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2006 - 2007

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.

USDA-ARS
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USDA ars Agricultural Research Service

TABLE OF CONTENTS

Entries and Pedigrees	3
Location Notes	4-11
Yield	12-15
Test Weight	16-19
Heading Date	20-22
Height	23-26
Lodging	27
Winter Damage	28-30
Leaf Rust	31-34
Stem Rust	35-36
Stripe Rust	37-38
Septoria	39-40
Fusarium Head Blight (Scab)	41-42
Powdery Mildew	43-44
Viruses	45-46
Xanthomonas	47
Hessian Fly	48
Acid Soil Tolerance	49
1RS Status	50
Marker Data	51-52
Kernel Weight	53
Milling and Baking Quality	54-64

2006-2007 UNIFORM EASTERN SOFT RED WINTER WHEAT NURSERY
LIST OF ENTRIES AND PEDIGREES

Entry No.	Cultivar/ Designation	Pedigree	Contributor	1st Year in Nursery
1	Foster	KY 83-60/Tyler//KY 83-75 (formerly KY 85C-31-6)	Check	96-97
2	Patton	SW85*94/IN82104B1-3-2 (formerly A94-1048)	Check	96-97
3	Roane	VA71-54-147(CI17449)/C68-15//IN65309C1-18-2-3-2 (formerly VA93-54-429)	Check	95-96
4	INW0411	96204A1-12//Goldfield/92823A1-11 (formerly P97397E1-11-2-4-1-1)	Check	03-04
5	MSU Line D8006-R	Pio2555/Lowell	Siler	04-05
6	AR96077-7-2	Jackson/Pio2643	Bacon	05-06
7	MO011126	MO94-103/Pio2552	McKendry	05-06
8	VA03W-412	Roane/Pio2643//SS520	Griffey	05-06
9	VA03W-409	VA94-52-25/Coker9835//VA96-54-234(Sisson'S')	Griffey	05-06
10	MD00-72-5028	Pio2552/VA97W-375=Sisson 'S'	Costa	05-06
11	MD00-72-5050	Pio2552/VA97W-375=Sisson 'S'	Costa	05-06
12	IL01-11934	IL90-6364(P76788G2-5-4-94//Caldwell/IL77-2656)/IL94-1909(OH416/IL87-2834-1)	Kolb	05-06
13	SE98-1089-34	P25R57/SE1694-12	Fioritto	05-06
14	SE91-1492-4	Taishang1/GR863//Cardinal	Fioritto	05-06
15	99840C4-8-4-12	961331A46-1/INW0302//F201R/Patton	Ohm	06-07
16	0175A1-44	981419B1-3-4-1/97397B1-4-5	Ohm	06-07
17	01946A1-16	981477/981128//97395/981250	Ohm	06-07
18	AR97044-10-2	Elkhart/AR494B-2-2	Bacon	06-07
19	NY88046-8138	Susquehanna/Harus	Sorrells	06-07
20	MSU Line E0028	Pio2737W/MSU Line D1148	Siler	06-07
21	T162	T143/OH669	Wilson	06-07
22	T157	OKP648/T81	Wilson	06-07
23	E01-1272	Z89-11/ZX90-2C1	Moreno	06-07
24	Z00*5267	U88C//Glacier/ZX90-15C	Moreno	06-07
25	VA03W-434	Roane/Coker9835//VA96-54-270(88-54-612(MSY*2/Balkan)/FFR511W)	Griffey	06-07
26	KY96C-0786-3-2	2684/Roane	Van Sanford	06-07
27	KY96C-0769-7-3	2552/Roane	Van Sanford	06-07
28	OH02-12678	Foster/Hopewell//OH581/OH569	Sneller	06-07
29	OH02-12686	Foster/Hopewell//OH581/OH569	Sneller	06-07
30	OH02-13567	OH581/IN83127E1-24-5-2-1-31//5088B-D-32-1/OH601	Sneller	06-07
31	MO040192	IL85-2872/MO10501	McKendry	06-07
32	IL00-8530	IL89-1687//IL90-6364/IL93-2489	Kolb	06-07
33	IL02-23168	IL94-1909/Pio25R26//IL95-4162	Kolb	06-07
34	B020815	2552/Coker9543	Hancock	06-07
35	D03*9804	Mallard Cross Bulk	Hancock	06-07
36	M03-3104	Hopewell/M94-1107(Pio2555/SW85*5626//MO10501)	Fogleman	06-07
37	M03-3616	Hopewell/Patton	Fogleman	06-07
38	M03*3877	T8141/D93-6093(Steele/McNair1003)	Fogleman	06-07
39	SE94-1012-25	T814/L880119	Fioritto	06-07
40	G59326	T812/VA91-54-219	Brown	06-07
41	G69322	T814/L900819	Brown	06-07
42	G69319	T814/L900819	Brown	06-07
43	GA98401-5E45	AGS2000/GA91215	Johnson	06-07
44	GA991369-5A17	AGS2000/Pio26R61//Crawford	Johnson	06-07

LOCATION NOTES

Bay, Arkansas

Cooperators:	June Hancock, David Hill, Richard Gray AgriPro COKER
Notes:	Easter freeze killed the plots.

Stuttgart, Arkansas

Cooperators:	Robert Bacon, John Kelly University of Arkansas
Notes:	Nursery was abandoned due to the late freeze.

Plains, Georgia

Cooperators:	Jerry Johnson, Dan Bland, James Buck, John Youmans, Lilian Miranda University of Georgia
Planted:	November 15, 2006
Harvested:	May 28, 2007
Fertilizer:	20 N preplant; 75 N topdress

Aberdeen, Idaho

Cooperators:	Harold Bockelman, Charles Erickson, Scott McNeil USDA-ARS, National Small Grains Collection
Notes:	Winter damage caused excessive CV's. Only height data is reported.

Brownstown, Illinois

Cooperators:	Fred Kolb, Norman Smith, Eric Brucker University of Illinois
Planted:	October 4, 2006
Harvested:	June 14, 2007
Fertilizer:	40 N preplant; 60 N spring topdress
Notes:	Limited damage from spring freeze. SBMV reduced yields of susceptible lines.

St. Jacob, Illinois

Cooperators:	Barton Fogleman, Jennifer Vonderwell, Eugene Glover AgriPro COKER
Planted:	October 12, 2006
Harvested:	June 20, 2007
Notes:	Some lines were damaged by freezing, but most recovered (at least visually). Southern early-moving lines were hurt the most.

Urbana, Illinois

Cooperators:	Fred Kolb, Norman Smith, Eric Brucker University of Illinois
Planted:	September 27, 2006
Harvested:	June 22, 2007
Fertilizer:	40 N preplant; 55 N topdress
Notes:	Some winter kill, a spring freeze and hot, dry conditions during tillering and grain fill all had an impact on yields. Winterkill: 0 = no damage, 9 = all plants dead. FHB data are from misted, grain spawn inoculated FHB nursery, 3 reps of single 3 foot rows. ISK Index = Incidence *(0.3) + Severity *(0.3) + Kernel Rating *(0.4). BYDV stunting data are from BYDV-PAV-IL inoculated hills. Stunting = ((Control Ht. - Inoc. Ht)/ Control Ht.) * 100. Winter survival data also recorded prior to the big freeze at Urbana and Dekalb.

Brookston, Indiana

Cooperators:	Barton Fogleman AgriPro COKER
Notes:	Winter survival data recorded prior to the April “Big Chill”.

Greensburg, Indiana

Cooperators:	Sam Brown Genesis Seed Research
Notes:	Nursery was abandoned. Stand establishment in the fall was affected by excessive rain and the winter finished the job.

Lafayette, Indiana

Cooperators:	Sam Brown Genesis Seed Research
Notes:	Winter kill data recorded in observation plot.

Lafayette, Indiana

Cooperators:	Benjamin Moreno, Justin Cooley Westbred LLC
Notes:	Winter kill data recorded in observation plot.

Wabash, Indiana

Cooperators:	Benjamin Moreno, Justin Cooley Westbred LLC
Planted:	October 23, 2006
Harvested:	July 4, 2007

West Lafayette, Indiana

Cooperators:	Herb Ohm Purdue University

Planted:	September 28, 2006
Harvested:	June 21, 2007
Fertilizer:	35-90-0 fall; 100-0-0 spring
Notes:	Average % of spikelets diseased from inoculated spikelet (3rd or 4th spikelet from tip) toward the base of the spike, at 25 dai. Ten spikes were inoculated at flowering in a 1-meter row of each entry, a plastic bag was placed over inoculated spikes for 3 days, and plots were misted for 2-3 weeks after inoculation. Entries with missing data suffered severe winterkill in yield plots.

West Lafayette, Indiana

Cooperators:	Sue Cambron USDA-ARS, Crop Production & Pest Control Research
Notes:	Hessian fly data. Data reported is Number of Plant Resistant – Number of Plants Susceptible.

Wichita, Kansas

Cooperators:	Jim Wilson Trio Research, Inc.
Notes:	Nursery was abandoned due to frost, rain, and weeds.

Schochoh, Kentucky

Cooperators:	Dave Van Sanford University of Kentucky
Planted:	October 24, 2006
Harvested:	June 19, 2007
Fertilizer:	P,K according to soil test; 110 N in split applications
Notes:	Not a good year for wheat in Kentucky. Tremendous freeze damage at this location.

Woodford Co., Kentucky

Cooperators:	Dave Van Sanford University of Kentucky
Planted:	October 30, 2006
Harvested:	June 26, 2007
Fertilizer:	P,K according to soil test; 110 N in split applications
Notes:	Not a good year for wheat in Kentucky. Lots of lodging, very high CVs at this location.

Clarksville, Maryland

Cooperators:	Jose Costa, Aaron Cooper University of Maryland
Planted:	October 4, 2006
Harvested:	June 25, 2007
Notes:	Soil borne was significant.

Laporte, Michigan

Cooperators:	Lee Siler Michigan State University
Planted:	October 10, 2006
Harvested:	July 11, 2007
Fertilizer:	250# 6-15-36; 196# 46-0-0 spring
Notes:	Very wet after planting. Disease pressure overall was low. No lodging. Somewhat dry during grain fill.

St. Paul, Minnesota

Cooperators:	Yue Jin, Lucy Wanschura USDA-ARS, Cereal Disease Laboratory
Notes:	Stem rust seedling and field data.

St. Paul, Minnesota

Cooperators:	Dave Long, Jim Kolmer USDA-ARS, Cereal Disease Laboratory
Notes:	Leaf rust seedling data.

Columbia, Missouri

Cooperators:	Anne McKendry, David Tague University of Missouri
Planted:	September 26, 2006
Harvested:	July 3, 2007
Fertilizer:	40 N fall, 80 N spring; 40 P, 60 K
Notes:	Sixteen inch snow insulated against severe cold in December. The two Georgia lines were growing actively as several weeks of ice and severe cold arrived, they later grew back a little from crowns. March was the 3rd warmest on record and temperatures from March 21st through April 3rd were 14 - 16 degrees above normal. This was followed by a period of the coldest temperatures in 118 years. On April 4, 5, 6, 7, and 8 low temperatures were 27, 29, 29, 23, and 19 degrees and freeze damage affected the wheat. Growing points at that time were below ground on late tillers of later varieties and four inches or more off the ground on earlier lines. There was no development for about a week to 10 days, then things began to recover. Heading period delayed and with less variance between the different entries due to the freeze damage, but also more variable within entries due to inconsistent damage to different replicates. Xanthomonas rating is confounded with leaf rust and other foliar diseases, but this was another large reduction on final yield as well as test weight. Freeze damage was assessed on a 0-9 scale after winter survival data were taken. We were interested to see if this correlated at all with yield and essentially made up a scale. Data were taken about 10 days after the freeze

and do not reflect recovery. Yield will give some sense of the recovery. The scale we used combined burn back and stem collapse/lodging as follows: 0 - No visible damage; 1 - 10% burn back; no lodging; 2 - 20% burn back; up to 5% lodging; 3 - 30 % burn back; up to 10% lodging; 4 - 40 % burn back; up to 15% lodging; 5 - 50% burn back; up to 20% lodging; 6- 60% burn back; up to 25% lodging; 7 - 70% burn back; 30% lodging; 8 - 80% burn back; 50% lodging; 9 - complete burn back - completely lodged.

Cleveland, Mississippi

Cooperators: June Hancock, David Hill, Richard Gray
AgriPro COKER

Notes: Late planting, poor stands, no yield data.

Lincoln, Nebraska

Cooperators: Stephen Baenziger
University of Nebraska

Notes: No winterkilling anywhere.

Ithaca, New York

Cooperators: Mark Sorrells
Cornell University

Planted: September 22, 2006

Harvested: July 21, 2007

Fertilizer: 200# 10-20-20 fall; 40 N topdress

Notes: Excellent growing conditions. No significant disease problems.

Plymouth, North Carolina

Cooperators: Paul Murphy
North Carolina State University

Notes: Location was abandoned due to poor emergence. Twelve inches of rain were received right after planting.

Raleigh, North Carolina

Cooperators: Gina Brown-Guedira
USDA-ARS, Eastern Regional Small Grains Genotyping Lab

Notes: Marker analysis. DNA was isolated from a samples of 10 plants/ entry. "nd"= not determined or lack of amplification. If marker is dominant, samples with no amplification are left blank. "yes?" or "no?" indicates that markers may not be diagnostic or data was not clear; therefore can be sure if gene is present or not.

Raleigh, North Carolina

Cooperators: Christina Cowger
USDA-ARS, Plant Science Research

Notes: Coordinator of the Eastern Septoria Nursery

Napoleon, Ohio

Cooperators:	Barton Fogleman, Jennifer Vonderwell, Eugene Glover AgriPro COKER
Planted:	October 10, 2006
Harvested:	July 9, 2007
Notes:	Excellent site (a beauty contest with very little disease).

Wooster, Ohio

Cooperators:	Clay Sneller Ohio State University – OARDC

Wooster, Ohio

Cooperators:	Ron Fioritto Sunbeam Extract Co.
Planted:	October 5, 2006
Harvested:	July 9, 2007

Wooster, Ohio

Cooperators:	Edward Souza USDA-ARS, Soft Wheat Quality Laboratory
Notes:	Milling and baking quality data.

Enid, Oklahoma

Cooperators:	Brett Carver Oklahoma State University
Notes:	Acid soil tolerance data. Soil pH=4.6, 70ppm Al, and Al saturation=11%). Scale 1=highly tolerant; 5=highly susceptible; 0=no discernable symptoms; Jagger = 2.

Ridgetown, Ontario

Cooperators:	Arend Smid Ridgetown College, University of Guelph
Planted:	November 3, 2006
Harvested:	August 2, 2007
Fertilizer:	50 N (high in residual N)
Notes:	Planted one month late under adverse conditions from ground too frozen, too muddy to just poor soil conditons.

Rodney, Ontario

Cooperators:	Mark Etienne Hyland Seeds, Nairn Research Lab
Planted:	October 27, 2006
Fertilizer:	200kg 6-24-24 fall; 90 units N (liquid) spring
Notes:	Due to the wet fall in the Nairn area, we were unable to plant prior to November 1st at Nairn. Trials were moved to Rodney (our

earliest planting) about 1 mile from Lake Erie, sout-east of Ridgetown (Arend Smid's plots). We had an open fall, freeze did not occur until mid-January. We experienced fall BYDV infection that was not uniform in areas of our plots. The UESWRWWN infection was fairly consistent, I rated twice based on "viral" mottling (prior to heading) on the lower leaves and rated "classic" red leaf and "stunting" symptoms after heading. We had an extemely dry late spring, early summer. Fall emergence was excellent. Very low disease pressure other than BYDV in the Rodney plots. Ratings: 0-none, 9-severe (% would be equal to the 0-9 value x 11.1).

Knoxville, Tennessee

Cooperators: Dennis West
University of Tennessee

Notes: Due to the Easter freeze the nursery was abandoned. Damage was severe in most areas of Tennessee. Some very late planted wheat (December) reported to be worth harvesting.

Castroville, Texas

Cooperators: Sid Perry
Westbred LLC

Notes: Leaf rust and Xanthomonas notes.

Blacksburg, Virginia

Cooperators: Carl Griffey
Virginia Tech

Notes: Belgian Lodging Scale=Area Affected(1-10) x Lodging Intensity(1-5) x 0.2

Warsaw, Virginia

Cooperators: Carl Griffey
Virginia Tech

Notes: Belgian Lodging Scale=Area Affected(1-10) x Lodging Intensity(1-5) x 0.2

Mt. Vernon & Pullman, Washington

Cooperators: Xianming Chen
USDA-ARS, Wheat Genetics, Quality, Physiology, & Disease

Notes: Adult stripe rust data.

Arlington, Wisconsin

Cooperators:	Mark Martinka University of Wisconsin
Planted:	October 6, 2006
Harvested:	July 18, 2007
Fertilizer:	70#
Notes:	No winterkill in the nursery. Leaf rust ratings provided by Gordon Cisar.

Oconto, Wisconsin

Cooperators:	Gordon Cisar Great Lakes Cereal Grains
Planted:	October 3, 2006
Harvested:	July 20, 2007
Fertilizer:	5,600 gal./acre manure before planting
Notes:	Good differential winterkill in the nursery. The stripe rust note is from a single row in Colorado.

YIELD (bu/acre)

		Plains		Brownstown		St. Jacob		Urbana		Wabash		W. Lafayette		Schochoh	
		GA		IL	ab	IL	ab	IL	ab	IN	ab	IN	ab	KY	a
		Johnson	rank	Kolb	rank	Fogleman	rank	Kolb	rank	Moreno	rank	Ohm	rank	anSanford	rank
1	Foster	59.1	34	58.6	36	68.3	29	55.6	34	75.5	18	57.0	29	56.5	23
2	Patton	66.9	23	59.1	34	70.0	26	58.3	28	79.2	8	56.5	30	51.8	32
3	Roane	71.1	18	71.1	8	81.6	4	70.0	5	81.5	4	68.0	12	60.9	16
4	INW0411	71.2	17	54.3	40	66.6	36	48.5	39	78.6	10	48.3	37	53.6	29
5	MSU Line D8006-R	87.5	2	67.2	16	66.7	35	56.5	31	77.2	11	68.9	10	44.8	41
6	AR96077-7-2	77.4	8	44.1	42	60.8	44	30.8	42	55.3	42			50.8	33
7	MO011126	84.2	6	71.3	5	74.9	14	70.8	4	74.9	20	82.7	1	53.2	30
8	VA03W-412	79.5	7	59.5	32	63.9	38	59.5	24	74.3	24	49.2	36	61.1	15
9	VA03W-409	66.1	25	71.2	6	78.0	9	63.3	15	81.1	6	57.6	28	74.5	3
10	MD00-72-5028	62.1	30	71.0	10	73.6	18	63.9	13	76.9	13	57.8	27	60.3	17
11	MD00-72-5050	74.5	11	70.4	11	70.5	24	58.9	26	73.9	25	64.7	15	61.5	14
12	IL01-11934	69.6	20	67.1	17	73.7	17	71.5	3	75.9	16	79.7	3	59.3	19
13	SE98-1089-34	65.9	26	74.2	1	76.3	11	55.8	33	69.0	34	58.1	26	62.4	13
14	SE91-1492-4	53.2	44	69.9	13	74.5	15	63.9	13	63.8	39	60.3	23	57.7	21
15	99840C4-8-4-12	58.3	36	62.0	28	77.1	10	57.3	30	66.5	38	50.9	35	67.9	6
16	0175A1-44	62.1	30	59.1	34	70.1	25	46.5	41	76.2	15	47.0	39	55.3	24
17	01946A1-16	57.8	38	55.4	39	61.0	43	49.7	38	66.9	37	53.3	33	46.0	39
18	AR97044-10-2	85.6	4	65.1	24	72.2	22	48.5	39	71.1	32	43.5	41	47.2	37
19	NY88046-8138	54.6	42	65.9	22	67.7	30	57.4	29	63.5	40	46.0	40	74.5	2
20	MSU Line E0028	75.2	9	61.2	29	81.7	3	68.9	6	90.9	1	69.4	9	64.0	10
21	T162	86.1	3	50.2	41	63.4	40	50.0	37	68.2	35	54.1	31	43.4	42
22	T157	69.5	21	63.0	27	75.4	12	66.3	10	71.3	31	72.5	7	40.6	44
23	E01-1272	74.5	11	67.4	15	67.2	32	55.9	32	81.5	5	66.3	14	46.1	38
24	Z00*5267	54.4	43	58.4	37	72.9	20	58.6	27	76.9	12	60.8	20	54.8	26
25	VA03W-434	69.8	19	59.9	31	64.6	37	55.1	36	75.9	17	52.9	34	42.7	43
26	KY96C-0786-3-2	66.7	24	69.6	14	71.4	23	63.3	15	61.0	41	60.7	21	63.4	12
27	KY96C-0769-7-3	64.8	27	59.2	33	75.1	13	61.4	19	75.3	19	47.2	38	53.8	27
28	OH02-12678	56.9	39	70.4	11	73.1	19	65.1	12	74.9	21	63.7	17	53.0	31
29	OH02-12686	58.3	36	72.6	3	78.2	8	62.4	17	78.7	9	64.0	16	77.1	1
30	OH02-13567	61.2	32	65.2	23	79.9	6	60.5	21	74.5	23	68.9	11	53.7	28
31	MO040192	55.9	41	66.4	21	69.0	27	59.2	25	72.4	30	66.6	13	45.3	40
32	IL00-8530	59.0	35	72.5	4	68.3	28	68.6	7	76.5	14	77.4	4	47.6	36
33	IL02-23168	75.1	10	63.7	25	63.0	41	67.5	8	72.9	28	61.8	19	48.1	35
34	B020815	61.2	32	66.7	19	72.3	21	65.5	11	73.0	27	71.5	8	64.9	8
35	D03*9804	73.0	14	56.8	38	61.9	42	60.3	22	73.3	26	53.9	32	49.0	34
36	M03-3104	71.3	16	60.7	30	84.4	2	72.9	2	82.7	3	82.4	2	67.0	7
37	M03-3616	63.4	28	67.1	17	86.7	1	66.4	9	72.7	29	73.9	6	68.1	5
38	M03*3877	74.0	13	63.4	26	78.4	7	60.2	23	68.0	36	58.8	24	58.0	20
39	SE94-1012-25	56.0	40	71.1	8	74.4	16	55.4	35	85.8	2	60.7	22	64.5	9
40	G59326	67.8	22	74.1	2	80.4	5	77.0	1	70.7	33	74.1	5	70.6	4
41	G69322	62.5	29	71.2	6	67.7	31	61.5	18	80.2	7	62.8	18	55.0	25
42	G69319	84.8	5	66.5	20	63.7	39	61.2	20	74.7	22	58.2	25	59.4	18
43	GA98401-5E45	72.2	15	35.8	44	67.0	34			53.7	43			63.7	11
44	GA991369-5A17	90.0	1	43.7	43	67.1	33	21.3	43	51.7	44			56.8	22
LOCATION MEANS		68.4		63.5		71.7		59.3		73.2		61.7		57.0	
LSD (.05)				8.1		10		5.4		9.57		8.3		19.8	
CV %				7.9		6.87		5.7		9.87		9.3		17.3	
REPS		1		3		2		3		2		4		2	
Harvest Plot Area (sq.ft.)		50		34		60		34						40	

