Performance of Ryegrass Varieties in Alabama, 2004-05

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PERFORMANCE OF RYEGRASS VARIETIES IN ALABAMA, 2004-05

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Introduction

The Alabama Ryegrass Variety Evaluation is a continuing evaluation of available varieties and breeding lines from private companies and state agricultural experiment stations. Experiments are planted annually in northern, central, and southern locations to evaluate the varieties and lines under the different environmental conditions of Alabama. Entries in each experiment are determined by the companies or institutes that control each variety or line, not by Alabama Agricultural Experiment Station personnel. The experiments are conducted by experiment station personnel and the results are presented in a fair and unbiased manner.

Procedure

Ryegrass entries were seeded at a 20-pound-per-acre rate in rows 7 inches apart, using plots 5 x 20 feet with four replications. Acceptable stands were obtained at the following locations: Sand Mountain Research and Extension Center, Crossville; E.V. Smith Research Center, Plant Breeding Unit, Tallassee; Wiregrass Research and Extension Center, Headland and Gulf Coast Research and Extension Center, Fairhope.

The experiments were fertilized with phosphorus and potassium according to Auburn University soil test recommendations. At planting, nitrogen was applied at the rate of 50 pounds per acre, and an additional 50 pounds of N per acre was applied after each cutting. A 32- or 49-inch swath of each plot was harvested to a cutting height of 1 to 2 inches with a flail harvester each time the ryegrass reached 6-10 inches tall. A herbage sample of approximately 1 pound was taken from each plot at each harvest for determining forage dry matter percentage. In 2004, the tests were planted October 7, October 21, October 14, and October 20 at Crossville, Tallassee, Headland, and Fairhope, respectively. The small trial at Marion Junction could not be planted due to excessive fall moisture. In 2003, the tests were planted September 30, October 2, October 15, and October 17 at Crossville, Tallassee, Headland, and Fairhope, respectively.

Discussion

Strategies to meet seasonal forage needs are an important consideration for livestock producers. Tables 1-4 provide yield data by harvest for 2004-05 at a given location, while Tables 5 and 6 show 1, 2, and 3-year total yields by location. Seasonal and total dry matter yields by locations are provided in Tables 7 and 8. The three seasonal periods are: fall -- forage produced through February; early spring -- March and early April production; and late spring -- production after April 20. A 3-year average provides a more dependable comparison of ryegrass varieties than do single-year results.

TABLE 1. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE SAND MOUNTAIN RESEARCH AND EXTENSION CENTER, CROSSVILLE, ALABAMA, 2005.

Cultivar	Yield by harvest date						Season total
	12/16	2/17	3/15	3/30	4/18	5/16	
	lbs per acre						
Grazer	1062	2045	1221	1345	2010	5727	13409
Ed	1425	2059	1363	1522	2091	4809	13267
Wax ME-94	1429	1938	1482	1436	2440	4457	13182
FL X2002 (New 3) LRCT Select	1298	1923	1549	1769	2051	4306	12897
DN-II	1403	1758	1220	1486	2357	4442	12666
4X	1193	1544	1116	1656	2190	4931	12629
FL X2003 (New 2)ER	1439	1825	867	1094	1891	5503	12620
Jackson	1311	2167	1351	1449	2330	3999	12607
TXR 2004-BAR	1183	1864	1382	1719	2269	4178	12595
Passerel Plus	1267	2045	1393	1649	2526	3705	12586
Graz-N-Gro	1271	2025	1578	1507	2329	3815	12524
FL/NE X 2004 (Misc 2X) LRCT	1041	2206	1678	1445	2651	3464	12485
Marshall	1202	1895	1479	1796	2191	3922	12484
Flying A	1178	1878	1316	1520	2018	4324	12235
WMN 97	1371	1859	1453	1540	2427	3491	12141
WVPB-SS-93-AR-K4N	1136	1379	865	1412	2159	5176	12127
Rio	1540	1806	983	1408	1944	4444	12124
FL X 2001(New 1) 4X LR Late	1366	1445	923	1470	2184	4661	12049
FL X2002 (New 3) LRCT	1045	2118	1317	1496	2080	3974	12030
Big Daddy	1676	1174	660	1410	2305	4804	12029
Brigadier	168	1751	1359	1635	2196	4909	12018
Tam 90	1100	1784	1167	1325	2118	4458	11952
WD- 40	1548	1559	890	1483	2217	4147	11845
Maximus	1331	1090	926	1519	2294	4658	11819
M/FL X2004 (New 4) LRCT	977	1888	1314	1456	1996	4187	11817
Gulf (Local)	1606	1459	669	1365	2664	3962	11725
TXR 2005-T2EM	620	1699	1167	1355	2249	4526	11616
Striker	1483	1566	1104	1334	1819	4238	11543
Prine	1289	1336	1171	1232	1967	4420	11414
Ribeye	832	1875	1110	1274	2037	4178	11306
Jumbo	977	1410	1180	1265	2079	4341	11253
3LWD8181-2	1139	1259	965	1355	2363	4100	11181
M/FL X2004 (4X) LRCT	1185	1559	1176	1245	2198	3695	11057
Diamond T	1331	1322	932	1423	1935	3892	10835
FL X2003(BD)4X LRCT	1067	1430	1112	1352	1953	3602	10515
TXR 2005-TBO	1045	1395	1100	1510	1734	3649	10432
Shiwasuaba	1138	492	230	1029	2023	5299	10210
Test Mean	1207	1671	1156	1440	2170	4335	11979
C.V. (%)	21	17	17	16	14	19	8
LSD(0.10)	275	300	212	217	440	908	941

