

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

and

Cooperating State Agricultural Experiment Stations

2007-08

UNIFORM BREAD WHEAT TRIAL

Final Report

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This is a joint progress report of cooperative investigations underway in the Agricultural Research Service of the U. S. Department of Agriculture and the State Agricultural Experiment Stations containing preliminary data which have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. This report is primarily a tool for use by cooperators and those persons having direct and special interest in the development of agricultural research programs. This report includes data furnished by the State Agricultural Experiment Stations and is not intended for publication and should not be referred to in literature citations or quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

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The purpose of the Uniform Bread Wheat Trial (UBWT) is to evaluate hard endosperm, bread quality, winter habit cultivars and advanced lines for adaptation to the high rainfall, humid environments of the eastern United States. The entries in this 6th UBWT are from publically funded breeding programs in NC, OK, TX, and VA. A total of 50 entries (32 hard red, 16 hard white, and 2 soft red) were included in the trial. There were 18 testing locations for the 2007-08 UBWT, with 1 in AL, 1 in Georgia, 2 in Kentucky, 1 in Maryland, 5 in North Carolina, 2 in Oklahoma, 2 in Texas, 2 in Virginia, and 1 in Washington.

Bella Mina, AL: Plot size=50 ft²; Reps=3. Cooperator-J.W.Johnson, D.Bland & S.Sutton.

New Castle County, DE: Late planted due to wet weather, mild winter, good moisture with dry time at grain fill. Plot size=50.25ft²; Reps=3; Planted=4 Nov 07; Harvested=4 Jul 08. Cooperator-Bob Uniatowski.

Plains, GA: Plot size=50 ft²; Reps=3; Planted=15 Nov 07; Harvested=28 May 08. Cooperator-J.W.Johnson, D.Bland & S.Sutton.

Lexington, KY: Cooperator-D. A. Van Sanford.

Schochoh, KY: Cooperator-D.A. Van Sanford.

NE: Field was damaged by heavy rains after planting and also by scab and soil-borne mosaic virus. Cooperator-Steve Baenziger.

Queenstown, MD: Warm winter, wet and cool spring, taller and more lodging, mildew and leaf rust than usual at this location. Plot size=?ft²; Reps=2; Planted=15 Oct 07; Harvested=19 Jun 08. Cooperator-J.M.Costa, A.Cooper.

Kinston, NC: Moderate powdery mildew and leaf rust. Plot size=55ft²; Reps=2; Planted=30 Oct 07; Harvested=6 Jun 08. Cooperators-M.O.Fountain, D.S.Marshall.

Laurel Springs, NC: Harvested for grain-quality testing. Screening nursery for stripe rust and winter survival (elevation=3,000ft). Cold winter. Plot size=50ft²; Reps=1; Planted=1 Oct 07; Harvested=9 Jul 08. Cooperators-M.O.Fountain, D.S.Marshall.

Raleigh, NC: Plot size=55ft²; Reps=2; Planted=1 Nov 07; Harvested=10 Jun 08. Cooperators-M.O.Fountain, D.S.Marshall.

Salisbury, NC: Not harvested due to planting error. Plot size=55ft²; Reps=2; Planted=15 Oct 07. Cooperators-M.O.Fountain, D.S.Marshall.

Waynesville, NC: Screening nursery for winter survival (elevation=2,500 ft). Cold winter. Plot size=65ft²; Reps=1; Planted=9 Oct 07; Harvested=25 Jun 08. Cooperators-M.O.Fountain, D.S. Marshall.

Fort Cobb, OK: Not harvested due to excessive rain and sprouting. Cooperator-B.F.Carver.

Stillwater, OK: Yields were outstanding, some powdery mildew, some leaf rust, and no moisture stress. The nursery average was 71 bu/ac, some 20 bu/ac above-average. Cooperator-B.F.Carver.

Amarillo, TX: Cooperator-J.Rudd.

Dallas, TX: Cooperator-R.Sutton.

Blacksburg, VA: Cooperator-C.A.Griffey.

Warsaw, VA: Cooperator-C.A.Griffey.

Pullman, WA: Reps=2. Very little stripe rust this year, so anything with a YRIT rating of 6 or greater shows a high degree of susceptibility, but the severity was so low that it's not a good predictor how it would perform under a normal stripe rust year.

Cooperator-K.Campbell, C. Hoagland.

