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1998 - 99

UNIFORM EASTERN SOFT RED WINTER WHEAT NURSERY

Report

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This is a joint progress report of cooperative investigations underway in the State Agricultural Experiment Stations and the Agricultural Research Service of the U.S. Department of Agriculture 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. The report is primarily a tool for the use of the cooperators and their official staff 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. The report is not intended for publication and should not be referred to in literature citations nor 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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1998-99 UNIFORM EASTERN SOFT RED WINTER WHEAT NURSERY

LIST OF ENTRIES AND PEDIGREES

Entry No.	Cultivar/ Designation	Pedigree	Contributor	1st Year in Nurs
1	Cardinal	Logan*2/3/VA63-5-12/Logan//Blueboy	Check	88-89
2	Caldwell	Benhur sib*2/Siete Cerros	Check	88-89
3	Pioneer 2548	Hadden*2/3/GA1123//N10-B/Tenmarq/4/MoW6582/Redco at/5/Ck68-15/4/Etoile de Choisy//Thorne/Clarkan/3/Pawnee/IN3848A5	Check	93-94
4	Foster	KY 83-60/Tyler//KY 83-75 (previously tested as KY 85C-31-6)	Check	96-97
5	OH 552	P71761A4-31-5-33/MD55-286-21	R.Gooding	96-97
6	AR 494B-2-2	Pioneer 2550/Keiser	R.Bacon	96-97
7	AR 584A-3-1	FL302//Coker 833/Hunter	R.Bacon	96-97
8	KY86C-127-3	NA-SW76-59/NA-SW78-111 = composite cross//Knox 62/SRW 14-74	D.VanSanford	97-98
9	BL930390	AL850046/Coker 86-23	J.Hancock	97-98
10	BL931167	Pio.Exp.9021/FL791G63	J.Hancock	97-98
11	IL91-15911	IL84-3511/Caldwell	F.Kolb	97-98
12	OH599	PS-840026/OH416	R.Gooding	97-98
13	MO94-317	AP Traveller/Pioneer 2555	A.McKendry	97-98
14	VA97W-375	Coker 9803/Freedom	C.Griffey	98-99
15	VA96W-247	Coker 9803/Freedom	C.Griffey	98-99
16	OH 536	P71761A4-31-5-33/MD55-286-21	R.Gooding	98-99
17	G60232	IL84-3511/T812	S.Brown	98-99
18	G41332	IL84-3010/T812	S.Brown	98-99
19	G41333	IL84-3010/T812	S.Brown	98-99
20	T104	T814*2/T408	J.Wilson	98-99
21	T105	T814*2/T408	J.Wilson	98-99
22	T106	T814*2/T408	J.Wilson	98-99
23	T109	T85/T814	J.Wilson	98-99
24	HT98-10291	Tyler*2/C65-20/Atr	K.Miskin	98-99
25	HT98-10033	Feland/Becker//Chay/Stella	K.Miskin	98-99
26	BL940582	Coker 86-27/Coker 9733//Pioneer 2555	J.Hancock	98-99
27	M95*3349	S76/N80738//Pioneer 2555	C.Beazer	98-99
28	M95*3330	Roland/R269-74//HE270-15/3/Howell	C.Beazer	98-99
29	M95*2883	Magnum/P101//OH394	C.Beazer	98-99
30	OK91P648-41	2555 sib/Vona//2180	B.Carver	98-99
31	IL94-2894	IL85-3132-1 (McN1003/Caldwell)/PSRW 71	F.Kolb	98-99
32	IL94-6727	IL87-3721 (Cardinal/Howell)/2*IL85-3132-1 (McN1003/Caldwell)	F.Kolb	98-99
33	GA88622E51	Gore//831466/GA100	Johnson/Barnett	98-99
34	GA881404E56	C983/4/Aepoglom//C762/FL302/3/C762	Johnson/Barnett	98-99
35	P86364RA1-4-2-7	INW9241//Clark/IL79-1458	H.Ohm	98-99
36	P92227C5-1-1	P86982C2/P844030H1//P831800A1/Grant	H.Ohm	98-99
37	P88204RB1-2-1-6	P81405/INW8841//P8279	H.Ohm	98-99
38	TW94315	Casey/Century	L.Shugar	98-99

LOCATION NOTES

Bay, Arkansas

cooperators: June A. Hancock
Novartis Seeds, Inc.
planted: 10/18/98
harvested: 6/9/99

Fayetteville, Keiser, Kibler, Rohwer, Arkansas

cooperators: Eugene A. Milus
University of Arkansas

Keiser, Arkansas

cooperators: Robert K. Bacon, John T. Kelly
University of Arkansas
planted: 10/2/98
harvested: 6/15/99
fertilizer: 150-35-0

Georgetown, Delaware

cooperators: Bob Uniatowski
University of Delaware
planted: 10/22/98
harvested: 6/24/99
fertilizer: 100-0-0

Quincy, Florida

cooperators: Ronald D. Barnett, L. Schell
University of Florida
planted: 11/25/98
fertilizer: 75-50-75

Griffin, Georgia

cooperators: Jerry W. Johnson, Barry M. Cunfer, Dan Bland
University of Georgia
planted: 11/3/98
harvested: 5/31/99
fertilizer: 100-40-60

Aberdeen, Idaho

cooperators: Charles Erickson, Scott McNeil, Harold Bockelman
USDA-ARS National Small Grains Germplasm Research Facility
comments: Nursery was abandoned due to winterkill caused mainly by standing water.

Brownstown, Illinois

cooperators: Frederic L. Kolb, N.J. Smith, L.K. Boze
University of Illinois
planted: 10/12/98
harvested: 7/1/99
fertilizer: spring topdress 50-0-0
comments: Mild winter, glume blotch moderately severe.

Nashville, Illinois

cooperators: Koy E. Miskin
Hybritech Seeds International, Inc.
harvested: 6/21/99

Urbana, Illinois

cooperators: Frederic L. Kolb, N.J. Smith, L.K. Boze
University of Illinois
planted: 9/28/98
harvested: 7/6/99
fertilizer: fall 40-0-0; spring 50-0-0
comments: Mild winter, glume blotch moderately severe.

Ft. Branch, Indiana

cooperators: Bill Laskar, Kyle Lively, Gregory C. Marshall
Pioneer Hi-Bred International, Inc.
planted: 10/10/98
harvested: 6/22/99
fertilizer: fall 27-69-90; spring 80-0-0
comments: Excellent planting conditions followed by mild winter. Above average spring growth. Wet spring with several storms caused significant early season lodging. Heading through grainfill relatively dry and hot, reducing late season leaf and head diseases.

Greensburg, Indiana

cooperators: Samuel J. Brown
Genesis Seed Research
planted: 10/1/98
harvested: 6/28/99
fertilizer: fall 24-0-0; spring 80-0-0
comments: Mild winter, high yield, limited lodging, limited disease pressure.

Lafayette, Indiana

cooperators: Koy E. Miskin
Hybritech Seeds International, Inc.
comments: Rhizoctonia and heading data only.

West Lafayette, Indiana

cooperators: Herbert W. Ohlm
Purdue University
planted: 10/1/98
harvested: 6/30/99
fertilizer: fall 30-75-75; Feb. 80-0-0
comments: Excellent growth in fall. Mild winter. Early spring growth slightly excessive. Excellent growing conditions until mid-June. Above normal temperatures after mid-June limited grain fill, particularly for late maturing lines. Fusarium generally negligible.

West Lafayette, Indiana

cooperators: Roger Ratcliffe, Sue Cambron
USDA-ARS Crop Production & Pest Control Research Unit
comments: Provided Hessian fly data.

Woodburn, Indiana

cooperators: Curtis Beazer, Brian Rice
AgriPro Seeds, Inc.
planted: 10/2/98
harvested: 7/9/99
fertilizer: spring 35.7-0-0
comments: Mild winter, little winterkill, little disease, very good yields.

Wichita, Kansas

cooperators: James A. Wilson
Trio Research, Inc.
planted: 10/5/98
harvested: 7/8/99
fertilizer: 50-0-0
comments: Excessive moisture, fall and spring. Heavy infections of soil borne mosaic. Infections of WSSMV and BYDV likely present in some plots.

Winfield, Kansas

cooperators: Sid W. Perry
Cargill-Goertzen Seed Research
comments: Nursery was lost due to poor stands from heavy rains in the fall.

Fulton Co., Kentucky

cooperators: David A. Van Sanford
University of Kentucky
planted: 10/20/98
harvested: 6/15/99
fertilizer: P and K according to soil tests; 60-0-0 @ GS4; 50-0-0 @ GS6

Lexington, Kentucky

cooperators: David A. Van Sanford
University of Kentucky
planted: 10/21/98
harvested: 6/30/99
fertilizer: P and K according to soil tests; 60-0-0 @ GS4; 50-0-0 @ GS6

Clarksville, Maryland

cooperators: Jose Costa, Emma Shirley
University of Maryland
planted: 10/7/98
harvested: 6/30/99
fertilizer: spring 60-0-0
comments: although a single strand electric fence was installed, deer damage (bedding down) was extensive. All lodging was due to deer traffic and bedding down in plots. Lodging was not specific to any one entry. Very mild winter; no winterkill observed. A dry and hot spring resulting in an early harvest.

Blissfield, Michigan

cooperators: Rick W. Ward
Michigan State University
planted: 10/1/98
harvested: 7/6/99

Clarksville, Michigan

cooperators: Rick W. Ward
Michigan State University
planted: 10/11/98

East Lansing, Michigan

cooperators: Rick W. Ward
Michigan State University
planted: 10/5/98

Saginaw, Michigan

cooperators: Rick W. Ward
Michigan State University
planted: 9/29/98
harvested: 7/7/99

St. Paul, Minnesota

cooperators: Donald V. McVey, David L. Long
USDA-ARS Cereal Disease Laboratory
comments: Provided seedling leaf rust (Dave Long) and stem rust (Don McVey) data.

Columbia, Missouri

cooperators: Anne. L. McKendry, David N. Tague
University of Missouri
planted: 10/13/98
harvested: 7/2/99
fertilizer: N: 30# fall, 58# spring; P₂O₅ 55#; K₂O 32#
comments: Extremely wet fall delayed planting somewhat. Mild winter resulted in good winter survival. Wet spring resulted in high levels of Septoria tritici in the canopy and low levels of scab. Leaf rust came in at heading. Rainfall delayed harvest.

Lincoln & Mead, Nebraska

cooperators: P. Stephen Baenziger
University of Nebraska
comments: Data collected on one replication at each location. Normal growing conditions with a mild winter and no winterkilling.

Lincoln, Nebraska

cooperators: Robert A. Graybosch
USDA-ARS Wheat, Sorghum, and Forage Research Unit
comments: Two samples did not agree with our 1998 determinations. We listed IL90-15911 as 1BL.1RS in 1998, but the 1999 sample was clearly non-1RS. In examining our notebooks, this line appeared mixed for 1BL.1RS, so perhaps we just contaminated the 1998 sample somehow. OH599 was scored as non-1RS in 1998, but appears to be mixed 1AL.1RS in 1999. Mixed samples sometimes escape our notice, so perhaps we just missed this one in 1998.

Plymouth, North Carolina

cooperators: Paul Murphy
North Carolina State University
planted: 10/26/98
harvested: 6/9/99
fertilizer: 120-0-0
comments: Mild winter, pretty heavy BYDV. Very heavy leaf rust. Average to good test overall.

Raleigh, North Carolina

cooperators: Steven Leath
USDA-ARS Plant Science Research Unit

comments: Powdery mildew evaluations were completed on detached primary leaves from ten day old plants. Leaves were cut into 3 cm sections and suspended on 0.5 % water agar amended with 50 ppm benzimidazole. Leaf sections were uniformly inoculated with conidia of *Blumeria graminis* f. sp. *tritici* (= *Erysiphe graminis* f. sp. *tritici*). The leaf sections were evaluated eight and ten days after inoculation on a ten point scale. The data from two replications and two rating dates were combined and condensed into one of three categories: Resistant (R), Intermediate (I), or Susceptible (S). A total of thirty-eight isolates were used to represent all relevant virulence genes known and a range in aggressiveness. A number of common checks also were included.

Ithaca, New York

cooperators: Mark E. Sorrells
Cornell University

planted: 9/23/98

harvested: 7/15/99

fertilizer: 30-60-60 plus 100# am. nitrate

West Elkton, Ohio

cooperators: Hal N. Lafever
Sunbeam Extract Co.

comments: Only one rep planted with no meaningful data gathered. No diseases or insects.

Wooster, Ohio

cooperators: Kim Campbell, Larry Herald, Barb Franchino
Ohio State University, OARDC

planted: 9/28/98

harvested: 7/9&12/99

fertilizer: 12-48-48; 100-0-0 in March

comments: Mild winter, dry spring. Light disease pressure. Early harvest. Second lodging rating was harder on lines.

Wooster, Ohio

cooperators: Patrick L. Finney
USDA-ARS Soft Wheat Quality Lab

comments: Quality data. Atlantic region includes samples from: Queenstown, MD; Plymouth, NC; Univ. Park, PA; Blacksburg, VA. Northern Corn Belt region includes samples from: Urbana, IL; W. Lafayette, IN; Woodburn, IN; E. Lansing, MI. Southern Corn Belt region includes samples from: Brownstown, IL; Columbia, MO.

Stillwater, Oklahoma

cooperators: Brett F. Carver, Melisa Rice
Oklahoma State University

comments: Standard used to set scale for acid soil tolerance was 2163, with an assigned value of 2 on a scale of 1 (tolerant) to 5 (susceptible).

Ailsa Craig, Ontario

cooperators: Les Shugar
W.G. Thompson & Sons, Ltd.

comments: Due to seed importation problems, seeding was not possible. See Ridgetown data – it was possible to plant late at that location.

Ridgetown, Ontario

cooperators: Arend E. Smid (and Les Shugar)
Ridgetown College, University of Guelph
planted: 11/18/99
harvested: 7/21/99
comments: Planting date was very late due to seed importation problems.j

University Park, Pennsylvania

cooperators: Marvin L. Risius
Pennsylvania State University
planted: 9/30/98
harvested: 7/10/99
fertilizer: 80-26-50
comments: Winter weather was mild with limited snow cover. Rainfall was 23% above average in April, 60% below average in May, and 30% below average in June.

Watertown, South Dakota

cooperators: Jackie Rudd, Richard Little
South Dakota State University
comments: Mild winter, so most entries survived well. The small variation among reps is likely due to dry field conditions at planting time. Thus, no differences in survival among entries in 1999.

Knoxville, Tennessee

cooperators: Dennis West
University of Tennessee
planted: 11/3/98
harvested: 5/31/99
fertilizer: 100-40-60
comments: Very mild winter. Dry during grain fill with light disease pressure. No lodging.

Overton, Texas

cooperators: Lloyd R. Nelson
Texas A&M University
planted: 10/22/98
harvested: 5/19/99
fertilizer: preplant 50-100-100

Blacksburg, Virginia

cooperators: Carl A. Griffey
Virginia Tech
planted: 10/15/98
harvested: 7/4/99
fertilizer: pre-plant 25-100-100, plus 1.5 tons of dolomitic limestone; 0.5 oz Harmony Extra on 2/11; 60-0-0 plus 0.5 oz Harmony Extra on 3/31

Warsaw, Virginia

cooperators: Carl A. Griffey
Virginia Tech
planted: 10/5/98
harvested: 6/26/99
fertilizer: preplant 30-30-100; 20-0-0 plus 0.4 oz Harmony Extra on 12/5; 30-0-0 on 2/1; 60-0-0 on 3/30; 2.0 oz Karate on 5/6

Arlington, Wisconsin

cooperators: Ed Oplinger, Mark Martinka
University of Wisconsin
planted: 9/23/98
harvested: 7/25/99
fertilizer: spring 75-0-0
comments: Limited lodging and no diseases observed.

YIELD (bu/acre)

	Bay AR	Keiser AR	Georgetown DE	Quincy FL	Griffin GA
	#	#	#	#	#
1 Cardinal	56.6	48.4	67.5	5.9	41.4
2 Caldwell	51.8	43.9	79.9	24.3	50.0
3 Pioneer 2548	64.6	56.8	84.9	9.7	57.8
4 Foster	70.2	56.9	85.2	9.3	49.2
5 OH 552	48.6	45.7	72.6	19.3	51.4
6 AR 494B-2-2	76.1	60.2	85.9	36.8	73.4
7 AR 584A-3-1	89.7	63.3	90.9	20.5	65.0
8 KY86C-127-3	65.4	53.8	75.0	20.3	54.8
9 BL930390	74.7	63.8	92.4	15.9	56.0
10 BL931167	56.0	63.7	71.6	14.8	51.2
11 IL91-15911	59.5	63.0	75.0	10.4	64.5
12 OH599	61.2	58.1	70.7	10.8	52.6
13 MO94-317	88.5	59.9	83.0	20.3	64.3
14 VA97W-375	73.1	63.9	94.3	13.1	66.7
15 VA96W-247	66.7	58.4	94.8	8.0	67.8
16 OH 536	52.0	46.7	70.9	31.6	51.7
17 G60232	60.4	53.2	72.0	26.9	61.2
18 G41332	61.3	69.8	81.9	22.8	72.2
19 G41333	70.8	69.7	81.2	20.4	63.9
20 T104	63.8	66.9	85.7	61.9	72.3
21 T105	56.6	61.9	82.3	56.2	71.5
22 T106	65.6	70.3	81.2	53.8	71.3
23 T109	65.0	69.0	78.8	41.9	68.3
24 HT98-10291	68.4	66.1	73.1	9.3	60.0
25 HT98-10033	59.6	49.4	62.9	5.1	44.3
26 BL940582	87.0	61.5	93.1	32.7	73.8
27 M95*3349	67.5	51.8	80.2	14.8	43.9
28 M95*3330	55.3	68.7	80.0	19.5	57.6
29 M95*2883	82.6	61.4	80.3	23.2	60.5
30 OK91P648-41	71.1	79.0	79.0	26.5	61.8
31 IL94-2894	56.2	61.8	68.3	18.2	61.2
32 IL94-6727	59.4	72.3	75.7	17.5	56.3
33 GA88622E51	70.4	68.1	87.7	29.9	64.9
34 GA881404E56	48.8	50.7	83.5	27.6	55.2
35 P86364RA1-4-2-7	63.6	55.7	74.2	27.6	53.0
36 P92227C5-1-1	55.6	46.8	67.9	15.3	45.5
37 P88204RB1-2-1-6	64.3	52.8	74.1	43.2	53.4
38 TW94315	46.6	46.0	78.5	14.3	36.4
LOCATION MEANS	64.6	59.5	79.4	23.1	58.6
L.S.D. (.05)	9.5	8.4	10.3	10.3	
CV %	10.5	8.7	7.9	22.1	
REPS	4	3	3	2	1
Harvest Plot Area (sq.ft.)	53.8	40.8	112.5	55	50

YIELD (bu/acre)

	Brownstown		Nashville		Urbana		Ft.Branch		Greensburg		W.Lafayette
	IL		IL		IL		IN		IN		IN
	#	@	#	@	#	@	#	@	#	@	#
1 Cardinal	51.2	33	46.3	35	56.4	35	83.3	12	101.6	15	65.5
2 Caldwell	53.0	27	49.9	32	53.6	36	68.6	32	104.5	12	81.1
3 Pioneer 2548	62.4	3	64.0	9	70.9	21	83.7	11	100.2	18	79.2
4 Foster	55.0	21	58.2	19	72.6	17	81.1	14	92.0	30	80.5
5 OH 552	57.1	16	47.9	33	73.4	15	77.9	19	93.7	28	88.2
6 AR 494B-2-2	60.3	6	63.7	12	77.0	9	75.0	27	106.3	9	82.7
7 AR 584A-3-1	62.0	4	53.3	24	72.6	18	77.2	20	107.6	8	88.7
8 KY86C-127-3	52.9	29	56.6	21	77.6	7	75.1	25	92.3	29	93.5
9 BL930390	60.3	7	61.0	13	63.9	32	66.1	34	98.1	21	81.8
10 BL931167	50.0	36	52.1	28	67.7	25	75.5	24	112.8	2	95.8
11 IL91-15911	62.8	2	60.5	15	75.1	12	61.7	37	112.8	3	91.6
12 OH599	56.0	19	59.4	17	67.3	26	69.8	31	107.9	7	83.4
13 MO94-317	53.1	26	65.7	5	67.0	28	80.8	16	102.7	14	89.1
14 VA97W-375	52.3	32	64.0	10	79.6	5	86.7	4	109.3	5	89.1
15 VA96W-247	59.0	9	72.4	2	65.2	31	90.0	1	85.7	35	80.5
16 OH 536	45.1	38	38.2	38	66.2	30	88.8	3	97.2	25	73.8
17 G60232	56.5	18	54.8	23	70.0	22	77.0	21	97.7	23	86.2
18 G41332	58.9	10	64.0	11	73.8	14	78.2	18	112.4	4	98.6
19 G41333	58.4	14	64.9	7	77.5	8	75.1	26	105.2	11	90.7
20 T104	58.7	12	64.8	8	71.5	20	84.4	9	85.5	36	98.7
21 T105	61.2	5	59.8	16	71.6	19	81.1	15	89.8	32	90.6
22 T106	60.2	8	58.5	18	69.9	23	85.3	7	105.6	10	95.9
23 T109	58.6	13	64.9	6	67.8	24	75.8	23	99.5	19	88.7
24 HT98-10291	53.9	23	60.8	14	83.1	3	76.1	22	92.0	31	97.0
25 HT98-10033	57.9	15	53.2	25	48.1	38	65.3	36	93.8	27	62.7
26 BL940582	53.7	24	74.1	1	79.4	6	65.7	35	88.6	33	80.3
27 M95*3349	53.7	25	56.3	22	72.8	16	74.7	28	78.8	38	83.4
28 M95*3330	52.9	28	53.1	26	60.9	34	68.2	33	99.0	20	84.4
29 M95*2883	67.8	1	71.2	3	76.1	11	80.2	17	113.4	1	93.1
30 OK91P648-41	56.8	17	68.4	4	83.3	2	60.4	38	108.8	6	84.8
31 IL94-2894	50.5	35	52.8	27	67.3	27	72.0	29	98.0	22	96.8
32 IL94-6727	54.4	22	57.2	20	73.9	13	83.8	10	97.3	24	98.5
33 GA88622E51	50.8	34	50.0	31	66.6	29	89.2	2	100.8	17	90.7
34 GA881404E56	52.8	30	44.1	36	50.5	37	86.7	5	81.9	37	79.9
35 P86364RA1-4-2-7	55.7	20	46.4	34	83.5	1	86.7	6	101.2	16	89.8
36 P92227C5-1-1	52.8	31	51.3	29	76.4	10	82.3	13	88.4	34	78.3
37 P88204RB1-2-1-6	58.8	11	50.9	30	81.0	4	85.2	8	103.1	13	87.6
38 TW94315	48.4	37	42.8	37	62.6	33	71.8	30	95.8	26	65.8
LOCATION MEANS	55.9		57.3		70.4		77.5		99.0		86.0
L.S.D. (.05)	7.1		6.3		8.6		10		8.99		12.1
CV %	7.8		7.8		7.5		7.8		8.11		12
REPS	3		3		3		3		3		4
Harvest Plot Area (sq.ft.)	34		45		34		33		32		32

YIELD (bu/acre)

	Yette	Woodburn	Wichita	Fulton Co.	Lexington	Clarksville
	IN	KS	KY	KY	MD	
	#@	#@	#@	#	#	
1 Cardinal	37	88.7 15	23.3 37	53.6 35	40.5 27	52.6 38
2 Caldwell	28	83.2 31	27.0 32	53.9 34	29.0 38	82.2 8
3 Pioneer 2548	33	90.6 12	30.1 30	63.8 12	41.9 20	83.9 5
4 Foster	29	91.8 6	50.2 4	61.3 19	39.0 31	65.9 33
5 OH 552	19	81.0 34	34.4 25	49.9 38	37.0 35	76.1 23
6 AR 494B-2-2	26	95.5 3	46.4 8	71.0 5	46.2 13	78.9 16
7 AR 584A-3-1	17	91.5 8	51.2 3	61.5 18	51.4 4	80.5 10
8 KY86C-127-3	8	87.1 22	37.8 20	61.9 17	41.1 23	69.6 29
9 BL930390	27	87.9 18	44.4 12	66.5 8	47.1 11	88.5 3
10 BL931167	7	80.1 37	22.2 38	54.7 33	50.4 6	64.4 34
11 IL91-15911	10	89.0 14	35.2 23	61.2 20	40.7 24	59.4 36
12 OH599	24	88.1 17	34.3 26	57.4 28	51.4 5	82.7 6
13 MO94-317	16	98.3 2	60.7 1	66.2 9	49.2 8	81.9 9
14 VA97W-375	15	93.7 4	31.7 28	74.7 3	52.0 3	93.3 2
15 VA96W-247	30	91.5 7	24.9 35	79.2 1	57.1 1	95.9 1
16 OH 536	35	83.1 32	30.7 29	54.7 32	36.9 36	80.3 12
17 G60232	21	91.2 9	49.8 5	58.7 26	46.2 14	68.8 30
18 G41332	2	91.8 5	38.4 18	70.0 6	45.1 15	77.5 18
19 G41333	11	86.9 25	46.9 7	60.4 22	44.7 16	79.1 15
20 T104	1	87.8 19	45.3 9	62.9 14	37.9 34	73.6 25
21 T105	13	87.0 24	38.6 17	61.9 16	38.4 32	82.7 7
22 T106	6	88.7 16	38.9 16	65.1 11	39.2 30	76.1 22
23 T109	18	85.0 27	34.7 24	63.6 13	42.5 19	79.2 14
24 HT98-10291	4	91.0 11	40.0 14	58.8 24	47.2 10	71.4 27
25 HT98-10033	38	84.5 28	26.0 33	53.4 37	36.0 37	67.3 32
26 BL940582	31	90.3 13	37.7 21	76.6 2	52.1 2	74.4 24
27 M95*3349	25	84.3 29	41.3 13	54.7 31	49.5 7	77.6 17
28 M95*3330	23	91.0 10	44.9 10	61.1 21	40.5 26	67.6 31
29 M95*2883	9	87.1 23	54.5 2	65.7 10	42.8 18	70.5 28
30 OK91P648-41	22	100.8 1	49.3 6	71.9 4	43.4 17	76.6 20
31 IL94-2894	5	87.3 21	38.1 19	59.8 23	38.4 33	61.2 35
32 IL94-6727	3	87.5 20	44.6 11	68.5 7	40.3 28	57.5 37
33 GA88622E51	12	85.9 26	24.5 36	58.8 25	46.9 12	86.2 4
34 GA881404E56	32	83.9 30	25.2 34	56.7 29	41.9 21	80.4 11
35 P86364RA1-4-2-7	14	80.4 36	34.2 27	62.0 15	49.0 9	71.6 26
36 P92227C5-1-1	34	80.7 35	28.6 31	57.7 27	40.6 25	77.2 19
37 P88204RB1-2-1-6	20	76.3 38	39.5 15	53.5 36	41.5 22	80.1 13
38 TW94315	36	81.6 33	36.8 22	55.1 30	39.6 29	76.6 21
LOCATION MEANS		87.7	38.0	61.8	43.5	75.5
L.S.D. (.05)		4.6	8.9	8.5	6.3	
CV %		5.6	14.5	8.2	10.6	15.4
REPS		3	3	2	3	3
Harvest Plot Area (sq.ft.)		58	40.5	40	40	56

YIELD (bu/acre)

	Bliss./Sag.		Columbia		Plymouth		Lincoln		Ithaca		Woos	
	MI		MO		NC		NE		NY		OH	
	#	@	#	@	#	@	#	@	#	@	#	@
1 Cardinal	71.6	32	49.5	25	46.6	22	45.3	27	98.8	7	89.9	
2 Caldwell	64.2	37	56.0	6	44.7	26	32.9	37	90.3	27	76.5	
3 Pioneer 2548	75.6	13	55.4	7	52.5	13	63.4	2	91.4	24	81.7	
4 Foster	80.2	4	52.7	13	41.7	35	56.2	10	84.4	34	85.1	
5 OH 552	78.4	6	51.6	17	42.3	32	51.4	18	90.6	26	85.4	
6 AR 494B-2-2	75.4	15	58.2	2	57.0	6	52.6	16	91.6	23	90.4	
7 AR 584A-3-1	72.7	26	54.7	9	63.9	2	49.7	22	87.5	29	90.9	
8 KY86C-127-3	75.8	12	49.2	26	50.4	18	55.2	11	95.1	15	76.3	
9 BL930390	72.5	28	51.6	18	58.9	4	65.8	1	103.3	2	91.1	
10 BL931167	75.4	16	52.6	15	45.4	24	44.5	30	79.8	37	84.7	
11 IL91-15911	77.7	8	60.4	1	55.2	10	52.8	15	101.3	4	81.9	
12 OH599	72.6	27	47.7	30	43.7	28	54.5	12	100.3	5	86.9	
13 MO94-317	74.0	21	50.7	21	51.0	16	34.7	36	93.1	20	80.3	
14 VA97W-375	88.6	1	56.0	5	57.4	5	62.1	3	92.6	21	95.0	
15 VA96W-247	85.4	2	52.9	12	53.0	12	61.2	5	102.3	3	93.8	
16 OH 536	77.9	7	41.6	38	43.9	27	44.6	28	97.9	8	90.0	
17 G60232	75.2	17	51.1	20	43.6	29	51.4	17	93.4	19	88.0	
18 G41332	74.5	19	50.6	22	57.0	7	58.5	9	94.9	16	78.1	
19 G41333	72.5	29	48.4	28	52.0	15	41.2	33	96.0	10	77.7	
20 T104	73.8	23	49.7	23	46.8	21	44.3	31	95.7	13	78.1	
21 T105	73.6	24	47.0	32	59.6	3	50.6	20	95.5	14	83.8	
22 T106	77.5	10	54.7	8	42.1	33	60.3	6	99.4	6	86.3	
23 T109	74.0	22	52.7	14	52.0	14	60.3	7	94.1	17	73.9	
24 HT98-10291	74.1	20	51.5	19	45.5	23	47.1	26	90.6	25	86.8	
25 HT98-10033	64.0	38	45.2	36	36.8	38	28.8	38	97.0	9	80.8	
26 BL940582	76.7	11	56.8	3	68.6	1	40.7	34	70.7	38	68.9	
27 M95*3349	71.8	31	47.7	31	45.1	25	43.6	32	84.0	36	87.4	
28 M95*3330	71.3	33	56.5	4	40.4	36	53.9	14	84.2	35	83.7	
29 M95*2883	74.6	18	49.5	24	55.3	9	48.7	24	88.8	28	84.4	
30 OK91P648-41	71.1	34	52.2	16	50.6	17	59.5	8	91.7	22	77.2	
31 IL94-2894	70.4	36	42.9	37	53.5	11	54.1	13	85.8	32	78.6	
32 IL94-6727	79.4	5	53.1	10	41.8	34	62.1	4	95.7	12	89.8	
33 GA88622E51	73.0	25	53.1	11	55.4	8	44.5	29	87.5	30	80.5	
34 GA881404E56	72.4	30	45.7	34	48.3	20	50.1	21	84.5	33	86.8	
35 P86364RA1-4-2-7	77.6	9	45.5	35	48.5	19	47.9	25	95.9	11	86.8	
36 P92227C5-1-1	81.9	3	49.1	27	42.4	31	51.0	19	86.3	31	82.2	
37 P88204RB1-2-1-6	70.8	35	47.9	29	43.5	30	36.9	35	104.7	1	78.1	
38 TW94315	75.5	14	46.5	33	38.8	37	49.2	23	93.9	18	82.8	
LOCATION MEANS	74.8		51.0		49.3		50.3		92.4		83.7	
L.S.D. (.05)	11.1		5.9		11.2				9.7		9.15	
CV %	7.3		7.1		11.3				6.23		6.72	
REPS	2 (1/1)		3		2		1		3		3	
Harvest Plot Area (sq.ft.)	55		55.5		55		32				45	

