

FOREWORD

Personnel of the Department of Entomology, Soil, and Plant Sciences of the South Carolina Agricultural Experiment Station conducted the research reported in this publication. Tests were located at the Edisto Research and Education Center near Blackville, the Pee Dee Research and Education Center near Florence, and the Simpson Experiment Station near Clemson.

The circular was prepared by Benjamin E. Edge, III, Interim Small Grains Breeder, and Carl W. Myers, Agricultural Science Associate. The research results and variety descriptions should provide a basis for reliable evaluations of the small grain varieties involved.

Certain of the varieties and advanced experimental strains have been tested for only one or two years. Such short-term data are considered inconclusive and are included in this publication merely as a report of progress.

For their assistance in conducting these tests, acknowledgment is made to the following individuals:

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PERFORMANCE OF SMALL GRAIN VARIETIES IN SOUTH CAROLINA

Benjamin E. Edge, III, and C. W. Myers*

Barley, oat, triticale, and wheat varieties are evaluated annually at three locations in South Carolina. Wheat is also evaluated using two planting dates. These evaluations are conducted to determine the value and adaptability of commercially available and experimental small grain varieties for planting in the state. Continued testing and evaluation are essential to provide farmers, seedsmen, and other agricultural workers with reliable information to assist them in selection of varieties best adapted to their locality and individual production requirements.

This publication contains current year and multiple year data for several standard varieties and some newer promising varieties and strains. Information is provided for yield, test weight, plant height, and heading date of the barley, oat, triticale, and wheat varieties tested. Also, some varieties are rated for pest resistance, straw strength, relative maturity, and other agronomic traits.

TEST CONDITIONS

The small grain tests at each location were planted in firm, well-prepared seedbeds. Early plantings (mid-October) of barley and oats at the Simpson Experiment Station were not made this season. Data over the years shows that yields from these crops tend to be higher when planted in mid-November. Early wheat was planted at the Simpson Station in late November while late wheat seeding was in mid-December. Tests in the Coastal Plain were planted the latter part of November and early December. Seeding dates are listed on individual tests. Triticale variety tests were seeded on or after November 15. It is very important to seed the triticale varieties after this date to minimize the chances of late spring freeze damage to the developing head/grain.

CULTURAL PRACTICES 2003-2004

Clemson:

Dates of planting:

Early: See individual crops.

Late: See individual crops.

Management: Chisel plowed and disked

Soil type: Cecil sandy clay loam

Fertilization: preplant-See individual crop locations for fertilizer amounts and soil test values.

topdress-70 lbs/acre N

Herbicide: 0.75 lb/acre 2,4-D

Plot size: planted 6 rows 12 ft. x 7 in.

harvested 6 rows 10 ft. x 7 in.

*Instructor - Small Grains Variety Test Manager and Agricultural Science Associate.

CULTURAL PRACTICES 2003-2004 (continued)

Blackville:

Date of planting: November 21, 2003

Management: Deep tillage and disked

Soil type: Varina loamy sand

Fertilization: pre-plant-see individual crop locations for fertilizer amounts and soil test values.
topdress-70 lbs/acre N

Herbicide: 0.75 lb/acre 2,4-D

Plot size: planted 6 rows 12 ft. x 7 in.
harvested 6 rows 10 ft. x 7 in.

Florence:

Date of planting: November 25, 2003.

Management: Deep tillage and disked

Soil type: Norfolk loamy sand

Fertilization: preplant-See individual crop locations for fertilizer amounts and soil test values.
topdress-70 lbs/acre N
Herbicide: 0.75 lb/acre 2,4-D

Plot size: planted 6 rows 12 ft. x 7 in.
harvested 6 rows 10 ft. x 7 in.

RECOMMENDED RATES OF FERTILIZER P₂O₅-K₂O TO APPLY TO SMALL GRAIN BASED ON
SOIL TEST LEVELS

		POTASSIUM			
	LOW	MEDIUM	HIGH	VERY HIGH	
PHOSPHORUS		POUNDS P ₂ O ₅ -K ₂ O			
LOW	80-80	80-40	80-0	80-0	
MEDIUM	40-80	40-40	40-0	40-0	
HIGH	0-80	0-40	0-0	0-0	
VERY HIGH	0-80	0-40	0-0	0-0	

DIFFERENCES IN YIELD

Since experimental plots are subject to inherent soil variations, fertility differences, and other sources of variation, it is not possible to determine the exact yield potential of a variety. Therefore, all differences between varieties should be viewed with caution since they may not be "real" differences, but may have occurred by chance. Statistical aids given in each of the tables should help the reader to make valid comparisons between varieties and show the precision with which the tests were conducted. The magnitude of differences which may have been due to chance have been computed for the data presented herein and are listed at the end of each column as the L.S.D. (least significant difference).

Comparisons between varieties should be made only within columns and not between columns in the tables. In comparing varieties within a column, differences greater than the L.S.D. may be assumed to be inherent differences between varieties with 90% confidence. Differences smaller than the L.S.D. are assumed not to be real differences with 90% confidence.

Coefficients of variation, (C.V.), which are listed at the bottom of the current year data tables, reflect the relative precision and accuracy with which the test was conducted. Relatively low percentages indicate small amounts of variation within each test.

CHOICE OF VARIETIES

Many factors besides yield influence the choice of small grain varieties. Plant characteristics which should be evaluated in selecting small grain varieties include lodging resistance, plant height, relative maturity, winterhardiness, and pest resistance, in addition to test weight of the grain. Further information on variety characteristics and pest resistance is available for barley on page 5, oats on page 10, and wheat on page 18 of this document. Also, Jay Chapin maintains a wheat production guide at <http://www.clemson.edu/smallgrains/>.

