UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

and

Cooperating State Agricultural Experiment Stations

2003-2004

UNIFORM WINTER BARLEY YIELD TRIAL

Final Report

Coordinator: David Marshall

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 Yield Trial (UWBYT) is to evaluate winter-habit (fall-sown) barley advanced lines for adaptation to those areas in the United States where winter barley is grown commercially. The entries in the 2003-04 UWBYT were submitted by public barley breeding programs in Nebraska, South Carolina, Texas, and Virginia. A total of 25 entries (5 hulled and 20 hulless) were included in the trial. There were twelve testing locations for the 2002-03 UWBYT, with one in Georgia (Griffin), Maryland (Queenstown), Nebraska (Lincoln), and Texas (Prosper); and two in North Carolina (Kinston and Laurel Springs); South Carolina (Clemson and Florence), and Virginia (Blacksburg and Warsaw).

Griffin, GA - Plot size-50ft^2; Reps-3; Planting Date-28 Oct 03; Harvest Date-2 June 04; Cooperators-J.W.Johnson, D.Bland, and S.Sutton.

Queenstown, MD - Severe winterkill resulted in uneven stands; Plot size-48ft^2 Reps-2; Planting Date-13 Oct 03; Harvest Date-8 June 04; Cooperators-J.Costa and A.Cooper.

Lincoln, NE - Plot size-48ft2; Cooperator-P.S.Baenziger.

Kinston, NC - No disease, insect pressure or winterkill. Plot size-55ft^2; Reps-3; Planting Date-24 Oct 03; Harvest Date-7 June 04; Cooperators-D.Marshall and P.Murphy.

Laurel Springs, NC - Mountain location (elevation 3000ft); snow cover most of the winter; no disease or insect pressure; no winterkill.. Plot size-55ft^2; Reps-3; Planting Date-21 Sept 03; Harvest Date-15 July 04; Cooperators-D.Marshall and P.Murphy.

Clemson, SC - Fertilized 30-83-40 at planting, topdressed 65 N. Cool winter, dry March, little disease pressure Plot size-35ft^2; Reps-3; Planting Date-3 Nov 03; Harvest Date-28 May 04; Cooperator-B.Edge.

Florence, SC - Fertilized 30-98-73 plus sulfur at planting, topdressed 65 N. Cool winter, dry March, little disease pressure Plot size-35ft^2; Reps-3; Planting Date-25 Nov 03; Harvest Date-2 June 04; Cooperators-B.Edge.

Prosper, TX - The plots were planted dry, and had heavy rain for two weeks, The stands were reduced and plant height was also reduced. Plot size-70ft2; Reps-3; Planting Date-17 Oct 03; Harvest Date-30 May 04; Cooperator-R.Sutton.

Blacksburg, VA - Fertilizer: 25+60+100 on 10/7/03, 60+0+0 on 4/7/04. Other: 0.6 oz/A Harmony Extra on 4/7/04. Plot size-42.8ft2; Reps-3; Planting Date-9 Oct 03; Harvest Date-10 June 04; Cooperator-C.Griffey

Warsaw, VA - Fertilizer: 30+80+100+5S on 10/13/03, 25 lb/A 15-0-0 on 12/20/03 and 2/23/04, 40 lb/A 24-0-0-3S on 3/30/04. Other: 0.4 oz/A Finesse on 12/09/03, 2.56 oz/A Warrior T on 5/11/04. Plot size-45ft2; Reps-3; Planting Date-17 Oct 03; Harvest Date-8 June 04; Cooperator-C.Griffey

USDA/ARS Uniform Winter Barley Yield Trial 2003-04
Entries

Entry#	*Designation*	*Pedigree*	*Source*	*Yrs in Trial*
1	Wysor	Composite cross/4/Harrison/3/Cebada Capa/Wong//awnleted Hudson (=PI501526; VA83-42-63)	NC	16
2	Perkins	Nebar selection/Dundy (=PI536646; NE851808)	NC	6
3	Price	Callao/SC830366 (=VA96-44-321)	NC	1
4	Doyce	Sangregado"S"//VA90-42-56/VA90-42-22/3/Pamunkey/4/SC890585 (=VA00H-137)	NC	1
5	NE98919	NE86841/Sussex 9024//NE83826	NE	1
6	NE98934	VA83-42-57/Perkins	NE	1
7	SC010440	VA75-4-24/SC793556//CI*ho* 2457 (hulless)	SC	2
8	SC010441	VA75-4-24/SC793556//CI*ho* 2457 (hulless)	SC	2
9	SC010455	VA75-4-24/SC793556//CI*ho* 2457 (hulless)	SC	2
10	SC010456	VA75-4-24/SC793556//CI*ho* 2457 (hulless)	SC	2
11	SC010475	VA75-4-24/SC793556//CI*ho* 2457 (hulless)	SC	2
12	SC010476	VA75-4-24/SC793556//CI*ho* 2457 (hulless)	SC	2
13	TX00D633	TAMBAR 500/Clayton//TAMBAR402/PI176071 (hulless)	TX	2
14	TX00D634	TAMBAR 500/Clayton//TAMBAR402/PI176071 (hulless)	TX	2
15	TX00D637	TAMBAR 500/Clayton//TAMBAR402/PI176071 (hulless)	TX	2
16	TX00D639	TAMBAR 500/Clayton//TAMBAR402/PI176071 (hulless)	TX	2
17	TX00D664	TAMBAR 402*2/CI5823//PI190762 (hulless)	TX	2
18	TX00D665	TAMBAR 402*2/CI5823//PI190762 (hulless)	TX	2
19	VA00H-65	SC890585/VA93-44-316 (hulless)	VA	2
20	VA01H-5	Sangregado"S"//VA90-42-56/VA90-42-22/3/Pamunkey/4/SC890585 (hulless)	VA	2
21	VA01H-122	VA90-41-10/VA90-42-9//CMB84A-1664/3/VA92-42-46/4/SC871077/5/SC871077/VA92-42-46	VA	2
22	VA00H-88	SC890585/93-44-316 (hulless)	VA	1
23	VA01H-68	SC860974/94-42-13 (hulless)	VA	1
24	VA01H-124	90-41-10/90-42-9//CMB84A-1664/3/92-42-46/4/SC871077/5/SC871077/4/90-41-10/90-42-9//CM	VA	1
25	VA00H-125	90-41-10/90-42-9//CMB84A-1664/3/92-42-46/4/SC871077/5/SC871077/4/90-41-10/90-42-9//CM	VA	1

