UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

and

Cooperating State Agricultural Experiment Stations

2007-08

UNIFORM WINTER BARLEY TRIAL

Final Report

Coordinator: David Marshall/Myron Fountain

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

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The purpose of the Uniform Winter Barley Trial (UWBT) is to evaluate winter-habit (fall planted) barley advanced lines for adaptation to those areas in the United States where winter barley is grown commercially. Eighteen entries were submitted by public/private barley breeding programs of Cargill, MD, NE, and VA in the 2007-08 UWBT. Thirteen testing locations were used for the 2007-08 UWBT, with one in each state of Georgia, Maryland, Nebraska, Texas, and Washington; two in each of South Carolina and Virginia; and four in North Carolina.

Griffin, GA: Plot size=50ft^2; Reps=3; Planted=1 Nov 07; Harvested=6 Jun 08. Cooperator-J.W.Johnson, Bland & S.Sutton.

Salisbury, MD: Warm winter, very early heading dates and harvest. Late frost. Reps=2; Planted=16 Oct 07; Harvested=3 Jun 08. Cooperator-J.M.Costa & A.Cooper

Mead, NE: Not harvested. Cooperator-P.S.Baenziger.

Laurel Springs, NC: Screening location for winter survival in mountain region (elevation 3000ft); Cold temperatures during winter. Plot size=50ft^2; Reps=1; Planted=1 Oct 07. Not harvested. Cooperators-M.O.Fountain & D.S.Marshall.

Raleigh, NC: Good conditions for excellent growth. Severe powdery mildew and lodging. Plot size=55ft^2; Reps=2; Planted=1 Nov 07; Harvested=4 Jun 08. Cooperator-M.O.Fountain & D.S.Marshall.

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

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

Clemson, SC: No data reported. Cooperator-B.Edge.

Florence, SC: No data reported. Cooperator-B.Edge.

Prosper, TX: Cooperator-R.Sutton.

Blacksburg, VA: Plot size=45ft^2; Reps=3; Planted=1 Oct 07; Harvested=12 Jun 08. Cooperators-W.Brooks & C.A.Griffey.

Warsaw, VA: Plot size=45ft^2; Reps=3; Planted=23 Oct 07; Harvested=9 Jun 08. Cooperator-W.Brooks & C.A.Griffey.

Pullman, WA: Disease screening location. Cooperator-X.Chen.

USDA/ARS Uniform Winter Barley Trial 2007-08

Entry	*Designation*	*Pedigree*	*Origin*	*Seed Source*	*Yrs in Trial*
1	Wysor	Composite cross/4/Harrison/3/Cebada Capa/Wong//awnleted Hudson (=PI501526; VA83-42-63)	VA	ARS	20
2	Perkins	Nebar selection/Dundy (=PI536646; NE851808)	NE	ARS	10
3	Thoroughbred	VA90-44-110/Plaisant	VA	VA	1
4	Cargill 26	proprietary	Cargill	ARS	3
5	Cargill 27	proprietary (2-row)	Cargill	ARS	3
6	MD931046-51	GA82-594/MD45-59-32	MD	MD	1
7	MD931060-15	921086/Tidewater	MD	MD	1
8	NB018187	NB93760/NB94723	NE	NE	1
9	NB03429	NB92711/NB86954	NE	NE	1
10	NB03437	NB92711/P-954	NE	ARS	2
11	VA04B-180	VA97B-416//VA96-41-25/VA96-44-307	VA	ARS	3
12	Doyce	Sangregado"S"//VA90-42-56/VA90-42-22/3/Pamunkey/4/SC890585 (=PI634932; VA00H-137) (hulless)	VA	ARS	5
13	VA01H-68	SC860974/94-42-13 (hulless)	VA	ARS	5
14	VA03H-61	96-41-17/SC872143 (hulless)	VA	ARS	3
15	VA04H-53	H-585/95-41-33 (hulless)	VA	ARS	3
16	VA06H-60	VA96B-315/SC871077//Wysor (hulless)	VA	VA	1
17	VA06H-79	VA96B-315/SC871077//Wysor (hulless)	VA	VA	1
18	VA06H-121	VA96B-315/SC871077//Wysor (hulless)	VA	VA	1