Planted: 10/7/2004

Soil: Hartsells Fine Sandy Loam

TABLE 2. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE E.V. SMITH RESEARCH CENTER, PLANT BREEDING UNIT, TALLASSEE, 2005.

	Yield by harvest date						Season
Cultivar	12/10	1/20	3/14	3/30	4/27	†	total
	lbs per acre						
FL X2003(BD)4X LRCT	381	435	1353	710	2303		5183
Gulf (Local)	431	494	1153	807	2102		4987
Ed	360	362	1209	758	2224		4911
Flying A	280	291	1007	815	2515		4909
Marshall	305	177	794	842	2779		4898
M/FL X2004 (4X) LRCT	372	422	1137	682	2216		4829
WVPB-SS-93-AR-K4N	304	439	992	773	2239		4746
Wax ME-94	301	192	774	864	2560		4692
Striker	336	283	873	750	2435		4678
Jackson	175	271	930	879	2401		4658
Big Daddy	325	416	985	730	2193		4649
M/FL X2004 (New 4) LRCT	311	227	943	818	2284		4583
WMN 97	310	171	536	710	2836		4563
Diamond T	271	255	1064	704	2238		4532
WD- 40	271	302	873	783	2263		4492
FL/NE X 2004 (Misc 2X) LRCT	278	187	790	815	2319		4389
DN-II	343	329	669	773	2243		4357
TXR 2005-TBO	341	244	840	778	2148		4351
FL X2003 (New 2)ER	328	314	1153	630	1919		4343
FL X 2001(New 1) 4X LR Late	225	193	753	710	2401		4283
Brigadier	15	205	947	745	2345		4257
Grazer	285	263	1255	487	1858		4148
Passerel Plus	323	225	596	665	2328		4137
4X	142	135	800	725	2334		4137
Prine	274	229	745	658	2191		4096
Graz-N-Gro	344	275	597	749	2104		4069
Rio	244	314	886	688	1933		4064
Tam 90	227	242	657	689	2242		4057
ME-3	40	122	446	628	2466		3702
TXR 2005-T2EM	193	127	646	626	1805		3397
Shiwasuaba	247	424	943	352	1296		3262
Test Mean	284	276	882	721	2243		4399
C.V. (%)	34	38	24	14	11		12
LSD(0.10)	100	105	195	97	228		483

Planted: 10/21/2004

Soil: Cahaba Fine Sandy Loam

† only five cuts taken at this location

TABLE 3. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE WIREGRASS RESEARCH AND EXTENSION CENTER, HEADLAND, ALABAMA, 2005.

