

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

and

Cooperating State Agricultural Experiment Stations

2007-08

UNIFORM WINTER OAT 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 Oat Trial (UWOT) is to evaluate winter-habit (fall-sown) oat advanced lines for adaptation to those areas in the United States where winter oats are grown commercially. Twenty-five entries were submitted from the publicly funded oat breeding programs in Florida, Louisiana, North Carolina, and Texas. The 2007-08 UWOT was grown at 18 locations; 1 in Alabama, 1 in Arkansas, 1 in Delaware, 1 in Florida, 2 in Georgia, 1 in Louisiana, 1 in Minnesota, 1 in Mississippi, 4 in North Carolina, 2 in South Carolina, 1 in Tennessee, and 2 in Texas.

Prattville, AL: Plot size=100ft²; Reps=3; Planting date=31 Oct 07; Harvest date=10 Jun 08. Cooperator-K.Glass

Stuttgart, AR: Plot size=61.2ft²; Reps=3; Planting date=6 Nov 07; Harvest date=5 Jun 08. Cooperators-R.Bacon & J.Kelly

Sussex County, DE: Plot size=50.25ft²; Reps=3; Planting date=4 Nov 07; Harvest date=2 Apr 08. Cooperator-B.Uniatowski

Quincy, FL: Planted late, good growing conditions, warm season, Plants grew tall, no lodging or diseases, very good test. Plot size=55ft², harvested 15ft²; Reps=4; Planting date=14 Dec 07; Harvest date=27 May 08. Cooperators-R. Barnett & A. Blount

Griffin, GA: Plot size=50ft²; Reps=3; Planting date=1 Nov 07; Harvest date=6 Jun 08. Cooperators-J.Johnson, D.Bland, & S.Sutton.

Plains, GA: Plot size=50ft²; Reps=2; Planting date=15 Nov 07; Harvest date=29 May 08. Cooperators-J.Johnson, D.Bland, & S.Sutton

Baton Rouge, LA: 0-0-60 preplant and 65-0-0-4 topdress fertilizer. 0.35 oz/a Amber herbicide + Harmony Extra. Heavy stem rust pressure, good yields. Plot size=70ft²; Reps=3; Planting date=19 Nov 07; Harvest date=15 May 08; Cooperators-S.Harrison, K.Arceneaux, & G.Schexnayder

St. Paul, MN (Buckthorn Nursery): Crown rust nursery. Dry conditions in June limited crown rust development on flag leaves, despite heavy early infections. Reps=2; Planting date=8 May 08. Cooperators-M.Carson & J.Ochocki

Newton, MS: Harvest delayed due to weather with lodging. Plot size=75ft²; Reps=4; Planting date=8 Nov 07; Harvest date=5 Jun 08. Cooperator-B.White

Kinston, NC: Good growth throughout season. Environment conducive to high yields. Plot size=55ft²; Reps=2; Planting date=21 Oct 07; Harvest date=25 May 08. Cooperator-P.Murphy

Laurel Springs, NC: Winter-stress nursery location in mountain region (elevation 3,000 ft); Plot size=60ft²; Reps=1; Planting date=1 Oct 07. Not harvested. Cooperators-M. Fountain & D.Marshall.

Salisbury, NC: Not harvested due to planting error. Cooperator-M. Fountain & D.Marshall.

Waynesville, NC: Winter-stress nursery location in mountain region (elevation=2,500 ft). Plot size=65ft²; Reps=1; Planted=9 Oct 07; Harvested=25 Jun 08. Cooperators-M.Fountain & D.Marshall.

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

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

Knoxville, TN: Seeding rate of 22 seeds per square foot used for seeding due to shortage of seed, soil pH=5.5, 2.46 tons/a dolomitic lime applied 9/11/07, 263 lb/a 10-10-10 applied 10/3/07, 60 lb N/a (34-0-0) applied 3/3/08, Gramoxone (32 oz/a) burndown, 0.4 oz/a Harmony Extra XP applied 3/13/08, no fungicide/insecticide applied, winter kill taken on 2/28/08, vigor on 3/13/08, hail damage on 5/9/08 (head bent over, but not broken off), good growing conditions with slightly lower temperatures and precipitation. Plot size=93.6ft²; Reps=3; Planted=29 Oct 07; Harvested=16 Jun 08. Cooperators-D. West & F.Allen