YIELD (bu/acre)

		Woodford Co.		Clarksville		Laporte		Columbia		Lincoln		Ithaca		Napoleon	
		KY	a	MD	ab	MI	ab	MO	a	NE		NY	ab	OH	ab
		VanSanford	rank	Costa	rank	Siler	rank	McKendry	rank	Baenziger	rank	Sorrells	rank	Fogleman	rank
1	Foster	67.4	32	76.3	18	58.7	41	32.8	33	68.8	40	78.1	26	94.8	19
2	Patton	66.3	33	68.8	33	64.3	20	27.8	42	81.7	34	87.1	8	91.2	30
3	Roane	80.6	19	86.4	1	62.9	26	46.0	9	94.4	15	88.3	5	96.1	12
4	INW0411	68.4	31	72.3	29	62.8	28	36.0	25	91.9	19	75.1	31	89.4	34
5	MSU Line D8006-R	65.9	34	69.4	30	66.5	16	37.2	20	93.5	17	72.5	39	97.8	7
6	AR96077-7-2	70.4	27	62.4	39	61.5	31	34.5	28	88.7	24	68.8	42	89.0	35
7	MO011126	86.9	13	76.1	19	62.9	26	39.7	14	95.1	14	75.2	30	99.3	5
8	VA03W-412	62.0	37	82.9	6	65.5	17	39.7	14	91.2	21	77.5	27	97.3	9
9	VA03W-409	92.5	5	80.8	8	77.4	1	51.6	3	102.8	3	83.9	13	101.5	1
10	MD00-72-5028	102.0	2	77.7	16	64.5	19	50.5	6	87.4	27	73.8	36	93.3	24
11	MD00-72-5050	91.5	7	72.8	28	68.5	9	41.0	13	82.7	32	85.4	10	94.4	22
12	IL01-11934	55.0	39	85.1	4	64.0	23	33.6	30	83.4	31	81.4	21	92.1	26
13	SE98-1089-34	73.8	23	75.1	22	68.2	10	43.4	10	101.7	5	83.7	15	96.8	11
14	SE91-1492-4	107.1	1	75.3	21	67.5	11	36.0	25	76.7	37	91.9	2	97.0	10
15	99840C4-8-4-12	69.1	28	69.3	32	61.8	30	42.3	12	99.4	9	78.3	25	87.7	38
16	0175A1-44	82.6	17	78.0	14	58.9	40	33.4	31	80.3	35	77.1	28	90.5	31
17	01946A1-16	64.4	36	62.0	40	60.6	37	31.3	35	74.8	38	73.0	37	83.8	43
18	AR97044-10-2	68.6	30	58.3	43	54.8	44	27.8	42	87.7	26	79.5	23	94.8	20
19	NY88046-8138	85.1	14	62.0	40	66.6	15	39.7	14	59.4	42	84.6	11	84.7	40
20	MSU Line E0028	68.9	29	77.8	15	70.1	6	36.7	24	96.9	13	87.3	7	101.5	2
21	T162	65.7	35	69.4	30	56.0	43	30.1	38	86.5	29	74.7	32	84.7	41
22	T157	74.6	21	65.4	37	61.5	31	51.5	4	89.8	22	79.0	24	90.4	33
23	E01-1272	52.9	40	75.1	22	58.1	42	36.9	22	101.2	6	81.8	18	93.0	25
24	Z00*5267	73.5	24	80.1	9	71.9	3	30.2	37	91.2	20	80.8	22	94.5	21
25	VA03W-434	87.3	12	80.0	10	67.2	14	34.1	29	100.9	7	88.2	6	88.6	36
26	KY96C-0786-3-2	94.4	4	82.7	7	59.3	39	37.0	21	94.2	16	74.0	35	100.4	3
27	KY96C-0769-7-3	88.7	11	85.6	2	62.3	29	37.3	19	98.5	10	76.9	29	92.1	26
28	OH02-12678	81.2	18	74.8	24	71.8	4	53.6	1	83.5	30	74.1	33	94.2	23
29	OH02-12686	89.8	10	62.0	40	63.4	25	50.9	5	88.1	25	83.8	14	92.1	26
30	OH02-13567	89.9	9	77.4	17	64.0	23	48.1	7	92.2	18	81.6	20	98.0	6
31	MO040192	48.1	41	68.1	35	67.5	11	36.8	23	87.1	28	72.0	40	100.0	4
32	IL00-8530	25.0	44	85.5	3	64.3	20	31.1	36	79.3	36	84.4	12	95.2	16
33	IL02-23168	40.3	43	75.7	20	61.1	34	29.0	40	82.7	32	81.9	17	84.3	42
34	B020815	92.3	6	79.5	11	60.2	38	38.0	18	99.6	8	72.7	38	90.5	32
35	D03*9804	56.7	38	73.8	26	61.5	31	26.4	44	102.2	4	70.8	41	95.7	14
36	M03-3104	43.2	42	84.8	5	69.9	7	28.2	41	104.8	1	83.3	16	94.9	17
37	M03-3616	80.5	20	74.5	25	70.3	5	52.6	2	97.5	12	85.5	9	91.8	29
38	M03*3877	83.4	15	68.3	34	61.1	34	33.4	31	89.7	23	74.1	34	95.3	15
39	SE94-1012-25	71.9	26	78.1	13	69.5	8	29.2	39	72.1	39	88.6	4	87.8	37
40	G59326	97.0	3	78.7	12	73.6	2	47.3	8	103.6	2	92.5	1	97.4	8
41	G69322	72.0	25	67.1	36	67.5	11	43.0	11	97.6	11	91.9	3	94.9	17
42	G69319	73.9	22	73.0	27	64.1	22	31.6	34			81.6	19	96.0	13
43	GA98401-5E45	90.8	8	48.4	44	64.9	18	39.3	17			61.2	44	86.3	39
44	GA991369-5A17	83.4	16	65.3	38	60.7	36	36.0	25	65.7	41	68.5	43	83.5	44
LOCATION MEANS		74.6		73.7		64.5		38.0		89.2		79.7		93.1	
LSD (.05)		36.7		14.8		7.6		8.5				11		7.9	
CV %		24.3		9.9		4.8		13.8				8.4		4.2	
REPS		2		2		2		3				3		2	
Harvest Plot Area (sq.ft.)		40						55						60	

YIELD (bu/acre)

		Wooster		Wooster		Ridgetown		Rodney		Blacksburg		Warsaw		Arlington	
		OH	ab	OH	a	ON	a	ON	ab	VA	ab	VA	ab	WI	a
		Sneller	rank	Fioritto	rank	Smid	rank	Etienne	rank	Griffey	rank	Griffey	rank	Martinka	rank
1	Foster	81.5	30	58.5	20	79	30	39.5	43	89.6	19	74.2	36	75.0	12
2	Patton	78.4	35	62.7	13	82	22	62.3	21	76.2	40	75.2	32	74.5	13
3	Roane	87.7	19	58.7	19	86	17	50.9	41	95.6	6	77.3	26	78.5	7
4	INW0411	84.7	24	53.1	28	89	9	66.0	12	90.4	18	72.1	37	65.5	34
5	MSU Line D8006-R	88.4	17	50.5	34	94	6	58.7	27	74.3	42	85.7	12	72.6	19
6	AR96077-7-2	57.2	42	27.1	42	84	20	59.0	26	86.6	24	85.4	13	69.2	25
7	MO011126	89.2	15	61.9	15	93	7	58.3	28	94.9	9	87.6	8	62.4	39
8	VA03W-412	85.6	23	44.0	39	81	24	56.4	33	97.2	5	87.0	9	73.3	17
9	VA03W-409	96.3	3	54.9	27	109	1	67.2	6	106.6	1	97.7	1	77.5	8
10	MD00-72-5028	95.0	7	52.9	29	87	14	58.0	30	98.4	4	86.0	11	65.7	33
11	MD00-72-5050	100.4	1	65.5	10	86	17	68.4	4	89.5	20	88.6	5	72.3	20
12	IL01-11934	90.0	14	68.8	6	95	5	53.7	38	91.7	15	82.5	16	76.5	11
13	SE98-1089-34	92.7	11	68.9	5	84	20	51.5	40	92.4	13	77.0	27	68.0	30
14	SE91-1492-4	94.5	9	68.2	8	89	9	65.6	13	91.8	14	87.7	7	67.4	31
15	99840C4-8-4-12	83.3	28	43.7	40	89	9	55.5	35	87.6	23	76.8	29	66.3	32
16	0175A1-44	90.1	13	64.7	12	69	44	68.4	4	95.0	8	71.0	40	68.3	29
17	01946A1-16	80.7	32	50.5	34	74	41	38.1	44	80.0	33	65.5	44	56.2	43
18	AR97044-10-2	75.2	37	44.1	38	80	27	55.2	36	92.7	12	74.9	33	90.6	1
19	NY88046-8138	72.7	41	68.5	7	80	27	57.0	32	76.1	41	65.7	43	62.0	40
20	MSU Line E0028	97.3	2	70.7	3	96	2	69.3	2	88.3	21	80.3	22	73.6	16
21	T162	73.8	39	43.4	41	80	27	49.4	42	80.5	32	71.9	38	73.7	15
22	T157	78.6	34	51.3	32	87	14	53.3	39	67.0	43	67.7	42	68.9	27
23	E01-1272	86.2	21	55.1	26	87	14	66.5	11	78.2	36	94.3	2	79.0	6
24	Z00*5267	83.6	27	59.4	17	88	12	66.8	10	81.1	31	76.6	30	71.6	21
25	VA03W-434	94.5	10	55.8	25	73	42	65.0	17	85.7	28	90.8	4	69.1	26
26	KY96C-0786-3-2	95.6	4	62.7	13	78	35	58.1	29	91.0	16	77.0	27	63.3	38
27	KY96C-0769-7-3	86.5	20	51.7	31	78	35	66.9	9	85.2	29	76.3	31	57.2	41
28	OH02-12678	90.3	12	73.3	1	81	24	54.4	37	90.8	17	74.8	34	64.0	36
29	OH02-12686	87.8	18	58.5	20	78	35	69.0	3	93.4	11	80.5	21	82.0	4
30	OH02-13567	94.6	8	69.5	4	72	43	56.4	33	85.9	27	79.9	24	69.7	24
31	MO040192	79.9	33	56.5	24	88	12	65.0	17	86.0	26	91.2	3	76.7	10
32	IL00-8530	73.9	38	52.8	30	85	19	62.6	19	76.9	38	80.1	23	64.1	35
33	IL02-23168	81.6	29	61.6	16	96	2	67.0	7	79.6	34	82.4	17	82.4	3
34	B020815	95.6	4	58.0	23	78	35	67.0	7	94.7	10	81.3	19	68.8	28
35	D03*9804	73.7	40	47.9	37	78	35	65.4	15	77.2	37	81.0	20	71.5	22
36	M03-3104	88.5	16	65.3	11	79	30	74.5	1	102.3	2	71.6	39	80.1	5
37	M03-3616	95.1	6	72.5	2	93	7	62.4	20	99.5	3	81.6	18	84.5	2
38	M03*3877	83.6	26	59.1	18	79	30	61.1	24	88.1	22	86.4	10	77.1	9
39	SE94-1012-25	83.7	25	66.3	9	82	22	57.9	31	79.3	35	70.9	41	63.4	37
40	G59326	86.1	22	58.1	22	96	2	65.6	13	95.6	6	74.7	35	74.5	13
41	G69322	81.0	31	51.1	33	79	30	65.1	16	84.8	30	77.4	25	71.0	23
42	G69319	77.9	36	49.2	36	77	40	60.1	25	86.1	25	84.8	14	73.0	18
43	GA98401-5E45	45.8	44	25.9	43	79	30	61.3	23	76.3	39	84.5	15	50.0	44
44	GA991369-5A17	54.9	43	20.0	44	81	24	61.6	22	66.1	44	87.8	6	57.1	42
LOCATION MEANS		83.9		56.0		84.0		60.5		87.0		80.1		70.6	
LSD (.05)		6.4		9		12		5.31		10.8		12.3		9.3	
CV %		4.6		11.9		10.4		5.42		6.2		7.6		10.6	
REPS		3		3		3		3						3	
Harvest Plot Area (sq.ft.)				45		48.3		44.55						55	

YIELD (bu/acre)

		Oconto WI	ab	ENTRY MEANS ALL LOCATIONS		ENTRY MEANS IN-REGION		ENTRY MEANS CV <10%	
		Cisar	rank		rank	[a]	rank	[b]	rank
1	Foster	77.3	29	67.4	38	67.7	35	70.3	35
2	Patton	76.3	30	68.9	32	68.4	33	71.6	31
3	Roane	90.6	4	76.5	5	75.9	5	79.1	6
4	INW0411	68.5	43	68.5	35	67.2	37	69.8	37
5	MSU Line D8006-R	80.4	23	71.6	22	69.8	26	73.6	27
6	AR96077-7-2	70.7	37	63.5	41	61.5	42	64.0	42
7	MO011126	81.6	18	76.2	7	74.8	9	78.5	7
8	VA03W-412	85.4	12	71.5	23	70.1	24	74.4	24
9	VA03W-409	94.7	1	81.2	1	80.9	1	82.7	1
10	MD00-72-5028	64.2	44	73.7	13	73.6	13	75.3	16
11	MD00-72-5050	79.3	26	75.5	8	75.2	8	77.5	9
12	IL01-11934	88.9	6	74.5	11	74.3	11	78.4	8
13	SE98-1089-34	82.4	17	73.7	14	72.7	16	75.2	18
14	SE91-1492-4	81.3	20	74.5	9	75.5	6	77.5	10
15	99840C4-8-4-12	86.0	9	69.8	30	68.9	30	71.4	32
16	0175A1-44	69.5	41	68.8	34	68.5	32	71.3	33
17	01946A1-16	70.0	40	61.6	44	61.1	43	64.3	41
18	AR97044-10-2	83.5	15	68.2	36	66.4	38	69.2	38
19	NY88046-8138	70.7	38	66.6	39	67.5	36	67.2	39
20	MSU Line E0028	92.0	3	78.1	4	77.3	4	81.1	3
21	T162	73.8	35	65.0	40	62.8	40	65.7	40
22	T157	75.4	34	69.1	31	68.0	34	70.5	34
23	E01-1272	78.5	27	71.9	21	70.3	23	75.0	20
24	Z00*5267	81.5	19	71.2	24	71.1	20	74.6	21
25	VA03W-434	84.5	14	72.1	20	70.7	22	75.2	19
26	KY96C-0786-3-2	80.2	24	72.9	16	72.2	17	74.6	23
27	KY96C-0769-7-3	70.1	39	70.5	25	69.3	28	72.9	30
28	OH02-12678	81.3	21	72.7	17	73.0	15	75.3	17
29	OH02-12686	69.4	42	74.5	10	74.7	10	75.5	15
30	OH02-13567	75.4	33	73.6	15	73.2	14	75.9	13
31	MO040192	81.2	22	69.9	29	69.8	25	74.6	22
32	IL00-8530	85.6	11	68.9	33	68.9	31	76.6	12
33	IL02-23168	83.2	16	70.0	28	69.2	29	73.3	29
34	B020815	84.6	13	74.4	12	73.8	12	76.8	11
35	D03*9804	78.2	28	67.6	37	65.6	39	70.2	36
36	M03-3104	90.6	5	76.5	6	75.3	7	81.7	2
37	M03-3616	94.3	2	78.8	3	78.6	2	80.1	5
38	M03*3877	86.2	8	72.1	19	71.1	19	73.8	26
39	SE94-1012-25	75.6	32	70.2	27	70.8	21	74.2	25
40	G59326	85.9	10	79.1	2	78.5	3	80.5	4
41	G69322	86.3	7	72.3	18	71.5	18	75.7	14
42	G69319	80.0	25	70.3	26	69.6	27	73.4	28
43	GA98401-5E45	76.0	31	62.2	42	61.7	41	63.4	43
44	GA991369-5A17	71.8	36	61.6	43	59.9	44	61.8	44
LOCATION MEANS		80.1		71.3		70.6		73.7	
LSD (.05)		9.7							
CV %		9							
REPS		3							
Harvest Plot Area (sq.ft.)		50							

TEST WEIGHT (lbs/bu)

		Plains GA Johnson	Brownstown IL Kolb	St. Jacob IL Fogleman	Urbana IL Kolb	Wabash IN Moreno	W. Lafayette IN Ohm
1	Foster	58.3	60.3	55.0	58.2	61.0	58.0
2	Patton	59.2	58.2	55.1	58.2	58.2	58.0
3	Roane	59.8	61.8	57.6	60.9	60.0	60.1
4	INW0411	58.1	57.3	58.4	57.9	60.4	55.7
5	MSU Line D8006-R	60.5	58.8	52.7	60.2	59.0	58.9
6	AR96077-7-2	60.6	59.3	56.2	57.2	58.9	
7	MO011126	61.0	60.2	57.9	60.1	61.0	59.3
8	VA03W-412	60.3	61.3	55.3	59.5	60.2	58.9
9	VA03W-409	57.4	58.8	57.1	59.2	58.9	57.1
10	MD00-72-5028	59.8	62.9	59.4	61.1	60.5	59.0
11	MD00-72-5050	58.4	60.5	57.5	59.8	59.7	58.2
12	IL01-11934	58.4	58.9	55.6	59.3	60.3	59.4
13	SE98-1089-34	58.1	57.7	49.9	57.5	58.1	53.2
14	SE91-1492-4	57.5	61.5	56.1	62.1	59.6	61.3
15	99840C4-8-4-12	60.5	59.8	55.3	60.6	60.3	60.3
16	0175A1-44	56.9	56.8	56.9	57.6	60.4	55.9
17	01946A1-16	58.8	59.1	60.3	56.8	59.0	56.5
18	AR97044-10-2	60.0	59.1	56.0	56.6	57.8	56.0
19	NY88046-8138	55.6	51.1	49.8	58.8	58.5	57.6
20	MSU Line E0028	58.9	56.6	51.5	57.4	57.2	56.6
21	T162	57.5	57.5	48.9	57.6	58.3	56.5
22	T157	59.3	58.1	54.4	59.7	60.8	60.2
23	E01-1272	59.7	58.6	52.6	56.2	58.8	54.9
24	Z00*5267	59.8	58.6	56.4	57.4	58.7	55.9
25	VA03W-434	58.7	58.7	55.3	59.8	58.7	57.8
26	KY96C-0786-3-2	60.7	59.6	54.1	59.6	57.0	59.4
27	KY96C-0769-7-3	60.5	59.5	57.5	60.2	61.7	59.2
28	OH02-12678	57.9	59.7	57.7	59.1	60.3	58.7
29	OH02-12686	53.9	52.0	56.7	59.2	60.9	56.2
30	OH02-13567	59.2	60.3	59.9	59.4	58.9	58.9
31	MO040192	58.5	60.4	55.6	59.0	59.1	59.1
32	IL00-8530	60.7	60.7	57.6	60.0	60.5	59.5
33	IL02-23168	61.6	61.2	52.5	60.9	60.2	60.1
34	B020815	57.3	60.1	55.8	60.9	60.2	
35	D03*9804	60.3	59.1	53.5	59.2	57.4	56.8
36	M03-3104	56.7	55.9	55.0	57.2	57.5	56.3
37	M03-3616	56.7	58.3	56.8	58.9	59.9	58.1
38	M03*3877	60.0	59.5	54.9	59.2	61.5	59.5
39	SE94-1012-25	57.4	59.4	55.1	57.9	60.5	58.2
40	G59326	59.2	59.8	53.3	59.4	59.5	59.8
41	G69322	60.7	59.3	60.4	58.8	59.9	57.8
42	G69319	59.5	57.7	49.9	58.8	61.2	58.3
43	GA98401-5E45	60.5	59.2	54.0		61.2	
44	GA991369-5A17	61.2	54.6	56.7	52.0	57.7	
LOCATION MEANS		59.0	58.8	55.4	58.8	59.5	58.0

