

*Performance of
Ryegrass
Varieties in
Alabama,
2011-12*

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PERFORMANCE OF RYEGRASS VARIETIES IN ALABAMA, 2011-12

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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 2011, tests were planted on October 3, October 13, October 24, and October 14 at Crossville, Tallassee, Headland, and Fairhope, respectively. In 2010, tests were planted on October 3, 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 2011-12 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, 2012.

Cultivar	Yield by harvest date						Season total
	1/6	3/14	3/21	3/29	4/4	4/11	
	----- lbs per acre -----						
Marshall	336	1007	831	1039	697	612	on
Earlyploid	371	1699	581	848	711	426	next
FL 2011 (PE-2x) LATE	212	1177	753	935	689	569	page
Big Boss	210	941	720	989	682	508	
Wax ME-94	178	920	723	947	660	515	
FL 2011 4x Early	126	1553	600	820	609	461	
Flying A	230	1087	874	825	623	408	
Fria	119	962	759	878	641	426	
DH-3	199	955	745	907	568	487	
Prine	152	885	690	881	582	442	
SHXFL 2011 (2x) ME	123	1216	489	752	534	388	
07-EW	67	1000	822	892	532	417	
Attain	220	970	522	900	584	393	
Wax ME-4	90	590	823	806	646	465	
Winterhawk	122	792	641	846	654	338	
Diamond T	72	795	623	863	576	520	
FLXSH 2011 (2x) ME	187	1347	552	676	474	402	
Passerel Plus	65	742	693	831	535	371	
TAMTBO	36	594	597	843	543	393	
FLXSH 2011 2x Early	223	1255	467	583	421	237	
M2CVS	21	320	730	797	475	372	
Bulldog Grazer	0	1058	521	595	584	368	
Nelson	100	666	423	743	517	399	
Jackson	68	616	599	715	525	367	
07-WW	0	419	506	768	499	245	
Test Mean	141	943	651	827	582	421	
C.V.(%)	119	31	30	19	22	34	
LSD(0.10)	153	271	178	146	115	132	

Planted: 10/3/2011

cuts 7-9 and total on next page

Soil: Hartsells Fine Sandy Loam

TABLE 1. CONTINUED

Cultivar	Yield by harvest date			Season total
	4/24	5/4	5/15	
	----- lbs per acre -----			
Marshall	1221	684	366	6794
Earlyploid	1118	687	220	6660
FL 2011 (PE-2x) LATE	1064	613	245	6257
Big Boss	865	790	332	6038
Wax ME-94	1120	545	226	5835
FL 2011 4x Early	859	571	189	5789
Flying A	902	582	200	5731
Fria	963	582	294	5623
DH-3	959	513	221	5554
Prine	1023	589	292	5537
SHXFL 2011 (2x) ME	1130	666	217	5514
07-EW	969	527	266	5493
Attain	919	675	295	5478
Wax ME-4	997	618	255	5292
Winterhawk	825	701	329	5246
Diamond T	968	499	313	5228
FLXSH 2011 (2x) ME	884	586	102	5211
Passerel Plus	917	592	293	5041
TAMTBO	871	678	270	4824
FLXSH 2011 2x Early	854	659	85	4784
M2CVS	883	658	337	4594
Bulldog Grazer	755	518	144	4544
Nelson	796	606	286	4535
Jackson	807	451	164	4311
07-WW	1001	514	247	4199
Test Mean	947	604	248	5364
C.V.(%)	28	33	27	22
LSD(0.10)	245	184	62	1095

Planted: 10/3/2011

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, 2012.

Cultivar	Yield by harvest date						Season total
	12/5	1/5	1/31	3/15	4/3	5/4	
	----- lbs per acre -----						
Earlyploid	1097	1117	782	2233	1182	1247	7658
Passerel Plus	1217	1168	706	1477	1649	1108	7325
M2CVS	992	1018	702	1805	1682	993	7191
Attain	850	855	1004	1418	1455	1312	6895
Wax ME-94	1000	1052	686	1495	1530	1067	6829
Fria	957	1059	598	1644	1502	961	6722
TAMTBO	1008	823	567	1458	1615	1249	6720
Nelson	975	868	550	1355	1563	1407	6717
Flying A	970	1151	721	1347	1471	960	6619
FLXSH 2011 (2x) ME	1071	1199	650	1590	1234	828	6572
DH-3	967	1117	705	1204	1583	970	6545
07-WW	878	1157	584	1252	1592	954	6418
Jackson	968	1004	574	1195	1544	1119	6404
Prine	959	845	571	1327	1377	1223	6303
SHXFL 2011 (2x) ME	929	908	735	1573	1191	838	6174
FL 2011 4x Early	954	753	640	1738	1224	835	6144
FL 2011 (PE-2x) LATE	891	925	547	1159	1549	1015	6086
Big Boss	802	750	536	1028	1612	1313	6042
FLXSH 2011 2x Early	946	1104	561	1551	1035	696	5894
Marshall	934	823	402	1097	1559	1044	5859
Winterhawk	805	675	462	1269	1485	1086	5781
Diamond T	913	851	568	1016	1215	1204	5766
Wax ME-4	765	650	407	1102	1479	1181	5586
Bulldog Grazer	723	626	415	1496	1191	647	5098
07-EW	747	852	431	829	1234	856	4949
Test Mean	933	934	604	1386	1430	1045	6332
C.V.(%)	18	31	27	35	21	20	20
LSD(0.10)	156	266	148	448	277	190	1169