College Station, TX: 51-51-51 preplant + 50-0-0 topdress (32%) fertilizer. Wet fall delayed planting, mild winter, light-moderate crown rust (came in late), very light stem rust, minimal lodging. Plot size=43.2ft²; Reps=3; Planting date=7 Dec 07; Harvest date=19 May 08. Cooperator-A.Ibrahim & R.Herrington

Prosper, TX: Cooperator-R.Sutton

USDA/ARS Uniform Winter Oat Trial 2007-08

Entry	Designation	Pedigree	Origin	Seed Source	Yrs in trial
1	Rodgers	Coker 80-33/NC81-376 (=PI593020)	NC	ARS	10
2	TAM-O-397	C75-12/4/Coker227/Coker234/3/TAM-O-301/TAM-O-312//CI9221/5/TAM-O-312/Coker227 (=TX92M1096)	TX	ARS	10
3	Harrison	C74C70/Florida 502 (=PI590937)	AR	ARS	10
4	Horizon 321	Coker75-26/CI8341/4/Coker76-19/Coker75-27*2/3/Coker75-26//Coker76-23/CI8322/5/Horizon 314 (=FL9708-P37)	FL	ARS	3*
5	FL99084-J2	TX96D210FL/98008 F1(LA90151-BB-11-2-1/UFRGS 940556)	FL	FL	1
6	Horizon 201	FL92OHR35183-Y1/TX96M1384 (=FL99201-D29-E1)	FL	ARS	3
7	FL99212-D6	UFRGS 921260/FL98091 F1 (P8674B1-2-4-2-5/TX97C1130)	FL	ARS	3
8	FL0115-J2	FL97AB15-A5-B6/TX97C1130	FL	FL	1
9	FL0115-J4	FL97AB15-A5-B6/TX97C1130	FL	FL	1
10	FL99153FBS-45-1-B-S-B-S1-B-S1	TX95C3147/FL98007 F1(SC 942283/UFRGS 940556)	LA	LA	1
11	LA97006GSB-59-2-4-SBS1	FL92OHR26763/TX93M2107	LA	LA	1
12	LA99017SBSBSB-275-C-B-S2	TX96M1385/LA604	LA	ARS	2
13	LA9911SBSBSB-45-B-S-B-S2	LA90104C22-4-1-3/MN97SA155	LA	ARS	2
14	LA02030-S-B-106-S1-B-S1	966BIB77/TX96M1398	LA	LA	1
15	LA03046SBS7-B-S1	LA9339/TAMO405	LA	LA	1
16	NC01-3497	NC93-2978/RODGERS//RODGERS/FL874	NC	NC	1
17	NC02-8057	NC90-7070/TX89D7213//RODGERS	NC	ARS	3
18	NC02-8331	NC93-2978 / FL874S1G3 // ARFOB3D	NC	ARS	2
19	NC03-2421	Rodgers/TX83AB2923//Rodgers	NC	NC	1
20	TX02U7325	UFRGS Q120101-4/TAMO386ERB/92SAT24-4	TX	ARS	2
21	TX02U7443	UFRGS Q120101-4/TAMO386ERB/92SAT24-4	TX	TX	1
22	TX02U7490	92M1065(TAMO386'S')/TAMO386ERB	TX	TX	1
23	TX02U7682	TAMO386ERB/TX83AB2923	TX	ARS	3
24	TX05CS347-1	TAMO 405/LA9339	TX	TX	1
25	TX05CS542	Rodgers/TAMO 405	TX	TX	1

Seed requirements: AL(360g); AR(200g); DE(250g); FL(300g); GA(300g); LA(225g); MS(300g); NC-Paul(150g); NC-USDA(525g); SC(300g); TN(400g); TXCS(300g); TXDL(150g) = **3,760g**

* Horizon 321 was tested as FL9708-P37 from 2002-2004. Horizon 201 was tested as FL99201-D29-E1 from 2005-2007.

