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Measured Crop Performance

SMALL GRAIN

1977

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AT RALEIGH

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1977

PERFORMANCE OF SMALL GRAIN VARIETIES IN NORTH CAROLINA

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INTRODUCTION

The Official Variety Test on Small Grain varieties in North Carolina conducted annually by locating evaluation trials throughout the small ain producing area of the state. These tests are conducted to determine e value and suitability of commercially available and prospective varieties wheat, oats and barley for planting in North Carolina. The results of iese tests are intended to aid the growers and agricultural workers in the election of a variety best suited for their particular area of the state or gion.

Winter wheat production in North Carolina for the 1976-77 season is orecast at 6,045,000 bushels as of June 1. This would be a decrease of 13 ercent over the 1976 crop. Acreage to be harvested for grain is estimated at 95,000 or 50,000 acres below the 1976 harvested acreage.

It is estimated that the yield per acre for the 1977 crop will be 31 ushels per acre. This would be an increase of two bushels from last year.

The United States winter wheat production is forecast at 1,526 million ushels, 3 percent below the previous yield last year and 8 percent below the ecord 1975 crop. Yield of 31.9 bushels per acre is up 0.3 bushels from the 976 average of 31.6 last year.

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

In North Carolina the oat acreage planted during the Fall of 1976 and Spring of 1977 was 185,000 acres. This was 10,000 acres more than last year's planted acreage and 106 percent increase over 1976.

The U. S. seeding of oats for the 1977 crop is expected to total over 18.0 million acres based on growers' intentions as of March 1 of this year. This is 104 percent of the 1976 crop.

The 1976 oat crop in North Carolina is estimated to yield 45.0 bushels per acre. This would be a decrease of five bushels per acre from the 1975 crop.

In 1976 the barley production in North Carolina was harvested from 65,000 acres with a yield of 39 bushels per acre. The 1975 acreage was 73,000 acres. The 1976 yield per acre of 39 bushels was down six bushels from the previous year.

Information on varietal performance is present from seven test locations in the state--four 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 grower's conditions should be used. 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 are presented for performance from one to five years. All available data[2/] were used in determining the pathologic and agronomic characteristics of the varieties.

[2/] Special acknowledgement is due Drs. T. T. Hebert and C. F. Murphy for their assistance in describing the characteristics of the 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

Coker's Pedigreed Seed Company	Hartsville, S. C.
Kentucky Agricultural Experiment Station	Lexington, Kentucky
McNair Seed Company, Inc.	Laurinburg, N. C.
North Carolina Agricultural Experiment Station	Raleigh, N. C.
Purdue University Agricultural Expt. Station	Lafayette, Indiana
South Carolina Agricultural Experiment Station	Clemson, S. C.
Virginia Agricultural Experiment Station	Blacksburg, Virginia

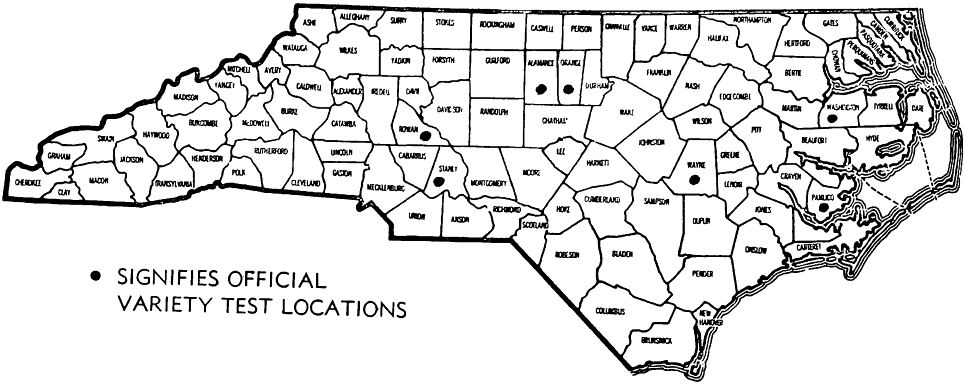
Test Locations

Seven locations were used in 1976-77 with four in the Piedmont and three in the Coastal Plain as shown in Figure 1. Five tests were located on private farms[1/] and two were on research stations. 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 analyses were made in the statistical laboratory under the supervision of Dr. J. O. Rawlings. This assistance is gratefully acknowledged.