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GRAIN YIELD

		Griffin,GA		Queenstown,MD		Lincoln,NE		Kinston,NC		LrlSpr,NC		Clemson,SC		Florence,SC	
Entry#	Designation	bu/ac	rank	bu/ac	rank	bu/ac	rank	bu/ac	rank	bu/ac	rank	bu/ac	rank	bu/ac	rank
1	Wysor	54.1*	21	68.5	8	91.8	6	102.6	3	82.6	3	120.6	1	87.8	3
2	Perkins	45.0	23	61.5	11	119.9	1	89.4	5	50.7	22	72.2	19	83.8	4
3	Price	80.4*	3	96.4	1	93.0	5	103.4	2	91.9	1	102.4	3	98.7	1
4	Doyce	84.0	1	84.2	3	89.9	7	67.5	22	67.0	8	95.6	4	77.6	5
5	NE98919	24.3*	24	77.5	5	75.4	10	112.4	1	87.3	2	111.9	2	75.2	8
6	NE98934	75.6	5	91.3	2	113.0	2	96.1	4	63.6	14	83.5	8	92.1	2
7	SC010440	62.8	16	32.0	24	60.9	18	76.5	17	70.9	6	80.0	14	64.2	20
8	SC010441	62.6	17	50.6	16	78.7	9	78.6	12	58.8	18	69.5	21	76.6	6
9	SC010455	72.0	9	50.7	15	67.0	13	68.1	21	65.7	10	81.2	11	64.2	19
10	SC010456	72.6	8	41.1	18	59.3	20	77.8	13	66.9	9	77.4	15	64.7	17
11	SC010475	62.3	19	38.8	19	56.9	21	80.1	11	67.7	7	70.5	20	68.8	15
12	SC010476	63.9	15	38.1	20	75.2	11	69.6	20	51.3	21	64.0	24	72.8	10
13	TX00D633	62.5	18	32.5	23	60.2	19	76.8	15	48.8	23	84.8	7	66.4	16
14	TX00D634	58.8	20	37.4	21	61.3	16	72.1	18	34.1	25	75.9	16	60.1	24
15	TX00D637	69.5	11	51.0	14	61.1	17	81.2	9	43.8	24	82.8	9	69.6	14
16	TX00D639	22.1*	25	26.9	25	55.4	23	55.2	24	53.7	20	60.5	25	73.8	9
17	TX00D664	75.5*	6	48.2	17	54.2	25	82.3	8	64.4	13	69.1	22	60.0	25
18	TX00D665	66.8*	13	36.9	22	62.3	15	71.7	19	63.1	15	74.3	17	63.6	21
19	VA00H-65	74.2	7	52.8	13	85.1	8	84.7	7	77.6	4	80.5	13	71.9	11
20	VA01H-5	70.1	10	77.9	4	96.9	3	76.7	16	65.6	11	91.1	5	71.5	12
21	VA01H-122	47.1	22	64.2	10	63.1	14	63.3	23	59.6	16	66.0	23	62.7	22
22	VA00H-88	67.1	12	67.7	9	95.8	4	77.7	14	72.4	5	81.8	10	71.0	13
23	VA01H-68	65.7	14	71.4	6	56.0	22	51.8	25	59.6	17	72.5	18	75.8	7
24	VA01H-124	78.6	4	57.6	12	67.3	12	87.5	6	55.7	19	85.4	6	62.7	23
25	VA00H-125	80.5	2	69.1	7	54.9	24	80.8	10	65.4	12	80.7	12	64.5	18
	Mean	68.9		58.0		74.2		79.3		63.5		81.4		72.0	
	LSD (5%)	24.8		6.2		18.8		8.1		14.2		13.0		14.4	
	CV (%)	26.1		15.5		15.4		13.4		19.0		9.7		12.2	

* Denotes bird damage; Wysor (95%), Price (20%), NE98919 (95%), TX00D639 (95%); TX00D664 (10%), and TX00D665 (10%).