Varietal performance may seem inconsistent because of year-to-year variations in rainfall, temperature, pests, and other factors. Therefore, continued testing over a period of years is necessary to obtain a more reliable evaluation of variety performance.

In addition to the yearly data, multiple-year averages are reported for certain of the varieties. Whenever possible these long-term averages, rather than the 1-year results, should be used to make comparisons between varieties.

WEATHER AND PEST CONDITIONS

Soil moisture in fields planted to small grains was good at seeding time. The oat, barley, and early wheat test at Clemson were planted during the first two weeks of November. All tests at the Pee Dee REC and Edisto REC were planted the third week of November. The triticale test at Clemson was planted the first week of December and the late wheat at Clemson was planted the second week of December. Good stands were obtained at all test locations.

Rainfall amounts for the period October 2003 through May 2004 for Clemson and Florence are listed in the table below for the test locations. Blackville data for rainfall were not available. Some ranges of the field at Florence had excessive moisture during topdressing, resulting in slightly higher CVs for that location. But rainfall during the growing season was generally below normal at Clemson, Florence, and Blackville. Small grains tend to perform better in slightly dry years. It was not too dry for small grains, except that the dry spell in March stressed the crops during stem elongation and resulted in shorter than normal height for most varieties. Disease infestations such as powdery mildew and rust were generally quite low. Variety reaction to leaf rust is listed in the characteristics of Wheat Varieties on page 18. Hessian fly levels were low at the Edisto REC and Pee REC and yield losses to fly were minimal. Barley yellow-dwarf virus infestations were minimal in the oat and barley variety tests.

Winter temperatures were slightly cooler than normal during the December to February period. Some freeze damage occurred in early maturing wheat varieties.

Monthly Rainfall at Test Locations in 2003-2004.*

Month	Year	Clemson	Florence	Blackville**
		inches		
October	2003	3.99	6.13	
November	2003	4.20	2.30	
December	2003	3.56	2.32	
January	2004	2.24	1.34	
February	2004	4.32	5.60	
March	2004	1.18	0.45	
April	2004	0.93	2.37	
May	2004	3.99	3.95	
Total	2003-2004	24.41	24.46	
Total(Normal)***	1951-80	37.70	29.21	24.80

* Monthly Climatological Data, Agricultural Weather Office, College of Agricultural, Forestry, and Life Sciences, Clemson University, Clemson, SC 29634.

** Data was not available for Blackville.

*** Same 8 month period from 1951-80.

CHARACTERISTICS OF OAT VARIETIES

-----DISEASE RESISTANCE-----

VARIETY OR SELECTION OR BRAND-VARIETY	CROWN RUST	MOSAIC*	HELMINTHOSPORIUM BLIGHT AND CULM ROT**
BROOKS	POOR	FAIR	GOOD
CHAPMAN	FAIR	FAIR	GOOD
COKER 227	POOR	FAIR	GOOD
COKER 716	POOR	EXCELLENT	GOOD
COKER 820	GOOD	FAIR	GOOD
HARRISON	GOOD	FAIR	GOOD
HORIZON 314	GOOD	FAIR	GOOD
HORIZON 474	GOOD	FAIR	GOOD
NC-HULLESS****	-	-	-
RODGERS	GOOD	FAIR	GOOD
SIMPSON	POOR	EXCELLENT	GOOD

-----PRODUCTION CHARACTERISTICS-----

VARIETY OR SELECTION OR BRAND-VARIETY	MATURITY***	HEIGHT OF STRAW	STRAW STRENGTH	TEST WEIGHT
BROOKS	MEDIUM	MEDIUM	FAIR	GOOD
COKER 227	MEDIUM	MEDIUM	FAIR	GOOD
COKER 716	MEDIUM	MEDIUM	FAIR	GOOD
COKER 820	EARLY	SHORT	GOOD	GOOD
HARRISON	MEDIUM	MEDIUM	GOOD	HIGH
HORIZON 314	MEDIUM	MEDIUM	EXCELLENT	FAIR
HORIZON 474	EARLY	SHORT	GOOD	HIGH
NC-HULLESS	MEDIUM	SHORT	GOOD	GOOD
RODGERS	MEDIUM	MEDIUM	FAIR	GOOD

*Damage from mosaic has been extensive in the Piedmont. If the disease is known to be present, a resistant variety should be grown.

**Disease causing blight in the fall, and/or lodging in the spring.

***Early maturity would be an average anticipated harvest date of May 30-June 5 from an October 1-10 seeding date.
 Medium maturity would be an average anticipated harvest date of June 5-15 from an October 1-10 seeding date.
 Late maturity would be an average anticipated harvest date of June 15-25 from an October 1-10 seeding date.

****NC-HULLESS is a hullless oat and particularly suited to feeding non-ruminants in that the fiber content is lower than hulled oat.

OAT: RESULTS OF THE VARIETY PERFORMANCE TRIALS AT THE
SIMPSON EXPERIMENT STATION, CLEMSON.

