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Measured Crop Performance
Small Grain

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1994

PERFORMANCE OF SMALL GRAIN VARIETIES
IN NORTH CAROLINA

INTRODUCTION

Across the state of North Carolina during the fall of 1993, growers planted 40,000 acres of barley, 85,000 acres of oats, and 720,000 acres of wheat.

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 four test locations in the state.¹ Also included are multiple-year performance data on a selected number of varieties.

¹Research technicians, Ken Barnes, Johnny Denton, Mark Langdon, and Dwight Parrish assisted in conducting these tests. 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, uncontrollable variability exists among experimental plots due to differences in 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.

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.

Research conducted at North Carolina State University and several other universities has consistently shown a significant yield advantage where professionally grown/certified seed is used rather than "farmer saved" or "brown bagged" seed. These tests were planted with professionally grown/certified seed provided by the sponsoring agencies. Farmers who use inferior seed sources can expect accompanying decreases in performances.

Table 1. Characteristics of barley varieties.*

Brand-Variety or Variety	Mildew resist-ance	Rust resist-ance	Lodging resist-ance	Winter hardiness	Maturity	Test Wt. lb/bu	Awns Present
Anson	Poor	Good	Fair	Good	Med-Late	Fair	No
Boone	Poor	Poor	Fair	Good	Medium	Good	Yes
Mollybloom	Good	Poor	Fair	Fair	Med-Late	Fair	Yes
Mulligan	Good	Fair	Fair	Fair	Med-Early	Fair	Yes
Nomini	Fair	Fair	Fair	Good	Med-Early	Fair	No
Pamunkey	Good	Fair	Fair	Excellent	Early	Good	Yes
Pennco	Good	Fair	Fair	Good	Med-Early	Fair	No
Starling	Good	Fair	Fair	Fair	Med-Early	Fair	No
Wysor	Good	Poor	Fair	Good	Med-Early	Good	Yes

Table 2. Characteristics of oat varieties.*

Brand-Variety or Variety	Crown Rust resist-ance	Powdery Mildew resist-ance	Septoria Leaf Blotch resist-ance	Mosaic resist-ance	Maturity	Winter hardi-ness	Lodging resist-ance	Test Weight lb/bu
Brooks	Poor	Fair	Fair	Fair	Med-Early	Fair	Fair	Fair
NK Coker 716	Poor	Good	Fair	Good	Medium	Good	Good	Good
Nuda One				Good	Medium			
Rodgers				Good	Med-Early		Good	Good
SS 76-30	Poor	Fair	Fair	Excellent	Early	Excellent	Fair	Good
Yeats	Good			Fair	Medium		Good	Good
811					Medium	Good	Good	Good

*These characteristics based upon all available observations.

Table 3. Characteristics of wheat varieties.*

Brand-Variety or Variety	Leaf rust resistance	Mildew resistance	Mosaic resistance	Maturity	Winter Hardiness	Lodging resistance	Test Weight lb/bu	Soft Wheat Milling Quality
ABI Hickory	Poor	Fair	Fair	Early	Good	Good	Fair	Good
ABI Mallard	Fair	Fair		Med-Late	Good	Good	Fair	
ABI Savannah	Fair	Poor	Fair	Early	Fair	Good	Fair	Good
ABI Sawyer	Fair	Fair		Med-Late	Good	Good	Fair	
FFR 511W	Poor	Good		Early	Excellent	Good	Fair	Good
FFR 525W	Poor	Good		Medium		Good	Good	
FFR 555W	Poor	Poor		Medium	Good	Good	Fair	Good
FFR 568W	Poor	Poor	Fair	Med-Late	Good	Good	Fair	Good
Florida 302	Poor	Poor	Poor	Early	Good	Fair	Poor	Good
Hazen	Poor	Poor		Med-Late		Good	Fair	
Jackson	Poor	Good		Medium		Fair	Fair	
Madison	Poor	Poor	Good	Early	Good	Good	Fair	Good
NK Coker 9543	Fair	Fair	Good	Med-Late	Good	Good	Good	Good
NK Coker 9803	Fair	Fair	Good	Medium	Good	Good	Good	Good
NK Coker 9904	Good	Good		Med-Early	Good	Good	Fair	
NK Coker 9134	Fair	Poor		Medium	Good	Good	Fair	
NK Coker 9835	Fair	Fair	Good	Early	Good	Good	Fair	Good
Pioneer 2566	Good	Fair	Good	Late	Good	Good	Fair	Good
Pioneer 2548	Poor	Poor	Fair	Late	Good	Good	Fair	Good
Pioneer 2580	Poor	Good	Good	Medium	Good	Good	Fair	Good
Pioneer 2684	Good	Good	Good	Early	Fair	Good	Good	Fair
Wakefield	Poor	Poor	Fair	Med-Late	Good	Good	Fair	Good

*These characteristics based upon all available observations.

