

PUBLICATIONS

1998

FORAGE-LIVESTOCK FIELD DAY REPORT - 1998

TEXAS A&M UNIVERSITY AGRICULTURAL RESEARCH and EXTENSION CENTER at OVERTON

**Texas Agricultural Experiment Station
Texas Agricultural Extension Service**



April 16, 1998

Research Center Technical Report 98-1

All programs and information of the Texas Agricultural Experiment Station and Texas Agricultural Extension Service are available to everyone without regard to race, color, religion, sex, age, or national origin.

Mention of trademark or a proprietary product does not constitute a guarantee or a warranty of the product by the Texas Agricultural Experiment Station or Texas Agricultural Extension Service and does not imply its approval to the exclusion of other products that also may be suitable.

OAT GRAIN VARIETY TESTS AT OVERTON FOR 1996-97 AND TWO-YEAR MEANS

Jim Crowder, Steve Ward, and L. R. Nelson

Background. Oat grain variety trials are planted annually at the TAMU Agricultural Research and Extension Center at Overton. These trials were planted to determine grain yield potential, adaptability, winter hardiness, and disease resistance of released varieties and experimental winter oat lines.

Research Findings. Oat varieties were planted on a prepared seedbed. The soil at the Overton site was a well drained sandy loam soil. Seeding rate was 90lbs/ac. A plot was 7 rows wide, with 6 inch row spacing, 10 ft in length. The test was planted on 7 October and harvested on 29 May 1997. Fertility application was 50 lbs N, 100 lbs P₂O₅ and 100 lbs K₂O/ac applied preplant. Nitrogen was applied at a rate of 75 lb/ac on 18 February as ammonium nitrate. Glean was applied at the two leaf stage of oats at 0.3 oz/ac. Good grain yields were obtained in this test in 1997 (Table 1). No winter killing occurred during the growing season. The highest yielding variety was Ozark which produced a yield of 115 bu/ac, however, its yield was not significantly different (LSD of 19.5 bu) than other varieties yielding higher than 96 bu/ac. Lower yielding varieties were Nora, 811, and TAMO 397. Several experimental lines also produced high yields, however, seed are presently not available to growers for those lines. For the two year mean, yields were higher than those produced in 1997, indicating a higher yield for 1996. Higher yielding released varieties were Ozark, 833, TAMO 386, Coronado, FLA 501, Big Mac, and Bob.

Test weights were very high for oats in 1997. A standard test weight is 32 lbs/bu. Most entries had tests weights surpassing this standard. Plant heights were somewhat high, however, no lodging occurred. Crown rust is often a problem on oats grown in south Texas, however, crown rust may also be a serious disease in northeast Texas. Disease ratings 4 or higher indicate that line is moderately susceptible to crown rust. Only very low ratings of stem rust were observed on this study in 1997.

Application. These data indicate that oats have very good grain yielding potential in northeast Texas. The data also indicates which varieties have best grain yield potential for east Texas. Oats are subject to winterkill and only the most winter hardy varieties should be planted. TAMO 386 should not be planted north of Waco, Texas as winterkill may occur during severe freezes. Oat forage yields are presented elsewhere in this publication.

Table 1. Uniform oat variety test, Overton, Texas 1996-97.

