

*Performance of
Ryegrass
Varieties in
Alabama,
2012-13*

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B.E. Gamble, Asst. Supt.

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PERFORMANCE OF RYEGRASS VARIETIES IN ALABAMA, 2012-13

K.M. Glass and E. van Santen

Agric. Program Associate and Professor, Dept. of Agronomy and Soils, Auburn University, AL 36849

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. Planting dates for two preceding years and the current year were:

Location	Growing season		
	2010-11	2011-12	2012-13
Sand Mountain Research and Extension Center, Crossville	Oct-10-2010	Oct-03-2011	Sep-25-2012
Plant Breeding Unit, Tallassee	Sep-30-2010	Oct-13-2011	Oct-10-2012
Wiregrass Research and Extension Center, Headland	Oct-07-2010	Oct-24-2011	Oct-22-2012
Gulf Coast Research and Extension Center, Fairhope	Nov-01-2010	Oct-14-2011	Oct-24-2012

DISCUSSION

Strategies to meet seasonal forage needs are an important consideration for livestock producers. Tables 1-4 provide yield data by harvest for 2012-13 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, 2013.

Cultivar	Yield by harvest date					
	2/25	3/15	3/20	4/2	4/10	4/22
	----- lbs per acre -----					
Abundant	314	177	372	514	546	1018
Marshall	26	168	373	499	652	1219
TAMTBO	390	286	355	450	461	872
M2CVS	77	112	301	492	523	1138
Winterhawk	295	183	318	429	344	937
Lonestar	299	179	424	482	319	924
Wax ME-94	322	133	371	457	527	828
Nelson	238	181	353	414	345	966
Prine	220	93	399	436	371	931
Sumo	121	133	286	319	410	972
DH-3	104	170	387	632	370	1123
IS-LWT 13	70	222	407	387	386	805
Tetrastar	233	184	629	434	382	724
Diamond T	72	172	384	401	357	821
LH 4X-1PS	48	120	419	303	275	1280
Passerel Plus	26	108	402	447	435	895
07-WW	307	141	392	310	284	906
Max	47	213	465	359	428	741
Maximo	48	126	340	288	246	782
Fria	248	185	406	326	248	805
07-EW	112	112	288	322	507	807
Wax ME-4	160	262	241	267	321	797
Striker	160	201	417	312	247	824
Jackson	160	193	394	391	282	892
Flying A	213	122	336	302	216	861
Gulf (Local)	259	184	366	378	402	660
Earlyploid	164	163	396	337	251	651
Bulldog Grazer	233	131	252	329	273	729
Test Mean	177	166	374	394	372	890
C.V.(%)	85	51	54	29	28	25
LSD(0.10)	138	78	183	104	95	199

continued

TABLE 1. CONTINUED

Cultivar	Yield by harvest date				Season total
	5/1	5/13	5/21	5/30	
	----- lbs per acre -----				
Abundant	462	657	533	330	4922
Marshall	395	625	553	215	4727
TAMTBO	445	546	436	233	4474
M2CVS	469	473	445	236	4267
Winterhawk	487	501	430	278	4203
Lonestar	327	524	543	146	4168
Wax ME-94	392	440	446	105	4022
Nelson	432	438	397	249	4014
Prine	373	490	474	217	4004
Sumo	483	501	424	298	3946
DH-3	260	333	308	118	3804
IS-LWT 13	493	423	424	187	3804
Tetrastar	385	331	301	173	3774
Diamond T	376	486	398	198	3666
LH 4X-1PS	429	383	245	158	3660
Passerel Plus	358	448	407	118	3644
07-WW	352	359	365	205	3622
Max	465	415	319	160	3611
Maximo	544	585	398	231	3588
Fria	332	418	330	191	3489
07-EW	432	420	339	148	3485
Wax ME-4	350	496	263	237	3394
Striker	314	295	279	188	3237
Jackson	266	295	194	112	3180
Flying A	303	395	258	159	3164
Gulf (Local)	358	356	122	74	3160
Earlyploid	241	424	328	84	3039
Bulldog Grazer	241	426	188	50	2853
Test Mean	384	446	362	182	3747
C.V.(%)	14	28	35	49	20
LSD(0.10)	49	115	117	82	674

Planted: 9/25/2012

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, 2013.