EXPERIMENTAL PROCEDURE

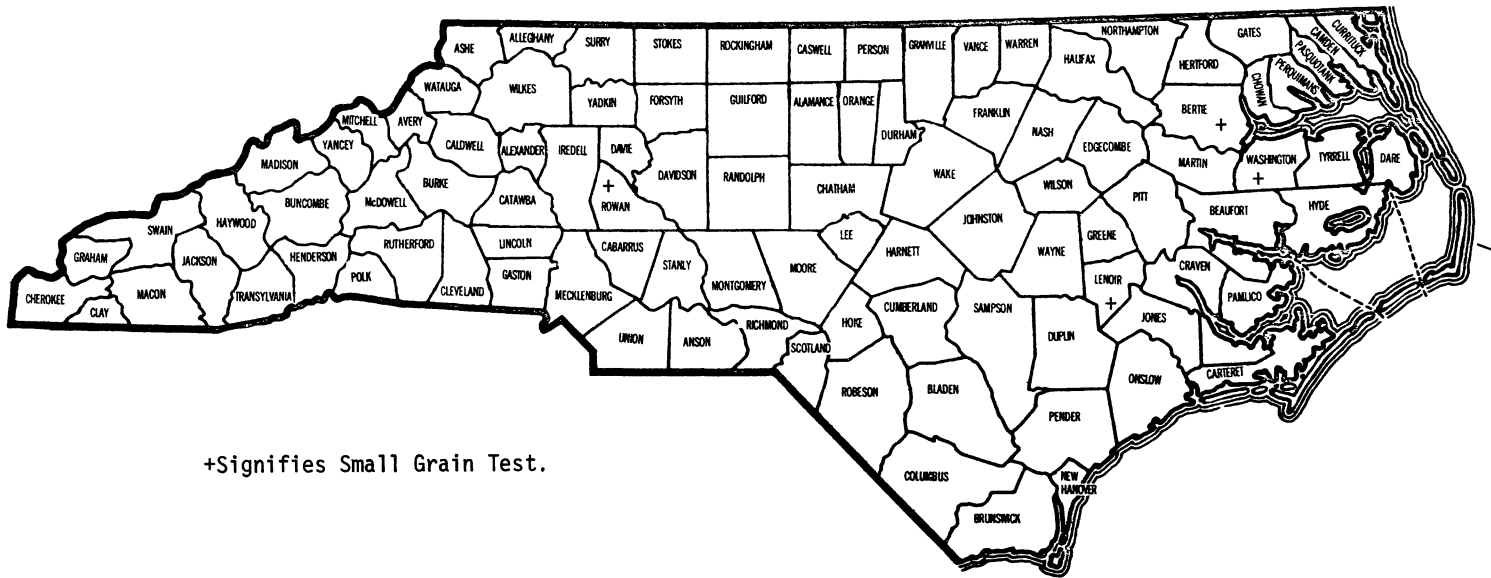
The state is divided into physiographic regions and tests were located in the Piedmont and Coastal Plain (Figure 1). All tests were located on research stations.

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 the Official Variety Testing Program, Department of Crop Science, North Carolina State University, Raleigh, N.C. 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 13, 8, and 34 commercial varieties and experimental lines of barley, oats, and wheat, respectively, were evaluated in the 1993-94 season.

Field Plot Design: A randomized, complete block design with five or six replications was used at each location.² Each plot consisted of eight rows, 7.5 inches apart, 19 feet long with 2.5 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). Seeding rate was 18 seed per foot.

²Statistical analyses were made in the statistical laboratory under the supervision of Dr. J. O. Rawlings and Mmes. Joy Smith and Sandra Donaghy. This assistance is gratefully acknowledged.



+Signifies Small Grain Test.

Table 4. Cultural practices for small grain tests, 1994.

County	Fertilizer lbs/A and Grade	Topdress* lbs/A 34% N	Soil Type	Planting Date	Harvest Date
<u>Piedmont Area</u>					
Rowan	150 lbs. 18-46-0	156	Davidson and Hiwassee clay loam	November 12	June 2 & 16
<u>Coastal Plain Area</u>					
Lenoir	300 lbs. 10-10-20	250	Norfolk loamy sand	October 21	May 24 & 31
Bertie	350 lbs. 10-20-20	235	Lynchburg Rains and Goldsboro sandy loam	November 15	June 15
Washington		265	Cape Fear Loam and Portsmouth fine sandy loam	November 2	June 1 & 14

*Topdressing applied in split application.

Table 5. Soil test results from test sites, 1994.