Seed Requirements: GA(200g); MD(150g); NE-150g; NC-USDA(610g); SC-300g; TX-150g; VA-500g; WA-50g = 2,110g total

Cooperators - USDA/ARS Uniform Winter Barley Trial 2007-08

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2007-08 Uniform Winter Barley Trial

Means across locations

Entry	Designation	Traits	Grain Yield bu/a	rank	TW lb/bu	Heading Julian	Height in	Lodging 0-9	Net Blotch 0-9	Powdery Mildew 0-9	Leaf Rust 0-9	Stripe Rust 24-Apr-08 Stem elong. IT	%	5-Jun-08 Heading IT	%	Winter Stress 0-9	Pearl %	Flour Protein %	Flour β-glucan %	Flour Lipid %
1	Wysor		81.0	7	45.8	105	38	5	3.0	0	6.3	8	20	8	100	3	87.7	12.421	5.48	1.740
2	Perkins		70.8	12	48.2	112	38	7	2.7	4	5.0	8	10	8	100	4	88.2	12.384	5.27	1.927
3	Thoroughbred		106.1	1	48.4	109	36	5	2.8	7	5.3	8	30	8	100	5	86.6	11.635	4.35	1.407
4	Cargill 26		96.9	2	46.8	108	35	4	4.0	0	3.3	8	5	8	100	2	86.6	10.804	4.04	1.047
5	Cargill 27	2-row	75.2	10	45.6	114	36	4	4.7	0	2.7	8	10	8	100	2	86.0	12.833	3.78	1.152
6	MD931046-51		87.6	5	45.5	102	37	6	3.8	7	2.7	8	10	8	100	5	85.9	12.597	4.52	1.617
7	MD931060-15		89.8	4	46.8	104	37	6	2.7	9	3.7	8	20	8	100	5	87.3	12.728	4.72	1.840
8	NB018187		81.9	6	47.1	109	36	5	2.8	9	4.3	8	40	8	100	5	86.4	12.045	4.41	1.599
9	NB03429		74.5	11	46.1	111	35	5	2.0	9	6.3	8	10	8	100	6	88.2	12.221	4.18	1.581
10	NB03437		78.0	8	45.6	113	37	6	2.5	2	4.7	8	20	8	100	3	87.1	11.550	4.70	1.222
11	VA04B-180		91.2	3	47.9	105	33	5	1.5	4	5.7	8	10	8	100	4	87.0	11.604	5.33	1.812
12	Doyce	hulless	62.2	16	55.4	102	34	6	5.5	4	1.0	8	20	8	100	4		11.541	4.21	1.580
13	VA01H-68	hulless	56.6	18	56.9	100	34	4	5.0	2	4.0	8	30	8	100	4		14.227	3.71	1.803
14	VA03H-61	hulless	75.7	9	57.7	109	34	4	3.2	5	4.7	8	20	8	100	4		13.900	4.74	2.340
15	VA04H-53	hulless	57.3	17	56.2	111	36	7	2.2	7	8.0	8	30	8	100	6		12.391	4.19	1.649
16	VA06H-60	hulless	68.3	13	55.9	101	33	7	3.2	9	7.3	8	10	8	100	6		11.371	4.65	0.944
17	VA06H-79	hulless	65.1	15	56.0	109	36	7	1.8	4	8.0	8	30	8	100	5		12.546	4.42	1.564
18	VA06H-121	hulless	67.2	14	55.6	102	34	7	3.8	3	5.3	8	10	8	100	4		11.240	4.64	1.426
	Hundred (susceptible check)											8	5	8	100					
	Mean		77.0		50.4	107	35	5	3.2	4	4.9	8	18	8	100	4	87.0	12.224	4.52	1.57
	CV (%)		18.0		5.9	2	4	32		34	15.4							5.430	12.96	19.95
	LSD(0.05)		17.5		3.4	2	2	2		3	1.0							1.101	0.97	0.52
	R^2		0.59		0.81	0.96	0.88	0.72										0.895	0.59	0.64
	Number of loc		5		6	6	6	6	2	1	1	1	1	1	1	3	2	3	3	3