YIELD (bu/acre)

Order	Location	Ridgetown		Univ.Park		Knoxville		Overton		Blacksburg		
		ON		PA		TN		TX		VA		
		#	@	#	@	#	@	#	@	#	@	
1	Cardinal	7	69	10	103	4	69	32	14.0	35	69	27
2	Caldwell	35	65	25	95	16	73	26	24.0	30	75	13
3	Pioneer 2548	25	72	4	104	3	83	9	26.0	27	72	21
4	Foster	17	69	11	101	8	82	11	15.4	33	74	15
5	OH 552	16	62	33	89	24	62	37	13.4	37	61	37
6	AR 494B-2-2	5	63	26	94	17	92	5	30.7	19	84	3
7	AR 584A-3-1	4	61	36	94	18	84	8	45.0	5	71	22
8	KY86C-127-3	36	62	35	97	13	80	17	25.2	28	64	33
9	BL930390	3	73	3	110	1	100	1	28.6	20	85	2
10	BL931167	18	68	13	86	30	69	33	23.9	31	70	23
11	IL91-15911	24	71	8	102	6	81	13	30.8	18	83	6
12	OH599	11	67	15	97	12	85	7	22.1	32	70	24
13	MO94-317	28	72	6	85	32	96	3	30.9	16	72	20
14	VA97W-375	1	53	38	103	5	89	6	45.9	3	82	7
15	VA96W-247	2	67	14	109	2	98	2	41.7	9	89	1
16	OH 536	6	75	1	98	11	72	27	14.3	34	64	34
17	G60232	9	65	21	92	19	71	28	32.6	15	74	14
18	G41332	32	62	34	86	31	79	20	26.5	25	73	19
19	G41333	33	67	17	85	33	67	35	27.8	22	73	18
20	T104	30	65	23	87	29	79	21	28.0	21	73	17
21	T105	20	69	12	90	21	71	29	34.6	13	73	16
22	T106	15	63	29	92	20	79	22	26.4	26	84	4
23	T109	37	66	20	84	35	81	14	24.4	29	69	26
24	HT98-10291	12	67	16	74	38	81	15	27.3	23	76	10
25	HT98-10033	26	72	5	89	22	71	30	13.5	36	69	28
26	BL940582	38	60	37	89	25	83	10	49.9	1	78	9
27	M95*3349	10	63	28	83	36	80	18	34.4	14	59	38
28	M95*3330	21	65	22	87	28	64	36	41.5	10	63	35
29	M95*2883	19	66	18	89	23	82	12	36.2	12	79	8
30	OK91P648-41	34	65	24	100	9	80	19	42.7	7	83	5
31	IL94-2894	29	63	31	78	37	59	38	45.0	6	66	31
32	IL94-6727	8	63	27	85	34	74	25	46.5	2	65	32
33	GA88622E51	27	66	19	88	26	93	4	45.5	4	75	12
34	GA881404E56	14	74	2	95	14	81	16	42.1	8	67	29
35	P86364RA1-4-2-7	13	71	7	95	15	79	23	30.9	17	69	25
36	P92227C5-1-1	23	63	30	88	27	70	31	37.0	11	61	36
37	P88204RB1-2-1-6	31	63	32	99	10	77	24	26.8	24	76	11
38	TW94315	22	70	9	101	7	69	34	8.9	38	67	30
LOCATION MEANS			66.2		92.7		78.6		30.5		72.6	
L.S.D. (.05)			7.9		8.7		11		30.5		7.51	
CV %			8.53		5.7		9.4				7.61	
REPS			4		3		4		1		3	
Harvest Plot Area (sq.ft.)					23.3		36				45	

YIELD (bu/acre)

	Warsaw		Arlington	
	VA		WI	
	#	reps	#@	reps
1 Cardinal	55	33	72.6	23
2 Caldwell	63	19	73.3	21
3 Pioneer 2548	68	15	81.6	3
4 Foster	68	14	75.8	12
5 OH 552	51	36	70.1	27
6 AR 494B-2-2	73	7	64.6	36
7 AR 584A-3-1	76	4	73.5	19
8 KY86C-127-3	60	28	72.6	22
9 BL930390	78	3	69.1	30
10 BL931167	60	26	61.1	37
11 IL91-15911	55	32	78.2	9
12 OH599	60	27	73.7	17
13 MO94-317	69	11	75.7	13
14 VA97W-375	80	2	73.5	18
15 VA96W-247	83	1	67.0	34
16 OH 536	54	34	75.4	14
17 G60232	60	25	75.2	15
18 G41332	74	6	69.6	29
19 G41333	72	10	78.3	8
20 T104	66	17	85.4	2
21 T105	61	21	76.5	11
22 T106	66	16	79.1	7
23 T109	73	9	79.8	6
24 HT98-10291	60	24	72.4	24
25 HT98-10033	47	38	67.3	33
26 BL940582	74	5	74.4	16
27 M95*3349	61	23	81.5	4
28 M95*3330	57	30	71.7	25
29 M95*2883	68	12	70.8	26
30 OK91P648-41	64	18	73.3	20
31 IL94-2894	52	35	85.6	1
32 IL94-6727	62	20	81.2	5
33 GA88622E51	73	8	68.4	32
34 GA881404E56	50	37	77.8	10
35 P86364RA1-4-2-7	58	29	69.8	28
36 P92227C5-1-1	57	31	54.7	38
37 P88204RB1-2-1-6	68	13	68.5	31
38 TW94315	61	22	65.4	35
LOCATION MEANS	64.1		73.3	
L.S.D. (.05)	9.64		6.7	
CV %	11.05		5.4	
REPS	3		2	
Harvest Plot Area (sq.ft.)	45		105	

YIELD (bu/acre)

	ENTRY MEANS ALL LOCATIONS		ENTRY MEANS IN-REGION		ENTRY MEANS CV <10%	
	Mean	#	Mean	#	Mean	#
1 Cardinal	59.9	36	66.9	33	71.6	27
2 Caldwell	61.0	34	67.1	32	69.9	33
3 Pioneer 2548	68.0	15	74.3	10	77.4	8
4 Foster	65.6	22	71.8	19	75.5	13
5 OH 552	60.8	35	66.4	35	69.4	35
6 AR 494B-2-2	71.1	3	75.9	4	78.2	4
7 AR 584A-3-1	70.7	5	75.8	5	76.1	11
8 KY86C-127-3	64.7	26	70.2	25	72.5	26
9 BL930390	70.9	4	76.9	3	78.6	3
10 BL931167	62.2	31	68.6	28	70.8	31
11 IL91-15911	67.3	18	73.3	14	77.6	7
12 OH599	65.2	25	71.6	21	74.2	22
13 MO94-317	69.5	9	75.2	6	76.4	10
14 VA97W-375	73.0	1	79.0	2	80.6	2
15 VA96W-247	72.4	2	79.0	1	81.1	1
16 OH 536	61.9	32	67.6	31	71.3	28
17 G60232	65.6	23	70.1	26	73.1	25
18 G41332	69.0	11	74.2	11	76.0	12
19 G41333	67.4	17	73.1	15	74.7	16
20 T104	68.7	12	72.6	16	75.3	15
21 T105	68.1	13	71.9	18	74.2	20
22 T106	70.2	6	74.4	9	77.8	6
23 T109	67.8	16	72.4	17	74.3	19
24 HT98-10291	65.6	24	71.6	20	73.8	23
25 HT98-10033	56.9	38	63.9	38	68.0	38
26 BL940582	69.4	10	74.0	12	74.5	18
27 M95*3349	63.0	28	68.7	27	70.3	32
28 M95*3330	63.6	27	67.8	29	71.2	29
29 M95*2883	69.7	8	75.0	7	77.1	9
30 OK91P648-41	70.1	7	74.7	8	77.9	5
31 IL94-2894	62.8	30	66.9	34	69.3	36
32 IL94-6727	67.0	19	71.5	22	75.4	14
33 GA88622E51	68.1	14	73.5	13	74.6	17
34 GA881404E56	62.9	29	67.7	30	70.8	30
35 P86364RA1-4-2-7	65.8	20	71.5	23	74.2	21
36 P92227C5-1-1	61.0	33	66.3	36	68.9	37
37 P88204RB1-2-1-6	65.7	21	71.1	24	73.4	24
38 TW94315	59.6	37	65.9	37	69.6	34

LOCATION MEANS

L.S.D. (.05)

CV %

REPS

Harvest Plot Area (sq.ft.)

TEST WEIGHT (lbs/bu)

	Bay AR	Keiser AR	Georgetown DE	Quincy FL	Griffin GA
1 Cardinal	54.7	54.9	60.4		56.8
2 Caldwell	55.8	54.6	58.0		55.9
3 Pioneer 2548	53.9	55.0	60.1		57.0
4 Foster	55.5	55.8	60.5		58.7
5 OH 552	54.8	55.7	60.0		58.4
6 AR 494B-2-2	56.5	57.8	59.5	52.0	56.9
7 AR 584A-3-1	56.8	57.6	59.1	55.5	59.5
8 KY86C-127-3	57.9	56.5	62.3		59.9
9 BL930390	55.9	55.7	59.6		57.1
10 BL931167	56.2	56.4	59.5		58.9
11 IL91-15911	55.5	55.8	59.3		57.9
12 OH599	57.3	58.9	60.6		59.8
13 MO94-317	55.9	56.9	59.1		57.3
14 VA97W-375	55.7	57.7	59.4		59.6
15 VA96W-247	55.1	56.4	59.9		60.2
16 OH 536	52.3	50.6	55.3	50.6	56.4
17 G60232	55.6	55.0	58.1	49.7	58.2
18 G41332	54.7	57.9	60.2	52.2	58.6
19 G41333	56.4	58.5	59.1		59.4
20 T104	56.5	57.6	60.7	54.8	59.0
21 T105	54.9	56.7	60.3	53.4	58.6
22 T106	54.0	56.9	56.9	53.6	59.4
23 T109	55.1	58.1	60.4	53.9	58.9
24 HT98-10291	56.2	56.4	59.0		57.5
25 HT98-10033	56.2	56.4	55.8		54.5
26 BL940582	56.0	56.9	61.5	52.7	58.2
27 M95*3349	56.3	56.5	59.9		59.9
28 M95*3330	58.3	59.3	60.7	54.8	61.1
29 M95*2883	56.5	56.5	59.2	52.0	58.5
30 OK91P648-41	54.6	57.4	57.4	55.0	58.1
31 IL94-2894	56.6	56.7	57.9	56.2	60.0
32 IL94-6727	57.0	58.2	55.7		60.7
33 GA88622E51	53.0	54.6	59.1	49.2	54.9
34 GA881404E56	53.7	55.9	60.3	51.1	56.5
35 P86364RA1-4-2-7	54.4	55.0	59.3	50.6	57.8
36 P92227C5-1-1	55.9	56.2	60.9		57.4
37 P88204RB1-2-1-6	54.6	52.9	55.9	52.5	56.8
38 TW94315	53.7	51.3	57.0		53.7
LOCATION MEANS	55.5	56.2	59.2	52.8	58.1

TEST WEIGHT (lbs/bu)

	Brownstown IL	Nashville IL	Urbana IL	Greensburg IN	W.Lafayette IN
1 Cardinal	53.8	57.0	53.1	56.3	57.0
2 Caldwell	53.2	59.3	53.4	57.5	57.5
3 Pioneer 2548	53.8	59.3	54.6	56.5	58.3
4 Foster	54.1	59.3	55.5	57.1	57.1
5 OH 552	55.7	59.0	56.0	56.8	59.2
6 AR 494B-2-2	55.8	60.0	56.9	58.8	59.5
7 AR 584A-3-1	53.6	61.0	55.0	56.9	58.0
8 KY86C-127-3	56.0	60.3	59.1	58.9	60.7
9 BL930390	53.4	59.3	52.4	56.8	55.6
10 BL931167	54.7	60.0	54.8	58.0	58.0
11 IL91-15911	54.6	59.0	54.6	57.2	57.3
12 OH599	56.2	60.7	56.7	58.5	59.1
13 MO94-317	52.5	59.0	54.1	56.8	57.1
14 VA97W-375	53.9	59.7	55.4	57.1	57.4
15 VA96W-247	53.2	59.0	53.0	57.8	57.3
16 OH 536	52.0		47.9	55.7	55.5
17 G60232	54.9	59.3	54.6	56.5	58.3
18 G41332	53.8	58.3	55.1	57.1	57.9
19 G41333	53.3	58.7	55.6	56.8	57.0
20 T104	55.1	59.7	56.2	57.8	59.1
21 T105	54.4	58.7	54.5	56.5	57.8
22 T106	52.6	58.0	51.8	56.5	57.1
23 T109	55.5	59.0	55.3	57.2	59.5
24 HT98-10291	53.0	59.7	56.3	56.3	57.5
25 HT98-10033	54.1	59.3	49.0	57.1	53.5
26 BL940582	52.9	58.3	55.4	55.8	56.9
27 M95*3349	55.7	60.0	56.8	57.5	57.7
28 M95*3330	57.9	61.3	55.7	58.8	58.3
29 M95*2883	53.3	59.3	55.4	56.9	56.8
30 OK91P648-41	52.8	59.3	54.9	55.7	53.6
31 IL94-2894	55.9	60.0	56.3	57.2	59.3
32 IL94-6727	57.1	61.0	58.1	58.2	59.2
33 GA88622E51	51.4	57.3	51.7	54.9	55.8
34 GA881404E56	52.4	58.0	51.5	54.6	55.3
35 P86364RA1-4-2-7	54.4	57.7	56.7	55.8	56.5
36 P92227C5-1-1	55.2	59.0	57.2	55.8	57.1
37 P88204RB1-2-1-6	53.7	59.0	53.3	56.9	55.6
38 TW94315	51.1	55.0	50.5	55.1	51.0
LOCATION MEANS	54.1	59.1	54.6	56.9	57.2

TEST WEIGHT (lbs/bu)

	Woodburn IN	Fulton Co. KY	Lexington KY	Clarksville MD	Bliss./Sag. MI
1 Cardinal	59.4	56.2	53.0	58.8	59.7
2 Caldwell	61.2	58.0	55.8	59.1	58.7
3 Pioneer 2548	60.3	56.8	55.8	57.8	59.8
4 Foster	60.4	56.8	56.6	59.2	62.0
5 OH 552	60.8	57.0	55.9	59.9	61.4
6 AR 494B-2-2	60.5	59.0	56.9	59.2	60.7
7 AR 584A-3-1	59.8	58.7	57.4	58.1	59.9
8 KY86C-127-3	62.3	58.5	57.4	61.0	63.8
9 BL930390	62.2	58.2	55.5	58.8	57.2
10 BL931167	58.8	58.2	55.7	58.0	59.4
11 IL91-15911	59.9	57.1	55.1	58.9	57.9
12 OH599	62.3	58.1	59.3	60.9	62.3
13 MO94-317	60.1	59.2	55.6	57.5	59.0
14 VA97W-375	60.6	57.8	57.5	60.3	62.1
15 VA96W-247	60.0	59.5	58.0	58.9	61.7
16 OH 536	58.9	56.2	53.8	55.3	57.4
17 G60232	60.0	54.3	55.9	58.4	60.5
18 G41332	60.4	56.8	56.3	58.5	61.1
19 G41333	60.6	54.8	56.8	58.8	59.9
20 T104	60.2	56.9	57.3	59.3	61.0
21 T105	59.2	56.8	56.3	57.4	60.0
22 T106	60.1	57.4	56.1	57.4	59.8
23 T109	60.1	56.5	57.0	59.0	59.8
24 HT98-10291	58.4	55.9	56.4	58.2	59.5
25 HT98-10033	59.9	58.2	55.9	57.3	57.0
26 BL940582	59.8	58.2	56.0	58.2	60.0
27 M95*3349	61.1	58.8	57.7	60.1	60.5
28 M95*3330	61.7	60.6	56.8	60.8	62.4
29 M95*2883	60.0	56.9	57.0	57.8	59.9
30 OK91P648-41	59.1	58.0	55.9	56.1	56.2
31 IL94-2894	60.7	58.2		58.4	60.0
32 IL94-6727	60.8	59.2	57.6	59.6	61.6
33 GA88622E51	57.1	53.6	55.6	55.5	56.6
34 GA881404E56	59.2	56.8	56.3	56.5	59.3
35 P86364RA1-4-2-7	60.4	55.3	57.4	59.3	60.8
36 P92227C5-1-1	60.6	57.3	54.9	58.9	61.9
37 P88204RB1-2-1-6	59.5	54.2	55.5	57.7	61.2
38 TW94315	57.5	52.0	51.9	56.4	56.0
LOCATION MEANS	60.1	57.2	56.2	58.5	59.9

TEST WEIGHT (lbs/bu)

	Columbia MO	Plymouth NC	Lincoln NE	Ithaca NY	Wooster OH
1 Cardinal	56.3	58.2	58.0	60.5	59.4
2 Caldwell	58.8	59.9	58.9	60.9	57.5
3 Pioneer 2548	56.8	58.9	58.3	61.7	57.3
4 Foster	57.7	57.3	58.9	61.6	58.8
5 OH 552	58.5	60.0	59.4	61.4	59.5
6 AR 494B-2-2	59.0	58.8	60.9	61.4	60.4
7 AR 584A-3-1	56.0	59.7	58.9	61.1	57.5
8 KY86C-127-3	59.2	61.2	59.7	61.6	59.3
9 BL930390	57.5	58.7	58.3	61.2	56.2
10 BL931167	57.4	59.4	57.7	61.3	58.2
11 IL91-15911	58.1	60.0	58.3	60.2	56.8
12 OH599	59.8	59.9	60.9	61.3	61.0
13 MO94-317	55.4	56.6	57.7	61.4	56.6
14 VA97W-375	57.2	58.5	59.4	61.2	58.7
15 VA96W-247	57.2	58.5	59.4	61.9	57.9
16 OH 536	54.6	57.5	56.6	61.3	57.2
17 G60232	55.9	60.4	58.9	60.9	58.8
18 G41332	57.2	58.9	58.6	60.5	56.8
19 G41333	57.1	59.4	59.7	61.2	58.1
20 T104	56.4	58.5	59.1	61.0	58.0
21 T105	54.2	58.9	59.4	59.8	57.8
22 T106	56.7	57.9	59.4	60.9	57.8
23 T109	57.6	57.8	60.0	61.9	58.8
24 HT98-10291	56.4	58.7	58.9	59.0	57.4
25 HT98-10033	56.5	58.7	58.0	61.0	58.8
26 BL940582	56.4	58.4	58.9	60.0	57.3
27 M95*3349	59.2	60.4	60.0	60.2	58.0
28 M95*3330	59.4	59.6	60.0	62.9	60.5
29 M95*2883	57.9	59.9	60.0	61.2	57.8
30 OK91P648-41	55.0	58.6	57.7	61.0	55.2
31 IL94-2894	56.0	60.0	61.1	61.1	58.6
32 IL94-6727	58.2	61.0	60.0	61.6	59.0
33 GA88622E51	55.2	57.8	56.9	59.2	56.0
34 GA881404E56	56.5	57.8	57.1	60.6	57.6
35 P86364RA1-4-2-7	56.2	57.9	63.4	61.6	58.9
36 P92227C5-1-1	57.3	59.4	60.0	60.8	57.8
37 P88204RB1-2-1-6	55.8	57.1	58.9	60.9	56.6
38 TW94315	55.1	55.4	56.6	59.8	56.7
LOCATION MEANS	57.0	58.8	59.0	61.0	58.0

TEST WEIGHT (lbs/bu)

	Ridgetown ON	Univ.Park PA	Knoxville TN	Overton TX	Blacksburg VA
1 Cardinal	61.5	60.5	52.4	42	60.1
2 Caldwell	62.6	61.6	59.9	42	62.4
3 Pioneer 2548	62.3	62.1	56.4	48	60.9
4 Foster	61.8	61.2	57.2	44	61.0
5 OH 552	62.6	61.9	56.7		61.0
6 AR 494B-2-2	63.1	62.0	56.1	46	60.8
7 AR 584A-3-1	61.4	61.0	56.4	55	60.6
8 KY86C-127-3	62.6	62.6	57.9	52	61.5
9 BL930390	62.0	61.3	56.5	48	60.5
10 BL931167	61.7	61.8	52.5	50	61.2
11 IL91-15911	62.8	61.4	50.1	46	60.7
12 OH599	63.2	63.5	60.0	50	61.8
13 MO94-317	62.1	61.1	56.0	46	60.7
14 VA97W-375	62.1	61.8	59.4	53	60.9
15 VA96W-247	61.8	61.6	56.9	51	60.6
16 OH 536	62.5	60.0	51.7	42	59.4
17 G60232	62.0	61.7	56.1	48	60.8
18 G41332	62.0	61.0	58.4	48	60.4
19 G41333	62.5	61.1	55.6	50	60.5
20 T104	62.5	61.4	59.4	48	60.9
21 T105	62.1	60.8	55.6	47	60.6
22 T106	62.8	60.9	56.2	46	60.9
23 T109	62.6	60.5	51.3	44	60.4
24 HT98-10291	61.2	59.8	53.4	50	59.3
25 HT98-10033	62.9	61.4	54.0	44	60.7
26 BL940582	60.3	60.8	56.2	52	60.2
27 M95*3349	62.8	61.7	57.6	53	61.8
28 M95*3330	62.8	63.0	60.0	56	62.2
29 M95*2883	62.5	61.7	55.2	50	61.1
30 OK91P648-41	61.8	61.5	54.3	48	60.5
31 IL94-2894	62.3	61.6	56.2	51	61.2
32 IL94-6727	63.1	61.8	57.0	55	61.6
33 GA88622E51	60.9	60.2	55.8	47	59.7
34 GA881404E56	62.0	61.5	57.0	49	60.3
35 P86364RA1-4-2-7	61.7	61.6	58.0	43	61.3
36 P92227C5-1-1	61.7	60.8	59.6	53	61.0
37 P88204RB1-2-1-6	62.8	60.9	58.2	42	60.8
38 TW94315	60.6	59.3	51.9		59.3
LOCATION MEANS	62.2	61.3	56.1	48.3	60.8

TEST WEIGHT (lbs/bu)

	Warsaw VA	Arlington WI	ENTRY MEANS ALL LOCATIONS	rank
1 Cardinal	56.6	56.3	56.7	33
2 Caldwell	59.4	55.5	57.6	19
3 Pioneer 2548	57.7	57.2	57.6	20
4 Foster	59.0	58.6	57.9	14
5 OH 552	58.2	57.3	58.7	6
6 AR 494B-2-2	59.4	57.2	58.3	8
7 AR 584A-3-1	58.0	56.9	58.1	12
8 KY86C-127-3	60.3	58.4	59.7	3
9 BL930390	60.1	55.9	57.5	21
10 BL931167	57.4	55.9	57.7	16
11 IL91-15911	57.7	58.2	57.3	24
12 OH599	60.0	59.1	59.7	2
13 MO94-317	58.2	55.9	57.2	28
14 VA97W-375	58.3	53.7	58.4	7
15 VA96W-247	58.5	57.3	58.2	11
16 OH 536	57.0	57.3	55.2	37
17 G60232	57.6	57.3	57.3	25
18 G41332	58.5	57.8	57.7	17
19 G41333	58.3	56.7	57.9	13
20 T104	59.2	57.9	58.3	9
21 T105	57.3	56.9	57.3	27
22 T106	58.8	57.3	57.2	29
23 T109	58.7	57.7	57.7	18
24 HT98-10291	57.4	56.9	57.3	26
25 HT98-10033	57.4	57.1	56.7	30
26 BL940582	58.0	55.4	57.4	22
27 M95*3349	59.4	56.9	58.8	5
28 M95*3330	59.7	58.4	59.7	1
29 M95*2883	59.3	56.6	57.8	15
30 OK91P648-41	57.2	55.6	56.7	32
31 IL94-2894	58.6	58.3	56.3	35
32 IL94-6727	59.0	57.9	59.2	4
33 GA88622E51	57.6	55.4	55.6	36
34 GA881404E56	58.2	56.2	56.7	31
35 P86364RA1-4-2-7	57.6	56.4	57.4	23
36 P92227C5-1-1	56.9	57.1	58.2	10
37 P88204RB1-2-1-6	57.6	56.4	56.6	34
38 TW94315	57.1	54.4	55.1	38
LOCATION MEANS	58.3	56.9		

KERNEL WEIGHT (grams)

	Bay AR	Ridgetown ON
	100 kernels	100 kernels
1 Cardinal	3.25	3.87
2 Caldwell	3.00	3.55
3 Pioneer 2548	3.05	3.37
4 Foster	3.45	3.67
5 OH 552	2.65	4.22
6 AR 494B-2-2	3.70	4.03
7 AR 584A-3-1	3.80	3.87
8 KY86C-127-3	3.45	3.83
9 BL930390	3.40	3.73
10 BL931167	3.60	4.08
11 IL91-15911	2.65	3.57
12 OH599	3.15	4.14
13 MO94-317	3.85	4.74
14 VA97W-375	2.95	3.50
15 VA96W-247	3.45	3.45
16 OH 536	2.80	3.80
17 G60232	2.90	3.67
18 G41332	2.95	3.64
19 G41333	3.10	3.66
20 T104	3.30	3.62
21 T105	2.95	3.56
22 T106	2.65	3.48
23 T109	3.10	3.95
24 HT98-10291	3.50	3.41
25 HT98-10033	3.20	3.93
26 BL940582	3.60	3.14
27 M95*3349	2.95	3.93
28 M95*3330	3.55	4.35
29 M95*2883	2.90	3.15
30 OK91P648-41	2.95	3.72
31 IL94-2894	3.00	3.55
32 IL94-6727	3.35	3.80
33 GA88622E51	2.80	3.51
34 GA881404E56	2.70	3.47
35 P86364RA1-4-2-7	3.20	3.76
36 P92227C5-1-1	3.25	3.76
37 P88204RB1-2-1-6	2.50	3.44
38 TW94315	3.25	3.90
LOCATION MEANS	3.15	3.73

HEADING DATE (Julian)

	Bay AR	Keiser AR	Georgetown DE	Quincy FL	Urbana IL
1 Cardinal	116	117	136	NV	138
2 Caldwell	114	116	133	110	135
3 Pioneer 2548	113	115	131	111	135
4 Foster	110	114	131	NV	136
5 OH 552	117	113	131	102	135
6 AR 494B-2-2	107	113	130	103	135
7 AR 584A-3-1	106	111	128	NV	136
8 KY86C-127-3	113	113	131	NV	137
9 BL930390	114	114	132	NV	137
10 BL931167	116	116	135	NV	139
11 IL91-15911	116	117	133	NV	136
12 OH599	113	116	133	NV	137
13 MO94-317	107	114	129	NV	135
14 VA97W-375	106	109	130	NV	134
15 VA96W-247	110	111	130	NV	135
16 OH 536	114	116	135	101	137
17 G60232	114	114	133	111	136
18 G41332	107	108	127	110	133
19 G41333	107	108	128	112	133
20 T104	110	113	128	91	133
21 T105	111	113	130	90	133
22 T106	110	112	130	88	134
23 T109	105	106	126	90	133
24 HT98-10291	114	118	134	NV	138
25 HT98-10033	114	118	133	NV	138
26 BL940582	105	108	126	102	134
27 M95*3349	112	113	133	NV	136
28 M95*3330	115	115	134	NV	138
29 M95*2883	107	114	131	111	135
30 OK91P648-41	113	113	132	NV	134
31 IL94-2894	114	114	132	NV	135
32 IL94-6727	115	114	135	NV	137
33 GA88622E51	110	113	128	99	134
34 GA881404E56	113	111	129	103	136
35 P86364RA1-4-2-7	114	118	130	102	134
36 P92227C5-1-1	112	113	133	113	135
37 P88204RB1-2-1-6	115	119	132	96	133
38 TW94315	121	125	136	NV	138
LOCATION MEANS	111.8	113.8	131.3	102.4	135.4

NV=non-vernalized

HEADING DATE (Julian)

	Ft.Branch IN	Greensburg IN	Lafayette IN	W.Lafayette IN	Wichita KS
1 Cardinal	129.0	137	136	137	124
2 Caldwell	127.3	133	133	134	123
3 Pioneer 2548	123.3	135	135	135	122
4 Foster	125.7	135	133	135	122
5 OH 552	125.7	133	132	134	122
6 AR 494B-2-2	125.3	137	133	134	124
7 AR 584A-3-1	124.3	135	136	134	124
8 KY86C-127-3	127.0	135	133	134	124
9 BL930390	126.0	136	135	136	125
10 BL931167	127.0	136	135	136	124
11 IL91-15911	128.0	136	135	135	124
12 OH599	127.7	136	135	136	124
13 MO94-317	123.3	134	133	134	123
14 VA97W-375	122.3	136	134	135	123
15 VA96W-247	123.0	136	133	135	123
16 OH 536	128.7	136	134	135	123
17 G60232	128.7	135	133	135	122
18 G41332	123.0	133	133	133	122
19 G41333	124.7	133	133	134	123
20 T104	123.7	133	133	134	122
21 T105	124.7	134	133	133	122
22 T106	124.3	133	132	133	122
23 T109	122.3	133	132	134	123
24 HT98-10291	128.3	138	136	136	124
25 HT98-10033	128.0	137	136	137	126
26 BL940582	123.3	135	133	134	125
27 M95*3349	126.0	135	133	135	123
28 M95*3330	129.3	137	136	136	123
29 M95*2883	124.3	136	133	135	123
30 OK91P648-41	126.0	135	134	135	123
31 IL94-2894	127.0	136	134	134	124
32 IL94-6727	129.7	137	136	138	123
33 GA88622E51	123.7	136	134	135	122
34 GA881404E56	124.0	136	135	135	123
35 P86364RA1-4-2-7	126.0	134	133	133	123
36 P92227C5-1-1	125.3	135	133	134	122
37 P88204RB1-2-1-6	127.3	135	132	135	122
38 TW94315	133.0	139	136	138	122
LOCATION MEANS	126.0	135.3	133.9	134.9	123.1

HEADING DATE (Julian)

	Fulton Co. KY	Lexington KY	Clarksville MD	Bliss./Sag. MI	Columbia MO
1 Cardinal	121	132	138	151.0	136.0
2 Caldwell	120	130	136	149.5	133.0
3 Pioneer 2548	116	129	134	151.0	131.3
4 Foster	118	128	136	150.5	132.3
5 OH 552	118	129	134	149.5	132.7
6 AR 494B-2-2	115	128	135	149.5	132.7
7 AR 584A-3-1	115	127	135	149.5	131.0
8 KY86C-127-3	119	127	136	149.5	133.7
9 BL930390	118	127	137	150.0	132.3
10 BL931167	120	131	137	150.5	135.3
11 IL91-15911	120	131	136	151.0	134.7
12 OH599	119	130	136	150.0	133.3
13 MO94-317	116	127	134	149.5	132.0
14 VA97W-375	113	127	133	149.0	130.0
15 VA96W-247	115	128	134	149.5	131.7
16 OH 536	120	131	137	150.5	137.3
17 G60232	120	130	136	149.5	134.0
18 G41332	116	127	132	148.5	130.0
19 G41333	115	126	134	150.0	131.7
20 T104	117	128	134	149.0	132.0
21 T105	117	128	134	150.0	132.0
22 T106	116	128	134	149.0	132.0
23 T109	113	127	133	149.0	131.3
24 HT98-10291	120	131	140	152.5	134.7
25 HT98-10033	120	130	138	151.5	136.3
26 BL940582	113	126	133	149.5	131.7
27 M95*3349	119	127	136	149.5	133.0
28 M95*3330	119	131	138	149.5	133.7
29 M95*2883	114	127	135	150.0	132.0
30 OK91P648-41	117	128	136	150.0	131.7
31 IL94-2894	118	129	137	150.5	133.7
32 IL94-6727	121	132	140	151.5	135.0
33 GA88622E51	116	127	133	149.5	133.3
34 GA881404E56	116	127	136	149.5	132.3
35 P86364RA1-4-2-7	119	128	134	149.0	133.3
36 P92227C5-1-1	119	128	135	149.0	132.0
37 P88204RB1-2-1-6	120	129	134	149.0	134.3
38 TW94315	122	133	138	151.5	139.3
LOCATION MEANS	117.6	128.7	135.5	149.9	133.1

