	Fair		Medium			Semi-Dwarf	Medium	

*These characteristics based upon all available observations.

†Hybrid.

EXPERIMENTAL PROCEDURE

The state is divided into physiographic regions and tests were located in the Piedmont and Coastal Plain (Figure 1). Tests were located on private farms^{3/} and on research stations.

Entries: 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 Official Variety Testing Program, Department of Crop Science, North Carolina State University, Raleigh, NC 27695-8604. A fee is charged on an entry basis for all private entries. Entries of specific interest to North Carolina seedsmen may have been included on a no-fee basis. A total of 12, 8, and 22 commercial varieties and experimental lines of barley, oats, and wheat, respectively, were evaluated in the 1985-86 season.

Field Plot Design: A randomized, complete block design with four or five replications was used at each location.^{4/} Each

^{3/} The cooperative spirit and civic-minded service rendered by the farmers who provide the land and the necessary cultural practices for these trials and the cooperation of the county agents are gratefully acknowledged.

^{4/} Statistical analyses were made in the statistical laboratory under the supervision of Dr. J. O. Rawlings and Mrs. Sandra Donaghy. This assistance is gratefully acknowledged.

plot consisted of eight rows, 7.5 inches apart, nineteen feet long with two feet between each plot.

Crop Management: 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 4). Prior to planting each test, soil samples were obtained from the test field and fertilizer and lime applications were made accordingly (Table 5).