Cooperators - Uniform Winter Oat Trial 2007-08

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2007-08 Uniform Winter Oat Trial

Mean across locations

Entry	Designation	Yield		TW	Heading	Height	Lodging	BYDV	Leaf	Crown Rust		Stem	Growth		Winter		Winter	Grain		Groat	Protein	β-glucan	Lipid
		bu/a	rank	lb/bu	Julian	in	0-9	0-9	Spot	Saint Paul, MN		Rust	Vigor	Habit	Leafiness	Phenotype	Stress	Survival	Quality	%	%	%	%
							0-9	0-9	0-9	7-Jul	14-Jul	0-9	0-9	0-9	0-9	0-9	0-9	%	0-9	%	%	%	%
7	FL99212-D6	119.2	1	34.2	102	42	2	1	3	TraceMR	TraceS	4	3.3	4	6	5	6	78	3	60.8	14.643	3.10	7.688
19	NC03-2421	119.1	2	34.8	99	42	3	5	5	3MR/MS	3MS	5	1.5	5	5	5	2	99	4	65.0	15.879	4.01	7.661
8	FL0115-J2	112.5	3	34.1	101	44	2	5	4	0	0	2	2.6	4	5	5	6	81	5	63.1	16.343	3.41	7.603
23	TX02U7682	110.3	4	34.4	96	42	2	2	5	0	TraceS	2	1.5	5	4	4	6	84	3	65.2	15.682	3.61	8.152
6	Horizon 201	109.7	5	33.1	100	48	2	2	3	TraceMS	TraceS	4	1.5	5	4	5	4	100	3	70.1	12.894	3.25	8.709
22	TX02U7490	108.9	6	32.6	97	45	1	1	5	0	TraceS	2	2.5	4	4	5	6	86	4	63.9	15.357	3.21	7.474
15	LA03046SBS7-B-S1	108.6	7	34.5	101	40	2	2	3	TraceMS	TraceMS	1	1.6	4	6	4	4	100	3	58.2	15.704	5.36	8.785
20	TX02U7325	108.0	8	32.8	95	42	4	6	4	TraceMR	TraceMS	3	1.4	4	5	4	4	98	4	58.7	15.885	3.60	6.895
24	TX05CS347-1	107.7	9	35.7	101	43	2	3	3	0	1S	3	1.7	5	4	5	3	100	2	64.3	15.869	4.29	8.383
14	LA02030-S-B-106-S1-B-S1	107.6	10	32.6	100	43	2	1	4	0	0	3	1.1	4	5	4	4	94	4	68.7	13.030	3.68	7.868
11	LA97006GSB-59-2-4-SBS1	105.1	11	34.1	101	40	2	1	4	0	TraceS	1	1.6	4	6	4	5	99	2	61.6	15.450	4.99	8.522
16	NC01-3497	103.2	12	32.9	101	42	4	1	3	10S	25S	3	2.3	6	4	6	3	98	4	54.4	14.301	3.39	8.726
25	TX05CS542	102.7	13	33.0	93	44	1	3	4	1S	1S	6	1.0	4	5	5	2	97	3	69.0	14.630	4.37	7.155
13	LA9911SBSBSB-45-B-S-B-S2	101.1	14	35.0	104	43	3	6	3	3S	5S	1	4.1	3	6	5	7	45	3	64.4	15.940	4.98	6.847
18	NC02-8331	101.1	15	32.9	105	40	4	4	2	25S	50S	3	2.1	7	4	6	2	100	3	50.1	13.897	3.50	8.982
10	FL99153FBS-45-1-B-S-B-S1-B-S1	100.0	16	36.3	102	43	2	5	3	0	1S	1	1.5	6	4	4	4	100	3	66.5	14.139	3.82	7.849
1	Rodgers	98.6	17	32.5	100	45	4	4	4	10S	20S	5	1.2	5	4	6	3	99	5	64.6	15.605	4.56	7.474
4	Horizon 321	98.2	18	35.7	102	42	3	3	4	10S	20S	3	1.9	6	6	5	4	100	4	65.7	15.027	3.56	8.686
3	Harrison	96.2	19	35.6	99	47	3	1	2	3S	5S	5	1.9	6	5	5	4	100	3	68.8	16.475	3.66	7.089
17	NC02-8057	96.2	20	35.6	101	43	3	2	3	10S	15S	3	1.8	6	4	6	2	99	3	62.8	16.030	4.63	8.088
21	TX02U7443	94.8	21	32.9	98	41	4	3	5	TraceMR	TraceMS	2	2.3	5	5	5	4	100	4	65.0	15.719	4.06	7.110
9	FL0115-J4	93.8	22	34.4	100	48	2	5	3	0	TraceS	3	1.6	4	5	5	3	100	4	69.3	14.054	4.48	8.810
12	LA99017SBSBSB-275-C-B-S2	93.2	23	33.5	104	51	1	3	3	0	TR/MS	1	1.4	6	3	4	4	100	4	72.0	15.120	4.11	8.504
2	TAM-O-397	91.2	24	32.2	96	44	2	3	5	0	0	1	1.6	4	4	4	5	97	3	66.5	15.857	3.32	7.625
5	FL99084-J2	86.2	25	35.8	99	41	2	1	4	TraceMR	1S	6	4.3	3	6	6	8	31	5	68.6	17.027	3.99	7.572
Starter (local check)										25S	30S												
MN841801 (local check)										1MR/MS	3MR/MS												
Mean		103.0		34.1	100	43	2	3	4			3	1.9	5	4	5	4	91	4	64.3	15.222	3.96	7.930
CV (%)		17.5		4.8	2	6	69					53	13.4	12	11	10			18	6.9	4.440	9.09	7.050
LSD (0.05)		15.1		1.3	2	2	2					2	0.5	1	1	1			1	7.3	1.395	0.74	1.154
R ²		0.75		0.71	0.89	0.83	0.65													0.7	0.900	0.86	0.739
Number of locations		11		12	9	10	7	2	1	1	1	1	1	1	1	1	4	4	1	3	2	2	2