USDA/ARS Uniform Bread Wheat Trial 2007-08

Entry	Designation	Pedigree	Class	Origin	Seed Source	Yrs in trial
1	AGS 2000	Pioneer 2555/PF84301//Florida 302 (=PI612956; GA89482E7)	SRW	GA	ARS	6
2	Hondo	W84-179/W81-171/3/Sturdy/Hawk/Vona/W76-1141 (=PI603958; W95-210)	HRW	AgriPro	ARS	6
3	Jagalene	Jagger/Abilene (=PI631376; W98-362)	HRW	AgriPro	ARS	6
4	Jagger	KS82W418/Stephens (=PI593688; KS84063-9-39-3)	HRW	KS	ARS	5
5	Lakin	KS89H130/Arlin (=PI617032; KS96HW115)	HWW	KS	ARS	5
6	TAM 303	TX89D1253*2/TTCC404 (=WX93D208-9-1-2) (=TX98D1170)	HRW	TX	ARS	6
7	Tribute	VA92-51-39/AL870365 (=VA98W-593)	SRW	VA	ARS	6
8	Deliver	OK91724/Karl (=PI639232; OK98690)	HRW	OK	OK	2
9	Duster	W0405D/NE78448//W7469/TX81V6187	HRW	OK	OK	2
10	Endurance	HBV756A/Siouxland//2180 (=PI639233; OK94P549-11)	HRW	OK	OK	2
11	TAM 203	TX89V4132/704LI-2221 (=TX01V5314)	HRW	TX	TX	2
12	ARS03-3806	X94-748-2-2/TAM 301 (=WX02ARS143-37)	HRW	ARS	ARS	3
13	ARS03-4736	KS00U755/TAM 303 (=WX02ARS113-9)	HRW	ARS	ARS	3
14	ARS03-4813	TAM 302/X940793-10-8 (=WX02ARS123-2)	HRW	ARS	ARS	2
15	ARS03-6180	TX94D4360/TAM 302 (=WX02ARS130-45)	HRW	ARS	ARS	2
16	ARS03-6198	TAM 303*2/TTCC160 (=WX02ARS152-7)	HRW	ARS	ARS	2
17	ARS04-1249	CO960293-1/KS98HW151-6//KS99HW37 (=KS2023-U18)	HWW	ARS	ARS	3
18	ARS04-1267	KS98HW151-6/KS01HW101(01-6101) (=KS2135-U54)	HWW	ARS	ARS	3
19	ARS05-0242	Coker9835/RL6042//TX99D4657 (WX02ARS030-591-25)	HRW	ARS	ARS	2
20	ARS05-1025	KS2108-U5/Trego (=WX03ARS1065-11)	HWW	ARS	ARS	2
21	ARS05-1034	KS2136-U142/Trego (=WX03ARS1066-8)	HWW	ARS	ARS	2
22	ARS05-1044	KS2132-U138/Trego (=WX03ARS1069-26)	HWW	ARS	ARS	2
23	ARS05-1048	KS98HW151-6(Arlin/TA2460/*3 TAM 107)/KS00HW34-1(94HW115/94HW131)	HWW	ARS	ARS	1
24	ARS05-1058	unknown	HWW	ARS	ARS	1
25	ARS05-1061	Lakin/KS2202-U12 (=WX03ARS1071-11)	HWW	ARS	ARS	2
26	ARS05-1094	Lakin/KS2007-U9 (=WX03ARS1074-3)	HWW	ARS	ARS	2
27	ARS05-1101	Lakin/KS2007-U9 (=WX03ARS1074-10)	HWW	ARS	ARS	2
28	ARS05-1179	KS2091-U5/Lakin (=WX03ARS1077-1)	HWW	ARS	ARS	2
29	ARS05-1200	CO960293-1/KS98HW151-6(Arlin/TA2460/*3 TAM 107)//KS00HW115(94HW117//Jagger/94HW301)	HWW	ARS	ARS	1
30	ARS05-1234	KS2016-U2/Lakin (=WX03ARS1080-19)	HWW	ARS	ARS	2
31	ARS05-1267	KS2133-U1/Lakin (=WX03ARS1084-3)	HWW	ARS	ARS	2
32	ARS05-1326	TX98D1519*2/TTCC580 (=WX02ARS153-2)	HRW	ARS	ARS	2
33	OK05737W	KS96WGRC39/Jagger	HWW	OK	OK	1
34	TX99A0153-1	Ogallala/TAM 202	HRW	TX	TX	2
35	TX01V5134RC-3	TAM-200/Jagger	HRW	TX	TX	1
36	TX03M1096	Mason/Jagger	HRW	TX	TX	1
37	TX04A001268	TX96V2627/TX94D7091	HRW	TX	TX	1
38	TX04A001771	2002 Vernon Composite	HRW	TX	TX	1
39	TX04M410211	Mason/Jagger//Ogallala	HRW	TX	TX	1
40	00F5--58-3	Bulk Selection	HRW	KSU-VA	VA	1
41	VA92PAN2#26	W8447D/W2436//W3420	HRW	VA	ARS	1
42	VA05HRW-9	92PAN2#26/92PIN#109,F8	HRW	VA	VA	1
43	VA06HRW-30	SOISSONS / 92PIN#107,F8	HRW	VA	VA	1
44	VA06HRW-49	92PAN1 #33 / RENWOOD 3260"S" (VA97W-414),F8	HRW	VA	VA	1
45	VA06HRW-66	92PIN#109 / 92PAN1 #33,F8	HRW	VA	VA	1
46	VA06HRW-70	92PIN#135 / PIONEER 2643,F8	HRW	VA	VA	1
47	VA06HRW-79	ETECHO / RENWOOD 3260 (VA96-54-326) // 92PIN#109,F8	HRW	VA	VA	1
48	VA06HRW-87	TREMIE / VA96W-391(IN81401A1-32-2/CK9803) // 92PAN1#29,F8	HRW	VA	VA	1
49	VA06HRW-103	AMELIO / PIONEER 26R61 // 92PIN#135,F8	HRW	VA	VA	1
50	VA06HRW-106	SOISSONS // HEYNE (KS85W633-11-6-42) / RENWOOD 3260 (VA96-54-326),F8	HRW	VA	VA	1

Seed Requirements: DE(300g); GA(280g); KY(350g); MD(400g); NC-USDA(920g); NE(40g); OK(200g); TX-Ama(5g); TX-Dal(50g); VA(450g); WA(70g) = 3,065g

