

Performance of Ryegrass Varieties in Alabama, 2014-2015



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The Alabama Experiment Station system evaluates variety performance of several crop species each year. Ryegrass studies were conducted during the 2014 - 2015 season at four locations across the state representing the northeast, central, southeast, and southwestern regions. The entries evaluated are chosen by private company, university, and federal staff. It is the mission of the experiment station to evaluate and present the data in a fair, unbiased manner that can be used by all sectors of industry and education.

Seed Sources for the 2014-15 Ryegrass Variety Trials
Allied Seed LLC, Macon, Missouri
Fria
Local Source, Opelika, AL
Gulf
OreGro Seeds, Inc., Albany, Oregon
Diamond T; Flying A; TAMTBO; Winterhawk;
TARX 10-1*; TARX 10-6*; 07-ww*
Pennington Seed, Inc., Madison, Georgia
Passerel Plus
Smith Seed Services, Halsey, Oregon
Attain; Big Boss; Bill; Meroa
The Wax Company, LLC, Amory, Mississippi
Jackson; Marshall; WAX ME-94; WAX ME-4; Nelson; M2CVS
The University of Georgia, Athens
GA-101-M*; GA-102-A*; GA-103-F*;
GA LM 1401*; GA LM 1402*; GA LM 1403*

* Experimental varieties

Methods

Ryegrass entries were seeded at 20 lb/acre in 7-inch rows (Table 1). Plots were 5 x 20 ft with four replications of each entry arranged in a randomized complete block experimental design. The 2014 – 2015 trials were conducted at the Gulf Coast Research and Extension Center, Fairhope; E.V. Smith Research Center, Plant Breeding Unit, Tallassee; Sand Mountain Research and Extension Center, Crossville; and the Wiregrass Research and Extension Center, Headland.

Soil fertility was maintained at each location according to Auburn University soil test recommendations. At planting, nitrogen was applied at 50 lb/acre, with an additional 50 lb/acre N applied after each cutting. When the ryegrass reached a height of 6 to 10 inches, a flail harvester was used to cut the plants to 1 to 2 inches. According to the location, a section 32- or 49-in wide X 20 ft long from each plot was harvested. Dry matter yield was determined by drying subsamples from each variety and then calculated using fresh and dry weights.

Table 1. Planting dates and soil textures for Alabama ryegrass trial locations.

		Trial Years		
Location	Alabama Exp. Station & soil texture	2012-2013	2013-2014	2014-2015
		(planting date)		
Crossville	Sand Mountain Research & Ext. Center Hartselle fine sandy loam	25-Sep-12	13-Oct-13	25-Sep-14
Fairhope	Gulf Coast Research & Ext. Center Malbis fine sandy loam	24-Oct-12	11-Oct-13	23-Sep-14
Headland	Wiregrass Research & Ext. Center Dothan fine sandy loam	22-Oct-12	16-Oct-13	25-Sep-14
Tallassee	Plant Breeding Unit, E.V. Smith Res. Ctr. Cahaba fine sandy loam	24-Oct-12	11-Oct-13	17-Sep-14

Performance of Annual Ryegrass Varieties in Alabama, 2015

Some varieties tested are considered experimental and are not currently available for retail sale. Inclusion in these trials is not a guarantee of performance or yield; rather, our data shows how the varieties performed at a specific location under specific environmental conditions.

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Table 2. Gulf Coast Research & Extension Center, Fairhope AL