HEADING DATE (Julian)

	Lincoln NE	Mead NE	Ithaca NY	Wooster OH	Ridgetown ON
1 Cardinal	143	143	150	139.7	152
2 Caldwell	141	144	146	137.0	148
3 Pioneer 2548	143	144	146	137.0	150
4 Foster	141	143	147	138.0	150
5 OH 552	142	143	144	135.7	148
6 AR 494B-2-2	143	143	147	136.3	150
7 AR 584A-3-1	143	143	147	137.7	148
8 KY86C-127-3	143	143	145	138.0	148
9 BL930390	143	144	148	139.3	150
10 BL931167	143	143	148	140.0	150
11 IL91-15911	143	143	146	138.0	149
12 OH599	144	144	147	138.0	149
13 MO94-317	143	144	146	137.0	148
14 VA97W-375	142	144	145	136.3	149
15 VA96W-247	142	144	147	137.7	149
16 OH 536	142	144	148	138.7	150
17 G60232	142	144	147	138.0	148
18 G41332	140	144	144	135.0	146
19 G41333	142	144	145	137.3	148
20 T104	142	144	145	137.0	148
21 T105	142	143	145	136.7	149
22 T106	142	143	145	137.0	149
23 T109	142	144	145	135.3	148
24 HT98-10291	144	146	150	140.0	153
25 HT98-10033	143	145	149	139.0	151
26 BL940582	144	144	147	136.7	149
27 M95*3349	143	144	147	138.0	148
28 M95*3330	143	144	148	140.0	148
29 M95*2883	143	144	147	138.0	149
30 OK91P648-41	144	145	146	138.0	147
31 IL94-2894	142	144	146	138.3	149
32 IL94-6727	143	144	149	140.0	150
33 GA88622E51	143	145	147	137.0	152
34 GA881404E56	143	145	146	137.7	149
35 P86364RA1-4-2-7	144	145	144	135.0	148
36 P92227C5-1-1	141	144	146	137.0	148
37 P88204RB1-2-1-6	142	144	145	136.0	149
38 TW94315	143	146	148	140.0	153
LOCATION MEANS	142.6	144.0	146.5	137.7	149.1

HEADING DATE (Julian)

	Univ.Park PA	Knoxville TN	Overton TX	Blacksburg VA	Warsaw VA
1 Cardinal	144	122	110	134	127
2 Caldwell	142	120	97	134	126
3 Pioneer 2548	141	119	98	131	119
4 Foster	144	118	109	132	123
5 OH 552	141	117	102	132	121
6 AR 494B-2-2	144	114	86	132	118
7 AR 584A-3-1	143	118	97	131	119
8 KY86C-127-3	142	118	102	131	125
9 BL930390	143	120	103	134	123
10 BL931167	145	123	108	135	125
11 IL91-15911	143	121	109	134	126
12 OH599	143	120	108	133	124
13 MO94-317	143	116	97	132	120
14 VA97W-375	143	115	102	132	118
15 VA96W-247	143	119	104	132	118
16 OH 536	143	123	110	135	123
17 G60232	143	119	102	133	126
18 G41332	141	118	92	130	119
19 G41333	142	118	97	132	119
20 T104	142	116	84	132	119
21 T105	141	120	85	132	120
22 T106	143	120	84	132	120
23 T109	141	115	78	130	117
24 HT98-10291	146	121	109	135	127
25 HT98-10033	145	122	103	136	127
26 BL940582	142	115	84	130	118
27 M95*3349	143	119	102	133	123
28 M95*3330	144	122	102	135	127
29 M95*2883	142	118	95	131	122
30 OK91P648-41	141	120	102	132	124
31 IL94-2894	142	120	101	133	124
32 IL94-6727	145	121	103	135	126
33 GA88622E51	143	117	98	132	117
34 GA881404E56	143	116	93	133	122
35 P86364RA1-4-2-7	141	121	104	132	121
36 P92227C5-1-1	142	119	102	132	121
37 P88204RB1-2-1-6	141	123	109	132	122
38 TW94315	145	125	116	136	127
LOCATION MEANS	142.8	119.2	99.7	132.7	122.2

HEADING DATE (Julian)

ENTRY MEANS ALL LOCATIONS

		rank
1	Cardinal	36
2	Caldwell	21
3	Pioneer 2548	14
4	Foster	26
5	OH 552	11
6	AR 494B-2-2	7
7	AR 584A-3-1	17
8	KY86C-127-3	24
9	BL930390	29
10	BL931167	33
11	IL91-15911	31
12	OH599	30
13	MO94-317	16
14	VA97W-375	13
15	VA96W-247	20
16	OH 536	28
17	G60232	22
18	G41332	4
19	G41333	8
20	T104	3
21	T105	6
22	T106	5
23	T109	1
24	HT98-10291	37
25	HT98-10033	35
26	BL940582	2
27	M95*3349	25
28	M95*3330	32
29	M95*2883	12
30	OK91P648-41	23
31	IL94-2894	27
32	IL94-6727	34
33	GA88622E51	9
34	GA881404E56	10
35	P86364RA1-4-2-7	15
36	P92227C5-1-1	18
37	P88204RB1-2-1-6	19
38	TW94315	38

LOCATION MEANS

HEIGHT (inches)

	Keiser AR	Georgetown DE	Quincy FL	Griffin GA	Brownstown IL
1 Cardinal	36	37	27	32	39.3
2 Caldwell	34	39	31	32	38.7
3 Pioneer 2548	30	34	24	29	36.7
4 Foster	29	37	26	29	37.3
5 OH 552	27	35	31	29	39.0
6 AR 494B-2-2	29	40	37	31	41.3
7 AR 584A-3-1	31	36	27	31	40.3
8 KY86C-127-3	31	36	30	30	36.7
9 BL930390	31	33	25	27	35.7
10 BL931167	33	33	26	27	37.0
11 IL91-15911	35	37	28	31	40.7
12 OH599	38	38	27	31	40.7
13 MO94-317	33	37	28	32	38.3
14 VA97W-375	28	32	23	27	32.7
15 VA96W-247	27	33	22	27	34.0
16 OH 536	32	31	26	27	32.3
17 G60232	35	35	31	31	38.0
18 G41332	36	38	29	33	38.7
19 G41333	39	38	29	33	41.0
20 T104	25	34	36	32	35.7
21 T105	26	33	33	28	35.0
22 T106	29	34	36	28	35.0
23 T109	28	33	37	29	36.7
24 HT98-10291	34	38	28	32	40.7
25 HT98-10033	35	37	26	32	42.0
26 BL940582	30	41	33	36	39.0
27 M95*3349	39	37	28	31	40.7
28 M95*3330	33	35	27	31	38.0
29 M95*2883	30	36	28	31	38.3
30 OK91P648-41	27	32	25	25	35.7
31 IL94-2894	33	34	23	26	36.3
32 IL94-6727	38	37	25	30	39.3
33 GA88622E51	30	33	28	28	34.3
34 GA881404E56	34	34	29	30	36.0
35 P86364RA1-4-2-7	28	37	31	33	37.7
36 P92227C5-1-1	33	33	29	29	36.0
37 P88204RB1-2-1-6	36	35	35	30	37.3
38 TW94315	38	36	27	31	37.0
LOCATION MEANS	32.1	35.5	28.7	30.0	37.6

HEIGHT (inches)

	Nashville IL	Urbana IL	Greensburg IN	W.Lafayette IN	Fulton Co. KY
1 Cardinal	42	42.7	42	40.5	39
2 Caldwell	37	39.7	40	40.0	37
3 Pioneer 2548	38	38.7	38	39.0	32
4 Foster	39	40.0	37	38.5	35
5 OH 552	39	38.3	37	38.0	32
6 AR 494B-2-2	40	40.3	41	40.0	39
7 AR 584A-3-1	38	41.3	41	41.0	38
8 KY86C-127-3	40	38.0	39	39.0	37
9 BL930390	38	35.3	38	37.5	32
10 BL931167	38	38.3	42	41.5	34
11 IL91-15911	40	41.3	42	40.5	38
12 OH599	42	42.3	43	42.5	38
13 MO94-317	42	40.3	41	40.5	34
14 VA97W-375	35	35.0	34	35.0	30
15 VA96W-247	35	35.3	35	35.5	32
16 OH 536	36	38.0	35	36.5	34
17 G60232	39	41.0	42	41.0	37
18 G41332	41	42.0	42	44.0	39
19 G41333	40	42.3	42	41.0	37
20 T104	36	38.3	35	38.0	32
21 T105	34	36.0	35	37.5	31
22 T106	35	36.7	35	37.5	32
23 T109	38	38.3	36	39.5	32
24 HT98-10291	44	44.7	42	44.0	39
25 HT98-10033	42	42.7	41	40.5	38
26 BL940582	43	42.3	41	41.5	38
27 M95*3349	42	42.0	41	41.0	38
28 M95*3330	39	39.3	41	40.0	37
29 M95*2883	41	41.0	40	41.0	36
30 OK91P648-41	36	33.7	35	37.0	32
31 IL94-2894	37	38.0	39	39.0	34
32 IL94-6727	39	39.7	40	41.5	38
33 GA88622E51	34	35.3	35	38.0	32
34 GA881404E56	37	36.7	35	39.5	32
35 P86364RA1-4-2-7	39	40.3	39	39.0	37
36 P92227C5-1-1	37	41.0	39	37.0	34
37 P88204RB1-2-1-6	40	40.3	40	39.0	35
38 TW94315	41	42.3	40	43.5	37
LOCATION MEANS	38.8	39.4	38.9	39.6	35.2

HEIGHT (inches)

	Clarksville MD	Bliss./Sag. MI	Columbia MO	Lincoln NE	Ithaca NY
1 Cardinal	38.8	40	42.7	42	43.3
2 Caldwell	42.3	37	42.7	38	35.4
3 Pioneer 2548	36.8	31	42.3	37	35.4
4 Foster	38.2	33	41.7	37	35.4
5 OH 552	40.8	35	41.7	39	37.4
6 AR 494B-2-2	43.3	38	44.7	43	37.4
7 AR 584A-3-1	40.8	38	44.3	43	41.3
8 KY86C-127-3	42.0	35	41.3	40	37.4
9 BL930390	37.5	33	39.7	37	37.4
10 BL931167	36.2	33	41.3	39	37.4
11 IL91-15911	41.2	39	43.7	41	39.4
12 OH599	43.0	38	45.3	43	41.3
13 MO94-317	37.8	38	43.3	39	37.4
14 VA97W-375	36.7	32	36.3	36	33.5
15 VA96W-247	35.2	33	39.3	35	33.5
16 OH 536	33.2	33	35.7	35	31.5
17 G60232	38.7	37	42.3	40	37.4
18 G41332	43.5	39	42.3	43	41.3
19 G41333	43.2	40	44.7	43	39.4
20 T104	36.7	34	40.0	38	35.4
21 T105	34.8	27	37.7	37	35.4
22 T106	35.7	34	39.7	36	33.5
23 T109	38.0	36	41.3	39	37.4
24 HT98-10291	40.5	39	45.3	43	39.4
25 HT98-10033	38.2	35	43.7	44	41.3
26 BL940582	41.8	40	44.3	40	39.4
27 M95*3349	41.2	36	45.3	41	37.4
28 M95*3330	36.8	35	43.3	41	35.4
29 M95*2883	36.8	36	42.7	41	33.5
30 OK91P648-41	33.3	33	39.3	36	33.5
31 IL94-2894	36.2	36	40.7	38	35.4
32 IL94-6727	38.8	36	42.7	39	39.4
33 GA88622E51	34.0	34	38.0	35	31.5
34 GA881404E56	35.0	31	39.3	38	35.4
35 P86364RA1-4-2-7	41.5	37	41.0	39	39.4
36 P92227C5-1-1	38.3	37	39.3	39	39.4
37 P88204RB1-2-1-6	37.8	35	41.3	39	37.4
38 TW94315	39.7	37	40.3	39	37.4
LOCATION MEANS	38.5	35.5	41.6	39.3	37.1

HEIGHT (inches)

	Wooster OH	Ridgetown ON	Univ.Park PA	Overton TX	Blacksburg VA
1 Cardinal	43.7	33	40	33	37
2 Caldwell	36.8	30	35	32	34
3 Pioneer 2548	36.6	28	33	27	31
4 Foster	39.3	31	36	31	34
5 OH 552	39.3	28	37	28	33
6 AR 494B-2-2	37.8	32	38	29	38
7 AR 584A-3-1	41.0	31	38	34	36
8 KY86C-127-3	36.4	30	35	33	35
9 BL930390	37.3	29	34	28	33
10 BL931167	37.0	32	35	31	34
11 IL91-15911	42.7	33	39	34	38
12 OH599	42.3	34	39	31	37
13 MO94-317	38.1	31	35	31	34
14 VA97W-375	34.4	26	31	31	31
15 VA96W-247	34.9	28	31	32	31
16 OH 536	35.5	28	32	27	31
17 G60232	37.8	31	35	36	37
18 G41332	40.1	30	37	33	36
19 G41333	37.8	32	37	30	38
20 T104	34.1	29	32	29	33
21 T105	33.2	28	31	27	32
22 T106	35.1	27	32	29	33
23 T109	34.5	31	33	24	33
24 HT98-10291	43.7	33	36	35	39
25 HT98-10033	41.8	35	36	34	38
26 BL940582	35.6	34	38	31	37
27 M95*3349	40.1	31	37	32	36
28 M95*3330	40.5	32	33	34	36
29 M95*2883	37.3	30	36	30	35
30 OK91P648-41	33.2	26	31	29	31
31 IL94-2894	37.2	31	35	31	36
32 IL94-6727	39.3	32	36	35	36
33 GA88622E51	32.2	28	31	27	31
34 GA881404E56	36.8	30	34	30	34
35 P86364RA1-4-2-7	38.5	30	38	35	35
36 P92227C5-1-1	37.2	30	35	35	34
37 P88204RB1-2-1-6	36.6	31	35	31	35
38 TW94315	41.0	32	37	31	37
LOCATION MEANS	37.8	30.4	35.1	31.1	34.7

HEIGHT (inches)

	Warsaw VA	Arlington WI	ENTRY MEANS ALL LOCATIONS	rank
1 Cardinal	38	39.5	38.6	3
2 Caldwell	37	34.5	36.5	17
3 Pioneer 2548	36	35.0	34.0	31
4 Foster	38	39.5	35.5	23
5 OH 552	39	37.5	35.5	24
6 AR 494B-2-2	41	37.0	38.1	9
7 AR 584A-3-1	42	37.0	37.8	11
8 KY86C-127-3	40	40.5	36.5	18
9 BL930390	38	32.5	34.0	30
10 BL931167	36	36.0	35.4	25
11 IL91-15911	39	39.5	38.3	7
12 OH599	41	38.0	38.9	2
13 MO94-317	39	36.5	36.6	16
14 VA97W-375	36	33.5	32.2	38
15 VA96W-247	37	33.5	32.7	34
16 OH 536	32	35.5	32.6	36
17 G60232	38	38.0	37.2	13
18 G41332	40	39.0	38.5	4
19 G41333	41	37.0	38.4	5
20 T104	35	36.5	34.3	29
21 T105	34	33.5	32.7	35
22 T106	35	31.5	33.6	32
23 T109	35	35.5	34.8	27
24 HT98-10291	39	39.0	39.0	1
25 HT98-10033	37	39.5	38.2	8
26 BL940582	42	36.5	38.4	6
27 M95*3349	41	38.0	38.0	10
28 M95*3330	36	34.5	36.3	20
29 M95*2883	38	38.0	36.2	21
30 OK91P648-41	35	34.0	32.4	37
31 IL94-2894	36	36.0	34.9	26
32 IL94-6727	37	37.0	37.1	14
33 GA88622E51	37	34.5	32.8	33
34 GA881404E56	35	35.5	34.4	28
35 P86364RA1-4-2-7	40	35.5	36.9	15
36 P92227C5-1-1	38	34.0	35.6	22
37 P88204RB1-2-1-6	38	37.5	36.5	19
38 TW94315	39	36.5	37.3	12
LOCATION MEANS	37.8	36.4		

LODGING

	Georgetown DE	Quincy FL	Griffin GA	Nashville IL	Urbana IL
	0-9	0-9	0-9	0-9	0-9
1 Cardinal	0	0	0	2	1.0
2 Caldwell	0	1	0	2	2.7
3 Pioneer 2548	0	1	0	3	5.3
4 Foster	0	0	0	2	1.0
5 OH 552	0	1	0	2	3.3
6 AR 494B-2-2	0	4	0	4	6.0
7 AR 584A-3-1	0	1	0	3	8.0
8 KY86C-127-3	0	1	0	2	6.3
9 BL930390	0	0	0	4	7.0
10 BL931167	0	0	0	2	2.7
11 IL91-15911	0	0	0	7	4.7
12 OH599	0	1	0	4	3.7
13 MO94-317	0	1	0	2	3.0
14 VA97W-375	0	0	0	2	5.3
15 VA96W-247	0	0	0	3	5.3
16 OH 536	0	0	0	2	1.0
17 G60232	0	0	0	3	2.0
18 G41332	0	1	0	4	2.0
19 G41333	0	0	1	8	4.7
20 T104	0	1	0	2	1.0
21 T105	0	1	0	2	1.0
22 T106	0	1	0	2	1.3
23 T109	0	3	0	3	3.3
24 HT98-10291	0	0	0	3	2.0
25 HT98-10033	0	0	0	2	3.0
26 BL940582	0	1	1	4	6.3
27 M95*3349	0	0	0	2	3.3
28 M95*3330	0	1	0	2	5.7
29 M95*2883	0	1	0	3	2.7
30 OK91P648-41	0	0	0	2	5.7
31 IL94-2894	0	0	0	2	1.0
32 IL94-6727	0	0	0	4	1.3
33 GA88622E51	0	1	0	4	3.7
34 GA881404E56	0	1	0	3	5.3
35 P86364RA1-4-2-7	0	0	0	2	2.0
36 P92227C5-1-1	0	1	0	1	3.3
37 P88204RB1-2-1-6	0	1	0	2	3.3
38 TW94315	0	0	0	2	2.0
LOCATION MEANS	0	0.7	0.1	2.8	3.5
GROWTH STAGE/DATE					

LODGING

	Ft.Branch	Greensburg	W.Lafayette	Woodburn	Wichita
	IN	IN	IN	IN	KS
	0-9	0-9	0-9	0-9	0-9
1 Cardinal	3.1	1	5.0		4
2 Caldwell	3.4	1	3.5		3
3 Pioneer 2548	4.2	1	4.5		2
4 Foster	1.5	1	4.0		2
5 OH 552	4.5	2	3.0		2
6 AR 494B-2-2	5.6	1	5.5	2	4
7 AR 584A-3-1	6.4	5	5.5	2	4
8 KY86C-127-3	6.0	1	4.5		4
9 BL930390	5.6	1	5.5		5
10 BL931167	1.5	1	4.5		4
11 IL91-15911	4.5	1	5.5		4
12 OH599	5.6	1	5.5		4
13 MO94-317	5.3	1	4.0		3
14 VA97W-375	4.9	1	5.0		3
15 VA96W-247	3.7	1	5.0		3
16 OH 536	0.4	1	3.5		3
17 G60232	0.0	1	5.0		2
18 G41332	1.2	1	5.5		2
19 G41333	3.7	1	6.5		3
20 T104	0.0	1	3.5		2
21 T105	0.0	1	3.5		2
22 T106	0.8	1	3.5		2
23 T109	2.6	1	4.0		3
24 HT98-10291	3.4	1	5.5		4
25 HT98-10033	5.3	1	6.5		6
26 BL940582	7.5	1	7.0		5
27 M95*3349	6.4	1	7.0		3
28 M95*3330	3.4	1	7.5		3
29 M95*2883	3.4	1	7.0		3
30 OK91P648-41	6.4	1	7.5		3
31 IL94-2894	1.2	1	5.0		4
32 IL94-6727	1.9	1	5.5		3
33 GA88622E51	4.2	1	5.5		2
34 GA881404E56	3.4	1	5.0		3
35 P86364RA1-4-2-7	1.2	1	4.0		3
36 P92227C5-1-1	1.2	1	3.5		2
37 P88204RB1-2-1-6	1.5	1	4.0		2
38 TW94315	1.9	1	5.5		2
LOCATION MEANS	3.3	1.1	5.0		3.1
GROWTH STAGE/DATE				June 21	

LODGING

	Fulton Co. KY	Lexington KY	Clarksville MD	Columbia MO	Ithaca NY
	%	%	0-9	0-9	0-9
1 Cardinal	0	0	8.0	1.0	0
2 Caldwell	0	0	4.7	1.0	0
3 Pioneer 2548	0	0	1.0	0.0	0
4 Foster	0	0	2.0	1.3	0
5 OH 552	0	0	0.3	0.0	0
6 AR 494B-2-2	0	0	3.0	1.3	0
7 AR 584A-3-1	0	0	1.0	0.3	0
8 KY86C-127-3	0	0	3.0	1.0	0
9 BL930390	0	0	1.0	2.3	0
10 BL931167	0	0	1.0	0.3	0
11 IL91-15911	0	0	4.7	1.3	0
12 OH599	0	0	0.0	0.7	0
13 MO94-317	0	0	0.0	0.7	0
14 VA97W-375	0	0	1.3	2.0	0
15 VA96W-247	0	0	1.0	2.7	0
16 OH 536	0	0	0.0	0.0	0
17 G60232	0	0	5.7	1.7	0
18 G41332	0	0	2.3	1.7	0
19 G41333	0	0	2.3	3.0	0
20 T104	0	0	1.3	0.0	0
21 T105	0	0	0.0	0.3	0
22 T106	0	0	0.7	0.0	0
23 T109	0	0	1.0	1.0	0
24 HT98-10291	0	0	0.0	1.0	0
25 HT98-10033	0	0	3.7	1.0	0
26 BL940582	0	0	2.7	0.3	0
27 M95*3349	0	0	3.0	1.7	0
28 M95*3330	0	0	1.7	1.7	0
29 M95*2883	0	0	5.7	1.7	0
30 OK91P648-41	0	0	2.7	2.3	0
31 IL94-2894	0	0	3.3	0.0	0
32 IL94-6727	0	0	3.7	1.7	0
33 GA88622E51	0	0	0.3	0.7	0
34 GA881404E56	0	0	0.7	0.3	0
35 P86364RA1-4-2-7	0	0	2.7	0.0	0
36 P92227C5-1-1	0	0	1.0	0.0	0
37 P88204RB1-2-1-6	0	0	0.0	0.0	0
38 TW94315	0	0	1.0	0.0	0
LOCATION MEANS	0.0	0.0	2.0	0.9	0.0
GROWTH STAGE/DATE					

see location notes

LODGING

	Wooster OH early %	Wooster OH late %	Ridgetown ON 0-9	Overton TX %	Blacksburg VA 0-9
1 Cardinal	0.7	16.7	1.0	0	0
2 Caldwell	0.0	20.0	0.5	5	0
3 Pioneer 2548	0.0	3.3	0.0	0	0
4 Foster	0.0	8.3	0.0	5	0
5 OH 552	0.0	1.7	0.0	0	0
6 AR 494B-2-2	3.3	18.3	0.2	15	0
7 AR 584A-3-1	1.7	30.0	0.0	0	0
8 KY86C-127-3	0.0	10.0	0.0	0	0
9 BL930390	0.0	35.0	0.0	0	0
10 BL931167	0.0	0.0	0.0	0	0
11 IL91-15911	0.7	56.7	1.2	0	0
12 OH599	0.0	6.7	0.2	0	0
13 MO94-317	0.0	8.3	0.0	0	0
14 VA97W-375	0.7	20.0	0.0	0	0
15 VA96W-247	5.7	40.0	0.0	0	0
16 OH 536	0.7	8.3	0.0	0	0
17 G60232	0.0	8.3	0.0	0	0
18 G41332	0.0	10.0	0.2	10	0
19 G41333	1.3	20.0	1.5	5	1
20 T104	0.0	0.0	0.0	0	0
21 T105	0.0	0.0	0.0	0	0
22 T106	0.0	1.7	0.0	5	0
23 T109	0.0	0.0	0.0	5	0
24 HT98-10291	0.0	5.0	0.5	0	0
25 HT98-10033	1.0	36.7	1.8	0	0
26 BL940582	3.3	21.7	0.0	0	0
27 M95*3349	1.3	6.7	0.0	0	0
28 M95*3330	0.7	5.0	0.0	0	0
29 M95*2883	0.0	10.0	0.0	5	0
30 OK91P648-41	0.0	8.3	0.5	0	0
31 IL94-2894	0.0	0.0	0.0	0	0
32 IL94-6727	0.7	3.3	0.5	0	0
33 GA88622E51	0.0	6.7	0.0	0	0
34 GA881404E56	0.0	6.7	0.0	0	0
35 P86364RA1-4-2-7	0.0	0.0	0.0	0	0
36 P92227C5-1-1	0.0	3.3	0.0	0	0
37 P88204RB1-2-1-6	0.0	0.0	0.0	0	0
38 TW94315	0.0	6.7	0.0	0	0
LOCATION MEANS	0.6	11.7	0.2	1.4	0.0
GROWTH STAGE/DATE	June 11	July 7	July 20		

LODGING

	Warsaw VA	Arlington WI
	0-9	0-9
1 Cardinal	0	0.0
2 Caldwell	0	1.0
3 Pioneer 2548	0	0.0
4 Foster	0	0.0
5 OH 552	0	0.0
6 AR 494B-2-2	1	2.0
7 AR 584A-3-1	2	0.5
8 KY86C-127-3	0	0.0
9 BL930390	2	0.0
10 BL931167	0	1.5
11 IL91-15911	1	0.5
12 OH599	1	0.5
13 MO94-317	0	0.0
14 VA97W-375	0	0.0
15 VA96W-247	0	0.0
16 OH 536	0	0.0
17 G60232	0	2.0
18 G41332	0	0.0
19 G41333	1	0.5
20 T104	0	0.0
21 T105	0	0.0
22 T106	0	0.0
23 T109	0	0.0
24 HT98-10291	0	1.0
25 HT98-10033	1	0.0
26 BL940582	0	0.0
27 M95*3349	0	0.0
28 M95*3330	0	0.5
29 M95*2883	0	0.5
30 OK91P648-41	0	2.0
31 IL94-2894	0	0.0
32 IL94-6727	0	0.0
33 GA88622E51	0	0.0
34 GA881404E56	0	0.0
35 P86364RA1-4-2-7	0	0.0
36 P92227C5-1-1	0	0.0
37 P88204RB1-2-1-6	0	0.0
38 TW94315	0	2.5
LOCATION MEANS	0.2	0.4
GROWTH STAGE/DATE		11

WINTERKILL / SURVIVAL

	W.Lafayette	Woodburn	Wichita	Fulton Co.
	IN	IN	KS	KY
	winterkill	winterkill	winterkill	survival
	0-9	0-9	1-9	%
1 Cardinal	0	1	2	100
2 Caldwell	0	1	2	100
3 Pioneer 2548	0	3	2	100
4 Foster	0	3	3	100
5 OH 552	0	1	2	100
6 AR 494B-2-2	0	3	3	100
7 AR 584A-3-1	0	3	2	100
8 KY86C-127-3	0	2	2	100
9 BL930390	0	3	2	100
10 BL931167	0	1	2	100
11 IL91-15911	0	2	2	100
12 OH599	0	2	2	100
13 MO94-317	0	3	2	100
14 VA97W-375	0	3	3	100
15 VA96W-247	0	3	4	100
16 OH 536	0	2	2	100
17 G60232	0	2	2	100
18 G41332	0	2	2	100
19 G41333	0	2	2	100
20 T104	0	5	2	100
21 T105	0	3	2	100
22 T106	0	3	2	100
23 T109	0	3	2	100
24 HT98-10291	0	2	3	100
25 HT98-10033	0	1	2	100
26 BL940582	0	2	2	100
27 M95*3349	0	1	2	100
28 M95*3330	0	1	2	100
29 M95*2883	0	2	2	100
30 OK91P648-41	0	2	2	100
31 IL94-2894	0	1	2	100
32 IL94-6727	0	2	1	100
33 GA88622E51	0	4	3	100
34 GA881404E56	0	4	3	100
35 P86364RA1-4-2-7	0	1	1	100
36 P92227C5-1-1	0	1	2	100
37 P88204RB1-2-1-6	0	2	1	100
38 TW94315	0	1	2	100
LOCATION MEANS	0	2.2	2.1	100.0
GROWTH STAGE/DATE		March 31		

WINTERKILL / SURVIVAL

	Lexington KY survival %	Columbia MO survival %	Ithaca NY winterkill 0-9	Wooster OH winterkill 0-9
1 Cardinal	100	91	0	0
2 Caldwell	100	91	0	0
3 Pioneer 2548	100	92	0	0
4 Foster	100	94	0	0
5 OH 552	100	90	0	0
6 AR 494B-2-2	100	93	0	0
7 AR 584A-3-1	100	92	0	0
8 KY86C-127-3	100	91	0	0
9 BL930390	100	91	0	0
10 BL931167	100	93	0	0
11 IL91-15911	100	93	0	0
12 OH599	100	92	0	0
13 MO94-317	100	92	0	0
14 VA97W-375	100	93	0	0
15 VA96W-247	100	91	0	0
16 OH 536	100	92	0	0
17 G60232	100	93	0	0
18 G41332	100	94	0	0
19 G41333	100	92	0	0
20 T104	100	91	0	0
21 T105	100	87	0	0
22 T106	100	92	0	0
23 T109	100	92	0	0
24 HT98-10291	100	89	0	0
25 HT98-10033	100	89	0	0
26 BL940582	100	93	0	0
27 M95*3349	100	93	0	0
28 M95*3330	100	93	0	0
29 M95*2883	100	91	0	0
30 OK91P648-41	100	93	0	0
31 IL94-2894	100	93	0	0
32 IL94-6727	100	91	0	0
33 GA88622E51	100	91	0	0
34 GA881404E56	100	87	0	0
35 P86364RA1-4-2-7	100	91	0	0
36 P92227C5-1-1	100	90	0	0
37 P88204RB1-2-1-6	100	90	0	0
38 TW94315	100	93	0	0
LOCATION MEANS	100.0	91.6	0.0	0.0
GROWTH STAGE/DATE				