Cultivar	Yield by harvest date					Season total
	12/12	2/18	3/7	3/28	4/16	
	----- lbs per acre -----					
TAMTBO	2709	2660	1647	1852	3065	11933
M2CVS	2262	2220	2043	2010	3303	11839
Marshall	2810	1977	1484	2195	3308	11773
Tetrastar	2138	2822	2035	1682	3083	11760
Wax ME-94	2637	2427	1450	1689	3339	11542
Bulldog Grazer	2650	2944	1589	2011	2336	11529
Gulf (Local)	2502	2821	1547	1498	2893	11260
Wax ME-4	2239	2392	1386	1697	3294	11008
Passerel Plus	2556	2311	1405	1739	2942	10952
07-EW	2187	2045	1177	2091	3306	10805
Sumo	2301	2136	1510	1833	3007	10787
Flying A	2280	2497	1531	1853	2552	10713
Abundant	2291	2412	1323	1629	2850	10506
Winterhawk	2205	2151	1554	1783	2687	10380
Fria	2047	2213	1360	1781	2811	10212
Lonestar	2157	2287	1368	1527	2823	10162
Jackson	2406	2020	1368	1678	2650	10122
07-WW	1974	2584	1403	1591	2556	10108
Prine	1958	2039	1528	1726	2669	9919
IS-LWT 13	1877	2160	1406	1555	2760	9758
Earlyploid	2039	2461	1257	1695	2231	9683
DH-3	1868	2059	1458	1547	2738	9670
Nelson	2038	1953	1309	1670	2670	9639
Diamond T	1844	2501	1316	1440	2493	9596
Test Mean	2249	2337	1477	1740	2848	10652
C.V.(%)	19	16	11	14	14	9
LSD(0.10)	397	337	155	218	357	834

Planted: 10/10/2012

Soil: Cahaba Fine Sandy Loam

TABLE 3. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE WIREGRASS RESEARCH AND EXTENSION CENTER, HEADLAND, ALABAMA, 2013.

Cultivar	Yield by harvest date					†	Season total
	1/10	2/4	3/4	4/9	5/10		
	----- lbs per acre -----						
TAMTBO	1830	1342	2454	2842	1336		9803
Winterhawk	1604	1081	2187	3581	1159		9611
Earlyploid	1522	1316	2380	2960	1242		9421
Tetrastar	1633	1204	2103	3214	1225		9378
Gulf (Local)	2106	1185	2142	2829	1096		9358
Surrey Nova	2230	1265	2065	3100	1011		9671
Wax ME-4	1363	1091	2392	3399	1326		9570
Passerel Plus	1632	1061	2251	3089	1348		9381
Wax ME-94	1516	1204	2007	3070	1202		9000
Fria	1546	1043	2245	3108	1002		8944
Prine	1498	1149	1906	2811	1440		8805
Bulldog Grazer	1676	1220	2174	2832	875		8777
M2CVS	1126	1000	2098	3242	1307		8772
07-EW	1381	957	2097	3016	1194		8646
Nelson	1478	1070	1951	2812	1202		8513
Lonestar	1710	954	2010	2873	920		8467
07-WW	1346	1316	2179	3022	1196		9058
Jackson	1340	932	2006	2763	1133		8174
Marshall	1143	986	1475	3310	1190		8103
Flying A	1121	959	1870	2876	1109		7935
DH-3	1027	911	1970	2811	1196		7914
Diamond T	890	890	2073	2787	1202		7842
Test Mean	1487	1097	2093	3016	1178		8870
C.V.(%)	32	19	14	6	15		9
LSD(0.10)	433	192	276	176	159		723

Planted: 10/22/2012

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, 2013.

Cultivar	Yield by harvest date					†	Season total
	1/7	1/22	2/18	3/20	4/17		
	----- lbs per acre -----						
M2CVS	1551	861	1831	2633	2826		9702
Wax ME-94	1530	909	1816	2612	2621		9488
Wax ME-4	1535	907	1888	2607	2545		9482
Gulf (Local)	1875	849	1838	2470	2425		9456
Marshall	1359	852	1892	2611	2655		9369
Fria	1560	903	1908	2513	2420		9302
DH-3	1567	826	1807	2480	2607		9286
Tetrastar	2045	880	1590	2386	2383		9284
Jackson	1740	908	1795	2358	2425		9225
Diamond T	1769	841	1814	2431	2368		9223
Passerel Plus	1687	895	1882	2477	2481		9423
07-EW	1497	930	1827	2458	2432		9145
Lonestar	1671	751	1878	2392	2426		9118
Flying A	1660	906	1759	2360	2416		9101
TAMTBO	1785	824	1739	2328	2386		9062
Prine	1760	826	1662	2400	2311		8959
Nelson	1743	867	1762	2285	2289		8945
Bulldog Grazer	1428	872	1783	2534	2325		8943
07-WW	1373	852	2015	2340	2358		8938
Winterhawk	1358	846	1753	2576	2389		8922
LH 4X-1PS	1673	890	1745	2348	2259		8915
Max	1604	900	1770	2482	2088		8843
Maximo	1436	835	1920	2419	2231		8841
Surrey Nova	1543	775	1650	2390	2369		8728
Striker	1774	819	1550	2262	2279		8684
Earlyploid	1422	786	1749	2231	2319		8508
Test Mean	1613	858	1793	2438	2409		9111
C.V.(%)	13	9	8	8	7		5
LSD(0.10)	185	71	130	177	154		391