Figure 1—Location of Small Grain Performance Trials

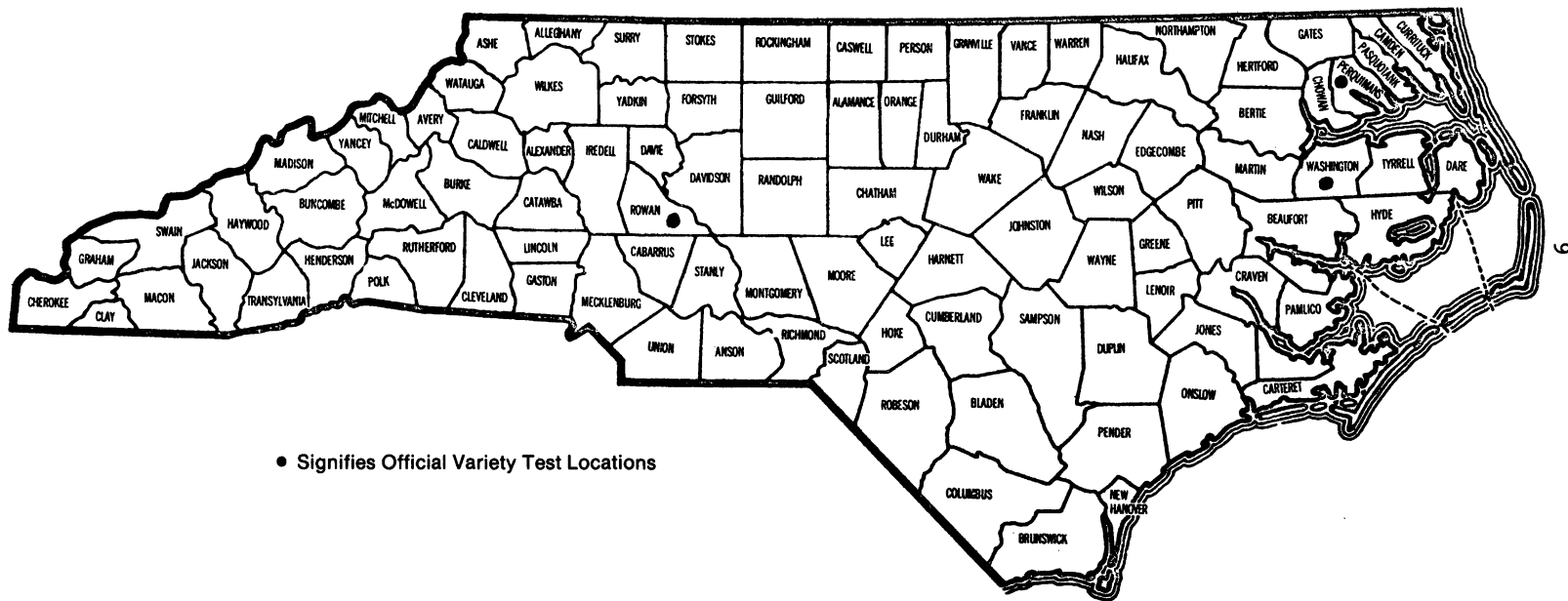


Table 4. Cultural practices for small grain tests, (1986)

County	Fertilizer lbs/A & Grade	Topdress lbs/A	Soil Type	Date of Planting	Date of Harvest
Rowan	700 lbs. 10-20-20	50 lbs. 33.5% N	Cecil Sandy Loam	Oct. 29	June 3 - Barley June 9 - Wheat & Oats
Perquimans	200 lbs. 0-21-31	330 lbs. 33.5% N		Nov. 13	June 10
Washington	500 lbs. 4-6-18	200 lbs. 33.5% N	Portsmouth Fine Sandy Loam	Nov. 13	June 10

Table 5. Soil test results from test sites, (1986)

County	HM %	W-V	CEC	BS %	Ac	pH	P-I	K-I	Ca %	Mg %	Mn- I	Zn- I	Cu- I
Rowan	0.2	1.14	5.9	80	1.2	6.0	18	58	52.8	21.8	625	54	206
Perquimans	0.3	1.07	4.0	80	0.8	5.7	33	26	55.1	21.6	30	32	30
Washington	4.6	0.99	12.5	87	1.6	5.7	100	118	57.7	24.7	23	62	74

Contact Person and
Agencies Sponsoring Entries

Entries

AgriPro Seeds Jesse Grogan RR #2 Brookston, IN 47923 (317) 563-3111	Hunter, Mangnum Twain
Florida Agricultural Experiment Station Dr. Ron Barnett Route 3, Box 4370 Quincy, FL 32351 (904) 627-9236	Florida 302
North Carolina Agric. Experiment Station Dr. Paul Murphy Crop Science Dept. Box 7620 Raleigh, NC 27695-7620	Anson, Boone, Clayton, Milton, Brooks, Madison, NC experimentals
Ohio Agricultural Experiment Station Dr. H. N. LaFever Ohio State University Columbus, OH 43210	Becker
Pioneer Hi-Bred International, Inc. Paul Rodgers 1000 W. Jefferson Street Tipton, IN 46072 (317) 675-2101	Pioneer 2550 Pioneer 2551
Purdue University Agric. Expt. Station Agronomy Department West Lafayette, IN 47907 (317) 494-4772	Caldwell
Rohm and Haas Seeds Al Hoggard West Memphis, AR 72301 (501) 735-8000	Coker 716 Coker 916 Coker 983 Coker 9227 Coker 9323 HW 3021 HW 3023
South Carolina Agric. Experiment Station Dr. Doyce Graham Agronomy & Soils Dept. Clemson University Clemson, SC 29634 (803) 656-3507	Redhill Simpson Williams

<u>Contact Person and Agencies Sponsoring Entries</u>	<u>Entries</u>
Virginia Agricultural Experiment Station Dr. Tom Starling Agronomy Department VPI Blacksburg, VA 24061 (703) 961-6483	Sussex Massey Tyler Wysor Saluda

Cooperators

Rowan County: Billy Ayscue, Superintendent, Piedmont
Research Station, Salisbury, NC.
Agricultural Extension Agent, Kevin Fisher.

Perquimans County: William Wray Chappell, Route 3, Box 296,
Hertford, NC.
County Extension Chairman, Stan Winslow.

Washington County: John Smith, Superintendent, Tidewater
Research Station, Plymouth, NC.
Agricultural Extension Agent, Michael Webb.

