

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

in cooperation with

STATE AGRICULTURAL EXPERIMENT STATIONS

Results from the

UNIFORM BARLEY WINTER HARDINESS NURSERY

2005-2006

Compiled by

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This is a joint progress report of an investigation underway in the State Agricultural Experiment Stations and the Agricultural Research Service of the U. S. Department of Agriculture. It contains 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 cooperators, their staff and those with special interest in agricultural research program development.

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CONTENTS

Cooperating Agricultural Experiment Stations and Personnel	Page 2
Digest and Comments	3
Top Ten Ranked Survival Entries	4
Table 1. Entries in the 2005-06 Uniform Barley Winter Hardiness Nursery	5
Table 2. Percent Survival at the Various Stations (sorted by entry no.)	6
Table 3. Percent Survival at the Various Stations (sorted by rank)	7

COOPERATING AGRICULTURAL EXPERIMENT STATIONS AND PERSONNEL

Country	State	AES Location	Personnel
USA	ID	Aberdeen	D.Obert
USA	KS	Hays	T.J.Martin
USA	NC	Laurel Springs	J.P.Murphy
USA	NE	Mead	S.P.Baenziger
USA	OR	Pendleton	P.Hayes, A.Corey, K.Rhinhart
USA	SC	Clemson	B.Edge
USA	SC	Florence	B.Edge
USA	SD	Watertown	A.Ibrahim
USA	TN	Knoxville	D.West
USA	VA	Blacksburg	C.A.Griffey
Russia	Krasnodar	Krasnodar Research Institute	V.Shevtsov
Russia	North Kuban	North -Kuban Station	V.Shevtsov
Canada	Ontario	Nairn	M. Etienne

DIGEST

NUMBER OF TESTS: 13 tests (8 US States, 2 foreign countries)

NUMBER OF ENTRIES: 18

EXPERIMENTAL DESIGN: Single-row, 5-foot plot
Two replications
Randomized complete block

DATA RECORDED: Percent winter survival

DATA NOT USED IN ANALYSIS: Hays, KS 100% Survival.
Pendleton, OR 100% Survival.
Clemson, SC 100% Survival
Florence, SC 100% Survival
Knoxville, TN 100% Survival
North Kuban Station, Russia 0% Survival except for Kenosha

COMMENTS:

US STATE/COUNTRY	LOCATION	COOPERATORS' COMMENTS
ID	Aberdeen	Quite a lot of snow. A slight warm up in early Mar, followed by another cold snap. Very distinct differentiation as seen by scores.
KS	Hays	Very warm and dry winter.
NC	Laurel Springs	Plots are 10-ft long.
NE	Mead	Very little winter injury at Mead, NE this year.
OR	Pendleton	It was a mild winter out here in spectacular Oregon
SC	Clemson and Florence	Mild winter, dry spring.
TN	Knoxville	Very mild winter.
VA	Blacksburg	Planted 10/13/05. Except for Dec, we had a warm dry winter.
Canada	Nairn, Ontario	Planted Oct 28,05: Quite variable between reps- 2nd rep located in an area prone to water sitting.
Russia	North -Kuban Station.	All barley entries were frost killed , only Kenosha survived.
Russia	Krasnodar Res. Institute	Freezing in special chambers, the best cold tolerant entries were Dicktoo, NB99874, NB99875, NB04427, NB03435 and VA04H-53. The released local varieties survived 10-70%.