GRAIN YELD

Entry#	Designation	Prosper,TX bu/ac	rank	Warsaw,VA bu/ac	rank	Blacksburg,VA bu/ac	rank	9-location** overall mean bu/ac	rank	9-location** hulled mean bu/ac	rank	9-location** hulless mean bu/ac	rank
1	Wysor	44.9	6	96.6	4	95.8	2	87.9	3	87.9	3	—	—
2	Perkins	52.7	3	88.2	5	55.4	12	74.9	7	74.9	5	—	—
3	Price	74.7	2	117.0	1	99.2	1	97.4	1	97.4	1	—	—
4	Doyce	36.4	17	87.6	6	79.7	5	76.2	5	—	—	76.2	1
5	NE98919	41.9	12	107.5	3	84.9	4	86.0	4	86.0	4	—	—
6	NE98934	75.5	1	113.4	2	88.6	3	90.8	2	90.8	2	—	—
7	SC010440	37.1	16	68.6	17	52.6	18	60.3	18	—	—	60.3	12
8	SC010441	47.5	4	78.7	9	53.2	16	65.8	10	—	—	65.8	5
9	SC010455	32.5	21	67.1	21	53.4	15	61.1	15	—	—	61.1	11
10	SC010456	44.4	7	69.2	16	50.1	21	61.2	16	—	—	61.2	10
11	SC010475	35.3	19	68.4	18	53.0	17	59.9	19	—	—	59.9	14
12	SC010476	43.6	8	64.6	23	56.0	10	59.5	20	—	—	59.5	15
13	TX00D633	42.1	11	73.1	13	47.2	23	59.1	22	—	—	59.1	16
14	TX00D634	41.8	13	65.1	22	46.9	24	55.0	24	—	—	55.0	19
15	TX00D637	43.5	9	76.8	10	51.3	20	62.3	14	—	—	62.3	9
16	TX00D639	24.5	25	42.0	25	35.9	25	47.5	25	—	—	47.5	20
17	TX00D664	46.0	5	67.2	20	50.0	22	60.2	17	—	—	60.2	13
18	TX00D665	34.2	20	67.4	19	56.6	9	58.9	21	—	—	58.9	17
19	VA00H-65	40.0	14	70.8	14	55.7	11	68.8	9	—	—	68.8	4
20	VA01H-5	38.1	15	80.2	8	72.0	6	74.4	6	—	—	74.4	2
21	VA01H-122	25.0	24	54.8	24	52.3	19	56.8	23	—	—	56.8	18
22	VA00H-88	36.3	18	69.5	15	61.4	7	70.4	8	—	—	70.4	3
23	VA01H-68	43.5	10	85.7	7	60.1	8	64.0	13	—	—	64.0	6
24	VA01H-124	25.9	22	75.4	12	55.0	13	63.6	12	—	—	63.6	7
25	VA00H-125	25.5	23	76.6	11	53.9	14	63.5	11	—	—	63.5	8
	Mean	41.3		77.3		60.8		67.4		87.4		62.4	
	LSD (5%)	13.8		7.0		9.4		9.3		13.1		8.2	
	CV (%)	20.4		6.6		11.3		14.8		15.6		14.1	

**Griffin, GA not included in yield average due to bird damage.

TEST WEIGHT

Entry#	Designation	Griffin GA lb/bu	Qtown MD lb/bu	Kinston NC lb/bu	Lrl Sp NC lb/bu	Clemson SC lb/bu	Florence SC lb/bu	Prosper TX lb/bu	Warsaw VA lb/bu	Bksburg NC lb/bu	9-location overall mean lb/bu	rank	9-location hulled mean lb/bu	rank	9-location hulless mean lb/bu	rank
1	Wysor	48	43.9	48.9	46.7	46.3	45.7	48.0	43.7	46.1	46.4	24	46.4	4	—	—
2	Perkins	51	48.9	51.7	48.5	50.6	51.2	50.8	43.3	46.4	49.2	22	49.2	2	—	—
3	Price	51	48.8	50.8	51.3	47.8	49.3	50.5	47.7	50.9	49.8	21	49.8	1	—	—
4	Doyce	58	56.4	53.7	52.3	58.6	56.8	57.9	55.6	54.8	56.0	18	—	—	56.0	18
5	NE98919	nd*	43.0	49.6	45.7	43.5	43.2	43.0	40.9	42.2	43.8	25	43.8	5	—	—
6	NE98934	51	49.2	48.7	48.0	49.3	49.1	50.1	45.2	48.2	48.7	23	48.7	3	—	—
7	SC010440	54	55.4	56.1	55.5	59.3	56.2	58.2	57.8	55.1	56.4	15	—	—	56.4	15
8	SC010441	56	58.6	55.9	55.3	59.1	56.8	57.7	56.9	54.3	56.7	12	—	—	56.7	12
9	SC010455	54	57.5	55.2	55.9	58.4	54.7	59.0	56.8	55.2	56.3	16	—	—	56.3	16
10	SC010456	55	57.9	55.1	56.1	59.5	55.1	58.6	57.7	54.7	56.6	14	—	—	56.6	14
11	SC010475	55	57.5	56.5	56.0	59.1	56.4	58.4	57.8	55.8	56.9	8	—	—	56.9	8
12	SC010476	55	57.1	56.2	55.1	60.1	56.7	58.7	58.0	55.7	56.9	9	—	—	56.9	9
13	TX00D633	57	56.4	55.3	55.7	60.0	56.2	59.3	57.5	54.8	56.9	10	—	—	56.9	10
14	TX00D634	56	57.3	56.1	55.2	59.3	56.6	59.7	57.3	55.4	57.0	6	—	—	57.0	6
15	TX00D637	57	58.6	56.6	54.5	60.5	56.3	59.0	57.5	55.1	57.2	2	—	—	57.2	2
16	TX00D639	nd	55.9	53.9	56.4	58.6	56.2	52.8	56.1	50.9	55.0	20	—	—	55.0	20
17	TX00D664	57	57.3	56.6	56.6	60.1	55.8	59.0	57.1	55.7	57.2	3	—	—	57.2	3
18	TX00D665	57	57.3	55.7	57.2	59.1	56.5	58.4	58.1	55.5	57.2	4	—	—	57.2	4
19	VA00H-65	56	58.0	56.6	54.1	58.3	56.3	58.1	57.1	55.5	56.7	13	—	—	56.7	13
20	VA01H-5	55	57.7	54.9	54.4	58.2	57.0	59.1	55.9	54.7	56.3	17	—	—	56.3	17
21	VA01H-122	54	59.4	56.5	57.6	58.4	58.1	59.0	57.8	55.2	57.3	1	—	—	57.3	1
22	VA00H-88	54	59.4	56.1	51.9	59.1	55.0	57.9	56.5	54.1	56.0	19	—	—	56.0	19
23	VA01H-68	57	58.4	54.7	55.4	59.0	56.9	59.2	56.9	56.2	57.1	5	—	—	57.1	5
24	VA01H-124	56	57.6	55.8	54.2	59.4	55.9	58.5	58.1	55.9	56.8	11	—	—	56.8	11
25	VA00H-125	56	59.1	56.5	53.9	59.7	55.7	58.9	58.2	55.4	57.0	7	—	—	57.0	7
	Mean	54.8	55.4	54.5	53.7	56.8	54.5	56.4	54.6	53.4	54.9		47.6		56.7	
	LSD (5%)	—	2.2	1.4	2.9	1.4	1.4	—	0.8	0.9	1.6		2.5		0.9	
	CV (%)	—	2.1	1.6	2.8	1.2	1.2	—	1.1	1.3	2.6		2.9		1.7	