TEST WEIGHT (lbs/bu)

		Schochoh KY Van Sanford	Woodford Co. KY Van Sanford	Clarksville MD Costa	Laporte MI Siler	Columbia MO McKendry	Ithaca NY Sorrells
1	Foster	56.2	57.0	59.6	55.7	51.2	58.3
2	Patton	55.9	57.7	59.1	56.5	50.4	57.9
3	Roane	57.5	59.0	60.4	57.8	53.9	59.4
4	INW0411	54.5	57.4	57.9	54.9	52.1	57.3
5	MSU Line D8006-R	56.2	58.7	59.6	56.6	51.8	58.2
6	AR96077-7-2	56.7	57.3	60.7	54.5	53.0	58.9
7	MO011126	56.7	59.9	60.2	57.5	52.8	57.6
8	VA03W-412	57.2	59.6	59.9	57.2	53.3	59.9
9	VA03W-409	55.6	57.0	57.5	56.6	50.3	57.7
10	MD00-72-5028	57.0	60.4	61.6	58.1	50.7	58.8
11	MD00-72-5050	56.0	60.0	59.8	58.0	50.0	59.1
12	IL01-11934	57.4	60.2	61.3	56.5	53.8	58.3
13	SE98-1089-34	53.1	56.8	56.0	55.0	46.9	55.7
14	SE91-1492-4	57.3	61.0	61.5	57.0	53.1	60.3
15	99840C4-8-4-12	59.5	60.2	61.5	56.7	54.2	59.5
16	0175A1-44	52.9	56.9	57.8	52.5	50.1	57.0
17	01946A1-16	55.6	57.1	60.5	56.0	52.1	57.2
18	AR97044-10-2	54.0	57.5	59.7	52.3	50.0	57.2
19	NY88046-8138	55.8	58.1	57.4	56.6	49.3	57.6
20	MSU Line E0028	55.2	58.4	57.0	55.8	45.1	56.3
21	T162	53.8	57.0	57.4	51.2	47.3	56.8
22	T157	55.3	58.2	59.0	55.8	54.4	58.9
23	E01-1272	52.7	54.2	57.4	54.0	49.9	57.5
24	Z00*5267	53.2	57.2	58.7	55.3	48.9	56.7
25	VA03W-434	55.2	57.5	57.9	54.8	49.1	58.5
26	KY96C-0786-3-2	57.5	60.2	59.7	58.2	53.1	58.3
27	KY96C-0769-7-3	57.5	58.7	59.7	58.1	52.1	59.2
28	OH02-12678	57.8	59.3	58.6	57.1	53.5	58.2
29	OH02-12686	57.4	58.4	56.8	54.8	54.3	58.2
30	OH02-13567	56.9	59.5	59.9	57.7	52.7	57.8
31	MO040192	55.7	58.7	59.7	56.2	54.0	59.0
32	IL00-8530	57.9	61.3	61.1	59.4	55.7	59.1
33	IL02-23168	57.8	60.3	59.8	56.4	56.9	59.7
34	B020815	57.4	60.0	60.3	58.5	51.7	58.4
35	D03*9804	54.3	59.0	59.4	55.7	51.5	57.9
36	M03-3104	54.5	56.1	58.0	55.2	46.0	56.6
37	M03-3616	55.6	59.4	58.4	55.7	52.1	57.0
38	M03*3877	56.4	59.4	59.3	57.9	52.2	58.2
39	SE94-1012-25	53.8	58.6	58.7	56.6	48.9	58.4
40	G59326	56.9	58.5	59.6	58.2	50.8	58.2
41	G69322	57.9	59.3	59.0	55.9	53.0	58.8
42	G69319	55.5	60.2	58.6	55.8	51.7	58.2
43	GA98401-5E45	57.6	60.0	55.4	56.6	55.5	59.5
44	GA991369-5A17	56.4	58.7	56.8	53.6	53.6	58.9
LOCATION MEANS		56.0	58.6	59.0	56.1	51.7	58.2

TEST WEIGHT (lbs/bu)

		Napoleon OH Fogleman	Wooster OH Sneller	Wooster OH Fioritto	Ridgetown ON Smid	Rodney ON Etienne	Blacksburg VA Griffey
1	Foster	62.4	61.3	58.6	58.4	59.2	58.3
2	Patton	61.2	59.9	56.9	57.2	59.0	57.0
3	Roane	64.0	62.1	59.5	59.0	57.4	59.5
4	INW0411	61.0	59.3	55.9	57.5	58.9	56.9
5	MSU Line D8006-R	61.6	60.9	60.9	58.4	58.7	57.6
6	AR96077-7-2	63.3	61.8	53.6	58.9	59.7	57.3
7	MO011126	63.8	62.9	61.9	58.6	58.9	59.8
8	VA03W-412	63.3	62.3	57.0	59.8	60.8	59.5
9	VA03W-409	61.3	59.4	57.3	58.4	59.0	56.9
10	MD00-72-5028	62.3	62.6	61.5	59.2	59.4	60.2
11	MD00-72-5050	63.4	61.9	60.1	59.5	59.6	60.2
12	IL01-11934	63.6	61.8	60.2	60.1	59.4	60.4
13	SE98-1089-34	61.2	57.6	56.7	55.6	55.4	55.9
14	SE91-1492-4	64.6	63.2	61.5	60.0	61.1	62.6
15	99840C4-8-4-12	64.2	62.3	57.9	60.4	61.3	61.0
16	0175A1-44	61.0	58.7	55.0	57.0	57.7	58.3
17	01946A1-16	61.8	58.8	53.4	58.1	58.1	57.7
18	AR97044-10-2	61.5	60.3	56.1	58.6	59.4	58.0
19	NY88046-8138	62.7	59.3	58.1	58.0	58.3	57.4
20	MSU Line E0028	60.4	59.5	57.4	57.6	57.7	57.7
21	T162	60.7	57.7	54.1	56.2	57.7	55.6
22	T157	63.9	60.8	59.7	58.7	60.1	57.6
23	E01-1272	60.2	59.1	59.3	56.7	57.1	55.4
24	Z00*5267	60.8	59.1	58.4	56.2	58.4	57.8
25	VA03W-434	61.6	60.8	56.2	61.2	59.4	57.8
26	KY96C-0786-3-2	63.0	62.3	60.1	59.4	59.9	59.9
27	KY96C-0769-7-3	63.3	61.7	59.0	58.3	59.0	59.2
28	OH02-12678	62.5	61.4	60.2	58.6	59.4	58.7
29	OH02-12686	62.8	60.3	58.7	58.0	58.0	59.7
30	OH02-13567	62.4	61.6	59.5	58.6	59.3	58.7
31	MO040192	61.7	60.0	57.5	58.4	60.3	58.3
32	IL00-8530	63.2	61.7	59.0	60.3	60.5	58.1
33	IL02-23168	64.3	60.5	59.8	59.7	60.7	58.3
34	B020815	62.8	62.1	60.9	59.5	59.8	60.1
35	D03*9804	61.2	60.6	57.2	57.0	58.3	56.6
36	M03-3104	59.9	56.8	56.9	57.3	58.0	56.6
37	M03-3616	62.2	61.0	58.5	58.0	58.7	58.2
38	M03*3877	62.6	60.7	60.2	59.2	60.0	58.9
39	SE94-1012-25	62.8	60.9	59.0	58.6	58.7	59.2
40	G59326	62.9	61.8	59.0	59.2	58.7	56.6
41	G69322	63.9	62.5	56.7	60.0	60.1	58.8
42	G69319	62.2	61.7	56.3	58.0	58.7	59.3
43	GA98401-5E45	61.9	62.1	55.1	58.7	60.6	58.2
44	GA991369-5A17	62.5	61.4	54.6	58.3	60.1	56.9
LOCATION MEANS		62.4	60.8	58.1	58.5	59.1	58.3

TEST WEIGHT (lbs/bu)

		Warsaw VA	Arlington WI	Oconto WI	ENTRY MEANS ALL LOCATIONS	
		Griffey	Martinka	Cisar		ranik
1	Foster	59.1	60.2	54.7	58.1	24
2	Patton	60.1	59.7	55.6	57.7	31
3	Roane	61.7	62.0	56.9	59.5	7
4	INW0411	58.8	59.3	54.7	57.3	36
5	MSU Line D8006-R	61.3	60.4	56.7	58.5	22
6	AR96077-7-2	60.6	61.2	55.4	58.2	23
7	MO011126	61.8	61.6	57.0	59.6	6
8	VA03W-412	62.1	61.9	57.4	59.4	8
9	VA03W-409	59.5	60.0	54.3	57.6	33
10	MD00-72-5028	61.8	62.1	54.5	59.7	5
11	MD00-72-5050	62.0	61.3	55.2	59.1	14
12	IL01-11934	60.9	61.1	55.7	59.2	11
13	SE98-1089-34	58.3	58.0	51.6	55.6	44
14	SE91-1492-4	62.8	61.7	55.7	60.1	1
15	99840C4-8-4-12	62.2	61.9	57.7	59.9	3
16	0175A1-44	57.8	58.1	53.0	56.6	40
17	01946A1-16	60.3	59.9	55.4	57.7	29
18	AR97044-10-2	60.9	60.8	56.2	57.5	35
19	NY88046-8138	56.7	58.8	54.9	56.7	38
20	MSU Line E0028	58.1	57.7	56.0	56.6	41
21	T162	60.2	59.5	51.5	55.9	43
22	T157	60.2	61.9	55.7	58.7	18
23	E01-1272	60.5	60.5	53.2	56.6	39
24	Z00*5267	59.0	60.2	54.4	57.2	37
25	VA03W-434	59.9	60.3	56.1	57.9	28
26	KY96C-0786-3-2	61.5	61.1	56.6	59.1	13
27	KY96C-0769-7-3	61.6	60.1	55.5	59.1	12
28	OH02-12678	60.0	59.4	56.2	58.8	17
29	OH02-12686	59.0	60.6	53.7	57.6	32
30	OH02-13567	59.5	60.3	54.7	58.8	16
31	MO040192	61.6	61.2	55.5	58.5	20
32	IL00-8530	62.9	61.6	58.2	59.9	2
33	IL02-23168	63.1	62.0	57.8	59.7	4
34	B020815	62.0	61.9	56.7	59.3	9
35	D03*9804	61.7	60.7	54.6	57.7	30
36	M03-3104	57.1	58.5	54.3	56.2	42
37	M03-3616	59.6	60.0	56.2	58.1	26
38	M03*3877	61.4	60.9	56.3	59.0	15
39	SE94-1012-25	59.0	60.8	54.9	58.0	27
40	G59326	61.4	61.0	56.9	58.6	19
41	G69322	62.0	61.1	58.3	59.3	10
42	G69319	61.2	61.1	56.5	58.1	25
43	GA98401-5E45	63.1	57.3	55.1	58.5	21
44	GA991369-5A17	62.1	59.3	55.4	57.5	34
LOCATION MEANS		60.6	60.4	55.5	58.2	

HEADING DATE (Julian Days)

		Plains GA Johnson	St. Jacob IL Fogleman	Urbana IL Kolb	W. Lafayette IN Ohm	Woodford Co. KY Van Sanford	Clarksville MD Costa
1	Foster	95	125.0	131	131.5	131.0	136.5
2	Patton	100	123.0	129	131.0	130.5	134.0
3	Roane	104	126.0	130	132.0	131.5	136.5
4	INW0411	106	124.5	129	131.5	130.0	132.5
5	MSU Line D8006-R	103	127.5	133	135.5	133.0	136.5
6	AR96077-7-2	102	125.5	132		131.5	134.5
7	MO011126	106	126.5	130	134.5	132.5	136.0
8	VA03W-412	106	125.0	129	132.5	129.5	134.0
9	VA03W-409	LATE	125.5	131	134.5	131.0	136.0
10	MD00-72-5028	LATE	126.0	130	135.5	131.5	137.0
11	MD00-72-5050	LATE	125.5	129	133.0	131.5	136.0
12	IL01-11934	LATE	125.5	130	132.0	131.5	134.0
13	SE98-1089-34	LATE	125.5	130	134.5	132.0	136.0
14	SE91-1492-4	LATE	126.5	130	134.5	131.0	136.0
15	99840C4-8-4-12	106	124.5	130	134.0	131.5	134.5
16	0175A1-44	LATE	126.0	130	133.0	131.5	135.0
17	01946A1-16	105	123.0	128	129.5	129.5	131.0
18	AR97044-10-2	93	124.0	129	135.0	129.5	133.5
19	NY88046-8138	LATE	133.0	137	137.0	139.5	140.0
20	MSU Line E0028	106	124.0	129	132.5	131.5	135.5
21	T162	83	122.0	130	131.0	130.0	130.0
22	T157	LATE	130.0	133	137.0	139.0	137.5
23	E01-1272	101	124.0	129	130.5	130.0	133.5
24	Z00*5267	105	125.0	129	132.0	130.0	134.0
25	VA03W-434	97	125.0	129	132.5	131.0	134.0
26	KY96C-0786-3-2	104	126.0	130	134.0	131.5	136.5
27	KY96C-0769-7-3	105	125.5	130	135.0	131.5	137.0
28	OH02-12678	LATE	126.5	132	136.0	132.5	138.0
29	OH02-12686	LATE	133.5	137	136.0	139.0	140.0
30	OH02-13567	LATE	127.5	133	136.0	137.5	136.0
31	MO040192	102	124.5	129	133.0	130.5	133.0
32	IL00-8530	104	124.0	127	129.0	130.0	131.0
33	IL02-23168	95	124.0	128	133.5	128.5	133.0
34	B020815	107	125.5	130	134.0	130.5	134.0
35	D03*9804		122.0	129	131.5	129.0	134.0
36	M03-3104		125.5	129	132.0	131.0	134.5
37	M03-3616	LATE	126.0	130	132.5	132.0	135.5
38	M03*3877	104	126.5	130	135.5	131.0	135.5
39	SE94-1012-25	LATE	126.0	133	134.0	131.5	137.5
40	G59326	LATE	126.5	130	134.0	132.5	135.5
41	G69322	104	124.0	127	130.5	130.0	131.5
42	G69319	90	128.0	133	134.5	135.0	135.5
43	GA98401-5E45	93	127.0			133.5	136.0
44	GA991369-5A17	87	125.5	136	136.0	130.5	133.0
LOCATION MEANS			125.7	130.4	133.4	131.8	135.0

HEADING DATE (Julian Days)

		Laporte MI	Columbia MO	Lincoln NE	Ithaca NY	Napoleon OH	Wooster OH
		Siler	McKendry	Baenziger	Sorrells	Fogleman	Sneller
1	Foster	153.0	136.0	137	152.0	142.0	140
2	Patton	149.0	137.3	137	152.0	137.0	139
3	Roane	151.0	131.0	137	152.7	141.0	141
4	INW0411	152.5	127.0	137	152.0	141.0	137
5	MSU Line D8006-R	153.5	137.7	140	152.0	142.5	142
6	AR96077-7-2	153.0	134.7	138	152.0	143.5	141
7	MO011126	152.5	137.3	138	153.3	146.0	142
8	VA03W-412	150.5	135.7	137	152.0	141.5	139
9	VA03W-409	151.0	129.7	137	153.3	143.0	141
10	MD00-72-5028	152.5	129.0	138	152.0	143.5	142
11	MD00-72-5050	151.0	131.0	137	152.0	144.0	140
12	IL01-11934	151.5	133.3	137	152.0	139.0	141
13	SE98-1089-34	152.0	132.3	138	152.7	143.0	142
14	SE91-1492-4	153.0	132.3	139	152.0	142.0	142
15	99840C4-8-4-12	152.5	132.7	137	152.0	140.5	140
16	0175A1-44	152.5	132.7	138	152.0	142.5	139
17	01946A1-16	149.0	130.7	138	148.7	136.5	137
18	AR97044-10-2	153.0	134.3	136	152.0	140.5	140
19	NY88046-8138	154.5	138.7	143	153.3	147.5	146
20	MSU Line E0028	151.5	132.7	137	152.7	142.5	141
21	T162	151.0	133.3	139	150.7	136.5	138
22	T157	153.0	135.7	140	152.0	144.5	142
23	E01-1272	151.0	134.0	139	151.3	139.5	138
24	Z00*5267	150.5	134.0	138	152.0	142.0	139
25	VA03W-434	151.5	134.3	137	152.7	141.0	140
26	KY96C-0786-3-2	151.5	132.3	138	152.0	141.5	141
27	KY96C-0769-7-3	151.5	133.3	138	152.0	143.5	141
28	OH02-12678	151.5	131.3	139	152.7	147.0	142
29	OH02-12686	154.5	137.0	141	154.0	146.5	145
30	OH02-13567	151.5	132.7	139	152.0	143.5	141
31	MO040192	151.5	134.3	137	152.0	139.0	138
32	IL00-8530	149.0	138.3	138	148.3	136.0	136
33	IL02-23168	151.5	138.3	137	151.3	140.5	140
34	B020815	150.5	133.3	137	152.0	142.5	140
35	D03*9804	153.0	137.0	138	152.0	139.5	138
36	M03-3104	150.5	130.0	137	152.0	141.5	140
37	M03-3616	152.5	131.7	137	152.0	142.5	141
38	M03*3877	151.5	134.0	139	152.0	144.0	141
39	SE94-1012-25	152.5	133.7	137	152.0	139.5	141
40	G59326	151.5	131.3	138	152.0	142.0	141
41	G69322	149.5	134.3	137	152.0	140.5	136
42	G69319	152.0	137.3	138	152.0	143.5	142
43	GA98401-5E45	155.0	136.3	145	152.0	138.5	143
44	GA991369-5A17	154.5	133.3	141	152.0	139.0	142
LOCATION MEANS		151.9	133.8	138.2	152.0	141.7	140.4

HEADING DATE (Julian Days)

		Wooster OH	Rodney ON	Blacksburg VA	Warsaw VA	ENTRY MEANS ALL LOCATIONS	
		Fioritto	Etienne	Griffey	Griffey		rank
1	Foster	143.3	151	132.5	122.5	135.0	15
2	Patton	141.0	150	130.0	121.0	133.8	5
3	Roane	142.7	151	131.5	123.5	135.1	17
4	INW0411	140.3	150	130.0	121.0	133.8	6
5	MSU Line D8006-R	145.3	153	132.5	124.0	136.9	30
6	AR96077-7-2	144.7	153	131.0	120.5	135.8	23
7	MO011126	143.7	153	132.5	123.0	136.7	27
8	VA03W-412	142.3	152	130.0	121.0	134.8	14
9	VA03W-409	144.0	152	131.0	123.5	137.6	34
10	MD00-72-5028	144.7	152	131.5	124.0	137.9	38
11	MD00-72-5050	143.0	151	132.0	123.5	137.3	32
12	IL01-11934	142.0	150	131.5	123.5	136.9	29
13	SE98-1089-34	144.3	153	132.5	123.5	138.1	39
14	SE91-1492-4	143.3	151	132.5	124.0	137.9	37
15	99840C4-8-4-12	143.0	151	131.0	121.0	135.1	16
16	0175A1-44	141.3	151	131.5	123.0	137.3	31
17	01946A1-16	138.7	149	130.0	120.0	132.7	2
18	AR97044-10-2	141.7	151	130.5	120.0	133.9	8
19	NY88046-8138	147.0	154	134.0	129.0	142.2	44
20	MSU Line E0028	143.3	151	132.5	124.0	135.4	19
21	T162	139.0	151	128.0	113.0	131.6	1
22	T157	144.0	151	131.5	124.0	139.6	42
23	E01-1272	140.0	152	131.0	120.0	134.0	10
24	Z00*5267	142.7	150	131.0	121.0	134.7	13
25	VA03W-434	141.3	151	130.5	123.0	134.4	11
26	KY96C-0786-3-2	143.0	152	131.5	123.0	135.5	21
27	KY96C-0769-7-3	144.0	152	131.0	121.0	135.7	22
28	OH02-12678	145.0	151	133.5	124.0	138.8	41
29	OH02-12686	147.7	154	135.5	127.5	141.9	43
30	OH02-13567	144.0	152	130.5	125.0	138.7	40
31	MO040192	139.0	150	130.0	120.5	134.0	9
32	IL00-8530	138.0	149	129.0	120.0	132.9	3
33	IL02-23168	142.0	150	130.0	120.0	133.9	7
34	B020815	142.7	151	131.0	122.5	135.2	18
35	D03*9804	140.3	150	129.5	119.5	136.2	26
36	M03-3104	142.7	151	132.0	124.0	136.8	28
37	M03-3616	143.3	151	131.5	123.5	137.5	33
38	M03*3877	143.7	152	131.5	122.5	135.9	24
39	SE94-1012-25	143.0	151	133.0	124.0	137.9	36
40	G59326	144.3	152	131.5	124.0	137.7	35
41	G69322	141.3	152	130.0	120.0	133.7	4
42	G69319	144.3	152	131.0	119.0	135.4	20
43	GA98401-5E45	143.7	153	130.0	118.5	136.0	25
44	GA991369-5A17	144.0	153	130.0	115.0	134.5	12
LOCATION MEANS		142.8	151.4	131.2	122.0	136.1	