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Entry	Designation	Class	TEST WEIGHT (lb/bu)											
			NCC DE	Plains GA	Q'town MD	NE*	Kinston NC	Raleigh NC	W'ville NC	Dallas TX	B'burg VA	Warsaw VA	Pullman WA	10-loc* mean
1	AGS 2000	SRW	58.1	60	56.0		59.6	61.8	57.6	56.6	52.5	58.7	62.8	58.4
2	Hondo	HRW	59.9	60	55.7	59.2	60.7	62.3	60.0	52.2	53.7	55.4	62.5	58.2
3	Jagalene	HRW	59.2	57	54.5	56.3	59.1	60.8	60.7	58.8	55.5	56.9	63.0	58.6
4	Jagger	HRW	57.3	57	56.7	51.8	58.1	57.4	57.4	54.5	51.8	56.1	62.9	56.9
5	Lakin	HWW	58.1	60	56.9	56.7	60.1	61.8	60.6	59.8	53.3	58.4	63.3	59.2
6	TAM 303	HRW	54.3	58	56.4	57.8	57.4	59.6	59.3	57.7	52.3	55.0	62.5	57.3
7	Tribute	SRW	58.9	61	57.7	59.3	62.2	64.8	63.5	58.9	57.6	58.9	62.6	60.6
8	Deliver	HRW	57.0	61	54.0	57.7	60.8	61.8	61.5	59.7	54.3	56.3	62.5	58.9
9	Duster	HRW	54.7	60	55.8	56.0	59.9	55.4	58.7	59.9	49.4	56.2	61.7	57.2
10	Endurance	HRW	52.5	58	55.2	57.2	58.0	59.3	59.6	58.6	52.3	56.0	62.6	57.2
11	TAM 203	HRW	56.1	59	53.9	52.7	56.7	57.7	58.2	56.4	51.0	54.8	62.5	56.6
12	ARS03-3806	HRW	56.3	61	55.6		60.1	61.5	59.5	56.1	52.6	56.3	62.5	58.2
13	ARS03-4736	HRW	60.2	61	57.2	58.1	62.6	61.9	59.0	58.0	56.9	60.1	63.3	60.0
14	ARS03-4813	HRW	55.5	58	56.2	52.2	59.0	58.4	59.0	50.9	45.3	56.2	61.5	56.0
15	ARS03-6180	HRW	56.1	60	55.1	56.6	60.2	61.9	58.2	55.9	52.2	56.1	62.5	57.8
16	ARS03-6198	HRW	61.0	62	59.3	60.1	62.7	62.7	59.4	57.8	56.7	60.4	62.5	60.5
17	ARS04-1249	HWW	59.5	60	54.4		60.6	63.0	57.1	55.2	54.3	57.9	62.9	58.5
18	ARS04-1267	HWW	60.6	61	59.3	60.8	61.6	63.9	57.9	59.1	56.0	59.1	62.6	60.1
19	ARS05-0242	HRW	55.5	59	52.3	57.0	60.4	59.7	55.0	56.7	50.2	55.4	61.5	56.6
20	ARS05-1025	HWW	59.5	61	55.7	57.6	62.5	63.1	62.4	57.6	55.9	58.7	62.5	59.9
21	ARS05-1034	HWW	60.9	61	59.2	56.9	63.5	63.8	62.6	59.7	58.2	59.4	62.5	61.1
22	ARS05-1044	HWW	59.0	60	57.3	58.9	62.3	62.5	59.8	56.1	55.8	56.6	62.5	59.2
23	ARS05-1048	HWW	58.9	59	58.0	59.4	59.3	62.4	61.2	53.3	54.5	59.1	62.5	58.8
24	ARS05-1058	HWW	59.7	59	58.2	57.3	58.2	62.6	61.1	52.1	52.7	58.7	63.0	58.5
25	ARS05-1061	HWW	57.1	58	57.0		60.7	60.0	60.3	55.5	52.4	56.7	62.7	58.0
26	ARS05-1094	HWW	58.0	59	56.1	59.1	59.8	57.6	58.8	56.7	51.0	54.4	62.5	57.4
27	ARS05-1101	HWW	57.5	60	57.9	58.8	59.4	59.4	58.3	58.7	52.0	56.5	62.5	58.2
28	ARS05-1179	HWW	58.7	61	51.4	57.4	60.1	60.1	59.6	59.7	55.9	57.3	63.0	58.7
29	ARS05-1200	HWW	57.1	58	56.4		58.0	60.2	57.3	54.2	50.7	57.9	62.5	57.2
30	ARS05-1234	HWW	59.5	59	56.8	57.3	59.9	60.3	58.5	51.0	51.0	55.9	62.5	57.4
31	ARS05-1267	HWW	59.9	60	57.3	60.8	61.7	63.6	61.7	54.4	56.4	58.4	62.5	59.6
32	ARS05-1326	HRW	57.1	59	55.2	53.6	60.2	59.6	58.9	58.8	52.4	54.8	62.5	57.9
33	OK05737W	HWW	57.7	60	57.0	55.1	59.9	59.8	60.7	57.1	51.1	56.6	62.5	58.2
34	TX99A0153-1	HRW	45.3	58	50.0		56.4	56.4	59.1	57.4	51.7	53.0	60.9	54.8
35	TX01V5134RC-3	HRW	58.0	61	55.0	57.8	60.5	60.4	59.8	60.1	55.4	57.0	62.5	59.0
36	TX03M1096	HRW	57.5	58	56.0	52.2	58.7	60.7	58.3	58.5	49.7	56.2	62.5	57.6
37	TX04A001268	HRW	55.3	57	54.2		56.3	55.4	58.3	58.8	50.5	54.9	63.5	56.4
38	TX04A001771	HRW	55.3	58	56.8		57.5	55.1	59.2	59.6	49.8	54.9	62.5	56.9
39	TX04M410211	HRW	59.5	61	55.4	57.6	62.2	61.5	59.2	60.8	52.1	59.2	63.0	59.4
40	00F5--58-3	HRW	58.3	61	56.0	60.4	61.2	61.5	60.6	60.2	53.8	58.4	63.1	59.4
41	VA92PAN2#26	HRW	56.5	58	54.7	47.5	58.3	61.1	59.5	55.9	49.6	54.2	61.9	57.0
42	VA05HRW-9	HRW	55.2	58	54.4	48.1	58.2	59.2	57.8	57.8	51.8	53.7	62.8	56.9
43	VA06HRW-30	HRW	57.2	59	55.5		57.7	62.7	59.5	56.8	50.6	55.8	63.0	57.8
44	VA06HRW-49	HRW	58.9	60	55.9	52.4	60.2	61.8	59.5	55.5	49.3	57.3	62.7	58.1
45	VA06HRW-66	HRW	56.4	57	55.5	53.7	58.2	61.3	60.5	56.6	52.6	57.1	62.5	57.8
46	VA06HRW-70	SRW	57.5	58	56.6		60.1	61.0	60.8	59.5	52.2	57.0	62.5	58.5
47	VA06HRW-79	SRW	54.0	59	54.6	45.9	57.9	59.8	60.3	56.7	51.3	56.1	61.9	57.2
48	VA06HRW-87	HRW	55.8	59	54.9	52.6	58.5	58.4	60.6	56.3	50.2	56.4	62.5	57.3
49	VA06HRW-103	SRW	55.8	59	51.2		58.3	60.0	61.4	53.8	51.0	55.1	62.5	56.8
50	VA06HRW-106	SRW	58.5	60	54.1		58.2	61.8	58.3	51.5	49.6	56.8	61.5	57.0
	Mean		57.3	59	55.7	56.1	59.6	60.6	59.5	56.9	52.6	56.8	62.5	58.1
	CV (%)		2.3		2.0		1.3	1.2	1 rep		2.4	2.2	1.3	2.7
	LSD (0.05)		2.1		2.3		1.5	1.5			1.7	1.7	1.6	1.4
	R ²						0.92	0.95					0.43	0.80