County	HM %	W-V	CEC	BS %	Ac	pH	P-I	K-I	Ca %	Mg %	Mn- I	Zn- I	Cu- I
<u>Piedmont Area</u>													
Rowan	0.1	1.03	7.5	79	1.6	5.8	61	108	47.7	23.9	625	118	
<u>Coastal Plain Area</u>													
Lenoir	0.6	1.17	2.5	84	0.4	5.9	153	54	52.2	20.9	41	55	50
Washington	5.6	.99	10.0	74	2.6	5.0	58	108	47.8	20.9	36	75	46

**Contact Person and
Agencies Sponsoring Entries**

Entries

Arkansas County Seed Company, Inc.
John Butler
P. O. Box 43
Stuttgart, Arkansas 72160

811

AgriPro Bio Science
Barton Fogleman
Box 2365
Jonesboro, Arkansas 72402

ABI Savannah
ABI Mallard
ABI Hickory

AgriPro Bio Science
Eugene Glover
Box 411 East 8th
Brookston, Indiana 47923

ABI Sawyer

Florida Agricultural Experiment Station
Dr. Ron Barnett
Route 3, Box 4370
Quincy, Florida 32351

Florida 302

Great Plains Research
Thad Busbice
3624 Kildaire Farm Road
Apex, NC 27502

512-2
417-2
610
618
416

North Carolina Agric. Experiment Station
Dr. Paul Murphy
Crop Science Department
Box 7620
Raleigh, N.C. 27695-7620

Anson, Boone,
Brooks, Mulligan,
Mollybloom, Yeats,
Rodgers
N.C. experimentals

Northrup King Company
Carroll Oakes
Box 249
Grifton, N.C. 28530

NK Coker 716
NK Coker 9134
NK Coker 9543
NK Coker 9803
NK Coker 9835
NK Coker 9904

Pennsylvania State University
University Park, Pa. 16802

Pennco

Pioneer Hi-Bred International, Inc.
Dennis McCoy
800 Tiffany Blvd., Suite 200
Rocky Mount, NC 27804

Pioneer 2548
Pioneer 2566
Pioneer 2580
Pioneer 2684
Pioneer XW522
Pioneer XW523

Southern States Coop.

Howard Tabor
P. O. Box 26234
Richmond, VA 23260

SS 76-30
FFR 511W
FFR 525W
FFR 555W
FFR 568W
FFR Exp. 362

Virginia Agricultural Experiment Station

Dr. Carl A. Griffey
Agronomy Department
VPI
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Jackson
Madison
Nomini
Pamunkey
Starling
Wakefield
Wysor
Virginia
experimentals

University of Arkansas

Dr. Robert Bacon
Dept. of Agronomy
115 Plant Science Building
Fayetteville, Arkansas 72701

Arkansas
experimental

L. B. Wannamaker Seed Company

Mary Jo Wannamaker
P. O. Box 497
St. Matthews, S.C. 29135

Nuda One

COOPERATORS

Bertie County: J. S. Barnes, Superintendent, Peanut Belt Research Station, Lewiston, N.C.

Lenoir County: Sandy Barnes, Superintendent, Lower Coastal Plain Tobacco Research Station, Kinston, N.C.

Rowan County: Raymond Coltrain, Superintendent, Piedmont Research Station, Salisbury, N.C.

Washington County: John Smith, Superintendent, Tidewater Research Station, Plymouth, N.C.

SEASONAL CONDITIONS

The 1993-94 small grain growing season was characterized by below-normal rainfall in October which delayed planting at some locations (Table 4). A cold period in January froze out the oats at Rowan and resulted in a complete loss. Freeze damage ratings were taken on the barley at that location (Table 9). Dry, warm weather hastened dry down and allowed harvest to be completed on time. Rainfall data at four locations are shown below:

Monthly Rainfall Totals (Inches)

<u>Location</u>	<u>Nov- ember</u>	<u>Dec- ember</u>	<u>Jan- uary</u>	<u>Feb- ruary</u>	<u>March</u>	<u>April</u>	<u>May</u>
Bertie	1.58	3.36	4.09	2.80	8.51	1.03	3.11
Lenoir	1.43	3.13	4.08	1.57	5.90	0.87	1.46
Rowan	2.18	4.21	4.55	3.27	6.66	1.93	2.67
Washington	1.71	2.80	5.23	3.42	7.18	2.39	3.76

Conditions were ideal for some diseases. Powdery mildew, and leaf rust were evident to the point where valid ratings could be made. Cereal leaf beetle was also evident at several locations although most locations did not require an application of insecticide. Glume blotch occurred at several locations in the Coastal Plain.

DATA

Yield is reported in bushels per acre by location and area as well as across years by location and area. Test weight in pounds per bushel was reported by region and by location. One thousand kernel weight for wheat was 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. All plots were adjusted to 13% moisture. Heading data were taken at the Lenoir county location.

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

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 replicates in the trials.

In calculating averages, equal weight was given to each location, therefore, two and three-year averages may not appear to equal the average between years when the number of locations varies from year to year.

RESULTS AND DISCUSSION

BARLEY

Statewide averages are shown in Tables 6 and 7. These tables only show lodging, plant height, date 50% headed, and disease data for entries common across all locations.

Individual location data, area data, and multiple year data are shown in Tables 8, 10, and 11. Table 9 shows freeze damage (winter kill) ratings at Rowan.