1977
LOCATION OF SMALL GRAIN PERFORMANCE TRIALS



COOPERATORS

PIEDMONT

Rowan County: Mr. Clyde McSwain, Superintendent, Piedmont Research Station, Salisbury, North Carolina
County Extension Chairman, R. R. McNeely

Stanly County: Mr. Keith Hill, Route 1, Box 138A, Oakboro, North Carolina
County Extension Chairman, J. Frank Simpson

Alamance County: Mr. J. J. Danieley, Route 4, Burlington, North Carolina
County Extension Chairman, Millis Wright

Orange County: Mr. M. A. Lotta, Route 1, Hillsborough, North Carolina
County Extension Chairman, Ebert L. Pierce

COASTAL PLAIN

Pamlico County: Mr. James Spencer, Box 1214, Alliance, North Carolina
County Extension Chairman, J. L. Rea, Jr.

Washington County: Mr. John Smith, Superintendent, Tidewater Research Station, Plymouth, North Carolina
County Extension Chairman, Guy M. Whitford

Wayne County: Mr. Wayland Price, Route 4, Mt. Olive, North Carolina
County Extension Chairman, T. S. Godwin
County Extension Agent, Wesley Townsend

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 for the test field and fertilizer requirements were made in accordance with the soil analysis report. Lime was applied, if needed, to adjust the pH to a desirable level for small grain production.

Starting in 1969 all tests were planted with cone-type, tractor-mounted, spring-loaded disc equipment. The disc allowed for more accurate seeding in areas with stubble or organic matter on the soil surface. The seeding rate was one gram per foot of row. The rows were spaced one foot apart. Each plot consisted of seven rows, 15 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 are 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 and moisture. All plots were adjusted to 13% moisture. All samples were run through a small thresher to remove the awns and foreign matter 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 appeared to give very satisfactory results.

Table 1. Cultural practices for small grain tests - 1977.

Area and Cooperator	Fertilizer lbs/A & Grade	pH Results	Topdress lbs/A	Date of planting	Date of harvesting
<u>Piedmont Area</u>					
Stanly County Keith Hill	300 lbs. 10-10-10	5.9	75 lbs. 30% Nit. Sol.	October 29	Barley - June 16 Oats - Discarded Wheat - June 16
Alamance County J. J. Danieley	300 lbs. 10-10-10	5.1	80 lbs. 33.5% Am. Nit.	November 3	Barley - Discarded Oats - Discarded Wheat - Discarded
Rowan County Clyde McSwain	700 lbs. 10-20-20	6.0	(included in fert.)	October 28	Barley - Discarded Oats - Discarded Wheat - June 16
Orange County M. A. Lotta	400 lbs. 10-20-20	4.8	70 lbs. 33.5% Am. Nit.	November 5	Barley - Discarded Oats - Discarded Wheat - Discarded
<u>Coastal Plain Area</u>					
Pamlico County James Spencer	350 lbs. 10-8-30	5.1	70 lbs. 30% Nit. Sol.	October 18	Barley - June 8 Oats - June 8 Wheat - June 8
Wayne County Wayland Price	300 lbs. 5-15-30	5.1	75 lbs. 30% Nit. Sol.	October 19	Barley - June 10 Oats - June 10 Wheat - June 10
Washington County John Smith	800 lbs. 2-6-12	5.3	80 lbs. 33% Am. Nit.	October 19	Barley - June 11 Oats - June 11 Wheat - June 11

Seasonal Conditions

The seasonal conditions during the Fall of 1976 and Spring of 1977 in North Carolina were characterized by abnormal weather which had pronounced affects on the small grain crop.

September 1976: During the early part of September temperatures averaged four to six degrees below normal in the east and six to eight degrees below normal in the west. Two weak cold fronts, moving across the state in September, caused unseasonably cool weather with night time temperatures near record low levels. Light frost was reported in the mountain section during the latter part of the month.

October 1976: This month started with showers and developing ahead of an approaching cold front. Amounts of rain varied in some areas of the Piedmont and eastern slopes and between one and three inches in localized thunderstorms. Later in the month, rainfall amounts were high particularly over the Piedmont and Coast. The excessive moisture, along with freezing temperatures, caused some heavy frost in the Piedmont. Temperatures during the latter part of the month averaged seven to eight degrees below normal and freezing temperatures occurred across all the state. This heavy rainfall and low temperatures delayed seeding of small grain, especially in the Piedmont Area.