* 10-location mean does not include NE data.

DAYS TO HEADING (JULIAN)												
Entry	Designation	Class	Plains			Kinston			B'burg		Pullman	9-loc mean
			GA	MD	NE	NC	NC	TX	VA	VA	WA	
1	AGS 2000	SRW	97	121	153	96	101	98	127.7	114.0	158	118
2	Hondo	HRW	110	127	152	111	114	112	133.7	125.0	159	127
3	Jagalene	HRW	101	123	151	102	106	106	129.3	117.0	157	121
4	Jagger	HRW	96	119	150	95	102	98	126.3	113.7	153	117
5	Lakin	HWW	108	123	150	105	112	102	130.3	116.0	156	122
6	TAM 303	HRW	103	120	151	105	106	99	127.0	114.3	154	120
7	Tribute	SRW	102	121	152	104	108	99	128.3	114.0	154	120
8	Deliver	HRW	109	124	151	107	111	105	131.3	116.7	156	123
9	Duster	HRW	107	124	152	104	108	103	130.3	116.3	159	123
10	Endurance	HRW	111	122	151	106	111	103	129.3	115.3	154	122
11	TAM 203	HRW	98	121	152	101	105	107	129.0	114.7	154	120
12	ARS03-3806	HRW	108	126	155	109	110	106	133.3	118.0	159	125
13	ARS03-4736	HRW	104	122	150	108	109	109	128.0	115.0	154	122
14	ARS03-4813	HRW	109	126	155	110	114	108	136.0	119.7	157	126
15	ARS03-6180	HRW	105	124	154	106	110	108	131.0	118.0	158	124
16	ARS03-6198	HRW	104	121	150	109	110	108	128.3	115.0	155	122
17	ARS04-1249	HWW	104	123	154	107	111	102	130.7	116.7	159	123
18	ARS04-1267	HWW	101	121	150	103	103	102	128.0	114.0	156	120
19	ARS05-0242	HRW	100	123	153	102	103	102	130.0	116.0	159	121
20	ARS05-1025	HWW	104	124	150	105	110	107	130.3	117.3	153	122
21	ARS05-1034	HWW	107	120	151	104	108	102	127.0	114.7	151	121
22	ARS05-1044	HWW	106	121	152	106	108	108	127.7	115.7	153	122
23	ARS05-1048	HWW	110	124	152	111	112	112	129.3	117.7	153	125
24	ARS05-1058	HWW	104	122	149	108	110	108	129.0	116.3	151	122
25	ARS05-1061	HWW	102	119	152	102	106	102	128.7	114.3	152	120
26	ARS05-1094	HWW	108	122	152	107	112	108	130.3	120.0	152	123
27	ARS05-1101	HWW	107	122	149	106	109	107	130.3	115.3	151	122
28	ARS05-1179	HWW	96	120	151	93	101	98	128.0	114.3	152	117
29	ARS05-1200	HWW	104	120	152	105	107	104	128.0	115.0	151	121
30	ARS05-1234	HWW	112	124	151	110	115	112	134.0	121.0	153	126
31	ARS05-1267	HWW	110	125	151	111	115	112	132.0	121.0	151	125
32	ARS05-1326	HRW	109	124	152	106	112	106	131.3	117.3	157	124
33	OK05737W	HWW	107	121	149	106	109	105	129.7	116.7	153	122
34	TX99A0153-1	HRW	103	122	155	106	107	106	128.0	116.0	153	122
35	TX01V5134RC-3	HRW	98	119	149	96	103	98	125.3	113.3	153	117
36	TX03M1096	HRW	95	120	150	99	103	101	127.3	114.3	153	118
37	TX04A001268	HRW	101	119	155	102	102	102	126.0	113.7	152	119
38	TX04A001771	HRW	96	119	151	96	102	101	126.7	113.7	153	118
39	TX04M410211	HRW	101	124	152	104	108	103	131.0	117.7	157	122
40	00F5--58-3	HRW	103	121	151	101	106	100	130.0	114.3	155	120
41	VA92PAN2#26	HRW	110	124	152	109	112	107	132.3	117.7	156	124
42	VA05HRW-9	HRW	102	121	152	104	106	102	128.7	115.0	155	121
43	VA06HRW-30	HRW	106	121	152	105	108	102	128.3	115.7	155	121
44	VA06HRW-49	HRW	103	120	152	104	105	102	127.3	115.3	155	120
45	VA06HRW-66	HRW		122	149	109	113	102	129.3	117.0	153	122
46	VA06HRW-70	SRW	102	121	151	104	106	101	129.3	116.0	156	121
47	VA06HRW-79	SRW	101	120	151	102	104	98	128.3	114.0	153	119
48	VA06HRW-87	HRW	104	121	151	105	108	102	128.7	114.7	154	121
49	VA06HRW-103	SRW	109	123	157	109	112	107	135.3	118.0	159	125
50	VA06HRW-106	SRW	110	123	152	106	110	107	130.7	116.3	157	124
		Mean	104	122	152	104	108	104	129.5	116.2	154.4	122
		CV (%)		0.7		1	1		0.8	0.7	0.9	2
		LSD (0.05)		2		3	2		1.3	1.2	2.7	2
		R ²				0.95	0.98				0.88	0.99