HEIGHT (inches)

		Plains GA Johnson	Aberdeen ID Bockelman	Brownstown IL Kolb	Urbana IL Kolb	W. Lafayette IN Ohm	Woodford Co. KY Van Sanford
1	Foster	32	33.0	34	31	28.0	38.0
2	Patton	35	33.0	36	33	28.5	38.0
3	Roane	32	34.8	32	29	27.5	39.0
4	INW0411	31	35.0	31	29	26.0	35.5
5	MSU Line D8006-R	34	34.0	36	31	29.5	35.5
6	AR96077-7-2	30	31.3	31	25		37.0
7	MO011126	33	33.5	34	32	29.0	35.0
8	VA03W-412	32	34.3	32	29	24.5	36.0
9	VA03W-409	31	31.5	32	28	24.5	33.5
10	MD00-72-5028	32	31.0	33	30	26.0	34.5
11	MD00-72-5050	33	31.0	33	32	27.0	35.0
12	IL01-11934	34	34.3	33	33	30.0	37.0
13	SE98-1089-34	28	27.0	30	27	22.5	35.5
14	SE91-1492-4	31	27.8	30	27	27.5	34.0
15	99840C4-8-4-12	32	31.3	32	30	25.5	34.5
16	0175A1-44	34	32.8	32	30	27.0	37.5
17	01946A1-16	30	33.8	32	30	25.5	32.5
18	AR97044-10-2	32	37.3	33	30	26.5	35.5
19	NY88046-8138	33	35.3	35	31	27.5	39.0
20	MSU Line E0028	32	32.0	32	33	30.0	37.5
21	T162	30	33.5	33	29	26.5	35.0
22	T157	37	32.5	34	31	28.5	38.0
23	E01-1272	34	35.5	35	31	27.5	34.5
24	Z00*5267	33	37.5	33	31	27.5	36.5
25	VA03W-434	27	29.0	27	25	21.0	28.5
26	KY96C-0786-3-2	32	31.8	33	31	26.0	39.5
27	KY96C-0769-7-3	29	31.0	31	28	22.0	32.5
28	OH02-12678	34	36.0	36	34	28.5	39.0
29	OH02-12686	34	33.0	34	30	28.5	39.0
30	OH02-13567	38	33.0	37	34	30.0	42.0
31	MO040192	38	37.0	38	34	30.5	39.0
32	IL00-8530	36	36.3	36	34	31.0	37.0
33	IL02-23168	34	32.5	32	31	26.5	32.0
34	B020815	34	30.5	34	31	27.0	37.0
35	D03*9804	33	31.0	32	32	24.5	34.5
36	M03-3104	31	33.3	33	32	27.5	36.5
37	M03-3616	34	35.5	34	33	26.5	39.0
38	M03*3877	32	33.0	34	30	26.0	35.5
39	SE94-1012-25	36	34.3	36	31	28.0	40.0
40	G59326	36	35.0	37	34	30.0	38.5
41	G69322	32	33.3	34	30	24.0	36.0
42	G69319	36	32.5	36	31	26.0	43.5
43	GA98401-5E45	34	30.5	31	23		37.0
44	GA991369-5A17	31	29.5	30	25		36.0
LOCATION MEANS		32.9	33.0	33.3	30.3	27.0	36.5

HEIGHT (inches)

		Clarksville MD	Laporte MI	Columbia MO	Lincoln NE	Ithaca NY	Napoleon OH
		Costa	Siler	McKendry	Baenziger	Sorrells	Fogleman
1	Foster	40.5	30.0	26	32	32.2	30.7
2	Patton	39.5	32.0	27	33	38.1	35.0
3	Roane	37.5	27.0	33	30	30.8	32.7
4	INW0411	39.0	25.0	28	32	32.2	31.3
5	MSU Line D8006-R	38.0	31.5	28	33	34.1	36.6
6	AR96077-7-2	33.5	27.5	25	30	29.5	29.5
7	MO011126	38.5	30.0	30	32	32.8	35.4
8	VA03W-412	33.5	28.5	27	29	29.5	31.7
9	VA03W-409	33.5	29.0	27	28	28.9	31.7
10	MD00-72-5028	35.5	27.5	30	29	30.8	31.5
11	MD00-72-5050	35.5	29.0	29	28	30.8	32.5
12	IL01-11934	40.0	30.0	29	31	32.2	33.9
13	SE98-1089-34	33.5	25.0	27	28	28.2	29.7
14	SE91-1492-4	30.5	27.5	26	28	28.9	30.5
15	99840C4-8-4-12	37.0	28.0	27	31	31.5	31.5
16	0175A1-44	38.5	28.0	28	29	32.8	32.1
17	01946A1-16	36.5	28.0	28	29	32.2	33.5
18	AR97044-10-2	38.5	28.5	31	32	34.1	35.4
19	NY88046-8138	36.0	33.0	33	33	34.8	37.8
20	MSU Line E0028	34.5	29.0	29	31	32.2	33.3
21	T162	36.5	27.5	28	31	31.5	30.3
22	T157	37.5	29.5	32	33	32.2	35.0
23	E01-1272	37.0	30.0	28	29	33.5	33.1
24	Z00*5267	38.5	31.0	27	29	34.1	33.1
25	VA03W-434	31.0	26.0	23	26	28.2	27.2
26	KY96C-0786-3-2	37.0	28.0	29	30	31.5	32.7
27	KY96C-0769-7-3	35.5	27.0	25	29	30.2	30.9
28	OH02-12678	39.5	31.5	31	32	36.1	35.4
29	OH02-12686	37.0	29.5	33	33	34.1	34.4
30	OH02-13567	42.5	30.5	35	31	34.8	37.2
31	MO040192	40.0	32.5	31	33	35.4	37.2
32	IL00-8530	39.5	30.0	28	32	36.1	34.6
33	IL02-23168	38.0	30.5	25	32	33.5	31.7
34	B020815	36.5	29.5	28	31	32.2	33.3
35	D03*9804	34.0	26.5	27	32	30.8	33.9
36	M03-3104	38.0	30.5	30	31	30.2	31.9
37	M03-3616	38.5	31.0	28	32	32.8	34.3
38	M03*3877	38.0	29.5	29	29	32.2	34.6
39	SE94-1012-25	41.0	31.0	28	31	34.1	34.4
40	G59326	38.0	31.5	33	32	36.7	36.0
41	G69322	34.5	29.5	27	30	33.5	32.7
42	G69319	42.0	32.5	29	32	36.7	39.4
43	GA98401-5E45	35.5	30.0	29	30	32.2	32.9
44	GA991369-5A17	36.0	28.5	28	30	29.5	33.1
LOCATION MEANS		37.1	29.3	28.6	30.6	32.5	33.3

HEIGHT (inches)

		Wooster OH Sneller	Wooster OH Fioritto	Rodney ON Etienne	Blacksburg VA Griffey	Warsaw VA Griffey	Arlington WI Martinka
1	Foster	38	29.7	31.6	35.0	32.5	32.3
2	Patton	39	30.0	33.5	35.5	34.0	34.3
3	Roane	37	27.0	31.0	34.0	28.0	31.3
4	INW0411	38	26.0	30.6	34.5	31.5	30.3
5	MSU Line D8006-R	38	30.7	34.1	32.0	34.0	34.0
6	AR96077-7-2	30	24.0	31.4	30.0	30.0	28.3
7	MO011126	37	30.3	29.7	32.5	32.5	32.0
8	VA03W-412	33	25.0	28.9	32.5	30.0	30.3
9	VA03W-409	34	25.7	29.9	32.5	29.0	29.0
10	MD00-72-5028	36	26.3	29.4	34.0	29.5	29.0
11	MD00-72-5050	36	27.3	30.6	35.0	32.0	29.0
12	IL01-11934	39	30.7	31.9	34.0	31.5	31.3
13	SE98-1089-34	33	25.7	26.5	31.0	26.5	28.0
14	SE91-1492-4	33	25.3	28.2	32.0	27.5	27.0
15	99840C4-8-4-12	36	25.7	30.8	34.0	30.5	32.0
16	0175A1-44	37	28.7	29.7	33.5	31.5	31.3
17	01946A1-16	38	27.3	30.1	32.5	30.0	29.7
18	AR97044-10-2	38	29.0	32.2	35.5	32.0	34.3
19	NY88046-8138	40	30.3	34.4	36.5	32.5	34.3
20	MSU Line E0028	39	29.3	31.0	35.5	31.0	29.3
21	T162	38	26.0	28.9	34.0	31.0	31.7
22	T157	38	27.3	29.7	33.0	32.5	32.0
23	E01-1272	35	29.3	32.0	32.5	34.5	33.0
24	Z00*5267	37	27.7	32.7	33.5	33.0	31.7
25	VA03W-434	31	24.0	27.7	29.0	26.0	24.0
26	KY96C-0786-3-2	35	28.3	31.4	33.0	32.5	30.7
27	KY96C-0769-7-3	34	24.0	29.1	32.5	27.5	30.0
28	OH02-12678	39	32.7	32.2	37.5	34.0	32.3
29	OH02-12686	39	28.3	31.1	35.5	31.5	32.7
30	OH02-13567	42	30.0	33.5	37.0	34.5	35.0
31	MO040192	39	32.7	34.4	35.5	36.5	36.0
32	IL00-8530	37	29.3	33.7	34.0	32.0	30.7
33	IL02-23168	36	29.3	32.4	31.0	32.5	33.0
34	B020815	37	28.7	31.5	34.0	31.5	31.3
35	D03*9804	35	27.0	29.1	32.5	30.5	29.3
36	M03-3104	37	27.7	30.7	35.5	30.0	32.0
37	M03-3616	38	30.3	32.4	37.0	32.5	32.0
38	M03*3877	36	27.0	29.9	33.5	33.0	32.0
39	SE94-1012-25	38	31.3	33.5	35.0	32.5	32.3
40	G59326	39	32.3	34.1	35.5	33.0	35.3
41	G69322	35	25.3	32.5	33.5	29.0	29.3
42	G69319	40	29.0	35.2	36.0	35.0	33.3
43	GA98401-5E45	33	27.3	31.4	32.0	31.0	32.0
44	GA991369-5A17	33	24.3	30.4	31.5	29.5	31.7
LOCATION MEANS		36.6	28.0	31.2	33.8	31.4	31.4

HEIGHT (inches)

		ENTRY MEANS ALL LOCATIONS	rank
1	Foster	32.6	18
2	Patton	34.1	7
3	Roane	31.9	24
4	INW0411	31.4	28
5	MSU Line D8006-R	33.6	10
6	AR96077-7-2	29.6	40
7	MO011126	32.7	16
8	VA03W-412	30.4	38
9	VA03W-409	29.9	39
10	MD00-72-5028	30.8	35
11	MD00-72-5050	31.4	29
12	IL01-11934	33.1	13
13	SE98-1089-34	28.5	43
14	SE91-1492-4	29.0	42
15	99840C4-8-4-12	31.1	33
16	0175A1-44	31.9	25
17	01946A1-16	31.0	34
18	AR97044-10-2	33.0	14
19	NY88046-8138	34.2	6
20	MSU Line E0028	32.3	20
21	T162	31.2	31
22	T157	32.9	15
23	E01-1272	32.5	19
24	Z00*5267	32.6	17
25	VA03W-434	26.7	44
26	KY96C-0786-3-2	31.8	27
27	KY96C-0769-7-3	29.3	41
28	OH02-12678	34.5	5
29	OH02-12686	33.2	12
30	OH02-13567	35.4	2
31	MO040192	35.5	1
32	IL00-8530	33.7	9
33	IL02-23168	31.8	26
34	B020815	32.1	21
35	D03*9804	30.8	36
36	M03-3104	32.1	22
37	M03-3616	33.4	11
38	M03*3877	31.9	23
39	SE94-1012-25	33.7	8
40	G59326	34.8	3
41	G69322	31.2	32
42	G69319	34.7	4
43	GA98401-5E45	31.3	30
44	GA991369-5A17	30.4	37
LOCATION MEANS		32.0	

LODGING

		W. Lafayette IN	Woodford Co. KY	Columbia MO	Blacksburg VA	Warsaw VA	Arlington WI
		Ohm	Van Sanford	McKendry	Griffey	Griffey	Martinka
		0-9	0-9	0-9	0.2-10	0.2-10	0-9
1	Foster	2.5	2.0	3.3	1.0	0.3	0.5
2	Patton	2.5	4.5	4.7	1.9	0.3	0.4
3	Roane	3.0	2.0	7.0	4.2	0.2	0.2
4	INW0411	2.0	5.5	2.7	0.2	0.2	0.2
5	MSU Line D8006-R	3.5	5.5	2.7	1.6	0.2	0.2
6	AR96077-7-2		0.0	2.0	0.5	0.2	0.2
7	MO011126	3.5	3.0	3.7	4.4	0.2	0.2
8	VA03W-412	2.5	3.0	1.3	1.3	0.2	0.2
9	VA03W-409	2.0	0.0	4.0	2.1	0.2	0.5
10	MD00-72-5028	2.0	0.0	5.0	0.2	0.2	0.2
11	MD00-72-5050	2.0	0.5	3.3	0.2	0.2	0.2
12	IL01-11934	3.5	5.0	6.7	4.9	0.3	0.8
13	SE98-1089-34	1.0	4.5	2.0	0.2	0.2	0.2
14	SE91-1492-4	2.0	0.0	2.0	0.2	0.2	0.2
15	99840C4-8-4-12	1.5	2.0	0.3	1.3	0.2	0.2
16	0175A1-44	1.0	1.5	1.3	0.2	0.2	0.2
17	01946A1-16	1.5	2.5	1.7	1.0	0.2	0.2
18	AR97044-10-2	2.0	0.5	2.0	0.5	0.2	0.4
19	NY88046-8138	2.5	0.0	1.3	0.5	0.2	0.2
20	MSU Line E0028	3.5	5.5	6.0	0.2	0.2	0.2
21	T162	2.5	1.5	2.3	1.2	0.2	0.2
22	T157	4.0	1.5	4.7	4.5	0.2	0.2
23	E01-1272	3.0	9.0	6.3	8.5	0.7	1.1
24	Z00*5267	2.0	3.0	1.7	0.2	0.2	0.2
25	VA03W-434	1.5	1.0	3.7	1.2	0.2	0.2
26	KY96C-0786-3-2	2.5	0.0	4.0	0.2	0.2	0.2
27	KY96C-0769-7-3	1.5	0.0	5.3	1.6	0.2	0.2
28	OH02-12678	3.5	0.5	5.7	0.9	0.2	0.2
29	OH02-12686	3.0	0.0	1.3	0.2	0.2	0.2
30	OH02-13567	3.5	0.0	4.0	1.0	0.2	0.2
31	MO040192	3.0	7.0	3.3	2.6	0.6	0.9
32	IL00-8530	4.0	8.0	5.7	7.5	1.4	2.0
33	IL02-23168	3.5	7.5	3.3	6.0	0.4	1.1
34	B020815	2.5	0.5	3.0	0.2	0.2	0.2
35	D03*9804	2.0	5.0	2.7	3.2	0.2	0.2
36	M03-3104	3.0	6.5	6.0	2.8	0.2	0.2
37	M03-3616	2.5	1.0	3.7	0.5	0.2	0.5
38	M03*3877	2.0	0.5	2.3	1.2	0.2	1.3
39	SE94-1012-25	3.0	2.5	3.3	0.5	0.2	0.2
40	G59326	3.0	0.5	5.0	7.0	0.2	1.1
41	G69322	2.5	2.5	4.7	2.5	0.3	0.2
42	G69319	2.5	1.0	2.7	3.4	0.3	0.2
43	GA98401-5E45		0.0	1.0	1.6	0.2	0.4
44	GA991369-5A17		0.5	0.7	1.8	0.2	0.2
LOCATION MEANS		2.5	2.4	3.4	2.0	0.3	0.4

WINTER DAMAGE

		Urbana IL Kolb Winter Kill 0-9	Urbana IL Kolb Winter Survival %	Dekalb IL (scab) Kolb Winter Survival %	Urbana IL (scab) Kolb Winter Survival %	Brookston IN Fogleman Winter Survival 1-9	Lafayette IN Moreno Winter Kill
1	Foster	1.8	100	67.5	80.0	4.0	1
2	Patton	2.4	100	80.0	46.7	5.7	1
3	Roane	1.4	100	87.5	71.7	5.0	2
4	INW0411	0.1	100	100.0	98.3	3.0	1
5	MSU Line D8006-R	3.6	100	60.0	31.7	4.0	1
6	AR96077-7-2	7.4	63	15.0	0.7	9.0	9
7	MO011126	3.4	100	60.0	36.7	4.7	1
8	VA03W-412	4.0	100	62.5	16.7	6.0	2
9	VA03W-409	4.1	100	27.5	50.0	6.0	2
10	MD00-72-5028	3.1	100	40.0	66.7	6.0	1
11	MD00-72-5050	1.3	100	67.5	93.3	5.0	1
12	IL01-11934	0.1	100	100.0	98.3	5.0	1
13	SE98-1089-34	0.6	100	85.0	98.3	6.0	2
14	SE91-1492-4	0.0	100	100.0	100.0	3.7	1
15	99840C4-8-4-12	4.3	100	35.0	36.7	6.0	2
16	0175A1-44	1.5	100	57.5	98.3	4.0	1
17	01946A1-16	1.6	100	77.5	73.3	5.0	2
18	AR97044-10-2	5.0	100	45.0	4.0	7.0	4
19	NY88046-8138	2.8	100	72.5	43.3	8.3	2
20	MSU Line E0028	0.4	100	100.0	88.3	4.3	1
21	T162	3.1	100	67.5	40.0	7.0	2
22	T157	0.6	100	87.5	93.3	3.3	1
23	E01-1272	0.3	100	100.0	91.7	4.0	2
24	Z00*5267	0.7	100	87.5	91.7	4.0	1
25	VA03W-434	3.6	100	72.5	18.7	6.0	4
26	KY96C-0786-3-2	2.9	100	35.0	78.3	4.3	4
27	KY96C-0769-7-3	5.5	100	30.0	5.3	6.0	6
28	OH02-12678	2.5	100	27.5	96.7	7.0	1
29	OH02-12686	1.0	100	70.0	100.0	4.7	2
30	OH02-13567	0.3	100	90.0	100.0	3.0	1
31	MO040192	3.3	100	85.0	15.0	6.0	1
32	IL00-8530	0.7	100	100.0	80.0	5.0	1
33	IL02-23168	1.5	100	85.0	70.0	6.3	2
34	B020815	1.9	100	70.0	71.7	7.3	1
35	D03*9804	3.3	100	75.0	25.0	4.3	1
36	M03-3104	1.3	100	70.0	90.0	6.0	1
37	M03-3616	0.3	100	90.0	100.0	4.7	1
38	M03*3877	2.7	100	70.0	50.0	7.0	2
39	SE94-1012-25	0.5	100	85.0	100.0	7.3	1
40	G59326	2.5	100	62.5	63.3	8.3	2
41	G69322	0.7	100	95.0	85.0	6.0	2
42	G69319	4.8	100	50.0	7.0	7.3	2
43	GA98401-5E45	9.0	4	3.0	0.0	9.0	9
44	GA991369-5A17	8.9	8	1.5	0.0	9.0	9
LOCATION MEANS		2.5	94.9	67.0	61.5	5.7	2.2
GROWTH STAGE/DATE			prior to big freeze	prior to big freeze	prior to big freeze	April 6	