November 1976: Temperatures and precipitation continued to average below normal for most of this month. Winter-like weather prevailed across the state with record-breaking low temperatures and snow in the mountains. The latter part of the month experienced cold air movement with snow flurries in the Mountain and Piedmont Areas.

December 1976: Temperatures continued to average well below normal and rainfall about normal. Strong cold fronts entered the Mountains and moved across the state to the Coastal Area. Cold artic air followed resulting in record breaking temperatures throughout the state. A travelers' advisory was in effect for a good portion of the Mountains through the Piedmont with over two inches of snow in the Piedmont and five inches in the Mountains. Over night temperature lows dipped into the teens and single digits in the Mountains and Piedmont with 20 degrees reported along the Coast. New record low temperatures were set in the Piedmont as well as the Coastal Areas.

January 1977: Temperatures continued to be cold to very cold with averages from five to ten degrees below normal. Wide-spread rain began as freezing rain in western counties and spread over most of the state. Later in the month a sharp cold front moved through the state with temperatures dropping below zero in the western section and around 10 degrees on the Coast. Snow flurries were reported over the Mountains and gales on the Coast. Bitter cold and temperatures averaging 18 to 21 degrees below normal, with the coldest weather in years, was in effect during the month. The cold weather continued to average 15 to 20 degrees below normal up to the end of the month.

February 1977: The cold temperatures during January continued into the first three weeks of February. Temperatures were five to ten degrees below normal with precipitation somewhat normal. By the third week in February the drastic change took place in the weather across North Carolina. The usual cold winter weather began to moderate with a continued warming trend toward the end of the month. The pattern was completely reversed with a high record temperature for the latter part of February. Rainfall for the latter part of the month averaged between one-half and one inch.

March 1977: Temperatures continued to warm during this month with three to four degrees above normal and precipitation averaged about one to one and one-half inches over the state. The month was marked by three separate cold fronts and temperatures averaged 9 to 11 degrees above normal. Some heavy showers accompanied the cold front through the state during the middle of the month. Heavy rainfall occurred throughout the entire state and near gale-force winds along the coast. Run-off from the rainfall caused the major rivers in the eastern section of the state to rise to near flood levels.

April 1977: This month was typical of spring weather with periods of sunshine and periods of rain. Weather conditions were generally favorable for field work in the Coastal Plain but limited farm activities in the Mountains and Piedmont. Land preparation and corn planting preceeded under normal conditions. Showers produced a wide range in precipitation and temperatures averaged three to five degrees below normal during the latter part of the month.

May 1977: Cool, dry weather prevailed over North Carolina during some of this month. Temperatures averaged about five degrees below normal and scattered showers occurred with the passage of a cold front. Rainfall was generally less than one tenth inch in the Coastal Plain. A gradual warming took place during the latter part of the month with high temperatures reaching into the 80's over most of the state and the 70's in the Mountains. All sections of North Carolina received abundant rainfall during the last week in the month.

June 1977: June temperatures averaged about normal with precipitation confined mainly to the Mountains and the Coast. The central section received very little rain during the month. High pressure over most of the state resulted in good weather for harvest and outside activities. Temperatures for the middle of the month were near normal but in some areas it was the driest June since 1890. The rainfall pattern was irregular with some showers in the Piedmont.

General 1976-77: The 1976-77 small grain season was characterized by a record-breaking low temperature in degrees and length of time during the winter growing season. Normal growing conditions resulted when the spring arrived and good yields were experienced throughout the eastern part of the state. The extremely low temperatures resulted in killing of the oat crop in the Piedmont Area and the oat entries in the Official Variety Test. The barley crop was damaged but not to the extent which the oats received. The wheat crop appeared to withstand this extremely cold weather and yields, although not as good as years before, were acceptable. A minimum amount of disease was observed throughout the areas for this period of time.

RESULTS AND DISCUSSION

The performance of the 1977 tests along with the previous four years re presented by crop and area in a tabular form in this report. Since the enetic expression of a variety is influenced greatly by the environment, t is best to have several years' data from which to draw conclusions. For xample, if a variety appeared in the two-year average but not in the three ear average, then it must be compared only within the two-year and not with he data in the three-year average since it is possible that the third year ould have been extremely good or poor and not comparable.