Entry	Designation	Class	HEIGHT (in)										
			NCC DE	Plains GA	Q'town MD	Kinston NC	Raleigh NC	W'ville NC	Dallas TX	B'burg VA	Warsaw VA	Pullman WA	10-loc mean
1	AGS 2000	SRW	41	35	39	37	41	41	36	38	32	32	37
2	Hondo	HRW	42	39	39	38	40	41	37	38	32	28	37
3	Jagalene	HRW	39	36	36	34	38	42	36	37	32	32	36
4	Jagger	HRW	36	37	39	34	38	39	31	37	30	29	35
5	Lakin	HWW	40	37	41	39	40	45	35	39	32	31	38
6	TAM 303	HRW	39	39	38	36	41	37	35	38	31	30	36
7	Tribute	SRW	36	35	37	34	38	37	31	35	30	28	34
8	Deliver	HRW	39	38	39	36	37	40	35	39	32	27	36
9	Duster	HRW	38	37	39	37	37	37	34	35	28	30	35
10	Endurance	HRW	40	41	41	37	41	39	37	41	32	33	38
11	TAM 203	HRW	40	36	41	32	35	41	30	38	29	27	35
12	ARS03-3806	HRW	43	38	42	35	41	41	33	40	32	28	37
13	ARS03-4736	HRW	39	41	41	37	42	41	35	40	31	31	38
14	ARS03-4813	HRW	38	35	37	34	38	41	32	37	30	26	35
15	ARS03-6180	HRW	43	38	42	38	42	39	35	40	33	29	38
16	ARS03-6198	HRW	40	42	42	41	43	40	38	40	33		39
17	ARS04-1249	HWW	39	40	40	36	39	39	36	38	32	30	37
18	ARS04-1267	HWW	41	36	37	35	38	35	35	38	32	30	36
19	ARS05-0242	HRW	37	32	37	33	36	37	35	36	30	28	34
20	ARS05-1025	HWW	41	37	38	39	43	43	34	40	32	31	38
21	ARS05-1034	HWW	41	40	42	42	41	41	38	41	33	32	39
22	ARS05-1044	HWW	41	41	43	42	42	39	34	39	31	28	38
23	ARS05-1048	HWW	41	41	38	38	40	41	36	39	33	30	38
24	ARS05-1058	HWW	44	40	44	39	43	41	36	41	34	35	40
25	ARS05-1061	HWW	35	39	40	37	40	36	36	38	29	30	36
26	ARS05-1094	HWW	38	36	39	36	40	45	36	36	31	25	36
27	ARS05-1101	HWW	37	38	39	35	39	35	37	35	31	29	36
28	ARS05-1179	HWW	40	36	39	36	39	37	35	39	32	29	36
29	ARS05-1200	HWW	37	37	36	35	39	34	35	36	30	29	35
30	ARS05-1234	HWW	40	39	39	36	42	45	37	36	28	25	37
31	ARS05-1267	HWW	39	39	39	34	40	40	36	37	33	29	37
32	ARS05-1326	HRW	42	40	43	39	41	41	34	40	32	35	39
33	OK05737W	HWW	39	39	40	35	41	41	36	39	32	28	37
34	TX99A0153-1	HRW	38	31	37	35	39	33	34	36	27	28	34
35	TX01V5134RC-3	HRW	38	33	41	37	37	30	35	36	28	28	34
36	TX03M1096	HRW	35	35	37	33	39	37	36	36	30	28	35
37	TX04A001268	HRW	36	36	37	38	40	33	38	38	30	30	36
38	TX04A001771	HRW	38	31	36	32	35	33	31	35	30	27	33
39	TX04M410211	HRW	40	34	37	38	40	41	37	41	31	30	37
40	00F5--58-3	HRW	36	33	40	34	41	33	36	37	32	28	35
41	VA92PAN2#26	HRW	36	32	36	34	35	35	33	36	30	29	34
42	VA05HRW-9	HRW	37	33	38	33	38	33	35	38	31	30	35
43	VA06HRW-30	HRW	37	41	36	33	39	37	32	36	31	28	35
44	VA06HRW-49	HRW	38	35	37	37	37	39	35	37	30	30	36
45	VA06HRW-66	HRW	38	38	38	38	40	43	38	39	29	30	37
46	VA06HRW-70	SRW	37	35	34	34	39	38	34	36	31	27	35
47	VA06HRW-79	SRW	36	35	38	35	38	37	35	37	31	30	35
48	VA06HRW-87	HRW	38	37	39	35	38	39	38	38	31	30	36
49	VA06HRW-103	SRW	38	36	39	32	38	39	35	37	31	30	36
50	VA06HRW-106	SRW	38	37	39	34	40	41	35	39	33	28	36
	Mean		39	37	39	36	39	39	35	38	31	29	36
	CV (%)		4		4.6	4	4	1 rep		3	6		5
	LSD (0.05)		3		4	3	3			2	3		2
	R ²					0.83	0.75						0.83

