

# **FIELD DAY REPORT - 1993**

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## OAT GRAIN VARIETY TESTS AT OVERTON FOR 1991-92

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**Background.** Oat grain variety trials are planted at the TAMU Agricultural Research and Extension Center at Overton on an annual basis. These trials were planted to compare grain yield potential, local adaptation, winterhardiness, and disease resistance of released varieties and experimental winter oat lines. Oat variety tests were planted on prepared seedbeds. The soil at the Overton site was a poorly drained sandy loam. Seeding rate was 90 lbs/ac. Plots were 7 rows wide, with 6 in. row spacing and 10 ft in length. The test was planted on October 23 and harvested on June 4, 1992. Fertilizer application was 50 lbs N, 100 lbs P<sub>2</sub>O<sub>5</sub>, and 100 lbs K<sub>2</sub>O/ac applied preplant. The oats were top-dressed with 67 lbs/ac, of actual N as ammonium nitrate on February 21 and 30 lbs/ac on March 21, 1992.

**Research Findings.** The 1991-92 growing season was unusually mild and wet in the fall and winter. Although these conditions favored disease buildup, oats were not affected. Grain yields at Overton in 1992 are presented in Table 1. The highest yielding varieties were Big Mac, Okay, H-833, and Mesquite 2, closely followed by several other varieties. The highest yielding experimental lines were TX89D7213, TX90D2457, and TX83AB2923, all of which all produced yields in excess of 90 bu/ac. Test weights were good in 1992, as several entries had test weights over the standard of 32 lbs/bu. Average heading date, plant height, and lodging are indication of agronomic characteristics of the lines. Lodging in this test was quite severe in 1992 due to several storms in May. Oats are more susceptible to lodging than are wheat, and harvested grain yields of oats often are reduced due to lodging. Plant height was above average for all of the varieties. The high N application rate at Overton may have contributed to the unusually tall plant height as well as lodging. Winterkill in oats is a serious problem most years in north Texas. No winterkill occurred in 1991-92. Crown rust on oats was quite severe at Overton in 1992. The crown rust developed late in the growing season, and probably reduced grain yields very little.

**Application.** These data should be useful in determining which oat varieties have best potential for grain yield in northeast Texas. Oats are subject to winterkill and only the most winterhardy varieties should be planted. TAM-O-386 should not be planted north of Waco, Texas as winterkilling will result most years. Many oats varieties are very susceptible to crown rust, and only resistant varieties should be planted. Oat grain and forage yields from other variety trials at Mount Pleasant and Overton are presented elsewhere in this publication.

Table 1. Oat grain variety yield test 1991-92 at Overton, Texas.

Variety	Yield bu/A	Test Wt. lbs/bu	Heading Date	Height (in)	Lodging %	Crown Rust (0-9) <u>1/</u>
TX89D7213*	96.3	29	4-19	37	5	6
TX90D2457*	94.4	31	4-17	34	5	1
TX83AB2923*	92.4	32	4-17	42	20	0
Big Mac	91.1	33	4-17	44	50	4
Okay	90.5	31	4-17	49	60	8
NC 881818*	90.0	31	4-17	42	0	8
NC 881652*	87.3	32	4-17	42	3	7
TX89D7195*	86.3	29	4-20	36	30	2
TX89B1980*	85.4	33	4-14	43	3	0
H-833	85.2	31	4-20	40	20	5
86-13*	84.9	35	4-14	39	10	1
TX87M1521*	84.8	30	4-14	39	5	1
Mesquite 2	84.5	34	4-13	39	60	6
TX89D7002*	82.6	28	4-18	38	0	4
H-422	82.4	33	4-19	38	30	1
Coker 227	82.1	32	4-14	46	70	3
TAM-O-386	82.0	31	4-17	45	5	6
TX89D2454*	81.2	32	4-17	38	0	6
AR FOB-30*	80.5	31	4-18	36	5	4
NF 170*	80.4	27	4-19	52	70	9
AR 82OB-111*	80.1	33	4-17	40	20	7
TAM-O-386R*	79.8	30	4-17	44	0	0
Nora	79.7	29	4-14	44	50	4
Coker 716	79.3	29	4-23	38	10	5
Coker 234	78.6	32	4-17	40	60	1
TX89D7073*	78.4	34	4-10	41	20	0
Blizzard	78.1	33	4-23	32	0	2
TX89D7198*	78.1	32	4-24	32	20	4
Bob	77.6	34	4-12	40	60	2
Coronado	77.2	28	4-18	42	10	1
TX87B9451*	76.8	31	4-19	43	0	0
NF 188*	75.3	32	4-18	54	70	9
Coker 87-11	73.9	31	4-18	36	20	1
TX89D7042*	72.6	28	4-04	34	20	1
Brooks	70.2	25	4-19	42	20	9
GA T81-1249*	69.2	34	4-17	33	0	4
AR 111-2*	69.1	32	4-12	38	50	3
Cimmaron	67.8	26	4-18	46	70	9
TX86B1240*	65.3	28	4-13	39	0	0
Ozark	64.7	31	4-19	38	5	5
TX82M4964*	62.8	29	4-07	42	0	0
FLA. 501	59.6	33	4-10	42	50	1
Mean	80.0	32	-	40	24	4
LSD (0.05)	18.6					
CV	16.7					

Planted October 23, 1991. Harvested June 4, 1992. Fertilizer application rate: Preplant 50 lbs N and 100 lbs P<sub>2</sub>O<sub>5</sub> and 100 K<sub>2</sub>O/A. Topdressed with 67 lbs/ac actual N as ammonium nitrate on February 21 and 30 lb/ac on March 21, 1992. Herbicide applied postemergence at two leaf stage of wheat: 0.3 oz/ac Glean.

1/Mean yields followed by the same letter are not significantly different as judged by Duncan's Test at the 0.05 level.

2/Disease ratings were on a scale of 0-9, where 0 = no disease and 9 = dead plants.

\*Experimental, seed not available.