WINTER DAMAGE

		Lafayette IN	W. Lafayette IN	Columbia MO	Columbia MO	Columbia MO	Wooster OH
		Brown	Ohm	McKendry	McKendry	McKendry	Fioritto
		Winter Kill	Survival	Winter Kill	Freeze Damage	Survival	Survival
			%	0-9	0-9	%	%
1	Foster	1	95	1.5	6.0	74	97
2	Patton	1	98	0.8	6.7	81	92
3	Roane	1	99	1.2	4.7	77	70
4	INW0411	1	100	1.6	4.3	73	90
5	MSU Line D8006-R	1	100	0.7	6.3	82	72
6	AR96077-7-2	9	0	2.7	6.3	62	35
7	MO011126	1	98	0.3	7.3	86	90
8	VA03W-412	2	88	1.3	5.7	76	78
9	VA03W-409	2	93	1.1	4.3	78	88
10	MD00-72-5028	3	94	0.9	5.0	80	60
11	MD00-72-5050	2	100	1.4	6.0	75	97
12	IL01-11934	1	100	1.0	5.7	79	95
13	SE98-1089-34	2	100	1.1	4.0	78	93
14	SE91-1492-4	2	99	1.7	5.0	72	90
15	99840C4-8-4-12	3	90	1.6	5.7	73	55
16	0175A1-44	2	99	1.6	5.3	73	93
17	01946A1-16	2	98	1.3	5.3	76	92
18	AR97044-10-2	3	85	1.6	5.7	73	87
19	NY88046-8138	1	95	1.0	3.3	79	98
20	MSU Line E0028	1	100	1.2	5.0	77	97
21	T162	2	97	1.9	5.7	70	90
22	T157	1	100	1.3	2.7	76	92
23	E01-1272	1	100	0.6	5.7	83	90
24	Z00*5267	1	100	0.8	6.0	81	87
25	VA03W-434	3	90	0.9	6.3	80	92
26	KY96C-0786-3-2	3	98	1.5	5.7	74	97
27	KY96C-0769-7-3	4	78	1.1	6.0	78	77
28	OH02-12678	1	100	1.5	2.0	74	93
29	OH02-12686	1	100	2.0	2.0	69	78
30	OH02-13567	1	99	1.9	3.0	70	95
31	MO040192	2	90	0.7	6.0	82	98
32	IL00-8530	1	100	0.7	7.0	82	67
33	IL02-23168	2	93	1.9	7.0	70	90
34	B020815	1	99	0.7	6.3	82	85
35	D03*9804	1	93	1.2	7.0	77	88
36	M03-3104	1	100	0.8	4.0	81	95
37	M03-3616	1	100	1.5	4.3	74	98
38	M03*3877	3	97	1.3	6.0	76	77
39	SE94-1012-25	1	100	0.9	5.0	80	95
40	G59326	2	99	1.0	4.7	79	85
41	G69322	1	95	1.3	6.7	76	87
42	G69319	3	88	1.2	6.7	77	77
43	GA98401-5E45	9	0	3.7	6.7	52	37
44	GA991369-5A17	9	0	4.1	6.3	49	10
LOCATION MEANS		2.2	89.6	1.4	5.4	75.4	82.9
GROWTH STAGE/DATE				5			

WINTER DAMAGE

		Rodney ON	Blacksburg VA	Oconto WI
		Etienne	Griffey	Cisar
		Survival	Spring Freeze	Winter Kill
		%	0-9	0-9
1	Foster	96	3.0	0.5
2	Patton	95	2.0	0.3
3	Roane	96	1.0	2.0
4	INW0411	96	2.0	2.8
5	MSU Line D8006-R	96	5.5	0.0
6	AR96077-7-2	87	3.5	6.3
7	MO011126	94	4.0	1.8
8	VA03W-412	95	3.5	2.5
9	VA03W-409	96	2.0	3.5
10	MD00-72-5028	92	1.5	3.5
11	MD00-72-5050	94	2.5	2.3
12	IL01-11934	96	2.0	0.5
13	SE98-1089-34	95	1.0	3.7
14	SE91-1492-4	96	2.0	1.3
15	99840C4-8-4-12	94	4.0	4.2
16	0175A1-44	92	3.0	4.7
17	01946A1-16	92	3.5	1.7
18	AR97044-10-2	94	2.5	1.0
19	NY88046-8138	94	1.0	1.7
20	MSU Line E0028	97	2.5	0.3
21	T162	93	5.5	1.8
22	T157	94	1.5	1.3
23	E01-1272	95	3.0	0.5
24	Z00*5267	97	4.0	1.7
25	VA03W-434	95	4.0	2.3
26	KY96C-0786-3-2	89	2.0	5.2
27	KY96C-0769-7-3	86	2.0	5.7
28	OH02-12678	87	1.0	3.5
29	OH02-12686	84	1.0	5.3
30	OH02-13567	89	2.0	4.0
31	MO040192	95	2.5	0.2
32	IL00-8530	97	3.0	1.3
33	IL02-23168	94	3.0	0.3
34	B020815	96	2.5	0.5
35	D03*9804	92	2.5	1.8
36	M03-3104	96	1.0	1.3
37	M03-3616	96	1.5	1.3
38	M03*3877	96	3.0	0.0
39	SE94-1012-25	96	3.0	1.5
40	G59326	95	2.5	2.3
41	G69322	93	3.5	1.0
42	G69319	95	3.5	1.3
43	GA98401-5E45	73	6.5	7.2
44	GA991369-5A17	90	6.5	3.8
LOCATION MEANS		93.2	2.8	2.3
GROWTH STAGE/DATE				

LEAF RUST

		Bay AR Hancock 1-9	Plains GA Johnson 0-9	Laporte MI Siler 0-9	Cleveland MS Hancock 1-9	Wooster OH Sneller 0-9	Rodney ON Etienne 0-9
1	Foster	4.5	3	3.4	4	0.0	1.3
2	Patton	4.0	0	2.6	5	0.0	1.0
3	Roane	3.5	3	2.9	4	0.0	0.8
4	INW0411	3.0	2	1.4	4	0.0	0.8
5	MSU Line D8006-R	4.5	1	3.2	5	0.0	0.8
6	AR96077-7-2	3.5	2	1.3	5	0.0	0.8
7	MO011126	4.0	6	2.2	4	0.0	0.5
8	VA03W-412	4.0	4	2.1	5	0.0	1.3
9	VA03W-409	3.0	0	0.7	3	0.0	0.1
10	MD00-72-5028	3.5	3	3.0	4	0.0	0.8
11	MD00-72-5050	2.5	1	1.4	5	0.0	0.0
12	IL01-11934	3.0	6	5.4	5	0.0	1.5
13	SE98-1089-34	6.0	8	3.8	7	0.0	1.0
14	SE91-1492-4	4.5	2	6.3	4	0.0	1.5
15	99840C4-8-4-12	2.5	0	1.8	5	0.0	0.5
16	0175A1-44	3.5	0	1.5	5	0.0	0.5
17	01946A1-16	4.0	7	3.3	6	0.0	1.8
18	AR97044-10-2	4.0	8	2.0	6	0.0	1.0
19	NY88046-8138	4.5	9	3.5	5	0.0	0.8
20	MSU Line E0028	5.5	9	3.0	6	0.3	1.0
21	T162	3.5	9	4.4	7	0.0	2.0
22	T157	3.0	0	4.0	6	0.0	1.0
23	E01-1272	2.0	0	2.4	6	0.0	0.5
24	Z00*5267	2.5	1	0.8	5	0.0	0.5
25	VA03W-434	3.0	9	0.6	6	0.0	0.3
26	KY96C-0786-3-2	4.5	9	1.6	5	0.3	1.0
27	KY96C-0769-7-3	3.5	8	2.6	6	0.0	0.5
28	OH02-12678	3.5	7	3.4	5	0.0	1.5
29	OH02-12686	2.0	0	1.8	3	0.0	0.5
30	OH02-13567	2.5	1	3.4	4	0.0	0.8
31	MO040192	2.0	0	0.8	6	0.0	0.1
32	IL00-8530	3.5	4	3.2	5	0.0	1.8
33	IL02-23168	3.0	0	3.3	5	0.0	0.8
34	B020815	4.5	6	1.7	4	0.0	0.3
35	D03*9804	4.5	3	2.6	6	1.0	1.0
36	M03-3104	6.0	8	2.7	5	5.7	2.3
37	M03-3616	2.5	2	1.2	4	0.3	1.0
38	M03*3877	3.5	9	3.0	6	1.0	1.3
39	SE94-1012-25	6.5	7	4.2	6	0.7	2.0
40	G59326	4.0	8	1.5	4	0.0	1.3
41	G69322	4.0	9	3.0	6	0.0	0.5
42	G69319	6.0	9	2.7	6	0.0	0.8
43	GA98401-5E45	2.0	0	1.0	4	0.0	0.3
44	GA991369-5A17	3.0	2	1.6	6	0.0	0.8
LOCATION MEANS		3.7	4.2	2.6	5.1	0.2	0.9

LEAF RUST

		Castroville TX Perry	Warsaw VA Griffey 0-9	Arlington WI Martinka 0-9	Oconto WI Cisar 0-9
1	Foster	6	7.5	6.5	2.5
2	Patton	2	4.5	6.0	2.5
3	Roane	1	5.5	5.0	0.0
4	INW0411	1	5.0	3.0	0.0
5	MSU Line D8006-R	6	5.5	2.5	0.0
6	AR96077-7-2	0	2.5	0.5	0.0
7	MO011126	6	4.0	4.0	0.0
8	VA03W-412	1	5.0	4.5	1.5
9	VA03W-409	1	0.0	0.0	0.5
10	MD00-72-5028	1	2.5	4.5	0.0
11	MD00-72-5050	1	1.0	0.0	0.0
12	IL01-11934	1	7.0	7.5	3.0
13	SE98-1089-34	1	7.0	7.0	1.0
14	SE91-1492-4	6	5.5	8.5	5.0
15	99840C4-8-4-12	2	1.0	0.5	0.0
16	0175A1-44	1	2.0	1.0	1.0
17	01946A1-16	6	5.0	7.5	5.5
18	AR97044-10-2	7	4.5	2.5	0.0
19	NY88046-8138	8	7.0	6.0	3.0
20	MSU Line E0028	2	9.0	6.0	0.0
21	T162	8	6.5	8.0	7.0
22	T157	6	1.0	6.0	0.0
23	E01-1272	1	0.5	5.0	0.5
24	Z00*5267	1	3.0	0.5	0.0
25	VA03W-434	1	1.0	0.5	2.0
26	KY96C-0786-3-2	1	5.5	5.5	1.5
27	KY96C-0769-7-3	1	5.5	7.0	2.0
28	OH02-12678	3	4.5	7.5	3.0
29	OH02-12686	3	1.0	0.0	1.5
30	OH02-13567	3	7.5	7.0	2.0
31	MO040192	6	1.0	1.0	0.0
32	IL00-8530	1	3.0	8.0	7.0
33	IL02-23168	8	1.5	2.5	0.0
34	B020815	1	4.5	4.0	1.5
35	D03*9804	6	4.5	2.5	2.0
36	M03-3104	1	8.5	6.5	0.5
37	M03-3616	2	4.0	3.0	0.0
38	M03*3877	2	5.5	3.0	0.0
39	SE94-1012-25	8	8.0	7.5	7.5
40	G59326	1	5.5	2.5	0.0
41	G69322	8	4.0	5.5	2.5
42	G69319	9	6.0	4.5	3.0
43	GA98401-5E45	4	0.5	0.0	0.0
44	GA991369-5A17	6	1.5	1.5	0.0
LOCATION MEANS		3.4	4.2	4.1	1.6

LEAF RUST

St. Paul
MN

Kolmer

Reactions produced by NA race* **

		BBBD	MFPS	MJBJ	MCRK	KFBJ	MHDS
1	Foster	;1	3	;2c	3	3	3
2	Patton	;1c	3	;2c	3	;1c	3
3	Roane	;-1c3	;-3	1c2	3	;1c2	;
4	INW0411	;1c	;1c2	;1c	3	1lc2	;1c2
5	MSU Line D8006-R	;1	3	3-1c;	3	3	3-1c
6	AR96077-7-2	;	;	;	3	;1c	;
7	MO011126	;21c	3	3	3	3	3
8	VA03W-412	;-3	3	;2c	3	3	3
9	VA03W-409	;	;	;	;	;1c	;
10	MD00-72-5028	;	3-;	;	3	;1c	;1c2
11	MD00-72-5050	;	;	;	;1c2	;1c	;
12	IL01-11934	1c	3	3	;1c2	;2	,1cn
13	SE98-1089-34	;1c	;1c2	;1c	3	;1c	;1c
14	SE91-1492-4	;	0;	0;	0;	;2	;
15	99840C4-8-4-12	;	;1c	;	;1c	;1	;1
16	0175A1-44	;1c	3	;1c	;1c2	;1c2	3
17	01946A1-16	;2	3;	1c;	;2c	;1c	23
18	AR97044-10-2	;	3	;-3	3	;	3
19	NY88046-8138	3	3	3	;1c2	;1c2	2;
20	MSU Line E0028	2c1;	;1c	3-2c	;2c2	;1c1	1c2
21	T162	1c2	3	3	3	1c2	3
22	T157	2c3	3	3	3	1c	3
23	E01-1272	;1	;1c	;1c	3-1c;	;1c	;12
24	Z00*5267	;1c	;1c	;2c	;2c	3	23;
25	VA03W-434	;	;	;	0;	;1c	;1c
26	KY96C-0786-3-2	0;	;1c	;1c	;1c2	;1c	;1c
27	KY96C-0769-7-3	0;	;1c	;1c	;1c	;1c	;1c
28	OH02-12678	0;	3	3	;1c	3	3
29	OH02-12686	1c2	3-;	;1c	;1c2	;1c	;1c
30	OH02-13567	3	3	3	3	3	3
31	MO040192	0;	3	1c2	3	3	3
32	IL00-8530	3	3	3	3	3	3
33	IL02-23168	;	3	3	;	;1c1	;1c
34	B020815	;	;1c2	;1c	;1c-3	;1c	;1c
35	D03*9804	;	3,1c;	;1c	3	;2c	;1c
36	M03-3104	;1c	3,12c	;1c2	3	3	3
37	M03-3616	;1c	3;	;1c	;1c1	;1c	;1c2
38	M03*3877	;	;1c2	;1c	;1c1	;1c	;1c2
39	SE94-1012-25	;	-	;1c-3	31c;	3	3
40	G59326	;-3	;1c3	;1c2	3	-	;1c
41	G69322	3	3	3	3	3	3
42	G69319	3	3	3	3	-	3
43	GA98401-5E45	;	3;	;1c	;1c	3	3
44	GA991369-5A17	;	3	;1c	2c,3;	3	3

*Single genes tested: = 1,2a,2c,3,3Ka,9,10,11,14a,16,17,18,24,26,30,B

**Virulence formula:

BBBD=14a

MFPS=1,3,3ka,10,14a,17,24,26,30,B

MJBJ=1,3,10,14a,16,24

MCRK=1,3,3ka,10,11,14a,18,26,30

KFBJ=2a,2c,3,10,14a,24,26

MHDS=1,3,10,14a,16,17,26,B

TGBG=1,2a,2c,3,10,16

TNRJ=1,2a,2c,3,3ka,9,10,11,14a,24,30

***+=Lr gene(s) present but unable to identify with these Lr virulence combinations

LEAF RUST

		TGBG	St. Paul MN Kolmer TNRJ	Postulated genes***
1	Foster	;1c	2;	26
2	Patton	;	;1c-3	1,26
3	Roane	0;	;	11,26
4	INW0411	;	0;	11,26
5	MSU Line D8006-R	;3	3	10
6	AR96077-7-2	;	;1c	11,26,+
7	MO011126	3;	3	0
8	VA03W-412	;	;1c	26
9	VA03W-409	;	;1c	+
10	MD00-72-5028	;1c	;1c	11,26
11	MD00-72-5050	;	;1c	+
12	IL01-11934	;1c	3	1,24
13	SE98-1089-34	;1c	3;	11,26
14	SE91-1492-4	;	2;	+
15	99840C4-8-4-12	;	;1c	+
16	0175A1-44	;	;	17,26
17	01946A1-16	;1c	;1c	+
18	AR97044-10-2	;1c	3	1,26
19	NY88046-8138	-	3	+
20	MSU Line E0028	;	3	9
21	T162	3	3	1
22	T157	3	3	1
23	E01-1272	;1c	3	9
24	Z00*5267	;23	;2	+
25	VA03W-434	;	;1c	+
26	KY96C-0786-3-2	;1c	3	9
27	KY96C-0769-7-3	;1c	;	+
28	OH02-12678	3	-	+
29	OH02-12686	;	;23	+
30	OH02-13567	3	3	0
31	MO040192	,3	3	+
32	IL00-8530	3	3	0
33	IL02-23168	;1c	3	24,+
34	B020815	;1c	3	9
35	D03*9804	;1c	3	11
36	M03-3104	;1c	;1c-3	26
37	M03-3616	;1c	;2c	+
38	M03*3877	;1c	3	9
39	SE94-1012-25	;3	2c;3	26
40	G59326	;1c	3	11
41	G69322	3;	3	0
42	G69319	3;	3	0
43	GA98401-5E45	;1c	;1c	26,+
44	GA991369-5A17	;1c	;1c	26,+

STEM RUST

St. Paul
MN
Jin

Seedling reactions produced by Pgt race

		QFCS	QTHJ	RCRS	RKQQ	TPMK	TTTT
		06ND76C	75ND717C	77ND82A	99KS76A-1	74MN1409	01MN84A-1-2
1	Foster	2	2;	2-	2/S	2/S	2
2	Patton	S/2	S/2	2/S	S/2	S/2	2-/S
3	Roane	S	S	2/S	S	S	S
4	INW0411	0	0	0;	;1	-	0;
5	MSU Line D8006-R	S	S	2 LIF	;13-	S	S
6	AR96077-7-2	0	0	S	S LIF	S/2++	S
7	MO011126	S	S	S	31; LIF	S1	S
8	VA03W-412	S	2/S	S/1	S/1	S1	2/S
9	VA03W-409	0	0	0;1	2	;1-	0;
10	MD00-72-5028	S/2	S LIF	2- LIF	2 LIF/S	2 LIF/S LIF	0;/S
11	MD00-72-5050	0	0	2- LIF	0	0;	0;
12	IL01-11934	2	2	2-	2	2+	2/S
13	SE98-1089-34	-	;	S	-	-	0/S LIF
14	SE91-1492-4	2	2	2	2	2+	2
15	99840C4-8-4-12	0	0	0;	0;	0;	;1=
16	0175A1-44	0	0	0	0;	0;	;
17	01946A1-16	0;/S	0;	-	2	2+/S	;
18	AR97044-10-2	2	S	S LIF	S LIF	S LIF	S LIF
19	NY88046-8138	S	S	S LIF	S LIF	S LIF	S LIF/2
20	MSU Line E0028	S	S	S	0/S	S LIF	S LIF
21	T162	S	2/S	S/2	2/;3 LIF	S LIF	S/2
22	T157	2	2	2+	2+	S LIF	S
23	E01-1272	2	S	S	S	S	S
24	Z00*5267	2	2	2-	2-	2	2/S
25	VA03W-434	;	0/S	S	S/2	S LIF	0;
26	KY96C-0786-3-2	S	0?	-	2+/S	S LIF	S LIF/;
27	KY96C-0769-7-3	2/S	S	S/2-	S LIF	S LIF/2	S LIF
28	OH02-12678	;	2	0;	2++LIF	0;	S LIF
29	OH02-12686	;1	0	0;	2+	0;	2
30	OH02-13567	S	S	S	S	S	S
31	MO040192	S	S	S	S	S	S LIF
32	IL00-8530	2	S	S LIF	S	2++	S
33	IL02-23168	2	2	2	2	2	2
34	B020815	S	S	S LIF	S	S	S
35	D03*9804	S	S	S	S	S	S
36	M03-3104	S	S/2	2/S	11+	S	S/;2
37	M03-3616	;/S	S/2	0;	2-	0;/2	;1/S
38	M03*3877	S	S	S LIF	S	S	S
39	SE94-1012-25	2	2	1/S	2	2	2-
40	G59326	S/2+	S	S	-	S/2++	S
41	G69322	0/2	0/S	S	S	0;/S	S
42	G69319	0	0	S	S	-	-
43	GA98401-5E45	0;	0;	;	;	;1	;1-
44	GA991369-5A17	2-	2-	0;	;	2	;

GROWTH STAGE/DATE

STEM RUST

St. Paul
MN
Jin

		TTKS 04KEN156/04	TTKS repeat 04KEN156/04	TTKS w/Sr24V 06KEN19v3	Field Adult Sev/IT
1	Foster	S			5 MR/40 S
2	Patton	S			40 S
3	Roane	S			60 S
4	INW0411	2	0/2	0/2	0
5	MSU Line D8006-R	S			60 S
6	AR96077-7-2	;1	0	0	T MR/20 MS
7	MO011126	S			60 S
8	VA03W-412	S			20 S
9	VA03W-409	0;	0;	0;1-	0
10	MD00-72-5028	S			30 S
11	MD00-72-5050	S			20 MR
12	IL01-11934	2-	2-	2	10 R-MR
13	SE98-1089-34	S			40 S
14	SE91-1492-4	2	2-	2	20 R-MR
15	99840C4-8-4-12	S			0
16	0175A1-44	-	0	0	0
17	01946A1-16	S			20 MR
18	AR97044-10-2	S			40 MS-S
19	NY88046-8138	S			70 S
20	MSU Line E0028	S			80 S
21	T162	S			70 S
22	T157	2+/S	2	2+/S	20 MS-S
23	E01-1272	S			30 MS
24	Z00*5267	S			5 R
25	VA03W-434	;2-	;1-	0	20 MS
26	KY96C-0786-3-2	S			60 S
27	KY96C-0769-7-3	S			80 S
28	OH02-12678	2	2+/S	2+	40 MS-S
29	OH02-12686	-	2	S	30 MS-S
30	OH02-13567	S			70 S
31	MO040192	S			60 MS-S
32	IL00-8530	S			40 MR-MS
33	IL02-23168	2	2	S	20 R-MR
34	B020815	S LIF	S	S	50 S
35	D03*9804	S			50 S
36	M03-3104	S			60 S
37	M03-3616	S			5 R
38	M03*3877	S			70 S
39	SE94-1012-25	S			10 R-MR
40	G59326	S			50 S
41	G69322	0	0	0	5 MS
42	G69319	0	0	0	10 S
43	GA98401-5E45	S/2+	S/2+	23	-
44	GA991369-5A17	S			0