OATS

Statewide average data are shown in Tables 12 and 13.

Individual location data, area data, and multiple year data are shown in Tables 14 and 15. Piedmont data are not shown since the oats were frozen at Rowan.

WHEAT

Statewide averages are shown in Tables 16 and 17.

Individual location data, area data, and multiple year averages are shown in Tables 18, 19, and 20. Entries that were not treated with a systemic fungicide seed treatment are labeled in all tables. If the entry is not denoted then it was treated with a systemic fungicide seed treatment. The Lenoir county location included nearly all entries tested with and without the systemic fungicide seed treatment and these data are reported in Table 21 separately. The varieties 512-2, 417-2, 610, 618, and 416 were not included in the statewide average because they were only tested in the Coastal Plain.

Table 6. Summary of barley performance trials across the state (1994.)

Brand-Variety or Variety	Lodging %	Plant Height Inches	Date 50% Headed
Anson	59	40	4-8
Boone	64	34	4-8
Mollybloom	50	35	4-11
Mulligan	49	36	4-4
+NC 90-4061	38	34	4-7
+NC 90-4062	41	33	4-8
Nomini	37	38	4-5
Pamunkey	54	36	4-1
Pennco	51	36	4-6
Starling	42	38	4-5
+VA/NC 2246	34	38	4-3
+VA 90-41-14	82	32	4-3
Wysor	43	37	4-6

+Experimental.

Table 7. Two and three-year average barley performance across the state (1992-94).

Brand/Variety or Variety	Two Years (1993-94)†			Three Years (1992-94)††		
	Lodging %	Plant Height Inches	Date 50% Headed	Lodging %	Plant Height Inches	Date 50% Headed
Anson	50	40	4-14	56	41	4-15
Boone	58	38	4-12	65	37	4-13
Mollybloom	55	36	4-14	63	36	4-15
Mulligan	50	37	4-10	48	38	4-11
Nomini	40	38	4-10	49	39	4-10
Pamunkey	54	37	4-6			
Pennco	46	37	4-11	48	38	4-11
Starling	41	38	4-10			
Wysor	50	37	4-11	60	38	4-11

†Eight Locations.

††Twelve locations.

Table 8. Summary of barley performance trials in the Piedmont-Rowan County (1994).

Brand-Variety or Variety	1994		1993-94 Average†		1992-94 Average††	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/a	Test Wt. lb/bu
Pennco	100**	47.7	102*	48.8	95**	46.8
Anson	96*	44.9	103**	47.4	95**	46.4
+VA/NC 2246	96*	46.7				
Nomini	88*	46.8	90*	47.5	90*	46.2
+VA 90-41-14	85*	48.7				
Boone	85*	46.6	94*	48.7	93*	48.2
Wysor	85*	48.4	96*	49.8	94*	48.7
Pamunkey	81	51.8	96*	51.6		
Starling	76	46.9	88*	48.2		
+NC 90-4061	65	50.0				
Mollybloom	62	46.8	80	49.0	90*	48.0
Mulligan	59	47.7	72	47.9	78*	45.5
+NC 90-4062	57	47.7				
Mean	80		91		85	
C.V. (%)	12.7		9.0		13.1	
B.L.S.D. (K-50)	18		18		NS	
s.e.	5.9		2.7		3.0	
Error d.f.	22		8		18	

+Experimental. **Highest yielder.

*Not significantly different from highest yielder.

†Two locations. ††Three locations.

Table 9. Rowan County barley winter kill ratings - 1994.

Brand-Variety or Variety	% Winter Kill
Mulligan	38
Starling	28
+NC 90-4062	26
Mollybloom	25
+NC 90-4061	16
Anson	16
+VA90-41-14	15
Pennco	14
Wysor	12
Boone	10
Pamunkey	9
Nomini	7
+VA/NC 2246	4
Mean	17
L.S.D.	12
Error d.f.	60

+Experimental.

Table 10. Summary of barley performance trials in the Coastal Plain (1994).

Brand-Variety or Variety	Bertie County bu/A	Lenoir County bu/A	Wash- ington County bu/A	1994		1993-94 Average†		1992-94 Average††	
				Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu
Starling	68*	65**	96**	76**	45.9	80**	45.0		
+NC 90-4062	75**	56*	88	73*	48.5				
Anson	67	63*	89	73*	47.0	78*	45.8	82**	45.2
+VA/NC 2246	65	62*	91*	73*	48.0				
Pennco	59	62*	92*	71*	45.5	76*	44.7	79*	45.0
+NC 90-4061	69*	51*	91*	70*	47.2				
Mollybloom	73*	49	84	69*	46.2	72	45.8	79*	45.7
Pamunkey	60	61*	84	68*	46.6	75*	45.4		
+VA 90-41-14	54	60*	88	67*	46.5				
Nomini	59	52*	88	66*	45.1	77*	45.1	79*	45.4
Boone	71*	56*	70	66*	46.6	73	46.0	80*	46.0
Mulligan	59	55*	79	65*	45.3	70	45.2	75*	45.5
Wysor	61	53*	75	63	46.4	72	46.0	74*	46.1
Mean	65	57	86	69		75		78	
C.V. (%)	9.0	14.9	6.9	8.9		7.2		9.4	
B.L.S.D. (K-50)	8	15	7	13		6		NS	
s.e.	2.6	3.8	2.7	1.6		1.0		1.1	
Error d.f.	44	44	44	24		40		54	

**Highest yielder.

*Not significantly different from highest yielder.