	Yield by harvest date						Season
Cultivar	12/3	1/25	3/4	3/30	4/27	†	total
	---------- lbs per acre ----------						
Striker	1648	2360	3335	4170	1299		12813
FL X2003(BD)4X LRCT	1549	2222	3128	3797	1388		12084
Prine	1290	2056	2925	3796	1470		11537
TXR 2005-TBO	1209	1929	2973	3682	1535		11328
FL X 2001(New 1) 4X LR Late	1168	1874	2898	3940	1423		11303
M/FL X2004 (4X) LRCT	1153	1824	3118	3846	1299		11240
Diamond T	1018	2128	2756	4057	1227		11186
Ed	1441	1883	2819	3812	1218		11173
Big Daddy	1419	1956	2865	3561	1230		11031
Marshall	1374	1673	1998	3914	1763		10722
Gulf (Local)	1269	2157	2686	3238	1221		10572
FL X2003 (New 2)ER	1464	1697	3169	2884	1220		10434
Passerel Plus	1505	1616	2311	3624	1369		10425
WVPB-SS-93-AR-K4N	1187	1900	2703	3515	1001		10307
4X	1612	1451	2262	3657	1290		10273
FL/NE X 2004 (Misc 2X) LRCT	1014	1410	2461	4155	1223		10263
Jackson	995	1527	2423	3833	1440		10218
Graz-N-Gro	1138	1694	2509	3568	1224		10134
M/FL X2004 (New 4) LRCT	1312	1583	2610	3491	1106		10103
Wax ME-94	1303	1549	2269	3762	1204		10087
DN-II	1463	1999	2299	3032	1097		9890
ME-3	943	1626	1866	3706	1680		9821
Flying A	1022	1818	2537	3368	1041		9786
WD- 40	1258	1766	2458	3389	872		9743
Rio	1529	1691	2404	2944	1121		9689
WMN 97	1199	1488	1822	3311	1421		9241
Tam 90	1190	1514	2357	3126	1033		9220
TXR 2005-T2EM	1337	1169	2106	3352	1100		9063
Grazer	847	1409	2839	2976	978		9048
Shiwasuaba	1035	1921	2441	2425	752		8575
Brigadier	236	671	2234	3411	1156		7709
Test Mean	1230	1728	2567	3527	1239		10291
C.V. (%)	34	14	10	11	20		8
LSD(0.10)	485	224	238	339	226		792

Planted: 10/14/2004

Soil: Dothan Fine Sandy Loam

† only five cuts taken at this location

TABLE 4. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE GULF COAST RESEARCH AND EXTENSION CENTER, FAIRHOPE, ALABAMA, 2005.

	Yield by harvest date						Season
Cultivar	1/5	2/18	3/21	4/15	†	†	total
	lbs per acre						
3LWD8181-2	1031	2153	1858	1998			7040
M/FL X2004 (4X) LRCT	1325	2314	1554	1764			6956
Big Daddy	1131	2102	1902	1769			6904
Maximus	1302	1544	1874	2113			6834
Wax ME-94	1123	1708	2110	1831			6772
Marshall	1268	1607	1973	1805			6653
Flying A	1274	2169	2162	1591			6593
Prine	1015	1892	1691	1805			6402
Tam 90	1309	1860	1693	1510			6371
Rio	728	1759	2106	1770			6363
Jumbo	1305	1562	1522	1951			6341
Jackson	971	1619	2028	1719			6336
Gulf (Local)	1172	1788	1858	1443			6261
Passerel Plus	1377	1801	1605	1848			6167
FL X2002 (New 3) LRCT	528	1839	1727	2022			6116
Striker	995	1994	1299	1741			6030
FL/NE X 2004 (Misc 2X) LRCT	897	1819	1575	1716			6006
FL X2003(BD)4X LRCT	785	1726	1774	1705			5990
Diamond T	558	1780	1663	1985			5986
Ed	1123	1691	1593	1463			5869
WD- 40	814	2020	1611	1382			5827
FL X2003 (New 2)ER	669	1968	2334	1326			5795
TXR 2005-T2EM	458	1777	1781	1752			5768
Ribeye	612	1734	1797	1554			5697
4X	712	1521	1495	1955			5683
TXR 2005-TBO	528	1834	1569	1697			5628
FL X 2001(New 1) 4X LR Late	551	1609	1650	1809			5620
WVPB-SS-93-AR-K4N	995	1927	1298	1628			5606
DN-II	553	1488	1898	1629			5569
M/FL X2004 (New 4) LRCT	711	1822	1700	1800			5544
WMN 97	1139	1149	1841	1376			5504
Graz-N-Gro	1148	1559	1332	1685			5472
TXR 2004-BAR	446	1401	1691	1562			5100
Brigadier	218	1401	1757	1653			5029
Grazer	283	1556	1678	1457			4974
Shiwasuaba	471	1785	1521	1158			4935
FL X2002 (New 3) LRCT Select	441	1350	1439	1674			4904
Test Mean	864	1747	1729	1693			5963
C.V. (%)	22	21	23	16			13
LSD(0.10)	222	373	443	418			1094

