

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

in cooperation with

STATE AGRICULTURAL EXPERIMENT STATIONS

Results from the

UNIFORM OAT WINTER HARDINESS NURSERY

for 2005-06

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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.

This report was compiled by the Agricultural Research Service, U. S. Department of Agriculture, and is not intended for publication nor should it 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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OAT WINTER HARDINESS NURSERY 2005-2006

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COOPERATING AGRICULTURAL EXPERIMENT STATIONS AND PERSONNEL

Country	State	AES Location	Personnel
USA	AR	Fayetteville	R.K. Bacon; John Kelly
USA	NC	Laurel Springs	J.P. Murphy
USA	SC	Clemson	B.Edge
USA	SC	Florence	B.Edge
USA	TN	Knoxville	D.West
USA	VA	Blacksburg	C.A. Griffey
Austria		Edelhof	Sandra Berger
Czech. Rep		Kromeriz	L.Nedomova
Hungary		Martonvasar	O.B.Veisz
Lithuania		Lithuania	A.Sliesaravicius
Poland		Radzikow	W.Podyma
Sweden		Svalov	R.Jonnson
UK		Aberystwyth, Wales	J.Valentine

NUMBER OF TESTS:	13 (5 US States and 7 foreign countries)	
NUMBER OF ENTRIES:	21	
EXPERIMENTAL DESIGN:	Single-row, 5-foot plot Two replications Randomized complete block	
DATA RECORDED:	Percent winter survival	
Data not used in analysis:	Fayetteville, AR	100% Survival
	Lithuania	0% Survival
	Clemson, SC	100% Survival
	Florence, SC	100% Survival
	Knoxville, TN	100% Survival
	Aberystwyth, Wales (UK)	100% Survival

AES	Location	Comments
AR	Fayetteville	Mild winter
NC	Laurel Springs	Plots are 10-ft long
SC	Clemson	Mild winter, dry spring
SC	Florence	Mild winter, dry spring.
TN	Knoxville	Very mild winter.
VA	Blacksburg	Except for December, we had warm, dry winter.
Austria	Edelhof	Seed: Oct21, 2005. Not really cold this winter but thick snow coverage from end of Nov till end of Mar. all through winter. Ave temps :Nov, 1.4C; Dec,-2.3C; Jan, -6.5C; Feb,-2.6C.
Czech Republic	Kromeriz	Plot Nos. 24 and 25 (yellow in color), damaged by fieldmice. Winter was very long, extremely long time with snow (from end of December to March 20)
Hungary	Martonvasar	Winter was typical, the temperature went down below zero with snow and without snow cover caused freezing damage.
Lithuania		Winter was severe with little snow. Temperature reached 28 C below zero. Many varieties of winter rape and winter wheat suffered.
Poland	Radzikow	Thick and long lasting snow cover. Occurrence of snow mold on cereals, particularly on winter barley. No cold damage visible on local wheat and triticale. Damage on winter oats caused mainly by cold.
Sweden	Svalov	Unusual winter. Not extremely cold but longest snow cover since the 40s. The snow cover probably saved the plants from dying from long exposure to low temps. But it caused another type of stress and very late start. No signs of snow mold in oats, although wheat had patches of it.
UK (Wales)	Aberystwyth	No winter damage

Top Ten Ranked Survival Entries

Rank	Ent No.	Entry	Pedigree	% Survival (across locations)
1	5	AR0336-3	TAMO 386// Coker 86-13/ T 81-1251	68.5
2	17	NC01-7989	RODGERS SIB/NC92-5838//PI 412561/TXAB2923	66.0
3	13	Win/Nor-10b	Selection from Win/Nor-10	64.9
4	14	NC01-3497	NC93-2978/RODGERS//RODGERS/FL874	62.9
5	15	NC01-4365	TX89D7213/3/C1108B/2/NC8780/C87-6	62.1
6	21	NC01-3981	NC88-1834/NC89-4708//TXAB2923/3/NC91-6448	61.0
7	6	AR0289-9	TAMO 386/FL501	59.2
8	8	AR0213-12	Coker 84-16/AR 125-4A	59.0
9	12	Win/Nor-10	Wintok x Norline	58.5
10	9	AR0213-10	Coker 84-16/AR1254A	58.1
LSD (0.05)				20.1