†Six locations.

††Nine locations.

+Experimental.

Table 11. Average barley performance across years at three locations in the Coastal Plain.

Brand-Variety or Variety	1994		2 Years (1993-94)		3 Years (1992-94)	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu
<u>Bertie County</u>						
Anson	67	46.4	67	45.3	77	44.7
Boone	71	47.5	63	46.4	78	47.3
Mollybloom	73	46.1	66	45.6	79	45.9
Mulligan	59	44.1	56	44.1	70	44.6
Nomini	59	43.0	64	44.4	79	44.4
Pamunkey	60	43.8	60	40.9		
Pennco	59	43.7	61	44.4	78	44.2
Starling	68	44.7	65	44.1		
Wysor	61	44.3	61	44.9	73	45.3
<u>Lenoir County</u>						
Anson	63	47.9	88	45.8	93	45.3
Boone	56	46.5	85	45.8	96	45.6
Mollybloom	49	47.1	76	45.7	88	44.9
Mulligan	55	47.8	80	46.4	91	45.7
Nomini	52	44.4	81	44.2	85	43.8
Pamunkey	61	47.8	82	47.1		
Pennco	62	45.7	86	44.9	90	44.6
Starling	65	46.1	86	44.9		
Wysor	53	47.6	79	46.4	82	45.8
<u>Washington County</u>						
Anson	89	46.7	80	46.5	81	45.2
Boone	70	45.7	72	45.8	65	45.0
Mollybloom	84	45.3	76	46.1	69	45.3
Mulligan	79	43.9	73	45.3	65	44.7
Nomini	88	47.9	85	46.9	76	46.3
Pamunkey	84	48.3	82	48.2		
Pennco	92	47.2	81	45.2	75	45.0
Starling	96	46.8	89	46.0		
Wysor	75	47.3	75	46.8	70	45.9

Table 12. Summary of oat performance trials across the state (1994).

Brand-Variety or Variety	Lodging %	Plant Height Inches	Date 50% Headed
Brooks	43	34	4-14
+NC 90-7070	67	33	4-18
NK Coker 716	18	36	4-19
Nuda One	35	33	4-16
Rodgers	12	34	4-16
SS 76-30	37	37	4-15
Yeats	23	34	4-19
811	11	33	4-15

+Experimental.

Table 13. Two and three-year average oat performance across the state (1992-94).

Brand/Variety or Variety	Two Years (1993-94)†			Three Years (1992-94)††		
	Lodging %	Plant Height Inches	Date 50% Headed	Lodging %	Plant Height Inches	Date 50% Headed
Brooks	52	38	4-22	53	39	4-22
NK Coker 716	29	38	4-24	35	40	4-25
Rodgers	30	38	4-22	32	39	4-22
SS 76-30	45	41	4-20	44	42	4-18
Yeats	32	38	4-23	32	40	4-24

†Seven Locations. ††Eleven locations.

Table 14. Summary of oat performance trials in the Coastal Plain (1994).

Brand-Variety or Variety	Bertie County bu/A	Lenoir County bu/A	Wash- ington County bu/A	1994		1993-94 Average†		1992-94 Average††	
				Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu
+NC 90-7070	86**	80**	156*	107**	40.8				
SS 76-30	83*	69	156*	103*	38.4	102*	36.9	108	37.1
Rodgers	77*	73*	156*	102*	36.8	111**	36.0	124**	36.4
NK coker 716	77*	74*	153*	101*	39.0	95	36.7	106	37.0
Yeats	74	68	158**	100*	37.9	98*	35.9	104	36.5
Brooks	66	73*	146	95*	36.5	90	33.8	100	34.3
811	73	78*	127	93*	40.3	99*	38.9		
Nuda One	64	56	92	70	44.4				
Mean	75	71	143	96		99		108	
C.V. (%)	10.2	11.1	4.2	11.8		11.6		10.9	
B.L.S.D. (K-50)	10	11	7	19		14		9	
s.e.	3.4	3.5	2.7	2.9		2.1		1.8	
Error d.f.	24	28	24	14		25		36	

+Experimental.

**Highest yielder.

†Six locations. ††Nine locations.

*Not significantly different from highest yielder.

Table 15. Average oat performance across years at three locations in the Coastal Plain.

