

*Performance of  
Ryegrass  
Varieties in  
Alabama,  
2010-11*

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## CONTENTS

<b>TABLE 1.</b> SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE SAND MOUNTAIN RESEARCH AND EXTENSION CENTER, CROSSVILLE, ALABAMA, 2011....	5
<b>TABLE 2.</b> SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE E.V. SMITH RESEARCH CENTER, PLANT BREEDING UNIT, TALLASSEE, 2011.....	6
<b>TABLE 3.</b> SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE WIREGRASS RESEARCH AND EXTENSION CENTER, HEADLAND, ALABAMA, 2011. ....	7
<b>TABLE 4.</b> SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE GULF COAST RESEARCH AND EXTENSION CENTER, FAIRHOPE, ALABAMA, 2011. ....	8
<b>TABLE 5.</b> TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2011, AND TWO- AND THREE-YEAR AVERAGES FOR SAND MOUNTAIN REC AND PLANT BREEDING UNIT. ....	9
<b>TABLE 6.</b> TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2011, AND TWO- AND THREE-YEAR AVERAGES FOR WIREGRASS REC AND GULF COAST REC.....	10
<b>TABLE 7.</b> SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT SAND MOUNTAIN REC BASED ON THREE-YEAR AVERAGES, 2009-2011.....	11
<b>TABLE 8.</b> SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT PLANT BREEDING UNIT BASED ON THREE-YEAR AVERAGES, 2009-2011.....	12
<b>TABLE 9.</b> SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT WIREGRASS REC BASED ON THREE-YEAR AVERAGES, 2009-2011.....	13
<b>TABLE 10.</b> SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT GULF COAST REC BASED ON THREE-YEAR AVERAGES, 2009-2011. ....	14
SEED SOURCES. ....	15

# PERFORMANCE OF RYEGRASS VARIETIES IN ALABAMA, 2010-11

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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 2010, tests were planted on October 10, September 30, October 7, and November 1 at Crossville, Tallassee, Headland, and Fairhope, respectively. In 2009, the tests were planted on September 30, October 1, October 21, and October 21 at Crossville, Tallassee, Headland, and Fairhope, respectively. In 2008, the tests were planted October 16, October 14, October 30, and October 13 at Crossville, Tallassee, Headland, and Fairhope, respectively. A small trial was planted on October 22 at Marion Junction but no stand was obtained.

## DISCUSSION

Strategies to meet seasonal forage needs are an important consideration for livestock producers. Tables 1-4 provide yield data by harvest for 2010-11 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 - 10. 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, 2011.

Cultivar	Yield by harvest date						Season total
	3/4	3/22	4/11	4/25	5/10	5/31	
	----- lbs per acre -----						
Ram 4	895	1889	753	676	2564	1374	8152
Wax ME-94	600	1654	860	610	3005	1164	7892
Diamond T	454	1553	760	634	2767	1535	7703
TXR 2008-T3	275	1531	696	792	2680	1688	7662
Passerel Plus	382	1426	910	498	2753	1663	7632
Prine	379	1348	886	744	2644	1574	7575
Bulldog Grazer	314	1444	872	710	2986	1192	7518
Winterhawk	360	1550	639	609	3092	1236	7486
Jumbo	206	1310	745	782	2862	1562	7468
FL 2010 4x Early	489	1587	743	646	2802	1181	7447
B-7,1366	237	1655	1004	530	2783	1186	7394
Fria	403	1641	590	587	2825	1288	7333
Big Boss	382	1345	890	629	2682	1400	7330
Nelson	259	1242	845	644	2783	1537	7310
Marshall	267	1301	725	618	2888	1469	7268
DH-3	433	1697	621	576	2783	1044	7155
Flying A	420	1717	544	553	2694	1128	7056
TAMTBO	398	1297	961	409	2474	1462	7001
Wax ME-4	112	1153	839	588	2902	1260	6853
07-EW	228	1441	687	569	2446	1464	6835
LWD9086-11	425	1269	753	523	2520	1333	6824
07-WW	266	1265	725	608	2624	1322	6809
FL 2010 (PE-2x) LATE	232	1169	696	615	2978	1118	6807
FLXSH 2010 (2x) ME	604	1379	862	787	2075	1098	6805
BAR LMF 9876	162	808	1120	611	2531	1515	6746
BAR LMF 9740	203	1129	999	614	2304	1438	6687
FLX2010 Red 4x late	206	1250	835	527	2714	1121	6653
Jackson	237	1289	664	478	2770	1038	6476
Maximus	226	1248	743	579	2557	1092	6446
Gulf (Local)	419	1302	665	529	2302	1013	6230
FLXSH 2010 2x Early	657	1259	590	477	2058	965	6006
SHXFL 2009 (2x) ME	706	1273	611	534	1910	887	5920
BAR LMF 9881	149	1091	499	469	2118	1556	5882
<b>Test Mean</b>	363	1379	768	599	2633	1300	7041
<b>C.V.(%)</b>	44	19	16	18	12	18	10
<b>LSD(0.10)</b>	146	245	115	99	290	213	633