Planting Date: September 23, 2014	Dry Matter Yield by Harvest Timing					
	First 12/17/14	Second 1/14/15	Third 2/27/15	Fourth 3/18/15	Fifth 4/7/15	Season Total
Variety	(lb/acre)					
Nelson	2572	1620	2331	2171	1576	10269
Marshall	2570	1454	2112	2137	1722	9995
Jackson	2246	1791	2218	2186	1431	9872
M2CVS	2129	1407	2001	2244	1925	9707
Fria	2264	1388	2169	2230	1570	9620
Wax ME-4	2319	1426	1888	2100	1732	9465
Attain	2298	1428	2122	1990	1516	9353
Winterhawk	1990	1440	2354	2104	1445	9332
Wax ME-94	1825	1428	2054	2173	1787	9267
TAMTBO	2336	1355	2147	2008	1388	9234
Diamond T	2449	1465	1965	1899	1412	9189
Flying A	2366	1491	2091	1940	1096	8985
TARX 10-6	2242	1407	2112	1849	1337	8946
Big Boss	2324	1397	2020	1901	1286	8927
Gulf (Local)	2328	1418	2026	1917	1152	8840
GA LM 1403	2017	1374	1990	2002	1306	8689
Passerel Plus	2424	1519	1629	1910	1148	8630
Bill	1910	1290	2023	1994	1395	8612
07-VVV	1856	1654	1885	1933	1219	8547
GA-102-A	1717	1218	2104	2037	1385	8461
GA-103-F	1900	1341	2042	1946	1093	8321
GA LM 1402	1853	1388	1878	1885	1312	8317
TARX 10-1	1691	1352	1795	1884	1584	8306
Meroa	1502	1225	1657	1832	1866	8082
GA LM 1401	1624	1192	2117	1820	1204	7957
GA-101-M	1567	1231	1635	1893	1542	7868
LSD (0.10)	348	190	273	162	209	210
Trial mean	2089	1411	2014	1999	1440	1791
CV(%)	14	11	12	7	12	23
Pr>F	0.0001	0.0003	0.0007	0.0001	0.0001	0.0024

Table 3. Plant Breeding Unit, E.V. Smith Research Center, Tallassee AL

Planting Date: September 17, 2014	Dry Matter Yield by Harvest Timing					
	First 12/9/14	Second 2/3/15	Third 3/4/15	Fourth 3/17/15	Fifth 4/16/15	Season Total
Variety	(lb/acre)					
Marshall	1398	3413	1318	1475	3665	11269
Gulf (Local)	1092	3257	1859	1709	3338	11255
Attain	1199	3152	1812	1265	3493	10920
07-WVV	1280	3396	1501	1664	2999	10839
Fria	1015	3068	1500	1364	3518	10465
Wax ME-4	959	3422	1454	1442	3104	10382
GA LM 1401	830	2555	1581	1720	3490	10176
TAMTBO	1095	2998	1579	1280	3197	10148
Nelson	966	2718	1654	1373	3418	10128
Wax ME-94	1125	2345	1544	1629	3478	10121
Big Boss	846	2936	1727	1242	3190	9941
M2CVS	684	3995	1194	1518	2477	9867
Jackson	1016	2565	1457	1385	3390	9812
GA-103-F	700	2822	1511	1369	3171	9573
GA-101-M	564	2294	1271	1614	3817	9560
Meroa	731	2828	1010	1371	3576	9516
Diamond T	1054	2245	1447	1330	3283	9358
Passerel Plus	658	2661	1424	1229	3372	9344
TARX 10-6	805	2623	1472	1154	3162	9215
Flying A	708	2387	1320	1355	3411	9181
GA-102-A	572	2981	1251	1053	3290	9147
GA LM 1403	477	2701	1296	1328	3322	9124
TARX 10-1	730	2367	1501	1198	3229	9025
Bill	630	2379	1182	1394	3370	8954
Winterhawk	901	2147	1488	1252	2993	8781
GA LM 1402	701	1986	1472	1344	2924	8427
LSD (0.10)	NS	NS	302	NS	NS	NS
Trial mean	874	2778	1455	1387	3295	1958
CV(%)	47	35	18	23	20	57
Pr>F	0.1666	0.5421	0.0034	0.3455	0.8918	0.9982

