

WHEAT VARIETY CHALLENGE 2000-01

J. W. CHAPIN AND J. S. THOMAS
DEPARTMENT OF ENTOMOLOGY
CLEMSON UNIVERSITY

Location: Edisto Research and Education Center, Barnwell Co. SC, Field B-6 B.

Design: RCB with five replicates; plot size 8 rows (8" spacing) x 40'

Soil Type: Varina sandy loam.

Rotation: 1996 corn/wheat; 1997 wheat/fallow; 1998 corn/fallow; 1999 peanut/fallow; 2000 strip-till corn/wheat; 2001 wheat.

Seeding

Rate: 24 seed / row foot

General

Fertility: 35 lbs./acre P₂O₅ + 100 lbs. K₂O was applied in late October 2000. 30 lbs./acre N (11.3 gal S-25) was applied 15 Dec (early post-emergence) and 70 lbs./acre N (26.4 gal S-25) was applied 23 Feb (GS 23). Total N = 100 lbs./acre, total S = 14 lbs./acre.

Fungicide: None

Herbicide: 0.28 oz Express 75DF was applied with N on 23 Feb.

Insecticide: 3.87 oz. Warrior 1EC 5 Mar.

Methods: Wheat maturity was determined by examining representative plants from one replicate. Hessian fly (HF) infestation was determined by examining 120 stems/variety from single row plots planted 4 Nov in a separate field close to a known HF source (last year's wheat stubble). Every other row was planted with Coker 9704 such that this susceptible cultivar bordered each variety on both sides. Notes on disease and lodging were taken by examining at least three replicates. The inner six rows of each 8-row plot were harvested 28 May with an Almaco plot combine. Yield samples were weighed on an electronic balance. Test weight was taken by funneling a sub-sample of grain through a Seedburo No. 151 filling hopper and weighing one dry pint of grain on an electronic scale. Grain moisture content was measured with a Burrows DMC-700 moisture meter. All yields were adjusted to 13.5% moisture before analysis.

Analysis: ANOVA, using SAS PROC GLM.
Fisher's protected LSD was used for mean separation ($P=0.05$).

Notes: Temperatures only briefly dropped below freezing 19 April (30.8° F for at least 30 sec; hourly mean = 32.5° F). 18 April low temperature was 35.8° F with a wind chill of 31.2° F. Disease and HF infestation were subeconomic.

Table 1. Varietal characteristics and yield. Blackville, SC 2000-01.

Variety	Jointing Date	Heading Date	Hessian Fly		Powdery Mildew present **	Rust present**	Yield bu/ac	Test weight lb/bu
			% stem	#/stem				
USG 3209	27-Feb	8-Apr	18	0.26	n	y	112	59.8
GA 901146E15	28-Feb	6-Apr	3	0.06	n	n	109	59.3
AGS 2000	2-Mar	9-Apr	6	0.09	n	n	106	60.4
Pioneer XW 692	7-Mar	9-Apr	3	0.03	n	n	106	61.0
Pioneer 2684	2-Mar	6-Apr	7	0.07	y	y	103	61.5
Pioneer XW 586	28-Feb	6-Apr	6	0.06	y	y	102	60.4
GA 91436	3-Mar	16-Apr	11	0.11	y	n	102	59.7
GA 90524E1	3-Mar	9-Apr	9	0.13	n	n	102	59.5
BL 950943	3-Mar	11-Apr	10	0.14	y	n	101	58.8
Pioneer 26R46 *	10-Mar	14-Apr	---	---	n	y	100	59.4
Coker 9835	2-Mar	10-Apr	9	0.09	y	y	99	57.8
BL 940582	26-Feb	8-Apr	3	0.03	y	n	99	59.3
BL 940812	28-Feb	11-Apr	3	0.04	y	y	99	61.2
Pioneer 26R38	1-Mar	9-Apr	3	0.03	n	y	98	60.4
Coker 9663	5-Mar	12-Apr	12	0.17	y	y	97	59.8
Roane	7-Mar	12-Apr	22	0.28	n	n	94	60.5
Pioneer 26R61	2-Mar	10-Apr	2	0.02	n	n	91	61.6
GA 91426E39	2-Mar	8-Apr	3	0.03	y	n	89	61.0
Coker 9704	---	---	8	0.12	---	---	---	---

Yield LSD = 5.0 bu/ac ($P=0.05$); Test weight LSD = 0.5 lb/bu.

Chapin and Thomas 01

* Pioneer 26R46 was planted 30 Nov 2000 ; all other varieties were planted Nov 18; harvested 28 May.

** Disease notes: Diseases were subeconomic on all varieties and therefore only the late presence of leaf rust or powdery mildew is indicated. No disease was observed prior to 12 Apr. Tan spot infection of lower leaves (and eventually flag leaves) was most prevalent on Pioneer 2684 and AGS 2000. Tan spot symptoms were also observed on flag leaves of every variety by 10 May except Coker 9835 and BL 950943. Rust was not present before 1 May.