Planted: 10/24/2013

Soil: Malbis Fine Sandy Loam

† only five cuts taken at this location

TABLE 5. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2013, 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
	2013	2012-13	2011-13		2013	2012-13	2011-13
----- lbs per acre -----				----- lbs per acre -----			
Marshall	4727	5760	6263	TAMTBO	11933	9327	9012
Wax ME-94	4022	4928	5916	Wax ME-94	11542	9185	8648
Prine	4004	4770	5705	Passerel Plus	10952	9138	8483
Winterhawk	4203	4724	5645	Marshall	11773	8816	8405
Diamond T	3666	4447	5532	Flying A	10713	8666	8180
DH-3	3804	4679	5505	Nelson	9639	8178	8125
Fria	3489	4556	5482	Wax ME-4	11008	8297	8097
Passerel Plus	3644	4342	5439	Fria	10212	8467	8033
TAMTBO	4474	4649	5433	Bulldog Grazer	11529	8313	8010
Flying A	3164	4447	5317	Jackson	10122	8263	7890
Nelson	4014	4274	5286	Prine	9919	8111	7855
07-EW	3485	4489	5271	07-WW	10108	8263	7789
Wax ME-4	3394	4343	5180	DH-3	9670	8107	7734
Bulldog Grazer	2853	3698	4972	Winterhawk	10380	8081	7586
07-WW	3622	3910	4876	Diamond T	9596	7681	7504
Jackson	3180	3745	4656	07-EW	10805	7877	7459
Earlyploid	3039	4850		M2CVS	11839	9515	
M2CVS	4267	4430		Earlyploid	9683	8671	
Abundant	4922			Tetrastar	11760		
Lonestar	4168			Gulf (Local)	11260		
Sumo	3946			Sumo	10787		
IS-LWT 13	3804			Abundant	10506		
Tetrastar	3774			Lonestar	10162		
LH 4X-1PS	3660			IS-LWT 13	9758		
Max	3611						
Maximo	3588						
Striker	3237						
Gulf (Local)	3160						

TABLE 6. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2013, 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
	2013	2012-13	2011-13		2013	2012-13	2011-13
----- lbs per acre -----				----- lbs per acre -----			
07-WW	8293	10422	9210	Marshall	9369	9025	8897
Winterhawk	9611	9156	8604	Wax ME-4	9482	9264	8685
TAMTBO	9803	9331	8581	Wax ME-94	9488	9095	8493
Marshall	8103	8623	8428	TAMTBO	9062	8875	8467
Wax ME-94	9000	8788	8327	Nelson	8945	9007	8454
Wax ME-4	9320	8894	8300	Passerel Plus	9204	8458	8413
Passerel Plus	9138	8841	8166	Diamond T	9223	8702	8354
Bulldog Grazer	8777	8225	8026	Jackson	9225	8903	8351
Jackson	8174	8249	8020	Fria	9302	8711	8335
Prine	8805	8373	7969	Prine	8959	8695	8299
Diamond T	7842	8069	7958	07-EW	9145	8598	8234
DH-3	7914	7994	7936	Flying A	9101	8539	8069
Fria	8944	8566	7884	Winterhawk	8922	8398	7995
Nelson	8513	8462	7866	07-WW	8938	8589	7948
07-EW	8646	8312	7762	DH-3	9286	8280	7944
Flying A	7935	8184	7687	Bulldog Grazer	8943	7871	7706
Earlyploid	9421	9153		M2CVS	9702	9109	
M2CVS	8772	8715		Earlyploid	8508	8328	
Tetrastar	9378			Gulf (Local)	9456		
Gulf (Local)	9358			Tetrastar	9284		
Surrey Nova	9356			Lonestar	9118		
Lonestar	8467			LH 4X-1PS	8915		
				Max	8843		
				Maximo	8841		
				Surrey Nova	8728		
				Striker	8684		