WINTERKILL / SURVIVAL

	Ridgetown ON winterkill 0-9	Watertown SD survival 0-10	Warsaw VA winterkill 0-9
1 Cardinal	0	9.7	1
2 Caldwell	0	10.0	1
3 Pioneer 2548	0	10.0	4
4 Foster	0	10.0	2
5 OH 552	0	9.3	1
6 AR 494B-2-2	0	10.0	5
7 AR 584A-3-1	0	9.0	2
8 KY86C-127-3	0	10.0	0
9 BL930390	0	7.0	1
10 BL931167	0	10.0	0
11 IL91-15911	0	10.0	0
12 OH599	0	10.0	0
13 MO94-317	0	8.3	3
14 VA97W-375	0	9.0	1
15 VA96W-247	0	9.7	2
16 OH 536	0	10.0	4
17 G60232	0	9.3	0
18 G41332	0	10.0	1
19 G41333	0	10.0	1
20 T104	0	10.0	3
21 T105	0	8.0	3
22 T106	0	9.3	2
23 T109	0	8.3	2
24 HT98-10291	0	10.0	0
25 HT98-10033	0	9.0	3
26 BL940582	0	9.3	4
27 M95*3349	0	9.3	0
28 M95*3330	0	10.0	1
29 M95*2883	0	10.0	0
30 OK91P648-41	0	10.0	1
31 IL94-2894	0	10.0	1
32 IL94-6727	0	10.0	0
33 GA88622E51	0	9.0	2
34 GA881404E56	0	9.7	1
35 P86364RA1-4-2-7	0	10.0	0
36 P92227C5-1-1	0	10.0	0
37 P88204RB1-2-1-6	0	9.7	0
38 TW94315	0	10.0	1
LOCATION MEANS	0.0	9.6	1.4
GROWTH STAGE/DATE			

LEAF RUST

	Bay AR	Keiser AR	Rohwer AR	Kibler AR	Quincy FL
		%	%	%	0-9
1 Cardinal	4.5	11	15	26	1.5
2 Caldwell	3.5	1	7	13	3.0
3 Pioneer 2548	6.3	19	15	33	3.0
4 Foster	5.3	11	19	40	1.5
5 OH 552	7.5	4	7	13	2.0
6 AR 494B-2-2	6.5	19	0	41	1.5
7 AR 584A-3-1	1.0	4	4	1	0.5
8 KY86C-127-3	3.0	8	11	18	0.0
9 BL930390	1.0	5	0	4	0.0
10 BL931167	1.0	1	0	0	1.0
11 IL91-15911	3.5	5	7	11	1.5
12 OH599	6.3	29	30	65	4.0
13 MO94-317	5.5	7	11	71	3.0
14 VA97W-375	1.5	2	2	46	0.0
15 VA96W-247	3.3	19	5	11	1.0
16 OH 536	2.8	4	5	2	0.0
17 G60232	1.8	2	2	1	0.5
18 G41332	3.0	7	7	4	1.5
19 G41333	3.5	11	11	15	1.0
20 T104	4.5	33	23	20	2.0
21 T105	4.0	2	33	15	1.5
22 T106	4.0	11	23	17	3.5
23 T109	2.5	11	11	8	1.0
24 HT98-10291	2.3	0	2	25	1.5
25 HT98-10033	4.8	5	11	28	2.0
26 BL940582	2.0	0	0	4	0.0
27 M95*3349	4.8	5	11	47	4.5
28 M95*3330	4.5	11	15	60	2.0
29 M95*2883	5.8	11	15	20	2.0
30 OK91P648-41	1.8	1	2	13	0.0
31 IL94-2894	2.8	5	1	8	0.0
32 IL94-6727	4.3	2	9	26	0.0
33 GA88622E51	1.0	0	1	2	0.0
34 GA881404E56	3.3	11	2	48	2.0
35 P86364RA1-4-2-7	2.8	7	7	6	2.0
36 P92227C5-1-1	4.5	7	15	10	4.0
37 P88204RB1-2-1-6	3.8	7	7	16	3.0
38 TW94315	5.5	9	23	51	4.5
LOCATION MEANS	3.7	8.1	9.7	22.1	1.6
GROWTH STAGE/DATE					

LEAF RUST

	Griffin GA	Urbana IL	W.Lafayette IN	W.Lafayette IN	Wichita KS
		1-9	%	IT	1-9
1 Cardinal	80	5.7	11.9	S	7
2 Caldwell	80	4.0	1.8	MS	3
3 Pioneer 2548	90	6.3	13.5	S	5
4 Foster	0	6.7	26.8	S	3
5 OH 552	90	3.7	9.3	S	2
6 AR 494B-2-2	90	3.7	10.6	S	2
7 AR 584A-3-1	0	1.7	0.0	R	1
8 KY86C-127-3	10	5.0	7.0	S	1
9 BL930390	50	1.0	0.0	R	1
10 BL931167	0	1.0	0.0	R	1
11 IL91-15911	0	3.0	2.1	S	1
12 OH599	90	6.7	20.0	S	2
13 MO94-317	70	6.3	8.8	S	2
14 VA97W-375	0	1.0	0.4	MR/S	1
15 VA96W-247	0	6.7	28.8	S	5
16 OH 536	80	6.7	17.5	S	1
17 G60232	0	1.0	0.8	MS	1
18 G41332	0	2.0	5.5	S	2
19 G41333	5	2.3	3.4	MS	3
20 T104	100	6.3	2.0	S	2
21 T105	90	6.3	4.5	S	1
22 T106	90	4.3	0.9	R/MS	2
23 T109	80	1.7	0.4	R/MS	1
24 HT98-10291	0	1.0	0.9	R/S	1
25 HT98-10033	80	5.7	26.3	S	3
26 BL940582	0	1.0	0.0	R	1
27 M95*3349	80	6.3	10.3	S	1
28 M95*3330	40	6.3	7.9	S	3
29 M95*2883	90	5.3	9.5	S	1
30 OK91P648-41	0	1.0	0.3	R	1
31 IL94-2894	0	2.0	2.1	S	1
32 IL94-6727	0	2.0	1.3	MS	2
33 GA88622E51	0	1.7	0.0	R	1
34 GA881404E56	100	3.7	0.9	S	2
35 P86364RA1-4-2-7	5	4.3	3.3	S-MS	2
36 P92227C5-1-1	90	5.0	15.0	S	1
37 P88204RB1-2-1-6	90	2.7	7.5	S	1
38 TW94315	95	7.3	26.3	S	5
LOCATION MEANS	46.4	3.9	7.6		2
GROWTH STAGE/DATE					

LEAF RUST

	Lexington KY	Columbia MO	Plymouth NC	Wooster OH	Overton TX
	%flag	%canopy		%	0-9
1 Cardinal	4	4	5.0	2.7	3
2 Caldwell	4	2	5.0	1.7	0
3 Pioneer 2548	2	5	7.0	13.3	0
4 Foster	4	6	6.5	6.7	6
5 OH 552	1	4	2.5	0.0	0
6 AR 494B-2-2	2	7	7.5	4.3	1
7 AR 584A-3-1	0	2	0.5	0.0	0
8 KY86C-127-3	2	4	6.0	15.0	0
9 BL930390	1	1	2.5	2.7	3
10 BL931167	1	1	0.0	1.7	0
11 IL91-15911	2	2	2.0	2.7	2
12 OH599	2	8	8.0	25.0	0
13 MO94-317	1	6	7.5	13.3	7
14 VA97W-375	1	1	1.0	0.0	1
15 VA96W-247	1	4	6.5	6.7	1
16 OH 536	0	2	1.0	1.0	0
17 G60232	1	2	2.5	0.0	1
18 G41332	1	2	3.5	3.3	5
19 G41333	4	6	2.5	4.3	1
20 T104	4	5	6.5	3.7	0
21 T105	0	3	5.0	0.3	7
22 T106	1	2	5.5	2.7	1
23 T109	1	2	5.0	3.3	0
24 HT98-10291	1	1	0.0	1.0	0
25 HT98-10033	0	4	5.5	2.7	3
26 BL940582	0	2	1.0	0.0	0
27 M95*3349	2	5	5.5	3.7	6
28 M95*3330	4	9	6.5	10.0	6
29 M95*2883	2	6	6.5	6.0	1
30 OK91P648-41	1	1	1.0	1.7	1
31 IL94-2894	1	3	1.5	0.0	1
32 IL94-6727	2	3	1.5	1.3	3
33 GA88622E51	0	1	0.0	0.0	3
34 GA881404E56	0	2	6.5	3.3	6
35 P86364RA1-4-2-7	0	2	5.0	2.0	1
36 P92227C5-1-1	0	9	6.0	11.7	2
37 P88204RB1-2-1-6	1	5	5.5	2.7	1
38 TW94315	6	8	7.0	11.7	5
LOCATION MEANS	1.6	3.7	4.2	4.5	2.1
GROWTH STAGE/DATE				June 11	

LEAF RUST

St. Paul, MN

Seedling reactions produced by NA race*

No.	Cultivar or Line	BBB*	MCRQ	MCDL	LBBQ	TFBL	TLGG	PNMQ	TDGL	FLML	Postulated Genes***
1	Cardinal	;1c	3	3	3	3	;	3	3	3;	10
2	Caldwell	3;	3	3	3	3	3	;3	3	3;	+
3	Pioneer 2548	;	3	;1c	3;	3	3;	;1c	3	;1c2	11,+
4	Foster	;	3	3	;	3	;	3-;	;	;	10,26
5	OH 552	;	3-2c;	3	;	;-3	;1c2	3	3	3	3,10
6	AR 494B-2-2	;	3	3	3	3	3	3	3	;	1,+
7	AR 584A-3-1	;	;	;	;	;	;	3	;	;1c2	9,10
8	KY86C-127-3	;-3	3	3	;1	3	;	3;	3;	;	26,+
9	BL930390	;	;	;	;	;	3	;	3	;	2a,11,+
10	BL931167	;	;	;	;	;	;	;	;	;	+
11	IL91-15911	3	3;	3	3	3	;3	3	3	3	0
12	OH599	;	3	;1c2	3	3	3-;	3	3	3	+
13	MO94-317	;	3	3;-3	;	-	3	3	3	3	3,10,+
14	VA97W-375	;	3	;1c	;	;1c	;	;	;	;	11,26,+
15	VA96W-247	;	3	3	;1c	3	;1c	;	;1c	;1c	26,+
16	OH 536	;	2c;2	3	3-;	3;	3-;	;	2c3;	;1c	+
17	G60232	;	3	3	3-3;	;	3-;	;	3	;	+
18	G41332	;	3	3	3	3	3	;	3	;1c3	+
19	G41333	;	3	3	3	3	3-;	;	3	;23	+
20	T104	3	3	3	3	3	3	3	3	3	0
21	T105	;	3	3	3	-	3	;	3	3	+
22	T106	;	3	3	3	3	3	;	3	3	+
23	T109	;	3	;1c	;1c	3	3	3	3	;1c2	+
24	HT98-10291	;	;	;	;	;	;	;	;	;	+
25	HT98-10033	;	3	3	3	3;	3	3	3	;	1,+
26	BL940582	;	2c;	;	;	3	;	;	3	;	24,+
27	M95*3349	;	3	;1c-3	;	3	3	;	3	3	+
28	M95*3330	;-3	3	3	3	3	3	3	3	3	0
29	M95*2883	;-3	3	3	3	3	3	3	3	;1c	+
30	OK91P648-41	;	3	3	3	3	;1c	;	;	3;	+
31	IL94-2894	;	3;	3	3	3	3;	3	3	;	1,10,+
32	IL94-6727	;	3,2;	3;	3	-	3	3	3	3	+
33	GA88622E51	;	;1c	;1c	;-3	;	;	;	;	;	+
34	GA881404E56	;	;	;	;	3	;-3	;	;	;	2a,26,+
35	P86364RA1-4-2-7	;	3	3	;-3	;-3	;	;	-	;-3	+
36	P92227C5-1-1	;	3	3	3	;	3	3	-	;	+
37	P88204RB1-2-1-6	;	3	3	-	-	;	;	-	;	10,26,+
38	TW94315	;	3	3	3	3	3	;	;	;	+

* Single genes tested = 1, 2a, 2c, 3, 3ka, 9, 10, 11, 16, 17, 18, 24, 26, 30

**Virulence Formula:

BBB = no virulence

MCRQ = Lr, 1, 3, 3ka, 10, 11, 18, 26, 30

MCDL = Lr, 1, 3, 10, 17, 26

LBBQ = Lr, 1, 10, 18

TFBL = Lr, 1, 2a, 2c, 3, 10, 24, 26

TLGG = Lr, 1, 2a, 2c, 3, 9, 11, 18

PNMQ = Lr, 1, 2c, 3, 3ka, 9, 10, 18, 24, 30

TDGL = Lr, 1, 2a, 2c, 3, 10, 11, 24

FLML = Lr, 2c, 3, 3ka, 9, 10, 30

***0 = no gene(s) detected with these Lr combinations; += Lr gene(s) present but unable to identify with these Lr virulence combinations

STEM RUST

St. Paul, MN

Seedling Reactions

	Stem Rust Isolate						Postulated R Gene?
	TPMK	RTRQ	RTQQ	RTHJ	RHMS	QKCS	
1 CARDINAL	S	S	S	S	S	S	none
2 CALDWELL	S	S	S	S	S	S	none
3 PIONEER 2548	2	S	S	S	S	S	+
4 FOSTER	0	2=	2=	2	1	2=	6
5 OH 552	S	S	S	S	S	;	+
6 AR494B-2-2	S	S	S	S	S	S	none
7 AR584-3-1	S	S	XN	S	S	S	17
8 KY86C-127-3	2=	2=	;;2=	2-	2=	2=	17,+
9 BL930390	S	S	XN	S	S	S	17
10 BL931167	S	S	XN	S	S	S	17
11 IL91-15911	2	S	;	S	S	S	17,+
12 OH599	S	;1N	;	2=	2	2=	10,+
13 MO94-317	S	S	S	S	S	S	none
14 VA97W-375	;	1	;	0	2=	0;	6,10,36
15 VA96W247	0;	;1N	;	0	2=	0	6,10,36,+
16 OH536	;	S	;1-,S	0	S	0	6,17,36
17 G60232	S	S	S	S	S	S	none
18 G41332	S	S	;;XN	S	S	S	17
19 G41333	S	S	;1N	S	S	S	17
20 T104	S	S	S	S	;;S	S	+
21 T105	S	S	S	S	S	S	none
22 T106	2	S	;1N	S	S	S	17
23 T109	S	;1N	;;S	S	S	S	10
24 HT98-10291**	0	0	;	0	0	0	--
25 HT98-10033	2	S	S	2	S	S	9a
26 BL940582	2	2	2-	2-	2-	2=	+
27 M95*3349	S	S	S	S	S	S	none
28 M95*3330	-	S	S	S	S	S	none
29 M95*2883	0;	S	;	S	2	S	6,17
30 OK91P648-41	1,S	1	;	2-	;1-	1	10,1
31 IL94-2894	S	S	S	S	S	S	none
32 IL94-6727	2?	S	S	S	S	S	?
33 GA88622E51	2	S	;	2=	2=	2=	+
34 GA881404E56	S	2=	S	S	S	S	+
35 P86636RA1-4-2-7	2=	2=	2=,S	2-,S	;1	2-,S	+
36 P92227C5-1-1	S	S	S	S	S	-	none
37 P88204RB1-2-1-6	S	S	S	S	S	S	none
38 TW94315	S	S	;	S	S	S	17

**Treated Seed

SEPTORIA

	Bay AR	Fayetteville AR leaf blotch	W.Lafayette IN	Lexington KY tritici 0-9	Columbia MO %canopy
1 Cardinal	3.5	19	7.2	3	52
2 Caldwell	3.5	60	7.6	3	40
3 Pioneer 2548	4.0	55	7.4	4	57
4 Foster	3.8	35	7.8	3	37
5 OH 552	4.8	23	7.9	4	39
6 AR 494B-2-2	3.5	26	7.6	4	25
7 AR 584A-3-1	3.0	23	7.1	4	36
8 KY86C-127-3	3.8	17	7.4	5	42
9 BL930390	3.8	55	6.8	4	69
10 BL931167	3.8	19	6.8	5	46
11 IL91-15911	4.3	19	7.7	4	38
12 OH599	4.0	31	7.8	3	37
13 MO94-317	3.5	35	7.6	4	39
14 VA97W-375	4.5	60	7.4	3	56
15 VA96W-247	3.8	55	8.1	3	56
16 OH 536	3.8	14	7.5	4	49
17 G60232	4.3	26	7.6	4	50
18 G41332	5.0	55	7.6	5	62
19 G41333	4.3	19	7.8	4	34
20 T104	4.5	59	6.9	3	54
21 T105	4.5	64	7.4	4	65
22 T106	5.5	45	7.8	5	47
23 T109	5.8	35	7.5	4	38
24 HT98-10291	3.3	13	7.0	4	35
25 HT98-10033	3.0	13	7.8	4	39
26 BL940582	6.3	45	7.4	5	37
27 M95*3349	3.3	23	7.6	4	34
28 M95*3330	3.3	28	7.0	3	46
29 M95*2883	3.5	59	7.3	4	73
30 OK91P648-41	3.5	60	7.5	3	42
31 IL94-2894	3.5	55	6.9	4	61
32 IL94-6727	3.8	26	7.1	4	44
33 GA88622E51	4.5	36	6.9	4	36
34 GA881404E56	5.0	23	7.1	4	40
35 P86364RA1-4-2-7	2.8	11	7.1	4	52
36 P92227C5-1-1	3.5	36	7.7	3	45
37 P88204RB1-2-1-6	4.0	11	7.6	3	44
38 TW94315	3.8	9	8.3	3	32
LOCATION MEANS	4.0	34.1	7.4	3.8	45.5
GROWTH STAGE/DATE					

mean 4 ratings

SEPTORIA

	Overton TX	Blacksburg VA
	0-9	0-9
1 Cardinal	1	2
2 Caldwell	4	1
3 Pioneer 2548	3	2
4 Foster	2	1
5 OH 552	4	2
6 AR 494B-2-2	7	1
7 AR 584A-3-1	2	1
8 KY86C-127-3	3	1
9 BL930390	2	1
10 BL931167	1	1
11 IL91-15911	1	2
12 OH599	1	1
13 MO94-317	3	1
14 VA97W-375	1	2
15 VA96W-247	1	1
16 OH 536	2	1
17 G60232	3	2
18 G41332	5	1
19 G41333	4	1
20 T104	7	2
21 T105	0	2
22 T106	8	1
23 T109	9	1
24 HT98-10291	1	2
25 HT98-10033	1	1
26 BL940582	3	1
27 M95*3349	1	1
28 M95*3330	1	2
29 M95*2883	3	1
30 OK91P648-41	0	1
31 IL94-2894	2	2
32 IL94-6727	1	1
33 GA88622E51	0	1
34 GA881404E56	4	1
35 P86364RA1-4-2-7	1	2
36 P92227C5-1-1	0	1
37 P88204RB1-2-1-6	0	1
38 TW94315	1	1
LOCATION MEANS	2.4	1.3
GROWTH STAGE/DATE		

POWDERY MILDEW

	Georgetown DE	Quincy FL	Nashville IL	Ft.Branch IN	Greensburg IN
1 Cardinal	2	8	4	4.2	6
2 Caldwell	3	5	3	4.9	6
3 Pioneer 2548	2	8	2	1.5	3
4 Foster	2	4	4	2.6	4
5 OH 552	1	7	1	0.4	3
6 AR 494B-2-2	2	5	2	0.4	3
7 AR 584A-3-1	2	4	1	0.0	3
8 KY86C-127-3	2	0	5	3.4	6
9 BL930390	1	6	1	0.8	4
10 BL931167	1	3	2	0.0	3
11 IL91-15911	2	3	2	3.7	4
12 OH599	2	1	3	3.4	6
13 MO94-317	2	5	1	1.5	3
14 VA97W-375	1	0	1	0.0	3
15 VA96W-247	1	0	1	0.0	3
16 OH 536	1	2	1	0.0	3
17 G60232	2	5	3	5.3	6
18 G41332	2	5	3	4.2	4
19 G41333	1	0	1	2.3	4
20 T104	3	8	2	6.8	6
21 T105	3	8	3	5.3	4
22 T106	2	7	1	4.5	4
23 T109	2	7	3	4.2	4
24 HT98-10291	5	9	5	5.3	4
25 HT98-10033	2	5	3	1.2	4
26 BL940582	3	7	1	0.8	2
27 M95*3349	1	3	1	0.8	2
28 M95*3330	2	3	1	3.7	3
29 M95*2883	2	7	4	4.9	4
30 OK91P648-41	1	7	3	4.5	5
31 IL94-2894	3	8	5	6.0	9
32 IL94-6727	3	7	1	3.1	5
33 GA88622E51	1	2	3	0.4	3
34 GA881404E56	2	6	1	0.0	3
35 P86364RA1-4-2-7	2	1	3	1.9	3
36 P92227C5-1-1	1	1	1	0.0	3
37 P88204RB1-2-1-6	2	7	4	5.3	9
38 TW94315	1	3	1	0.8	5
LOCATION MEANS	1.9	4.7	2.3	2.6	4.2
GROWTH STAGE/DATE				10	10.1

POWDERY MILDEW

	W.Lafayette IN	Lexington KY	Bliss./Sag. MI	Bliss./Sag. MI	Plymouth NC
		0-9	0-9	%flag	
1 Cardinal	13.1	4	5	4.5	3.0
2 Caldwell	14.5	7	4	1.0	1.0
3 Pioneer 2548	5.0	3	2	2.0	3.0
4 Foster	1.3	5	4	2.0	4.0
5 OH 552	2.5	3	0	1.0	1.5
6 AR 494B-2-2	2.5	4	1	1.5	0.5
7 AR 584A-3-1	4.0	5	2	0.0	2.0
8 KY86C-127-3	13.8	8	5	4.0	0.5
9 BL930390	8.8	5	2	2.5	4.5
10 BL931167	0.0	4	3	2.5	0.0
11 IL91-15911	10.0	5	3	6.0	1.0
12 OH599	7.5	5	3	5.5	2.0
13 MO94-317	8.8	5	4	4.0	2.0
14 VA97W-375	0.0	2	0	0.5	0.0
15 VA96W-247	1.3	3	0	0.0	0.0
16 OH 536	2.5	2	0	1.5	2.0
17 G60232	16.3	6	5	3.0	3.0
18 G41332	10.0	5	6	2.5	4.5
19 G41333	11.0	8	2	2.5	1.5
20 T104	22.5	8	5	16.5	5.0
21 T105	23.8	7	5	0.5	3.5
22 T106	15.0	7	5	7.0	3.5
23 T109	16.3	8	5	3.5	4.5
24 HT98-10291	13.8	6	6	5.0	5.5
25 HT98-10033	10.0	4	2	0.5	5.5
26 BL940582	5.0	5	0	1.0	4.0
27 M95*3349	5.0	3	0	1.0	0.5
28 M95*3330	11.8	6	1	0.5	0.0
29 M95*2883	11.3	7	7	4.0	3.5
30 OK91P648-41	21.3	8	4	6.0	5.0
31 IL94-2894	27.5	8	7	9.0	7.0
32 IL94-6727	16.3	8	7	8.5	5.5
33 GA88622E51	5.0	4	3	2.0	1.0
34 GA881404E56	6.3	4	0	0.0	1.0
35 P86364RA1-4-2-7	11.3	6	4	2.0	3.5
36 P92227C5-1-1	3.8	3	0	0.0	0.0
37 P88204RB1-2-1-6	13.8	6	6	7.0	4.5
38 TW94315	8.8	4	1	1.5	0.0
LOCATION MEANS	10.0	5.3	3.1	3.2	2.6
GROWTH STAGE/DATE					

POWDERY MILDEW

	Wooster OH	Ridgetown ON	Warsaw VA
	0-9	0-9	0-9
1 Cardinal	3	3	3
2 Caldwell	2	2	0
3 Pioneer 2548	1	1	0
4 Foster	3	2	3
5 OH 552	1	0	0
6 AR 494B-2-2	2	1	0
7 AR 584A-3-1	1	1	2
8 KY86C-127-3	4	3	4
9 BL930390	2	2	0
10 BL931167	1	1	0
11 IL91-15911	1	3	0
12 OH599	2	3	2
13 MO94-317	0	3	1
14 VA97W-375	0	0	0
15 VA96W-247	1	1	0
16 OH 536	0	1	1
17 G60232	2	3	3
18 G41332	2	2	3
19 G41333	1	2	0
20 T104	7	4	5
21 T105	5	4	5
22 T106	1	4	1
23 T109	2	2	1
24 HT98-10291	3	3	6
25 HT98-10033	1	2	2
26 BL940582	1	0	3
27 M95*3349	0	0	0
28 M95*3330	0	2	2
29 M95*2883	2	3	6
30 OK91P648-41	4	4	3
31 IL94-2894	5	5	5
32 IL94-6727	4	5	4
33 GA88622E51	0	1	1
34 GA881404E56	0	1	1
35 P86364RA1-4-2-7	3	2	2
36 P92227C5-1-1	1	1	0
37 P88204RB1-2-1-6	0	4	2
38 TW94315	0	1	0
LOCATION MEANS	1.8	2.2	1.9
GROWTH STAGE/DATE	May 15	June 9	
	1 rep		

POWDERY MILDEW

Raleigh, NC

		Seedling reaction to isolates						
		7	Aso	E2-15	E3-14	E3-25	F7-11	F7-12
	Axminster Pm1	S	R	R	R	S	R	M
	Orestis Pm2	S	R	R	R	M	S	R
	Asosan Pm3a	S	S	M	R	R	S	S
	Chul Pm3b	M	M	R	R	S	S	M
	Sonora Pm3c	S	S	S	R	S	S	S
	Yuma Pm4a	R	S	R	M	S	S	S
	Ronos Pm4b	M	M	M	M	S	M	RM
	CI 14125 Pm5	S	S	MS	R	S	S	S
	C747 Pm6	S	S	S	M	S	S	S
	Transec Pm7	S	S	S	S	S	S	S
	Kavkaz Pm8	M	M	S	M	S	R	M
	Pm12	S	SR	M	R	MS	RS	M
	Pm16	S	R	R	R	R	R	R
	Amigo Pm17	R	R	R	R	R	R	R
	Mich Amber	S	S	S	R	MS	S	S
	Chancellor	S	S	S	M	RS	S	S
1	Cardinal	S	S	S	S	M	S	S
2	Caldwell	S	S	S	S	S	S	S
3	Pioneer2548	S	S	R	R	R	S	S
4	Foster	S	S	RS	M	S	M	S
5	OH552	S	S	R	R	R	M	S
6	AR494B22	S	S	S	M	S	S	.
7	AR584A31	.	S	RS	R	S	S	.
8	KY86C1273	.	R	S	S	S	.	.
9	BL930390	.	S	R,S	R	.	S	.
10	BL931167	.	S	R,M	R	.	M	.
11	IL91-15911	S	S	S	M	S	.	.
12	OH599	S	S	MS	S	S	S	.
13	MO94-317	S	S	S	S	S	S	.
14	VA97W375	RM	M	R,M	R,M	R	R	.
15	VA96W247	M	R,M	R	R	R	R	M
16	OH536	S	S	R	R	R	S	S
17	G60232	S	S	S	M	S	M	S
18	G41332	S	RM	MS	MS	MS	MS	S
19	G41333	S	S	R,S	R	MS	RM	S
20	T104	S	S	S	M	M	S	S
21	T105	S	S	S	RM	S	S	S
22	T106	S	S	S	M	S	S	S
23	T109	S	S	MS	R	S	S	S
24	HT98-10291	S	S	S	R	R	M	S
25	HT98-10033	R	SR	R	M	R	S	R
26	BL940582	M	R	R	R	RM	RM	M
27	M95-3349	R	MR	R	R	S	R	M
28	M95-3330	S	S	S	R	MS	S	S
29	M95-2883	S	S	R,S	R	M	RS	S
30	OK91P648-41	S	S	S	R	M	M	S
31	IL94-2894	S	S	M	M	S	.	S
32	IL94-6727	S	S	S	.	.	S	S
33	GA88622E51	M	R	M	.	.	M	R
34	GA881404E56	.	.	R	.	.	M	.
35	P86364RA1427	M	.	S	.	.	M	.
36	P92227C5111	R	.	R	.	.	R	.
37	P88204RB1216	.	M	M	R,M	M	M	M
38	TW94315	R	MR	M	R	.	.	R

POWDERY MILDEW

Raleigh, NC

		Seedling reaction to isolates						
		Mo10	Pm4	Yuma	WKin91	W72-27	3a	6
	Axminster Pm1	R	R	R	S	S	R	R
	Orestis Pm2	R	R	S	S	S	R	R
	Asosan Pm3a	S	S	S	S	R	S	S
	Chul Pm3b	RM	R	R	RM	R	S	S
	Sonora Pm3c	S	S	S	SM	S	S	S
	Yuma Pm4a	S	S	R	R	RM	M	S
	Ronos Pm4b	M	M	R	M	S	R	M
	CI 14125 Pm5	S	S	M	S	S	S	S
	C747 Pm6	S	S	S	S	S	S	S
	Transec Pm7	S	S	S	S	M	SM	S
	Kavkaz Pm8	S	S	R	M	M	M	M
	Pm12	RM	R	R	RM	M	R	S
	Pm16	R	R	R	M	RM	R	R
	Amigo Pm17	R	R	R	R	R	R	M
	Mich Amber	S	S	S	S	S	S	S
	Chancellor	S	S	S	S	S	S	S
1	Cardinal	S	S	S	S	S	MS	M
2	Caldwell	S	S	S	S	RM	S	S
3	Pioneer2548	S	S	S	S	R	S	S
4	Foster	S	RM	MS	M	.	M	RM
5	OH552	S	M	MS	S	.	M	M
6	AR494B22	S	S	SM	S	.	S	S
7	AR584A31	SM	S	S	MS	.	MS	S
8	KY86C1273	.	RS	.	.	.	.	R
9	BL930390	MS	S	.	S	.	.	S
10	BL931167	.	S	.	S	.	.	MS
11	IL91-15911	.	S	.	S	.	.	S
12	OH599	S	S	S	S	.	S	S
13	MO94-317	S	S	S	S	S	S	S
14	VA97W375	M	RM	R	SR	R	RM	R
15	VA96W247	M	RS	R	M	R	M	M
16	OH536	S	S	S	S	R	S	S
17	G60232	S	S	S	S	S	S	S
18	G41332	S	MS	S	S	S	S	S
19	G41333	RM	S	S	SM	MR	S	MS
20	T104	S	S	S	S	S	S	S
21	T105	S	M	S	S	MS	S	S
22	T106	S	S	S	S	R	S	S
23	T109	S	MS	S	S	S	M	S
24	HT98-10291	S	RM	MS	SM	R	RM	RM
25	HT98-10033	R	RM	RS	SR	S	MS	M
26	BL940582	R	R	M	MS	M	M	M
27	M95-3349	R	R	RM	MR	RS	MR	MR
28	M95-3330	MS	M	S	S	M	M	S
29	M95-2883	S	RM	RM	S	R	MR	M
30	OK91P648-41	S	M	S	S	M	M	M
31	IL94-2894	MS	M	M	.	S	M	M
32	IL94-6727	S	S	S	S	S	S	S
33	GA88622E51	S	S	S	M	.	M	M
34	GA881404E56	.	.	.	.	.	M	M
35	P86364RA1427	.	.	.	R	.	M	S
36	P92227C5111	.	R	.	.	.	.	.
37	P88204RB1216	MS	M	S	S	S	MR	R
38	TW94315	R	M	.	.	R	R	R