COMPANY OR BRAND NAME	VARIETY OR STRAIN	--3-YEAR AVG.-- ---2002-2004---		--2-YEAR AVG.-- ---2003-2004---		RANK	-----2004 DATA-----			
		YIELD (BU/A)	TEST WEIGHT (LB/BU)	YIELD (BU/A)	TEST WEIGHT (LB/BU)		YIELD (BU/A)	TEST WEIGHT (LB/BU)	PLANT HEIGHT (IN)	50% HEADED (DATE)
ARKANSAS CO.	HARRISON	110.6	33.2	116.9	33.4	2	116.3	33.5	30	4/21
PLANTATION SEED	HORIZON 321	110.2	32.9	112.4	32.2	4	112.3	32.0	29	4/23
CLEMSON UNIV.	SC961246	104.4	31.6	110.2	31.5	10	96.0	30.5	26	4/23
NC.STATE UNIV.	RODGERS	100.7	31.0	108.6	30.6	6	110.5	29.9	31	4/23
CLEMSON UNIV.	SC910337	100.4	33.8	107.5	33.1	8	102.9	32.3	30	4/23
NC.STATE UNIV.	BROOKS	100.1	30.6	109.5	29.7	7	110.4	29.8	32	4/24
CLEMSON UNIV.	SC96R036	99.7	31.1	108.5	30.0	13	92.9	28.7	30	4/25
WHITE HAT SEED	NKCOKER 716	95.9	32.4	102.7	32.0	12	95.3	30.6	31	4/25
MIXON SEED	NKCOKER 227	91.6	29.7	99.9	29.5	11	95.5	28.4	30	4/24
MIXON SEED	NKCOKER 820	87.8	32.2	89.3	31.2	14	89.6	31.1	29	4/18
PLANTATION SEED	HORIZON 474	85.6	33.8	80.9	32.9	17	67.8	31.7	30	4/20
PLANTATION SEED	HORIZON 314	78.0	29.3	80.7	28.8	15	79.8	28.5	32	4/26
NC.STATE UNIV.	NC HULLESS	56.2	34.6	54.2	33.4	18	58.0	30.6	28	4/21
NC.STATE UNIV.	NC97-8885	-	-	101.2	31.8	9	100.0	30.8	27	4/24
NC.STATE UNIV.	NC99-3802	-	-	-	-	1	128.9	29.6	25	4/19
LSU	LA9810SBS-58	-	-	-	-	3	114.4	32.4	32	4/20
LSU	LA9339	-	-	-	-	5	110.9	31.7	31	4/25
LSU	LA989SBS-49-	-	-	-	-	16	70.0	27.7	29	4/24
AVERAGES		94.0	32.0	98.8	31.5		97.3	30.5	29	4/22
L.S.D. (.10)		13.9	1.5	15.5	1.9		9.9	1.7	2.7	
C.V. (%)		9.1	3.4	9.3	3.1		8.6	3.1	5.3	
STD. ERROR OF ENTRY MEAN		5.8	0.6	6.3	0.8		4.2	0.7	1.1	DF=51

REFER TO PAGE 3 FOR AN EXPLANATION OF THE STATISTICAL MEAN
SEPARATIONS (LSD) AND TEST PRECISION (C.V.).

PLANTED: NOV. 3, 2003 MANAGEMENT: CHISEL PLOW AND DISK.
HARVESTED: JUNE 7, 2004 HERBICIDE: 0.75 LB/ACRE 2,4-D
SOIL TYPE: CECIL SANDY LOAM SEEDING RATE: 2.0 BU/AC
SOIL TEST: P=MEDIUM-, K=HIGH, pH=6.4
FERTILIZATION:
PREPLANT: 250 LB/AC 12-33-16
TOPDRESS: 70 LB/AC N.

BU/AC CALCULATED USING TEST WEIGHT OF 32 LB/BU

**OAT: RESULTS OF THE VARIETY PERFORMANCE TRIALS AT THE
EDISTO RESEARCH AND EDUCATION CENTER, BLACKVILLE.**

COMPANY OR BRAND NAME	VARIETY OR STRAIN	--3-YEAR AVG.-- ---2002-2004---		--2-YEAR AVG.-- ---2003-2004---		RANK	---2004 DATA---		
		YIELD (BU/A)	TEST WEIGHT (LB/BU)	YIELD (BU/A)	TEST WEIGHT (LB/BU)		YIELD (BU/A)	TEST WEIGHT (LB/BU)	PLANT HEIGHT (IN)
CLEMSON UNIV.	SC961246	122.2	28.2	143.8	30.0	9	138.9	30.3	30
NC.STATE UNIV.	RODGERS	122.2	29.0	141.4	30.6	2	152.7	32.3	40
PLANTATION SEED	HORIZON 321	115.6	30.2	131.8	30.7	5	142.9	30.6	33
ARKANSAS CO.	HARRISON	114.0	30.6	130.8	31.4	16	134.4	31.4	37
NC.STATE UNIV.	BROOKS	113.3	28.0	130.7	29.1	3	151.7	30.5	40
MIXON SEED CO.	NKCOKER 227	110.8	28.4	131.5	29.7	11	138.2	30.0	38
PLANTATION SEED	HORIZON 474	108.0	32.7	128.1	33.1	6	142.8	32.6	37
CLEMSON UNIV.	SC910337	107.1	30.8	128.3	32.2	8	141.1	32.3	36
MIXON SEED CO.	NKCOKER 820	106.8	30.2	122.3	30.4	10	138.2	30.5	39
CLEMSON UNIV.	SC96R036	104.1	27.7	124.2	28.5	15	136.4	29.4	33
WHITE HAT SEED	NKCOKER 716	99.4	28.9	122.1	28.8	13	137.1	29.3	40
PLANTATION SEED	HORIZON 314	92.5	25.8	113.6	25.7	14	136.5	26.1	38
NC.STATE UNIV.	NC HULLESS	78.3	30.7	88.5	30.8	18	101.9	27.8	38
NC.STATE UNIV.	NC97-8885	-	-	129.0	30.3	12	137.8	30.6	34
NC.STATE UNIV.	NC99-3802	-	-	-	-	1	170.9	30.7	39
LSU	LA9810SBS-58	-	-	-	-	4	149.1	31.6	39
LSU	LA9339	-	-	-	-	7	142.0	29.6	39
LSU	LA989SBS-49-	-	-	-	-	17	130.3	31.2	36
AVERAGES		107.2	29.3	128.1	30.1		140.2	30.4	37
L.S.D. (.10)		12.9	2.2	17.2	2.7		13.1	1.6	1.9
C.V. (%)		10.3	2.9	10.2	3.1		7.9	3.1	3.0
STD. ERROR OF ENTRY MEAN		5.4	0.9	6.9	1.1		5.5	0.7	0.8

DF=51

REFER TO PAGE 3 FOR AN EXPLANATION OF THE STATISTICAL MEAN
SEPARATIONS (LSD) AND TEST PRECISION (C.V.).