Planted: 10/10/2010

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, 2011.**

Cultivar	Yield by harvest date						Season total
	11/18	3/2	3/17	4/6	5/4	†	
	----- lbs per acre -----						
TAMTBO	1143	1474	1041	1438	3287		8384
Nelson	957	1338	765	1412	3545		8017
Wax ME-4	878	1353	936	1562	2967		7698
SHXFL 2009 (2x) ME	1229	2824	957	1140	1462		7613
Jumbo	1008	1156	899	1414	3133		7611
Marshall	1053	1002	891	1620	3016		7582
Wax ME-94	1204	1054	970	1556	2789		7572
B-7,1366	1029	939	860	1516	3127		7471
Bulldog Grazer	1305	1456	987	1481	2175		7404
Prine	948	1048	837	1357	3152		7342
TXR 2008-T3	806	969	931	1265	3277		7248
Flying A	970	1263	1023	1658	2293		7208
BAR LMF 9740	1258	1099	749	1232	2853		7191
Passerel Plus	1083	735	883	1434	3039		7173
Fria	810	1075	993	1500	2787		7165
Diamond T	1073	1163	864	1373	2678		7151
Jackson	920	1125	986	1447	2666		7145
Big Boss	864	1235	875	1436	2597		7006
Ram 4	1085	1327	909	1227	2444		6992
DH-3	1003	1382	950	1456	2196		6986
FL 2010 4x Early	763	1532	809	1301	2467		6873
07-WW	858	1237	990	1454	2302		6841
FLXSH 2010 (2x) ME	1242	1788	938	1223	1621		6813
Maximus	958	1297	952	1359	2223		6790
FLX2010 Red 4x late	809	1008	818	1260	2798		6693
07-EW	774	970	914	1486	2479		6623
Winterhawk	838	852	838	1503	2567		6598
FLXSH 2010 2x Early	1040	2251	970	1232	1005		6497
FL 2010 (PE-2x) LATE	945	992	926	1269	2352		6483
Gulf (Local)	1036	1433	1091	1345	1561		6467
BAR LMF 9876	857	880	712	1237	2596		6281
LWD9086-11	831	1399	839	1045	1846		5960
BAR LMF 9881	622	893	703	1066	1939		5224
<b>Test Mean</b>	976	1259	903	1373	2522		7033
<b>C.V.(%)</b>	28	23	15	13	12		11
<b>LSD(0.10)</b>	251	262	124	168	268		697

Planted: 9/30/2010

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, 2011.

Cultivar	Yield by harvest date						Season
	12/9	2/14	3/16	4/7	†	†	total
	----- lbs per acre -----						
FLXSH 2010 2x Early	1942	3145	2421	600			8108
Marshall	2401	2155	2320	1162			8037
SHXFL 2009 (2x) ME	2004	2751	2636	501			7892
DH-3	2077	2340	2444	962			7822
Diamond T	2474	2113	2149	1001			7736
Maximus	2323	2234	2223	888			7667
Jackson	2215	1863	2571	914			7562
Winterhawk	2077	1733	2790	901			7500
FLXSH 2010 (2x) ME	1799	2539	2541	566			7446
Big Boss	2215	1928	2184	1090			7418
Wax ME-94	2192	1970	2177	1066			7406
Gulf (Local)	1851	2613	2170	755			7389
Bulldog Grazer	2778	1590	2154	871			7393
BAR LMF 9740	2136	2117	1930	1173			7355
Ram 4	2254	1704	2547	707			7212
TXR 2008-T3	2171	1677	2322	1015			7186
Prine	1999	1870	2305	988			7162
B-7,1366	2163	1697	2119	1179			7158
Wax ME-4	1503	1936	2605	1068			7112
TAMTBO	2065	1820	2127	1068			7081
Jumbo	1904	1828	2173	913			6819
Passerel Plus	2079	1479	2101	1157			6816
07-WW	1910	1867	2250	760			6787
Flying A	1781	1821	2309	783			6694
Nelson	1629	1628	2246	1171			6674
07-EW	1465	2074	2349	775			6662
FLX2010 Red 4x late	1901	1683	2158	894			6636
FL 2010 (PE-2x) LATE	1805	1685	2164	900			6554
LWD9086-11	1926	1718	2084	817			6545
Fria	1524	1875	2296	823			6519
FL 2010 4x Early	1594	1626	2432	750			6402
BAR LMF 9881	1915	1470	1865	966			6215
BAR LMF 9876	1294	1155	1845	1342			5636
<b>Test Mean</b>	1981	1930	2273	925			7109
<b>C.V.(%)</b>	13	19	12	16			8
<b>LSD(0.10)</b>	244	342	244	137			529