GROWTH STAGE/DATE July 2/soft-hard dough

STRIPE RUST

		Laporte MI	Pullman WA	
		Siler	Chen	
		0-9	IT	%
1	Foster	1.1	8	90
2	Patton	0	8	90
3	Roane	0.4	7	40
4	INW0411	2.5	8	90
5	MSU Line D8006-R	0	5	40
6	AR96077-7-2	0	5	5
7	MO011126	0	3	10
8	VA03W-412	0.2	5	20
9	VA03W-409	1.4	8	80
10	MD00-72-5028	0	8	100
11	MD00-72-5050	0.5	8	90
12	IL01-11934	0	8	70
13	SE98-1089-34	0.7	5	30
14	SE91-1492-4	0.4	8	10
15	99840C4-8-4-12	0.1	0	0
16	0175A1-44	4	8	80
17	01946A1-16	0	8	40
18	AR97044-10-2	0	2	40
19	NY88046-8138	2	8	80
20	MSU Line E0028	1.4	7	50
21	T162	0.1	8	60
22	T157	0	5	40
23	E01-1272	0	5	30
24	Z00*5267	0	5	60
25	VA03W-434	0	8	80
26	KY96C-0786-3-2	0.2	8	10
27	KY96C-0769-7-3	0	8	10
28	OH02-12678	2.6	8	70
29	OH02-12686	0	8	80
30	OH02-13567	1.6	8	100
31	MO040192	0	8	90
32	IL00-8530	0	2	1
33	IL02-23168	0.1	2	1
34	B020815	0	5	5
35	D03*9804	0.1	2	5
36	M03-3104	0	0	0
37	M03-3616	0	8	40
38	M03*3877	0	5	5
39	SE94-1012-25	1.2	8	80
40	G59326	0	2	1
41	G69322	0.2	5	40
42	G69319	0	5	1
43	GA98401-5E45	0	0	0
44	GA991369-5A17	0	5	2
GROWTH STAGE/DATE			10.54 / June 22	

STRIPE RUST

		Mt. Vernon WA Chen				Oconto WI Cisar
		IT	%	IT	%	0-9
1	Foster	8	60	8	100	9
2	Patton	8	60	8	100	8
3	Roane	8	60	5	40	0
4	INW0411	8	60	8	100	6
5	MSU Line D8006-R	8	60	5	40	2
6	AR96077-7-2	8	60	2,8	5,80	1
7	MO011126	5	30	2	5	0
8	VA03W-412	8	30	5	30	0
9	VA03W-409	8	60	8	100	6
10	MD00-72-5028	8	60	8	100	3
11	MD00-72-5050	8	50	8	100	6
12	IL01-11934	8	60	8	100	2
13	SE98-1089-34	8	50	3	20	0
14	SE91-1492-4	8	50	2	15	0
15	99840C4-8-4-12	5	30	2	5	0
16	0175A1-44	8	40	8	100	7
17	01946A1-16	8	50	8	50	1
18	AR97044-10-2	8	60	8	100	0
19	NY88046-8138	8	60	8	100	1
20	MSU Line E0028	5	30	3	20	0
21	T162	8	60	8	100	0
22	T157	8	60	8	60	0
23	E01-1272	8	60	8	80	0
24	Z00*5267	5,8	60	2	15	0
25	VA03W-434	8	60	8	100	0
26	KY96C-0786-3-2	5	30	2	2	0
27	KY96C-0769-7-3	5	30	2	5	0
28	OH02-12678	8	50	8	80	4
29	OH02-12686	5	30	2	5	7
30	OH02-13567	8	60	8	100	9
31	MO040192	8	60	8	100	0
32	IL00-8530	5	50	3	20	0
33	IL02-23168	5	30	3	20	0
34	B020815	5,8	20	2	2	0
35	D03*9804	5	30	2	2	0
36	M03-3104	5	50	2	5	0
37	M03-3616	8	60	8	90	0
38	M03*3877	5	30	2	2	0
39	SE94-1012-25	8	50	8	100	4
40	G59326	5	30	2	10	0
41	G69322	8	60	8	100	0
42	G69319	5	50	5	50	0
43	GA98401-5E45	5	30	2	2	0
44	GA991369-5A17	5	30	2	2	0
GROWTH STAGE/DATE		6 / April 18		10.1 / June 1		

SEPTORIA

		Wooster OH Sneller leaf blotch 0-9	Rodney ON Etienne leaf blotch
1	Foster	2.0	3.5
2	Patton	2.0	4.0
3	Roane	2.0	3.0
4	INW0411	2.0	3.0
5	MSU Line D8006-R	3.0	1.5
6	AR96077-7-2	2.0	2.0
7	MO011126	2.0	3.5
8	VA03W-412	2.0	2.0
9	VA03W-409	2.0	1.5
10	MD00-72-5028	3.0	3.0
11	MD00-72-5050	2.3	4.0
12	IL01-11934	2.7	5.0
13	SE98-1089-34	3.0	4.0
14	SE91-1492-4	2.0	4.5
15	99840C4-8-4-12	2.0	4.0
16	0175A1-44	2.0	3.5
17	01946A1-16	3.7	5.5
18	AR97044-10-2	2.0	3.5
19	NY88046-8138	3.0	3.5
20	MSU Line E0028	3.0	2.5
21	T162	5.3	2.5
22	T157	3.0	3.5
23	E01-1272	2.0	4.0
24	Z00*5267	3.3	2.0
25	VA03W-434	2.0	4.0
26	KY96C-0786-3-2	2.0	2.5
27	KY96C-0769-7-3	2.0	4.0
28	OH02-12678	1.3	4.0
29	OH02-12686	2.0	1.5
30	OH02-13567	2.0	4.0
31	MO040192	2.0	2.0
32	IL00-8530	4.3	5.0
33	IL02-23168	5.0	3.5
34	B020815	3.0	4.0
35	D03*9804	5.3	4.0
36	M03-3104	4.0	3.5
37	M03-3616	2.7	2.0
38	M03*3877	3.0	1.5
39	SE94-1012-25	2.0	2.0
40	G59326	2.0	2.0
41	G69322	2.0	2.0
42	G69319	1.0	2.0
43	GA98401-5E45	2.0	1.5
44	GA991369-5A17	3.0	3.5
LOCATION MEANS		2.6	3.1

SEPTORIA

		Princeton KY	Princeton KY	Kinston NC	Blacksburg VA	Blacksburg VA
		Hershman	Hershman	Cowger	Stromberg	Stromberg
		SNB leaf blotch	SNB glume blotch	SNB leaf blotch	SNB leaf blotch	SNB glume blotch
		10-100	10-100	%	%	%
1	Foster	70	30	10	5	12
2	Patton	30	20	10	10	8
3	Roane	50	40	10	25	20
4	INW0411	40	60	11	4	12
5	MSU Line D8006-R	30	20	11	18	15
6	AR96077-7-2	60	60	18	5	3
7	MO011126	20	40	11	20	30
8	VA03W-412		30	9	30	8
9	VA03W-409	30	30	6	5	5
10	MD00-72-5028	20	30	12	20	1
11	MD00-72-5050	40	20	9	5	2
12	IL01-11934	20	40	7	10	5
13	SE98-1089-34	40	30	18	20	15
14	SE91-1492-4	60	20	10	5	12
15	99840C4-8-4-12	20	20	11	5	3
16	0175A1-44	50	30	9	15	20
17	01946A1-16	50	60	8	5	5
18	AR97044-10-2	30	40	12	5	8
19	NY88046-8138	30	50	7	12	15
20	MSU Line E0028	40	30	11	15	5
21	T162	80	80	16	30	30
22	T157	40	30	14	22	12
23	E01-1272	40	50	9	15	20
24	Z00*5267	40	40	8	4	1
25	VA03W-434	60	30	10	3	4
26	KY96C-0786-3-2	20	40	15	15	1
27	KY96C-0769-7-3	20	30	13	7	3
28	OH02-12678	40	20	8	5	12
29	OH02-12686	20	20	6	2	3
30	OH02-13567	20	40	10	25	20
31	MO040192	30	60	14	12	5
32	IL00-8530	50	20	14	4	6
33	IL02-23168	20	30	9	10	20
34	B020815	50	20	18	3	2
35	D03*9804	70	60	13	8	8
36	M03-3104	30	20	9	15	5
37	M03-3616	30	30	7	30	5
38	M03*3877	40	20	14	10	10
39	SE94-1012-25	70	50	9	20	10
40	G59326	30	30	10	35	20
41	G69322	40	20	14	20	15
42	G69319	40	20	16	4	8
43	GA98401-5E45	20	20	15	10	3
44	GA991369-5A17	30	40	35	15	15
LOCATION MEANS		38.6	34.5	11.5	12.8	10.0
		1 rep	1 rep	2 reps	1 rep	1 rep

Eastern Septoria Nursery Coordinated by Christina Cowger

FUSARIUM HEAD BLIGHT (SCAB)

		Urbana IL				
		Incid. (%)	Severity (%)	Kolb FHB Index (0-100)	Kernel Rating (% FDK)	ISK Index (0-100)
1	Foster	71.7	29.8	21.2	27	41.1
2	Patton	60.0	37.4	22.9	27	39.9
3	Roane	58.3	22.2	13.0	13	29.5
4	INW0411	33.3	22.9	8.5	30	28.9
5	MSU Line D8006-R	76.7	54.6	42.0	50	59.4
6	AR96077-7-2					
7	MO011126	68.3	35.9	24.9	38	46.6
8	VA03W-412	67.5	45.4	31.8	45	51.9
9	VA03W-409	65.0	30.7	20.0	30	40.7
10	MD00-72-5028	70.0	38.3	26.9	35	46.5
11	MD00-72-5050	61.7	33.7	20.9	23	37.9
12	IL01-11934	53.3	40.7	20.9	20	36.2
13	SE98-1089-34	65.0	45.0	29.7	60	57.0
14	SE91-1492-4	36.7	37.9	15.5	23	31.7
15	99840C4-8-4-12	50.0	20.9	10.4	23	30.6
16	0175A1-44	33.3	23.4	9.2	33	30.4
17	01946A1-16	51.7	35.4	22.3	33	39.5
18	AR97044-10-2					
19	NY88046-8138	51.7	41.4	20.9	43	45.2
20	MSU Line E0028	68.3	55.4	40.4	37	51.8
21	T162	86.7	49.0	42.1	70	68.7
22	T157	71.7	47.8	34.3	53	57.2
23	E01-1272	45.0	39.0	18.5	33	38.5
24	Z00*5267	36.7	51.2	18.9	53	47.7
25	VA03W-434	60.0	30.4	18.2	60	51.1
26	KY96C-0786-3-2	71.7	34.3	23.9	43	49.1
27	KY96C-0769-7-3	90.0	13.3	12.0	20	39.0
28	OH02-12678	41.7	42.2	15.0	23	34.5
29	OH02-12686	56.7	34.9	20.7	17	34.2
30	OH02-13567	56.7	19.7	11.1	15	28.9
31	MO040192	65.0	38.8	25.2	45	49.1
32	IL00-8530	31.7	33.1	10.5	15	25.4
33	IL02-23168	53.3	35.8	18.8	22	35.4
34	B020815	78.3	40.4	31.8	40	51.6
35	D03*9804	80.0	47.6	38.7	47	56.3
36	M03-3104	46.7	36.9	17.5	43	42.4
37	M03-3616	43.3	20.3	9.7	25	29.1
38	M03*3877	63.3	32.8	20.4	40	44.8
39	SE94-1012-25	70.0	46.2	32.1	63	60.2
40	G59326	46.7	38.7	18.2	23	35.0
41	G69322	36.7	33.9	12.8	37	35.9
42	G69319	75.0	47.0	34.9	50	56.6
43	GA98401-5E45					
44	GA991369-5A17					

FUSARIUM HEAD BLIGHT (SCAB)

		W. Lafayette IN	Wooster OH
		Ohm	Fioritto
		Point Inoc	
		Severity(%)	1-9
1	Foster	56	1.0
2	Patton	41	1.0
3	Roane	52	1.3
4	INW0411	10	1.0
5	MSU Line D8006-R	82	1.0
6	AR96077-7-2	20	1.3
7	MO011126	10	1.0
8	VA03W-412	68	1.0
9	VA03W-409	12	1.0
10	MD00-72-5028	20	1.0
11	MD00-72-5050	53	1.0
12	IL01-11934	45	1.0
13	SE98-1089-34	61	1.0
14	SE91-1492-4	17	1.0
15	99840C4-8-4-12	22	1.0
16	0175A1-44	11	1.0
17	01946A1-16	11	1.0
18	AR97044-10-2	81	1.0
19	NY88046-8138	57	1.0
20	MSU Line E0028	63	1.0
21	T162	14	1.0
22	T157	36	1.3
23	E01-1272	97	1.0
24	Z00*5267	93	1.0
25	VA03W-434	40	1.0
26	KY96C-0786-3-2	11	1.0
27	KY96C-0769-7-3	12	1.3
28	OH02-12678	82	1.0
29	OH02-12686	30	1.0
30	OH02-13567	12	1.0
31	MO040192	90	1.0
32	IL00-8530	11	1.0
33	IL02-23168	14	1.0
34	B020815	16	1.0
35	D03*9804	87	1.0
36	M03-3104	10	1.0
37	M03-3616	15	1.0
38	M03*3877	10	2.0
39	SE94-1012-25	58	1.0
40	G59326	53	1.0
41	G69322	10	1.0
42	G69319	10	1.0
43	GA98401-5E45		1.0
44	GA991369-5A17		1.0

POWDERY MILDEW

		Plains GA	Woodford Co. KY	Laporte MI	Wooster OH	Rodney ON	Blacksburg VA
		Johnson	Van Sanford	Siler	Sneller	Etienne	Griffey
		0-9		0-9	0-9	0-9	0-9
1	Foster	4	4	0.5	2.0	0.5	2.5
2	Patton	3	4	0.5	2.3	1.2	1.5
3	Roane	2	2	0.0	0.0	1.8	2.5
4	INW0411	0	1	0.0	0.0	0.2	0.0
5	MSU Line D8006-R	T	1	0.0	0.0	0.0	0.0
6	AR96077-7-2	1	2	0.5	0.0	0.0	0.0
7	MO011126	2	4	0.0	0.0	1.8	0.5
8	VA03W-412	0	1	0.0	0.0	0.8	0.0
9	VA03W-409	0	1	0.0	0.0	0.0	0.0
10	MD00-72-5028	0	1	1.0	0.0	0.2	0.0
11	MD00-72-5050	T	0	0.0	0.7	0.8	0.0
12	IL01-11934	0	0	0.0	0.0	0.0	0.0
13	SE98-1089-34	T	2	0.0	0.0	0.0	0.0
14	SE91-1492-4	0	0	0.0	0.0	0.0	0.5
15	99840C4-8-4-12	0	2	0.5	0.0	0.8	0.0
16	0175A1-44	0	3	0.0	1.0	0.7	0.0
17	01946A1-16	4	4	0.5	2.3	2.2	0.5
18	AR97044-10-2	4	3	1.5	0.0	1.5	3.0
19	NY88046-8138	2	4	1.0	2.7	0.8	2.5
20	MSU Line E0028	1	2	0.0	0.3	0.3	0.5
21	T162	6	4	1.0	2.0	2.5	4.5
22	T157	6	4	0.5	4.7	2.3	2.5
23	E01-1272	5	2	0.5	1.7	1.2	3.5
24	Z00*5267	5	3	1.0	1.0	1.0	0.5
25	VA03W-434	0	1	0.0	0.0	0.2	0.0
26	KY96C-0786-3-2	1	3	0.0	0.0	1.2	0.0
27	KY96C-0769-7-3	2	2	0.0	0.0	1.7	0.5
28	OH02-12678	0	3	0.0	0.0	0.0	0.0
29	OH02-12686	0	1	0.0	0.0	0.0	0.0
30	OH02-13567	1	3	1.0	0.3	1.2	3.5
31	MO040192	1	2	1.0	0.0	0.0	0.0
32	IL00-8530	2	5	3.0	2.3	3.5	2.5
33	IL02-23168	1	1	0.0	0.0	0.3	1.0
34	B020815	1	3	0.0	0.0	1.0	0.0
35	D03*9804	T	2	0.5	0.0	0.0	0.0
36	M03-3104	1	3	2.0	0.0	1.0	0.0
37	M03-3616	2	1	0.5	0.0	0.2	1.5
38	M03*3877	1	3	0.0	0.0	1.7	0.5
39	SE94-1012-25	1	3	1.5	0.3	1.2	0.0
40	G59326	T	1	0.5	0.3	0.7	0.5
41	G69322	2	2	0.0	0.0	0.2	0.5
42	G69319	3	1	0.0	0.0	0.0	0.5
43	GA98401-5E45	2	1	0.0	0.0	0.0	0.0
44	GA991369-5A17	4	1	0.0	0.0	0.5	0.0
LOCATION MEANS			2.2	0.4	0.5	0.8	0.8
GROWTH STAGE/DATE		April 3					

POWDERY MILDEW

		Warsaw VA Griffey 0-9	Oconto WI Cisar 0-9
1	Foster	2.0	2.5
2	Patton	4.0	7.0
3	Roane	0.5	1.0
4	INW0411	0.0	0.0
5	MSU Line D8006-R	0.0	0.0
6	AR96077-7-2	1.0	0.0
7	MO011126	0.5	6.0
8	VA03W-412	0.5	0.0
9	VA03W-409	0.0	0.0
10	MD00-72-5028	0.5	0.0
11	MD00-72-5050	1.5	3.0
12	IL01-11934	1.5	0.0
13	SE98-1089-34	0.0	0.0
14	SE91-1492-4	0.0	0.0
15	99840C4-8-4-12	0.5	0.0
16	0175A1-44	0.5	2.0
17	01946A1-16	1.5	4.5
18	AR97044-10-2	0.0	2.5
19	NY88046-8138	0.0	0.0
20	MSU Line E0028	0.0	0.0
21	T162	4.0	7.0
22	T157	3.5	7.0
23	E01-1272	2.0	5.5
24	Z00*5267	0.5	6.5
25	VA03W-434	0.0	0.0
26	KY96C-0786-3-2	0.0	4.0
27	KY96C-0769-7-3	0.0	3.0
28	OH02-12678	1.0	0.0
29	OH02-12686	0.0	0.0
30	OH02-13567	0.0	0.0
31	MO040192	0.0	1.0
32	IL00-8530	4.5	3.5
33	IL02-23168	1.5	0.0
34	B020815	1.5	3.0
35	D03*9804	0.0	0.0
36	M03-3104	0.0	3.0
37	M03-3616	0.0	2.0
38	M03*3877	1.5	2.5
39	SE94-1012-25	0.0	2.5
40	G59326	0.5	0.0
41	G69322	0.5	0.0
42	G69319	0.5	0.0
43	GA98401-5E45	0.0	0.0
44	GA991369-5A17	1.0	1.0
LOCATION MEANS		0.8	1.8
GROWTH STAGE/DATE			

VIRUSES

		Urbana IL	W. Lafayette IN	Clarksville MD	Columbia MO	Wooster OH
		Kolb	Ohm	Costa	McKendry	Sneller
		BYDV	BYDV	SBMV	BYDV	BYDV
		% stunting	0-9	%	% flag	0-9
1	Foster	14	5.0	15	22	0.0
2	Patton	9	5.5	35	23	0.0
3	Roane	15	6.0	25	21	0.0
4	INW0411	10	6.5	15	28	0.0
5	MSU Line D8006-R	21	4.5	13	8	0.0
6	AR96077-7-2	0		20	12	0.0
7	MO011126	9	3.5	5	8	0.0
8	VA03W-412	8	7.0	25	26	0.7
9	VA03W-409	0	6.0	15	14	0.0
10	MD00-72-5028	2	6.0	20	28	0.0
11	MD00-72-5050	7	6.0	10	22	0.0
12	IL01-11934	14	4.0	18	50	0.7
13	SE98-1089-34	21	7.0	25	22	0.3
14	SE91-1492-4	28	7.5	5	30	0.0
15	99840C4-8-4-12	22	7.0	25	15	0.0
16	0175A1-44	12	6.5	25	25	0.0
17	01946A1-16	0	6.5	35	24	1.0
18	AR97044-10-2	10	6.5	25	27	0.0
19	NY88046-8138	10	7.0	28	22	0.7
20	MSU Line E0028	0	4.5	20	36	0.0
21	T162	0	6.5	20	28	1.3
22	T157	23	5.0	0	7	0.0
23	E01-1272	4	6.5	15	21	0.7
24	Z00*5267	5	5.5	15	33	0.3
25	VA03W-434	0	6.5	0	19	0.0
26	KY96C-0786-3-2	10	4.5	10	23	0.0
27	KY96C-0769-7-3	0	6.5	15	14	0.7
28	OH02-12678	16	5.5	35	15	0.0
29	OH02-12686	10	5.5	15	15	0.0
30	OH02-13567	14	4.5	0	29	0.0
31	MO040192	0	5.0	10	15	0.0
32	IL00-8530	2	3.0	0	17	2.7
33	IL02-23168	24	6.0	10	14	1.3
34	B020815	9	4.5	20	17	0.0
35	D03*9804	11	5.0	25	18	0.7
36	M03-3104	7	5.0	10	23	0.0
37	M03-3616	0	5.0	35	27	0.0
38	M03*3877	8	5.0	15	24	1.3
39	SE94-1012-25	10	5.0	40	38	0.0
40	G59326	0	3.0	10	9	0.0
41	G69322	5	6.5	25	15	0.7
42	G69319	20	6.0	13	10	0.7
43	GA98401-5E45			55	10	0.0
44	GA991369-5A17			45	7	0.0
LOCATION MEANS		9	5.6	19	21	0.3
GROWTH STAGE/DATE						