*nd = no data reported.

HEADING DATE (JULIAN)

Entry	Designation	Griffin GA	Q'town MD	Lincoln NE	Kinston NC	Clemson SC	Warsaw VA	Bksburg VA	7-location overall mean	rank	7-location hulled mean	rank	7-location hulless mean	rank
1	Wysor	91	120	126	102.0	99.7	112.7	117.3	109.8	21	109.8	3	—	—
2	Perkins	99	128	130	108.0	108.0	120.0	127.0	117.1	25	117.1	5	—	—
3	Price	88	115	127	99.5	97.3	111.0	115.7	107.6	6	107.6	1	—	—
4	Doyce	89	116	127	95.0	98.3	113.0	116.7	107.9	10	—	—	107.9	9
5	NE98919	92	118	125	102.0	99.0	112.0	116.7	109.2	18	109.2	2	—	—
6	NE98934	101	125	128	108.5	105.0	118.0	124.3	115.7	24	115.7	4	—	—
7	SC010440	90	124	127	98.5	98.7	113.0	118.0	109.9	22	—	—	109.9	19
8	SC010441	90	120	126	96.5	99.0	112.7	114.7	108.4	13	—	—	108.4	12
9	SC010455	88	117	127	95.0	98.3	112.3	116.3	107.7	8	—	—	107.7	7
10	SC010456	88	118	126	96.5	98.3	112.0	116.3	107.9	9	—	—	107.9	8
11	SC010475	89	117	126	94.5	98.0	112.0	116.0	107.5	3	—	—	107.5	3
12	SC010476	89	118	126	94.5	98.3	111.7	116.0	107.6	5	—	—	107.6	5
13	TX00D633	89	122	127	98.5	98.3	113.0	119.3	109.6	19	—	—	109.6	17
14	TX00D634	88	122	126	97.5	99.0	112.7	118.3	109.1	16	—	—	109.1	15
15	TX00D637	88	118	126	95.5	98.3	111.7	116.3	107.7	7	—	—	107.7	6
16	TX00D639	93	125	127	103.5	105.0	117.7	122.7	113.4	23	—	—	113.4	20
17	TX00D664	89	119	126	96.5	98.0	112.0	116.7	108.2	12	—	—	108.2	11
18	TX00D665	88	118	126	94.0	97.3	111.0	116.0	107.2	1	—	—	107.2	1
19	VA00H-65	89	119	127	97.5	99.3	113.0	116.7	108.8	15	—	—	108.8	14
20	VA01H-5	89	116	127	98.5	99.3	113.3	117.3	108.6	14	—	—	108.6	13
21	VA01H-122	91	117	127	99.5	102.0	113.7	118.7	109.8	20	—	—	109.8	18
22	VA00H-88	90	118	127	98.5	100.0	113.3	117.7	109.2	17	—	—	109.2	16
23	VA01H-68	89	117	127	97.5	98.3	112.0	116.0	108.1	11	—	—	108.1	10
24	VA01H-124	89	116	126	97.0	97.7	111.7	116.0	107.6	4	—	—	107.6	4
25	VA00H-125	89	115	126	97.0	97.7	111.3	116.0	107.4	2	—	—	107.4	2
	Mean	90.2	119.0	126.7	98.5	99.5	113.1	117.7	109.2		111.9		108.6	
	LSD (5%)	—	2.1	1.0	1.3	1.7	0.3	1.5	1.6		1.8		1.2	
	CV (%)	—	5.4	0.5	2.7	1.0	0.5	0.9	1.3		1.4		1.1	

*no data reported.