Planted: 10/20/2004

Soil: Malbis Fine Sandy Loam

† only four cuts taken at this location

TABLE 5. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2005, AND TWO- AND THREE-YEAR AVERAGES FOR SAND MOUNTAIN REC AND PLANT BREEDING UNIT.

Sand Mountain Research and Ext. Ctr.				Plant Breeding Unit			
		2-yr. Avg	3-yr. Avg			2-yr. Avg	3-yr. Avg
Brand-Variety	2005	2004-05	2003-05	Brand-Variety	2005	2004-05	2003-05
	lbs per acre				lbs per acre		
Wax ME-94	13182	13685	11646	Ed	4911	3784	3752
Passerel Plus	12586	13336	11399	Marshall	4898	3751	3692
Ed	13267	13101	11249	Gulf (Local)	4987	3761	3689
Jackson	12607	12991	11207	Jackson	4658	3681	3679
Marshall	12484	13062	11157	Wax ME-94	4692	3687	3608
WMN 97	12141	12878	10985	WD- 40	4492	3548	3476
Brigadier	12018	12928	10941	Prine	4096	3334	3470
Gulf (Local)	11725	12657	10710	WMN 97	4563	3308	3450
Tam 90	11952	12740	10700	Brigadier	4257	3505	3446
WD- 40	11845	12627	10674	Tam 90	4057	3371	3400
Prine	11414	12022	10097	Passerel Plus	4137	3118	3222
Flying A	12235	13240	†	Flying A	4909	3955	†
Rio	12124	13066	†	FL X2003 (New 2)ER	4343	3577	†
4X	12629	12545	†	Diamond T	4532	3552	†
FL X2003 (New 2)ER	12620	12501	†	Rio	4064	3393	†
Diamond T	10835	11434	†	4X	4137	3218	†
Shiwasuaba	10210	10989	†	Shiwasuaba	3262	3018	†

continued

TABLE 5. CONTINUED

Sand Mountain Research and Ext. Ctr.				Plant Breeding Unit			
		2-yr. Avg	3-yr. Avg			2-yr. Avg	3-yr. Avg
Brand-Variety	2005	2004-05	2003-05	Brand-Variety	2005	2004-05	2003-05
	lbs per acre				lbs per acre		
Grazer	13409	†	†	FL X2003(BD) 4X LRCT	5183	†	†
FL X2002 (New 3) LRCT Select	12897	†	†	M/FL X2004 (4X) LRCT	4829	†	†
DN-II	12666	†	†	WVPB-SS-93-AR-K4N	4746	†	†
TXR 2004-BAR	12595	†	†	Striker	4678	†	†
Graz-N-Gro	12524	†	†	Big Daddy	4649	†	†
FL/NE X 2004 (Misc 2X)	12485	†	†	M/FL X2004 (New 4) LRCT	4583	†	†
WVPB-SS-93-AR-K4N	12127	†	†	FL/NE X 2004 (Misc 2X) LRCT	4389	†	†
FL X 2001(New 1) 4X LR Late	12049	†	†	DN-II	4357	†	†
FL X2002 (New 3) LRCT	12030	†	†	TXR 2005-TBO	4351	†	†
Big Daddy	12029	†	†	FL X 2001 (New 1) 4X LR Late	4283	†	†
Maximus	11819	†	†	Grazer	4148	†	†
M/FL X2004 (New 4) LRCT	11817	†	†	Graz-N-Gro	4069	†	†
TXR 2005-T2EM	11616	†	†	3LWD8181-2	3603	†	†
Striker	11543	†	†	TXR 2005-T2EM	3397	†	†
Ribeye	11306	†	†				
Jumbo	11253	†	†				
3LWD8181-2	11181	†	†				
M/FL X2004 (4X) LRCT	11057	†	†				
FL X2003(BD) 4X LRCT	10515	†	†				
TXR 2005-TBO	10432	†	†				