Planted: 10/13/2011

Soil: Cahaba Fine Sandy Loam

TABLE 3. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE WIREGRASS RESEARCH AND EXTENSION CENTER, HEADLAND, ALABAMA, 2012.

Cultivar	Yield by harvest date					†	Season total
	12/14	1/19	2/10	3/7	4/10		
	----- lbs per acre -----						
Marshall	611	1631	1219	1997	3684		9143
Earlyploid	581	2020	1612	1155	3517		8884
TAMTBO	700	2173	1544	1778	2664		8859
Winterhawk	468	1910	1635	1768	2921		8702
M2CVS	638	1809	1244	1824	3143		8658
Wax ME-94	622	1844	1386	1586	3138		8577
Passerel Plus	691	1823	1460	1724	2846		8544
Wax ME-4	569	1693	1455	1745	3007		8469
Flying A	585	2098	1468	1480	2802		8433
Nelson	579	2095	1455	1490	2792		8412
Jackson	515	1917	1563	1473	2856		8324
Big Boss	544	1822	1401	1473	3078		8319
Diamond T	667	1993	1488	1590	2559		8297
Fria	532	1899	1600	1563	2594		8188
07-WW	454	1775	1496	1529	2858		8112
DH-3	679	1785	1521	1543	2545		8073
Attain	596	1756	1474	1526	2680		8033
FL 2011 (PE-2x) LATE	486	2021	1512	1587	2423		8028
07-EW	461	1862	1540	1480	2635		7978
FLXSH 2011 (2x) ME	614	1936	1506	1221	2683		7961
Prine	621	1696	1516	1313	2796		7942
SHXFL 2011 (2x) ME	634	1942	1500	1224	2641		7941
FL 2011 4x Early	591	1980	1469	1027	2704		7771
Bulldog Grazer	493	1946	1486	1259	2488		7673
FLXSH 2011 2x Early	521	1884	1481	1039	2092		7017
Test Mean	578	1893	1481	1496	2806		8253
C.V.(%)	16	13	13	13	13		5
LSD(0.10)	86	232	180	174	324		399

Planted: 10/24/2011

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, 2012.

Cultivar	Yield by harvest date						Season
	12/16	1/3	1/30	2/29	3/29	4/27	total
	----- lbs per acre -----						
Nelson	988	870	1305	1773	2151	1980	9069
Wax ME-4	768	811	1399	2092	2432	1543	9046
Big Boss	958	938	1396	1657	2332	1642	8923
Wax ME-94	635	896	1334	1789	2322	1726	8702
TAMTBO	834	962	1295	1819	2207	1571	8688
Marshall	794	831	1230	2086	2470	1272	8681
Jackson	622	929	1357	1658	2278	1736	8581
M2CVS	556	684	1340	1881	2364	1690	8516
Prine	778	904	1332	1638	2246	1533	8430
07-WW	620	890	1392	1757	2287	1291	8239
Diamond T	876	851	1077	1726	2244	1406	8180
Earlyploid	823	931	1543	1655	1721	1476	8148
Attain	843	882	1260	1586	2150	1417	8138
Fria	626	1006	1307	1500	2271	1411	8120
07-EW	781	993	1342	1676	2213	1045	8050
Flying A	642	963	1415	1758	2186	1013	7977
FL 2011 (PE-2x) LATE	730	855	1225	1827	2153	1178	7968
FL 2011 4x Early	767	890	1405	1634	1593	1674	7963
Winterhawk	590	644	1163	1776	2442	1259	7873
Passerel Plus	654	936	1248	1305	2096	1471	7711
FLXSH 2011 (2x) ME	617	808	1449	1775	1720	1063	7433
SHXFL 2011 (2x) ME	745	949	1426	1737	1433	1048	7338
DH-3	756	840	1212	1364	2171	932	7275
FLXSH 2011 2x Early	670	895	1554	1506	1416	782	6824
Bulldog Grazer	569	830	1362	1776	1699	565	6800
Test Mean	730	880	1335	1710	2104	1349	8107
C.V.(%)	25	22	13	19	10	21	9
LSD(0.10)	170	178	161	298	196	256	677

