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OAT GRAIN VARIETY TRIAL AT OVERTON FOR 2000-2001 AND THREE-YEAR MEANS

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Background. Oat grain variety trials were planted annually for many years at Overton. These trials were planted to determine grain yield potential, adaptation, winter hardiness, and disease resistance of experimental lines and commercial varieties of oats. Oats are fairly susceptible to winter killing and to crown rust, however, oats can produce high grain yields in east Texas. The oat variety test was planted on 31 October into a prepared seedbed. Preplant fertilization consisted of 35 lb N, 90 lb P₂O₅, and 90 lb K₂O/ac. Additional fertilizer was applied on 24 January at a rate of 20 lb N, 50 lb P₂O₅, and 50 lb K₂O/ac. The experiment was top-dressed with 70 lb N/ac on 21 February. Glean was applied as a post-emergence herbicide at the two-leaf stage at a rate of 0.3 oz/ac for control of ryegrass and other weeds.

Research Findings. Good stands were obtained in 2000. Environmental conditions greatly affected results of this study. A wet November with 11.7 inches of rainfall was not damaging, however, it did require extra fertilization as described above for the 24 January application. No winter kill damage was observed in this study, although temperatures as low as 17 F were experienced on 3 January 2001. A dry April (0.4 inches rainfall) in combination with a sandy soil resulted in severe moisture stress during the heading stage and extremely short oats. These environmental conditions also caused early and rapid maturing of the oats, thus reducing grain yields. Crown rust was not present. Below average yields were obtained in 2001 (Table 1). Several experimental lines produced yields above or near 60 bu/ac. Highest yielding commercial varieties were 'Horizon 314' at 55 bu/ac, followed by 'Secretariat 494' at 54 bu/ac. 'Nora', 'Florida 501', and 'Dallas' produced yields near 50 bu/ac. For the three-year means, five entries yielded more than 100 bu/ac. They were Dallas, TX96D093, TX96D011, TX95B1250, and TX96M1390. Several other varieties and experimental lines produced yields in the high nineties over three years. The standard test weight for oats is 32 lb/bu. Test weights for most entries were near normal. Plant heights were very short due to moisture stress during heading. This indicates the extreme moisture stress that occurred and provides the reason for the low grain yields in 2001.

Application. Results from these experiments are useful in determining which varieties have best yield potential for grain yields in east Texas. Varieties with highest grain yield potential should be selected when choosing a variety for your farm; however, disease resistance should also be considered. Winter freeze damage can and does occur with oats in north Texas. We do not recommend that TAMO 397 be planted north of I-20 due to potential winter freeze risk. Crown rust can also be a problem in south and central Texas and when selecting varieties, crown rust resistance should be considered, especially if oats are being grown south of Waco.

Texas Uniform Oat Grain Test, Overton, Texas 2000-2001.

Variety	Yield bu/ac	3-Year Mean bu/ac	Test Weight lb/bu	Plant Height in.	Heading Date
TX96D093	66.2	101.7	31	26	4-14
TX98D662	61.5	+	27	17	4-14
TX96D011	59.8	101.6	28	22	4-11
PLX474-1-B2-8-WI	59.3	-	33	25	4-10
TX94D081	55.5	98.5	34	23	4-13
TX98D658	55.5	-	26	17	4-13
Horizon 314	55.2	-	30	25	4-14
LA9339E45	54.6	-	31	24	4-16
TX96M1394	54.4	95.5	30	26	4-14
Secretariat 495	54.3	98.8	33	26	4-11
LA90113AFL2-1-19-3	52.8	-	29	26	4-11
TX96D071	52.3	-	26	14	4-15
Nora	51.6	93.3	32	30	4-14
TX97Ab1581	50.9	-	26	16	4-11
TX95B1250	50.5	104.8	31	29	4-14
TX96M1390	50.4	104.5	30	26	4-15
Florida 501	50.1	97.0	30	30	4-10
TX00M617	50.1	-	30	27	4-10
Dallas	49.4	104.8	29	28	4-10
811	47.8	95.6	34	31	4-10
TX96D070	46.9	-	27	17	4-15
Chapman	46.5	90.2	29	23	4-10
TX96M1567	46.4	94.1	29	23	4-10
MX96M1384	46.1	-	32	28	4-16
TX96M1385	45.7	89.2	31	27	4-14
TX93AB715	44.8	88.9	31	28	4-17
Harrison	44.7	88.2	32	30	4-13
TX00M628	44.5	-	31	29	4-17
TX98D666	43.8	-	32	26	4-11
TX98D137	43.2	-	29	26	4-13
TX00M622	43.2	-	33	29	4-16
TX96M1091	42.9	88.0	30	27	4-11
TX96M1260	42.4	92.8	31	28	4-11
TX00M635	42.1	-	31	29	4-16
TX95B1328	40.6	85.9	30	27	4-11
TAMO 397	39.6	85.5	30	27	4-10
TX95B1213	37.8	-	29	28	4-17
TX96M1560	37.8	79.9	32	22	4-18
TX00M646	37.1	-	28	22	4-10
TX83AB2923	33.6	84.5	29	29	4-17
Grand Mean	48.3	97.1	30	25	
CV	13.4		0	0	
LSD	8.8		0	0	

Planting date: October 31, 2000. Harvest date: May 29, 2001. Fertilization: Preplant 350 lb of 10-26-26.

Topdressed with 200 lb/ac of 10-26-26 January 24, 2001. Applied 210 lb/ac of ammonium nitrate on February 21, 2001.

+Entry not tested over last 3 years.

An additional 210 lb/ac of ammonium nitrate was applied on March 26, 2001.

Herbicide applied postemergence at two leaf stage of oats: 0.3 oz/ac Glean.