VIRUSES

		Rodney ON Etienne BYDV mottling 0-9	Rodney ON Etienne BYDV stunting 0-9	Blacksburg VA Griffey BYDV 0-9	Warsaw VA Griffey BYDV 0-9
1	Foster	0.5	0.7	1.0	1.5
2	Patton	0.5	0.3	2.0	3.5
3	Roane	0.3	0.2	0.5	0.5
4	INW0411	0.0	0.2	1.0	1.0
5	MSU Line D8006-R	0.0	0.1	1.0	1.0
6	AR96077-7-2	0.2	0.3	3.0	1.5
7	MO011126	1.0	0.1	1.0	0.5
8	VA03W-412	0.5	0.3	3.5	3.5
9	VA03W-409	0.2	0.1	0.5	1.0
10	MD00-72-5028	0.8	0.5	1.5	2.0
11	MD00-72-5050	0.7	0.2	1.0	1.5
12	IL01-11934	0.0	0.7	2.0	1.5
13	SE98-1089-34	0.5	0.3	1.0	1.0
14	SE91-1492-4	0.5	0.7	1.0	1.5
15	99840C4-8-4-12	0.0	0.3	2.0	2.5
16	0175A1-44	0.0	0.2	1.0	1.0
17	01946A1-16	2.3	0.4	3.0	3.0
18	AR97044-10-2	2.2	0.1	1.0	1.5
19	NY88046-8138	0.0	0.3	3.5	4.5
20	MSU Line E0028	0.2	0.4	3.5	4.5
21	T162	0.5	0.7	2.0	4.0
22	T157	0.5	0.3	1.0	1.5
23	E01-1272	0.2	0.4	2.0	2.5
24	Z00*5267	0.7	0.5	1.0	2.0
25	VA03W-434	0.2	0.2	1.0	2.0
26	KY96C-0786-3-2	0.3	0.6	1.0	1.5
27	KY96C-0769-7-3	1.0	0.4	0.5	1.0
28	OH02-12678	0.0	0.4	1.0	1.5
29	OH02-12686	0.0	0.3	2.5	1.5
30	OH02-13567	0.0	0.6	2.5	2.0
31	MO040192	0.5	0.2	1.0	1.0
32	IL00-8530	1.0	0.2	2.5	2.5
33	IL02-23168	0.5	0.2	1.5	1.5
34	B020815	0.3	0.5	1.0	1.5
35	D03*9804	0.5	0.2	1.0	1.5
36	M03-3104	0.0	0.1	0.5	1.0
37	M03-3616	0.5	0.2	1.0	2.0
38	M03*3877	0.7	0.4	1.5	1.0
39	SE94-1012-25	0.2	0.4	2.5	2.5
40	G59326	0.0	0.3	1.0	1.5
41	G69322	0.3	0.4	1.0	1.0
42	G69319	0.3	0.2	0.0	1.0
43	GA98401-5E45	0.0	0.3	2.0	2.0
44	GA991369-5A17	0.8	0.1	1.0	1.5
LOCATION MEANS		0.4	0.3	1.5	1.8
GROWTH STAGE/DATE		pre-heading	post-heading		

XANTHOMONAS

		Columbia MO McKendry %	Castroville TX Perry
1	Foster	69	1
2	Patton	73	7
3	Roane	77	1
4	INW0411	79	6
5	MSU Line D8006-R	71	1
6	AR96077-7-2	75	0
7	MO011126	70	0
8	VA03W-412	75	0
9	VA03W-409	72	5
10	MD00-72-5028	70	6
11	MD00-72-5050	74	7
12	IL01-11934	77	3
13	SE98-1089-34	82	6
14	SE91-1492-4	72	0
15	99840C4-8-4-12	77	8
16	0175A1-44	78	5
17	01946A1-16	74	4
18	AR97044-10-2	77	1
19	NY88046-8138	66	1
20	MSU Line E0028	76	5
21	T162	80	4
22	T157	72	1
23	E01-1272	75	2
24	Z00*5267	81	6
25	VA03W-434	72	6
26	KY96C-0786-3-2	74	6
27	KY96C-0769-7-3	73	6
28	OH02-12678	74	1
29	OH02-12686	76	1
30	OH02-13567	78	5
31	MO040192	73	3
32	IL00-8530	75	5
33	IL02-23168	68	1
34	B020815	74	2
35	D03*9804	72	8
36	M03-3104	82	3
37	M03-3616	76	7
38	M03*3877	74	8
39	SE94-1012-25	73	3
40	G59326	75	5
41	G69322	73	1
42	G69319	70	3
43	GA98401-5E45	71	8
44	GA991369-5A17	75	8
LOCATION MEANS		74	3.9

HESSIAN FLY

		W. Lafayette IN Cambron			
		Biotype B	Biotype C	Biotype D	Biotype L
1	Foster	1-18	0-14	0-13	0-9
2	Patton	0-19	9-4	0-17	0-16
3	Roane	7-10	16-3	0-15	0-11
4	INW0411	0-19	0-11	0-14	0-12
5	MSU Line D8006-R	0-18	0-10	0-16	0-12
H7H8	check	0-12	0-13	0-11	0-18
H5	check	14-2	12-0	16-2	0-16
6	AR96077-7-2	0-15	0-15	0-15	0-16
7	MO011126	0-15	0-13	0-17	0-17
8	VA03W-412	0-15	0-13	0-15	0-11
9	VA03W-409	0-13	9-4	0-17	0-11
10	MD00-72-5028	0-17	0-14	0-19	0-13
11	MD00-72-5050	0-16	0-13	0-14	0-13
12	IL01-11934	0-17	0-11	0-13	0-13
13	SE98-1089-34	0-16	6-3	0-14	0-7
14	SE91-1492-4	0-16	0-15	0-17	0-15
15	99840C4-8-4-12	0-15	0-11	0-16	0-13
H3(H13)	check *H13 for L only	0-19	8-3	0-15	9-0
H6	check	15-3	0-14	0-12	0-15
16	0175A1-44	0-14	11-0	0-15	0-14
17	01946A1-16	0-16	8-7	0-15	0-14
18	AR97044-10-2	0-17	0-14	0-14	0-12
19	NY88046-8138	0-15	0-12	0-17	0-14
20	MSU Line E0028	0-18	0-13	0-16	0-15
21	T162	4-11	3-11	0-15	0-15
22	T157	0-17	13-2	0-17	0-13
23	E01-1272	0-20	0-12	0-18	0-15
24	Z00*5267	0-15	0-13	0-17	0-14
25	VA03W-434	0-16	0-13	0-18	0-18
H7H8	check	0-12	0-14	0-12	0-15
H5	check	14-2	17-0	16-1	0-20
26	KY96C-0786-3-2	0-15	0-14	0-16	0-11
27	KY96C-0769-7-3	12-3	13-0	0-17	0-19
28	OH02-12678	0-15	0-10	0-16	0-15
29	OH02-12686	13-3	14-0	2-17	0-11
30	OH02-13567	0-18	2-13	0-13	0-10
31	MO040192	0-15	0-13	0-17	0-15
32	IL00-8530	0-16	9-7	0-18	0-12
33	IL02-23168	0-16	0-17	0-17	0-14
34	B020815	0-17	0-15	0-16	0-18
35	D03*9804	0-20	0-18	0-17	0-17
H3(H13)	check *H13 for L only	0-16	10-3	0-15	11-0
H6	check	20-3	0-14	0-12	0-15
36	M03-3104	0-18	0-16	0-17	0-12
37	M03-3616	15-4	10-5	18-1	0-16
38	M03*3877	0-20	0-12	0-14	0-13
39	SE94-1012-25	0-16	0-14	0-16	0-13
40	G59326	18-2	12-2	15-2	0-14
41	G69322	0-14	4-9	0-16	0-13
42	G69319	0-17	14-0	0-15	0-11
43	GA98401-5E45	0-14	0-10	0-14	0-10
44	GA991369-5A17	0-16	0-14	0-14	0-10
H7H8	check	0-14	0-12	0-16	0-16
H5	check	16-2	16-0	17-3	0-16
H3(H13)	check *H13 for L only	0-17	9-4	0-15	7-0
H6	check	16-3	0-15	0-14	0-12

ACID SOIL TOLERANCE

		Enid OK Carver	
		0-5	0-5
1	Foster	3	3
2	Patton	4	3
3	Roane	2	2
4	INW0411	3	2
5	MSU Line D8006-R	2	1
6	AR96077-7-2	2	5
7	MO011126	1	1
8	VA03W-412	1	2
9	VA03W-409	1	2
10	MD00-72-5028	2	2
11	MD00-72-5050	3	2
12	IL01-11934	2	2
13	SE98-1089-34	4	3
14	SE91-1492-4	2	4
15	99840C4-8-4-12	4	3
16	0175A1-44	4	3
17	01946A1-16	2	3
18	AR97044-10-2	1	1
19	NY88046-8138	4	3
20	MSU Line E0028	4	4
21	T162	1	2
22	T157	1	2
23	E01-1272	1	1
24	Z00*5267	2	2
25	VA03W-434	2	3
26	KY96C-0786-3-2	2	1
27	KY96C-0769-7-3	2	2
28	OH02-12678	4	3
29	OH02-12686	5	3
30	OH02-13567	3	2
31	MO040192	1	1
32	IL00-8530	2	2
33	IL02-23168	3	3
34	B020815	1	2
35	D03*9804	2	1
36	M03-3104	4	2
37	M03-3616	4	2
38	M03*3877	1	1
39	SE94-1012-25	2	2
40	G59326	3	1
41	G69322	1	2
42	G69319	1	1
43	GA98401-5E45	3	2
44	GA991369-5A17	3	2
LOCATION MEANS		2.4	2.2
GROWTH STAGE/DATE		March 19	May 21

1RS STATUS

		Lincoln NE Graybosch
1	Foster	Non.1RS
2	Patton	1BL.1RS
3	Roane	Non.1RS
4	INW0411	1BL.1RS
5	MSU Line D8006-R	Non.1RS
6	AR96077-7-2	Non.1RS
7	MO011126	Non.1RS
8	VA03W-412	Non.1RS
9	VA03W-409	1BL.1RS
10	MD00-72-5028	1BL.1RS
11	MD00-72-5050	1BL.1RS
12	IL01-11934	1AL.1RS
13	SE98-1089-34	Non.1RS
14	SE91-1492-4	1AL.1RS
15	99840C4-8-4-12	1BL.1RS
16	0175A1-44	1BL.1RS
17	01946A1-16	1BL.1RS
18	AR97044-10-2	Non.1RS
19	NY88046-8138	Non.1RS
20	MSU Line E0028	Non.1RS
21	T162	Non.1RS
22	T157	Non.1RS
23	E01-1272	Non.1RS
24	Z00*5267	1BL.1RS
25	VA03W-434	Non.1RS
26	KY96C-0786-3-2	Non.1RS
27	KY96C-0769-7-3	Non.1RS
28	OH02-12678	1AL.1RS
29	OH02-12686	1AL.1RS
30	OH02-13567	Non.1RS
31	MO040192	Non.1RS
32	IL00-8530	Non.1RS
33	IL02-23168	Non.1RS
34	B020815	Non.1RS
35	D03*9804	Non.1RS
36	M03-3104	Non.1RS
37	M03-3616	1BL.1RS
38	M03*3877	Non.1RS
39	SE94-1012-25	1BL.1RS
40	G59326	Non.1RS
41	G69322	Non.1RS
42	G69319	Non.1RS
43	GA98401-5E45	1BL.1RS
44	GA991369-5A17	1BL.1RS

MARKER DATA

Raleigh
NC

Brown-Guedira

		Lr34	Bx7oe	Dwarfing	3BS FHB QTL	5AS FHB QTL	2DL FHB QTL	H13
1	Foster	no	no	Rht1	no	no	no	no
2	Patton	no	**hetero**	unclear	no	no	no	no
3	Roane	no	no	Rht2	no	no	no	no
4	INW0411	no	no	Rht1	no	**yes?**	no	no
5	MSU Line D8006-R	no	**yes**	Rht2?	no	no	no	no
6	AR96077-7-2	**hetero**	no	nd	no	no	no	no
7	MO011126	no	**yes**	Rht2	no	no	no	no
8	VA03W-412	no	no	nd	no	no	no	no
9	VA03W-409	no	no	Rht1	no	no	no	no
10	MD00-72-5028	no	no	unclear	no	no	no	no
11	MD00-72-5050	no	**hetero**	unclear	no	no	no	no
12	IL01-11934	no	no	Rht1	no	no	no	no
13	SE98-1089-34	no	no	Rht1	no	no	no	no
14	SE91-1492-4	no	no	Rht2	no	no	no	no
15	99840C4-8-4-12	no	no	nd	no	no	no	no
16	0175A1-44	no	no	unclear	no	**yes?**	no	no
17	01946A1-16	no	no	Rht1	**hetero?**	no	no?	no
18	AR97044-10-2	no	no	unclear	no	no	no	no
19	NY88046-8138	no	no	Rht2	no	no	no?	no
20	MSU Line E0028	no	**yes**	nd	no	no	no	no
21	T162	no	no	Rht1	no	no	no	no
22	T157	no	no	Rht1	no	no	no	no
23	E01-1272	no	no	Rht1	no	**yes?**	no	no
24	Z00*5267	no	no	Rht1	no	no	no	no
25	VA03W-434	no	no	unclear	no	no	no	no
26	KY96C-0786-3-2	no	no	Rht2	no	no	no	no
27	KY96C-0769-7-3	no	no	Rht2	no	no	no	no
28	OH02-12678	no	no	unclear	no	**hetero?**	no	no
29	OH02-12686	no	no	Rht1	no	yes	no	no
30	OH02-13567	no	no	Rht1	no	no	no	no
31	MO040192	no	no	Rht1	no	no	no?	no
32	IL00-8530	no	no	Rht1	no	no	no	no
33	IL02-23168	no	**hetero**	unclear	no	no	no	no
34	B020815	no	no	Rht2	no	no	no	no
35	D03*9804	no	no	Rht2	no	no	no	no
36	M03-3104	no	no	Rht1	no	no	no	no
37	M03-3616	no	no	Rht1	no	no	no	no
38	M03*3877	no	**hetero**	Rht2	no	no	no	no
39	SE94-1012-25	no	no	Rht1	no	?	no	no
40	G59326	no	no	Rht1	no	no	no	no
41	G69322	no	no	unclear	no	no	no	no
42	G69319	no	no	unclear	no	no	no	no
43	GA98401-5E45	no	no	Rht2	no	no	no	no
44	GA991369-5A17	no	**hetero**	Rht2	no	no	no	no

MARKER DATA

Raleigh
NC
Brown-Guedira

		H9	Yr17/Lr37/Sr38	Sr24/Lr24	Sr36	1RS:1BL	1RS:1AL
1	Foster	no	no	no	**yes**	**yes**	
2	Patton	no	no	no	no	**yes**	
3	Roane	no	no	no	no		
4	INW0411	no	no	no	**yes**	**yes**	
5	MSU Line D8006-R	no	no	no	no		
6	AR96077-7-2	no	no	**yes**	**yes**		
7	MO011126	no	no	no	no		
8	VA03W-412	no	no	no	no	**yes**	
9	VA03W-409	no	no	no	**yes**	**yes**	
10	MD00-72-5028	no	no	no	no	**yes**	
11	MD00-72-5050	no	no	no	no	**yes**	
12	IL01-11934	no	no	**yes**	no		**yes**
13	SE98-1089-34	no	no	no	no		
14	SE91-1492-4	no	no	**yes**	no		**yes**
15	99840C4-8-4-12	no	**yes**	no	no	**yes**	
16	0175A1-44	no	no	no	**yes**	**yes**	
17	01946A1-16	no	no	no	no	**yes?**	
18	AR97044-10-2	no	no	no	no		
19	NY88046-8138	no	no	no	no		
20	MSU Line E0028	no	no	no	no		
21	T162	no	no	no	no		
22	T157	no	no	**yes**	no		
23	E01-1272	no	no	no	no		
24	Z00*5267	no	no	no	no	**yes**	
25	VA03W-434	no	no	no	**yes**	**yes**	
26	KY96C-0786-3-2	no	no	no	no		
27	KY96C-0769-7-3	no	no	no	no		
28	OH02-12678	no	no	no	?		**yes**
29	OH02-12686	nd	no	no	no		**yes**
30	OH02-13567	no	no	no	no		
31	MO040192	no	no	**yes**	no		
32	IL00-8530	no	no	no	no		
33	IL02-23168	no	no	**yes**	no	**yes?**	
34	B020815	no	no	no	no	**yes?**	
35	D03*9804	no	no	no	no		
36	M03-3104	no	no	no	no		
37	M03-3616	no	no	no	no	**yes**	
38	M03*3877	no	no	no	no		
39	SE94-1012-25	no	no	no	no	**yes**	
40	G59326	no	no	no	no		
41	G69322	no	no	no	**yes**		
42	G69319	no	no	no	**yes**		
43	GA98401-5E45	no	**yes**	no	no	**yes**	
44	GA991369-5A17	no	no	no	no	**yes**	

KERNEL WEIGHT

		Ridgetown ON Smid 1000 kernels grams
1	Foster	30.8
2	Patton	36.5
3	Roane	27.7
4	INW0411	33.6
5	MSU Line D8006-R	40.3
6	AR96077-7-2	30.5
7	MO011126	39.9
8	VA03W-412	34.5
9	VA03W-409	35.9
10	MD00-72-5028	31.5
11	MD00-72-5050	32.5
12	IL01-11934	33.0
13	SE98-1089-34	33.2
14	SE91-1492-4	30.5
15	99840C4-8-4-12	28.7
16	0175A1-44	33.5
17	01946A1-16	33.4
18	AR97044-10-2	35.9
19	NY88046-8138	33.2
20	MSU Line E0028	39.7
21	T162	31.7
22	T157	35.1
23	E01-1272	29.6
24	Z00*5267	33.4
25	VA03W-434	25.5
26	KY96C-0786-3-2	37.2
27	KY96C-0769-7-3	33.7
28	OH02-12678	33.5
29	OH02-12686	31.6
30	OH02-13567	30.6
31	MO040192	32.4
32	IL00-8530	34.4
33	IL02-23168	30.7
34	B020815	38.7
35	D03*9804	30.8
36	M03-3104	33.1
37	M03-3616	31.6
38	M03*3877	35.4
39	SE94-1012-25	33.6
40	G59326	34.8
41	G69322	31.5
42	G69319	31.7
43	GA98401-5E45	32.1
44	GA991369-5A17	27.7
LOCATION MEANS		33.1

2007 Crop
Advanced Nursery Evaluation

Jose Costa
Uniform Eastern Nursery

Entries #722661 - #722704

A total of 44 entries were analyzed from the Uniform Eastern Nursery. These entries represented composite samples from locations in Virginia, Illinois, and Ohio. #722662, PATTON was used as the standard for this group. Of the 830 cultivars in the SWQL database of Allis-milled cultivars, PATTON ranks 249th for Milling Score based on data from 8 millings.

The standard data is compared to the "historical average" for the cultivar, and quality scores are adjusted to this average. Quality scores for each of the entries in the nursery are then adjusted by the same factor as the standard. These factors are shown in the following table:

	UEN
Milling Quality Score Factor	+13.2
Baking Quality Score Factor	-13.0
Softness Equivalent Factor	-10.4

This year a new tab called "HISTORICAL" has been added to the evaluation worksheet. On this page we will present data from the SWQL Allis and Advanced Nursery databases for the check cultivars as a historical comparison. In addition to the standard, FOSTER, INW 0411, and ROANE were also included as quality checks.

Grain condition for these entries was generally good. Evidence of FHB was seen in many samples; however, amounts were generally low. Weathering and sprouting were not noted throughout the set. The samples were lightly cleaned prior to milling and fewer than half of the entries retained shriveled grain.