The 1977 data presented in this report have been analyzed statistically nd the least significant difference (L.S.D.), in terms of bushels per acre s given. Unless the difference between two varieties is greater than the .S.D., the varieties should not be considered as being any different tatistically.

Barley

Table 5 shows the performance of barley in the Piedmont. Winter damage rom low temperatures resulted in low yields varying from a high of 36.6 bushels er acre for the Maury variety to 26.5 bushels for the experimental, N.C. 73-34. he mean of the test for the 1976-77 season was 32.7 bushels per acre compared o 82.2 bushels per acre in 1975-76. The mean of the test was 49.5 bushels ower than last year.

The test weights of 44.0 for the experimental N.C. 63 and 43.9 for Keowee were the highest test weights in pounds per bushel of all entries. Keowee continued to be the highest five year average of four entries common to the test for this period of time with 76.9 bushels per acre. The yield and test weight data for barley performance in the Piedmont are averages of Stanly County.

In the Coastal Plain Area, Table 6 shows the difference in yield between varieties and breeding lines. The mean of the test in bushels per acre was 57.0 for the average of three locations in the Coastal Plain. The highest yield was from the new variety, Boone, at 65.2 bushels per acre. The test weight in pounds per bushel on the ten entries varied from 42.6 to 47.5 with a mean of 44.8. The mean test weight for 1976-77 season was 0.9 pounds more than last season's test weights. The experimental, N.C. 63, showed the highest test weight at 42.6.

Oats

The data from the oat trials in North Carolina are recorded in Tables 7 and 8.

Table 7 shows the winter survival of the eight oat entries in the 1976-77 trials in the Piedmont. As noted in Table 7 in Rowan and Alamance Counties the entries experienced almost complete destruction. The same was true for the entries at the Stanly and Orange County locations.

Some of the bitter cold was experienced during the third week in January 1977. Temperatures averaged 18 to 21 degrees below normal with the coldest weather in years occurring during this month. Temperatures dropped below zero over much of the western section of the state.

Along with the below freezing temperatures, the many sections of the state experienced sub-zero readings for several days. This extremely cold weather resulted in no yield data for oats in the Piedmont. The survival data as shown are relative figures which indicate some degree of winter hardiness in the entries listed. Some entries in the Coastal Plain were damaged by low temperatures, but the damage was not as severe as in the Piedmont locations.

In the Coastal Plain the mean yield of the test was 94.8 bushels for three locations. This was 14.0 bushels more than last year. The mean test ight was 34.5 pounds per bushel which was 0.9 pounds per acre more than 975-76. Salem was highest in yield at 103.5 bushels per acre with two xperimentals, N.C. 73-15 and Coker 70-16, close seconds at 97.9. The ighest test weight on nine entries was 35.3 pounds per bushel for Coker 70-16. he mean of the test in yield increased 14.0 bushels per acre over the 1976 eason.

Wheat

Table 9 shows the data on wheat trials in the Piedmont. The mean yield bu/A) of the test for the 1977 season was 0.9 bushels more than in 1976. The ean test weight in pounds per bushel for 1977 was 55.2 compared with 59.4 ast year. The highest yielding entry was the variety, McNair 1003, ith 50.2 bushels per acre. The highest test weight was on Arthur 71 and ullivan at 57.2 pounds per bushel. In the four-year average Abe was high ith 48.1 bushels per acre.

The wheat yields in the Coastal Plain Area were up over last year. The ean of the test increased from 32.0 bushels per acre as the mean for 1976 ompared to 53.9 bushels per acre for 1977 mean. This was a 21.9 bushel per cre increase.

For the four-year average, the variety Abe was the highest yielding entry t 40.6. Generally speaking, the growing season for wheat was better than ast year.

Lodging data are given in Table 11. A one-year, two-year, three-year nd four-year comparison is shown. In 1977 a total of three locations was used or lodging data on barley, three locations on oats and two locations on wheat. If o lodging was recorded at a specific location, data on this location was not sed for the average. When a test was discarded or had no lodging, no data as used for lodging.