Planted: 10/7/2010

Soil: Dothan Fine Sandy Loam

† only four cuts taken at this location

**TABLE 4. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE GULF COAST RESEARCH AND EXTENSION CENTER, FAIRHOPE, ALABAMA, 2011.**

Cultivar	Yield by harvest date					†	Season total
	1/28	2/23	3/8	3/24	4/18		
	----- lbs per acre -----						
Marshall	1234	1512	1852	1613	2429		8639
Passerel Plus	903	1709	1804	1584	2324		8323
FLX2010 Red 4x late	816	1604	1501	1277	2540		7738
Diamond T	1055	1761	1601	1302	1940		7659
TAMTBO	1070	1573	1718	1317	1972		7650
LWD9086-11	1149	1853	1619	1229	1776		7627
Fria	608	1634	1692	1412	2236		7583
Wax ME-4	622	1418	1594	1573	2319		7526
BAR LMF 9740	804	1527	1603	1407	2174		7515
Prine	1122	1569	1629	1250	1938		7508
07-EW	690	1647	1622	1382	2165		7506
Gulf (Local)	1000	1854	1590	1133	1915		7492
Big Boss	916	1549	1655	1378	1962		7461
Bulldog Grazer	878	1657	1668	1219	1953		7374
Nelson	949	1547	1544	1348	1960		7349
BAR LMF 9881	779	1387	1651	1448	2050		7316
Maximus	825	1497	1628	1279	2066		7295
FL 2010 4x Early	1103	1760	1491	1145	1789		7289
Wax ME-94	638	1354	1763	1384	2148		7288
Ram 4	1164	1832	1364	1103	1815		7279
DH-3	714	1620	1668	1187	2082		7271
Jackson	738	1671	1587	1234	2018		7248
TXR 2008-T3	705	1535	1514	1472	1966		7191
Winterhawk	607	1544	1647	1303	2090		7190
BAR LMF 9876	622	1342	1625	1552	2014		7155
SHXFL 2009 (2x) ME	998	1856	1311	1229	1745		7140
Flying A	735	1540	1630	1226	1999		7130
FL 2010 (PE-2x) LATE	698	1605	1608	1275	1892		7077
B-7,1366	612	1468	1699	1297	1944		7021
FLXSH 2010 2x Early	948	1959	1125	1222	1663		6918
Jumbo	654	1540	1635	1231	1735		6795
07-WW	624	1334	1489	1237	1982		6666
FLXSH 2010 (2x) ME	881	1647	1128	1202	1736		6594
<b>Test Mean</b>	844	1603	1584	1317	2010		7358
<b>C.V.(%)</b>	41	12	8	10	11		10
<b>LSD(0.10)</b>	317	174	116	121	194		640

Planted: 11/1/2010

Soil: Malbis Fine Sandy Loam

† only five cuts taken at this location



**TABLE 5. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2011, AND TWO- AND THREE-YEAR AVERAGES FOR SAND MOUNTAIN REC AND PLANT BREEDING UNIT.**