SEASONAL CONDITIONS

The 1985-86 small grain growing season was characterized by above-normal rainfall in the fall during planting and below-normal rainfall for the rest of the growing season. Temperatures were near or above-normal for the most part. Rainfall data at two locations are shown below:

Monthly Rainfall Totals (Inches)

<u>Location</u>	<u>No- vember</u>	<u>Dec- ember</u>	<u>Jan- uary</u>	<u>Feb- ruary</u>	<u>March</u>	<u>April</u>	<u>May</u>
Rowan	7.00	1.00	1.13	1.25	1.96	0.74	0.82
Wash- ington	6.43	0.54	2.36	2.17	2.84	2.07	1.82

Dates of planting during the fall of 1985 were later than normal due to the wet fall. Leaf rust was evident in the spring in the Coastal Plain region of the state. Ratings of wheat varieties are reported for powdery mildew and leaf rust. Cereal leaf beetle was evident at several locations. Due to lateness of planting no stand problems attributed to the Hessian fly were observed. The Hessian fly was present in the spring but losses due to lodging could not be substantiated.

Topdressing of small grains was on time. Dry, warm weather caused the crop to mature earlier than normal and to reveal very little differences (in maturity) among

the varieties. Harvesting progressed rapidly and all tests had been harvested by June 10.

Yields were below-normal due primarily to the dry spring at some locations.

DATA

Yield is reported in bushels per acre by location, area and across all locations within the state. Test weights in pounds per bushel were reported averaged across the state. Lodging was reported in percentage averaged across all locations within the state; the lodging data are for lodging prior to harvest. Harvest losses were negligible for all crops and, thus, were not reported.

Date 50% headed was taken at the Rowan County location and reported in the state-wide average. Date of physiological maturity was not taken due to the rapid dry-down of the crop which would have masked any real differences.

Disease ratings are reported in the state-wide averages although they may have only been taken at one or two locations.

Certain wheat varieties were tested only in the Coastal Plain while other varieties were tested in the Piedmont only. Table 16 reflects these differences.

Coded samples of wheat were submitted for protein analyses to the Bartlett Milling Company, Stateville, North Carolina. Such analyses are helpful in determining whether released or potential varieties are suitable for the mills

in terms of quality. A general protein content of 8 to 11% is desirable for soft red winter wheat. Special acknowledgment is due Bartlett Milling Company and Howard Lemon, Quality Control Manager, for their assistance in making available these data.

Yield data were analyzed. The average yield of each test was indicated on the bottom of the tables. The B.L.S.D. K-50 is equivalent to the Fisher's L.S.D. at the 10% level. The standard error of the mean (s.e.) is an indicator of the precision of that test; the smaller the s.e., the more precise the estimate of yield is for any particular variety. The s.e. of the mean is equal to the standard deviation divided by the square root of N; N is normally the number of replications in the trials.

The statewide average may not appear to equal that of the average between the locations; this is due to the fact that different number of replications was used at each location and the total number of replications was used in calculating the average.

RESULTS AND DISCUSSION

Barley

Barley performance is summarized across the state for 1986 in Table 6 while two and three-year averages across the state are shown in Tables 7 and 8. Wysor, a new barley out of Virginia, averaged 84 bushels per acre, although all other varieties were not significantly different in yield. Test weights were below average which is thought to be a result of the environment since plots were harvested as early as possible at these locations; the early harvest resulted in the low lodging percentage shown in Table 6. Plant height and date 50% headed are near normal. Date 50% headed would be earlier in the Coastal Plain region of the state depending upon location and date of planting. Date of physiological maturity was not collected in 1986 due to the extremely dry, warm spring which tended to mask any real differences among varieties for maturity. The two and three year average tables, Tables 7 and 8, give a more accurate picture of the average performance of these varieties and growers are cautioned against examining only one year's data for yield, test weight, lodging, plant height or date 50% headed.