Table 2. Characteristics of barley varieties*

Variety	Mildew resistance	Leaf rust resist ance	Scald resistance	Lodging resistance	Winter hardiness	Maturity	Test Weight lb/bu	Length of awns
Barsoy	Good	Poor	Fair	Good	Good	Very Early	High	Long
Boone	Fair	Good	Fair	Good	Good	Early	High	Short
Clayton	Good	Excellent	Fair	Good	Good	Early	Medium	Awnless
Keowee	Good	Poor	Fair	Good	Good	Early	High	Short
Maury	Good	Medium	Good	Good	Good	Early	High	Awnless
Monroe	Good	Good	Fair	Good	Excellent	Late	Medium	Awnless
Surry**	Good	Medium	Fair	Good	Excellent	Early	Medium	Awnless

Table 3. Characteristics of oat varieties*

Variety	Crown rust resistance	Smut resistance	Blight resistance	Mosaic resistance	Maturity	Winter Hardiness	Lodging resistance	Test Weight lb/bu
Carolee**	Fair	Good	Good	Fair	Medium	Good	Good	Medium
Coker 227	Excellent	Good	Good	Good	Med. Early	Good	Good	Med. High
+Firecracker	Fair	Good	Good	Good	Early	Poor	Excellent	Med. High
Salem	Fair	Good	Good	Good	Medium	Good	Excellent	High
Windsor	Fair	Good	Excellent	Good	Medium	Good	Good	Med. High

+Recommended for Coastal Plain only.
*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
Abe**	Good	Good	Good	Medium	Excellent	Good	Medium	High	Good
Arthur 71**	Good	Good	Good	Medium	Excellent	Good	Semi-Dwarf	High	Good
Beau**	Good	Good	Good	Medium	Good	Good	Medium	High	Good
Blueboy II	Good	Poor	Good	Medium	Excellent	Excellent	Semi-Dwarf	Low	Good
Coker 747	Good	Good	Good	Medium	Good	Good	Semi-Dwarf	High	Good
McNair 1813**	Good	Good	Good	Medium	Good	Good	Semi-Dwarf	High	Good
McNair 4823	Good	Good	Good	Late	Excellent	Excellent	Semi-Dwarf	High	Good
Oasis**	Good	Good	Good	Medium	Excellent	Good	Medium	High	Good
Sullivan**	Good	Good	Good	Medium	Excellent	Good	Medium	High	Good

*These characteristics 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/] 1977 bu/A	1 yr. avg.[1/] 1977 lbs/bu	2 yr. avg. 1976-1977 bu/A	2 yr. avg. 1976-1977 lbs/bu	3 yr. avg. 1975-1977 bu/A	3 yr. avg. 1975-1977 lbs/bu	4 yr. avg. 1974-1977 bu/A	4 yr. avg. 1974-1977 lbs/bu	5 yr. avg. 1973-1977 bu/A	5 yr. avg. 1973-1977 lbs/bu
Boone	32.7	41.8	61.0	44.3	74.8	44.3	75.6	44.9	75.4	44.6
Clayton	31.6	40.8	55.6	43.0	66.1	43.3	68.1	43.7	68.1	43.3
Keowee	36.5	43.9	63.1	45.5	74.3	45.9	77.9	46.4	76.9	46.1
Barsoy	27.2	43.1	48.0	45.4	61.5	45.4	65.6	46.2	65.5	46.1
Monroe	34.2	39.2	63.8	42.6	71.8	42.3				
Maury	36.6	41.7	65.4	44.0	72.0	43.4				
*N. C. 63	31.6	44.0	63.8	46.2						
Surry	36.5	41.6								
*N. C. 74-34	26.5	40.5								
*N. C. 73-119	33.2	40.9								
Mean of Test	32.7	41.8	60.1	44.4	70.1	44.1	71.8	45.3	71.5	45.0
L.S.D. (.05)	N.S.									
(.01)	N.S.									
C.V. (%)	16									

1/ Average of Stanly County only.

Table 6. Summary of BARLEY performance trials in the COASTAL PLAIN.