HEIGHT

Entry	Designation	Q'town MD in.	Lincoln NE in.	Clemson SC in.	Florence SC in.	Prosper TX in.	Warsaw VA in.	Bksburg VA in.	7-location overall mean in.	rank	7-location hulled mean in.	rank	7-location hulless mean in.	rank
1	Wysor	37.0	29.0	33.3	33.5	33	35.3	35.0	33.7	25	33.7	5	—	—
2	Perkins	35.5	33.3	28.7	29.0	28	30.7	31.7	31.0	20	31.0	2	—	—
3	Price	28.0	28.7	27.0	26.0	26	25.0	28.3	27.0	3	27.0	1	—	—
4	Doyce	33.0	27.7	28.3	26.5	27	29.3	30.3	28.9	14	—	—	28.9	13
5	NE98919	38.0	31.0	33.0	30.5	30	35.3	33.0	33.0	24	33.0	4	—	—
6	NE98934	38.5	31.7	31.3	28.5	28	32.3	34.0	32.0	23	32.0	3	—	—
7	SC010440	24.5	29.7	29.0	25.0	26	29.0	28.0	27.3	5	—	—	27.3	4
8	SC010441	32.0	30.0	29.7	30.0	26	33.7	32.3	30.5	18	—	—	30.5	17
9	SC010455	29.5	30.3	29.7	26.0	25	28.7	29.3	28.3	9	—	—	28.3	8
10	SC010456	28.0	29.0	28.7	26.0	24	28.7	28.3	27.5	6	—	—	27.5	5
11	SC010475	28.5	28.3	26.7	28.0	27	30.3	30.0	28.4	10	—	—	28.4	9
12	SC010476	27.5	29.3	28.7	28.0	28	29.3	31.3	28.9	15	—	—	28.9	14
13	TX00D633	28.0	29.3	29.7	26.5	29	30.0	29.0	28.8	12	—	—	28.8	11
14	TX00D634	29.0	30.7	32.7	28.5	31	32.7	31.3	30.8	19	—	—	30.8	18
15	TX00D637	29.5	31.0	29.0	28.0	26	30.7	30.3	29.2	16	—	—	29.2	15
16	TX00D639	32.5	30.7	34.3	35.5	21	34.7	33.3	31.7	22	—	—	31.7	20
17	TX00D664	29.0	29.7	26.7	27.5	24	30.3	29.3	28.1	8	—	—	28.1	7
18	TX00D665	26.0	28.3	28.0	26.0	21	29.3	31.0	27.1	4	—	—	27.1	3
19	VA00H-65	27.0	29.3	30.7	25.0	24	28.0	29.3	27.6	7	—	—	27.6	6
20	VA01H-5	34.5	27.3	29.7	28.0	25	27.7	29.3	28.8	13	—	—	28.8	12
21	VA01H-122	34.0	28.7	31.7	30.0	30	31.0	33.0	31.2	21	—	—	31.2	19
22	VA00H-88	32.0	29.7	29.0	27.0	27	27.0	29.0	28.7	11	—	—	28.7	10
23	VA01H-68	31.5	28.7	29.0	30.5	28	31.3	29.7	29.8	17	—	—	29.8	16
24	VA01H-124	22.5	27.0	24.0	22.5	20	24.7	25.3	23.7	1	—	—	23.7	1
25	VA00H-125	23.0	25.0	24.7	23.5	21	24.3	24.0	25.6	2	—	—	25.6	2
	Mean	30.3	29.3	29.3	27.8	26.2	30.0	30.2	29.0		31.2		28.4	
	LSD (5%)	5.4	3.2	5.0	5.0	—	1.5	2.5	2.0		2.2		1.9	
	CV (%)	8.7	3.4	2.4	2.9	—	3.7	5.9	6.4		6.4		6.2	