[illegible]

[illegible]

[illegible]

		LODGING							
		<i>P'ville</i>	<i>Stuttgart</i>	<i>Sussex</i>	<i>Quincy</i>	<i>Griffin</i>	<i>B.Rouge</i>	<i>Newton</i>	<i>7-location</i>
<i>Entry</i>	<i>Designation</i>	<i>AL</i>	<i>AR</i>	<i>DE</i>	<i>FL</i>	<i>GA</i>	<i>LA</i>	<i>MS</i>	<i>mean</i>
		<i>0-9</i>	<i>0-9</i>	<i>0-9</i>	<i>0-9</i>	<i>0-9</i>	<i>0-9</i>	<i>0-9</i>	<i>0-9</i>
1	Rodgers	7	6	1	0	9	3	1	4
2	TAM-O-397	5	4	0	0	4	1	1	2
3	Harrison	4	6	2	0	3	2	2	3
4	Horizon 321	8	1	1	1	4	1	2	3
5	FL99084-J2	1	0	1	0	9	3	2	2
6	Horizon 201	2	2	3	0	8	1	1	2
7	FL99212-D6	1	1	0	0	8	1	1	2
8	FL0115-J2	2	0	0	0	8	1	1	2
9	FL0115-J4	5	1	2	0	6	2	1	2
10	FL99153FBS-45-1-B-S-B-S1-B-S1	3	4	1	0	4	1	1	2
11	LA97006GSB-59-2-4-SBS1	7	0	0	0	3	2	1	2
12	LA99017SBSBSB-275-C-B-S2	3	0	0	0	4	1	1	1
13	LA9911SBSBSB-45-B-S-B-S2	4	6	2	1	5	1	3	3
14	LA02030-S-B-106-S1-B-S1	7	0	0	0	4	1	1	2
15	LA03046SBS7-B-S1	2	0	0	0	8	1	1	2
16	NC01-3497	5	8	0	0	9	5	1	4
17	NC02-8057	2	6	0	0	9	1	1	3
18	NC02-8331	7	6	1	0	8	3	2	4
19	NC03-2421	7	5	2	0	5	1	1	3
20	TX02U7325	8	5	0	0	9	4	4	4
21	TX02U7443	5	7	0	0	9	1	5	4
22	TX02U7490	1	0	0	0	3	2	2	1
23	TX02U7682	3	7	0	0	2	1	3	2
24	TX05CS347-1	5	1	0	0	3	1	1	2
25	TX05CS542	3	0	0	0	3	1	1	1
<i>Mean</i>		4	3	1	0	6	2	2	2
<i>CV (%)</i>			55				49		69
<i>LSD (0.05)</i>			2				1		2
<i>R²</i>									0.65