Brand-Variety or Variety	1994		2 Years (1993-94)		3 Years (1992-94)	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu
<u>Bertie County</u>						
Brooks	66	35.6	71	34.3	87	34.6
NK Coker 716	77	37.7	71	36.1	93	36.4
Rodgers	77	35.4	81	35.7	101	35.8
SS 76-30	83	37.2	84	35.6	97	36.0
Yeats	74	35.2	76	33.9	88	35.2
811	73	40.1	77	38.3		
<u>Lenoir County</u>						
Brooks	73	37.6	67	32.2	92	33.1
NK Coker 716	74	41.1	80	37.0	96	37.4
Rodgers	73	38.6	104	35.9	115	35.9
SS 76-30	69	39.3	82	37.0	103	37.0
Yeats	68	42.1	83	37.4	92	37.2
811	68	41.3	98	38.9		
<u>Washington County</u>						
Brooks	146	36.2	131	35.1	129	34.7
NK Coker 716	153	38.1	133	37.2	132	37.7
Rodgers	156	36.5	147	36.5	152	36.8
SS 76-30	156	38.7	141	38.2	139	38.2
Yeats	158	36.5	137	36.4	134	36.8
811	127	39.4	122	39.5		

Table 16. Summary of wheat performance trials across the state (1994).

Brand-Variety Variety	Lodging %	Plant Height Inches	1000 Kernel Weight gm	Date 50% Headed	Powdery Mildew Resistance	Leaf Rust Resistance
ABI Hickory++	22	39	26.3	4-10	Fair	Poor
ABI Mallard++	4	34	24.5	4-15	Fair	Fair
ABI Savannah++	9	36	28.8	4-8	Poor	Fair
ABI Sawyer++	16	34	27.2	4-16	Fair	Fair
+FFR Exp. 362++	4	35	25.3	4-15	Good	Poor
FFR 511W++	4	35	25.3	4-11	Good	Poor
FFR 525W	19	36	30.9	4-12	Good	Poor
FFR 555W	10	33	27.0	4-14	Good	Poor
FFR 568W++	2	35	26.8	4-14	Poor	Poor
Florida 302	25	35	26.3	4-11	Poor	Poor
Hazen++	3	34	25.9	4-16	Poor	Poor
Jackson++	29	36	25.5	4-13	Good	Poor
Madison	8	36	25.4	4-10	Fair	Poor
NK Coker 9134	13	36	28.7	4-13	Fair	Fair
NK Coker 9543	14	34	26.0	4-12	Fair	Fair
NK Coker 9803	13	34	28.4	4-10	Good	Fair
NK Coker 9835	2	31	28.1	4-10	Good	Fair
NK Coker 9904++	13	37	29.1	4-11	Good	Good
+Pioneer XW522++	0	31	25.3	4-11	Good	Good
+Pioneer XW523++	1	35	27.5	4-12	Good	Poor
Pioneer 2548++	5	33	25.0	4-13	Fair	Poor
Pioneer 2566++	8	34	26.2	4-16	Good	Good
Pioneer 2580++	7	35	25.2	4-13	Good	Poor
Pioneer 2684++	10	34	28.1	4-10	Good	Good
Wakefield	14	38	31.0	4-16	Fair	Poor

+Experimental.

++Not treated with systemic fungicide seed treatment.

Table 17. Two and three-year average wheat performance across the state (1992-94).

Brand-Variety or Variety	Two Years (1993-94)†				Three Years (1992-94)††			
	Lodging %	Plant Height Inches	1000 Kernel Weight grams	Date 50% Headed	Lodging %	Plant Height Inches	1000 Kernel Weight grams	Date 50% Headed
ABI Hickory++	12	40	26.0	4-16				
ABI Savannah++	4	36	28.4	4-14	10	35	30.0	4-13
FFR 511W++	2	36	25.4	4-16	7	36	28.2	4-17
FFR 555W	5	34	27.0	4-22	7	34	28.7	4-22
FFR 568W++	1	36	28.3	4-20	6	36	29.6	4-19
Florida 302	18	37	26.9	4-16	18	38	30.0	4-16
Jackson++	15	37	26.4	4-20				
Madison	4	38	27.5	4-16	8	37	29.5	4-15
NK Coker 9134	8	36	28.0	4-20				
NK Coker 9543	7	34	25.6	4-18	11	34	27.4	4-19
NK Coker 9803	7	35	27.8	4-17	10	35	29.5	4-18
NK Coker 9835	1	32	27.4	4-16	7	32	29.1	4-15
NK Coker 9904++	6	38	28.2	4-18	12	38	29.9	4-18
Pioneer 2548++	4	34	25.3	4-21	7	34	27.1	4-22
Pioneer 2566++	5	35	26.5	4-22				
Pioneer 2580++	4	36	26.0	4-20				
Pioneer 2684++	6	35	27.6	4-14				
Wakefield	7	38	31.0	4-20	12	39	32.5	4-21

†Eight locations. ††Twelve locations.

++Not treated with systemic fungicide seed treatment.

Table 18. Summary of wheat performance trials in the Piedmont-Rowan county (1994).