TABLE 6. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2005, AND TWO- AND THREE-YEAR AVERAGES FOR WIREGRASS REC AND GULF COAST REC

Wiregrass Research and Ext. Ctr.				Gulf Coast Research and Ext. Ctr.			
		2-yr. Avg	3-yr. Avg			2-yr. Avg	3-yr. Avg
Brand-Variety	2005	2004-05	2003-05	Brand-Variety	2005	2004-05	2003-05
	---------- lbs per acre ----------				---------- lbs per acre ----------		
Prine	11537	9824	8363	Prine	6402	6251	6925
Gulf (Local)	10572	8904	7896	Marshall	6653	6514	6824
Ed	11173	9215	7830	Wax ME-94	6772	6550	6777
Wax ME-94	10087	8868	7578	Jumbo	6341	6204	6738
Marshall	10722	8894	7564	Jackson	6336	6211	6717
Passerel Plus	10425	8540	7323	Tam 90	6371	6102	6689
WD- 40	9743	8417	7317	Gulf (Local)	6261	6044	6600
Jackson	10218	8468	7315	Ed	5869	6076	6586
Tam 90	9220	7978	7166	WD- 40	5827	5903	6508
WMN 97	9241	7722	6769	Passerel Plus	6167	6087	6505
Brigadier	7709	7339	6690	WMN 97	5504	5825	6470
Diamond T	11186	9739	†	Brigadier	5029	5794	6336
4X	10273	9086	†	Ribeye	5697	5803	6330
FL X2003 (New 2)ER	10434	8763	†	Diamond T	5986	6181	†
Flying A	9786	8648	†	Flying A	6593	6181	†
Rio	9689	7997	†	FL X2002 (New 3) LRCT	6116	6131	†
Shiwasuaba	8575	7872	†	Rio	6363	5988	†

continued

TABLE 6. CONTINUED

Wiregrass Research and Ext. Ctr.				Gulf Coast Research and Ext. Ctr.			
		2-yr. Avg	3-yr. Avg			2-yr. Avg	3-yr. Avg
Brand-Variety	2005	2004-05	2003-05	Brand-Variety	2005	2004-05	2003-05
	lbs per acre				lbs per acre		
Striker	12813	†	†	4X	5683	5897	†
FL X2003(BD)4X	12084	†	†	FL X2003 (New 2)ER	5795	5846	†
TXR 2005-TBO	11328	†	†	Shiwasuaba	4492	5597	†
FL X 2001(New 1) 4X LR Late	11303	†	†	3LWD8181-2	7040	†	†
M/FL X2004 (4X) LRCT	11240	†	†	M/FL X2004 (4X) LRCT	6956	†	†
Big Daddy	11031	†	†	Big Daddy	6903	†	†
WVPB-SS-93-AR-K4N	10307	†	†	Maximus	6834	†	†
FL/NE X 2004 (I	10263	†	†	Striker	6030	†	†
Graz-N-Gro	10134	†	†	FL/NE X 2004 (M	6006	†	†
M/FL X2004 (Ne	10103	†	†	FL X2003(BD)4X	5990	†	†
DN-II	9890	†	†	TXR 2005-T2EM	5768	†	†
3LWD8181-2	9821	†	†	TXR 2005-TBO	5628	†	†
TXR 2005-T2EM	9063	†	†	FL X 2001(New 1	5620	†	†
Grazer	9048			WVPB-SS-93-AR	5606	†	†
				DN-II	5569	†	†
				M/FL X2004 (Nev	5544	†	†
				Graz-N-Gro	5472	†	†
				TXR 2004-BAR	5100	†	†
				FL X2002 (New 3	4904	†	†
				Grazer	4636		