PLANTED: NOV.21, 2003 MANAGEMENT: CHISEL PLOW AND DISK.
HARVESTED: JUNE 3, 2004 HERBICIDE: 0.75 LB/ACRE 2,4-D
SOIL TYPE: VARINA LOAMY SAND SEEDING RATE: 2.0 BU/AC
SOIL TEST: P=HIGH, K=MEDIUM+, pH=5.7
FERTILIZATION: LIME: 2000 LB/AC
PREPLANT: 300 LB/AC 0-10-30
TOPDRESS: 70 LB/AC N.

BU/AC CALCULATED USING TEST WEIGHT OF 32 LB/BU

CHARACTERISTICS OF BARLEY VARIETIES

-----DISEASE RESISTANCE-----

VARIETY OR SELECTION OR BRAND-VARIETY	LEAF RUST	POWDERY MILDEW	SCALD	LOOSE SMUT	SPOT BLOTCH
BOONE	GOOD	FAIR	GOOD	POOR	FAIR
CALLAO	GOOD	GOOD	GOOD	-	GOOD
DOYCE	GOOD	-	-	-	-
NOMINI	FAIR	-	GOOD	-	GOOD
PRICE	FAIR	-	GOOD	-	GOOD
THOROUGHbred	FAIR	-	-	-	-

-----PRODUCTION CHARACTERISTICS-----

VARIETY OR SELECTION OR BRAND-VARIETY	HEAD* TYPE	MATURITY**	STRAW STRENGTH	TEST WEIGHT
BOONE	2	MED/LATE	GOOD	GOOD
CALLAO	3	MEDIUM	FAIR	GOOD
DOYCE (HULLESS)	3	MEDIUM	GOOD	HIGH
NOMINI	2	MEDIUM	GOOD	FAIR
PRICE	3	MEDIUM	GOOD	GOOD
THOROUGHbred	3	MEDIUM	GOOD	GOOD

*1=AWNLESS, 2=SHORT AWNED, 3=AWNED

**Early maturity would be an average anticipated harvest date of May 15-20 from an October 1-10 seeding date.
 Medium maturity would be an average anticipated harvest date of May 20-25 from an October 1-10 seeding date.
 Late maturity would be an average anticipated harvest date of May 25-June 1 from an October 1-10 seeding date

BARLEY: RESULTS OF THE VARIETY PERFORMANCE TRIALS AT THE SIMPSON EXPERIMENT STATION, CLEMSON.

COMPANY OR BRAND NAME	VARIETY OR STRAIN	--3-YEAR AVG.-- ---2002-2004---		--2-YEAR AVG.-- ---2003-2004---		RANK	-----2004 DATA-----			
		YIELD (BU/A)	TEST WEIGHT (LB/BU)	YIELD (BU/A)	TEST WEIGHT (LB/BU)		YIELD (BU/A)	TEST WEIGHT (LB/BU)	PLANT HEIGHT (IN)	50% HEADED (DATE)
VIRGINIA TECH	NOMINI	87.6	42.0	93.8	41.6	2	119.2	44.7	35	4/ 8
VIRGINIA TECH	THOROUGHbred	80.2	43.8	81.4	42.7	3	112.3	47.3	28	4/11
VIRGINIA TECH	PRICE	79.3	43.9	79.3	42.9	1	120.6	47.4	28	4/10
VIRGINIA TECH	CALLAO	77.3	42.9	75.1	42.7	4	106.3	46.6	27	4/ 8
NC.STATE UNIV.	BOONE	69.3	41.6	69.7	41.1	5	96.1	44.6	32	4/15
VIRGINIA TECH	DOYCE	-	-	67.3	52.1	6	94.4	56.6	30	4/ 8
CLEMSON UNIV.	SC010455	-	-	-	-	7	78.3	57.7	31	4/ 8
CLEMSON UNIV.	SC010475	-	-	-	-	8	73.9	57.7	29	4/ 8
CLEMSON UNIV.	SC010476	-	-	-	-	9	73.8	57.8	28	4/ 7
CLEMSON UNIV.	SC010440	-	-	-	-	10	71.5	58.3	30	4/ 9
AVERAGES		78.7	42.9	77.8	43.9		94.7	51.8	29	4/ 8
L.S.D. (.10)		12.6	1.5	16.8	1.8		6.4	1.1	3.3	
C.V. (%)		10.2	1.4	10.2	1.1		5.6	1.2	6.2	
STD. ERROR OF ENTRY MEAN		4.8	0.6	5.9	0.6		2.7	0.4	1.3	DF=27

REFER TO PAGE 3 FOR AN EXPLANATION OF THE STATISTICAL MEAN SEPARATIONS (LSD) AND TEST PRECISION (C.V.).

PLANTED: NOV. 3, 2003 MANAGEMENT: CHISEL PLOW AND DISK.
HARVESTED: MAY 28, 2004 HERBICIDE: 0.75 LB/ACRE 2,4-D
SOIL TYPE: CECIL SANDY LOAM SEEDING RATE: 2.0 BU/AC
SOIL TEST: P=MEDIUM-, K=HIGH+, pH=6.4
FERTILIZATION:
PREPLANT: 250 LB/AC 12-33-16
TOPDRESS: 70 LB/AC N.