Top Ten Ranked Survival Entries

Rank	Ent No.	Entry	Pedigree	% Survival (across locations)
1	4	Kenosha (wht ck)	CI 14025	93.9
2	7	NB99874	Robust/Perkins/Dundy	90.0
3	9	NB04427	NE97891/NE94708	86.2
4	10	NB03435	NB92716/PA8649-95	85.1
5	15	VA04H-53(Hulless H-585/95-41-33 (Rep1 Hulless Prel)		82.3
6	8	NB99875	Robust/Perkins?Dundy	82.1
7	5	Dicktoo (ck)	CI 5529	81.1
8	11	NB03439	Perkins/88Ab926	78.2
9	14	VA01H-125 (Hulless)	90-41-10/90-42-9//CMB84A-1664/3/92- 42-46/4/SC871077/5/SC871077/4/90-41- 10/90-42-9//CMB84A-1664/3/Nomini (Rep3 Hulless Adv Warsaw)	78.2
10	3	Kearney (ck)	CI 7580	76.3
LSD (0.05)				21.0

Table 1. Entries in the 2005-2006 Uniform Barley Winter Hardiness Nursery.

Entry No	Entry name	Pedigree	Yrs in Nursery	Contributors
1	Tenn. Winter(ck)	CI 6034	70	
2	Trebi (ck)	CI 936	66	
3	Kearney (ck)	CI 7580	58	
4	Kenosha (wht ck)	CI 14025	31	
5	Dicktoo (ck)	CI 5529	58	
6	Kentucky 1 (ck)	CI 6050	70	
7	NB99874	Robust/Perkins/Dundy	1	Baenziger
8	NB99875	Robust/Perkins?Dundy	1	Baenziger
9	NB04427	NE97891/NE94708	1	Baenziger
10	NB03435	NB92716/PA8649-95	2	Baenziger
11	NB03439	Perkins/88Ab926	2	Baenziger
12	NB018163	NB90710/NB94723	2	Baenziger
13	VA 03H-61(Hulless)	96-41-17/SC872143 (Rep3 Hulless Adv)	1	Griffey
14	VA01H-125 (Hulless)	90-41-10/90-42-9//CMB84A-1664/3/92-42-46/4/SC871077/5/SC871077/4/90-41-10/90-42-9//CMB84A-1664/3/Nomini (Rep3 Hulless Adv Warsaw)	3	Griffey
15	VA04H-53(Hulless)	H-585/95-41-33 (Rep1 Hulless Prel)	1	Griffey
16	VA01H-68(Hulless)	SC860974/94-42-13 (Seed Source: Rep3 Hulless Adv)	3	Grffey
17	VA04B-180(Hulled)	97B-416//96-41-25/96-44-307	1	Grffey
18	VA01H-1(Hulless)	H-585/Pennbar66 (Rep3 Hulless Adv Warsaw)	2	Grffey

Table 2. Winter Barley Survival (%) at Various Stations (sorted by entry number)

Ent. No.	Entry Name	Ranked Means	Means across loc	Nairn Canada	Aberdeen ID	Laurel Springs NC	Mead NE	Krasnodar Russia	Water Town SD	Blacksburg VA
1	Tenn. Winter(ck)	17	59.1	25.0	75.0	100.0	65.0	54.0	0.0	95.0
2	Trebi (ck)	18	28.2	15.0	17.5	70.0	0.0	0.0	0.0	95.0
3	Kearney (ck)	10	76.3	15.5	87.5	95.0	100.0	81.2	60.0	95.0
4	Kenosha (wht ck)	1	93.9	87.5	100.0	100.0	100.0	100.0	70.0	100.0
5	Dicktoo (ck)	7	81.1	50.0	92.5	99.0	100.0	86.2	40.0	100.0
6	Kentucky 1 (ck)	12	74.4	45.0	80.0	99.0	100.0	66.9	30.0	100.0
7	NB99874	2	90.0	77.5	95.0	95.0	100.0	82.4	80.0	100.0
8	NB99875	6	82.1	65.0	95.0	99.0	100.0	85.9	30.0	100.0
9	NB04427	3	86.2	52.5	86.5	100.0	100.0	94.2	70.0	100.0
10	NB03435	4	85.1	65.0	86.0	99.0	100.0	80.5	65.0	100.0
11	NB03439	8	78.2	40.0	81.5	98.0	100.0	62.8	65.0	100.0
12	NB018163	11	75.0	47.5	80.0	99.0	100.0	58.2	40.0	100.0
13	VA 03H-61(Hulless)	13	73.2	60.0	75.0	95.0	100.0	37.4	45.0	100.0
14	VA01H-125 (Hulless)	9	78.2	55.0	92.5	100.0	100.0	39.9	60.0	100.0
15	VA04H-53(Hulless)	5	82.3	55.0	87.5	100.0	100.0	73.3	60.0	100.0
16	VA01H-68(Hulless)	14	73.0	52.5	78.5	98.0	100.0	42.0	40.0	100.0
17	VA04B-180(Hulled)	16	71.6	50.0	62.5	100.0	100.0	23.4	65.0	100.0
18	VA01H-1(Hulless)	15	72.4	40.0	82.5	99.0	100.0	35.5	50.0	100.0
	Average		75.6	49.9	80.8	96.9	92.5	61.3	48.3	99.2
	LSD (0.05)		21.0	29.6	18.6	15.0	3.5	39.5	35.4	*ns
	CV(%)		15.6	28.1	10.9	7.3	1.8	30.5	34.7	3.0

