FIELD DAY REPORT - 1996

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

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RYEGRASS FORAGE YIELDS AT OVERTON FOR 1994-95 AND THREE-YEAR MEANS

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Background. Annual ryegrass is an important forage crop in East Texas. Varieties vary in total forage yield and distribution, and for disease resistance. This study is conducted each year at the TAMU Agricultural Research and Extension Center at Overton to compare varieties for East Texas soils and climatic conditions.

Research Findings. All available ryegrass varieties and some experimental lines were evaluated during the past 3 years. Fertilizer rates are noted on table 1. Tests were planted into a prepared seedbed at 1/4 inch depth at 30 lb/ac. Planting dates were mid-September normally and on 23 September in 1994. Plot size was 4 x 12 ft with four replications. During the 1994-95 season, plots were harvested with a Hege plot harvester at a cutting height of 2 inches at five harvest dates. The January and February yields were very low for all entries, and contributed little to the total seasonal yield. The March, April, and May harvests were fairly good. The highest varieties were 'Marshall', 'Magnum', 'Surrey', 'Jackson', and 'Gulf'. Yield of TAM 90 was down in 1995 due to a low harvest weight on the April harvest. Three year mean yields are also presented in table 1. Note that the top three yielding lines are TAM 90, followed by Jackson and Marshall, however these yields differences are not significantly different.

Crown rust data are reported in 1995 (Table 1). Crown rust severely levels are on a 0 to 9 scale, where 0 = no disease, and 9 = death of the plant. At Overton, disease ratings of 2 or less, indicate good resistance to crown rust. Entries with crown rust ratings of 3.0 or higher should not be grown near the Gulf Coast, where crown rust may reduce forage yields. Data from the yield tables should be used with some caution. Note the least significant differences at the bottom on each table. Yield differences between varieties of less than the lsd, should not be considered real, and may be due to experimental error. Data over years is considered to be more reliable.

Application. The data presented from these experiments should be useful in selecting ryegrass varieties best adapted to northeast Texas. Several varieties are available which will normally out yield Gulf by 1000 lbs dry matter forage per acre. Winterhardiness is extremely valuable in those years when winterkill occurs. The small additional seed cost of new varieties such as TAM 90, and Marshall should be well worth their extra forage yielding potential.

Table 1. Ryegrass forage variety test at Overton, TX 1994-95.

Variety	HAR 1 1-20	HAR 2 2-27	HAR 3 3-31	HAR 4 4-26	HAR 5 5-18	Total DMY	3 Yr. Mean	Crown Rust Rating
	pounds of dry matter per acre							
Marshall	733	442	1839	1594	1184	5792	6183	5.0[a]
Wax NME94*	601	568	1794	1517	1202	5682	--[b]	3.0
Magnum tetraploid	908	699	1484	1307	1195	5593	--	1.5
DSVHS94-3 2N*	371	748	1726	1267	1457	5569	--	1.0
FL/OR 1994LR*	285	493	1842	1516	1412	5548	--	1.0
TXR93-12*	301	676	1797	1297	1462	5533	--	3.0
SS33DK*	405	636	1806	1380	1265	5492	--	1.5
Surrey	635	648	1714	1135	1348	5480	5546	2.0
WVPB-AR-93-A-9*	445	654	1619	1282	1463	5463	--	2.0
Jackson	544	640	1618	1258	1353	5413	6045	1.5
Gulf	1051	757	1427	896	1153	5284	5852	1.5
AR 90-1*	487	514	1574	1241	1439	5255	--	1.5
WVPB-AR-93-101*	110	443	1874	1177	1585	5189	--	2.0
WVPB-AR-90-300*	125	421	1836	1310	1421	5113	--	2.5
FLA 80	605	885	1574	900	1131	5095	5621	1.0
Rustmaster	274	533	1893	1055	1324	5079	--	1.5
Rio	329	526	1506	1359	1358	5078	5549	1.0
WVPB-AR-R-3*	329	618	1620	1063	1389	5019	--	2.5
Southern Star	189	519	1694	1150	1463	5015	--	2.0
TXR92-3*	172	490	1729	1163	1359	4913	--	4.0
TXR91-TA5EF*	163	516	1734	1245	1229	4887	5055	3.0
TXR93-11*	195	539	1662	1090	1318	4805	--	2.5
TAM 90	645	684	1477	830	1149	4785	6322	1.0
Tetrablend 444	214	410	1515	1383	1258	4780	--	4.0
Dargle	889	679	1145	948	1067	4728	--	0.5
WVPB-AR-ETCO-8-88*	281	337	1256	1408	1356	4638	--	3.0
BL3*	333	518	1416	1070	1293	4630	--	1.5
DSVHS 94-2 2N*	584	607	1200	831	1226	4447	--	2.5
Grazer	101	925	1503	1057	859	4445	--	5.0
Columbus	353	542	1175	897	1471	4438	--	2.0
Max	331	373	1056	1390	1214	4364	--	3.0
Andrea	498	410	1210	1100	1081	4299	--	5.5
NCSU 91*	87	319	1469	1192	1046	4113	5376	5.5
Comet	537	462	1016	949	1087	4051	--	5.5
DSVHS 94-1 4N*	248	372	1097	1130	1089	3936	--	5.5
Mean	366	574	1548	1167	1269	4897		
LSD (0.10)	245	173	293	187	258	734		

Planted September 23, 1994. Fertilization: Preplant 50 lbs N, 100 lb P_2O_5 and 100 lbs of K_2O/ac. Top-dressed with 40 lbs N/ac on November 3, 50 lbs N/ac on January 19, and 60 lbs N/ac on March 17 applied as ammonium nitrate. Herbicide: Buctril was applied postemergence to control broadleaf weeds at a rate of 1.5 oz/ac on February 1, 1995.
*Experimental line, seed not available.

[a]Crown rust rating was on a 0-9 scale where 9 = dead plants. Rating taken on May 18, 1995.
[b]Variety not tested over last 3 years.