BU/AC CALCULATED USING TEST WEIGHT OF 48 LB/BU

BARLEY: RESULTS OF THE VARIETY PERFORMANCE TRIALS AT THE EDISTO RESEARCH AND EDUCATION CENTER, BLACKVILLE.

COMPANY OR BRAND NAME	VARIETY OR STRAIN	--3-YEAR AVG.-- ---2002-2004--		--2-YEAR AVG.-- ---2003-2004--		RANK	---2004 DATA---			
		YIELD (BU/A)	TEST WEIGHT (LB/BU)	YIELD (BU/A)	TEST WEIGHT (LB/BU)		YIELD (BU/A)	TEST WEIGHT (LB/BU)	PLANT HEIGHT (IN)	50% HEADED (DATE)
VIRGINIA TECH	THOROUGHbred	82.3	45.0	101.0	45.9	2	99.5	45.7	31	
VIRGINIA TECH	PRICE	82.1	42.9	93.7	44.6	1	108.3	44.9	33	
VIRGINIA TECH	CALLAO	77.2	42.5	89.5	44.5	3	91.1	43.5	30	
VIRGINIA TECH	NOMINI	75.6	41.7	83.4	43.5	5	80.0	43.9	35	
NC.STATE UNIV.	BOONE	69.6	42.6	83.1	43.9	4	88.7	45.7	29	
VIRGINIA TECH	DOYCE	-	-	74.2	54.7	7	74.6	55.5	29	
CLEMSON UNIV.	SC010455	-	-	-	-	6	74.7	56.3	31	
CLEMSON UNIV.	SC010476	-	-	-	-	8	73.8	57.4	29	
CLEMSON UNIV.	SC010475	-	-	-	-	9	71.9	57.5	32	
CLEMSON UNIV.	SC010440	-	-	-	-	10	71.6	58.0	31	
AVERAGES		77.4	42.9	87.5	46.2		83.4	50.8	31	
L.S.D. (.10)		15.0	1.9	18.6	2.7		12.3	1.1	3.1	
C.V. (%)		11.3	1.8	10.9	1.0		12.2	1.2	5.5	
STD. ERROR OF ENTRY MEAN		5.7	0.7	6.5	0.9		5.1	0.4	1.2	DF=27

REFER TO PAGE 3 FOR AN EXPLANATION OF THE STATISTICAL MEAN SEPARATIONS (LSD) AND TEST PRECISION (C.V.).

PLANTED: NOV.21, 2003 MANAGEMENT: CHISEL PLOW AND DISK.
HARVESTED: JUNE 2, 2004 HERBICIDE: 0.75 LB/ACRE 2,4-D
SOIL TYPE: VARINA LOAMY SAND SEEDING RATE: 2.0 BU/AC
SOIL TEST: P=MEDIUM+, K=HIGH, pH=6.0
FERTILIZATION: LIME: 2000 LB/AC
PREPLANT: 300 LB/AC 0-10-30
TOPDRESS: 70 LB/AC N.

BU/AC CALCULATED USING TEST WEIGHT OF 48 LB/BU

**TRITICALE: RESULTS OF THE VARIETY PERFORMANCE TRIALS AT THE
PEE DEE RESEARCH AND EDUCATION CENTER, FLORENCE.**

COMPANY OR BRAND NAME	VARIETY OR STRAIN	--3-YEAR AVG.-- ---2002-2004--		--2-YEAR AVG.-- ---2003-2004--		-----2004 DATA-----				
		YIELD (BU/A)	TEST WEIGHT (LB/BU)	YIELD (BU/A)	TEST WEIGHT (LB/BU)	RANK	YIELD (BU/A)	TEST WEIGHT (LB/BU)	PLANT HEIGHT (IN)	50% HEADED (DATE)
RESOURCE SEEDS	TRICAL 314	83.5	46.7	91.7	46.0	2	104.8	50.0	32	
RESOURCE SEEDS	TRICAL 342	77.5	47.2	86.4	47.7	3	97.4	51.2	46	
RESOURCE SEEDS	TRICAL 498	74.0	42.2	86.9	42.3	1	106.5	47.3	40	
S. WILDLIFE SEED	MONARCH	-	-	85.1	47.5	4	97.1	50.6	46	
AG SOUTH GENETIC	AGS2000 *	-	-	64.5	55.4	7	69.2	56.3	36	
UNIV. OF FLA.	FL93078-Y18	-	-	-	-	5	96.3	50.2	45	
UNIV. OF FLA.	FL92T056-A15	-	-	-	-	6	81.4	49.5	44	
AVERAGES		78.3	45.4	82.9	47.8		93.2	50.7	41	
L.S.D. (.10)		11.0	2.1	16.0	4.4		7.6	0.6	1.5	
C.V. (%)		8.7	1.4	8.2	1.4		6.6	0.6	1.8	
STD. ERROR OF ENTRY MEAN		3.7	0.7	5.3	1.5		3.1	0.2	0.5	DF=18

REFER TO PAGE 3 FOR AN EXPLANATION OF THE STATISTICAL MEAN SEPARATIONS (LSD) AND TEST PRECISION (C.V.).

PLANTED: NOV. 25, 2003 MANAGEMENT: V-RIPPED AND FIELD CULTIVATED.
HARVESTED: JUNE 10, 2004 HERBICIDE: 0.75 LB/ACRE 2,4-D
SOIL TYPE: NORFOLK LOAMY SAND SEEDING RATE: 3.0 BU/AC
SOIL TEST: P=LOW+, K=MEDIUM-, pH=5.9
FERTILIZATION:
PREPLANT: 427 LB/AC 7-23-17
TOPDRESS: 70 LB/AC N.