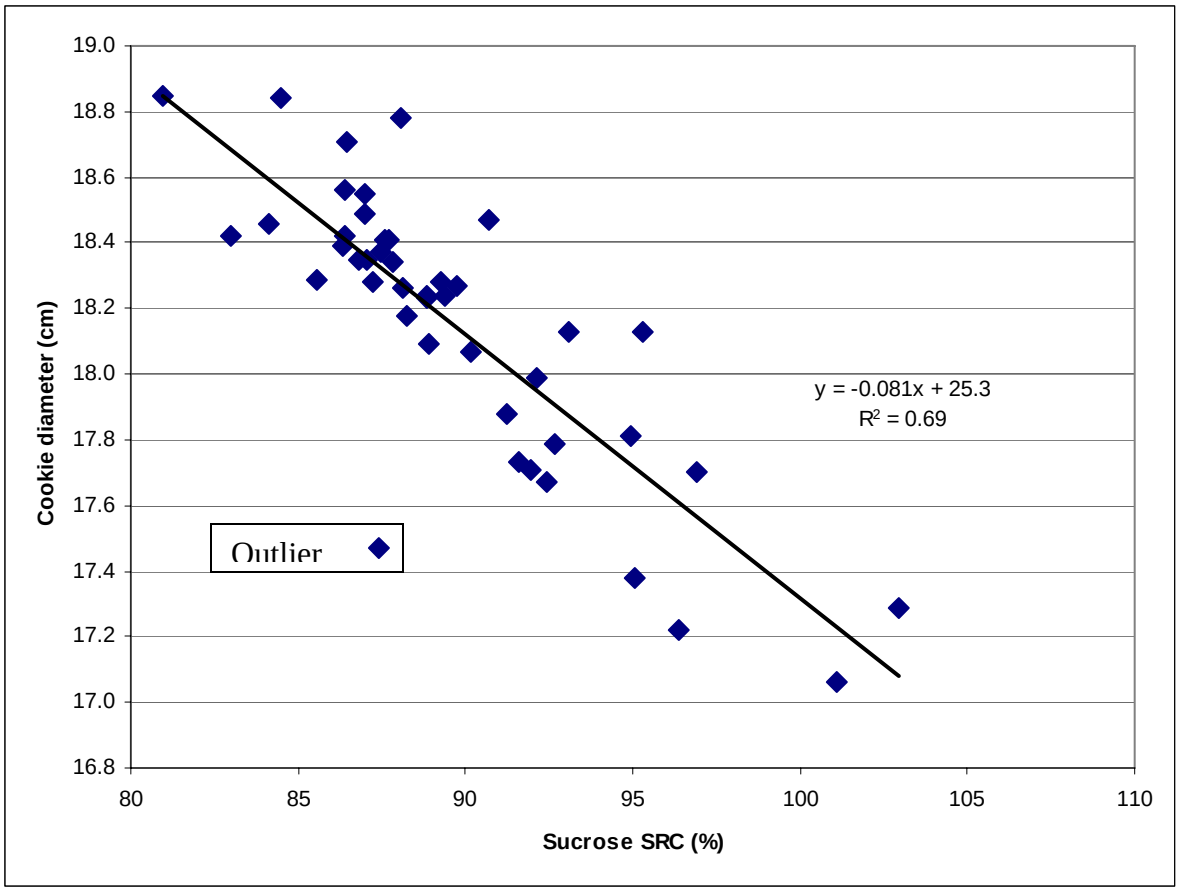
Each of the checks showed elevations in test weight of between 1.3 and 1.9 lb/bu compared to their values in the SWQL database. Flour yields were somewhat lower than expected for the checks as each was at least 1.0% below its historic value. PATTON displayed some elevation in Lactic Acid SRC, however, the other checks produced typical values. Both FOSTER and PATTON showed elevations of at least 0.4 cm in cookie diameter while INW 0411 and ROANE produced typical cookie diameters.

Comments from Ed Souza
As noted above the milling yield was lower in this set than the historical average for the checks. The samples were also softer than the historical average. Typically, those two physical characteristics are related as the softer grain texture often results in reduced fracture and shattering of the endosperm away from the bran during the reduction of the grain.

Within this set, the check cultivars ranked correctly for milling and baking quality. Lines with milling yield similar to or lower than Roane (68.1%) should be reviewed closely for acceptability in other areas. Lines with poor softness equivalent (54% or less) may make poorer cakes than are generally desired by the milling and baking industry. Sucrose SRC is a predictor of general soft wheat quality. Lower values are desired. Lines with greater than 95% sucrose SRC values generally produce poor soft wheat products. Lines that are poor for all three of these characteristics likely will be unacceptable for milling and baking quality if they are released as a cultivar.

Sucrose SRC is correlated to cookie diameter. In this data set sucrose SRC predicted 69% of the variation in cookie diameter (See Figure 1 below). Typically, if a cookie diameter is smaller than predicted by sucrose SRC, sprouting has occurred. Alternatively, the reduction in cookie diameter could be due to gluten strength. Protein and gluten in flour cause cookie spread to be constrained by oxidative gelation of proteins. Within this dataset, the cookie diameter is reduced by about 0.2 cm for every 10 g 100 g^{-1} increase in lactic acid SRC. However, some samples still under-perform for cookie diameter as predicted by their sucrose SRC. Lines such as the outlier in Figure 1 did not have obvious sprouting nor strong lactic acid values and is interesting but probably not good for normal soft wheat use.

Figure 1. Prediction of sugar-snap cookie diameter from sucrose SRC data in the 2007 Uniform Eastern Regional Nursery.



ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

LAB NO.		**LOCATIONS:** Brownstown, IL; Napoleon, OH; Warsaw, VA	MILLING QUALITY SCORE		BAKING QUALITY SCORE		SOFT. EQUIV. SCORE	
	STANDARD (#722662, Patton)		71.9	B	68.3	C	69.1	C
722661	1	Foster	88.1	A	86.3	A	76.1	B
722662	2	Patton	71.9	B	68.3	C	69.1	C
722663	3	Roane	62.1	C	39.6	F	74.9	B
722664	4	INW0411	68.0	C	56.3	D	59.9	D
722665	5	MSU Line D8006-R	75.8	B	75.6	B	59.6	D
722666	6	AR96077-7-2	72.4	B	72.0	B	65.8	C
722667	7	MO011126	88.8	A	69.6	C	72.3	B
722668	8	VA03W-412	75.6	B	68.3	C	69.6	C
722669	9	VA03W-409	75.1	B	74.0	B	65.9	C
722670	10	MD00-72-5028	79.6	B	72.6	B	61.8	C
722671	11	MD00-72-5050	71.1	B	50.6	D	56.2	D
722672	12	IL01-11934	74.9	B	74.0	B	74.0	B
722673	13	SE98-1089-34	65.1	C	63.3	C	73.2	B
722674	14	SE91-1492-4	56.8	D	34.3	F	57.3	D
722675	15	99840C4-8-4-12	54.5	D	36.6	F	65.1	C
722676	16	0175A1-44	72.6	B	76.6	B	60.6	C
722677	17	01946A1-16	65.2	C	50.3	D	60.7	C
722678	18	AR97044-10-2	76.4	B	51.3	D	69.6	C
722679	19	NY88046-8138	76.9	B	88.3	A	78.1	B
722680	20	MSU Line E0028	87.1	A	88.6	A	78.3	B
722681	21	T162	69.5	C	64.6	C	77.4	B
722682	22	T157	58.5	D	29.0	F	69.4	C
722683	23	E01-1272	68.6	C	54.0	D	79.6	B
722684	24	Z00*5267	71.2	B	49.3	E	85.9	A
722685	25	VA03W-434	69.2	C	79.0	B	70.8	B
722686	26	KY96C-0786-3-2	80.6	A	76.0	B	69.5	C
722687	27	KY96C-0769-7-3	75.6	B	71.6	B	71.9	B
722688	28	OH02-12678	69.8	C	62.6	C	62.7	C
722689	29	OH02-12686	67.3	C	42.6	E	57.5	D
722690	30	OH02-13567	76.9	B	70.0	C	64.1	C
722691	31	MO040192	68.1	C	69.6	C	67.5	C
722692	32	IL00-8530	84.3	A	78.6	B	63.5	C
722693	33	IL02-23168	76.2	B	74.3	B	67.2	C
722694	34	B020815	77.3	B	66.3	C	69.8	C
722695	35	D03*9804	62.2	C	53.3	D	60.7	C
722696	36	M03-3104	64.3	C	74.3	B	72.0	B
722697	37	M03-3616	69.6	C	84.0	A	73.0	B
722698	38	M03*3877	79.7	B	68.0	C	72.0	B
722699	39	SE94-1012-25	78.4	B	73.3	B	74.2	B
722700	40	G59326	67.2	C	69.0	C	75.5	B
722701	41	G69322	70.1	B	64.6	C	51.6	D
722702	42	G69319	68.7	C	60.0	D	60.9	C
722703	43	GA98401-5E45	67.1	C	69.3	C	56.8	D
722704	44	GA991369-5A17	76.2	B	72.0	B	67.2	C

ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

LAB NO.		**LOCATIONS:** Brownstown, IL; Napoleon, OH; Warsaw, VA	MICRO T.W. LB/BU		FLOUR YIELD %		SOFT. EQUIV. %		FLOUR PROT. %
	STANDARD (#722662, Patton)		62.3		70.1		57.3		8.94
722661	1	Foster	62.5		73.3		59.8		8.26
722662	2	Patton	62.3		70.1		57.3		8.94
722663	3	Roane	64.3		68.1	Q	59.3		8.33
722664	4	INW0411	61.4		69.3	*	54.1	*	8.77
722665	5	MSU Line D8006-R	63.2		70.8		54.0	*	8.64
722666	6	AR96077-7-2	63.2		70.2		56.2		8.65
722667	7	MO011126	64.4		73.4		58.5		8.30
722668	8	VA03W-412	64.4		70.8		57.5		8.52
722669	9	VA03W-409	62.1		70.7		56.2		7.87
722670	10	MD00-72-5028	65.1		71.6		54.8		8.45
722671	11	MD00-72-5050	64.5		69.9		52.8	*	8.12
722672	12	IL01-11934	63.4		70.7		59.0		7.63
722673	13	SE98-1089-34	62.0		68.7	*	58.8		7.89
722674	14	SE91-1492-4	65.3		67.0	Q	53.2	*	8.32
722675	15	99840C4-8-4-12	64.9		66.6	Q	55.9		8.37
722676	16	0175A1-44	60.9	*	70.2		54.4		8.29
722677	17	01946A1-16	63.0		68.7	*	54.4		9.01
722678	18	AR97044-10-2	63.1		71.0		57.5		8.46
722679	19	NY88046-8138	61.0	*	71.1		60.5		8.14
722680	20	MSU Line E0028	61.1	*	73.1		60.5		7.43
722681	21	T162	62.7		69.6		60.2		8.25
722682	22	T157	63.6		67.4	Q	57.4		8.41
722683	23	E01-1272	62.7		69.4		61.0		8.14
722684	24	Z00*5267	62.5		69.9		63.2		8.62
722685	25	VA03W-434	63.2		69.5		57.9		8.23
722686	26	KY96C-0786-3-2	64.4		71.8		57.5		8.48
722687	27	KY96C-0769-7-3	64.0		70.8		58.3		8.00
722688	28	OH02-12678	62.8		69.6		55.1		8.52
722689	29	OH02-12686	61.7		69.1	*	53.3	*	8.65
722690	30	OH02-13567	62.0		71.1		55.6		8.24
722691	31	MO040192	63.4		69.3		56.8		8.24
722692	32	IL00-8530	65.0		72.5		55.4		8.42
722693	33	IL02-23168	64.8		70.9		56.7		8.21
722694	34	B020815	64.2		71.1		57.6		8.47
722695	35	D03*9804	63.3		68.1	Q	54.4		7.99
722696	36	M03-3104	60.5	*	68.5	Q	58.3		7.82
722697	37	M03-3616	62.4		69.6		58.7		8.14
722698	38	M03*3877	63.9		71.6		58.3		8.34
722699	39	SE94-1012-25	62.7		71.4		59.1		7.90
722700	40	G59326	63.6		69.1	*	59.6		7.93
722701	41	G69322	64.5		69.7		51.2	*	8.11
722702	42	G69319	63.1		69.4		54.5		8.20
722703	43	GA98401-5E45	64.6		69.1	*	53.0	*	8.21
722704	44	GA991369-5A17	63.0		70.9		56.7		8.95

ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

LAB NO.		**LOCATIONS:** Brownstown, IL; Napoleon, OH; Warsaw, VA	LACTIC ACID SRC	SUCROSE SRC %	COOKIE DIAM. CM.		TOP GR.
	STANDARD (#722662, Patton)		102.5	89.41	18.24		4
722661	1	Foster	106.6	88.05	18.78		6
722662	2	Patton	102.5	89.41	18.24		4
722663	3	Roane	113.5	95.04	17.38	Q	2
722664	4	INW0411	95.7	91.24	17.88	*	5
722665	5	MSU Line D8006-R	106.9	84.12	18.46		6
722666	6	AR96077-7-2	114.0	87.06	18.35		5
722667	7	MO011126	118.1	87.24	18.28		5
722668	8	VA03W-412	103.4	88.85	18.24		5
722669	9	VA03W-409	93.4	87.61	18.41		6
722670	10	MD00-72-5028	95.8	87.44	18.37		6
722671	11	MD00-72-5050	97.7	91.95	17.71	Q	4
722672	12	IL01-11934	115.2	87.69	18.41		5
722673	13	SE98-1089-34	114.9	88.91	18.09		4
722674	14	SE91-1492-4	112.2	96.38	17.22	Q	3
722675	15	99840C4-8-4-12	109.7	102.94	17.29	Q	2
722676	16	0175A1-44	84.9	86.99	18.49		6
722677	17	01946A1-16	112.1	96.90	17.70	Q	4
722678	18	AR97044-10-2	120.4	91.59	17.73	Q	3
722679	19	NY88046-8138	88.0	84.49	18.84		7
722680	20	MSU Line E0028	90.6	80.96	18.85		7
722681	21	T162	123.9	95.32	18.13		5
722682	22	T157	137.9	101.10	17.06	Q	2
722683	23	E01-1272	126.1	94.94	17.81	*	5
722684	24	Z00*5267	101.1	92.45	17.67	Q	3
722685	25	VA03W-434	104.4	86.38	18.56		6
722686	26	KY96C-0786-3-2	107.2	90.73	18.47		7
722687	27	KY96C-0769-7-3	111.0	87.81	18.34		5
722688	28	OH02-12678	102.8	90.17	18.07		4
722689	29	OH02-12686	95.6	87.41	17.47	Q	4
722690	30	OH02-13567	100.0	85.59	18.29		6
722691	31	MO040192	109.2	89.26	18.28		5
722692	32	IL00-8530	119.0	86.98	18.55		6
722693	33	IL02-23168	116.0	83.00	18.42		5
722694	34	B020815	110.7	88.24	18.18		3
722695	35	D03*9804	109.5	92.68	17.79	*	3
722696	36	M03-3104	99.6	86.37	18.42		6
722697	37	M03-3616	96.6	86.44	18.71		6
722698	38	M03*3877	116.0	88.86	18.23		5
722699	39	SE94-1012-25	86.5	86.36	18.39		6
722700	40	G59326	95.1	88.10	18.26		5
722701	41	G69322	114.7	93.10	18.13		6
722702	42	G69319	119.0	92.12	17.99	*	5
722703	43	GA98401-5E45	97.7	89.76	18.27		6
722704	44	GA991369-5A17	94.7	86.84	18.35		6

ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

LAB NO.		**LOCATIONS:** Brownstown, IL; Napoleon, OH; Warsaw, VA	FHB (0-3)	WEATHERING (Yes/No)	SPROUTING (0-3)	BLACK POINT (0-3)	SHRIVELING AFTER CLEANING (0-3)
	STANDARD (#722662, Patton)						
722661	1	Foster	1				
722662	2	Patton	1				1
722663	3	Roane					
722664	4	INW0411	1				
722665	5	MSU Line D8006-R				1	
722666	6	AR96077-7-2	1			1	
722667	7	MO011126	1				
722668	8	VA03W-412	1			1	
722669	9	VA03W-409	1			1	1
722670	10	MD00-72-5028				1	
722671	11	MD00-72-5050	1				
722672	12	IL01-11934					
722673	13	SE98-1089-34	1				1
722674	14	SE91-1492-4	1				
722675	15	99840C4-8-4-12	1			1	
722676	16	0175A1-44	1				
722677	17	01946A1-16	1			1	
722678	18	AR97044-10-2	1				
722679	19	NY88046-8138					
722680	20	MSU Line E0028	1				
722681	21	T162	1			1	1
722682	22	T157	1			1	
722683	23	E01-1272	1			1	
722684	24	Z00*5267	1				1
722685	25	VA03W-434	1				
722686	26	KY96C-0786-3-2	1				
722687	27	KY96C-0769-7-3					
722688	28	OH02-12678	1			1	
722689	29	OH02-12686	1			1	1
722690	30	OH02-13567	1				
722691	31	MO040192	1			1	
722692	32	IL00-8530					
722693	33	IL02-23168					
722694	34	B020815	1			1	
722695	35	D03*9804	1				
722696	36	M03-3104	1				1
722697	37	M03-3616				1	
722698	38	M03*3877	1			1	
722699	39	SE94-1012-25	1			1	1
722700	40	G59326	1				
722701	41	G69322					
722702	42	G69319	1			1	
722703	43	GA98401-5E45	1			1	
722704	44	GA991369-5A17	1			1	

ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

LOCATIONS:
Brownstown, IL; Napoleon, OH; Warsaw, VA

LAB NO.	**STANDARD** (#722662, Patton)	
722661	1	Foster
722662	2	Patton
722663	3	Roane
722664	4	INW0411
722665	5	MSU Line D8006-R
722666	6	AR96077-7-2
722667	7	MO011126
722668	8	VA03W-412
722669	9	VA03W-409
722670	10	MD00-72-5028
722671	11	MD00-72-5050
722672	12	IL01-11934
722673	13	SE98-1089-34
722674	14	SE91-1492-4
722675	15	99840C4-8-4-12
722676	16	0175A1-44
722677	17	01946A1-16
722678	18	AR97044-10-2
722679	19	NY88046-8138
722680	20	MSU Line E0028
722681	21	T162
722682	22	T157
722683	23	E01-1272
722684	24	Z00*5267
722685	25	VA03W-434
722686	26	KY96C-0786-3-2
722687	27	KY96C-0769-7-3
722688	28	OH02-12678
722689	29	OH02-12686
722690	30	OH02-13567
722691	31	MO040192
722692	32	IL00-8530
722693	33	IL02-23168
722694	34	B020815
722695	35	D03*9804
722696	36	M03-3104
722697	37	M03-3616
722698	38	M03*3877
722699	39	SE94-1012-25
722700	40	G59326
722701	41	G69322
722702	42	G69319
722703	43	GA98401-5E45
722704	44	GA991369-5A17

GRAIN CONDITION SCALE

FHB, SPROUTING & BLACK POINT

0	None
1	up to 10%
2	10% to 40%
3	above 40%

SHRIVELING

0	None
1	Some
2	Moderate
3	Heavy

ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

LOCATIONS: Brownstown, IL; Napoleon, OH; Warsaw, VA

EVALUATION SUMMARY

	STD. DATA		AVG. DATA
MILLING QUALITY SCORE	71.90	B	72.15
BAKING QUALITY SCORE	68.30	C	65.27
SE SCORE	69.10	C	67.93

	STD. DATA	AVG. DATA	ADJ. L.S.D.	NOTATION BEGINS *	Q
TEST WEIGHT	62.32	63.20	1.20	61.11	59.91
FLOUR YIELD	70.06	70.11	0.75	69.31	68.56
SOFTNESS EQUIV.	57.33	56.92	3.08	54.25	51.16
FLOUR PROTEIN	8.94	8.29	0.72		
LACTIC ACID SRC	102.55	106.59			
SUCROSE SRC	89.41	89.69			
COOKIE DIAMETER	18.24	18.15	0.24	18.00	17.75

	A	B	C	D	E	F	TOTAL
MILLING SCORE	5	20	16	3	0	0	
BAKING SCORE	4	14	13	7	2	4	44
SOFTNESS EQUIV. SCORE	1	16	20	7	0	0	

ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

LOCATIONS: Brownstown, IL; Napoleon, OH; Warsaw, VA

HISTORICAL

LAB NO.		ENTRY	MILLING QUALITY SCORE		BAKING QUALITY SCORE		SOFT. EQUIV. SCORE		MICRO T.W. LB/BU	FLOUR YIELD %
722661	1	Foster	88.1	A	86.3	A	76.1	B	62.5	73.3
		Foster	88.5	A	71.4	B	71.6	B	60.9	74.3
722664	4	INW0411	68.0	C	56.3	D	59.9	D	61.4	69.3
		INW0411	72.4	B	50.0	D	67.6	C	59.5	70.4
722662	2	Patton	71.9	B	68.3	C	69.1	C	62.3	70.1
		Patton	71.9	B	68.3	C	69.1	C	60.7	71.5
722663	3	Roane	62.1	C	39.6	F	74.9	B	64.3	68.1
		Roane	44.9	E	40.4	E	68.0	C	63.0	69.7

ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

LOCATIONS: Brownstown, IL; Napoleon, OH; Warsaw, VA

HISTORICAL

LAB NO.		ENTRY	SOFT. EQUIV. %	FLOUR PROT. %	LACTIC ACID SRC	SUCROSE SRC %	COOKIE DIAM. CM.	TOP GR.
722661	1	Foster	59.8	8.3	106.6	88.0	18.8	6
		Foster	57.1	8.8	103.0		18.3	5
722664	4	INW0411	54.1	8.8	95.7	91.2	17.9	5
		INW0411	54.3	8.8	93.3		17.7	5
722662	2	Patton	57.3	8.9	102.5	89.4	18.2	4
		Patton	55.7	9.4	86.0		17.8	4
722663	3	Roane	59.3	8.3	113.5	95.0	17.4	2
		Roane	56.6	8.4	112.4		17.4	3