POWDERY MILDEW

Raleigh, NC

		Seedling reaction to isolates						
		127	144	85063	#5	#7	#8	#9
Axminster Pm1		S	S	S	R	R	S	R
Orestis Pm2		R	R	M	R	R	R	RS
Asosan Pm3a		R	RM	R	R	M	R	RS
Chul Pm3b		M	RS	R	R	RM	M	RS
Sonora Pm3c		S	SM	R	S	RM	S	MS
Yuma Pm4a		S	S	M	S	M	S	MS
Ronos Pm4b		S	S	M	M	MS	S	S
CI 14125 Pm5		S	S	M	S	S	S	S
C747 Pm6		S	S	S	S	M	S	S
Transec Pm7		S	S	S	S	S	S	S
Kavkaz Pm8		S	S	S	S	S	S	M
Pm12		M	S	MS	S	M	S	RM
Pm16		R	R	R	R	R	R	R
Amigo Pm17		R	R	R	R	R	R	R
Mich Amber		S	S	RM	S	S	S	S
Chancellor		S	S	S	S	S	S	S
1 Cardinal		S	S	S	M	S	M	S
2 Caldwell		S	S	S	S	MS	S	S
3 Pioneer2548		R	R	R	.	S	R	S
4 Foster		S	S	S	.	RS	S	S
5 OH552		R	R	R	.	RM	R	MR
6 AR494B22		S	SM	S	.	S	MS	S
7 AR584A31		S	S	RS	.	S	.	S
8 KY86C1273		S	MS	S	.	S	S	M
9 BL930390		R	.	R	.	S	.	.
10 BL931167		R	.	R	.	S	.	.
11 IL91-15911		S	S	S	M	S	.	S
12 OH599		S	S	S	S	S	.	S
13 MO94-317		S	S	S	S	S	.	S
14 VA97W375		M	R	R	R	RS	R	S
15 VA96W247		M	R	R	R	M	R	M
16 OH536		R	R	R	R	R	R	R
17 G60232		S	S	S	S	S	S	S
18 G41332		S	S	MS	RM	M	MR	S
19 G41333		MS	RS	RS	M	MR	M	S
20 T104		M	S	S	S	M	S	MR
21 T105		S	S	S	S	M	S	M
22 T106		S	S	S	S	M	S	S
23 T109		M	S	S	S	M	S	S
24 HT98-10291		RS	RM	R	R	M	RS	S
25 HT98-10033		M	RS	RS	S	MR	S	M
26 BL940582		M	R	R	R	R	RM	.
27 M95-3349		S	R	R	S	M	S	M
28 M95-3330		S	S	S	S	MR	S	M
29 M95-2883		S	MR	MS	SR	MR	R	M
30 OK91P648-41		S	S	S	S	M	S	S
31 IL94-2894		S	M	S	S	M	S	S
32 IL94-6727		R	S	M	S	M	S	S
33 GA88622E51		R	M	.	R	S	R	R
34 GA881404E56		.	.	.	.	M	.	.
35 P86364RA1427		.	S	.	.	S	M	.
36 P92227C5111		.	R	R	R	R	SM	R
37 P88204RB1216		RM	R	M	S	R	S	R
38 TW94315		S	MS	MR	S	R	S	R

POWDERY MILDEW

Raleigh, NC

	Seedling reaction to isolates						
	#10	43a1	43a2	73b2	101a2	153a2	156b1
Axminster Pm1	.	.	.	M	S	S	.
Orestis Pm2	R	S	S	R	R	S	S
Asosan Pm3a	RM	S	S	S	R	S	S
Chul Pm3b	R	R	RM	R	MS	M	S
Sonora Pm3c	S	S	RS	S	S	RS	M
Yuma Pm4a	S	S	S	S	S	R	M
Ronos Pm4b	M	R	M	M	S	M	R
CI 14125 Pm5	S	S	S	S	S	S	M
C747 Pm6	S	S	S	S	S	S	M
Transec Pm7	S	S	S	S	S	S	M
Kavkaz Pm8	M	R	M	S	S	R	R
Pm12	MS	M	RM	S	S	M	R
Pm16	R	R	R	R	R	RM	R
Amigo Pm17	R	R	R	R	R	R	R
Mich Amber	S	S	S	S	S	S	S
Chancellor	S	S	S	S	S	S	S
1 Cardinal	S	S	S	S	S	S	M
2 Caldwell	S	S	S	S	S	S	M
3 Pioneer2548	MR	S	S	S	R	S	S
4 Foster	S	M	R	S	S	M	MS
5 OH552	R	M	M	M	R	S	S
6 AR494B22	S	MR	S	S	S	S	S
7 AR584A31	.	M	S	S	RS	S	S
8 KY86C1273	.	.	R	S	S	R	R
9 BL930390	.	S	M	S	R	M	S
10 BL931167	.	M	S	S	R M	M	S
11 IL91-15911	.	S	S	S	S	M	S
12 OH599	S	S	SM	MS	S	S	RS
13 MO94-317	S	S	S	S	S	S	S
14 VA97W375	R	RS	R	MS	RM	MS	MR
15 VA96W247	M	MR	R	S	M	R	R
16 OH536	R	S	S	S	R	M	MR
17 G60232	S	S	S	S	M	S	RS
18 G41332	S	MS	RM	M	S	S	S
19 G41333	S	RS	S	S	RS	S	M
20 T104	S	S	MS	S	S	S	RM
21 T105	S	S	S	S	RM	S	S
22 T106	S	S	S	S	MS	S	SM
23 T109	S	S	S	S	S	S	MS
24 HT98-10291	R	M	S	RS	MS	S	S
25 HT98-10033	MR	RS	RM	RS	S	S	S
26 BL940582	M	RM	M	M	R	.	RM
27 M95-3349	MR	RM	R	R	M	R	R
28 M95-3330	S	S	S	MS	S	S	M
29 M95-2883	S	S	MS	RM	S	S	R
30 OK91P648-41	S	S	S	S	S	S	S
31 IL94-2894	S	S	S	M	S	S	M
32 IL94-6727	S	S	S	M	S	S	M
33 GA88622E51	R	M	R	.	.	M	M
34 GA881404E56	.	.	.	.	.	.	.
35 P86364RA1427	.	.	.	.	.	.	.
36 P92227C5111	.	R	R	.	.	R	.
37 P88204RB1216	S	.	MS	.	.	S	R
38 TW94315	S	M	.	M	.	.	R

POWDERY MILDEW

Raleigh, NC

		isolates		
		169-1b	209a2	216a
Axminster Pm1		R	R	S
Orestis Pm2		S	R	R
Asosan Pm3a		RM	S	S
Chul Pm3b		R	M	R
Sonora Pm3c		S	S	RM
Yuma Pm4a		S	MS	R
Ronos Pm4b		M	M	M
CI 14125 Pm5		S	MS	R
C747 Pm6		S	S	S
Transec Pm7		S	S	S
Kavkaz Pm8		S	M	M
Pm12		MR	M	M
Pm16		R	R	R
Amigo Pm17		R	R	R
Mich Amber		S	S	S
Chancellor		S	S	S
1 Cardinal		S	S	S
2 Caldwell		S	S	S
3 Pioneer2548		R	S	S
4 Foster		S	S	M
5 OH552		R	S	R
6 AR494B22		S	S	S
7 AR584A31		R	.	S
8 KY86C1273		S	.	.
9 BL930390		R	.	S
10 BL931167		R	.	S
11 IL91-15911		S	.	S
12 OH599		S	.	S
13 MO94-317		S	.	S
14 VA97W375		RM	R	R
15 VA96W247		MS	RM	RM
16 OH536		R	S	R
17 G60232		S	S	S
18 G41332		M	MS	S
19 G41333		S	M	M
20 T104		S	MR	M
21 T105		M	S	M
22 T106		S	S	S
23 T109		S	MS	M
24 HT98-10291		R	S	M
25 HT98-10033		R	R	R
26 BL940582		M	M	R
27 M95-3349		R	MR	R
28 M95-3330		S	S	S
29 M95-2883		S	S	M
30 OK91P648-41		S	S	S
31 IL94-2894		S	S	S
32 IL94-6727		.	S	SM
33 GA88622E51		.	R	M
34 GA881404E56		.	.	R
35 P86364RA1427		.	R	S
36 P92227C5111		.	R	.
37 P88204RB1216		R	R	M
38 TW94315		R	M	M

FUSARIUM HEAD SCAB

	Urbana IL incidence %	Urbana IL severity %	Urbana IL index	Clarksville/E.Lansing MI severity	incidence	Columbia MO incidence
1 Cardinal	17.5	18.0	3.1	3.0	7.0	2
2 Caldwell	32.5	15.6	5.1	4.5	7.5	2
3 Pioneer 2548	20.0	16.9	3.4	5.0	7.5	5
4 Foster	20.0	12.5	2.4	3.5	8.0	3
5 OH 552	20.0	10.2	2.3	3.0	8.0	2
6 AR 494B-2-2	25.0	13.7	3.5	5.0	7.0	2
7 AR 584A-3-1	35.0	22.9	8.0	6.0	9.0	9
8 KY86C-127-3	20.0	12.8	2.6	2.5	6.0	2
9 BL930390	35.0	22.0	7.7	4.5	8.0	4
10 BL931167	22.5	21.5	4.9	4.5	8.5	3
11 IL91-15911	12.5	10.6	1.3	2.5	5.5	2
12 OH599	22.5	24.3	5.1	6.5	7.0	3
13 MO94-317	42.5	25.6	10.8	6.0	8.5	9
14 VA97W-375	30.0	18.5	5.4	6.5	9.0	7
15 VA96W-247	42.5	14.4	6.3	4.0	8.0	6
16 OH 536	30.0	19.0	5.6	4.0	9.0	2
17 G60232	30.0	25.5	7.8	4.5	6.5	3
18 G41332	17.5	20.0	3.5	3.0	5.5	3
19 G41333	25.0	15.2	3.7	4.0	5.0	3
20 T104	35.0	13.2	4.5	2.0	6.5	2
21 T105	32.5	16.2	5.0	4.0	8.5	2
22 T106	50.0	18.4	9.2	4.0	7.0	3
23 T109	30.0	17.3	5.2	4.0	9.0	2
24 HT98-10291	30.0	26.1	7.8	4.5	6.5	2
25 HT98-10033	12.5	15.2	1.9	2.5	7.0	2
26 BL940582	25.0	37.6	9.5	7.0	8.5	7
27 M95*3349	20.0	16.0	3.2	4.0	7.5	2
28 M95*3330	22.5	34.6	7.6	3.5	7.0	3
29 M95*2883	22.5	23.1	5.8	4.0	6.5	2
30 OK91P648-41	42.5	23.1	9.9	8.5	9.0	7
31 IL94-2894	12.5	11.6	1.5	2.5	5.5	2
32 IL94-6727	20.0	14.8	3.0	2.5	6.0	1
33 GA88622E51	55.0	16.9	9.3	5.0	8.5	4
34 GA881404E56	35.0	23.5	8.6	6.5	9.0	4
35 P86364RA1-4-2-7	32.5	16.8	5.5	4.0	8.5	2
36 P92227C5-1-1	25.0	16.5	4.4	3.5	7.5	2
37 P88204RB1-2-1-6	30.0	20.2	6.3	5.5	8.5	2
38 TW94315	27.5	29.1	7.9	3.5	6.5	1

LOCATION MEANS

27.9

19.2

5.5

4.3

7.5

3.3

GROWTH STAGE/DATE

2 reps
misted, inoculated

irrigated and inoculated

SHARP EYESPOT

		Bay
		AR
		1-9
1	Cardinal	3.0
2	Caldwell	3.0
3	Pioneer 2548	3.0
4	Foster	2.5
5	OH 552	2.3
6	AR 494B-2-2	3.3
7	AR 584A-3-1	3.5
8	KY86C-127-3	2.3
9	BL930390	3.3
10	BL931167	2.8
11	IL91-15911	3.5
12	OH599	3.5
13	MO94-317	2.5
14	VA97W-375	2.8
15	VA96W-247	3.5
16	OH 536	2.0
17	G60232	2.8
18	G41332	3.0
19	G41333	3.3
20	T104	3.8
21	T105	3.8
22	T106	3.5
23	T109	3.8
24	HT98-10291	3.5
25	HT98-10033	3.8
26	BL940582	4.0
27	M95*3349	2.5
28	M95*3330	3.8
29	M95*2883	3.3
30	OK91P648-41	4.8
31	IL94-2894	3.8
32	IL94-6727	4.0
33	GA88622E51	3.8
34	GA881404E56	4.5
35	P86364RA1-4-2-7	2.5
36	P92227C5-1-1	2.8
37	P88204RB1-2-1-6	2.3
38	TW94315	2.3
LOCATION MEANS		3.2

Rating of individual stems which lodged

RHIZOCTONIA

	Lafayette IN	Woodburn IN
	Rhizoctonia	Rhizoctonia/ spring freeze
1 Cardinal	7	
2 Caldwell	8	
3 Pioneer 2548	8	
4 Foster	7	
5 OH 552	4	
6 AR 494B-2-2	7	
7 AR 584A-3-1	7	
8 KY86C-127-3	4	
9 BL930390	5	5 / 5
10 BL931167	8	5 /
11 IL91-15911	8	
12 OH599	5	
13 MO94-317	4	
14 VA97W-375	5	
15 VA96W-247	7	
16 OH 536	6	
17 G60232	7	
18 G41332	7	
19 G41333	8	
20 T104	8	
21 T105	8	/ 5
22 T106	8	
23 T109	8	/ 5
24 HT98-10291	4	
25 HT98-10033	4	
26 BL940582	7	/ 5
27 M95*3349	3	
28 M95*3330	8	
29 M95*2883	3	
30 OK91P648-41	8	
31 IL94-2894	8	5 /
32 IL94-6727	8	
33 GA88622E51	7	/ 5
34 GA881404E56	8	
35 P86364RA1-4-2-7	5	
36 P92227C5-1-1	7	
37 P88204RB1-2-1-6	3	
38 TW94315	8	
LOCATION MEANS	6.4	

BYDV

	Griffin GA	Nashville IL 1-9	Urbana IL 0-9	Urbana IL stunting %	Plymouth NC
1 Cardinal	5	8	5.5	9.3	2.5
2 Caldwell	4	8	4.5	8.1	2.0
3 Pioneer 2548	2	7	6.0	22.1	0.5
4 Foster	7	4	5.0	8.5	3.5
5 OH 552	7	8	8.0	25.0	2.0
6 AR 494B-2-2	1	4	5.0	13.8	1.5
7 AR 584A-3-1	6	9	8.0	16.9	3.0
8 KY86C-127-3	9	5	7.5	22.0	3.0
9 BL930390	5	8	5.0	4.6	1.5
10 BL931167	6	8	1.5	-8.3	2.0
11 IL91-15911	6	6	4.5	9.1	2.5
12 OH599	4	4	7.0	5.1	2.5
13 MO94-317	4	7	6.5	1.7	3.0
14 VA97W-375	4	8	7.0	1.3	2.0
15 VA96W-247	4	7	4.5	-5.9	2.0
16 OH 536	8	8	4.5	15.6	2.5
17 G60232	5	4	5.0	7.6	1.0
18 G41332	3	4	4.5	13.4	2.5
19 G41333	3	8	6.5	18.4	2.5
20 T104	3	8	5.0	1.6	2.0
21 T105	2	7	8.0	15.9	3.5
22 T106	2	5	6.0	13.6	4.5
23 T109	3	8	3.5	8.3	3.5
24 HT98-10291	9	4	8.0		2.5
25 HT98-10033	8	7	4.5	6.1	4.5
26 BL940582	3	6	3.0	9.3	3.0
27 M95*3349	6	5	6.0	17.2	2.5
28 M95*3330	7	7	1.5	-2.1	2.5
29 M95*2883	5	5	4.5	-3.3	1.0
30 OK91P648-41	2	7	6.0	4.5	2.0
31 IL94-2894	4	8	5.0		1.0
32 IL94-6727	8	8	5.0	12.1	1.0
33 GA88622E51	3	7	4.5	10.7	2.0
34 GA881404E56	6	9	5.0	3.8	2.0
35 P86364RA1-4-2-7	8	6	4.5	3.6	1.0
36 P92227C5-1-1	7	6	4.5	5.4	1.0
37 P88204RB1-2-1-6	3	7	4.5	19.6	1.5
38 TW94315	8	5	4.0	6.9	2.5

LOCATION MEANS

5

6.6

5.2

8.9

2.3

GROWTH STAGE/DATE

based on black head
after ripening

2 reps or paired
FAV inc. vs
control hills

BYDV

	Blacksburg VA	Warsaw VA
	0-9	0-9
1 Cardinal	2	1
2 Caldwell	2	2
3 Pioneer 2548	2	3
4 Foster	1	2
5 OH 552	2	3
6 AR 494B-2-2	1	0
7 AR 584A-3-1	2	3
8 KY86C-127-3	2	3
9 BL930390	1	1
10 BL931167	1	3
11 IL91-15911	1	4
12 OH599	2	5
13 MO94-317	1	2
14 VA97W-375	1	3
15 VA96W-247	2	1
16 OH 536	2	1
17 G60232	2	2
18 G41332	3	0
19 G41333	2	1
20 T104	2	3
21 T105	2	1
22 T106	3	4
23 T109	3	0
24 HT98-10291	2	3
25 HT98-10033	2	3
26 BL940582	2	2
27 M95*3349	2	4
28 M95*3330	2	3
29 M95*2883	2	1
30 OK91P648-41	1	4
31 IL94-2894	2	3
32 IL94-6727	2	2
33 GA88622E51	2	2
34 GA881404E56	2	2
35 P86364RA1-4-2-7	1	3
36 P92227C5-1-1	1	4
37 P88204RB1-2-1-6	1	1
38 TW94315	2	3
LOCATION MEANS	1.8	2.3
GROWTH STAGE/DATE		

VIRUSES

		Bay AR	Keiser AR	Keiser AR	Keiser AR
		spindle streak spindle streak	soilborne mosaic	spindle streak mosaic	soilborne & spindle streak
1	Cardinal	5.5	4.8	1.5	4.0
2	Caldwell	7.0	0.5	5.0	2.5
3	Pioneer 2548	6.5	3.5	6.5	4.0
4	Foster	2.3	0.8	1.5	0.0
5	OH 552	1.8	0.0	0.0	0.0
6	AR 494B-2-2	3.0	0.0	1.5	0.0
7	AR 584A-3-1	1.0	0.0	1.5	0.0
8	KY86C-127-3	3.3	0.0	0.0	2.5
9	BL930390	2.3	1.3	0.0	2.5
10	BL931167	6.5	0.0	1.5	0.0
11	IL91-15911	6.0	0.0	0.0	0.0
12	OH599	2.3	0.5	1.5	3.0
13	MO94-317	1.0	0.0	0.0	1.5
14	VA97W-375	2.0	1.7	4.0	4.0
15	VA96W-247	4.3	4.5	2.5	3.0
16	OH 536	1.8	0.5	1.5	0.0
17	G60232	5.0	0.0	1.5	0.0
18	G41332	4.3	0.0	2.5	0.0
19	G41333	4.3	0.0	0.0	0.0
20	T104	6.3	0.0	4.0	0.0
21	T105	6.3	0.0	4.5	4.5
22	T106	6.0	0.0	6.5	6.5
23	T109	5.5	0.8	4.0	4.0
24	HT98-10291	2.5	0.0	5.0	2.5
25	HT98-10033	1.5	0.8	0.0	0.0
26	BL940582	1.0	0.0	0.0	0.0
27	M95*3349	1.3	0.0	0.0	0.0
28	M95*3330	3.8	0.0	4.0	0.0
29	M95*2883	2.0	0.5	1.5	0.0
30	OK91P648-41	4.3	0.0	8.0	0.0
31	IL94-2894	5.8	1.3	8.5	2.5
32	IL94-6727	2.8	0.5	4.0	1.5
33	GA88622E51	3.0	2.8	0.0	8.0
34	GA881404E56	6.5	1.3	4.0	4.0
35	P86364RA1-4-2-7	2.5	0.5	4.0	0.0
36	P92227C5-1-1	2.8	0.0	0.0	0.0
37	P88204RB1-2-1-6	1.3	0.0	3.0	0.0
38	TW94315	2.0	0.0	2.0	0.0
LOCATION MEAN		3.6	0.7	2.5	1.6
			mean 6 ratings	mean 2 ratings	mean 2 ratings

VIRUSES

	Urbana IL	Wichita KS
	WSSMV 0-9	SBM 1-9
1 Cardinal	5.0	2.0
2 Caldwell	6.0	1.0
3 Pioneer 2548	7.0	9.0
4 Foster	4.5	1.0
5 OH 552	2.5	1.0
6 AR 494B-2-2	4.5	1.0
7 AR 584A-3-1	1.5	1.0
8 KY86C-127-3	1.5	1.0
9 BL930390	1.5	1.0
10 BL931167	5.0	5.0
11 IL91-15911	3.5	1.0
12 OH599	2.5	1.0
13 MO94-317	2.5	1.0
14 VA97W-375	6.5	6.0
15 VA96W-247	7.5	9.0
16 OH 536	1.5	1.0
17 G60232	4.0	1.0
18 G41332	5.5	1.0
19 G41333	4.5	1.0
20 T104	6.0	1.0
21 T105	6.0	1.0
22 T106	6.0	1.0
23 T109	6.0	1.0
24 HT98-10291	5.0	1.0
25 HT98-10033	3.5	1.0
26 BL940582	3.5	1.0
27 M95*3349	3.0	1.3
28 M95*3330	4.5	1.0
29 M95*2883	5.5	1.0
30 OK91P648-41	5.5	1.0
31 IL94-2894	6.0	3.0
32 IL94-6727	5.5	1.0
33 GA88622E51	8.0	9.0
34 GA881404E56	7.5	3.0
35 P86364RA1-4-2-7	4.5	1.0
36 P92227C5-1-1	2.0	1.0
37 P88204RB1-2-1-6	3.5	1.0
38 TW94315	3.0	1.0
LOCATION MEAN	4.5	2.0
	2 reps	

HESSIAN FLY

W. Lafayette, IN

		Biotype GP	Biotype B	Biotype C	Biotype D	Biotype E	Biotype L
1	Cardinal	15 - 0	0 - 12	9 - 6	0 - 13	5 - 8	0 - 12
2	Caldwell	16 - 0	14 - 0	0 - 14	0 - 14	11 - 0	0 - 13
3	Pioneer 2548	0 - 16	0 - 14	0 - 16	0 - 15	0 - 16	0 - 16
4	Foster	0 - 9	0 - 15	0 - 14	0 - 15	0 - 12	0 - 15
5	OH 552	0 - 13	0 - 13	0 - 16	0 - 15	0 - 11	0 - 17
6	AR 494B-2-2	0 - 16	0 - 15	0 - 13	0 - 16	1 - 16	0 - 15
7	AR 584A-3-1	0 - 18	0 - 13	0 - 14	0 - 16	0 - 14	0 - 15
8	KY86C-127-3	0 - 16	0 - 14	0 - 13	0 - 16	0 - 15	0 - 13
9	BL930390	0 - 17	0 - 15	0 - 14	0 - 16	0 - 14	0 - 12
10	BL931167	10 - 4	0 - 10	0 - 10	0 - 16	0 - 18	0 - 16
11	IL91-15911	17 - 0	15 - 0	2 - 14	0 - 9	11 - 9	0 - 16
12	OH599	6 - 12	0 - 16	6 - 8	0 - 10	0 - 18	0 - 16
13	MO94-317	0 - 11	0 - 12	0 - 14	0 - 12	0 - 14	0 - 16
14	VA97W-375	0 - 12	0 - 11	0 - 11	0 - 14	0 - 16	0 - 12
15	VA96W-247	0 - 17	0 - 16	0 - 15	0 - 13	0 - 15	0 - 16
16	OH 536	0 - 17	0 - 13	0 - 17	0 - 18	0 - 17	0 - 15
17	G60232	8 - 5	2 - 12	10 - 4	0 - 15	6 - 13	0 - 13
18	G41332	17 - 0	17 - 0	2 - 11	0 - 17	16 - 0	0 - 16
19	G41333	20 - 0	16 - 0	0 - 14	0 - 13	20 - 0	0 - 15
20	T104	7 - 6	8 - 3	0 - 17	0 - 14	5 - 9	0 - 13
21	T105	0 - 11	0 - 8	0 - 17	0 - 16	3 - 18	0 - 15
22	T106	0 - 14	0 - 14	0 - 11	0 - 22	0 - 17	0 - 10
23	T109	0 - 10	0 - 16	0 - 12	0 - 12	0 - 18	0 - 11
24	HT98-10291	0 - 9	0 - 12	0 - 16	0 - 13	0 - 14	0 - 12
25	HT98-10033	10 - 9	7 - 9	12 - 3	3 - 10	13 - 7	8 - 4
26	BL940582	0 - 18	0 - 12	4 - 12	0 - 15	0 - 17	0 - 14
27	M95*3349	9 - 7	1 - 14	4 - 10	0 - 20	14 - 6	0 - 14
28	M95*3330	0 - 17	0 - 15	6 - 11	0 - 16	0 - 15	0 - 17
29	M95*2883	16 - 0	12 - 0	0 - 14	0 - 13	23 - 0	0 - 18
30	OK91P648-41	5 - 9	0 - 14	16 - 3	0 - 11	1 - 17	0 - 15
31	IL94-2894	0 - 9	0 - 16	0 - 15	0 - 17	0 - 19	0 - 14
32	IL94-6727	15 - 0	14 - 0	2 - 8	0 - 15	19 - 0	0 - 16
33	GA88622E51	0 - 12	0 - 11	10 - 2	0 - 20	0 - 12	0 - 9
34	GA881404E56	14 - 0	10 - 0	3 - 9	0 - 15	13 - 0	0 - 12
35	P86364RA1-4-2-7	12 - 0	14 - 0	11 - 0	6 - 6	14 - 0	0 - 11
36	P92227C5-1-1	13 - 0	11 - 0	11 - 0	7 - 6	15 - 0	0 - 12
37	P88204RB1-2-1-6	11 - 0	10 - 0	15 - 0	9 - 3	12 - 0	0 - 15
38	TW94315	0 - 15	0 - 14	0 - 15	0 - 15	0 - 20	0 - 17

no. seedlings resistant - no. seedlings susceptible

PREHARVEST SPROUTING

E.Lansing
MI

0-9

1	Cardinal	6
2	Caldwell	3
3	Pioneer 2548	1
4	Foster	3
5	OH 552	4
6	AR 494B-2-2	4
7	AR 584A-3-1	2
8	KY86C-127-3	1
9	BL930390	6
10	BL931167	4
11	IL91-15911	1
12	OH599	2
13	MO94-317	3
14	VA97W-375	7
15	VA96W-247	1
16	OH 536	2
17	G60232	2
18	G41332	3
19	G41333	1
20	T104	1
21	T105	4
22	T106	1
23	T109	5
24	HT98-10291	5
25	HT98-10033	2
26	BL940582	5
27	M95*3349	5
28	M95*3330	1
29	M95*2883	3
30	OK91P648-41	1
31	IL94-2894	1
32	IL94-6727	1
33	GA88622E51	6
34	GA881404E56	4
35	P86364RA1-4-2-7	1
36	P92227C5-1-1	2
37	P88204RB1-2-1-6	1
38	TW94315	6

LOCATION MEANS

2.9

greenhouse - 5 heads subjected to
near-continuous misting

ACID SOIL TOLERANCE

	Stillwater OK	Stillwater OK	Stillwater OK
	1-5	1-5	1-5
1 Cardinal	2	2	3
2 Caldwell	3	3	3
3 Pioneer 2548	2	2	2
4 Foster	1	1	1
5 OH 552	2	2	2
6 AR 494B-2-2	1	1	1
7 AR 584A-3-1	1	1	1
8 KY86C-127-3	2	2	2
9 BL930390	2	2	2
10 BL931167	3	3	2
11 IL91-15911	2	2	1
12 OH599	2	2	2
13 MO94-317	3	2	2
14 VA97W-375	4	4	4
15 VA96W-247	1	1	1
16 OH 536	4	4	4
17 G60232	2	2	3
18 G41332	4	3	3
19 G41333	3	3	3
20 T104	3	2	2
21 T105	4	3	3
22 T106	4	3	3
23 T109	4	2	3
24 HT98-10291	2	3	3
25 HT98-10033	2	3	4
26 BL940582	2	1	1
27 M95*3349	3	3	2
28 M95*3330	1	1	1
29 M95*2883	1	1	2
30 OK91P648-41	2	2	1
31 IL94-2894	3	3	3
32 IL94-6727	3	3	3
33 GA88622E51	2	2	2
34 GA881404E56	3	2	2
35 P86364RA1-4-2-7	2	2	3
36 P92227C5-1-1	2	3	3
37 P88204RB1-2-1-6	5	5	5
38 TW94315	4	4	4
LOCATION MEANS	2.5	2.4	2.4
GROWTH STAGE/DATE	Dec 15	Feb 23	May 5
1=tolerant; 5=susceptible	see location notes		

SPRING VIGOR

Ridgetown
ON

0-9

1	Cardinal	5.5
2	Caldwell	6.0
3	Pioneer 2548	6.0
4	Foster	6.0
5	OH 552	6.0
6	AR 494B-2-2	6.0
7	AR 584A-3-1	5.8
8	KY86C-127-3	6.0
9	BL930390	6.0
10	BL931167	6.0
11	IL91-15911	5.8
12	OH599	6.0
13	MO94-317	6.0
14	VA97W-375	4.5
15	VA96W-247	5.8
16	OH 536	6.0
17	G60232	5.8
18	G41332	5.8
19	G41333	5.8
20	T104	5.2
21	T105	5.5
22	T106	5.2
23	T109	5.8
24	HT98-10291	5.0
25	HT98-10033	6.0
26	BL940582	6.0
27	M95*3349	6.0
28	M95*3330	6.0
29	M95*2883	6.0
30	OK91P648-41	5.5
31	IL94-2894	5.5
32	IL94-6727	5.5
33	GA88622E51	5.2
34	GA881404E56	5.8
35	P86364RA1-4-2-7	6.0
36	P92227C5-1-1	5.2
37	P88204RB1-2-1-6	4.8
38	TW94315	5.5
	LOCATION MEANS	5.7

MATURITY

Ridgetown
ON

	julian
1 Cardinal	189.0
2 Caldwell	188.0
3 Pioneer 2548	190.0
4 Foster	191.0
5 OH 552	190.0
6 AR 494B-2-2	190.0
7 AR 584A-3-1	190.0
8 KY86C-127-3	190.0
9 BL930390	190.0
10 BL931167	190.0
11 IL91-15911	188.0
12 OH599	189.0
13 MO94-317	189.0
14 VA97W-375	192.0
15 VA96W-247	191.0
16 OH 536	190.0
17 G60232	190.0
18 G41332	189.0
19 G41333	188.0
20 T104	190.0
21 T105	190.0
22 T106	189.0
23 T109	190.0
24 HT98-10291	192.0
25 HT98-10033	188.0
26 BL940582	191.0
27 M95*3349	189.0
28 M95*3330	192.0
29 M95*2883	188.0
30 OK91P648-41	185.0
31 IL94-2894	190.0
32 IL94-6727	190.0
33 GA88622E51	190.0
34 GA881404E56	190.0
35 P86364RA1-4-2-7	190.0
36 P92227C5-1-1	191.0
37 P88204RB1-2-1-6	190.0
38 TW94315	187.0
LOCATION MEANS	189.6

1RS STATUS

Lincoln
NE

1	Cardinal	non.1RS
2	Caldwell	non.1RS
3	Pioneer 2548	non.1RS
4	Foster	1BL.1RS
5	OH 552	non.1RS
6	AR 494B-2-2	non.1RS
7	AR 584A-3-1	non.1RS
8	KY86C-127-3	1BL.1RS
9	BL930390	non.1RS
10	BL931167	non.1RS
11	IL91-15911	non.1RS
12	OH599	1AL.1RS - mixed?
13	MO94-317	non.1RS
14	VA97W-375	1BL.1RS
15	VA96W-247	1BL.1RS
16	OH 536	non.1RS
17	G60232	non.1RS
18	G41332	non.1RS
19	G41333	non.1RS
20	T104	non.1RS
21	T105	non.1RS
22	T106	non.1RS
23	T109	non.1RS
24	HT98-10291	non.1RS
25	HT98-10033	non.1RS
26	BL940582	non.1RS
27	M95*3349	non.1RS
28	M95*3330	non.1RS
29	M95*2883	non.1RS
30	OK91P648-41	non.1RS
31	IL94-2894	non.1RS
32	IL94-6727	non.1RS
33	GA88622E51	non.1RS
34	GA881404E56	non.1RS
35	P86364RA1-4-2-7	1BL.1RS
36	P92227C5-1-1	non.1RS
37	P88204RB1-2-1-6	non.1RS
38	TW94315	non.1RS

**1999 Crop
Advanced Nursery Evaluation
Regional UERN Composites**

#3801- #3838 Atlantic Region
#3851- #3888 Northern Corn Belt
#3901- #3938 Southern Corn Belt

Entries were first analyzed by region, using the CALDWELL checks as the standards. Then the data from all three regions were combined, and all the entries were compared to the mean data from the three CALDWELL checks. In this manner, entries are compared within a region, and also the three regions can be compared.