Uniform Winter Oat Trial 2007-08

Entry	Designation	GROAT PERCENT				PROTEIN PERCENT			β-GLUCAN PERCENT			LIPID PER	
		Quincy	Kinston	W'ville	3-loc	Quincy	Kinston	2-loc	Quincy	Kinston	2-loc	Quincy	Kinston
		FL	NC	NC	mean	FL	NC	mean	FL	NC	mean	FL	NC
1	Rodgers	63.3	67.2	63.2	64.6	16.331	14.879	15.605	4.75	4.38	4.56	6.838	8.10
2	TAM-O-397	61.4	65.8	72.3	66.5	16.769	14.945	15.857	3.19	3.45	3.32	7.899	7.35
3	Harrison	63.9	67.4	75.0	68.8	16.877	16.074	16.475	3.58	3.74	3.66	7.168	7.01
4	Horizon 321	55.4	71.9	69.7	65.7	14.920	15.135	15.027	3.92	3.20	3.56	8.794	8.57
5	FL99084-J2	61.2	70.6	73.9	68.6	17.614	16.439	17.027	4.37	3.60	3.99	7.873	7.27
6	Horizon 201	68.2	66.8	75.3	70.1	13.672	12.115	12.894	3.49	3.02	3.25	8.654	8.76
7	FL99212-D6	58.2	62.4	61.8	60.8	15.939	13.348	14.643	3.40	2.80	3.10	7.377	7.99
8	FL0115-J2	56.6	69.1	63.5	63.1	16.685	16.000	16.343	3.37	3.45	3.41	7.822	7.38
9	FL0115-J4	67.1	70.9	69.9	69.3	14.641	13.467	14.054	4.45	4.51	4.48	8.358	9.26
10	FL99153FBS-45-1-B-S-B-S1-B-S1	64.8	63.9	70.8	66.5	15.799	12.478	14.139	3.58	4.06	3.82	6.807	8.89
11	LA97006GSB-59-2-4-SBS1	55.7	60.6	68.6	61.6	16.781	14.120	15.450	4.99	4.98	4.99	8.295	8.74
12	LA99017SBSBSB-275-C-B-S2	66.2	74.0	75.9	72.0	15.977	14.264	15.120	3.96	4.26	4.11	8.872	8.13
13	LA9911SBSBSB-45-B-S-B-S2	59.6	65.4	68.1	64.4	16.828	15.052	15.940	5.38	4.59	4.98	6.946	6.74
14	LA02030-S-B-106-S1-B-S1	67.3	65.8	73.1	68.7	14.367	11.694	13.030	3.13	4.24	3.68	7.050	8.68
15	LA03046SBS7-B-S1	54.4	60.4	59.9	58.2	17.083	14.325	15.704	5.75	4.98	5.36	9.095	8.47
16	NC01-3497	51.9	53.4	57.9	54.4	15.746	12.856	14.301	3.06	3.72	3.39	8.866	8.58
17	NC02-8057	61.0	64.7	62.6	62.8	18.022	14.037	16.030	4.91	4.35	4.63	8.028	8.14
18	NC02-8331	46.7	57.8	45.9	50.1	15.356	12.439	13.897	3.43	3.58	3.50	8.640	9.32
19	NC03-2421	63.6	68.3	63.0	65.0	16.745	15.013	15.879	4.11	3.91	4.01	8.020	7.30
20	TX02U7325	57.5	65.5	53.1	58.7	16.918	14.853	15.885	3.32	3.89	3.60	6.761	7.02
21	TX02U7443	64.9	78.3	51.7	65.0	15.996	15.442	15.719	3.86	4.26	4.06	6.983	7.23
22	TX02U7490	60.3	65.5	65.8	63.9	16.160	14.553	15.357	3.34	3.08	3.21	8.097	6.85
23	TX02U7682	63.0	66.4	66.1	65.2	16.936	14.429	15.682	3.54	3.67	3.61	8.305	7.99
24	TX05CS347-1	59.9	64.8	68.2	64.3	16.707	15.030	15.869	4.43	4.16	4.29	8.000	8.76
25	TX05CS542	66.6	69.2	71.2	69.0	15.826	13.435	14.630	4.59	4.15	4.37	7.091	7.21
Mean		60.7	66.2	65.9	64.3	16.188	14.257	15.222	4.00	3.92	3.96	7.866	7.99
CV					6.9			4.440			9.09		
LSD (					7.3			1.395			0.74		
					0.7			0.900			0.86		