LODGING (0-9 0=none)												
Entry	Designation	Class	NCC	Plains	Q'town	Kinston	Raleigh	W'ville	B'burg	Warsaw	8-loc	
			DE	GA	MD	NC	NC	NC	VA	VA	mean	
1	AGS 2000	SRW	1	3	4.0	1	3	1	3.0	3.7	3.7	
2	Hondo	HRW	1	3	8.5	0	4	7	6.7	7.7	5.0	
3	Jagalene	HRW	1	1	3.0	2	2	3	0.7	5.0	2.7	
4	Jagger	HRW	1	3	4.5	3	7	5	1.7	5.3	4.0	
5	Lakin	HWW	1	6	2.0	3	4	1	1.0	2.7	3.0	
6	TAM 303	HRW	1	7	4.5	4	8	8	4.3	8.7	6.0	
7	Tribute	SRW	1	2	3.5	1	3	7	3.7	3.7	3.0	
8	Deliver	HRW	1	8	7.0	3	7	8	2.3	8.0	6.0	
9	Duster	HRW	1	9	6.0	4	8	8	8.7	9.3	7.0	
10	Endurance	HRW	1	2	4.0	2	3	8	1.0	6.0	3.0	
11	TAM 203	HRW	1	3	5.5	1	7	8	0.7	5.7	4.0	
12	ARS03-3806	HRW	1	4	5.5	1	7	8	3.7	4.7	5.0	
13	ARS03-4736	HRW	1	5	5.0	1	6	8	4.3	6.3	5.0	
14	ARS03-4813	HRW	1	6	4.5	2	7	8	3.3	3.0	4.0	
15	ARS03-6180	HRW	1	2	6.5	2	6	8	4.7	4.3	4.0	
16	ARS03-6198	HRW	1	7	3.5	1	5	8	5.0	5.3	5.0	
17	ARS04-1249	HWW	1	0	1.0	1	4	9	3.0	5.0	3.0	
18	ARS04-1267	HWW	1	0	2.5	1	4	8	4.3	2.3	3.0	
19	ARS05-0242	HRW	1	1	1.0	1	5	1	0.3	1.0	1.0	
20	ARS05-1025	HWW	1	6	4.5	1	4	1	0.3	5.0	3.0	
21	ARS05-1034	HWW	1	4	5.0	1	7	7	2.7	7.3	4.0	
22	ARS05-1044	HWW	1	9	8.0	2	7	9	6.7	8.3	6.0	
23	ARS05-1048	HWW	1	2	5.0	1	4	8	4.0	3.3	4.0	
24	ARS05-1058	HWW	1	4	4.0	2	6	8	6.7	5.7	5.0	
25	ARS05-1061	HWW	1	3	5.0	1	8	9	5.0	7.0	5.0	
26	ARS05-1094	HWW	1	0	3.5	0	7	8	5.0	6.7	4.0	
27	ARS05-1101	HWW	1	8	5.0	2	8	9	4.7	7.0	6.0	
28	ARS05-1179	HWW	1	3	2.5	2	6	9	0.7	8.0	4.0	
29	ARS05-1200	HWW	1	2	2.5	1	7	9	3.0	5.3	4.0	
30	ARS05-1234	HWW	1	9	6.0	1	8	9	6.7	7.0	6.0	
31	ARS05-1267	HWW	1	3	2.0	0	3	7	1.3	3.7	3.0	
32	ARS05-1326	HRW	1	3	7.0	3	7	7	4.0	7.7	5.0	
33	OK05737W	HWW	1	3	2.5	1	5	3	1.3	6.0	3.0	
34	TX99A0153-1	HRW	1	2	6.0	0	7	8	5.0	7.3	5.0	
35	TX01V5134RC-3	HRW	1	3	8.5	1	8	9	2.0	9.0	5.0	
36	TX03M1096	HRW	1	6	6.5	2	8	9	4.7	6.0	6.0	
37	TX04A001268	HRW	1	8	4.0	2	5	7	1.0	9.0	5.0	
38	TX04A001771	HRW	1	1	2.5	1	4	3	0.0	4.3	2.0	
39	TX04M410211	HRW	1	2	3.0	4	7	7	1.0	2.3	3.0	
40	00F5--58-3	HRW	1	2	1.5	2	4	7	1.7	3.3	3.0	
41	VA92PAN2#26	HRW	1	8	2.0	1	6	7	2.7	7.3	4.0	
42	VA05HRW-9	HRW	1	3	2.5	1	7	8	1.7	7.0	4.0	
43	VA06HRW-30	HRW	1	3	4.5	1	2	1	1.0	4.0	2.0	
44	VA06HRW-49	HRW	1	3	3.0	2	7	7	4.7	2.7	4.0	
45	VA06HRW-66	HRW	1	0	2.5	1	6	1	1.7	5.0	2.0	
46	VA06HRW-70	SRW	1	0	1.0	1	5	1	0.0	3.0	2.0	
47	VA06HRW-79	SRW	1	0	1.5	0	4	1	0.0	0.3	1.0	
48	VA06HRW-87	HRW	1	3	7.0	1	7	3	0.3	8.0	4.0	
49	VA06HRW-103	SRW	1	2	3.5	1	5	2	0.7	7.3	3.0	
50	VA06HRW-106	SRW	1	1	2.5	1	2	2	0.0	0.3	1.0	
	Mean		1	4	4.1	1	5	6	2.9	5.4	4.0	
	CV (%)				46.2	73	30	1 rep	40.0	36.1	44	
	LSD (0.05)				3.8	1.7	3		1.5	2.7	1.7	
	R ²					0.73	0.74				0.67	