*ns = Not significant

Table 3. Winter Barley Survival (%) at Various Stations (sorted by rank)

Ent. No.	Entry Name	Ranked Means	Means across loc	Nairn Canada	Aberdeen ID	Laurel Springs NC	Mead NE	Krasnodar Russia	Water Town SD	Blacksburg VA
4	Kenosha (wht ck)	1	93.9	87.5	100.0	100.0	100.0	100.0	70.0	100.0
7	NB99874	2	90.0	77.5	95.0	95.0	100.0	82.4	80.0	100.0
9	NB04427	3	86.2	52.5	86.5	100.0	100.0	94.2	70.0	100.0
10	NB03435	4	85.1	65.0	86.0	99.0	100.0	80.5	65.0	100.0
15	VA04H-53(Hulless)	5	82.3	55.0	87.5	100.0	100.0	73.3	60.0	100.0
8	NB99875	6	82.1	65.0	95.0	99.0	100.0	85.9	30.0	100.0
5	Dicktoo (ck)	7	81.1	50.0	92.5	99.0	100.0	86.2	40.0	100.0
11	NB03439	8	78.2	40.0	81.5	98.0	100.0	62.8	65.0	100.0
14	VA01H-125 (Hulless)	9	78.2	55.0	92.5	100.0	100.0	39.9	60.0	100.0
3	Kearney (ck)	10	76.3	15.5	87.5	95.0	100.0	81.2	60.0	95.0
12	NB018163	11	75.0	47.5	80.0	99.0	100.0	58.2	40.0	100.0
6	Kentucky 1 (ck)	12	74.4	45.0	80.0	99.0	100.0	66.9	30.0	100.0
13	VA 03H-61(Hulless)	13	73.2	60.0	75.0	95.0	100.0	37.4	45.0	100.0
16	VA01H-68(Hulless)	14	73.0	52.5	78.5	98.0	100.0	42.0	40.0	100.0
18	VA01H-1(Hulless)	15	72.4	40.0	82.5	99.0	100.0	35.5	50.0	100.0
17	VA04B-180(Hulled)	16	71.6	50.0	62.5	100.0	100.0	23.4	65.0	100.0
1	Tenn. Winter(ck)	17	59.1	25.0	75.0	100.0	65.0	54.0	0.0	95.0
2	Trebi (ck)	18	28.2	15.0	17.5	70.0	0.0	0.0	0.0	95.0
Average			75.6	49.9	80.8	96.9	92.5	61.3	48.3	99.2
LSD (0.05)			21.0	29.6	18.6	15.0	3.5	39.5	35.4	*ns
CV(%)			15.6	28.1	10.9	7.3	1.8	30.5	34.7	3.0

*ns = Not significant