• WHEAT, BU/AC CALCULATED USING TEST WEIGHT OF 60 LB/BU

TRITACALE, BU/AC CALCULATED USING TEST WEIGHT OF 48 LB/BU

CHARACTERISTICS OF SELECTED WHEAT VARIETIES 2003-2004

VARIETY/ SELECTION/OR BRAND	DISEASE/INSECT RESISTANCE			
	HessianFly ¹	PowderyMildew	Leaf Rust	Septoria
AgriPro Crawford	-	Good	Good	Fair
AGS 2000	Good	Good	Good	Fair
AGS 2485	Fair/Good	Good	Good	Fair
NK Coker 9152	Poor	Poor	Good	Fair
NK Coker 9184	Poor	Fair	Good	Fair
NK Coker 9295	Poor	Good	Good	Fair
NK Coker 9375	-	Fair?	Fair?	Fair
NK Coker 9663	Fair	Poor	Good	Fair
NK Coker 9835	Fair	Fair	Poor	Fair
Featherstone 520	Poor	Good	Fair	Fair
McCormick	-	-	-	Fair
NC-Neuse	-	-	-	Fair
Pioneer Brand 26R12	Good	Good	Good	Fair
Pioneer Brand 26R24	Good	Good	Fair	Fair
Pioneer Brand 26R31	-	Good	-	-
Pioneer Brand 26R38	Fair/Good	Good	Fair	Fair
Pioneer Brand 26R58	Fair	Good	Fair	Fair
Pioneer Brand 26R61	Good	Fair/Good	Good	Fair
SS 520	Poor/Fair	Good	Fair	Fair
SS 524	Poor	Poor	Fair	Fair
SS 535	Poor	Fair	Poor	Fair
Vigoro Tribute	Fair	Good	-	Fair
UniSouth Genetics USG3209	Fair	Good	Good	Fair
UniSouth Genetics USG3592	Fair/Good	Good	Good	Fair
PRODUCTION CHARACTERISTICS				
VARIETY/SELECTION/BRAND	Maturity ²	Milling quality	Straw strength	Test Weight
AgriPro Crawford	Medium	Good	Good	Good
AGS 2000	Medium	Good	Good	Good
AGS 2485	Medium	Good	Good	High
NK Coker 9152	Medium	Good	Good	Fair
NK Coker 9184	Medium/Late	Good	Good	High
NK Coker 9295	Medium/Late	Good	Good	Good
NK Coker 9375	Medium	Good	Good	Fair
NK Coker 9663	Medium	Good	Good	High
NK Coker 9835	Medium	Good	Good	Fair
Featherstone 520	Medium	Good	Good	High
McCormick	Medium/Late	Good	Good	High
NC-Neuse	Medium/Late	Good	Good	High
Pioneer Brand 26R12	Medium/Late	Good	Good	High
Pioneer Brand 26R24	Medium	Good	Good	Good
Pioneer Brand 26R31	Medium	Good	Good	Good
Pioneer Brand 26R38	Medium	Good	Good	Fair
Pioneer Brand 26R58	Medium	Good	Good	Fair
Pioneer Brand 26R61	Medium	Good	Good	High
SS 520	Medium	Good	Good	Fair
SS 524	Medium	Good	Good	Fair
SS 535	Medium	Good	Good	Good
Vigoro Tribute	Medium	Good	Good	High
UniSouth Genetics USG3209	Medium	Good	Good	Good
UniSouth Genetics USG3592	Medium/Late	Good	Good	Good

¹Hessian fly ratings by J. W. Chapin, Edisto REC.

²Early=May 25-June 5 harvest date from Nov. 1-15 seeding
 July 1 harvest date from Nov. 1-15 seeding