The following table presents the data for the standards, as well as the historical data from the SWQL data base of 232 Quad-milled cultivars:

Test	Atlantic	Northern	Southern	Mean	Data Base
Milling Quality Score	97.7	104.4	97.9	100	
Baking Quality Score	90.0	98.5	108.6	99.0	
Combined Quality Score	90.0	98.5	97.9	95.5	
Test Weight	62.1	59.6	59.1	60.3	58.76
Softness Equivalent	59.3	63.6	66.2	63.0	63.78
Adjusted Flour Yield	71.9	73.2	71.2	72.1	71.31
Flour Protein	8.51	9.32	8.07	8.63	8.37
A.W.R.C.	56.8	56.1	55.9	56.3	56.62
Cookie Diameter	17.68	17.82	18.32	17.94	18.12

CALDWELL ranked 86th for Adjusted yield out of the 232 cultivars in the data-base, based on averaged data from 74 millings. The standards had slightly higher test weight than the historical data, but were very similar. The standard for the Atlantic region had lower Softness Equivalent (S.E.) and smaller cookie diameter than the other regions.

In addition to the data tables, a series of graphs were prepared. The following comments are based on observations from the data tables and graphs:

Milling Quality Score:

Milling quality scores of "C" or higher were acceptable. Lower Milling Quality Scores meant that the adjusted yields were 70.5% or lower. There was very good agreement between regions. The mean scores were: Atlantic = 93.2, North = 95.4, and South = 98.4.

Baking Quality Score:

Baking Quality Scores were more variable than the Milling Quality Scores. Mean scores were: Atlantic = 87.1, North = 91.0, South = 103.0. As observed from the means, the Southern region had the highest scores. Note low scores for entry #7 (AR 584A3-1), #25 (HT 98-10033), and #30 (OK 91 P548-41).

Combined Quality Score:

In most cases, the Combined Quality Scores were the same as the Baking Quality Scores.

Test Weight:

It was apparent from the graph that the Southern region had lower test weights than the other locations. Atlantic = 61.7, North = 60.6, and South = 57.8. There was good agreement for cultivars. Entry #12 (OH 599), #28 (M95*3330), and #32 (IL 94-2894). All had high test weights.

Adjusted Yields:

The yields were very similar for all reps. There was a good response to varietal differences. Entries #4 (AP Foster) and #16 (OH 536) had very high adjusted yields. Entries #30 (OK 91 P648-41), and #33 (GA 88622E51) were the lowest.

Flour Protein:

Protein content was influenced by both variety and region. The Southern region was 1-1.5% lower than the other regions.

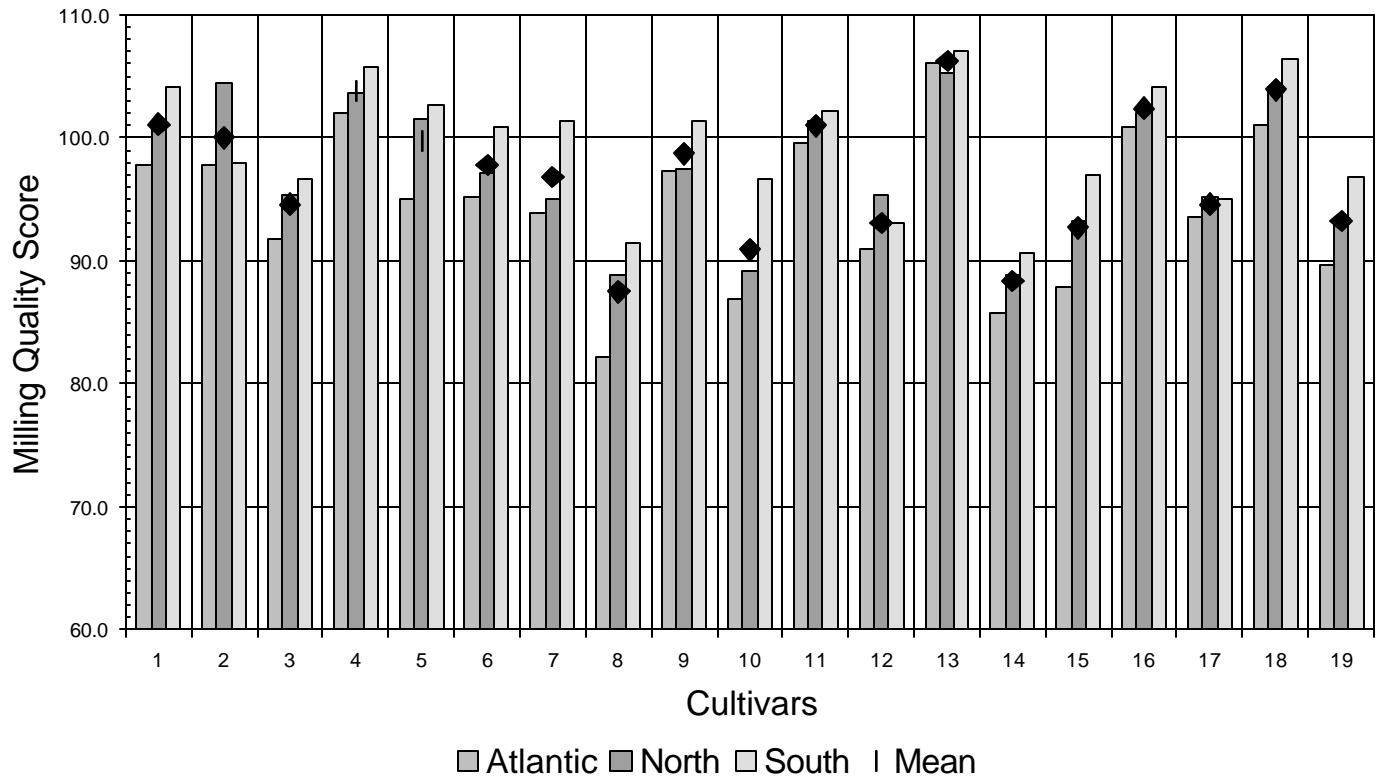
A.W.R.C.:

The A.W.R.C. values were influenced mostly by genetics, since there was good agreement across locations. High A.W.R.C.: #3(PION. 2548), #15 (VA 96W-247), #22 (TI06), #23 (T109), AND #30 (OK 91 P648-41). Low A.W.R.C. values were observed for #5 (OH 552), #16 (OH 536), #26 (BL 940582), and #35 (P86364RAI-4-2-7).

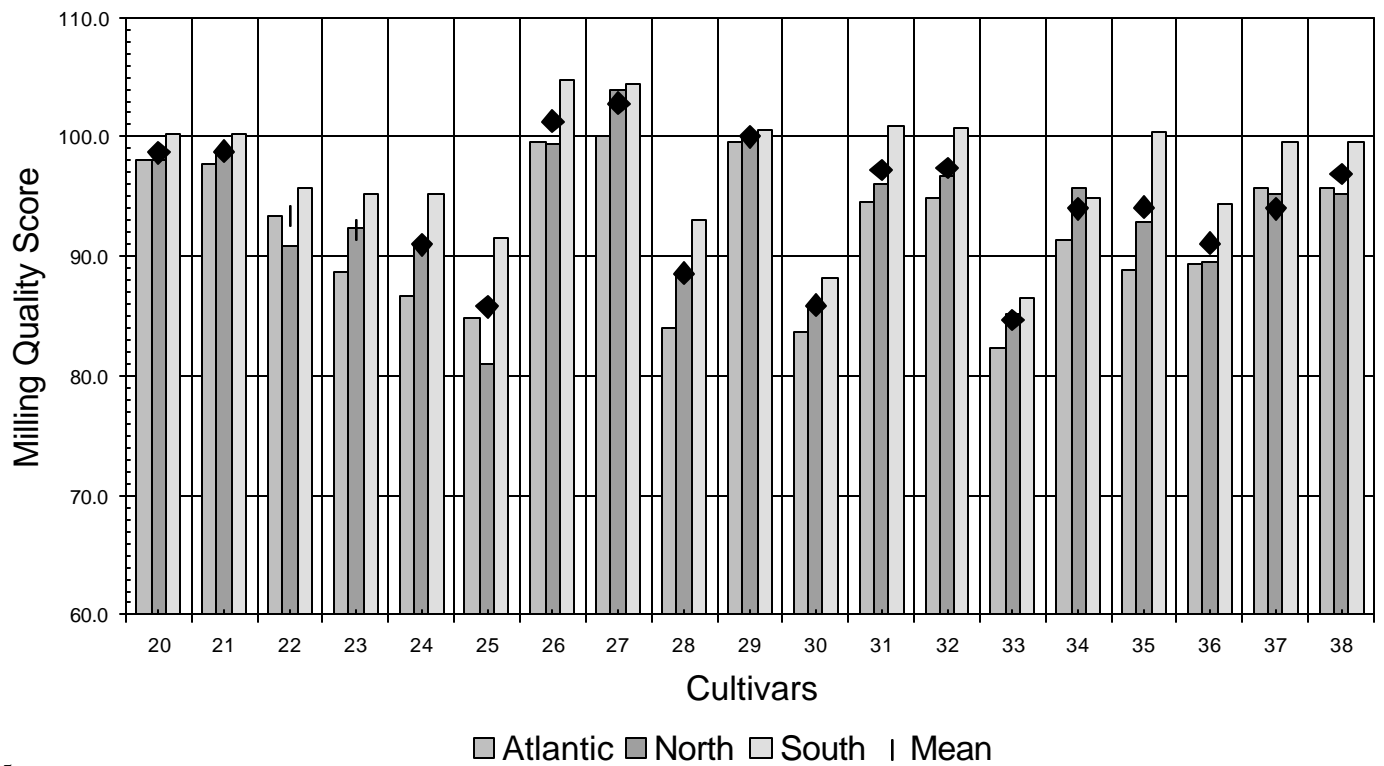
Cookie Diameter:

Cookies averaged .5cm larger from the Southern region. Entries with cookie diameters below 17.5 cm. would be considered to be small.

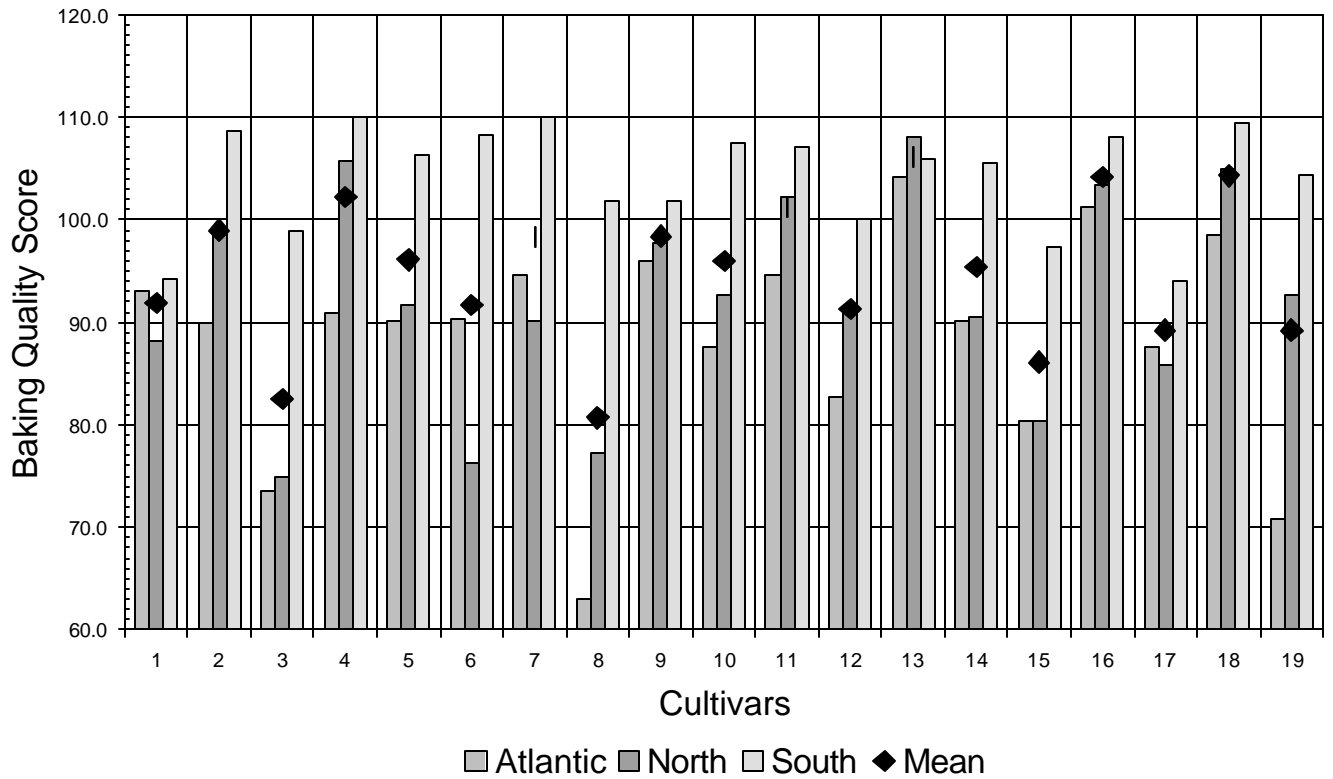
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



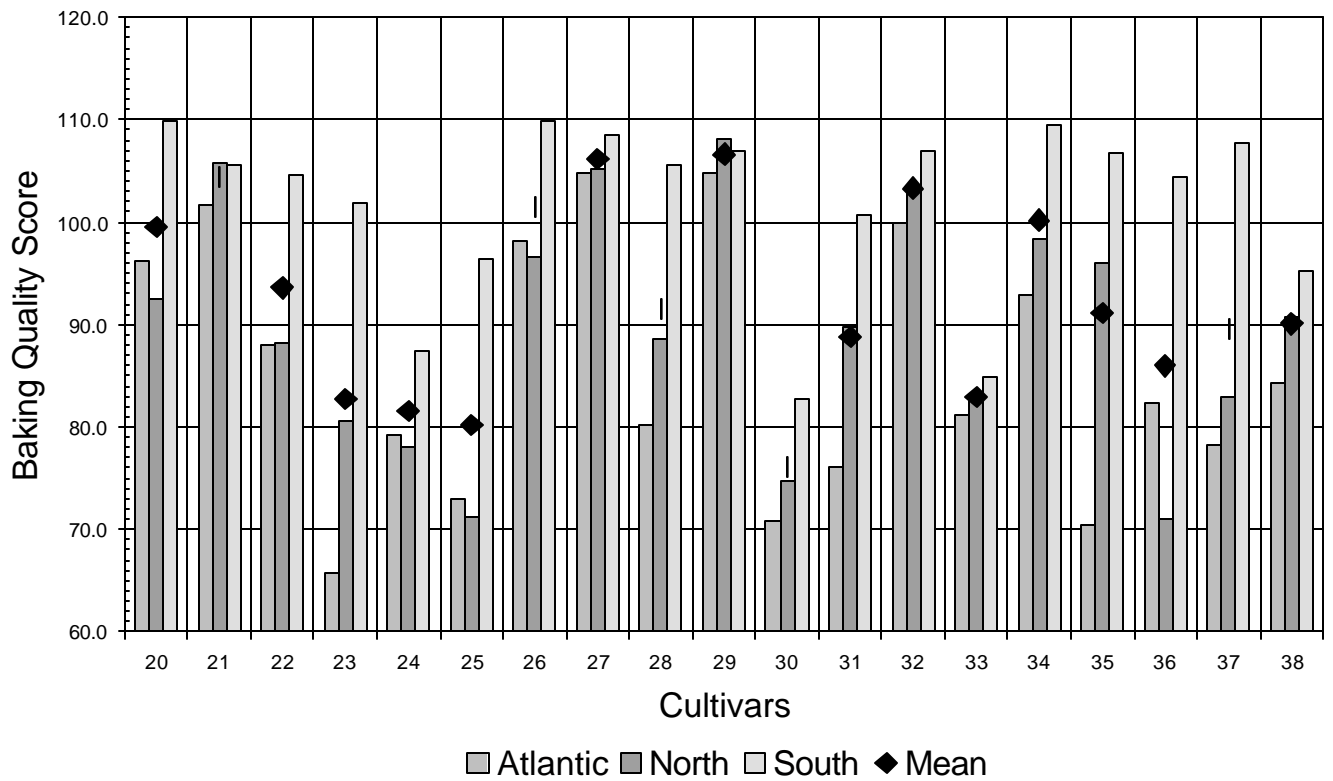
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



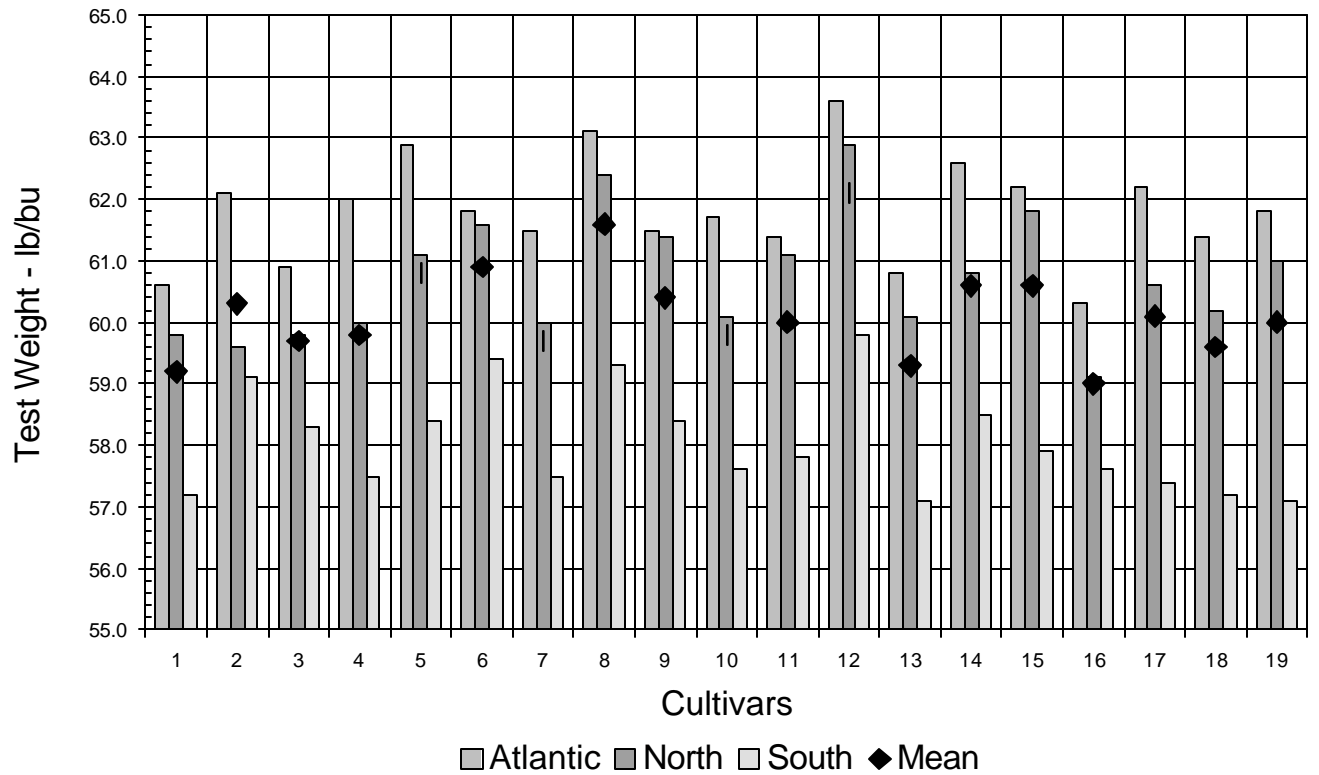
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



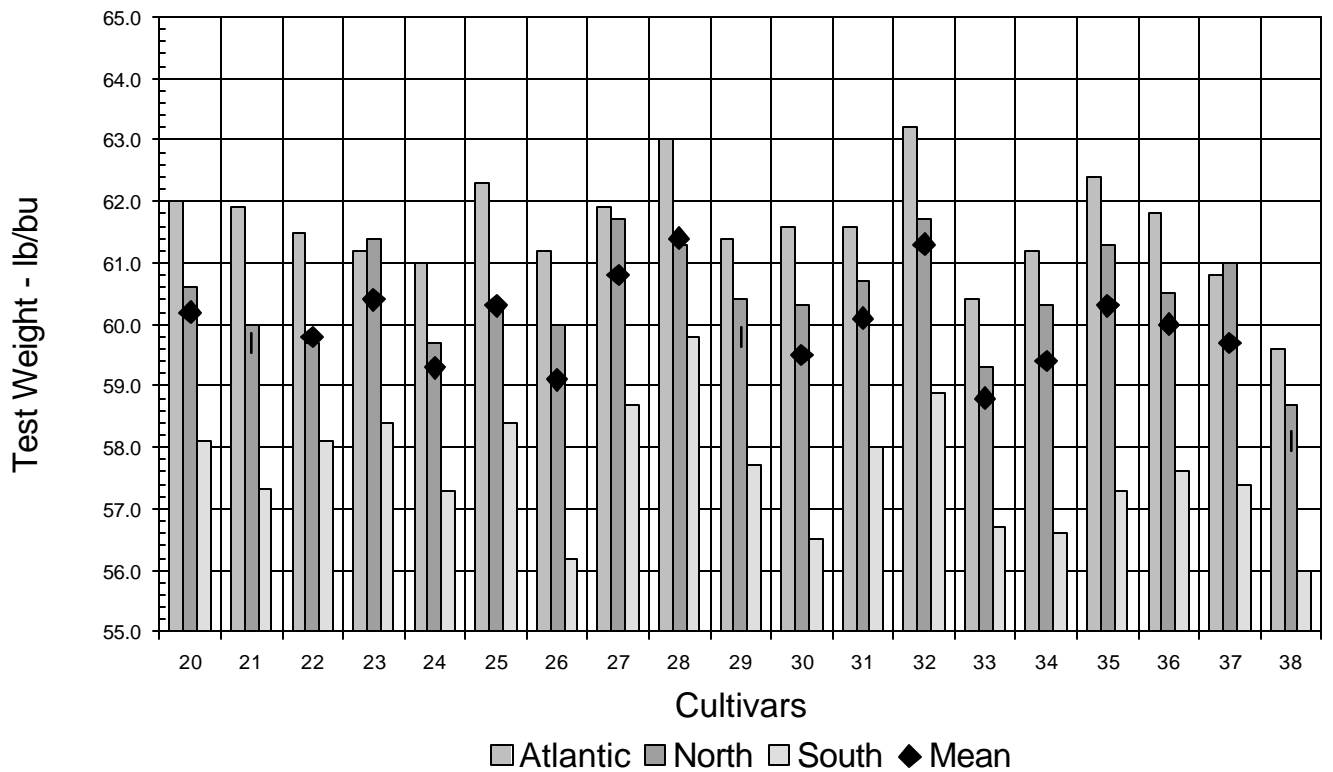
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



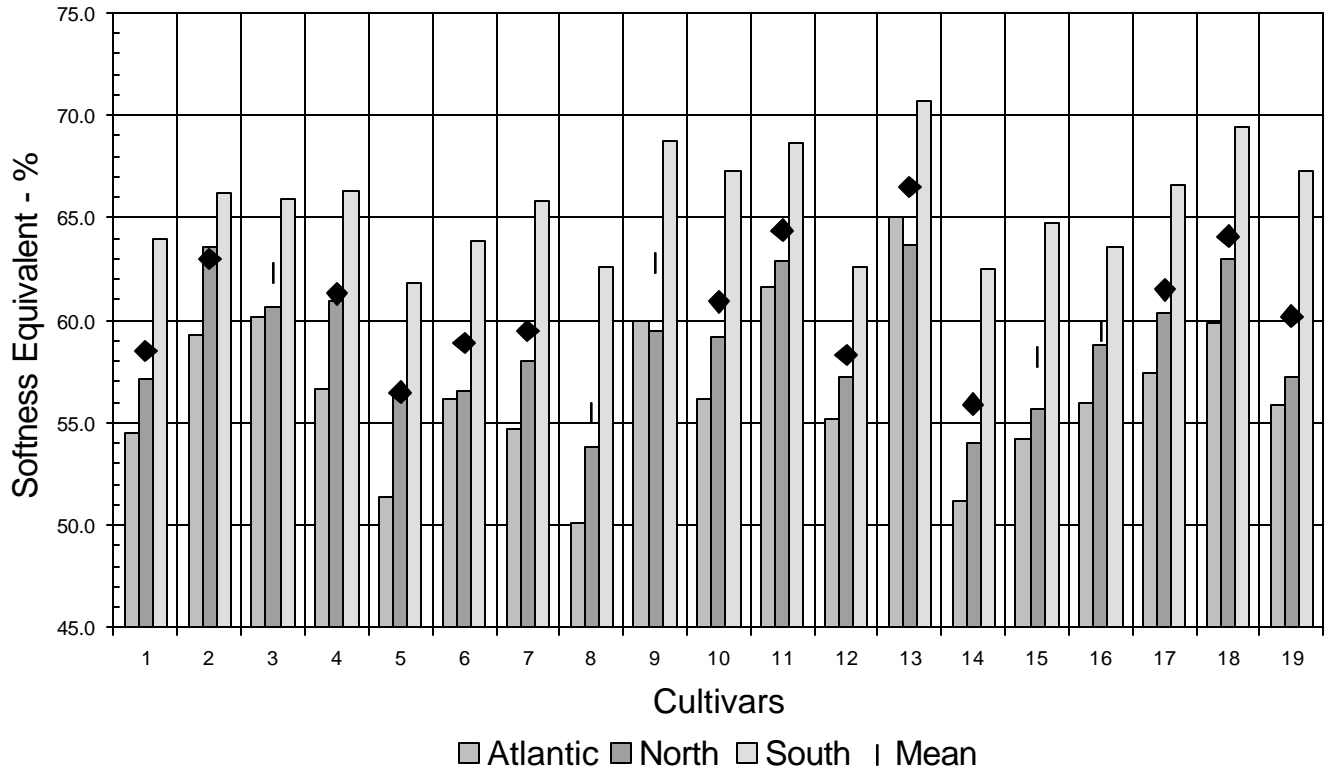
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



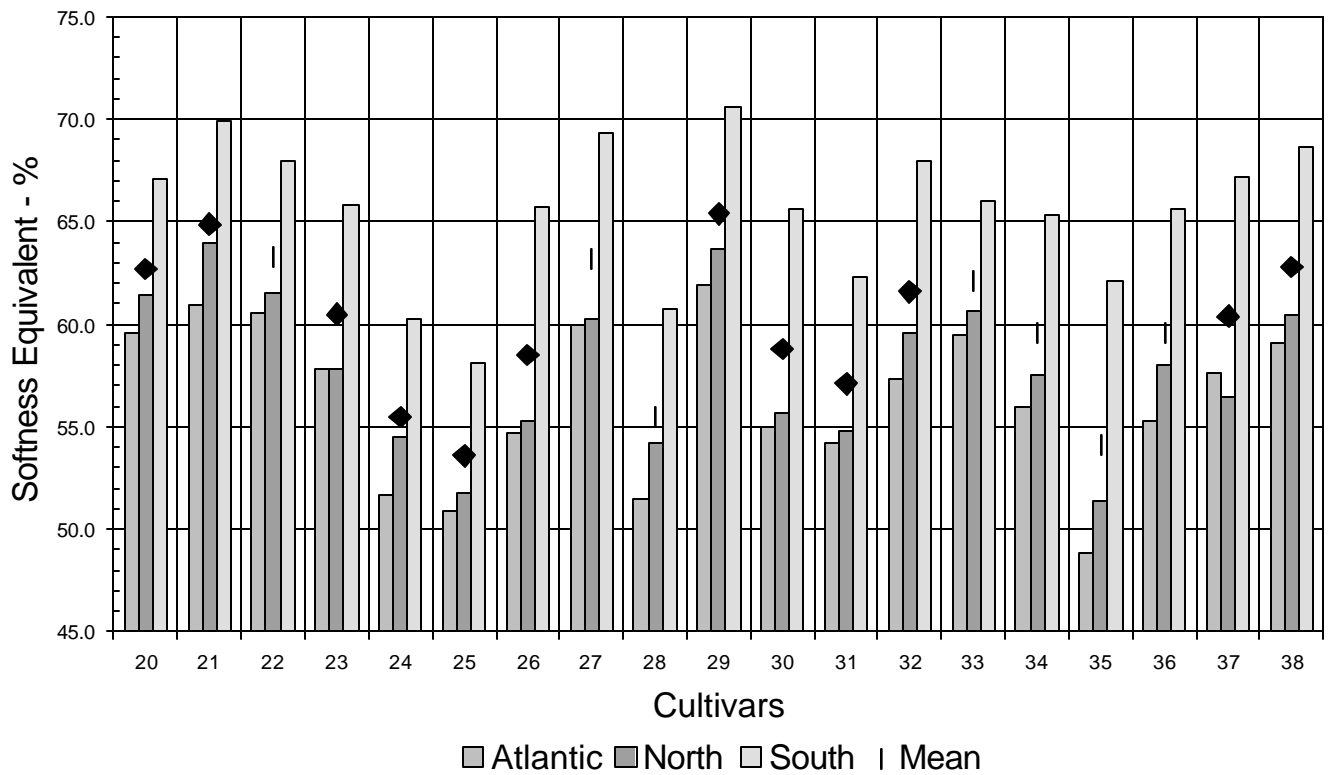
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



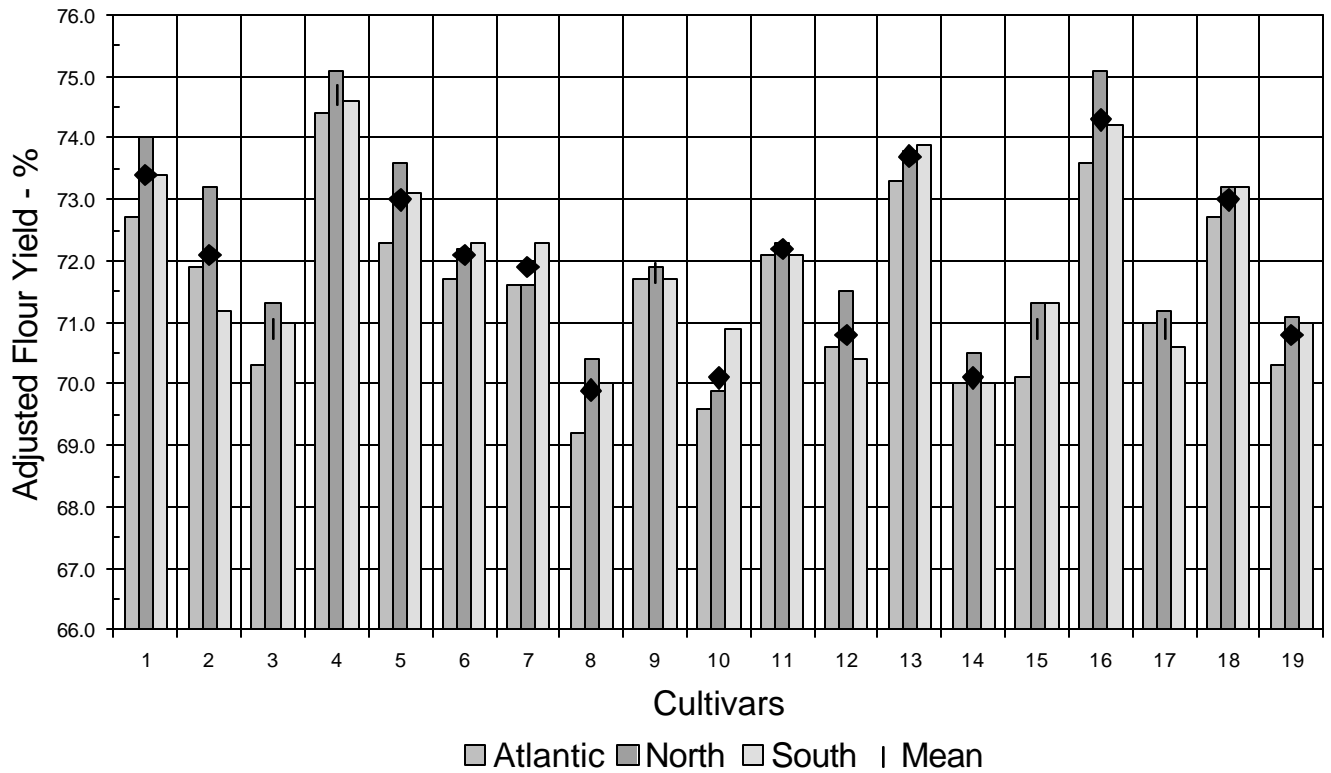
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