LODGING

Entry	Designation	Q'town MD 0-9	LrlSpr NC 0-9	Prosper TX 0-9	3-location overall mean 0-9	rank	3-location hulled mean 0-9	rank	3-location hulless mean 0-9	rank	Warsaw VA* 0.2-10	Bksburg VA 0.2-10	2-location overall mean 0.2-10	rank	2-location hulled mean 0.2-10	rank	2-location hulless mean 0.2-10	rank
1	Wysor	1.0	0.0	0	0.3	2	0.3	1	—	—	3.1	1.7	2.4	12	2.4	2	—	—
2	Perkins	1.0	3.5	2	2.2	11	2.2	4	—	—	3.6	3.2	3.4	14	3.4	4	—	—
3	Price	3.5	2.5	4	3.3	12	3.3	5	—	—	5.0	0.6	2.8	13	2.8	3	—	—
4	Doyce	4.5	0.0	0	1.5	9	—	—	1.5	9	0.9	0.4	0.7	5	—	—	0.7	5
5	NE98919	1.0	0.5	3	1.5	9	1.5	3	—	—	1.7	1.5	1.6	11	1.6	1	—	—
6	NE98934	1.5	2.5	0	1.3	8	1.3	2	—	—	3.3	5.9	4.6	15	4.6	5	—	—
7	SC010440	0.5	0.0	0	0.2	1	—	—	0.2	1	0.5	0.2	0.4	2	—	—	0.4	2
8	SC010441	1.0	0.0	0	0.3	2	—	—	0.3	2	1.5	0.2	0.8	6	—	—	0.8	6
9	SC010455	2.0	0.0	0	0.7	4	—	—	0.7	4	1.5	0.2	0.9	7	—	—	0.9	7
10	SC010456	1.5	0.0	0	0.5	3	—	—	0.5	3	0.5	0.2	0.4	2	—	—	0.4	2
11	SC010475	1.0	0.0	0	0.3	2	—	—	0.3	2	0.7	0.3	0.5	3	—	—	0.5	3
12	SC010476	1.5	0.0	0	0.5	3	—	—	0.5	3	0.4	0.7	0.5	3	—	—	0.5	3
13	TX00D633	1.0	0.0	3	1.3	8	—	—	1.3	8	0.9	0.2	0.5	3	—	—	0.5	3
14	TX00D634	0.5	0.0	2	0.8	5	—	—	0.8	5	1.2	0.2	0.7	5	—	—	0.7	5
15	TX00D637	2.0	0.0	0	0.7	4	—	—	0.7	4	1.4	0.2	0.8	6	—	—	0.8	6
16	TX00D639	1.0	0.5	0	0.5	3	—	—	0.5	3	1.5	0.7	1.1	8	—	—	1.1	8
17	TX00D664	1.0	0.0	0	0.3	2	—	—	0.3	2	0.5	0.2	0.3	1	—	—	0.3	1
18	TX00D665	0.5	0.0	0	0.2	1	—	—	0.2	1	0.4	0.2	0.3	1	—	—	0.3	1
19	VA00H-65	1.0	1.5	0	0.8	5	—	—	0.8	5	1.0	2.0	1.5	10	—	—	1.5	10
20	VA01H-5	4.5	1.5	0	2.0	10	—	—	2.0	10	1.3	1.8	1.6	11	—	—	1.6	11
21	VA01H-122	3.0	0.0	0	1.0	6	—	—	1.0	6	0.7	0.3	0.5	3	—	—	0.5	3
22	VA00H-88	3.5	0.0	0	1.2	7	—	—	1.2	7	0.6	0.3	1.4	9	—	—	1.4	9
23	VA01H-68	1.0	0.0	0	0.3	2	—	—	0.3	2	0.8	0.4	0.6	4	—	—	0.6	4
24	VA01H-124	1.5	0.0	0	0.5	3	—	—	0.5	3	0.9	0.2	0.5	3	—	—	0.5	3
25	VA00H-125	3.0	0.5	0	1.2	7	—	—	1.2	7	1.4	0.2	0.8	6	—	—	0.8	6
	Mean	1.7	0.5	0.6	0.9		1.7		0.7		1.4	0.9	1.1		3.0		0.6	
	LSD (5%)	1.7	2.5	—	1.7		2.3		1.5		0.7	1.2	1.7		4.9		0.5	
	CV (%)	46.7	77.8	—	111.1		69.3		125		36.4	98.9	71.6		60.0		42.2	

* Virginia rating for lodging on Belgian Lodging Scale = Area x Intensity x 0.2. Area is rated on a scale from 1 (plot unaffected) to 10 (entire plot affected). Intensity is rated on a scale from 1 (plants standing upright) to 5 (plants lying flat on the ground).

Entry	Designation	LEAF RUST *Blacksburg* *VA* *0-9*	NET BLOTCH *Blacksburg* *VA* *0-9*	WINTER SURVIVAL *Lincoln* *NE* *%*
1	Wysor	7.3	3.3	100
2	Perkins	5.3	3.7	100
3	Price	3.0	4.0	100
4	Doyce	1.0	5.0	100
5	NE98919	6.3	3.0	100
6	NE98934	5.7	3.3	80
7	SC010440	5.0	5.7	100
8	SC010441	5.7	5.7	100
9	SC010455	5.7	5.3	100
10	SC010456	6.3	5.0	100
11	SC010475	7.3	4.0	100
12	SC010476	5.3	6.7	100
13	TX00D633	5.3	5.7	100
14	TX00D634	5.3	6.3	85
15	TX00D637	6.0	5.7	100
16	TX00D639	6.0	3.7	100
17	TX00D664	6.3	5.7	100
18	TX00D665	7.0	5.3	100
19	VA00H-65	5.7	6.3	100
20	VA01H-5	1.7	5.0	100
21	VA01H-122	1.3	7.0	100
22	VA00H-88	5.3	5.3	100
23	VA01H-68	4.0	4.0	70
24	VA01H-124	6.0	6.3	90
25	VA00H-125	6.0	7.0	100
	Mean	5.2	5.1	97
	LSD (5%)	1.2	1.3	—
	CV (%)	16.3	18.1	—

GRAIN PROTEIN PERCENT*

Entry#	Designation	Kinston NC	Laurel Springs NC	Warsaw VA	3-location overall mean	rank	3-location hulled mean	rank	3-location hulless mean	rank
1	Wysor	12.10	8.88	10.38	10.45	23	10.45	3	—	—
2	Perkins	12.12	10.02	11.18	11.11	20	11.11	2	—	—
3	Price	12.03	10.38	11.23	11.21	17	11.21	1	—	—
4	Doyce	12.27	9.15	10.87	10.76	22	—	—	10.76	20
5	NE98919	12.10	9.00	10.23	10.44	24	10.44	4	—	—
6	NE98934	11.33	9.45	9.85	10.21	25	10.21	5	—	—
7	SC010440	13.49	10.32	12.42	12.08	3	—	—	12.08	3
8	SC010441	13.36	10.00	11.64	11.67	9	—	—	11.67	9
9	SC010455	13.23	10.04	11.43	11.57	12	—	—	11.57	12
10	SC010456	13.36	9.98	11.55	11.63	11	—	—	11.63	11
11	SC010475	13.88	10.31	12.43	12.21	2	—	—	12.21	2
12	SC010476	13.99	9.74	12.37	11.71	6	—	—	11.71	6
13	TX00D633	13.47	10.04	11.61	11.71	7	—	—	11.71	7
14	TX00D634	13.16	10.09	11.86	11.70	8	—	—	11.70	8
15	TX00D637	13.67	9.24	11.31	11.41	14	—	—	11.41	14
16	TX00D639	12.79	10.35	11.87	11.67	10	—	—	11.67	10
17	TX00D664	13.26	10.18	11.87	11.77	5	—	—	11.77	5
18	TX00D665	13.45	10.26	12.10	11.94	4	—	—	11.94	4
19	VA00H-65	12.70	9.78	11.60	11.36	15	—	—	11.36	15
20	VA01H-5	12.59	9.97	10.68	11.08	21	—	—	11.08	19
21	VA01H-122	14.76	11.52	13.44	13.24	1	—	—	13.24	1
22	VA00H-88	12.89	9.32	11.18	11.13	18	—	—	11.13	17
23	VA01H-68	13.11	10.01	11.60	11.57	13	—	—	11.57	13
24	VA01H-124	13.01	8.91	11.47	11.13	19	—	—	11.13	18
25	VA00H-125	13.16	9.62	11.03	11.27	16	—	—	11.27	16
	Mean	13.01	9.86	11.49	11.45		10.69		11.65	
	LSD (5%)	—	—	—	0.61		0.74		0.50	
	CV (%)	—	—	—	3.26		7.29		2.59	