Wysor, Anson, and experimental, NC 81-4, led the barley test in the Piedmont (Table 9). Wysor and Anson are the two year yield leaders and Milton is the three-year yield leader in that area. In the Coastal Plain, six barley varieties led the test headed by Boone with 69 bushels per acre.

Milton is the two-year yield leader as well as the three year yield leader.

Oats

Oat yields were near average across the state while test weights were good (Table 11). Winter kill damage was taken at Rowan County and correlates well with yield at that location (Table 14). Two and three year averages are shown in Tables 12 and 13, respectively. Coker 716 leads all oat varieties in both tables. An experimental, NC 82-172, and Coker 716 led the oat performance test in the Piedmont (Table 14). Yields were below average due to winter kill as mentioned previously. NC 82-172 leads the two-year average in that area while Coker 716 leads the three year average.

In the Coastal Plain, yields were excellent at both locations and Brooks, Coker 716, Madison, and experimental NC 80-28, led the test across that region (Table 15). Test weights were excellent. Coker 716 led the two-year average in that region while Madison is the three year yield leader.

Wheat

Table 16 lists the wheat entries and the locations where they were tested. Summary of wheat performance trials across the state for 1986 are shown in Table 17. Florida 302 led the way with 73 bushels per acre but was not significantly different from all other entries that were common across all tests in 1986. Test weights were fair. A better indicator of wheat quality is 1,000 kernel weight

which is shown in Table 17. The higher the 1,000 kernel weight, the higher the quality although it should be pointed out that growers are still paid on test weights. There was virtually no lodging at any of the test sites when harvested. Straw height was below normal due to the dry winter and spring. Date 50% headed was near normal although-it should be cautioned that these data are collected at Rowan County. Wheat in the Coastal Plain headed earlier depending on location and planting date. Protein percentage is a good indicator of flour quality. As indicated earlier, protein between 8 and 11% is desirable for soft red winter wheat. Nearly all of the entries were slightly above the desirable range; this is thought to be due to unique environment during the spring. Leaf rust and powdery mildew ratings are shown also in Table 17. Two and three-year averages for wheat trials across the state are shown in Tables 18 and 19, respectively.

Pioneer 2551 and Tyler led the wheat performance tests in the Piedmont with 49 bushels per acre but were not significantly different from seven other varieties (Table 20). Tyler leads the region in the two and three-year averages for yield.

In the Coastal Plain yields were good both at Perquimans and Washington Counties and Florida 302 significantly out-yielded all other varieties at both locations (Table 21). Across both locations Florida 302 was

yield. This particular variety, Florida 302, is also the two and three-year average yielder for the Coastal Plain region of the state.

Table 6. Summary of barley performance trials across the state (1986).

Brand-Variety or Variety	Yield bu/A	Test Weight lb/bu	Lodging %	Plant Height Inches	Date † 50% Headed
Wysor	84**	42.9	12	38	4-30
Anson	80*	44.1	17	35	4-23
Sussex	80*	42.9	16	29	4-14
Boone	80*	39.9	7	31	4-21

Milton	78*	44.0	6	32	4-20
‡NC 80-1	75*	43.5	7	33	4-20
‡NC 81-4	74*	42.6	9	30	4-20
‡NC 82-36	70*	38.7	3	31	5-6

‡NC 82-34	68*	39.3	3	33	4-20
Clayton	65*	39.9	18	34	4-21
‡NC 82-22	62*	39.9	4	28	4-20
Redhill	52*	46.0	8	27	4-14
<u>Mean</u>	<u>72</u>				
C.V. (%)	8.5				
B.L.S.D. (K-50)	NS				
s.e.	6.7				
Error d.f.	11				

†Data collected at Rowan County.

‡Experimental. Seed may or may not be available in 1986.

**Highest yielder.

*Not significantly different from highest yielder.

Table 7. Two-year average barley performance across the state (1985-86).

