

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

in cooperation with

STATE AGRICULTURAL EXPERIMENT STATIONS

Results from the

UNIFORM BARLEY WINTER HARDINESS NURSERY

2004-2005

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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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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	Lincoln	S.P.Baenziger
USA	NE	Mead	S.P.Baenziger
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, T.Pridgen, W.S.Brooks
Russia	Krasnodar	Krasnodar Research Institute	V.Shevtsov, N.Serkin
Russia	North Kuban	North -Kuban Station	V.Shevtsov, N.Serkin
Turkey		Eskisehir	E.Ozdemir
Turkey		Hamidiye	E.Ozdemir

DIGEST

NUMBER OF TESTS: 11 tests (7 US States, 2 foreign countries)

NUMBER OF ENTRIES: 19

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.
Clemson, SC 100% Survival
Florence, SC 100% Survival
Blacksburg, VA 100% Survival
Eskisehir, Turkey

Percent survival of Kenosha lower than that of barley and data given separately in Table 4

COMMENTS:

US STATE/COUNTRY	LOCATION	COOPERATORS' COMMENTS
ID	Aberdeen	Did not plant this year.
KS	Hays	Very mild winter. When there was cold, there was no snow cover
NE	Lincoln	No data. Planted in a bad spot.
NE	Mead	Field was planted long and narrow. There may be a field trend.
SC	Clemson and Florence	Cool spring but relatively mild winter.
Russia	North -Kuban Station.	Temperature on the tillering node was -13 to -14 degree C without snow
Russia	Krasnodar Res. Institute	Freezing in special chambers, the best cold tolerant entries were NE98919, VA01H-68. Tenn winter, Kearny and Kentucky1. Dicktoo was used as source with deep crown node. Varieties Samson, Zimur, Falon were between NE018919 and Kentucky1
Turkey	Eskisehir	Weather was not so cold. Temperature went down to -12 deg C for 2 weeks
Turkey	Hamidiye	Could not get any data.

Top Ten Ranked Survival Entries

Rank	Ent No.	Entry	Pedigree	% Survival (across locations)
1	4	Kenosha (wht ck)	CI 14025	89.2
2	7	NE018199	NE94723/NE93727	74.2
3	8	NE99845	KrasnodarK304/2//NE90701	73.0
4	9	NE98919	NE86841/Sussex9024//NE83826	66.8
5	5	Dicktoo (ck)	CI 5529	64.9
6	6	Kentucky 1 (ck)	CI 6050	63.7
7	10	NB03435	NB92716/PA8649-95	62.3
8	3	Kearney (ck)	CI 7580	62.1
9	12	NB018163	NB90710/NB94723	60.7
10	11	NB03439	Perkins/88Ab926	60.4
LSD (0.05)				23.2

Table 1. Entries in the 2004-2005 Uniform Barley Winter Hardiness Nursery.

Entry No	Entry name	Pedigree	Yrs in Nursery	Contributors
1	Tenn. Winter(ck)	CI 6034	69	
2	Trebi (ck)	CI 936	65	
3	Kearney (ck)	CI 7580	57	
4	Kenosha (wht ck)	CI 14025	30	
5	Dicktoo (ck)	CI 5529	57	
6	Kentucky 1 (ck)	CI 6050	69	
7	NE018199	NE94723/NE93727	2	Baenziger
8	NE99845	KrasnodarK304/2//NE90701	2	Baenziger
9	NE98919	NE86841/Sussex9024//NE83826	3	Baenziger
10	NB03435	NB92716/PA8649-95	1	Baenziger
11	NB03439	Perkins/88Ab926	1	Baenziger
12	NB018163	NB90710/NB94723	1	Baenziger
13	VA00H-65	SC89585/93-44-316:HULLESS	3	Griffey
14	VA01H-125	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	2	Griffey
15	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//CMB84A-1664/3/Nomini	2	Griffey
16	VA01H-68	SC860974/94-42-13	2	Grffey
17	VA00H-99	H-585/93-44-316	1	Grffey
18	VA01H-1	H-585/Pennbar66	1	Grffey
19	VA01H-37	CMB79-54//90-42-56/90-42-22/3/Pamunkey/4/H-585	1	Grffey