			GRAIN YIELD														TEST WEIGHT (lb/bu)								PEARL WEIGHT (%)				
			Griffin		Salisbury		Raleigh*		Waynesville*		Prosper		Blacksburg		Warsaw		5-location*													
			GA		MD		NC		NC		TX		VA		VA		mean													
Entry	Designation	Traits	bu/a	rank	bu/a	rank	bu/a	rank	bu/a	rank	bu/a	rank	bu/a	rank	bu/a	rank	bu/a	rank	Griffin GA	S'bury MD	Raleigh NC	W'ville NC	Prosper TX	B'burg VA	Warsaw VA	6-loc mean	S'bury MD	Raleigh NC	W'ville NC	B'burg VA	4-loc mean
1	Wysor		86.5	5	deer damag		77.6	8	82.5	6	70.3	8	73.7	8	92.2	6	81.0	7	50	.	50.8	53.1	47.4	39.6	43.8	45.8		88.4	89.2	87.0	
2	Perkins		55.6	18	73.2	8	61.4	11	63.2	9	76.9	7	59.5	13	89.0	7	70.8	12	53	44.1	52.5	52.7	51.2	42.2	46.3	48.2	87.1	87.7	88.3	88.6	87.9
3	Thoroughbred		109.5	1	99.1	3	86.0	6	93.5	5	96.9	2	113.9	3	111.1	1	106.1	1	49	44.9	54.4	54.1	51.1	42.9	48.0	48.4	86.3	86.8	87.7	86.4	86.8
4	Cargill 26		100.5	3	107.3	1	78.2	7	84.1	7	69.3	9	106.7	4	100.9	4	96.9	2	51	44.2	52.7	52.9	47.3	41.1	44.6	46.8	82.3	87.2	88.0	86.0	85.9
5	Cargill 27	2-row	78.2	8	65.9	14	88.3	5	97.0	4	58.1	13	78.7	6	95.3	5	75.2	10	50	38.9	52.9	51.0	48.8	37.0	46.1	45.6	80.9	86.3	89.4	85.7	85.6
6	MD931046-51		75.6	10	104.9	2	95.0	3	.		64.0	10	114.4	2	78.9	10	87.6	5	49	42.0	49.2	.	46.8	43.9	41.9	45.5	84.2	87.8	.	83.9	
7	MD931060-15		78.8	7	97.9	4	60.4	13	60.7	11	80.5	5	115.1	1	76.9	11	89.8	4	50	43.7	51.3	53.1	49.0	44.1	42.8	46.8	84.5	87.2	87.2	87.4	86.6
8	NB018187		77.7	9	83.6	6	44.2	18	41.9	15	79.8	6	92.6	5	75.7	12	81.9	6	50	43.5	51.7	51.6	50.1	42.1	45.1	47.1	84.4	84.9	88.0	87.8	86.3
9	NB03429		72.8	14	65.7	15	61.2	12	62.3	10	91.9	4	61.6	11	80.6	9	74.5	11	50	40.5	50.6	50.6	49.4	40.3	45.7	46.1	80.8	87.5	88.9	88.9	86.5
10	NB03437		75.6	11	58.6	16	90.1	4	100.0	3	97.2	1	55.7	14	102.8	3	78.0	8	51	41.4	51.8	49.9	49.4	38.1	42.1	45.6	83.0	89.0	88.1	85.1	86.3
11	VA04B-180		98.5	4	82.5	7	76.7	9	80.7	8	92.1	3	76.9	7	106.2	2	91.2	3	53	42.5	52.2	54.3	50.8	41.0	47.7	47.9	84.6	86.4	90.2	87.5	87.2
12	Doyce	hulless	64.7	16	67.7	12	111.3	1	127.4	1	49.0	16	60.0	12	69.7	16	62.2	16	.	51.7	58.7	60.2	56.2	55.0	55.1	55.4					
13	VA01H-68	hulless	62.4	17	67.4	13	99.4	2	112.6	2	31.6	18	53.9	15	67.7	17	56.6	18	50	56.6	59.8	61.2	57.9	57.9	58.9	56.9					
14	VA03H-61	hulless	106.4	2	93.7	5	58.1	14	57.8	12	56.8	14	50.8	17	70.7	14	75.7	9	50	58.0	60.5	62.1	60.2	57.1	60.5	57.7					
15	VA04H-53	hulless	75.4	12	52.9	17	56.5	15	55.5	13	62.9	11	40.1	18	55.1	18	57.3	17	51	55.3	60.1	59.8	59.1	53.2	58.3	56.2					
16	VA06H-60	hulless	86.2	6	70.5	10	50.7	17	.		50.2	15	64.5	10	70.1	15	68.3	13	52	54.8	57.6	.	59.0	55.0	57.2	55.9					
17	VA06H-79	hulless	74.9	13	70.6	9	63.6	10	.		58.2	12	50.9	16	71.1	13	65.1	15	51	56.8	60.1	.	57.3	54.7	56.0	56.0					
18	VA06H-121	hulless	66.0	15	68.7	11	52.8	16	51.3	14	45.0	17	69.3	9	86.9	8	67.2	14	50	57.1	57.8	60.0	58.4	54.4	55.7	55.6					
		Mean	80.7		78.2		72.8		78.0		68.4		74.4		83.4		77.0			48.0	54.7	55.1	52.7	46.6	49.8	50.4	83.8	87.2	88.5	86.8	86.6
		CV (%)	12.1		10.8		26.0		1 rep		12.5		12.0		8.0		18.0			3.2	1.7		1.5	2.3	1.3	5.9					
		LSD (0.05)	17.2		18.0		40.0				14.2		12.3		9.2		17.5			3.2	2.0		1.3	1.5	0.9	3.4					
		R^2															0.59									0.81					