		POWDERY MILDEW											
Entry	Designation	Class	Plains	Q'town	Q'town	Kinston	L.Springs	Raleigh	Salisbury*	W'ville	B'burg	Warsaw	8-loc*
			GA 0-9	MD %	MD 0-9	NC 0-9	NC 0-9	NC 0-9	NC 0-9	NC 0-9	NC 0-9	VA 0-9	VA 0-9
1	AGS 2000	SRW	0	5	1	1	6	4	4	0	0.0	1.3	1
2	Hondo	HRW	0	0	0	2	3	0	0	0	0.3	0.0	0
3	Jagalene	HRW	5	90	8	8	9	9	9	9	8.0	9.0	8
4	Jagger	HRW	4	75	6	6	9	9	8	9	6.0	7.7	7
5	Lakin	HWW	0	65	5	4	8	8	5	6	5.3	6.0	5
6	TAM 303	HRW	0	0	0	1	0	1	0	0	0.3	0.0	0
7	Tribute	SRW	0	0	0	0	0	0	0	0	0.0	0.0	0
8	Deliver	HRW	0	45	3	2	0	8	3	0	2.3	1.7	2
9	Duster	HRW	0	30	2	2	2	8	3	7	1.3	0.7	3
10	Endurance	HRW	0	40	3	2	0	7	2	5	3.3	4.0	3
11	TAM 203	HRW	3	70	6	5	7	9	6	7	6.0	7.3	6
12	ARS03-3806	HRW	0	5	1	1	0	0	0	0	0.0	0.0	0
13	ARS03-4736	HRW	2	30	2	1	0	5		2	5.0	3.7	3
14	ARS03-4813	HRW	2	45	3	1	0	9		4	6.0	4.7	4
15	ARS03-6180	HRW	0	0	0	0	0	0		0	0.0	0.3	0
16	ARS03-6198	HRW	3	45	3	2	8	7		4	5.0	6.0	4
17	ARS04-1249	HWW	0	0	0	0	7	1		0	0.0	0.7	0
18	ARS04-1267	HWW	0	0	0	2	0	0	2	0	0.0	0.0	0
19	ARS05-0242	HRW	0	0	0	2	0	0		0	0.0	0.0	0
20	ARS05-1025	HWW	1	30	2	2	0	6	2	6	3.3	4.0	3
21	ARS05-1034	HWW	0	0	0	1	0	3		0	2.0	0.0	1
22	ARS05-1044	HWW	0	0	0	1	0	0	0	0	0.0	0.0	0
23	ARS05-1048	HWW	0	3	1	0	0	0		0	0.7	0.7	0
24	ARS05-1058	HWW	0	5	1	2	0	2	0	0	0.0	0.7	1
25	ARS05-1061	HWW	0	0	0	2	0	1	0	0	1.0	0.0	1
26	ARS05-1094	HWW	0	50	4	4	6	8		3	5.0	6.0	4
27	ARS05-1101	HWW	0	40	3	2	6	7	4	4	5.3	6.0	4
28	ARS05-1179	HWW	1	70	6	2	6	6		5	5.0	6.3	4
29	ARS05-1200	HWW	2	65	5	2	9	8	0	3	5.7	5.7	5
30	ARS05-1234	HWW	1	40	3	1	7	7	0	2	4.7	2.7	3
31	ARS05-1267	HWW	2	65	5	4	7	9	6	7	6.0	4.3	5
32	ARS05-1326	HRW	5	60	5	3	3	6	7	6	5.0	6.0	5
33	OK05737W	HWW	4	50	4	5	8	8	6	6	5.7	7.0	6
34	TX99A0153-1	HRW	0	0	0	4	6	0		0	0.0	0.0	1
35	TX01V5134RC-3	HRW	0	0	0	1	0	0		0	0.0	0.0	0
36	TX03M1096	HRW	3	45	3	4	3	8	6	3	3.7	6.0	4
37	TX04A001268	HRW	3	25	2	3	7	8	5	6	4.0	3.3	4
38	TX04A001771	HRW	3	65	5	3	7	8	8	6	5.3	5.3	5
39	TX04M410211	HRW	5	70	6	7	9	9	8	8	7.0	6.7	7
40	00F5--58-3	HRW	2	50	4	1	7	7	3	7	4.7	3.3	4
41	VA92PAN2#26	HRW	3	40	3	2	6	6	5	3	3.3	2.7	3
42	VA05HRW-9	HRW	2	5	1	1	6	4	2	0	1.7	1.0	2
43	VA06HRW-30	HRW	1	45	3	1	6	6	3	3	3.7	2.3	3
44	VA06HRW-49	HRW	0	0	0	1	0	0	0	0	0.0	0.0	0
45	VA06HRW-66	HRW	0	55	4	1	3	4	3	4	4.0	6.0	3
46	VA06HRW-70	SRW	0	30	2	2	0	1	2	0	0.3	1.7	1
47	VA06HRW-79	SRW	0	10	1	1	0	1	0	0	0.0	0.0	0
48	VA06HRW-87	HRW	0	5	1	2	0	4	0	0	1.0	0.0	1
49	VA06HRW-103	SRW	0	50	4	2	0	4	0	0	1.3	3.0	2
50	VA06HRW-106	SRW	0	20	2	1	0	1	1	0	0.0	0.0	1
	Mean		1	3.1	2	2	3	4	3	3	2.8	2.9	3
	CV (%)			42.6		33	1 rep	22	1 rep	1 rep	22.9	39.6	49
	LSD (0.05)			26.3		1		2			0.9	1.5	1
	R ²					0.93		0.96					0.80