TABLE 7. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT SAND MOUNTAIN REC BASED ON THREE-YEAR AVERAGES, 2011-2013.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Sand Mountain Research and Ext. Ctr.				
Marshall	4	43	54	6263
Wax ME-94	5	46	49	5916
Prine	7	41	52	5705
Winterhawk	5	41	54	5645
Diamond T	2	44	54	5532
DH-3	4	47	49	5505
Fria	4	45	52	5482
Passerel Plus	3	44	54	5439
TAMTBO	5	43	52	5433
Flying A	5	46	49	5317
Nelson	4	39	56	5286
07-EW	2	45	53	5271
Wax ME-4	3	41	55	5180
Bulldog Grazer	5	44	52	4972
07-WW	6	38	56	4876
Jackson	5	44	52	4656

continued

TABLE 8. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT PLANT BREEDING UNIT BASED ON THREE-YEAR AVERAGES, 2011-2013.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Plant Breeding Unit				
TAMTBO	30	46	23	9012
Wax ME-94	32	47	21	8648
Passerel Plus	33	45	23	8483
Marshall	29	48	22	8405
Flying A	33	49	19	8180
Nelson	27	45	28	8125
Wax ME-4	28	49	24	8097
Fria	30	49	22	8033
Bulldog Grazer	34	49	17	8010
Jackson	31	47	22	7890
Prine	28	46	25	7855
07-WW	32	48	20	7789
DH-3	31	50	19	7734
Winterhawk	29	49	22	7586
Diamond T	32	44	24	7504
07-EW	29	50	21	7459

continued

**TABLE 9. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT WIREGRASS REC
BASED ON THREE-YEAR AVERAGES, 2011-2013.**

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Wiregrass Research and Ext. Ctr.				
07-WW	49	39	12	9210
Winterhawk	37	50	12	8604
TAMTBO	40	46	14	8581
Marshall	37	50	13	8428
Wax ME-94	39	48	13	8327
Wax ME-4	34	52	14	8300
Passerel Plus	37	48	15	8166
Bulldog Grazer	44	46	10	8026
Jackson	39	48	13	8020
Prine	39	45	16	7969
Diamond T	40	46	14	7958
DH-3	39	47	14	7936
Fria	39	49	12	7884
Nelson	38	48	14	7866
07-EW	38	48	14	7762
Flying A	39	48	13	7687

continued

**TABLE 10. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT GULF COAST REC
BASED ON THREE-YEAR AVERAGES, 2011-2013.**

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Gulf Coast Research and Ext. Ctr.				
Marshall	40	47	13	8897
Wax ME-4	39	45	16	8685
Wax ME-94	38	44	18	8493
TAMTBO	42	42	17	8467
Nelson	40	39	20	8454
Passerel Plus	39	45	16	8413
Diamond T	42	43	15	8354
Jackson	40	42	18	8351
Fria	40	45	15	8335
Prine	41	42	16	8299
07-EW	42	46	12	8234
Flying A	43	45	12	8069
Winterhawk	39	47	14	7995
07-WW	41	44	15	7948
DH-3	42	47	11	7944
Bulldog Grazer	46	47	7	7706

SOURCES OF RYEGRASS SEED

Cultivar	Company
Fria	Allied Seed LLC, Macon, Missouri
Bulldog Grazer	Athens Seed Co., Watkinsville, Georgia
Sumo, IS-LWT 13	DLF International Seeds, Inc., Halsey, Oregon
Surrey Nova, Abundant	
Lonestar, Tetrastar	Grassland Oregon, Salem, Oregon
Prine, Earlyploid	Ragan & Massey, Inc., Ponchatoula, Louisiana
DH-3, Diamond T, Flying A, TAMTBO	OreGro Seeds, Inc., Albany, Oregon
Winterhawk, 07-EW, 07-WW,	
Gulf (Local Source)	Piedmont Fertilizer Co., Opelika, Alabama
Passerel Plus	Pennington Seed, Inc., Lebanon, Oregon
Jackson, Marshall, WAX ME-94	The Wax Company, LLC, Amory, Mississippi
WAX ME-4, Nelson, M2 CVS	
Striker, Max	Pickseed USA, Albany, Oregon
Maximo, LL4X-1PS	