Medium=June 5-15 harvest date from Nov. 1-15 seeding

Late=June 15-

**WHEAT: RESULTS OF THE VARIETY PERFORMANCE TRIALS AT THE
PEE DEE RESEARCH AND EDUCATION CENTER, FLORENCE.**

COMPANY OR BRAND NAME	VARIETY OR STRAIN	--3-YEAR AVG.-- ---2002-2004--		--2-YEAR AVG.-- ---2003-2004--		-----2004 DATA-----				
		YIELD (BU/A)	TEST WEIGHT (LB/BU)	YIELD (BU/A)	TEST WEIGHT (LB/BU)	RANK	YIELD (BU/A)	TEST WEIGHT (LB/BU)	PLANT HEIGHT (IN)	50% HEADED (DATE)
PIONEER	26R12	63.8	55.9	69.5	55.7	2	83.5	56.7	28	
PIONEER	26R24	61.5	53.6	67.3	53.8	5	79.0	56.4	32	
NK	COKER 9835	59.1	52.9	63.8	52.7	12	73.5	54.1	30	
NC.STATE UNIV.	NC-NEUSE	58.1	55.8	62.6	55.9	14	72.9	56.1	27	
PIONEER	26R61	56.9	56.0	61.8	55.8	23	67.4	56.8	33	
AGSOUTH GENETICS	AGS 2000	56.1	54.3	61.0	55.1	3	80.5	56.3	30	
AGRIPRO	CRAWFORD	56.0	55.2	55.1	55.3	28	63.7	56.1	29	
VIRGINIA TECH	McCORMICK	56.0	55.5	58.2	55.0	19	71.1	56.5	28	
NK	COKER 9184	55.7	56.0	60.3	54.9	11	74.3	55.8	28	
AGSOUTH GENETICS	AGS 2485	55.4	56.2	59.3	55.9	8	77.0	56.6	32	
PIONEER	26R38	55.2	53.2	55.0	53.0	32	53.5	53.6	32	
FEATHERSTONE	520	53.8	55.4	55.7	54.5	26	65.4	56.1	29	
NK	COKER 9295	53.2	53.8	55.9	53.5	17	71.8	54.6	30	
UNISOUTH GENETICS	USG 3209	53.1	53.1	54.4	54.2	25	66.3	56.9	29	
VIGORO	TRIBUTE	52.6	57.0	52.7	56.4	29	62.8	56.8	29	
HORNBECK SEED	HBK 3266	-	-	66.5	55.3	7	77.0	56.4	31	
CLEMSON UNIV.	SC996284	-	-	63.4	56.0	22	68.1	55.4	30	
CLEMSON UNIV.	SC996289	-	-	63.2	54.8	21	69.4	54.9	34	
AGRIPRO	PANOLA	-	-	62.2	53.0	6	77.1	54.4	28	
UNIV. of GA	GA931233E17	-	-	60.0	55.3	10	74.9	56.0	30	
UNISOUTH GENETICS	USG 3592	-	-	58.9	54.5	16	72.2	55.2	33	
NK	COKER 9375	-	-	57.6	51.1	18	71.4	51.6	34	
NK	COKER 9152	-	-	56.0	53.8	13	73.5	55.4	35	
NC.STATE UNIV.	NC99-13022	-	-	55.2	53.9	9	76.7	55.6	29	
NC.STATE UNIV.	NC001533	-	-	-	-	1	86.5	55.3	30	
PIONEER	26R31	-	-	-	-	4	79.5	56.0	27	
NC.STATE UNIV.	NC001538	-	-	-	-	15	72.6	56.6	28	
CLEMSON UNIV.	SC006424	-	-	-	-	20	70.2	55.5	38	
UNIV. MARYLAND	MD11-52	-	-	-	-	24	66.4	56.0	24	
CLEMSON UNIV.	SC001699	-	-	-	-	27	65.3	56.6	37	
CLEMSON UNIV.	SC000521	-	-	-	-	30	62.3	54.7	35	
CLEMSON UNIV.	SC001454	-	-	-	-	31	57.7	56.7	33	
CLEMSON UNIV.	SC002048	-	-	-	-	33	52.8	54.0	31	
CLEMSON UNIV.	SC002054	-	-	-	-	34	34.7	52.9	34	
CLEMSON UNIV.	SC002051	-	-	-	-	35	31.8	52.5	32	
AVERAGES		56.4	54.9	59.8	54.6		68.7	55.4	31	
L.S.D. (.10)		8.9	1.7	12.3	1.8		8.5	1.3	2.1	
C.V. (%)		11.3	1.8	11.4	1.3		10.5	1.4	4.1	
STD. ERROR OF ENTRY MEAN		3.7	0.7	5.1	0.7		3.6	0.5	0.9	DF=102

REFER TO PAGE 3 FOR AN EXPLANATION OF THE STATISTICAL MEAN SEPARATIONS (LSD) AND TEST PRECISION (C.V.).

PLANTED: NOV. 25, 2002

MANAGEMENT: V-RIPPED AND FIELD CULTIVATED.

HARVESTED: JUNE 10, 2004

HERBICIDE: 0.75 LB/ACRE 2,4-D

SOIL TYPE: NORFOLK LOAMY SAND

SEEDING RATE: 1.5 BU/AC

SOIL TEST: P=LOW+, K=MEDIUM-, pH=5.9

FERTILIZATION:

PREPLANT: 427 LB/AC 7-23-17

TOPDRESS: 70 LB/AC N.

BU/AC CALCULATED USING TEST WEIGHT OF 60 LB/BU

WHEAT: RESULTS OF THE VARIETY PERFORMANCE TRIALS AT THE EDISTO RESEARCH AND EDUCATION CENTER, BLACKVILLE.