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

Ent. No.	Entry Name	Ranked Means	Means across loc	Laurel Springs NC	Mead NE	Krasnodar Russia	North-Kuban Russia	Water Town SD	Knoxville TN
1	Tenn. Winter(ck)	17	43.3	75.0	70.0	10.0	0.0	5.0	100.0
2	Trebi (ck)	19	22.1	40.0	10.0	0.0	0.0	0.0	82.5
3	Kearney (ck)	8	62.1	100.0	80.0	50.0	27.8	15.0	100.0
4	Kenosha (wht ck)	1	89.2	100.0	100.0	100.0	100.0	35.0	100.0
5	Dicktoo (ck)	5	64.9	100.0	100.0	42.5	27.1	20.0	100.0
6	Kentucky 1 (ck)	6	63.7	100.0	90.0	46.5	45.6	0.0	100.0
7	NE018199	2	74.2	100.0	100.0	71.0	59.1	15.0	100.0
8	NE99845	3	73.0	100.0	100.0	56.0	67.2	15.0	100.0
9	NE98919	4	66.8	99.5	100.0	39.5	56.8	5.0	100.0
10	NB03435	7	62.3	100.0	100.0	60.5	8.6	5.0	100.0
11	NB03439	10	60.4	100.0	80.0	40.5	26.9	15.0	100.0
12	NB018163	9	60.7	100.0	100.0	37.0	27.2	0.0	100.0
13	VA00H-65	13	52.8	100.0	100.0	16.5	0.0	0.0	100.0
14	VA01H-125	12	53.6	97.5	90.0	34.0	0.0	0.0	100.0
15	VA01H-124	14	52.8	99.5	90.0	27.0	0.0	0.0	100.0
16	VA01H-68	15	50.7	87.5	75.0	41.5	0.0	0.0	100.0
17	VA00H-99	11	54.2	100.0	90.0	35.0	0.0	0.0	100.0
18	VA01H-1	16	48.6	70.0	90.0	31.5	0.0	0.0	100.0
19	VA01H-37	18	36.3	60.0	65.0	13.0	0.0	0.0	80.0
	Average		57.5	91.0	85.8	39.6	23.5	6.8	98.0
	LSD (0.05)		23.2	*ns	14.3	18.3	5.9	*ns	5.1
	CV(%)		16.5	18.5	8.0	22.1	12.0	159.6	2.5

*ns = Not significant

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

Ent. No.	Entry Name	Ranked Means	Means across loc	Laurel Springs NC	Mead NE	Krasnodar Russia	North-Kuban Russia	Water Town SD	Knoxville TN
4	Kenosha (wht ck)	1	89.2	100.0	100.0	100.0	100.0	35.0	100.0
7	NE018199	2	74.2	100.0	100.0	71.0	59.1	15.0	100.0
8	NE99845	3	73.0	100.0	100.0	56.0	67.2	15.0	100.0
9	NE98919	4	66.8	99.5	100.0	39.5	56.8	5.0	100.0
5	Dicktoo (ck)	5	64.9	100.0	100.0	42.5	27.1	20.0	100.0
6	Kentucky 1 (ck)	6	63.7	100.0	90.0	46.5	45.6	0.0	100.0
10	NB03435	7	62.3	100.0	100.0	60.5	8.6	5.0	100.0
3	Kearney (ck)	8	62.1	100.0	80.0	50.0	27.8	15.0	100.0
12	NB018163	9	60.7	100.0	100.0	37.0	27.2	0.0	100.0
11	NB03439	10	60.4	100.0	80.0	40.5	26.9	15.0	100.0
17	VA00H-99	11	54.2	100.0	90.0	35.0	0.0	0.0	100.0
14	VA01H-125	12	53.6	97.5	90.0	34.0	0.0	0.0	100.0
13	VA00H-65	13	52.8	100.0	100.0	16.5	0.0	0.0	100.0
15	VA01H-124	14	52.8	99.5	90.0	27.0	0.0	0.0	100.0
16	VA01H-68	15	50.7	87.5	75.0	41.5	0.0	0.0	100.0
18	VA01H-1	16	48.6	70.0	90.0	31.5	0.0	0.0	100.0
1	Tenn. Winter(ck)	17	43.3	75.0	70.0	10.0	0.0	5.0	100.0
19	VA01H-37	18	36.3	60.0	65.0	13.0	0.0	0.0	80.0
2	Trebi (ck)	19	22.1	40.0	10.0	0.0	0.0	0.0	82.5
Average			57.5	91.0	85.8	39.6	23.5	6.8	98.0
LSD (0.05)			23.2	*ns	14.3	18.3	5.9	*ns	5.1
CV(%)			16.5	18.5	8.0	22.1	12.0	159.6	2.5

*ns = Not significant

Table 4. Percent survival at Eskisehir, Turkey

Entry No	Entry Name	Survival (%)
1	Tenn. Winter(ck)	21
2	Trebi (ck)	15
3	Kearney (ck)	83
4	Kenosha (wht ck)	23
5	Dicktoo (ck)	45
6	Kentucky 1 (ck)	13
7	NE018199	65
8	NE99845	50
9	NE98919	87
10	NB03435	65
11	NB03439	63
12	NB018163	68
13	VA00H-65	94
14	VA01H-125	93
15	VA01H-124	94
16	VA01H-68	90
17	VA00H-99	91
18	VA01H-1	90
19	VA01H-37	95
	Average	65.3