Planted: 10/14/2014

Soil: Malbis Fine Sandy Loam

TABLE 5. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2012, 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
	2012	2011-12	2010-12		2012	2011-12	2010-12
----- lbs per acre -----				----- lbs per acre -----			
Marshall	6794	7031	6103	Nelson	6717	7367	7307
Wax ME-94	5835	6863	6098	TAMTBO	6720	7552	7122
Passerel Plus	5041	6336	5832	Wax ME-94	6829	7201	6907
Flying A	5731	6393	5796	Marshall	5859	6720	6631
Diamond T	5228	6465	5760	Prine	6303	6823	6628
FL 2011 (PE-2x) LATE	6257	6532	5735	Flying A	6619	6913	6625
Winterhawk	5246	6366	5630	Passerel Plus	7325	7249	6623
Prine	5537	6556	5629	Jackson	6404	6775	6564
DH-3	5554	6355	5582	SHXFL 2011 (2x) ME	6174	6893	6496
Wax ME-4	5292	6073	5485	DH-3	6545	6765	6484
FLXSH 2011 (2x) ME	5211	6008	5462	Wax ME-4	5586	6642	6422
SHXFL 2011 (2x) ME	5514	5717	5420	Winterhawk	5781	6190	6403
Bulldog Grazer	4544	6031	5417	FLXSH 2011 (2x) ME	6572	6692	6359
Nelson	4535	5923	5296	FL 2011 (PE-2x) LATE	6086	6285	6230
TAMTBO	4824	5913	5276	Diamond T	5766	6459	6137
Jackson	4311	5393	5103	Bulldog Grazer	5098	6251	6030
Big Boss	6038	6684		Fria	6722	6943	
FL 2011 4x Early	5789	6618		07-WW	6418	6629	
Fria	5623	6478		Big Boss	6042	6524	
07-EW	5493	6164		FL 2011 4x Early	6144	6508	
07-WW	4199	5504		FLXSH 2011 2x Early	5894	6195	
FLXSH 2011 2x Early	4784	5395		07-EW	4949	5786	
Earlyploid	6660			Earlyploid	7658		
Attain	5478			M2CVS	7191		
M2CVS	4594			Attain	6895		

TABLE 6. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2012, 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
	2012	2011-12	2010-12		2012	2011-12	2010-12
----- lbs per acre -----				----- lbs per acre -----			
Marshall	9143	8590	11087	Marshall	8681	8660	9345
Winterhawk	8702	8101	11009	Wax ME-4	9046	8286	8878
TAMTBO	8859	7970	10959	Nelson	9069	8209	8690
Prine	7942	7552	10792	TAMTBO	8688	8169	8690
Diamond T	8297	8017	10785	Wax ME-94	8702	7995	8660
Wax ME-94	8577	7991	10719	Prine	8430	7969	8652
DH-3	8073	7947	10681	Passerel Plus	7711	8017	8650
Wax ME-4	8469	7791	10626	Diamond T	8180	7920	8647
Flying A	8433	7564	10586	Jackson	8581	7914	8600
Nelson	8412	7543	10501	Flying A	7977	7553	8410
Bulldog Grazer	7673	7651	10482	Winterhawk	7873	7532	8382
FLXSH 2011 (2x) ME	7961	7703	10238	FL 2011 (PE-2x) LATE	7968	7522	8204
SHXFL 2011 (2x) ME	7941	7917	10224	DH-3	7275	7273	8204
Jackson	8324	7943	10125	Bulldog Grazer	6800	7087	8139
Passerel Plus	8544	7680	9749	SHXFL 2011 (2x) ME	7338	7239	7886
FL 2011 (PE-2x) LATE	8028	7291	9367	FLXSH 2011 (2x) ME	7433	7013	7583
Big Boss	8319	7868		Big Boss	8923	8192	
FLXSH 2011 2x Early	7017	7562		Fria	8120	7851	
07-WW	8112	7449		07-EW	8050	7778	
Fria	8188	7353		FL 2011 4x Early	7963	7626	
07-EW	7978	7320		07-WW	8239	7452	
FL 2011 4x Early	7771	7086		FLXSH 2011 2x Early	6824	6871	
Earlyploid	8884			M2CVS	8516		
M2CVS	8658			Earlyploid	8148		
Attain	8033			Attain	8138		