* 5-location mean does not include Raleigh and Waynesville, NC locations

			DAYS TO HEADING (JULIAN)							HEIGHT (in)								LODGING (0-9)						
			Griffin	S'bury	Raleigh	Prosper	B'burg	Warsaw	6-loc	Griffin	S'bury	Raleigh	Prosper	B'burg	Warsaw	6-loc	S'bury	L.Springs	Raleigh	S'bury*	W'ville	B'burg	Warsaw	6-loc*
Entry	Designation	Traits	GA	MD	NC	TX	VA	VA	mean	GA	MD	NC	TX	VA	VA	mean	MD	NC	NC	NC	NC	VA	VA	mean
1	Wysor		94	110	104	101	116	104	105	37	42	43	33	37	38	38	0.0	0	8	0	7	9.0	4.7	5
2	Perkins		100	118	106	106	127	115	112	38	41	42	33	37	36	38	6.0	5	9	3	7	9.0	7.0	7
3	Thoroughbred		99	113	106	105	119	109	109	34	39	39	31	39	33	36	4.5	0	7	2	6	3.0	6.7	5
4	Cargill 26		98	114	106	104	120	108	108	35	36	40	32	33	32	35	1.0	0	7	1	3	6.0	6.0	4
5	Cargill 27	2-row	107	117	112	109	126	114	114	37	35	44	32	35	33	36	1.5	0	7	1	5	2.0	4.7	4
6	MD931046-51		93	110	97	93	115	106	102	38	41	42	30	38	35	37	3.5	3	9	6	8	8.0	5.3	6
7	MD931060-15		94	110	98	98	116	106	104	41	39	38	31	37	33	37	4.0	0	9	3	7	8.3	5.0	6
8	NB018187		95	115	104	107	121	112	109	37	37	41	30	36	32	36	2.5	0	9	7	7	7.3	4.7	5
9	NB03429		100	117	105	108	124	114	111	37	36	38	30	35	33	35	2.5	0	8	2	8	6.0	4.0	5
10	NB03437		102	119	108	108	127	113	113	38	39	42	33	36	34	37	6.0	0	7	2	7	7.7	7.7	6
11	VA04B-180		95	112	101	98	117	107	105	35	34	39	26	30	31	33	6.5	0	8	0	7	4.0	5.0	5
12	Doyce	hulless	93	110	94	94	117	103	102	36	36	38	28	33	32	34	7.5	0	8	.	5	8.3	7.7	6
13	VA01H-68	hulless	94	107	94	90	113	102	100	35	35	40	31	33	32	34	6.5	0	7	.	0	5.0	6.7	4
14	VA03H-61	hulless	102	113	106	104	120	109	109	37	34	39	30	32	32	34	0.5	0	8	.	5	3.0	6.3	4
15	VA04H-53	hulless	104	114	110	106	123	110	111	37	38	42	31	36	33	36	5.5	7	7	.	6	9.0	5.3	7
16	VA06H-60	hulless	92	107	98	90	113	103	101	36	34	36	27	33	33	33	7.5	0	9	.	7	9.0	7.7	7
17	VA06H-79	hulless	102	112	105	104	120	108	109	37	39	41	31	35	33	36	6.0	4	8	.	7	9.0	6.7	7
18	VA06H-121	hulless	92	111	98	94	115	102	102	38	36	37	28	34	31	34	7.0	0	9	.	7	9.0	7.3	7
		Mean	98	112	103	101	119	108	107	37	37	40	30	35	33	35	4.6	1	8	2	6	6.8	6.0	5
		CV (%)		1	2	2	1	1	2		3	6	6	6	5	4	35.1		10			12.0	20.2	32
		LSD (0.05)		3	4	4	1	1	2		2	5	3	3	2	2	3.4		2			1.1	1.7	2
		R^2							0.96							0.88								0.72