COMPANY OR BRAND NAME	VARIETY OR STRAIN	--3-YEAR AVG.-- ---2002-2004--		--2-YEAR AVG.-- ---2003-2004--		-----2004 DATA-----				
		YIELD (BU/A)	TEST WEIGHT (LB/BU)	YIELD (BU/A)	TEST WEIGHT (LB/BU)	RANK	YIELD (BU/A)	TEST WEIGHT (LB/BU)	PLANT HEIGHT (IN)	50% HEADED (DATE)
PIONEER	26R24	85.2	54.6	99.4	56.3	2	97.0	58.6	37	
AGSOUTH GENETICS	AGS 2000	82.4	56.6	94.6	57.0	1	101.3	59.6	38	
VIRGINIA TECH	McCORMICK	76.4	56.8	89.2	56.9	11	86.9	58.9	34	
AGSOUTH GENETICS	AGS 2485	76.1	56.8	88.9	57.2	9	89.1	59.0	35	
UNISOUTH GENETICS	USG 3209	75.1	54.3	86.4	54.8	13	86.1	57.5	34	
VIGORO	TRIBUTE	74.7	58.3	86.6	58.0	23	82.4	60.3	31	
PIONEER	26R61	74.1	57.3	85.3	57.1	16	84.2	59.4	37	
NK	COKER 9295	71.4	54.2	86.1	54.3	3	95.4	57.9	37	
NK	COKER 9184	70.6	58.3	84.8	58.3	14	85.8	60.4	33	
FEATHERSTONE	520	69.9	56.7	82.2	56.1	22	83.0	59.7	34	
AGRIPRO	CRAWFORD	69.1	55.1	79.6	55.3	28	77.5	57.3	34	
PIONEER	26R12	69.0	57.3	82.6	57.0	15	85.1	59.2	35	
NC.STATE UNIV.	NC-NEUSE	68.6	57.0	79.1	57.1	29	74.4	58.9	31	
NK	COKER 9835	65.0	54.4	75.0	54.3	30	74.2	57.2	32	
PIONEER	26R38	61.8	54.0	66.5	54.0	33	41.5	54.9	36	
CLEMSON UNIV.	SC996289	-	-	91.8	56.7	20	83.7	58.4	40	
HORNBECK SEED	HBK 3266	-	-	90.9	57.2	6	92.4	59.1	37	
AGRIPRO	PANOLA	-	-	90.5	55.1	4	93.8	56.8	35	
NK	COKER 9375	-	-	87.3	51.7	5	92.8	53.1	39	
UNISOUTH GENETICS	USG 3592	-	-	86.9	55.5	7	90.6	58.2	37	
NC.STATE UNIV.	NC99-13022	-	-	85.6	53.8	12	86.4	56.3	35	
UNIV. of GA	GA931233E17	-	-	84.3	56.5	17	83.9	59.0	34	
CLEMSON UNIV.	SC996284	-	-	84.3	55.8	26	77.6	56.6	39	
NK	COKER 9152	-	-	80.5	54.4	19	83.8	56.9	39	
NC.STATE UNIV.	NC001538	-	-	-	-	8	90.2	58.7	33	
NC.STATE UNIV.	NC001533	-	-	-	-	10	87.0	56.5	36	
CLEMSON UNIV.	SC000521	-	-	-	-	18	83.9	59.5	44	
UNIV. MARYLAND	MD11-52	-	-	-	-	21	83.0	57.6	29	
CLEMSON UNIV.	SC001454	-	-	-	-	24	81.5	58.1	38	
CLEMSON UNIV.	SC001699	-	-	-	-	25	78.2	60.6	46	
PIONEER	26R31	-	-	-	-	27	77.6	58.4	32	
CLEMSON UNIV.	SC006424	-	-	-	-	31	73.5	57.4	42	
CLEMSON UNIV.	SC002048	-	-	-	-	32	59.1	57.2	38	
CLEMSON UNIV.	SC002054	-	-	-	-	34	34.9	56.5	39	
CLEMSON UNIV.	SC002051	-	-	-	-	35	26.8	54.7	38	
AVERAGES		72.6	56.1	85.3	55.8		80.1	57.9	36	
L.S.D. (.10)		12.0	1.6	15.8	1.6		8.6	2.3	2.4	
C.V. (%)		9.6	2.2	8.7	2.0		9.2	2.3	3.9	
STD. ERROR OF ENTRY MEAN		5.0	0.7	6.5	0.7		3.7	1.0	1.0	DF=102

REFER TO PAGE 3 FOR AN EXPLANATION OF THE STATISTICAL MEAN SEPARATIONS (LSD) AND TEST PRECISION (C.V.).

PLANTED: NOV. 21, 2003
HARVESTED: JUNE 3, 2004
SOIL TYPE: VARINA LOAMY SAND
SOIL TEST: P=HIGH, K=MEDIUM+, pH=5.7
FERTILIZATION: LIME: 2000 LB/AC
PREPLANT: 300 LB/AC 0-10-30
TOPDRESS: 70 LB/AC N.

MANAGEMENT: CHISEL PLOW AND DISK.
HERBICIDE: 0.75 LB/ACRE 2,4-D
SEEDING RATE: 1.5 BU/AC

BU/AC CALCULATED USING TEST WEIGHT OF 60 LB/BU

Names of Agencies and Companies Sponsoring Entries in South Carolina Small Grain Variety Tests, 2003-2004

Originator and/or Seed Source	Variety, Strain, or Brand/Variety
AgriPro Biosciences, Inc. P.O. Box 2365 Jonesboro, AR 72402-2365	Crawford wheat, Panola wheat, and AgriPro experimental lines
AGSouth Genetics, LLC P.O. Box 398 Newton, GA 39870-0398	AGS 2000, AGS 2485 brand wheat varieties
Arkansas County Seed Co. P.O.Box 43 Stuttgart, AR 72160	Harrison oat
Featherstone Seed, Inc. Amelia, VA	Featherstone 520 wheat
Florida Agricultural Exp. Sta.	FL experimental lines
Georgia Agricultural Exp. Sta.	GA experimental lines
Hornbeck Seed Co., Inc. P.O. Box 472, 210 Drier Road DeWitt, AR 72042-0472 870-946-2087	HBK 3266 wheat
Louisiana Ag. Exp. Station	LA experimental lines
Mixon Seed Co. Orangeburg, SC	NK Coker 820 oat, NK Coker 227 oat
NC Agricultural Exp. Station / NC Foundation Seed Producers	Brooks, Rodgers, NC-Hulless oats; Boone barley; NC-Neuse wheat and NC experimental lines
Pioneer Hi-Bred International, Inc., a DuPont Company 6767 Old Madison Pike, Suite 110 Huntsville, AL 35806	Pioneer brand wheat varieties and experimentals
Plantation Seed Newton, GA	Horizon 314 oat, Horizon 474 oat
Resource Seeds, Inc. 2355 Rice Pike Union, KY 41091	Trical brands and RSI triticale experimental lines
Royster-Clark Seed Research/Vigoro Seeds 70 N Market St Mt Sterling, OH 43143	Tribute wheat
SC Agricultural Exp. Station	SC experimental lines
Southern States Cooperative Richmond, VA	SS brand wheat varieties

Southern Wildlife Seed

Syngenta Seeds, Inc.
P.O. Box 1240
Winterville, NC 28590

UniSouth Genetics, Inc
2640-C Nolensville Rd
Nashville, TN 37211

University of Maryland

VPI&SU/VCIA/EVAREC
2229 Menakin Rd
Warsaw, VA 22572

White Hat Seed Farm

Monarch triticale

NK Coker brand wheat varieties

USG 3209, USG 3592 brand wheat
varieties

MD11-52 wheat

VA exp. Lines; Nomini, Callao, Price,
Doyce, Thoroughbred barley; McCormick
wheat

Coker 716 oat