Sand Mountain Research and Ext. Ctr.				Plant Breeding Unit			
Brand-Variety	2-yr. Avg		3-yr. Avg	Brand-Variety	2-yr. Avg		3-yr. Avg
	2011	2010-11	2009-11		2011	2010-11	2009-11
----- lbs per acre -----				----- lbs per acre -----			
Wax ME-94	7892	6230	6038	Nelson	8017	7601	7135
Marshall	7268	5758	5984	Wax ME-4	7698	6840	6938
Diamond T	7703	6026	5871	Marshall	7582	7017	6850
Bulldog Grazer	7518	5853	5817	Wax ME-94	7572	6945	6766
Flying A	7056	5829	5752	Jumbo	7611	6706	6636
Passerel Plus	7632	6227	5670	Flying A	7208	6628	6621
Jackson	6476	5500	5663	TAMTBO	8384	7324	6529
Prine	7575	5675	5636	DH-3	6986	6454	6513
TAMTBO	7001	5501	5624	Jackson	7145	6645	6427
DH-3	7155	5597	5621	Prine	7342	6791	6417
Wax ME-4	6853	5582	5589	Bulldog Grazer	7404	6497	6369
Nelson	7310	5677	5536	Diamond T	7151	6323	6336
FLX2010 Red 4x late	6653	5422	5470	FLX2010 Red 4x late	6693	6287	6243
Maximus	6446	5341	5436	Maximus	6790	6336	6220
Gulf (Local)	6230	5267	5430	Passerel Plus	7173	6271	6058
Jumbo	7468	5502	5284	Gulf (Local)	6467	5993	5732
Winterhawk	7486	5823		Winterhawk	6598	6713	
FLXSH 2010 (2x) ME	6805	5587		SHXFL 2009 (2x) ME	7613	6657	
FL 2010 (PE-2x) LATE	6807	5473		B-7,1366	7471	6490	
SHXFL 2009 (2x) ME	5920	5373		FL 2010 (PE-2x) LATE	6483	6302	
Ram 4	8152			FLXSH 2010 (2x) ME	6813	6253	
TXR 2008-T3	7662			TXR 2008-T3	7248		
FL 2010 4x Early	7447			BAR LMF 9740	7191		
B-7,1366	7394			Fria	7165		
Fria	7333			Big Boss	7006		
Big Boss	7330			Ram 4	6992		
07-EW	6835			FL 2010 4x Early	6873		
LWD9086-11	6824			07-WW	6841		
07-WW	6809			07-EW	6623		
BAR LMF 9876	6746			FLXSH 2010 2x Early	6497		
BAR LMF 9740	6687			BAR LMF 9876	6151		
FLXSH 2010 2x Early	6006			LWD9086-11	5960		
BAR LMF 9881	5882			BAR LMF 9881	5224		

**TABLE 6. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2011, AND TWO- AND THREE-YEAR AVERAGES FOR WIREGRASS REC AND GULF COAST REC.**

Wiregrass Research and Ext. Ctr.				Gulf Coast Research and Ext. Ctr.			
Brand-Variety	2-yr. Avg		3-yr. Avg	Brand-Variety	2-yr. Avg		3-yr. Avg
	2011	2010-11	2009-11		2011	2010-11	2009-11
----- lbs per acre -----				----- lbs per acre -----			
Maximus	7667	12619	11039	Marshall	8639	9677	9495
Diamond T	7736	12030	10863	Diamond T	7659	8881	8941
Prine	7162	12217	10791	Flying A	7130	8627	8932
TAMTBO	7081	12010	10704	Passerel Plus	8323	9120	8848
DH-3	7822	11985	10630	Wax ME-4	7526	8794	8834
Nelson	6674	11545	10502	Wax ME-94	7288	8639	8832
Bulldog Grazer	7630	11887	10499	Prine	7508	8763	8756
Flying A	6694	11663	10450	Jackson	7248	8609	8746
Jumbo	6819	11264	10392	Bulldog Grazer	7374	8809	8728
Marshall	8037	12060	10319	TAMTBO	7650	8691	8697
Wax ME-4	7112	11704	10294	DH-3	7271	8669	8663
Wax ME-94	7406	11791	10287	Gulf (Local)	7492	8700	8578
FLX2010 Red 4x late	6636	11123	10217	Maximus	7295	8640	8537
Gulf (Local)	7389	11374	9890	FLX2010 Red 4x late	7738	8483	8517
Jackson	7562	11026	9877	Nelson	7349	8501	8505
Passerel Plus	6816	10351	9268	Jumbo	6795	8318	8302
Winterhawk	7500	12163		B-7,1366	7021	8768	
FLXSH 2010 (2x) ME	7446	11376		Winterhawk	7190	8636	
SHXFL 2009 (2x) ME	7892	11366		FL 2010 (PE-2x) LATE	7077	8323	
FL 2010 (PE-2x) LATE	6554	10036		SHXFL 2009 (2x) ME	7140	8160	
FLXSH 2010 2x Early	8108			FLXSH 2010 (2x) ME	6594	7658	
Big Boss	7418			LWD9086-11	7627		
BAR LMF 9740	7355			Fria	7583		
Ram 4	7212			BAR LMF 9740	7515		
TXR 2008-T3	7186			07-EW	7506		
B-7,1366	7158			Big Boss	7461		
07-WW	6787			BAR LMF 9881	7316		
07-EW	6662			FL 2010 4x Early	7289		
LWD9086-11	6545			Ram 4	7279		
Fria	6519			TXR 2008-T3	7191		
FL 2010 4x Early	6402			BAR LMF 9876	7155		
BAR LMF 9881	6215			FLXSH 2010 2x Early	6918		
BAR LMF 9876	5873			07-WW	6666		