TABLE 7. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT SAND MOUNTAIN REC BASED ON THREE-YEAR AVERAGES, 2010-2012.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Sand Mountain Research and Ext. Ctr.				
Marshall	5	48	46	6103
Wax ME-94	3	53	44	6098
Passerel Plus	1	52	47	5832
Flying A	4	52	44	5796
Diamond T	1	51	48	5760
FL 2011 (PE-2x) LATE	4	51	45	5735
Winterhawk	2	51	47	5630
Prine	3	49	48	5629
DH-3	3	53	43	5582
Wax ME-4	2	50	49	5485
FLXSH 2011 (2x) ME	3	57	40	5462
SHXFL 2011 (2x) ME	2	58	40	5420
Bulldog Grazer	1	52	48	5417
Nelson	2	48	50	5296
TAMTBO	1	52	47	5276
Jackson	1	52	46	5103

continued

TABLE 8. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT PLANT BREEDING UNIT BASED ON THREE-YEAR AVERAGES, 2010-2012.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Plant Breeding Unit				
Nelson	19	39	42	7307
TAMTBO	20	41	39	7122
Wax ME-94	23	42	36	6907
Marshall	20	41	38	6631
Prine	21	39	40	6628
Flying A	23	44	32	6625
Passerel Plus	25	40	35	6623
Jackson	21	41	38	6564
SHXFL 2011 (2x) ME	24	51	24	6496
DH-3	23	43	34	6484
Wax ME-4	17	42	41	6422
Winterhawk	17	43	40	6403
FLXSH 2011 (2x) ME	25	49	25	6359
FL 2011 (PE-2x) LATE	20	41	40	6230
Diamond T	23	40	37	6137
Bulldog Grazer	21	48	30	6030

continued

**TABLE 9. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT WIREGRASS REC
BASED ON THREE-YEAR AVERAGES, 2010-2012.**

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Wiregrass Research and Ext. Ctr.				
Marshall	26	47	27	11087
Winterhawk	24	48	28	11009
TAMTBO	24	42	34	10959
Prine	25	44	31	10792
Diamond T	26	42	32	10785
Wax ME-94	25	45	30	10719
DH-3	28	46	26	10681
Wax ME-4	23	46	31	10626
Flying A	27	44	28	10586
Nelson	22	45	33	10501
Bulldog Grazer	28	45	27	10482
FLXSH 2011 (2x) ME	29	49	22	10238
SHXFL 2011 (2x) ME	32	45	23	10224
Jackson	27	46	27	10125
Passerel Plus	25	49	26	9749
FL 2011 (PE-2x) LATE	24	43	32	9367
				<i>continued</i>

TABLE 10. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT GULF COAST REC
BASED ON THREE-YEAR AVERAGES, 2010-2012.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Gulf Coast Research and Ext. Ctr.				
Marshall	32	50	18	9345
Wax ME-4	30	50	19	8878
Nelson	32	46	23	8690
TAMTBO	32	47	22	8690
Wax ME-94	29	50	21	8660
Prine	32	47	21	8652
Passerel Plus	30	51	19	8650
Diamond T	33	48	20	8647
Jackson	30	49	22	8600
Flying A	33	50	18	8410
Winterhawk	29	52	19	8382
FL 2011 (PE-2x) LATE	29	50	21	8204
DH-3	31	52	18	8204
Bulldog Grazer	35	49	16	8139
SHXFL 2011 (2x) ME	38	45	17	7886
FLXSH 2011 (2x) ME	36	47	17	7583

SOURCES OF RYEGRASS SEED

Cultivar	Company
Fria	Allied Seed LLC, Macon, Missouri
Bulldog Grazer	Athens Seed Co., Watkinsville, Georgia
Prine, Earlyploid	Ragan & Massey, Inc., Ponchatoula, Louisiana
DH-3, Diamond T, Flying A TAMTBO, Winterhawk 07-EW, 07-WW	OreGro Seeds, Inc., Shedd, Oregon
Passerel Plus	Pennington Seed, Inc., Lebanon, Oregon
Attain, Big Boss	Smith Seed Services, Halsey, Oregon
Jackson, Marshall WAX ME-94, WAX ME-4 Nelson (formerly TXR 2006-T22), M2 CVS	The Wax Company, LLC, Amory, Mississippi
FL 2011 PE-2x Late FLxSH 2011 2x ME SHxFL 2011 2x ME FL 2011 4X Early FLxSh 2011 2x Early	University of Florida, Gainesville, Florida