Variety or Line	1 yr. avg.[1/] 1977 bu/A	1 yr. avg.[1/] 1977 lbs/bu	2 yr. avg. 1976-1977 bu/A	2 yr. avg. 1976-1977 lbs/bu	3 yr. avg. 1975-1977 bu/A	3 yr. avg. 1975-1977 lbs/bu	4 yr. avg. 1974-1977 bu/A	4 yr. avg. 1974-1977 lbs/bu	5 yr. avg. 1973-1977 bu/A	5 yr. avg. 1973-1977 lbs/bu
Boone	65.2	45.4	72.4	44.8	76.4	45.6	73.2	45.2	70.8	45.0
Clayton	58.4	43.8	60.5	43.2	64.8	43.7	61.4	42.9	61.0	43.3
Keowee	57.6	46.0	59.8	45.2	67.6	46.1	64.8	45.4	64.7	45.7
Barsoy	48.2	47.5	54.0	46.5	62.7	47.3	62.5	46.8	62.0	47.0
Surry	46.9	43.1	51.5	42.7	58.6	43.9				
*N. C. 63	60.4	46.7	66.9	46.1						
Maury	56.8	44.5								
Monroe	54.7	42.6								
*N. C. 74-34	59.2	43.9								
*N. C. 73-119	62.4	44.0								
Mean of Test	57.0	44.8	60.8	44.8	66.0	45.3	65.5	45.1	64.6	45.2
L.S.D. (.05)	9.4									
(.01)	12.5									
C.V. (%)	12									

1/ Average of Pamlico, Wayne and Washington Counties.
* Experimentals.

OATS - PIEDMONT

% WINTER SURVIVAL

Table 7.

Variety	Rowan County	Alamance County	Average
Carolee	0	3	2
Salem	0	2	1
Windsor	8	14	11
Coker 227	0	9	4
*Coker 70-16	12	6	9
*N. C. 73	0	4	2
*N. C. 73-9	4	9	6
*N. C. 73-15	4	10	7

*Experimentals.

Table 8. Summary of OAT performance trials in the COASTAL PLAIN.

Variety or Line	1 yr. avg.1/ 1977		2 yr. avg. 1976-1977		3 yr. avg. 1975-1977		4 yr. avg. 1974-1977		5 yr. avg. 1973-1977	
	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu	bu/A	lbs/bu
Carolee	97.5	33.4	89.6	33.6	95.1	34.2	96.6	33.4	95.8	33.6
Salem	103.5	34.9	91.6	34.6	98.2	35.8	102.2	35.4	98.0	35.6
Windsor	94.9	34.7	83.8	34.0	89.4	35.1	92.8	34.8	90.5	34.8
Coker 227	85.2	34.8	87.6	34.1	90.8	35.1	95.2	34.8		
Firecracker	90.8	34.5	89.0	34.1	94.3	35.0	96.8	34.6		
N. C. 73	96.1	33.3	92.3	33.8						
Coker 70-16	97.9	35.3								
N. C. 73-9	89.1	34.5								
N. C. 73-15	97.9	35.2								
Mean of Test	94.8	34.5	89.0	34.0	93.6	35.0	96.7	34.6	94.8	34.7
L.S.D. (.05)	14.6									
(.01)	19.4									
C.V. (%)	11									

1/ Average of Pamlico, Wayne and Washington Counties.
* Experimentals.

Table 9. Summary of WHEAT performance trials in the PIEDMONT.

Variety or Line	1 yr. avg.[1/] 1977 bu/A	lbs/bu	2 yr. avg. 1976-1977 bu/A	lbs/bu	3 yr. avg. 1975-1977 bu/A	lbs/bu	4 yr. avg. 1974-1977 bu/A	lbs/bu	5 yr. avg. 1973-1977 bu/A	lbs/bu
McNair 4823	41.0	56.7	39.3	59.2	43.9	58.1	45.7	57.9	48.0	57.1
Blueboy II	42.3	54.6	42.4	56.8	45.6	57.1	46.4	57.0	43.7	55.6
Arthur 71	40.8	57.2	40.2	58.6	43.7	59.1	47.3	59.6	48.4	58.7
Abe	41.9	56.4	38.4	57.6	43.6	58.4	48.1	59.0	49.9	58.2
Oasis	39.6	56.8	41.7	58.6	44.7	59.2	48.0	59.6		
*Va. 72-54-14	49.1	54.6	51.4	57.0	53.3	57.6				
Coker 747	45.6	57.0	51.3	59.5	50.7	60.0				
*Va. 68-22-7	46.4	53.0	47.6	56.2	50.8	57.3				
McNair 1003	50.2	53.8	55.2	56.8						
Beau	40.0	56.9	43.8	59.0						
Sullivan	44.3	57.2								
*N. C. 74-6	51.2	53.1								
*N. C. 74-31	47.1	53.8								
*N. C. 74-33	41.7	54.9								
*N. C. 74-36	48.8	54.5								
*N. C. 74-1	46.7	53.0								
Mean of Test	44.8	55.2	45.1	57.9	47.0	58.4	47.1	58.6	47.5	57.4
L.S.D. (.05)	N.S.									
(.01)	N.S.									
C.V. (%)	N.S.									