| Variety | Yield bu/ac | 2 Year Mean | Test Weight lb/bu | Heading Date | Height inches | Crown Rust (0-9) | Stem Rust (0-9) |
|------------------|----------------|-----------------|----------------------|-----------------|------------------|---------------------|--------------------|
| Ozark | 115.3 | 121 | 33 | 4-11 | 40 | 3 | 0 |
| TX93C7236 | 113.5 | -- ^a | 33 | 4-10 | 45 | 2 | 0 |
| TX93D5764 | 113.5 | -- | 32 | 4-10 | 42 | 4 | 0 |
| 833 | 109.0 | 118 | 34 | 4-7 | 41 | 2 | 0 |
| TAMO 386 | 107.1 | 116 | 33 | 4-16 | 44 | 1 | 0 |
| TX93D5800 | 107.0 | -- | 32 | 4-10 | 41 | 3 | 0 |
| TX94D081 | 106.5 | -- | 38 | 4-8 | 30 | 4 | 0 |
| TX95C3222 | 106.2 | -- | 35 | 4-17 | 42 | 0 | 0 |
| Coronado | 105.7 | 107 | 32 | 4-10 | 40 | 3 | 0 |
| TX92M1028 | 104.0 | -- | 31 | 4-8 | 39 | 0 | 1 |
| TX93D5855 | 103.7 | -- | 34 | 4-18 | 33 | 1 | 0 |
| FLA 501 | 103.1 | 106 | 34 | 4-4 | 41 | 2 | 0 |
| Big Mac | 103.0 | 103 | 34 | 4-8 | 40 | 1 | 0 |
| Mitchell | 102.3 | 99 | 33 | 4-3 | 31 | 2 | 0 |
| Bob | 102.3 | 104 | 33 | 4-7 | 33 | 1 | 0 |
| Buckshot HG76-30 | 101.4 | 97 | 34 | 4-7 | 41 | 5 | 0 |
| Harrison | 101.3 | 99 | 33 | 4-7 | 37 | 1 | 1 |
| TX94D084 | 100.4 | -- | 34 | 4-6 | 35 | 3 | 0 |
| TX93D5852 | 99.7 | -- | 34 | 4-17 | 39 | 2 | 0 |
| Chapman | 99.5 | -- | 32 | 4-6 | 32 | 1 | 0 |
| TX94D006 | 98.9 | -- | 38 | 4-6 | 38 | 3 | 0 |
| TX95B1250 | 98.2 | -- | 33 | 4-15 | 43 | 0 | 0 |
| TX83AB2923 | 97.7 | -- | 32 | 4-16 | 40 | 0 | 0 |
| TX94D107 | 97.5 | -- | 32 | 4-18 | 34 | 2 | 0 |
| TX93AB715 | 92.4 | -- | 31 | 4-17 | 39 | 0 | 0 |
| TX92M1048 | 91.3 | -- | 35 | 4-15 | 41 | 0 | 0 |
| Nora | 89.1 | 102 | 31 | 4-11 | 37 | 2 | 0 |
| TX95B1213 | 86.9 | -- | 34 | 4-15 | 41 | 0 | 0 |
| 811 | 86.6 | 85 | 33 | 4-1 | 37 | 6 | 1 |
| TX94D037 | 85.9 | -- | 36 | 4-6 | 37 | 3 | 0 |
| TX95B1328 | 85.8 | -- | 31 | 4-5 | 37 | 0 | 0 |
| TX95B1033 | 82.4 | -- | 34 | 4-7 | 44 | 1 | 0 |
| TX92M1596 | 82.4 | -- | 29 | 4-3 | 36 | 0 | 0 |
| TX89B1980 | 80.8 | -- | 32 | 4-2 | 38 | 1 | 0 |
| TX95B1111 | 80.8 | -- | 33 | 4-17 | 39 | 0 | 0 |
| TX95C3046 | 79.7 | -- | 32 | 4-7 | 39 | 0 | 0 |
| TX93C7691 | 77.2 | -- | 32 | 4-8 | 44 | 0 | 0 |
| TX94D117 | 76.8 | -- | 34 | 4-16 | 27 | 0 | 0 |
| TAMO 397 | 69.6 | -- | 30 | 4-2 | 33 | 0 | 0 |
| Mean | 95.8 | -- | 33 | -- | 38 | 2 | 0 |
| LSD (0.05) | 19.5 | | | | | | |
| CV | 12.6 | | | | | | |

Planting date October 7, 1996. Harvested: May 29, 1997. Fertilizer application rate: Preplant 500 lb of 10-20-20/ac. Topdressed with 75 lb of N/ac on February 18, 1997. Glean applied at 2-leaf stage at 0.3 oz/ac. Disease ratings were on a scale of 0-9, where 0 = no disease and 9 = dead plants. ^aNot tested over last 2 years.