Brand-Variety or Variety	Yield bu/A	Test Weight lb/bu	Lodging %	Plant Height Inches	Date 50% Headed
Anson	76	40.3	28	29	4-19
Milton	75	38.6	10	27	4-17
Wysor	74	40.5	11	29	4-22
Boone	69	37.7	11	26	4-18

*NC 80-1	67	40.7	8	27	4-17
Sussex	67	38.9	18	26	4-12
*NC 81-4	66	39.5	15	27	4-17
*NC 82-34	66	38-1	6	28	4-18

Clayton	61	37.9	26	28	4-17
*NC 82-22	57	37.8	10	25	4-18
Redhill	44	40.1	9	29	4-12

*Experimental. Seed may or may not be available in 1986.

Table 8. Three-year average barley performance across the state (1984-86).

Brand-Variety or Variety	Yield bu/A	Test Weight lb/bu	Lodging %	Plant Height Inches	Date 50% Headed
Milton	79	34.6	34	32	4-20
Anson	74	38.5	42	33	4-23
Boone	74	36.6	38	30	4-21
Sussex	73	38.5	34	30	4-13

*NC 80-1	71	39.1	32	32	4-21
*NC 81-4	69	38.0	40	31	4-20
Clayton	65	37.3	43	33	4-21
Redhill	57	38.3	29	30	4-17

*Experimental. Seed may or may not be available in 1986.

Table 9. Summary of barley performance trials in the Piedmont.

Brand-Variety or Variety	1986†		1985-86 Average		1984-86 Average	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lbs/bu	Yield bu/A	Test Wt. lbs/bu
Wysor	106**	--	93	40.8		
Anson	99*	--	93	39.5	83	37.1
NC 81-4	99	--	85	38.5	81	37.0
Sussex	98	--	80	39.1	82	38.8
Milton	94	--	88	38.1	88	32.4
Boone	94	--	84	39.0	83	36.5
*NC 80-1	87	--	78	40.5	78	37.7
*NC 82-36	85	--				
Clayton	79	--	75	37.6	74	36.7
*NC 82-34	78	--	77	38.9		
*NC 82-22	72	--	69	38.5		
Redhill	47	--	46	40.2	58	37.2
<u>Mean</u>	<u>87</u>					
C.V. (%)	6.7					
B.L.S.D. (K-50)	7					
s.e.	2.9					
Error d.f.	33					

†Data collected at Rowan County.

*Experimental. Seed may or may not be available in 1986.

**Highest yielder.

* Not significantly different from highest yielder.

Table 10. Summary of barley performance trials in the Coastal Plain.

Brand-Variety or Variety	1986†		1985-86 Average		1984-86 Average	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lbs/bu	Yield bu/A	Test Wt. lbs/bu
Boone	69**	39.9	55	36.3	64	36.7
Wysor	67*	42.9	54	40.2		
Anson	66*	44.1	60	41.1	62	39.9
Sussex	66*	42.9	54	38.6	65	38.2
Milton	66*	44.0	62	39.1	71	36.8
NC 80-1	65	43.5	56	40.8	65	40.5
*NC 82-34	59	39.3	55	37.2		
*NC 82-36	58	38.7				
Redhill	56	46.0	43	39.9	56	39.4
*NC 81-4	54	42.6	47	40.5	57	39.0
Clayton	54	39.9	47	38.2	55	37.8
*NC 82-22	53	39.9	46	37.0		
<u>Mean</u>	<u>61</u>					
C.V. (%)	10.5					
B.L.S.D. (K-50)	7					
s.e.	2.9					
Error d.f.	44					

†Data collected at Washington County.

*Experimental. Seed may or may not be available in 1986.

**Highest yielder.

*Not significantly different from highest yielder.

Table 11. Summary of oat performance trials across the state (1986).