* Hulled entries (#1, 2, 3, 5, and 6) were pearled (hulls removed) for analysis.

β-GLUCAN PERCENT*

Entry#	Designation	Kinston NC	Laurel Springs NC	Warsaw VA	3-location overall mean	rank	3-location hulled mean	rank	3-location hulless mean	rank
1	Wysor	4.72	4.81	4.23	4.59	11	4.59	5	—	—
2	Perkins	5.76	5.02	5.31	5.36	1	5.36	1	—	—
3	Price	4.72	4.53	4.62	4.62	9	4.62	4	—	—
4	Doyce	5.03	4.85	4.57	4.82	6	—	—	4.82	3
5	NE98919	5.22	4.89	5.23	5.11	4	5.11	2	—	—
6	NE98934	4.57	5.41	4.87	4.95	5	4.95	3	—	—
7	SC010440	4.71	4.53	4.16	4.47	13	—	—	4.47	8
8	SC010441	4.66	5.11	4.68	4.82	7	—	—	4.82	4
9	SC010455	4.59	4.11	4.02	4.24	18	—	—	4.24	13
10	SC010456	4.21	4.04	3.81	4.02	19	—	—	4.02	14
11	SC010475	3.84	3.59	3.75	3.73	24	—	—	3.73	19
12	SC010476	3.95	4.61	4.62	4.39	17	—	—	4.39	2
13	TX00D633	5.10	5.27	5.33	5.23	2	—	—	5.23	1
14	TX00D634	4.43	4.76	4.62	4.60	10	—	—	4.60	6
15	TX00D637	5.07	4.92	4.04	4.68	8	—	—	4.68	5
16	TX00D639	4.24	3.91	3.76	3.97	21	—	—	3.97	16
17	TX00D664	3.54	3.72	3.92	3.73	25	—	—	3.73	20
18	TX00D665	3.88	4.03	3.55	3.82	22	—	—	3.82	17
19	VA00H-65	4.82	4.32	4.27	4.47	14	—	—	4.47	9
20	VA01H-5	4.11	3.84	4.06	4.00	20	—	—	4.00	15
21	VA01H-122	3.74	3.59	3.95	3.76	23	—	—	3.76	18
22	VA00H-88	4.33	4.73	4.27	4.44	15	—	—	4.44	10
23	VA01H-68	4.39	4.21	4.72	4.44	16	—	—	4.44	11
24	VA01H-124	4.85	5.62	5.02	5.16	3	—	—	5.16	2
25	VA00H-125	4.82	4.47	4.26	4.52	12	—	—	4.52	7
	Mean	4.53	4.52	4.39	4.48		4.93		4.37	
	LSD (5%)	—	—	—	0.45		0.62		0.45	
	CV (%)	—	—	—	6.16		6.71		6.18	

* Hulled entries (#1, 2, 3, 5, and 6) were pearled (hulls removed) for analysis.

GRAIN LIPID PERCENT*

Entry#	Designation	Kinston NC	Laurel Springs NC	Warsaw VA	3-location overall mean	rank	3-location hulled mean	rank	3-location hulless mean	rank
1	Wysor	1.44	1.72	1.63	1.60	13	1.60	3	—	—
2	Perkins	1.85	1.92	1.93	1.90	1	1.90	1	—	—
3	Price	1.65	1.78	1.83	1.75	6	1.75	2	—	—
4	Doyce	1.75	1.42	1.59	1.59	14	—	—	1.59	11
5	NE98919	1.63	1.50	1.52	1.55	15	1.55	4	—	—
6	NE98934	1.22	1.42	1.14	1.26	24	1.26	5	—	—
7	SC010440	1.43	1.59	1.56	1.53	16	—	—	1.53	12
8	SC010441	1.41	1.20	1.25	1.29	21	—	—	1.29	17
9	SC010455	1.29	1.33	1.22	1.28	22	—	—	1.28	18
10	SC010456	1.92	1.76	1.83	1.84	2	—	—	1.84	1
11	SC010475	1.90	1.75	1.80	1.81	4	—	—	1.81	3
12	SC010476	1.52	1.83	1.74	1.70	8	—	—	1.70	6
13	TX00D633	1.38	1.82	1.73	1.64	9	—	—	1.64	7
14	TX00D634	1.81	1.44	1.59	1.61	11	—	—	1.61	9
15	TX00D637	1.66	1.94	1.87	1.82	3	—	—	1.82	2
16	TX00D639	1.27	1.35	1.32	1.31	20	—	—	1.31	16
17	TX00D664	1.88	1.57	1.68	1.71	7	—	—	1.71	5
18	TX00D665	1.52	1.90	1.89	1.77	5	—	—	1.77	4
19	VA00H-65	1.47	1.83	1.52	1.61	12	—	—	1.61	10
20	VA01H-5	1.42	1.23	1.57	1.41	19	—	—	1.41	15
21	VA01H-122	1.57	1.48	1.51	1.52	18	—	—	1.52	14
22	VA00H-88	1.16	1.21	1.15	1.17	25	—	—	1.17	20
23	VA01H-68	1.93	1.72	1.27	1.64	10	—	—	1.64	8
24	VA01H-124	1.62	1.55	1.42	1.53	17	—	—	1.53	13
25	VA00H-125	1.43	1.27	1.12	1.27	23	—	—	1.27	19
	Mean	1.57	1.58	1.55	1.56		1.61		1.55	
	LSD (5%)	—	—	—	0.25		0.19		0.26	
	CV (%)	—	—	—	9.57		6.32		10.25	