1/ Average of Stanly and Rowan Counties.

Table 10. Summary of WHEAT performance trials in the COASTAL PLAIN.

Variety or Line	1 yr. avg.[1/] 1977 bu/A	lbs/bu	2 yr. avg. 1976-1977 bu/A	lbs/bu	3 yr. avg. 1975-1977 bu/A	lbs/bu	4 yr. avg. 1974-1977 bu/A	lbs/bu	5 yr. avg. 1973-1977 bu/A	lbs/bu
McNair 1813	41.4	59.3	29.0	59.0	31.0	59.4	32.7	58.8	34.2	58.7
Blueboy II	49.1	57.5	38.6	57.6	38.0	57.8	35.6	56.8	34.0	56.6
Arthur 71	45.3	58.4	37.2	58.8	36.8	59.3	38.4	59.3	38.4	59.6
Abe	50.4	58.9	39.0	58.4	37.7	59.1	40.6	59.0	41.5	59.3
Oasis	43.8	58.7	37.4	58.8	36.7	59.5	39.5	59.5		
Coker 747	59.5	60.2	52.0	60.6	51.0	60.8				
*Va. 68-22-7	53.2	58.0	44.6	58.4	44.5	58.7				
*Va. 72-54-14	62.4	57.6	45.5	57.8	47.6	57.9				
Beau	44.9	59.0	39.6	59.4						
McNair 1003	59.5	58.0	52.6	58.2						
Sullivan	44.0	59.1								
*N. C. 74-1	66.0	56.7								
*N. C. 74-6	55.1	56.7								
*N. C. 74-31	66.6	58.1								
*N. C. 74-33	54.9	57.1								
*N. C. 74-36	66.8	58.4								
Mean of Test	53.9	58.2	41.6	58.7	40.4	59.1	37.4	58.7	37.0	58.6
L.S.D. (.05)	6.2									
(.01)	8.1									
C.V. (%)	8									

1/ Average of Pamlico, Wayne and Washington Counties.
* Experimentals.

Table 11. Lodging Data.

Varieties or Lines	1 yr. Avg.	2 yr. Avg.	3 yr. Avg.	4 yr. Avg.
BARLEY				
Boone	64	32	48	42
Clayton	44	22	39	36
Keowee	27	14	19	20
Barsoy	60	30	54	43
Monroe	5	2	14	
Maury	14	7	18	
Surry	53	26	43	
*N. C. 63	18	9		
*N. C. 74-34	61			
*N. C. 73-119	61			
OATS				
Carolee	75	38	38	44
Salem	16	8	6	14
Windsor	34	17	12	16
Coker 227	72	42	41	41
Firecracker	29	14	15	
*N. C. 73	74	40		
*N. C. 73-9	68			
*N. C. 73-15	58			
*Coker 70-16	50			
WHEAT				
Blueboy II	17	8	6	4
McNair 4823	29	14	10	7
McNair 1813	2	1	1	0
Arthur 71	31	16	10	8
Abe	24	12	8	6
Oasis	30	15	10	8
Coker 747	22	11	7	
*Va. 68-22-7	20	10	7	
*Va. 72-54-14	15	8	5	
McNair 1003	18	9		
Beau	34	17		
Sullivan	26			
*N. C. 74-1	25			
*N. C. 74-6	19			
*N. C. 74-31	32			
*N. C. 74-33	28			
*N. C. 74-36	16			

Barley - Average of three Coastal Plain locations. No lodging in Piedmont.
Oats - Average of three Coastal Plain locations. Tests discarded in Piedmont.
Wheat Average of Rowan and Washington locations. No lodging at Stanly, Pamlico or Wayne Counties.