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

Entry No.	Entry Name	Pedigree	No. Yrs. in Nurs.	Contributors	
				Last Name	State
1	Fulghum (ck)	CI 708	68		
2	Norline (ck)	CI 6903	45		
3	Winter Turf (ck)	CI 3296	65		
4	Wintok (ck)	CI 3424	65		
5	AR0336-3	TAMO 386// Coker 86-13/ T 81-1251	3	Bacon	AR
6	AR0289-9	TAMO 386/FL501	3	Bacon	AR
7	AR0336-12	Toms386// Coker86-13/T81-1251	2	Bacon	AR
8	AR0213-12	Coker 84-16/AR 125-4A	2	Bacon	AR
9	AR0213-10	Coker 84-16/AR1254A	2	Bacon	AR
10	ARNO-7	Composite	2	Bacon	AR
11	Win/Nor-1	Wintok x Norline	3	Livingston,Murphy	NC
12	Win/Nor-10	Wintok x Norline	3	Livingston,Murphy	NC
13	Win/Nor-10b	Selection from Win/Nor-10	2	Livingston,Murphy	NC
14	NC01-3497	NC93-2978/RODGERS//RODGERS/FL874	1	Murphy	NC
15	NC01-4365	TX89D7213/3/C1108B/2/NC8780/C87-6	1	Murphy	NC
16	NC01-456	NC88-1652/FL874S1G3//GA872E87	1	Murphy	NC
17	NC01-7989	RODGERS SIB/NC92-5838//PI 412561/TXAB2923	1	Murphy	NC
18	NC02-8037	NC90-7070/TX89D7213//RODGERS	1	Murphy	NC
19	NC02-8057	NC90-7070/TX89D7213//RODGERS	1	Murphy	NC
20	NC01-3908	TAM0386R/2/MADISON/NC87-6/3/NC92-6590	2	Murphy	NC
21	NC01-3981	NC88-1834/NC89-4708//TXAB2923/3/NC91-6448	2	Murphy	NC

Table 2. Winter Oat Survival Data Summary (%) at Various Stations (sorted by entry number)

Ent. No.	Entry	Ranked Means	Means (across loc)	Edelhof Austria	Kromeriz Czech Rep	Matnvasar Hungary	Laurel Springs NC	Radzikow Poland	Svalov Sweden	Blacksburg VA
1	Fulghum (ck)	21	29.9	15.0	19.5	6.0	0.0	73.5	0.0	95.0
2	Norline (ck)	15	50.6	5.0	51.3	55.5	35.0	92.2	15.0	100.0
3	Winter Turf (ck)	20	42.3	7.5	42.3	38.0	15.0	93.0	0.0	100.0
4	Wintok (ck)	11	54.8	12.5	80.9	62.5	12.5	95.4	20.0	100.0
5	AR0336-3	1	68.5	75.0	70.4	70.5	35.0	93.3	40.0	95.0
6	AR0289-9	7	59.2	62.5	80.1	61.5	15.0	93.1	12.5	90.0
7	AR0336-12	18	45.8	5.0	44.4	51.0	27.5	87.9	15.0	90.0
8	AR0213-12	8	59.0	12.5	87.6	58.5	25.0	99.1	35.0	95.0
9	AR0213-10	10	58.1	10.0	87.8	59.5	32.5	91.8	25.0	100.0
10	ARNO-7	19	44.8	2.5	56.3	51.0	15.0	86.4	12.5	90.0
11	Win/Nor-1	13	53.3	2.5	76.8	66.5	15.0	92.3	20.0	100.0
12	Win/Nor-10	9	58.5	15.0	71.9	60.0	52.5	92.8	17.5	100.0
13	Win/Nor-10b	3	64.9	42.5	88.7	61.5	47.5	91.8	22.5	100.0
14	NC01-3497	4	62.9	70.0	69.2	64.5	22.5	91.4	27.5	95.0
15	NC01-4365	5	62.1	35.0	74.8	53.5	55.0	89.1	37.5	90.0
16	NC01-456	17	48.8	17.5	50.8	58.5	45.0	65.1	10.0	95.0
17	NC01-7989	2	66.0	50.0	82.3	59.5	72.5	77.9	20.0	100.0
18	NC02-8037	12	54.0	5.0	74.7	64.0	42.5	86.9	15.0	90.0
19	NC02-8057	14	52.9	10.0	69.4	47.0	47.5	86.6	15.0	95.0
20	NC01-3908	16	50.0	12.5	52.1	57.5	35.0	80.7	17.5	95.0
21	NC01-3981	6	61.0	2.5	74.4	62.5	62.5	89.9	35.0	100.0
	Average		54.6	22.4	66.9	55.7	33.8	88.1	19.6	96.0
	LSD (0.05)		20.1	19.5	21.6	23.6	*ns	*ns	15.7	*ns
	CV(%)		19.9	46.2	16.9	19.3			38.4	