Brand-Variety or Variety	1994		1993-94 Average†		1992-94 Average††	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu
NK Coker 9543	83**	59.4	71*	59.6	72	58.2
Pioneer 2580++	77*	57.9	72**	58.6		
Pioneer 2548++	75	58.2	69*	58.5	81*	56.6
FFR 555W	74	58.7	68*	58.6	83**	57.0
+FFR Exp. 362++	74	59.2				
ABI Hickory++	73	59.7	70*	59.4		
+Pioneer XW522++	72	59.0				
ABI Sawyer++	72	57.6				
Wakefield	71	58.0	62	57.9	69	56.5
NK Coker 9134	71	60.2	69*	59.2		
Jackson++	71	59.2	70*	58.8		
Florida 302	70	56.9	68*	57.6	70	56.7
+Pioneer XW523++	70	58.7				
NK Coker 9803	69	58.5	66*	59.0	71	58.4
NK Coker 9904++	68	58.6	64	58.7	68	56.8
Pioneer 2566++	68	58.3	62	58.2		
Hazen++	67	57.1				
Madison	66	57.2	60	56.6	65	56.2
NK Coker 9835	66	58.2	61	58.2	68	56.1
FFR 525W	65	60.5				
ABI Savannah++	63	58.9	57	58.8	65	56.7
ABI Mallard++	62	58.1				
Pioneer 2684++	62	59.6	60	59.3		
FFR 568W++	60	58.8	52	58.5	67	57.2
FFR 511W++	57	58.4	54	57.7	70	56.1
Mean	68		64		71	
C.V. (%)	10.2		6.6		9.7	
B.L.S.D. (K-50)	8		8		8	
s.e.	2.8		1.2		1.7	
Error d.f.	139		17		44	

+Experimental. **Highest yielder. *Not significantly different from highest yielder.
†Two locations. ††Three locations. ++Not treated with systemic fungicide seed treatment.

Table 19. Summary of wheat performance trials in the Coastal Plain (1994).

Brand-Variety or Variety	Bertie County bu/A	Lenoir County bu/A	Wash- ington County bu/A	1994		1993-94 Average†		1992-94 Average††	
				Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu
NK Coker 9134	63*	65*	60	63**	58.3	62*	56.7		
ABI Savannah++	62*	61	66*	63**	58.3	61*	56.8	65	57.5
NK Coker 9904++	59	58	68*	62*	58.5	64**	56.6	70**	56.1
NK Coker 9803	56	59	70**	62*	59.0	61*	58.0	66*	58.3
NK Coker 9835	63*	64*	56	61*	57.8	59*	56.0	66*	56.7
+512-2++	60*	59	60	60*	59.8				
+Pioneer XW522++	58	58	62	59*	58.1				
NK Coker 9543	64**	56	58	59*	58.8	59*	57.2	64	57.8
AB Hickory++	53	58	58	57*	58.2	60*	56.9		
+417-2++	54	54	61	56*	59.5				
Jackson++	60*	66**	42	56*	57.4	59*	56.7		
Pioneer 2566++	50	54	65	56*	57.8	56	55.9		
Pioneer 2684++	52	59	56	56*	58.8	56	57.5		
Pioneer 2580++	55	60	52	56*	57.5	57	56.6		
FFR 555W	60*	66**	41	56*	55.9	57	54.8	65	55.8
AB Mallard++	56	47	63	55*	56.0				
Wakefield	57	61	45	54*	57.5	55	55.2	63	56.2
+Pioneer XW523++	57	61	44	54*	57.2				
+610++	56	45	60	54*	58.6				
ABI Sawyer++	62*	54	42	53*	56.5				

Table 19. (Continued). Summary of wheat performance trials in the Coastal Plain (1994).

Brand-Variety or Variety	Bertie County bu/A	Lenoir County bu/A	Wash- ington County bu/A	1994		1993-94 Average†		1992-94 Average††	
				Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu
FFR 525W	57	56	45	53*	58.4				
+FFR 362++	55	58	44	52*	58.1				
Madison	56	54	44	51*	56.0	53	55.1	58	55.6
+618++	54	48	52	51*	57.0				
+416++	44	48	61	51*	59.3				
FFR 511++	46	47	49	47	56.4	49	55.6	54	56.2
Pioneer 2548++	58	50	32	47	56.9	50	55.9	59	56.4
Florida 302	60*	46	31	46	55.9	49	53.6	59	54.6
Hazen++	56	46	33	45	56.3				
FFR 568W++	49	51	29	43	56.7	48	54.8	54	55.8
Mean	55	53	51	53		56		62	
C.V. (%)	8.1	8.3	9.4	14.9		10.8		10.3	
B.L.S.D. (K-50)	5	5	5	14		6		5	
s.e.	2.0	2.0	2.2	2.0		1.1		0.9	
Error d.f.	128	172	128	66		85		99	

+Experimental. **Highest yielder. *Not significantly different from highest yielder.
 †Six locations. ††Nine locations. ++Not treated with systemic fungicide seed treatment.