TABLE 7. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT SAND MOUNTAIN REC BASED ON THREE-YEAR AVERAGES, 2009-2011.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
<b>Sand Mountain Research and Ext. Ctr.</b>				
Wax ME-94	46	54		6038
Marshall	41	59		5984
Diamond T	42	58		5871
Bulldog Grazer	43	57		5817
Flying A	45	55		5752
Passerel Plus	45	55		5670
Jackson	46	54		5663
Prine	41	59		5636
TAMTBO	44	56		5624
DH-3	47	53		5621
Wax ME-4	42	58		5589
Nelson	42	58		5536
FLX2010 Red 4x late	43	57		5470
Maximus	41	59		5436
Gulf (Local)	48	52		5430
Jumbo	40	60		5284

*continued*

**TABLE 8. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT PLANT BREEDING UNIT BASED ON THREE-YEAR AVERAGES, 2009-2011.**

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
<b>Plant Breeding Unit</b>				
Nelson	24	37	39	7135
Wax ME-4	24	40	36	6938
Marshall	24	42	35	6850
Wax ME-94	24	42	34	6766
Jumbo	24	40	36	6636
Flying A	26	44	30	6621
TAMTBO	22	40	38	6529
DH-3	27	42	31	6513
Jackson	23	41	36	6427
Prine	23	39	38	6417
Bulldog Grazer	27	45	28	6369
Diamond T	28	40	32	6336
FLX2010 Red 4x late	24	40	36	6243
Maximus	23	45	32	6220
Passerel Plus	26	40	35	6058
Gulf (Local)	25	48	27	5732

*continued*

**TABLE 9. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT WIREGRASS REC  
BASED ON THREE-YEAR AVERAGES, 2009-2011.**

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
<b>Wiregrass Research and Ext. Ctr.</b>				
Maximus	29	45	27	11039
Diamond T	31	44	25	10863
Prine	28	47	26	10791
TAMTBO	27	45	27	10704
DH-3	30	49	21	10630
Nelson	24	49	27	10502
Bulldog Grazer	31	49	20	10499
Flying A	30	48	22	10450
Jumbo	26	47	26	10392
Marshall	29	48	23	10319
Wax ME-4	26	49	25	10294
Wax ME-94	28	48	24	10287
FLX2010 Red 4x late	29	46	25	10217
Gulf (Local)	32	48	21	9890
Jackson	29	49	22	9877
Passerel Plus	28	52	20	9268

*continued*

**TABLE 10. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT GULF COAST REC  
BASED ON THREE-YEAR AVERAGES, 2009-2011.**

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
<b>Gulf Coast Research and Ext. Ctr.</b>				
Marshall	27	54	19	9495
Diamond T	29	52	20	8941
Flying A	28	54	18	8932
Passerel Plus	27	57	16	8848
Wax ME-4	25	56	19	8834
Wax ME-94	24	57	19	8832
Prine	27	52	21	8756
Jackson	26	56	18	8746
Bulldog Grazer	27	54	18	8728
TAMTBO	28	52	20	8697
DH-3	27	56	17	8663
Gulf (Local)	29	54	17	8578
Maximus	27	54	20	8537
FLX2010 Red 4x late	26	55	19	8517
Nelson	26	54	20	8505
Jumbo	26	53	21	8302

## SOURCES OF RYEGRASS SEED

Cultivar	Company
Fria	Allied Seed LLC, Macon, Missouri
Bulldog Grazer	Athens Seed Co., Watkinsville, Georgia
Jumbo, Maximus, LWD9086-11 BAR LMF 9740, BAR LMF 9881, BAR LMF 9876	Barenbrug USA, Tangent, Oregon
B-7,1366	KB Seed Solutions, Harrisburg, Oregon
Prine, RAM 4	Ragan & Massey, Inc., Ponchatoula, Louisiana
DH-3, Diamond T, Flying A TAMTBO, Winterhawk 07-EW, 07-WW	OreGro Seeds, Inc., Shedd, Oregon
Gulf (Local Source)	Piedmont Fertilizer Co., Opelika, Alabama
Passerel Plus	Pennington Seed, Inc., Lebanon, Oregon
Big Boss	Smith Seed Services, Halsey, Oregon
TXR 2008-T3	Texas A & M University, College Station, Texas
Jackson, Marshall WAX ME-94, WAX ME-4 Nelson (formerly TXR 2006-T22)	The Wax Company, LLC, Amory, Mississippi
FL 2010 Red 4x Late, FL 2010 PE-2x Late FLXSH 2010 2x ME, SHXFL 2009 2x ME FL 2010 4x Early, FLxSh 2010 2x Early	University of Florida, Gainesville, Florida