Brand-Variety or Variety	Yield bu/A	Test Weight lbs/bu	Lodging %	Plant Height Inches	Date† 50% Headed	Winter† Kill %
Coker 716	108**	34.4	8	40	4-28	13
Brooks	108**	32.8	7	37	5-1	13
‡NC 82-172	101*	34.6	24	40	5-1	10
‡NC 80-28	100*	31.6	27	41	4-29	20

Simpson	95*	33.7	1	37	4-28	20
Madison	94*	33.0	0	32	5-3	48
‡NC 82-264	88*	34.1	2	37	5-4	30
‡NC 79-343	85*	32.8	58	40	5-4	55
<u>Mean</u>	<u>97</u>					
C.V. (%)	12.0					
B.L.S.D. (K-50)	NS					
s.e.	3.2					
Error d.f.	14					

†Data collected at Rowan County

‡Experimental. Seed may or may not be available in 1986.

**Highest yielder.

*Not significantly different from highest yielder.

Table 12. Two-year average oat performance across the state (1985-86).

Brand-Variety or Variety	Yield bu/A	Test Weight lb/bu	Lodging %	Plant Height Inches	Date 50% Headed
Coker 716	88	30.7	15	34	4-26
Brooks	85	30.4	5	33	4-27
*NC 82-172	83	32.1	22	34	4-27

Simpson	80	32.3	14	33	4-26
*NC 82-264	71	32.1	6	32	4-29
Madison	69	30.5	3	27	4-28

*Experimental. Seed may or may not be available in 1986.

Table 13. Three-year average oat performance across the state (1984-86).

Brand-Variety or Variety	Yield bu/A	Test Weight lb/bu	Lodging %	Plant Height Inches	Date 50% Headed
Coker 716	107	32.6	25	37	4-30
Brooks	100	31.1	20	37	5-1
Madison	94	31.2	4	31	5-2

Table 14. Summary of oat performance trials in the Piedmont.

Brand-Variety or Variety	1986 †		1985-86 Average		1984-86 Average	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lbs/bu	Yield bu/A	Test Wt. lbs/bu
*NC 82-172	84**	32.0	70	31.9		
Coker 716	77*	31.5	65	30.4	87	32.0
Brooks	72	30.1	62	29.1	82	30.5
Simpson	70	31.0	63	31.8		

*NC 80-28	61	27.2				
*NC 82-264	53	30.9	46	31.5		
Madison	33	26.4	30	27.5	59	29.3
*NC 79-343	27	30.6				
<u>Mean</u>	<u>60</u>					
C.V. (%)	11.1					
B.L.S.D. (K-50)	8					
s.e.	3.3					
Error d.f.	21					

†Data collected at Rowan County.

*Experimental. Seed may or may not be available in 1986.

**Highest yielder.

*Not significantly different from highest yielder.

Table 15. Summary of oat performance trials in the Coastal Plain.

Brand-Variety or Variety	Per- quimans County bu/A	Wash- ington County bu/A	1986 Average		1985-86 Average		1984-86 Average	
			Yield bu/A	Test Wt. lbs/bu	Yield bu/A	Test Wt. lbs/bu	Yield bu/A	Test Wt. lbs/bu
Brooks	129*	120*	124**	34.1	107	31.6	118	31.6
Coker 716	124*	121**	122*	35.8	111	33.0	128	33.1
Madison	130**	114*	121*	36.3	108	33.4	129	33.1
‡NC 80-28	119*	115*	117*	33.8				

‡NC 79-343	112*	110*	111	33.9				
‡NC 82-172	119*	98	108	35.9	97	32.2		
Simpson	110*	102	106	35.0	98	32.8		
‡NC 82-264	106*	101	103	35.6	96	32.7		
<u>Mean</u>	<u>119</u>	<u>110</u>	<u>114</u>					
C.V. (%)	12.8	10.6	11.6					
BLSD (K-50)	NS	15	10					
s.e.	10.7	5.2	3.3					
Error d.f.	21	28	7					

‡Experimental. Seed may or may not be available in 1986.

**Highest yielder.

*Not significantly different from highest yielder.

Table 16. Test sites for wheat entries (1986).