* 6-location mean does not include Salisbury, NC location

DISEASE AND OTHER TRAITS

		Net Blotch			Spot Blotch	Leaf Rust	Stripe Rust* Mt. Vernon, WA				Powdery Mildew	Scald	Winter Stress				Winter Survival	Growth Habit
		B'burg	*Warsaw*	*2-loc*	*S'bury*	*B'burg*	24-Apr-08		5-Jun-08		*Raleigh*	*Mt. Vernon*	*L. Springs*	*Raleigh*	*W'ville*	*2-loc*	*L. Springs*	*Raleigh*
		VA	*VA*	*mean*	*NC*	*VA*	Stem elong.		Heading		*NC*	*WA*	*NC*	*NC*	*NC*	*mean*	*NC*	*NC*
Entry	*Designation*	0-9	0-9	0-9	0-9	0-9	IT	%	IT	%	0-9	%	0-9	0-9	0-9	0-9	%	0-9
1	Wysor	3.3	2.7	3.0	7	6.3	8	20	8	100	0		2	0	1	1	100	6
2	Perkins	3.0	2.3	2.7	7	5.0	8	10	8	100	4	20	1	0	1	1	100	8
3	Thoroughbred	4.3	1.3	2.8	6	5.3	8	30	8	100	7		5	3	2	4	100	7
4	Cargill 26	5.0	3.0	4.0	4	3.3	8	5	8	100	0	20	6	5	3	6	100	6
5	Cargill 27	5.3	4.0	4.7	8	2.7	8	10	8	100	0		6	0	2	3	100	6
6	MD931046-51	5.7	2.0	3.8	2	2.7	8	10	8	100	7		5	1	.	3	100	4
7	MD931060-15	4.3	1.0	2.7	5	3.7	8	20	8	100	9		6	1	.	4	90	6
8	NB018187	4.0	1.7	2.8	6	4.3	8	40	8	100	9		1	0	2	1	100	8
9	NB03429	2.7	1.3	2.0	5	6.3	8	10	8	100	9		1	0	1	1	100	9
10	NB03437	4.0	1.0	2.5	5	4.7	8	20	8	100	2		2	0	1	1	100	9
11	VA04B-180	2.0	1.0	1.5	6	5.7	8	10	8	100	4		1	0	1	1	100	9
12	Doyce	5.7	5.3	5.5	.	1.0	8	20	8	100	4	30	6	1	6	4	100	2
13	VA01H-68	5.7	4.3	5.0	.	4.0	8	30	8	100	2		3	2	3	3	100	6
14	VA03H-61	5.0	1.3	3.2	.	4.7	8	20	8	100	5		2	1	1	2	100	9
15	VA04H-53	2.7	1.7	2.2	.	8.0	8	30	8	100	7		2	0	2	1	100	8
16	VA06H-60	3.0	3.3	3.2	.	7.3	8	10	8	100	9		6	3	.	5	100	3
17	VA06H-79	2.3	1.3	1.8	.	8.0	8	30	8	100	4		4	0	.	2	100	6
18	VA06H-121	5.0	2.7	3.8	.	5.3	8	10	8	100	3		5	4	3	4	100	3
	Hundred (susceptible check)						8	5	8	100								
	Mean	4.1	2.3	3.2	6	4.9	8	18	8	100	4		4	1	2	2	99	6
	CV (%)	16.0	29.7			15.4					34							
	LSD (0.05)	0.9	0.9			1.0					3							

* Infection Type (IT) was recorded based on the 0-9 scale with ITs 8 and 9 combined as 8 (the most susceptible reaction) in field data. Generally, IT 0-3 are considered resistant, 4-6 intermediate, and 7-9 susceptible.