*ns = Not significant

Table 3. Winter Oat Survival Data Summary (%) at Various Stations (sorted by rank)

Ent. No.	Entry	Ranked Means	Means (across loc)	Edelhof Austria	Kromeriz Czech Rep	Matnvasar Hungary	Laurel Springs NC	Radzikow Poland	Svalov Sweden	Blacksburg VA
5	AR0336-3	1	68.5	75.0	70.4	70.5	35.0	93.3	40.0	95.0
17	NC01-7989	2	66.0	50.0	82.3	59.5	72.5	77.9	20.0	100.0
13	Win/Nor-10b	3	64.9	42.5	88.7	61.5	47.5	91.8	22.5	100.0
14	NC01-3497	4	62.9	70.0	69.2	64.5	22.5	91.4	27.5	95.0
15	NC01-4365	5	62.1	35.0	74.8	53.5	55.0	89.1	37.5	90.0
21	NC01-3981	6	61.0	2.5	74.4	62.5	62.5	89.9	35.0	100.0
6	AR0289-9	7	59.2	62.5	80.1	61.5	15.0	93.1	12.5	90.0
8	AR0213-12	8	59.0	12.5	87.6	58.5	25.0	99.1	35.0	95.0
12	Win/Nor-10	9	58.5	15.0	71.9	60.0	52.5	92.8	17.5	100.0
9	AR0213-10	10	58.1	10.0	87.8	59.5	32.5	91.8	25.0	100.0
4	Wintok (ck)	11	54.8	12.5	80.9	62.5	12.5	95.4	20.0	100.0
18	NC02-8037	12	54.0	5.0	74.7	64.0	42.5	86.9	15.0	90.0
11	Win/Nor-1	13	53.3	2.5	76.8	66.5	15.0	92.3	20.0	100.0
19	NC02-8057	14	52.9	10.0	69.4	47.0	47.5	86.6	15.0	95.0
2	Norline (ck)	15	50.6	5.0	51.3	55.5	35.0	92.2	15.0	100.0
20	NC01-3908	16	50.0	12.5	52.1	57.5	35.0	80.7	17.5	95.0
16	NC01-456	17	48.8	17.5	50.8	58.5	45.0	65.1	10.0	95.0
7	AR0336-12	18	45.8	5.0	44.4	51.0	27.5	87.9	15.0	90.0
10	ARNO-7	19	44.8	2.5	56.3	51.0	15.0	86.4	12.5	90.0
3	Winter Turf (ck)	20	42.3	7.5	42.3	38.0	15.0	93.0	0.0	100.0
1	Fulghum (ck)	21	29.9	15.0	19.5	6.0	0.0	73.5	0.0	95.0
Average			54.6	22.4	66.9	55.7	33.8	88.1	19.6	96.0
LSD (0.05)			20.1	19.5	21.6	23.6	*ns	*ns	15.7	*ns
CV(%)			19.9	46.2	16.9	19.3			38.4	

*ns = Not significant