Table 20. Average wheat performance across years at three locations in the Coastal Plain.

Brand-Variety or Variety	1994		2 Years (1993-94)		3 Years (1992-94)	
	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu	Yield bu/A	Test Wt. lb/bu
<u>Bertie County</u>						
ABI Hickory++	53	58.5	52	57.5		
ABI Savannah++	62	58.9	58	56.6	67	57.5
Florida 302	60	57.5	54	52.7	65	54.2
FFR 511W++	46	56.2	45	56.6	53	57.0
FFR 555W	60	57.3	56	54.6	66	55.8
FFR 568W++	49	57.5	48	54.1	57	55.7
Jackson++	60	58.2	56	57.6		
Madison	56	56.7	51	56.8	59	57.2
NK Coker 9134	63	58.4	54	57.3		
NK Coker 9543	64	59.3	58	57.7	65	58.3
NK Coker 9803	56	57.9	52	57.7	61	58.1
NK Coker 9835	63	58.2	58	56.5	69	57.0
NK Coker 9904++	59	58.4	57	56.3	70	55.5
Pioneer 2548++	58	58.1	48	55.5	60	56.4
Pioneer 2566++	50	57.0	46	56.3		
Pioneer 2580++	55	57.0	50	57.4		
Pioneer 2684++	52	58.1	49	58.4		
Wakefield	57	57.6	53	54.3	64	55.8
<u>Lenoir County</u>						
ABI Hickory++	58	59.3	67	58.2		
ABI Savannah++	61	57.4	62	57.9	62	57.8
Florida 302	46	57.0	48	56.2	55	55.0
FFR 511W++	47	57.8	53	56.5	55	56.4
FFR 555W	66	58.7	65	57.3	70	57.0
FFR 568W++	51	59.9	52	58.3	56	57.7
Jackson++	66	58.8	70	58.5		
Madison	54	56.6	58	55.8	60	55.7
NK Coker 9134	65	60.1	69	58.7		
NK Coker 9543	56	59.3	63	59.2	64	58.9
NK Coker 9803	59	60.3	64	59.7	64	59.1
NK Coker 9835	64	59.3	60	57.5	67	57.2
NK Coker 9904++	58	58.8	65	57.8	67	55.9
Pioneer 2548++	50	59.0	59	58.4	63	58.0
Pioneer 2566++	54	60.2	60	58.7		
Pioneer 2580++	60	59.8	67	58.6		
Pioneer 2684++	59	60.7	60	59.1		
Wakefield	61	58.8	60	57.4	62	57.1
<u>Washington County</u>						
ABI Hickory++	58	56.7	61	55.2		
ABI Savannah++	66	58.6	65	56.1	66	57.0
Florida 302	31	53.2	44	51.9	53	53.5
FFR 511W++	49	55.1	50	53.8	53	55.0
FFR 555W	41	51.6	50	52.7	60	54.2
FFR 568W++	29	52.8	43	52.2	47	53.9
Jackson++	42	55.1	52	54.0		
Madison	44	54.6	51	52.6	51	54.1
NK Coker 9134	60	56.4	62	54.3		
NK Coker 9543	58	57.8	57	54.7	62	56.1
NK Coker 9803	70	58.9	67	56.8	70	58.0
NK Coker 9835	56	55.9	60	54.2	67	55.3
NK Coker 9904++	68	58.3	68	55.8	72	56.5
Pioneer 2548++	32	53.7	43	53.9	49	55.0
Pioneer 2566++	65	56.1	62	52.9		
Pioneer 2580++	52	55.7	54	53.8		
Pioneer 2684++	56	57.5	57	55.2		
Wakefield	45	56.1	51	54.0	58	55.6

++Not treated with systemic fungicide seed treatment.

Table 21. Comparison of yields of wheat entries with and without systemic fungicide seed treatment-Lenoir county.

Brand Variety or Variety	1994		1993-94		1992-1994	
	Yield (bu/a)		Yield (bu/A)		Yield (bu/A)	
	Treated	Nontreated	Treated	Nontreated	Treated	Nontreated
FFR 555W	66	63	65	61	70	65
NK Coker 9134	65	61				
NK Coker 9835	64	56	60	55	67	60
NK Coker 9803	59	58	64	64	64	66
FFR 525W	56	37				
+FFR Exp. 362	56	58				
FFR 568W	56	51	56	52	59	56
NK Coker 9543	56	55	63	61	64	60
Madison	54	53	58	56	60	58
FFR 511	48	47	53	53	56	55
Florida 302	46	44	48	46	55	52
Mean	57	53	58	56	62	59
C.V. (%)	10.6		10.3		10.9	
B.L.S.D. (K-50) for comparing treatment effect	4		4		4	
s.e.	2.6		1.8		1.7	
Error d.f.	84		135		210	

+Experimental.

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