Growth habit (mid-winter rating): 0=very upright, 9=very prostrate

Winter stress (mid-winter rating of damaged leaf tissue): 0=none, 9=severe.

			FLOUR PROTEIN PERCENT*				FLOUR β- GLUCAN PERCENT*				FLOUR LIPID PERCENT*			
			S'bury	*Raleigh*	*B'burg*	*3-location*	*S'bury*	*Raleigh*	*B'burg*	*3-location*	*S'bury*	*Raleigh*	*B'burg*	*3-location*
Entry	*Designation*	*Traits*	*MD*	*NC*	*VA*	*mean*	*MD*	*NC*	*VA*	*mean*	*MD*	*NC*	*VA*	*mean*
1	Wysor		11.929	13.333	12.000	12.421	5.18	5.96	5.31	5.48	1.624	1.981	1.615	1.740
2	Perkins		10.610	13.651	12.891	12.384	5.64	5.28	4.88	5.27	2.136	1.725	1.921	1.927
3	Thoroughbred		10.487	12.943	11.475	11.635	4.62	4.97	3.46	4.35	1.512	1.340	1.370	1.407
4	Cargill 26		9.615	12.744	10.054	10.804	4.38	4.63	3.11	4.04	1.139	1.072	0.930	1.047
5	Cargill 27	2-row	11.244	15.543	11.713	12.833	3.86	3.87	3.60	3.78	1.022	1.473	0.961	1.152
6	MD931046-51		10.683	15.082	12.025	12.597	5.33	3.82	4.40	4.52	1.671	1.572	1.608	1.617
7	MD931060-15		11.383	14.721	12.080	12.728	5.40	4.59	4.16	4.72	1.529	1.865	2.125	1.840
8	NB018187		11.154	13.151	11.831	12.045	4.15	4.16	4.93	4.41	1.649	1.544	1.606	1.599
9	NB03429		10.152	13.830	12.680	12.221	3.96	4.61	3.98	4.18	1.519	1.241	1.983	1.581
10	NB03437		9.714	13.662	11.272	11.550	4.77	4.53	4.79	4.70	1.104	1.839	0.721	1.222
11	VA04B-180		10.278	12.660	11.874	11.604	5.08	5.13	5.79	5.33	2.037	1.660	1.739	1.812
12	Doyce	hulless	9.968	13.468	11.186	11.541	4.42	4.92	3.31	4.21	1.720	0.976	2.043	1.580
13	VA01H-68	hulless	13.565	15.308	13.808	14.227	3.88	4.15	3.08	3.71	1.473	1.915	2.021	1.803
14	VA03H-61	hulless	13.255	14.923	13.522	13.900	5.41	4.55	4.26	4.74	2.225	2.442	2.354	2.340
15	VA04H-53	hulless	11.787	14.530	10.855	12.391	4.46	4.64	3.49	4.19	1.700	1.696	1.551	1.649
16	VA06H-60	hulless	10.114	13.477	10.523	11.371	3.68	5.53	4.73	4.65	0.829	0.898	1.106	0.944
17	VA06H-79	hulless	10.575	15.045	12.019	12.546	4.42	5.64	3.19	4.42	1.886	1.022	1.785	1.564
18	VA06H-121	hulless	9.297	12.943	11.479	11.240	4.85	5.49	3.57	4.64	1.720	0.788	1.769	1.426
		Mean	10.878	13.945	11.849	12.224	4.64	4.80	4.11	4.52	1.58	1.50	1.62	1.57
		CV (%)				5.430				12.96				19.95
		LSD (0.05)				1.101				0.97				0.52
		R^2				0.895				0.59				0.64

* Hulled entries were pearled (hulls removed) for analysis