* 8-location mean does not include data from Salisbury, NC location,

Entry	Designation	Class	FLOUR PROTEIN							FALLING NUMBER						
			B. Mina*	L.Springs	Kinston	Raleigh	W'ville	Warsaw	4-loc*	B. Mina*	L.Springs	Kinston	Raleigh	W'ville	Warsaw	4-loc*
			AL %	NC %	NC %	NC %	NC %	VA %	mean %	AL s	NC s	NC s	NC s	NC s	VA s	mean s
1	AGS 2000	SRW		16.35	11.73	12.04	13.65		13.44		434	373	412	467		422
2	Hondo	HRW	15.56	16.02	11.75	13.91	16.40	14.85	14.52	518	450	376	482	410	580	430
3	Jagalene	HRW		15.19	10.50	12.27	14.04		13.00		494	373	417	476		440
4	Jagger	HRW	14.63	17.40	13.18	14.30	16.27	14.47	15.29	440	376	437	501	515	542	457
5	Lakin	HWW	14.04	15.88	10.68	13.57	14.46	13.74	13.65	381	143	372	485	483	573	371
6	TAM 303	HRW	14.46	15.42	12.27	14.42	15.64	13.81	14.44	391	514	408	474	423	498	455
7	Tribute	SRW		13.33	11.46	13.27	13.31		12.84		149	395	414	452		353
8	Deliver	HRW		12.15	10.64	12.58	13.49		12.22		438	379	432	352		400
9	Duster	HRW		12.61	11.55	15.22	14.42		13.45		440	488	607	444		495
10	Endurance	HRW		10.78	10.21	12.49	13.52		11.75		411	410	423	382		407
11	TAM 203	HRW		12.46	11.43	12.87	17.03		13.45		370	420	492	563		461
12	ARS03-3806	HRW	15.39	12.96	11.04	14.04	16.01	14.20	13.51	471	475	431	538	434	564	470
13	ARS03-4736	HRW	13.99	12.58	10.35	13.55	14.48	12.92	12.74	466	433	383	495	485	505	449
14	ARS03-4813	HRW		14.08	11.21	14.42	15.47		13.80		419	427	478	491		454
15	ARS03-6180	HRW	15.52	16.19	12.22	14.39	16.90	14.61	14.93	467	487	442	464	508	496	475
16	ARS03-6198	HRW		15.17	11.65	12.51	15.22		13.64		493	401	401	484		445
17	ARS04-1249	HWW	15.09	16.14	11.88	13.81	15.98	15.51	14.45	462	83	378	505	521	461	372
18	ARS04-1267	HWW		16.14	10.88	14.43	17.19		14.66		119	355	534	464		368
19	ARS05-0242	HRW	15.42	16.16	12.06	14.33	14.74	14.42	14.32	441	462	429	522	505	622	480
20	ARS05-1025	HWW		15.68	12.26	14.15	16.01		14.53		124	383	434	496		359
21	ARS05-1034	HWW	14.95	17.55	12.62	15.58	18.63	16.36	16.10	552	136	333	512	472	507	363
22	ARS05-1044	HWW	16.00	17.32	12.11	13.04	15.41	14.16	14.47	507	62	401	546	442	592	363
23	ARS05-1048	HWW		13.09	9.28	12.36	15.55		12.57		151	342	475	484		363
24	ARS05-1058	HWW		14.92	11.25	14.67	15.26		14.03		81	373	502	441		349
25	ARS05-1061	HWW		17.84	10.60	14.68	15.38		14.63		230	419	562	505		429
26	ARS05-1094	HWW		14.07	10.69	15.72	16.26		14.19		157	373	587	479		399
27	ARS05-1101	HWW		15.02	10.63	14.39	17.22		14.32		133	396	530	610		417
28	ARS05-1179	HWW		17.86	10.75	13.68	16.07		14.59		164	355	488	444		363
29	ARS05-1200	HWW		14.77	10.78	13.95	16.49		14.00		165	366	516	455		376
30	ARS05-1234	HWW	15.09	14.34	9.91	15.27	17.08	14.46	14.15	631	119	446	640	525	602	433
31	ARS05-1267	HWW		15.17	11.54	13.28	14.45		13.61		198	418	490	474		395
32	ARS05-1326	HRW		14.56	9.16	14.08	13.48		12.82		465	452	517	546		495
33	OK05737W	HWW		18.21	9.85	14.13	13.98		14.04		207	426	502	464		400
34	TX99A0153-1	HRW		15.31	11.36	14.25	14.00		13.73		480	453	516	484		483
35	TX01V5134RC-3	HRW	14.41	18.57	12.79	14.73	15.90	13.81	15.50	445	505	422	540	637	660	526
36	TX03M1096	HRW	15.19	17.13	12.51	13.69	15.46	14.59	14.70	436	468	443	468	445	434	456
37	TX04A001268	HRW		17.87	13.88	15.33	17.39		16.12		515	486	493	489		496
38	TX04A001771	HRW		17.22	13.11	15.17	14.02		14.88		450	455	476	511		473
39	TX04M410211	HRW		17.02	12.62	13.49	14.74		14.47		522	438	454	413		457
40	00F5--58-3	HRW		15.49	11.61	13.81	15.85		14.19		398	432	444	485		440
41	VA92PAN2#26	HRW		17.57	10.74	13.77	15.37		14.36		518	377	462	575		483
42	VA05HRW-9	HRW		16.28	11.42	14.37	14.54		14.15		497	405	486	449		459
43	VA06HRW-30	HRW		16.39	10.82	14.02	14.93		14.04		471	366	419	448		426
44	VA06HRW-49	HRW	15.53	17.37	11.42	15.44	16.17	14.73	15.10	422	340	410	454	513	464	429
45	VA06HRW-66	HRW	13.38	15.79	10.45	14.43	13.70	13.07	13.59	451	442	395	498	423	522	440
46	VA06HRW-70	SRW		15.64	12.14	14.88	14.23		14.22		435	325	423	438		405
47	VA06HRW-79	SRW	13.76	13.64	11.53	14.24	14.25	13.16	13.42	398	424	360	373	379	415	384
48	VA06HRW-87	HRW		12.45	11.02	14.76	13.41		12.91		406	441	524	512		471
49	VA06HRW-103	SRW		12.86	12.29	13.87	13.23		13.06		369	387	417	393		392
50	VA06HRW-106	SRW		12.07	12.14	14.44	15.22		13.47		437	330	389	447		401
		Mean	14.85	15.32	11.40	14.04	15.24	14.29	14.00	463	345	401	484	475	532	426
		CV (%)	1 rep		8.89	6.17	1 rep	1 rep	8.06	1 rep	1 rep	8	10	1 rep	1 rep	20
		LSD (0.05)			2.04	1.74			1.58			67	93			122
		R ²			0.67	0.68			0.78			0.73	0.74			0.48

* 4-location mean does not include data from Bella Mina, AL and Warsaw, VA locations