* Hulled entries (#1, 2, 3, 5, and 6) were pearled (hulls removed) for analysis.

FLOUR AND GRAIN CHARACTERISTICS

		Falling Number (seconds)				Hardness Score				Seed Weight (mg)				Seed Diameter (mm)			
Entry#	Designation	Kinston	Laurel Sp	Warsaw	Mean	Kinston	Laurel Sp	Warsaw	Mean	Kinston	Laurel Sp	Warsaw	Mean	Kinston	Laurel Sp	Warsaw	Mean
1	Wysor	551	397	557	502	60	49	56	55	31.38	24.53	24.12	26.68	2.33	1.94	1.87	2.05
2	Perkins	708	405	537	550	72	58	66	65	29.84	22.66	22.34	24.95	2.22	1.87	1.80	1.96
3	Price	534	418	508	487	60	45	59	55	31.64	28.56	28.33	29.51	2.42	2.23	2.21	2.29
4	Doyce	326	424	451	400	54	49	50	51	30.92	26.58	25.99	27.83	2.05	1.81	1.80	1.89
5	NE98919	333	449	500	427	69	63	67	66	31.14	24.62	24.68	26.81	2.24	1.94	1.99	2.06
6	NE98934	584	513	484	527	67	59	62	63	30.10	23.66	24.32	26.03	2.12	1.96	2.09	2.06
7	SC010440	460	415	514	463	60	64	62	62	35.53	26.97	28.40	30.30	2.19	1.81	1.89	1.96
8	SC010441	340	404	517	420	59	57	64	60	35.10	27.93	28.58	30.54	2.14	1.86	1.91	1.97
9	SC010455	336	398	473	402	59	61	57	59	32.25	23.87	25.13	27.08	2.15	1.75	1.78	1.89
10	SC010456	399	415	472	429	54	57	55	55	33.55	27.58	26.62	29.25	2.19	1.90	1.88	1.99
11	SC010475	370	438	500	436	63	60	64	62	32.70	26.99	26.80	28.83	2.12	1.88	1.86	1.95
12	SC010476	401	462	484	449	62	59	56	59	32.87	25.92	25.83	28.21	2.15	1.83	1.81	1.93
13	TX00D633	434	422	548	468	62	57	64	61	33.51	27.04	28.06	29.54	2.09	1.84	1.86	1.93
14	TX00D634	358	392	471	407	65	59	63	62	33.54	28.17	26.65	29.45	2.11	1.92	1.85	1.96
15	TX00D637	357	362	531	417	59	56	51	55	32.87	25.31	26.46	28.21	2.16	1.80	1.83	1.93
16	TX00D639	447	351	435	411	66	59	64	63	30.68	25.41	25.45	27.18	1.99	1.78	1.75	1.84
17	TX00D664	368	414	480	421	64	65	55	61	33.98	26.38	27.73	29.36	2.17	1.84	1.91	1.97
18	TX00D665	376	428	525	443	64	62	67	64	31.36	26.61	27.73	28.57	2.06	1.85	1.89	1.93
19	VA00H-65	397	359	501	419	65	55	58	59	33.15	27.82	27.12	29.36	2.16	1.93	1.87	1.99
20	VA01H-5	399	348	415	387	56	49	46	50	34.19	28.65	26.54	29.79	2.20	1.91	1.83	1.98
21	VA01H-122	426	331	399	385	68	61	62	64	30.36	24.27	24.44	26.36	2.10	1.82	1.79	1.90
22	VA00H-88	378	339	362	360	67	57	54	59	34.41	26.31	28.07	29.60	2.18	1.84	1.90	1.97
23	VA01H-68	203	370	404	326	54	50	54	53	36.47	33.51	32.35	34.11	2.32	2.19	2.15	2.22
24	VA01H-124	337	378	392	369	77	61	66	68	31.04	27.81	26.44	28.43	2.11	1.94	1.80	1.95
25	VA00H-125	301	428	439	389	82	70	63	72	30.05	24.51	24.92	26.49	2.10	1.83	1.88	1.94
	Mean	405	402	476	428	64	58	59	60	32.51	26.47	26.52	28.50	2.16	1.89	1.89	1.98
	LSD (0.5%)	—	—	—	98	—	—	—	6	—	—	—	1.48	—	—	—	0.09
	CV%	—	—	—	14	—	—	—	6	—	—	—	3.17	—	—	—	2.69