Brand-Variety or Hybrid/Variety	Perquimans	Rowan	Washington
AgriPro Hunter	X		X
AgriPro Magnum		X	
AgriPro Twain		X	
Becker	X	X	X
Caldwell	X	X	X
Coker 747	X	X	X
Coker 762	X	X	X
Coker 916	X	X	X
Coker 983	X	X	X
Coker 9227	X	X	X
Coker 9323	X	X	X
Florida	X	X	X
†Hybrex HW3021	X	X	X
†Hybrex HW3023	X	X	X
Massey	X		X
*NC 82-1	X	X	X
*NC 81-58	X	X	X
Pioneer 2550	X	X	X
Pioneer 2551	X	X	X
Saluda	X	X	X
Tyler	X	X	X
Williams	X	X	X

†Hybrid

*Experimental. Seed may or may not be available in 1986.

Table 17. Summary of wheat performance trials across the state (1986).

Brand-Variety or Hybrid/Variety	Yield bu/A	Test Weight lb/bu	1,000 Kernel Weight g	Lodging %	Plant Ht. Inches	Date† 50% Headed	Protein %	Leaf‡ Rust Rating	Powdery‡ Mildew Rating
Florida 302	73**	56.0	36.5	0	35	4-26	11.7	R	MR
Coker 983	66*	56.8	30.1	0	30	4-25	12.7	R	R
Saluda	66*	55.6	31.5	0	33	4-23	12.4	S	S
§Hybrex HW 3021	65*	56.5	35.3	0	38	4-25	11.7	VS	S
Coker 762	64*	55.4	27.7	0	31	4-26	11.9	MR	S
Williams	63*	54.5	36.4	0	34	4-22	13.5	S	MR
§Hybrex HW 3023	62*	56.7	34.2	0	33	4-21	12.1	MR	S
Coker 9323	61*	55.5	29.6	0	32	4-21	13.5	S	VS
Coker 916	61*	54.5	31.6	0	33	4-20	12.4	MR	MR
Coker 747	61*	55.6	32.8	0	33	4-24	12.6	S	S
Pioneer 2550	61*	52.3	32.1	0	33	4-26	12.6	MR	MR
Caldwell	60*	51.8	31.3	0	36	4-24	12.0	MR	S
Tyler	60*	52.6	31.1	0	37	4-26	12.3	VS	MR
Pioneer 2551	59*	51.8	29.7	0	33	4-26	14.1	MR	MR
‡NC 81-58	59*	55.5	32.6	0	33	4-30	12.7	MR	S
Becker	58*	55.5	31.2	0	31	4-26	11.7	S	VS
Coker 9227	56*	56.6	34.8	0	33	4-20	12.3	S	S
‡NC 82-1	54*	50.0	32.1	0	36	5-1	11.5	S	MR
Mean	61								
C.V. (%)	6.4								
BLSD (K-50)	NS								
s.e.	3.8								
Error d.f.	34								

†Data collected at Rowan County. ‡Experimental. Seed may or may not be available in 1986. §Hybrid. **Highest yielder. *Not significantly different from highest yielder. †R = Resistant, MR = Moderately Resistant, MS = Moderately Susceptible S = Susceptible, VS = Very Susceptible.

Table 18. Two-year average wheat performance across the state (1985-86).

Brand-Variety or Variety	Yield bu/A	Test Weight lb/bu	Lodging %	Plant Height Inches	Date 50% Headed
Florida 302	59	53.0	10	31	4-22
Tyler	56	53.7	0	31	4-23
Saluda	56	53.7	0	28	4-19
*NC 81-58	55	54.5	4	29	4-27

Pioneer 2550	54	53.3	16	28	4-25
Caldwell	53	52.3	9	30	4-22
Coker 916	52	52.5	8	28	4-17
Coker 983	50	54.8	0	26	4-20

*Experimental. Seed may or may not be available in 1986.

Table 19. Three-year average wheat performance across the state (1984-86).