TABLE 7. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT SAND MOUNTAIN REC AND PLANT BREEDING UNIT BASED ON THREE-YEAR AVERAGES, 2003-2005.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	---------- % ----------			-- lbs per acre --
Sand Mountain Research and Ext. Ctr.				
Wax ME-94	25	42	34	11646
Passerel Plus	26	42	32	11399
Ed	24	41	35	11249
Jackson	26	43	32	11207
Marshall	24	44	32	11157
WMN 97	24	42	34	10985
Brigadier	21	43	36	10941
Gulf (Local)	27	40	33	10710
Tam 90	26	40	34	10700
WD- 40	27	40	33	10674
Prine	26	41	33	10097
Plant Breeding Unit				
Ed	17	50	33	3752
Marshall	15	46	40	3692
Gulf (Local)	16	53	31	3689
Jackson	13	51	37	3679
Wax ME-94	15	48	37	3608
WD- 40	15	50	36	3476
Prine	15	48	37	3470
WMN 97	12	45	43	3450
Brigadier	12	51	36	3446
Tam 90	16	49	35	3400
Passerel Plus	15	45	40	3222

TABLE 8. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT WIREGRASS REC AND GULF COAST REC BASED ON THREE-YEAR AVERAGES, 2003-2005.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	---------- % ----------			-- lbs per acre --
Wiregrass Research and Ext. Ctr.				
Prine	30	53	17	8363
Gulf (Local)	33	52	15	7896
Ed	31	53	15	7830
Wax ME-94	29	55	16	7578
Marshall	28	53	19	7564
Passerel Plus	28	53	19	7323
WD- 40	32	54	14	7317
Jackson	27	56	17	7315
Tam 90	31	53	16	7166
WMN 97	25	55	20	6769
Brigadier	24	58	18	6690
Gulf Coast Research and Ext. Ctr.				
Prine	38	37	25	6925
Marshall	35	41	24	6824
Wax ME-94	38	41	21	6777
Jumbo	36	39	25	6738
Jackson	37	40	23	6717
Tam 90	40	37	23	6689
Gulf (Local)	40	38	22	6600
Ed	39	38	23	6586
WD- 40	40	37	23	6508
Passerel Plus	38	36	25	6505
WMN 97	37	38	26	6470
Brigadier	35	42	23	6336
Ribeye	38	38	23	6330

SOURCES OF RYEGRASS SEED

3LWD8181-2 Jumbo Ribeye Maximus FL X2002 (New 3) LRCT FL X2002 (New 3) LRCT SELECT TX2004-BAR	**Barenbrug USA, Tangent, Oregon**
Brigadier Prine	**East Texas Seed Co., Tyler, Texas**
Diamond T 4X Flying A WD-40 DN-II	**OreGro Seeds, Inc., Shedd, Oregon**
Gulf (Local Source)	**Piedmont Fertilizer Co., Opelika, Alabama**
Passerel Plus Shiwasuaba	**Pennington Seed, Inc., Lebanon, Oregon**
Rio	**ProSeeds Marketing, Inc., Jefferson, Oregon**
Graze-N-Gro Striker	**Seed Research of Oregon, Corvallis, Oregon**
Big Daddy Ed WVPB-SS-93-AR-KYN FLX2001(New1) 4XLRLate FLX2003(BD)4XLRCT	**Smith Seed Service, Halsey, Oregon**
TAM 90 TXR 2005-T2EM TXR2005-TBO	**Texas A & M University, College Station, Texas**
Jackson Marshall WAX ME-94 WMN 97	**The Wax Company, LLC, Amory, Mississippi**
M/FL X2004(New 4)LRCT FL/NE X2004(Misc 2x)LRCT FL X2003 (New2)ER M/FL X2004(4x)LRCT	**University of Florida, Gainesville, Florida**
Grazer	**Univ. of Georgia, Athens, GA**