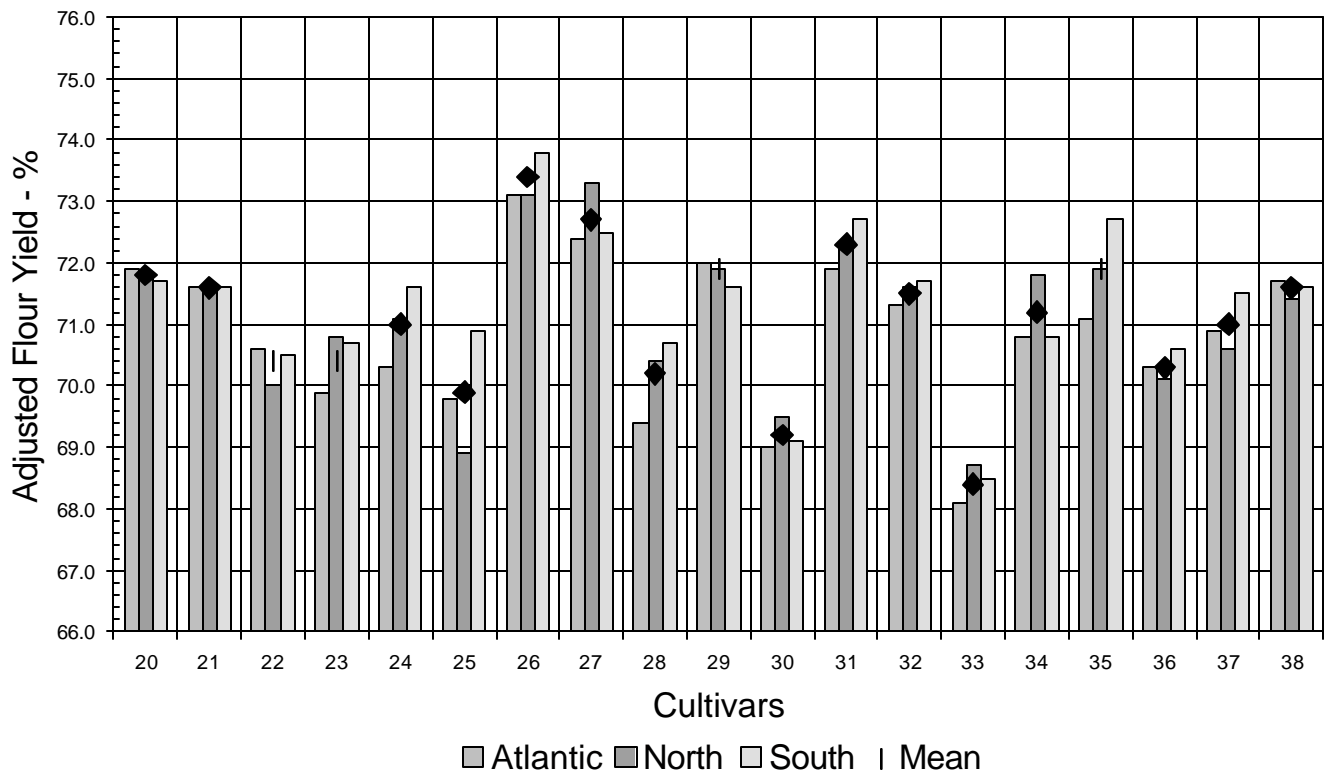
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



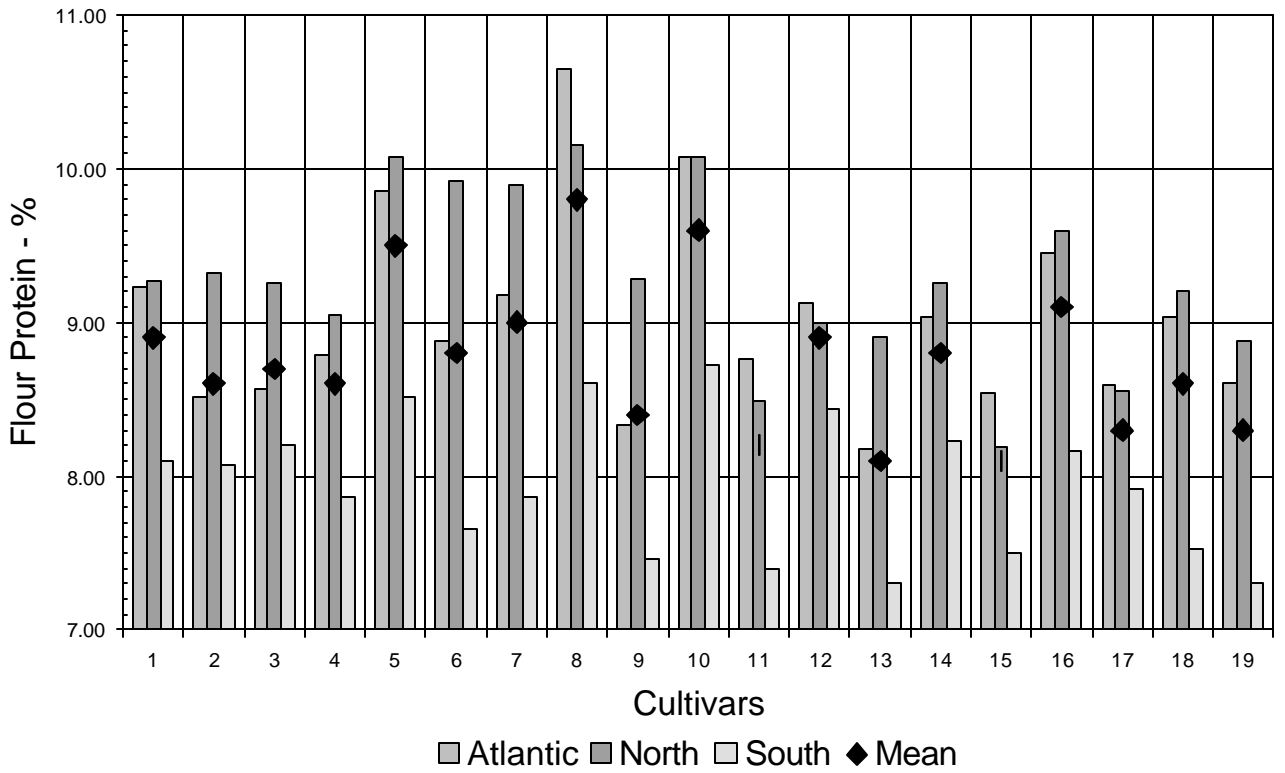
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



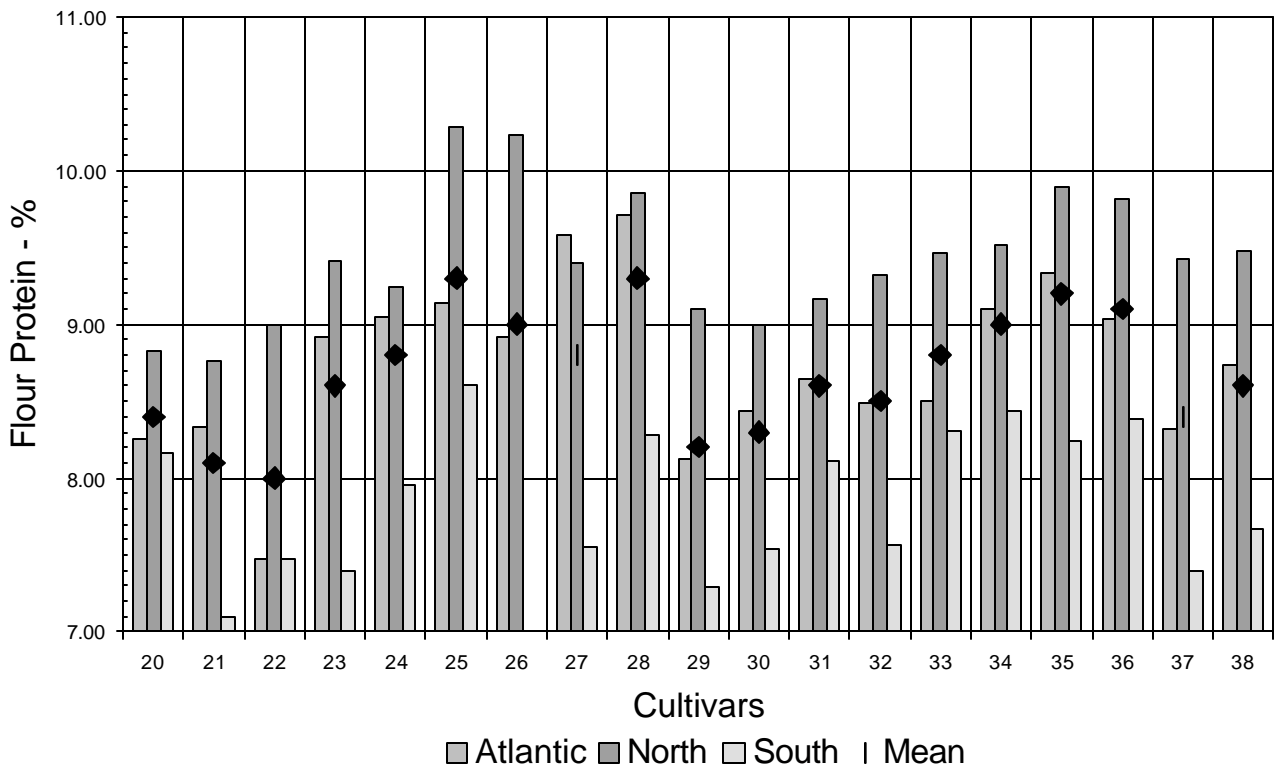
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



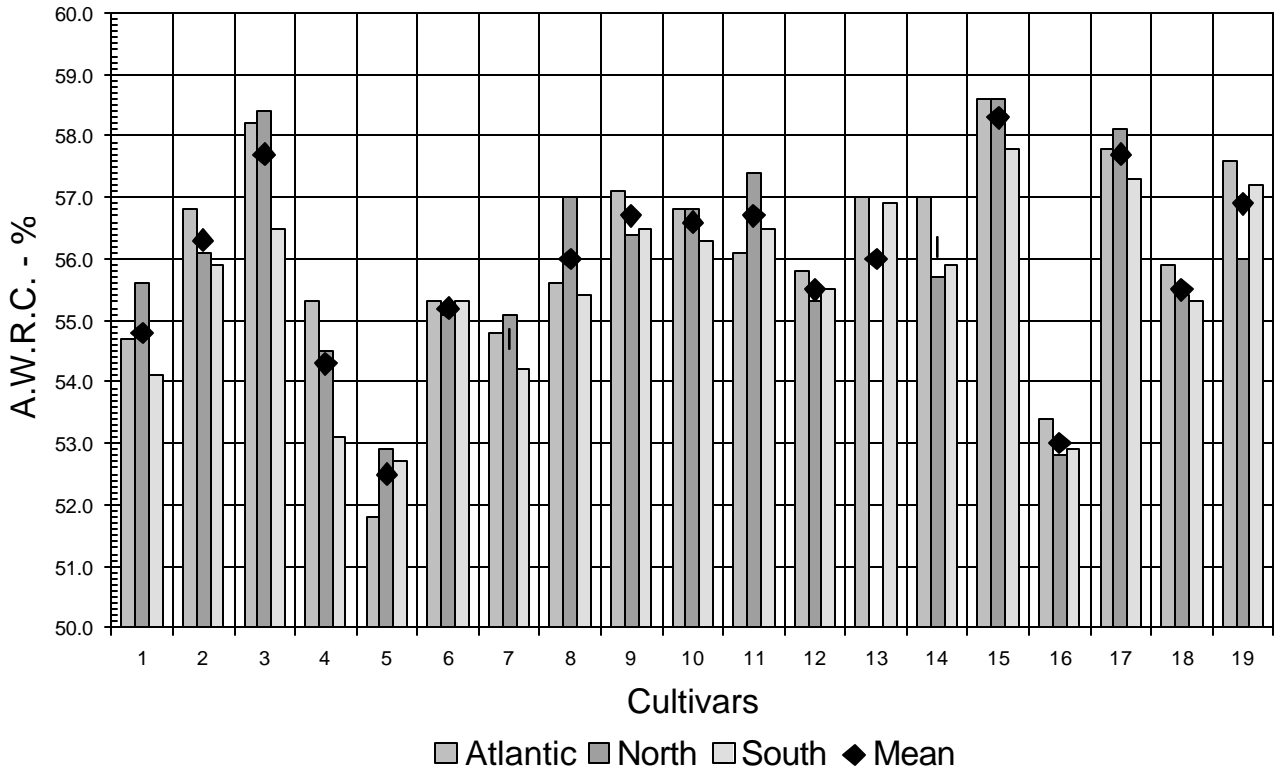
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



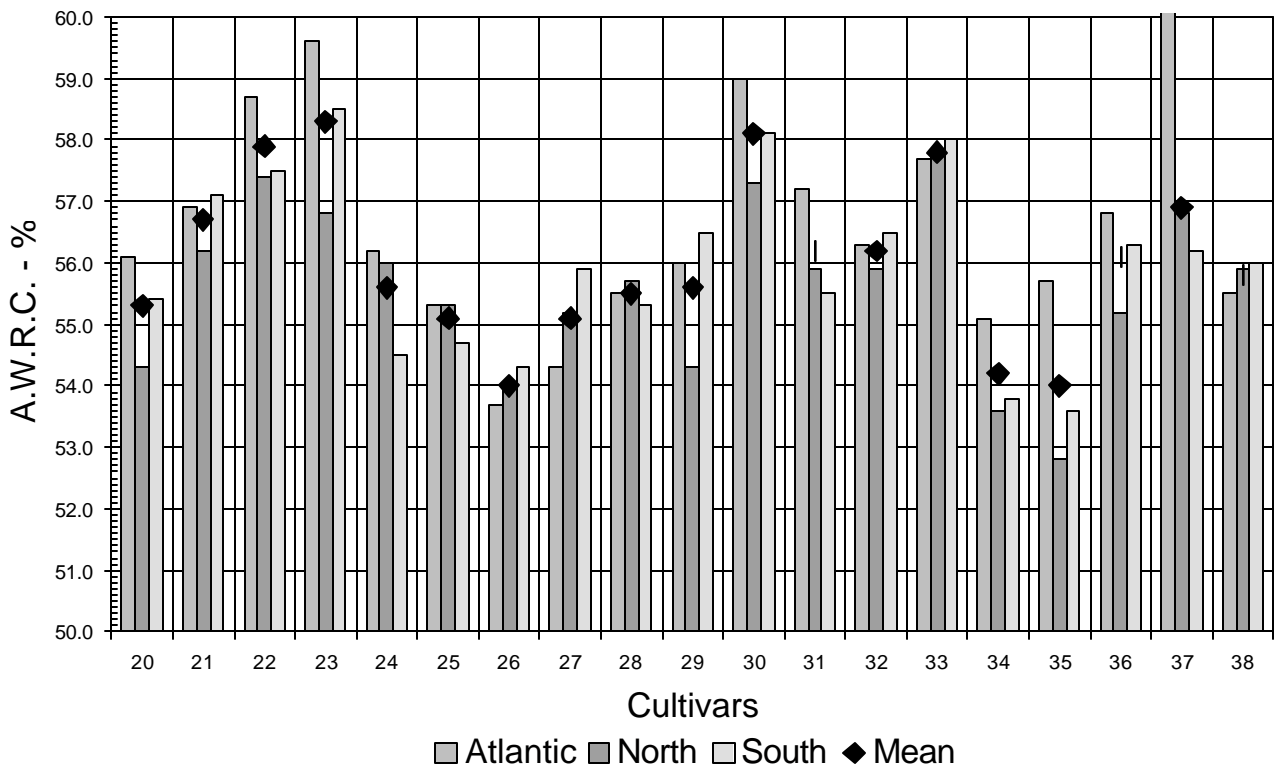
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



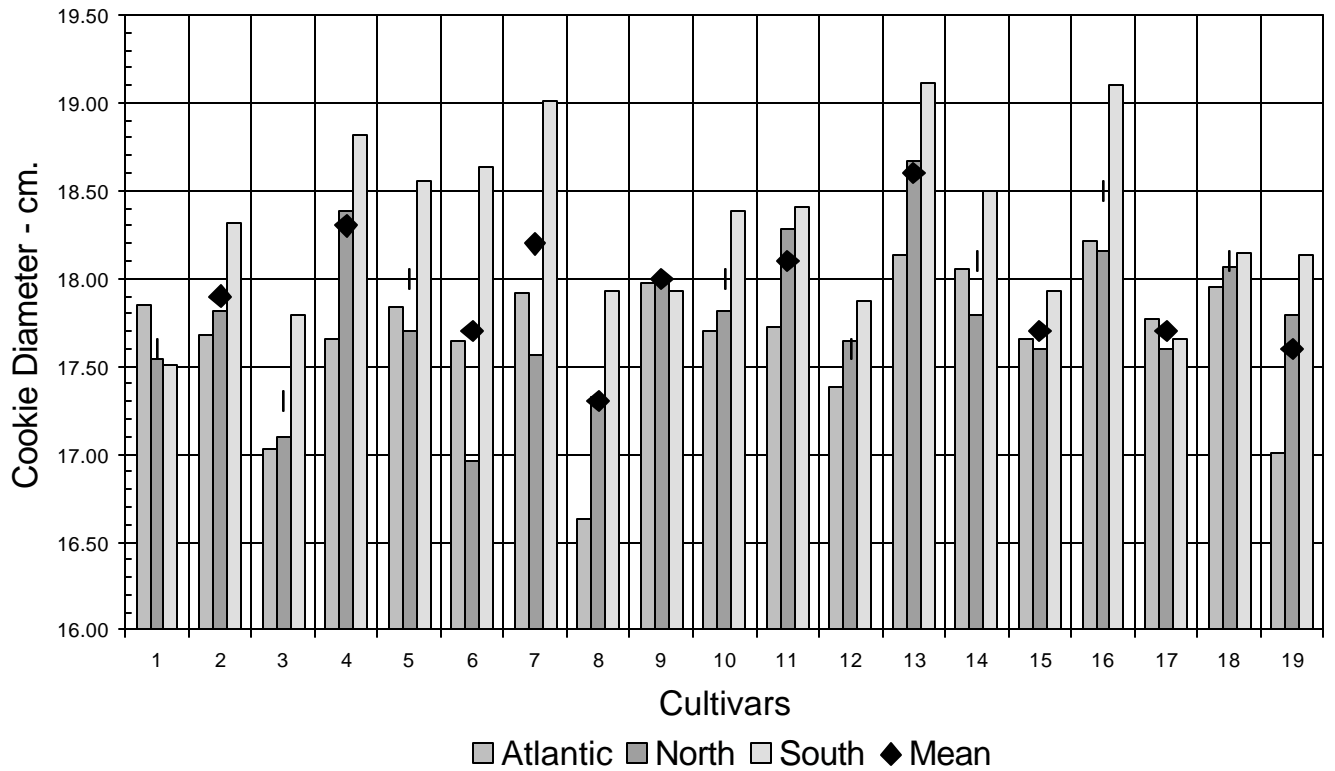
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



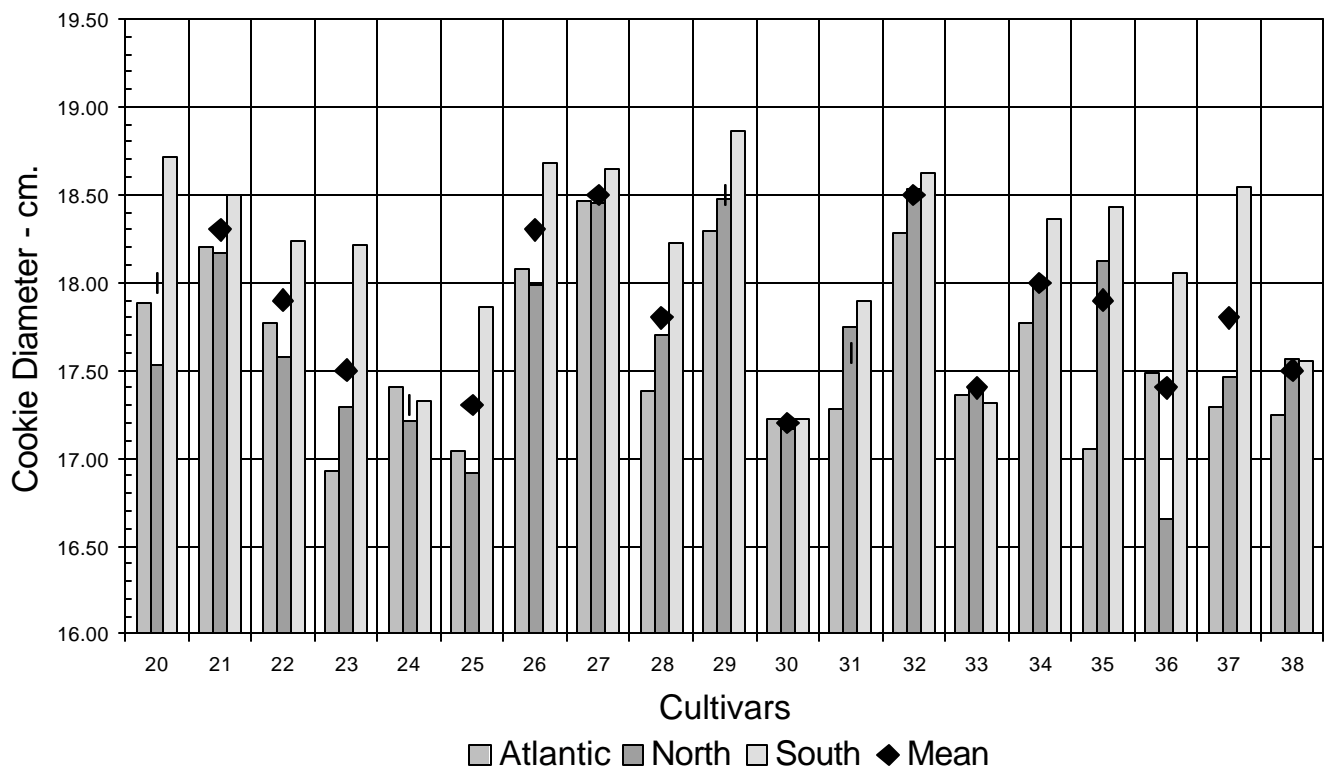
Uniform Eastern Hard Red Winter Wheat Nursery, 1999



Uniform Eastern Hard Red Winter Wheat Nursery, 1999



Uniform Eastern Hard Red Winter Wheat Nursery, 1999



ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

PAGE 1

MBQ-UERN
ATLANTIC REGION

STD= #3802,CALDWELL

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
****	STANDARD	100.0 A	100.0 A	100.0 A	62.1	59.3	71.9	8.51	56.8	17.68	3
3801	1 Cardinal	99.8 B	101.6 A	99.8 B	60.6 *	54.5 *	72.7	9.23 *	54.7	17.85	3
3802	2 Caldwell	100.0 A	100.0 A	100.0 A	62.1	59.3	71.9	8.51	56.8	17.68	3
3803	3 Pioneer 2548	94.0 C	83.5 E	83.5 E	60.9	60.2	70.3 Q	8.57	58.2	17.03 Q	1
3804	4 AP Foster	103.3 A	99.6 B	99.6 B	62.0	56.7	74.4	8.79	55.3	17.66	5
3805	5 OH 552	97.0 B	98.4 B	97.0 B	62.9	51.4 Q	72.3	9.85 *	51.8	17.84	2
3806	6 AR 494B-2-2	97.3 B	98.9 B	97.3 B	61.8	56.2	71.7	8.88	55.3	17.65	3
3807	7 AR 584A-3-1	96.0 B	103.2 A	96.0 B	61.5	54.7 *	71.6	9.18	54.8	17.92	3
3808	8 KY86C-127-3	84.1 E	71.5 F	71.5 F	63.1	50.1 Q	69.2 Q	10.65 Q	55.6	16.63 Q	1
3809	9 BL930390	99.6 B	104.9 A	99.6 B	61.5	60.0	71.7	8.33	57.1	17.97	5
3810	10 BL931167	89.0 D	97.5 B	89.0 D	61.7	56.2	69.6 Q	10.07 Q	56.8	17.70	4
3811	11 IL 91-15911	101.9 A	104.8 A	101.9 A	61.4	61.6	72.1	8.76	56.1	17.72	5
3812	12 OH 599	92.9 C	92.2 C	92.2 C	63.6	55.2 *	70.6 *	9.13	55.8	17.38 *	4
3813	13 MO 94-317	107.9 A	107.0 A	107.0 A	60.8 *	65.0	73.3	8.18	57.0	18.14	4
3814	14 VA97W-375	87.7 D	96.8 B	87.7 D	62.6	51.2 Q	70.0 Q	9.03	57.0	18.06	4
3815	15 VA96W-247	89.9 D	90.2 C	89.9 C	62.2	54.2 *	70.1 Q	8.54	58.6 *	17.66	3

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

MBQ-UERN
ATLANTIC REGION

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3816	16 OH 536	102.2 A	104.4 A	102.2 A	60.3 *	56.0 *	73.6	9.45 *	53.4	18.21	6
3817	17 G60232	95.6 B	97.6 B	95.6 B	62.2	57.4	71.0 *	8.59	57.8	17.77	3
3818	18 G41332	103.4 A	107.9 A	103.4 A	61.4	59.9	72.7	9.04	55.9	17.95	4
3819	19 G41333	91.8 C	80.5 E	80.5 E	61.8	55.9 *	70.3 *	8.61	57.6	17.01 Q	2
3820	20 T104	100.3 A	106.3 A	100.3 A	62.0	59.6	71.9	8.26	56.1	17.88	4
3821	21 T105	100.0 A	106.3 A	100.0 A	61.9	60.9	71.6	8.33	56.858	18.20	4
3822	22 T106	95.7 B	98.2 B	95.7 B	61.5	60.6	70.6 *	7.48	58.743 *	17.77	4
3823	23 T109	90.9 C	75.4 F	75.4 F	61.2	57.8	69.9 Q	8.92	59.62 *	16.93 Q	2
3824	24 HT98-10291	88.6 D	88.7 D	88.6 D	61.0	51.7 Q	70.3 Q	9.05	56.162	17.41 *	3
3825	25 HT98-10033	86.8 D	81.0 E	81.0 E	62.3	50.9 Q	69.8	9.14	55.268	17.04 Q	2
3826	26 BL940582	101.7 A	103.2 A	101.7 A	61.2	54.7 *	73.1	8.92	53.661	18.08	5
3827	27 M95*3349	102.3 A	108.2 A	102.3 A	61.9	60.0	72.4	9.58 *	54.271	18.46	5
3828	28 M95*3330	85.9 D	88.7 D	85.9 D	63.0	51.5 Q	69.4 Q	9.71 *	55.464	17.38 *	3
3829	29 M95*2883	101.8 A	109.5 A	101.8 A	61.4	61.9	72.0	8.12	55.992	18.29	3
3830	30 OK91 P648-41	85.8 D	80.6 E	80.6 E	61.6	55.0 *	69.0 Q	8.44	58.981 *	17.22 *	2
3831	31 IL94-2894	96.7 B	85.7 D	85.7 D	61.6	54.2 *	71.9	8.65	57.187	17.28 *	3
3832	32 IL94-6727	97.0 B	104.4 A	97.0 B	63.2	57.3	71.3	8.49	56.277	18.28	4
3833	33 GA88622E51	84.6 E	91.1 C	84.6 E	60.4 *	59.5	68.1 Q	8.50	57.686	17.36 *	2
3834	34 GA881404E56	93.6 C	101.3 A	93.6 C	61.2	56.0 *	70.8 *	9.10	55.11	17.77	3
3835	35 P86364RAI-4-2-7	90.7 C	79.2 F	79.2 F	62.4	48.8 Q	71.1	9.33 *	55.651	17.05 Q	2

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

PAGE 3

MBQ-UERN
ATLANTIC REGION

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3836	36 P92227C5-1-1	91.4 C	92.0 C	91.4 C	61.8	55.3 *	70.3 *	9.04	56.808	17.48	3
3837	37 P88204RBI-2-1-6	94.7 C	88.0 D	88.0 D	60.8 *	57.6	70.9 *	8.32	57.622	17.29 *	2
3838	38 TW94315	98.0 B	93.2 C	93.2 C	59.6 Q	59.1	71.7	8.74	55.466	17.25 *	3

EVALUATION SUMMARY

MBQ-UERN
ATLANTIC REGION

STD = #3802, CALDWELL

STANDARD DATA

ADJUSTED L.S.D.