Brand-Variety or Variety	Yield bu/A	Test Weight lb/bu	Lodging %	Plant Height Inches	Date 50% Headed
Tyler	62	53.9	3	35	4-27
Saluda	62	54.8	4	32	4-23
Pioneer 2550	59	54.2	14	32	4-28

*NC 81-58	58	54.2	3	32	5-2
Coker 983	58	55.7	1	30	4-24
Caldwell	57	53.4	11	33	4-26

*Experimental. Seed of these may or may not be available in 1986.

Table 20. Summary of wheat performance trials in the Piedmont.

Brand-Variety or Hybrid/Variety	1986 [†]		1985-86 Average		1984-86 Average	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lbs/bu	Yield bu/A	Test Wt. lbs/bu
Pioneer 2551	49**	41.8				
Tyler	49**	55.5	55	55.5	62	54.6
Becker	48*	57.4				
§Hybrex HW3021	47*	51.3				

Coker 762	46*	54.5	51	51.1	61	51.8
Pioneer 2550	45*	53.4	51	54.9	57	54.5
Florida 302	45*	60.8	50	56.2		
Coker 747	45*	56.5	46	57.1	55	56.0

§Hybrex HW3023	45*	52.2				
Coker 9323	44	55.7				
Saluda	44	52.6	49	50.8	58	51.7
Coker 916	43	57.0	45	53.6	56	53.5

Caldwell	42	55.4	50	55.2	56	54.5
‡NC 81-58	42	61.5	49	56.9	56	55.5
AgriPro Twain	39	58.8				
AgriPro Magnum	39	60.2				

Coker 983	38	58.8	39	55.8	52	55.8
Williams	37	50.5				
‡NC 82-1	37	48.5				
Coker 9227	35	50.3				
Mean	43					
C.V. (%)	7.7					
B.L.S.D. (K-50)	4					
s.e.	1.6					
Error d.f.	57					

[†]Data collected at Rowan County. [‡]Experimental. Seed may or may not be available in 1986. [§]Hybrid.

**Highest Yielder.

*Not significantly different from highest yielder.

Table 21. Summary of wheat performance trials in the Coastal Plain.

Brand-Variety or Hybrid/Variety	Per- quimans County bu/A	Wash- ington County bu/A	1986 Average		1985-86 Average		1984-86 Average	
			Yield bu/A	Test Wt. lbs/bu	Yield bu/A	Test Wt. lbs/bu	Yield bu/A	Test Wt. lbs/bu
Florida 302	87**	86**	86**	53.6	69	49.8	69	52.4
Coker 983	81	76	78*	55.8	60	53.8	64	55.6
Saluda	77	74	75*	57.1	63	56.5	67	57.8
Williams	82	73	75*	56.5				

§Hybrex HW3021	75	72	73*	59.1				
AgriPro Hunter	75	70	72*	60.6	54	58.4	57	51.7
Coker 762	75	70	72*	55.8	55	49.9	60	51.7
Massey	73	69	71*	57.6	58	52.5	60	53.7

Coker 916	82	59	69	53.8	58	51.4		
§Hybrex HW3023	77	63	69	58.9				
Coker 9323	75	64	69	55.4				
Coker 747	75	63	68	55.1				

Pioneer 2550	73	64	68	51.7	57	51.7	61	53.8
Caldwell	76	60	67	49.9	56	49.3	59	52.2
#NC 81-58	67	65	66	52.5	60	52.1	60	52.8
Coker 9227	72	59	65	59.7				

Tyler	70	60	64	51.2	58	51.8	62	53.2
Pioneer 2551	73	56	64	56.8				
Becker	64	61	63	54.6				
#NC 82-1	49	71	61	50.8				
Mean	74	67	70					
C.V. (%)	5.2	6.7	6.1					
BLSD (K-50)	4	4	15					
s.e.	1.9	2.0	1.4					
Error d.f.	57	76	19					

§Hybrid. #Experimental. Seed may or may not be available in 1986.

**Highest yielder. *Not significantly different from highest yielder.