COMBINED QUALITY
SCORES

TEST WT.	62.08
S.E	59.33
YIELD	71.86
FL. PROTEIN	8.51
AWRC	56.8
DIAMETER	17.68
TOP GRAIN	3

TEST WT.	1.200225
S.E	3.19032
YIELD	0.771438
FL. PROTEIN	0.688862
AWRC	1.562
DIAMETER	0.235733

A	10
B	9
C	5
D	6
E	5
F	3
TOTAL	38

NOTATION BEGINS

AVERAGED DATA

	"**"	"Q"
TEST WT.	60.88	59.68
S.E	56.14	52.95
YIELD	71.09	70.32
FL. PROT.	9.2	9.89
AWRC	58.36	59.92
DIAMETER	17.44	17.21

TEST WT.	61.69
S.E	56.54
YIELD	71.18
FL. PROTEIN	8.88
AWRC	56.28
DIAMETER	17.64
TOP GRAIN	3.2632

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

MBQ-UERN
NORTHERN CORN BELT

STD= #3852,CALDWELL

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
	STANDARD	100.0 A	100.0 A	100.0 A	59.6	63.6	73.2	9.32	56.1	17.82	4
3851	1 Cardinal	99.4 B	89.7 D	89.7 D	59.8	57.1 *	74.0	9.27	55.606	17.54 *	3
3852	2 Caldwell	100.0 A	100.0 A	100.0 A	59.6	63.6	73.2	9.32	56.111	17.82	4
3853	3 Pioneer 2548	91.1 C	76.3 F	76.3 F	59.8	60.7	71.3 Q	9.26	58.419 *	17.10 Q	2
3854	4 AP Foster	103.6 A	105.1 A	103.6 A	60.0	60.9	75.1	9.05	54.524	18.38	5
3855	5 OH 552	98.0 B	93.7 C	93.7 C	61.1	56.4 Q	73.6	10.07	52.93	17.70	3
3856	6 AR 494B-2-2	92.9 C	78.2 F	78.2 F	61.6	56.6	72.2 *	9.92	55.09	16.96 Q	2
3857	7 AR 584A-3-1	90.8 C	92.1 C	90.8 C	60.0	58.0 *	71.6 Q	9.89	55.073	17.56 *	3
3858	8 KY86C-127-3	84.7 E	78.7 F	78.7 F	62.4	53.8	70.4 Q	10.15 *	57.019	17.33 Q	3
3859	9 BL930390	93.2 C	99.2 B	93.2 C	61.4	59.5 *	71.9 *	9.28	56.402	17.99	5
3860	10 BL931167	84.9 E	94.2 C	84.9 D	60.1	59.2 *	69.9 Q	10.08 *	56.849	17.82	4
3861	11 IL 91-15911	97.0 B	101.1 A	97.0 B	61.1	62.9	72.3 *	8.49	57.356	18.28	4
3862	12 OH 599	91.0 C	92.8 C	91.0 C	62.9	57.2 *	71.5 Q	8.99	55.262	17.64	3
3863	13 MO 94-317	102.7 A	107.6 A	102.7 A	60.1	63.7	73.8	8.91	54.228	18.67	5
3864	14 VA97W-375	84.7 E	92.0 C	84.7 E	60.8	54.0	70.5 Q	9.26	55.673	17.79	4
3865	15 VA96W-247	88.9 D	81.9 E	81.9 E	61.8	55.7 Q	71.3 Q	8.19	58.627 *	17.60	3

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

MBQ-UERN
NORTHERN CORN BELT

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3866	16 OH 536	102.0 A	103.3 A	102.0 A	59.1	58.8 *	75.1	9.60	52.785	18.16	4
3867	17 G60232	90.9 C	87.3 D	87.3 D	60.6	60.4	71.2 Q	8.55	58.143 *	17.60	3
3868	18 G41332	99.8 B	106.3 A	99.8 B	60.2	63.0	73.2	9.20	55.401	18.07	4
3869	19 G41333	88.9 D	94.1 C	88.9 D	61.0	57.2 *	71.1 Q	8.88	55.99	17.79	3
3870	20 T104	93.7 C	94.4 C	93.7 C	60.6	61.4	71.8 *	8.83	54.28	17.53 *	3
3871	21 T105	94.3 C	105.0 A	94.3 C	60.0	64.0	71.6 Q	8.76	56.224	18.17	4
3872	22 T106	86.7 D	89.7 D	86.7 D	59.7	61.5	70.0 Q	8.99	57.384	17.58 *	3
3873	23 T109	88.2 D	82.0 E	82.0 E	61.4	57.8 *	70.8	9.42	56.755	17.29 Q	2
3874	24 HT98-10291	86.7 D	79.5 F	79.5 F	59.7	54.5 Q	71.1 Q	9.24	55.969	17.21 Q	1
3875	25 HT98-10033	76.9 F	72.8 F	72.8 F	60.3	51.8 Q	68.9 Q	10.28 *	55.298	16.92 Q	1
3876	26 BL940582	95.0 B	98.8 B	95.0 B	60.0	55.3 Q	73.1	10.23 *	54.04	17.99	4
3877	27 M95*3349	99.5 B	104.5 A	99.5 B	61.7	60.3	73.3	9.40	55.172	18.45	4
3878	28 M95*3330	84.5 E	90.3 C	84.5 E	61.3	54.2 Q	70.4	9.85	55.713	17.70	2
3879	29 M95*2883	95.6 B	107.6 A	95.6 B	60.4	63.7	71.9 *	9.10	54.325	18.48	6
3880	30 OK91 P648-41	81.7 E	76.2 F	76.2 F	60.3	55.7 Q	69.5 Q	8.99	57.333	17.17 Q	4
3881	31 IL94-2894	91.8 C	91.2 C	91.2 C	60.7	54.8 Q	72.3 *	9.16	55.936	17.75	4
3882	32 IL94-6727	92.3 C	102.0 A	92.3 C	61.7	59.6 *	71.6 Q	9.32	55.922	18.53	6
3883	33 GA88622E51	81.0 E	83.9 E	81.0 E	59.3	60.7	68.7 Q	9.46	57.823 *	17.39 *	3
3884	34 GA881404E56	91.4 C	100.3 A	91.4 C	60.3	57.5 *	71.8 *	9.51	53.557	17.97	3
3885	35 P86364RAI-4-2-7	88.6 D	96.8 B	88.6 D	61.3	51.4 Q	71.9 *	9.89	52.802	18.12	5

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

MBQ-UERN
NORTHERN CORN BELT

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3886	36 P92227C5-1-1	85.4 D	72.8 F	72.8 F	60.5	58.0 *	70.1 Q	9.82	55.228	16.65 Q	1
3887	37 P88204RBI-2-1-6	86.3 D	84.4 E	84.4 E	61.0	56.5 Q	70.6 Q	9.43	56.776	17.46 *	2
3888	38 TW94315	91.0 C	92.3 C	91.0 C	58.7	60.5	71.4 Q	9.48	55.913	17.56 *	3

EVALUATION SUMMARY

MBQ-UERN
NORTHERN CORN BELT

STD = #3852, CALDWELL

STANDARD DATA

TEST WT.	59.61
S.E	63.61
YIELD	73.21
FL. PROTEIN	9.32
AWRC	56.1
DIAMETER	17.82
TOP GRAIN	4

ADJUSTED L.S.D.

TEST WT.	1.152498
S.E	3.42072
YIELD	0.785913
FL. PROTEIN	0.754612
AWRC	1.54275
DIAMETER	0.2376

COMBINED QUALITY
SCORES

A	4
B	5
C	10
D	6
E	6
F	7
TOTAL	38

NOTATION BEGINS

	""	"Q"
TEST WT.	58.46	57.31
S.E	60.19	56.77
YIELD	72.42	71.64
FL. PROT.	10.08	10.83
AWRC	57.64	59.19
DIAMETER	17.58	17.34

AVERAGED DATA

TEST WT.	60.58
S.E	58.37
YIELD	71.69
FL. PROTEIN	9.36
AWRC	55.74
DIAMETER	17.73
TOP GRAIN	3.3684

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

MBQ-UERN
NORTHERN CORN BELT

STD= #3902,CALDWELL

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
	STANDARD	100.0 A	100.0 A	100.0 A	59.1	66.2	71.2	8.07	55.9	18.32	4
3901	1 Cardinal	102.9 A	84.0 E	84.0 E	57.2 *	64.0	73.4	8.10	54.127	17.51 Q	3
3902	2 Caldwell	100.0 A	100.0 A	100.0 A	59.1	66.2	71.2	8.07	55.893	18.32	4
3903	3 Pioneer 2548	98.7 B	87.4 D	87.4 D	58.3	65.9	71.0	8.20	56.46	17.79 Q	4
3904	4 AP Foster	104.4 A	107.6 A	104.4 A	57.5 *	66.3	74.6	7.87	53.124	18.82	4
3905	5 OH 552	102.2 A	103.7 A	102.2 A	58.4	61.8 *	73.1	8.51	52.745	18.56	4
3906	6 AR 494B-2-2	103.1 A	104.7 A	103.1 A	59.4	63.9	72.3	7.66	55.255	18.63	3
3907	7 AR 584A-3-1	103.5 A	107.2 A	103.5 A	57.5 *	65.8	72.3	7.86	54.221	19.01	4
3908	8 KY86C-127-3	93.6 C	90.5 C	90.5 C	59.3	62.6	70.0 *	8.61	55.351	17.93 *	3
3909	9 BL930390	103.3 A	92.6 C	92.6 C	58.4	68.8	71.7	7.46	56.506	17.93 *	3
3910	10 BL931167	98.8 B	101.3 A	98.8 B	57.6 *	67.3	70.9	8.72	56.291	18.39	3
3911	11 IL 91-15911	104.3 A	102.4 A	102.4 A	57.8 *	68.7	72.1	7.39	56.51	18.41	4
3912	12 OH 599	95.2 B	88.7 D	88.7 D	59.8	62.6	70.4 *	8.44	55.548	17.87	4
3913	13 MO 94-317	106.7 A	104.9 A	104.9 A	57.1 *	70.7	73.9	7.31	56.883	19.11	5
3914	14 VA97W-375	92.8 C	100.6 A	92.8 C	58.5	62.5 *	70.0 *	8.23	55.87	18.50	4
3915	15 VA96W-247	99.1 B	85.9 D	85.9 D	57.9 *	64.8	71.3	7.50	57.808 *	17.93	3

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

PAGE 2

MBQ-UERN
SOUTHERN CORN BELT

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3916	16 OH 536	102.9 A	105.3 A	102.9 A	57.6 *	63.6	74.2	8.17	52.851	19.10	5
3917	17 G60232	97.2 B	83.3 E	83.3 E	57.4 *	66.6	70.6	7.91	57.275	17.66 Q	3
3918	18 G41332	106.0 A	100.6 A	100.6 A	57.2 *	69.4	73.2	7.53	55.281	18.15	4
3919	19 G41333	98.9 B	93.8 C	93.8 C	57.1 *	67.3	71.0	7.31	57.159	18.13	3
3920	20 T104	102.2 A	107.1 A	102.2 A	58.1	67.1	71.7	8.17	55.404	18.71	4
3921	21 T105	102.8 A	103.2 A	102.8 A	57.3 *	69.9	71.6	7.10	57.051	18.50	3
3922	22 T106	97.8 B	95.8 B	95.8 B	58.1	68.0	70.5	7.47	57.451 *	18.24	5
3923	23 T109	97.4 B	90.7 C	90.7 C	58.4	65.8	70.7	7.40	58.506 *	18.21	4
3924	24 HT98-10291	97.6 B	77.3 F	77.3 F	57.3 *	60.3 *	71.6	7.96	54.536	17.33 Q	2
3925	25 HT98-10033	93.9 C	86.2 D	86.2 D	58.4	58.1 Q	70.9	8.60	54.688	17.86 *	5
3926	26 BL940582	103.4 A	107.1 A	103.4 A	56.2	65.7	73.8	7.72	54.28	18.68	5
3927	27 M95*3349	106.6 A	107.5 A	106.6 A	58.7	69.3	72.5	7.55	55.887	18.64	4
3928	28 M95*3330	95.3 B	95.0 B	95.0 B	59.8	60.8 *	70.7	8.28	55.3	18.22	3
3929	29 M95*2883	103.6 A	105.9 A	103.6 A	57.7 *	70.6	71.6	7.29	56.52	18.86	3
3930	30 OK91 P648-41	90.2 C	71.4 F	71.4 F	56.5 Q	65.6	69.1 Q	7.54	58.073	17.22 Q	2
3931	31 IL94-2894	102.3 A	89.2 D	89.2 D	58.0 *	62.3 *	72.7	8.11	55.523	17.90 *	3
3932	32 IL94-6727	102.9 A	105.0 A	102.9 A	58.9	68.0	71.7	7.56	56.493	18.62	4
3933	33 GA88622E51	88.5 D	73.7 F	73.7 F	56.7 Q	66.0	68.5 Q	8.31	58.014 *	17.31 Q	2
3934	34 GA881404E56	96.9 B	102.6 A	96.9 B	56.6 Q	65.3	70.8	8.44	53.847	18.36	4
3935	35 P86364RAI-4-2-7	101.9 A	101.3 A	101.3 A	57.3 *	62.1 *	72.7	8.24	53.562	18.43	3

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

MBQ-UERN
SOUTHERN CORN BELT

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3936	36 P92227C5-1-1	96.5 B	92.9 C	92.9 C	57.6 *	65.6	70.6	8.38	56.309	18.05 *	4
3937	37 P88204RBI-2-1-6	101.1 A	104.6 A	101.1 A	57.4 *	67.2	71.5	7.40	56.197	18.54	5
3938	38 TW94315	101.5 A	86.2 D	86.2 D	56.0 Q	68.7	71.6	7.67	55.96	17.55 Q	2

EVALUATION SUMMARY

MBQ-UERN
SOUTHERN CORN BELT

STD = #3902, CALDWELL

STANDARD DATA

TEST WT.	59.14
S.E	66.18
YIELD	71.19
FL. PROTEIN	8.07
AWRC	55.9
DIAMETER	18.32
TOP GRAIN	4

ADJUSTED L.S.D.

TEST WT.	1.143298
S.E	3.558713
YIELD	0.764188
FL. PROTEIN	0.653186
AWRC	1.53725
DIAMETER	0.244267

COMBINED QUALITY
SCORES

A	17
B	4
C	6
D	6
E	2
F	3
TOTAL	38

NOTATION BEGINS

	"**"	"Q"
TEST WT.	57.99	56.85
S.E	62.62	59.06
YIELD	70.42	69.66
FL. PROT.	8.72	9.38
AWRC	57.44	58.97
DIAMETER	18.08	17.83

AVERAGED DATA

TEST WT.	57.84
S.E	65.67
YIELD	71.63
FL. PROTEIN	7.89
AWRC	55.76
DIAMETER	18.24
TOP GRAIN	3.6053

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

MBQ-UERN
ALL ENTRIES

STD= AVG OF 3 CALDWELLS

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
	STANDARD	100.0 A	100.0 A	100.0 A	60.3	63.0	72.1	8.63	56.3	17.94	4
3801	1 Cardinal	97.7 B	93.1 C	93.1 C	60.6	54.5 Q	72.7	9.23	54.7	17.85	3
3802	2 Caldwell	97.7 B	90.0 c	90.0 c	62.1	59.3 *	71.9	8.51	56.8	17.68 *	3
3803	3 Pioneer 2548	91.7 C	73.6 F	73.6 F	60.9	60.2	70.3 Q	8.57	58.2	17.03 Q	1
3804	4 AP Foster	102.0 A	91.0 c	91.0 c	62.0	56.7 *	74.4	8.79	55.3	17.66 *	5
3805	5 OH 552	95.0 B	90.1 c	90.1 c	62.9	51.4 Q	72.3	9.85	51.8	17.84	2
3806	6 AR 494B-2-2	95.2 B	90.4 C	90.4 C	61.8	56.2 Q	71.7	8.88	55.3	17.65 *	3
3807	7 AR 584A-3-1	93.9 C	94.7 C	93.9 C	61.5	54.7 Q	71.6	9.18	54.8	17.92	3
3808	8 KY86C-127-3	82.2 E	63.0 F	63.0 F	63.1	50.1 Q	69.2 Q	10.65 Q	55.6	16.63 Q	1
3809	9 BL930390	97.3 B	95.9 B	95.9 B	61.5	60.0	71.7	8.33	57.1	17.97	5
3810	10 BL931167	86.9 D	87.7 D	86.9 D	61.7	56.2 Q	69.6 Q	10.07 Q	56.8	17.70 *	4
3811	11 IL 91-15911	99.5 B	94.7 C	94.7 C	61.4	61.6	72.1	8.76	56.1	17.72	5
3812	12 OH 599	90.9 C	82.7 E	82.7 E	63.6	55.2 Q	70.6 *	9.13	55.8	17.38 Q	4
3813	13 MO 94-317	106.0 A	104.1 A	104.1 A	60.8	65.0	73.3	8.18	57.0	18.14	4
3814	14 VA97W-375	85.7 D	90.2 C	85.7 D	62.6	51.2 Q	70.0 Q	9.03	57.0	18.06	4
3815	15 VA96W-247	87.9 D	80.4 E	80.4 E	62.2	54.2 Q	70.1 Q	8.54	58.6 *	17.66	3

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

PAGE 2

MBQ-UERN
ALL ENTRIES

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3816	16 OH 536	100.9 A	101.3 A	100.9 A	60.3	56.0 Q	73.6	9.45 *	53.4	18.21	6
3817	17 G60232	93.5 C	87.6 D	87.6 D	62.2	57.4 *	71.0 *	8.59	57.8	17.77	3
3818	18 G41332	101.1 A	98.5 B	98.5 B	61.4	59.9	72.7	9.04	55.9	17.95	4
3819	19 G41333	89.7 D	70.9 F	70.9 F	61.8	55.9 Q	70.3 Q	8.61	57.6	17.01 Q	2
3820	20 T104	98.0 B	96.2 B	96.2 B	62.0	59.6 *	71.9	8.26	56.1	17.88	4
3821	21 T105	97.7 B	101.7 A	97.7 B	61.9	60.9	71.6	8.33	56.858	18.20	4
3822	22 T106	93.4 C	88.0 D	88.0 D	61.5	60.6	70.6 *	7.48	58.743 *	17.77	4
3823	23 T109	88.7 D	65.7 F	65.7 F	61.2	57.8 *	69.9 Q	8.92	59.62 Q	16.93 Q	2
3824	24 HT98-10291	86.6 D	79.2 F	79.2 F	61.0	51.7 Q	70.3 Q	9.05	56.162	17.41 Q	3
3825	25 HT98-10033	84.8 E	73.0 F	73.0 F	62.3	50.9 Q	69.8 Q	9.14	55.268	17.04 Q	2
3826	26 BL940582	99.6 B	98.1 B	98.1 B	61.2	54.7 Q	73.1	8.92	53.661	18.08	5
3827	27 M95*3349	100.0 A	104.9 A	100.0 A	61.9	60.0	72.4	9.58 *	54.271	18.46	5
3828	28 M95*3330	84.0 E	80.2 E	80.2 E	63.0	51.5 Q	69.4 Q	9.71 *	55.464	17.38 Q	3
3829	29 M95*2883	99.5 B	104.8 A	99.5 B	61.4	61.9	72.0	8.12	55.992	18.29	3
3830	30 OK91 P648-41	83.7 E	70.9 F	70.9 F	61.6	55.0 Q	69.0 Q	8.44	58.981 *	17.22 Q	2
3831	31 IL94-2894	94.6 C	76.1 F	76.1 F	61.6	54.2	71.9	8.65	57.187	17.28 Q	3
3832	32 IL94-6727	94.9 C	100.0 A	94.9 C	63.2	57.3 *	71.3 *	8.49	56.277	18.28	4
3833	33 GA88622E51	82.4 E	81.1 E	81.1 E	60.4	59.5 *	68.1 Q	8.50	57.686	17.36 Q	2
3834	34 GA881404E56	91.4 C	92.8 C	91.4 C	61.2	56.0	70.8 *	9.10	55.11	17.77	3
3835	35 P86364RAI-4-2-7	88.9 D	70.5 F	70.5 F	62.4	48.8	71.1 *	9.33 *	55.651	17.05 Q	2

ADVANCED NURSERY EVALUATION
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MBQ-UERN
ALL ENTRIES

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3836	36 P92227C5-1-1	89.3 D	82.3 E	82.3 E	61.8	55.3 Q	70.3 Q	9.04	56.808	17.48 *	3
3837	37 P88204RBI-2-1-6	92.5 C	78.2 F	78.2 F	60.8	57.6 *	70.9 *	8.32	57.622	17.29 Q	2
3838	38 TW94315	95.7 B	84.3 E	84.3 E	59.6	59.1 *	71.7	8.74	55.466	17.25 Q	3
3851	1 Cardinal	101.3 A	88.2 D	88.2 D	59.8	57.1 *	74.0	9.27	55.606	17.54 *	3
3852	2 Caldwell	104.4 A	98.5 B	98.5 B	59.6	63.6	73.2	9.32	56.111	17.82	4
3853	3 Pioneer 2548	95.4 B	74.9 F	74.9 F	59.8	60.7	71.3	9.26	58.419 *	17.10 Q	2
3854	4 AP Foster	103.6 A	105.7 A	103.6 A	60.0	60.9	75.1	9.05	54.524	18.38	5
3855	5 OH 552	101.5 A	91.7 C	91.7 C	61.1	56.4 *	73.6	10.07 Q	52.93	17.70	3
3856	6 AR 494B-2-2	97.2 B	76.3 F	76.3 F	61.6	56.6 *	72.2	9.92 *	55.09	16.96 Q	2
3857	7 AR 584A-3-1	95.1 B	90.1 C	90.1 C	60.0	58.0 *	71.6	9.89 *	55.073	17.56 *	3
3858	8 KY86C-127-3	88.9 D	77.2 F	77.2 F	62.4	53.8 Q	70.4 Q	10.15 Q	57.019	17.33 Q	3
3859	9 BL930390	97.5 B	97.7 B	97.5 B	61.4	59.5 *	71.9	9.28	56.402	17.99	5
3860	10 BL931167	89.2 D	92.7 C	89.2 D	60.1	59.2 *	69.9 Q	10.08 Q	56.849	17.82	4
3861	11 IL 91-15911	101.3 A	102.2 A	101.3 A	61.1	62.9	72.3	8.49	57.356	18.28	4
3862	12 OH 599	95.3 B	91.1 C	91.1 C	62.9	57.2 *	71.5	8.99	55.262	17.64 *	3
3863	13 MO 94-317	105.3 A	108.1 A	105.3 A	60.1	63.7	73.8	8.91	54.228	18.67	5
3864	14 VA97W-375	88.9 D	90.5 C	88.9 D	60.8	54.0 Q	70.5 Q	9.26	55.673	17.79	4
3865	15 VA96W-247	93.2 C	80.4 E	80.4 E	61.8	55.7 Q	71.3 *	8.19	58.627 *	17.60 *	3
3866	16 OH 536	102.0 A	103.4 A	102.0 A	59.1 *	58.8 *	75.1	9.60 *	52.785	18.16	4
3867	17 G60232	95.2 B	85.8 D	85.8 D	60.6	60.4	71.2 *	8.55	58.143 *	17.60 *	3

ADVANCED NURSERY EVALUATION
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ALL ENTRIES

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3868	18 G41332	104.2 A	105.0 A	104.2 A	60.2	63.0	73.2	9.20	55.401	18.07	4
3869	19 G41333	93.1 C	92.6 C	92.6 C	61.0	57.2 *	71.1 *	8.88	55.99	17.79	3
3870	20 T104	98.0 B	92.5 C	92.5 C	60.6	61.4	71.8	8.83	54.28	17.53 *	3
3871	21 T105	98.7 B	105.8 A	98.7 B	60.0	64.0	71.6	8.76	56.224	18.17	4
3872	22 T106	90.9 C	88.3 D	88.3 D	59.7	61.5	70.0	8.99	57.384	17.58 *	3
3873	23 T109	92.4 C	80.6 E	80.6 E	61.4	57.8	70.8 *	9.42 *	56.755	17.29 Q	2
3874	24 HT98-10291	91.0 C	78.1 F	78.1 F	59.7	54.5 Q	71.1 *	9.24	55.969	17.21 Q	1
3875	25 HT98-10033	81.0 E	71.2 F	71.2 F	60.3	51.8 Q	68.9 Q	10.28 Q	55.298	16.92 Q	1
3876	26 BL940582	99.4 B	96.7 B	96.7 B	60.0	55.3 Q	73.1	10.23 Q	54.04	17.99	4
3877	27 M95*3349	103.9 A	105.1 A	103.9 A	61.7	60.3	73.3	9.40 *	55.172	18.45	4
3878	28 M95*3330	88.7 D	88.7 D	88.7 D	61.3	54.2 Q	70.4 Q	9.85 *	55.713	17.70 *	2
3879	29 M95*2883	99.9 A	108.1 A	99.9 A	60.4	63.7	71.9	9.10	54.325	18.48	6
3880	30 OK91 P648-41	85.8 D	74.8 F	74.8 F	60.3	55.7 Q	69.5 Q	8.99	57.333	17.17 Q	4
3881	31 IL94-2894	96.1 B	89.7 D	89.7 D	60.7	54.8 Q	72.3	9.16	55.936	17.75	4
3882	32 IL94-6727	96.7 B	103.0 A	96.7 B	61.7	59.6 *	71.6	9.32	55.922	18.53	6
3883	33 GA88622E51	85.2 D	82.5 E	82.5 E	59.3	60.7	68.7 Q	9.46 *	57.823	17.39 Q	3
3884	34 GA881404E56	95.7 B	98.3 B	95.7 B	60.3	57.5 *	71.8	9.51 *	53.557	17.97	3
3885	35 P86364RAI-4-2-7	92.9 C	96.0 B	92.9 C	61.3	51.4 Q	71.9	9.89 *	52.802	18.12	5
3886	36 P92227C5-1-1	89.6 D	71.1 F	71.1 F	60.5	58.0 *	70.1 Q	9.82 *	55.228	16.65 Q I	
3887	37 P88204RBI-2-1-6	90.5 C	82.9 E	82.9 E	61.0	56.5 *	70.6 *	9.43 *	56.776	17.46 Q	2

ADVANCED NURSERY EVALUATION
FOR SOFT WHEAT MILLING AND BAKING QUALITY
1999 CROP

MBQ-UERN
ALL ENTRIES

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3888	38 TW94315	95.3 B	90.8 c	90.8 C	58.7 *	60.5	71.4	9.48 *	55.913	17.56 *	3
3901	1 Cardinal	104.2 A	94.3 C	94.3 C	57.2 Q	64.0	73.4	8.10	54.127	17.51 *	3
3902	2 Caldwell	97.9 B	108.6 A	97.9 B	59.1	66.2	71.2 *	8.07	55.893	18.32	4
3903	3 Pioneer 2548	96.6 B	99.0 B	96.6 B	58.3 *	65.9	71.0 *	8.20	56.46	17.79	4
3904	4 AP Foster	105.8 A	110.0 A	105.8 A	57.5 Q	66.3	74.6	7.87	53.124	18.82	4
3905	5 OH 552	102.6 A	106.4 A	102.6 A	58.4 *	61.8	73.1	8.51	52.745	18.56	4
3906	6 AR 494B-2-2	100.9 A	108.3 A	100.9 A	59.4	63.9	72.3	7.66	55.255	18.63	3
3907	7 AR 584A-3-1	101.4 A	110.0 A	101.4 A	57.5 Q	65.8	72.3	7.86	54.221	19.01	4
3908	8 KY86C-127-3	91.4 C	101.9 A	91.4 C	59.3	62.6	70.0 Q	8.61	55.351	17.93	3
3909	9 BL930390	101.3 A	101.8 A	101.3 A	58.4 *	68.8	71.7	7.46	56.506	17.93	3
3910	10 BL931167	96.7 B	107.5 A	96.7 B	57.6 Q	67.3	70.9 *	8.72	56.291	18.39	3
3911	11 IL 91-15911	102.2 A	107.0 A	102.2 A	57.8 Q	68.7	72.1	7.39	56.51	18.41	4
3912	12 OH 599	93.0 C	100.1 A	93.0 C	59.8	62.6	70.4 Q	8.44	55.548	17.87	4
3913	13 MO 94-317	107.1 A	106.0 A	106.0 A	57.1 Q	70.7	73.9	7.31	56.883	19.11	5
3914	14 VA97W-375	90.7 C	105.6 A	90.7 C	58.5 *	62.5	70.0 Q	8.23	55.87	18.50	4
3915	15 VA96W-247	97.0 B	97.4 B	97.0 B	57.9 Q	64.8	71.3 *	7.50	57.808	17.93	3
3916	16 OH 536	104.2 A	108.0 A	104.2 A	57.6 Q	63.6	74.2	8.17	52.851	19.10	5
3917	17 G60232	95.1 B	94.1 C	94.1 C	57.4 Q	66.6	70.6 *	7.91	57.275	17.66 *	3
3918	18 G41332	106.4 A	109.4 A	106.4 A	57.2 Q	69.4	73.2	7.53	55.281	18.15	4
3919	19 G41333	96.9 B	104.3 A	96.9 B	57.1 Q	67.3	71.0 *	7.31	57.159	18.13	3

ADVANCED NURSERY EVALUATION
 FOR SOFT WHEAT MILLING AND BAKING QUALITY
 1999 CROP

MBQ-UERN
 ALL ENTRIES

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MICRO T.W. LB/BU	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
3920	20 T104	100.2 A	109.8 A	100.2 A	58.1 *	67.1	71.7	8.17	55.404	18.71	4
3921	21 T105	100.2 A	105.6 A	100.2 A	57.3 Q	69.9	71.6	7.10	57.051	18.50	3
3922	22 T106	95.8 B	104.5 A	95.8 B	58.1 *	68.0	70.5 Q	7.47	57.451	18.24	5
3923	23 T109	95.3 B	101.8 A	95.3 B	58.4 *	65.8	70.7 *	7.40	58.506 *	18.21	4
3924	24 HT98-10291	95.3 B	87.4 D	87.4 D	57.3 Q	60.3	71.6	7.96	54.536	17.33 Q	2
3925	25 HT98-10033	91.6 C	96.4 B	91.6 C	58.4 *	58.1 *	70.9 *	8.60	54.688	17.86	5
3926	26 BL940582	104.8 A	109.8 A	104.8 A	56.2 Q	65.7	73.8	7.72	54.28	18.68	5
3927	27 M95*3349	104.5 A	108.6 A	104.5 A	58.7 *	69.3	72.5	7.55	55.887	18.64	4
3928	28 M95*3330	93.1 C	105.6 A	93.1 C	59.8	60.8	70.7 *	8.28	55.3	18.22	3
3929	29 M95*2883	100.6 A	106.9 A	100.6 A	57.7 Q	70.6	71.6	7.29	56.52	18.86	3
3930	30 OK91 P648-41	88.2 D	82.7 E	82.7 E	56.5 Q	65.6	69.1 Q	7.54	58.073 *	17.22 Q	2
3931	31 IL94-2894	100.9 A	100.6 A	100.6 A	58.0 *	62.3	72.7	8.11	55.523	17.90	3
3932	32 IL94-6727	100.8 A	107.0 A	100.8 A	58.9 *	68.0	71.7	7.56	56.493	18.62	4
3933	33 GA88622E51	86.5 D	84.9 D	84.9 D	56.7 Q	66.0	68.5 Q	8.31	58.014 *	17.31 Q	2
3934	34 GA881404E56	94.9 C	109.5 A	94.9 C	56.6 Q	65.3	70.8 *	8.44	53.847	18.36	4
3935	35 P86364RAI-4-2-7	100.4 A	106.7 A	100.4 A	57.3 Q	62.1	72.7	8.24	53.562	18.43	3
3936	36 P92227C5-1-1	94.4 C	104.5 A	94.4 C	57.6 Q	65.6	70.6 *	8.38	56.309	18.05	4
3937	37 P88204RBI-2-1-6	99.0 B	107.8 A	99.0 B	57.4 Q	67.2	71.5	7.40	56.197	18.54	5
3938	38 TW94315	99.5 B	95.2 B	95.2 B	56.0 Q	68.7	71.6	7.67	55.96	17.55 *	2

EVALUATION SUMMARY

MBQ-UERN
ALL ENTRIES

STD = AVG OF 3 CALDWELLS

STANDARD DATA

TEST WT.	60.27
S.E	63.02
YIELD	72.08
FL. PROTEIN	8.63
AWRC	56.3
DIAMETER	17.94
TOP GRAIN	4

ADJUSTED L.S.D.

TEST WT.	1.165292
S.E	3.388709
YIELD	0.773823
FL. PROTEIN	0.698628
AWRC	1.54825
DIAMETER	0.2392

COMBINED QUALITY
SCORES

A	27
B	21
C	25
D	13
E	11
F	17
TOTAL	114

NOTATION BEGINS

	"**"	"Q"
TEST WT.	59.11	57.94
S.E	59.63	56.24
YIELD	71.31	70.54
FL. PROT.	9.33	10.03
AWRC	57.85	59.4
DIAMETER	17.7	17.46

AVERAGED DATA

TEST WT.	60.04
S.E	60.19
YIELD	71.5
FL. PROTEIN	8.71
AWRC	55.92
DIAMETER	17.87
TOP GRAIN	3.4123