Table 4. Sand Mountain Research & Extension Center, Crossville AL

Planting Date: September 10, 2014	Dry Matter Yield by Harvest Timing						
	First 3/26/15	Second 4/19/15	Third 4/24/15	Fourth 5/15/15	Fifth 5/22/15	Sixth 6/16/15	Season Total
Variety	(lb/acre)						
Big Boss	914	842	1889	1132	809	1319	6905
GA LM 1401	784	878	1883	995	691	1631	6862
GA-102-A	855	789	1872	937	963	1391	6808
Passerel Plus	897	824	1746	920	812	1385	6584
Jackson	712	771	1787	953	721	1583	6528
TAMTBO	518	812	1818	992	871	1175	6187
Gulf (Local)	512	741	1805	852	778	1315	6003
GA-103-F	573	714	1742	881	779	1305	5994
Attain	416	773	1934	824	863	1174	5984
TARX 10-6	501	732	1669	1033	673	1301	5909
Wax ME-4	437	927	1838	770	853	1077	5901
GA-101-M	710	686	1773	860	681	1159	5869
Diamond T	623	753	1731	907	714	1136	5863
M2CVS	895	663	1632	790	764	1095	5838
GA LM 1403	514	720	1808	906	697	1174	5819
Meroa	511	990	1914	717	772	890	5794
Bill	693	745	1680	729	896	1034	5777
Marshall	824	560	1753	855	629	1136	5757
GA LM 1402	669	723	1742	757	856	948	5696
Wax ME-94	820	516	1681	782	765	1111	5674
Fria	358	775	1569	805	914	1229	5648
Flying A	634	707	1628	717	838	1077	5601
Nelson	400	741	1526	1045	684	1138	5534
Winterhawk	563	776	1518	905	646	1101	5508
07-VVV	662	463	1552	771	683	1076	5206
TARX 10-1	400	652	1477	691	831	1148	5198
LSD (0.10)	NS	NS	NS	NS	NS	NS	NS
Trial mean	631	741	1730	866	776	1196	985
CV(%)	48	30	15	29	24	36	49
Pr>F	0.2175	0.3823	0.4372	0.7136	0.5916	0.8997	0.9440

Table 5. Wiregrass Research & Extension Center, Headland AL

Planting Date: September 25, 2014	Dry Matter Yield by Harvest Timing				
	First 12/10/14	Second 1/28/15	Third 3/17/15	Fourth 4/21/15	Season Total
Variety	(lb/acre)				
GA LM 1403	1034	1056	1950	2152	6192
Bill	1005	870	2003	2267	6144
Big Boss	1163	840	1982	2156	6141
Wax ME-4	1254	947	1772	2164	6136
TARX 10-6	998	971	1886	2216	6071
TAMTBO	825	719	2094	2410	6048
Marshall	1096	777	1611	2402	5887
GA LM 1401	654	746	2536	1914	5850
GA-102-A	662	771	1971	2403	5807
Nelson	1004	734	1717	2342	5797
Passerel Plus	903	942	2002	1951	5797
Fria	1029	764	1890	2107	5790
Flying A	957	811	2069	1940	5777
M2CVS	1075	688	1461	2546	5770
Attain	861	841	1867	2115	5684
GA-101-M	840	760	1994	2089	5683
Gulf (Local)	1184	973	1904	1586	5647
Jackson	916	583	2119	1985	5604
Winterhawk	838	624	1985	2109	5556
Wax ME-94	989	677	1507	2360	5532
07-VVV	835	865	1695	2077	5472
Diamond T	701	716	1849	2035	5300
GA LM 1402	737	710	1730	2080	5256
GA-103-F	683	708	2028	1799	5218
TARX 10-1	754	571	2033	1846	5203
Meroa	790	665	1286	1402	4143
LSD (0.10)	258	170	406	277	391
Trial mean	915	782	1882	2094	1418
CV(%)	24	18	18	11	47
Pr>F	0.0027	0.0001	0.0089	0.0001	0.9959

Table 6. Gulf Coast Research & Extension Center, Fairhope AL

Average dry matter production*			
Variety	1-year 2015	2-year 2014-2015	3-year 2013-2015
	(lb/acre)		
Jackson	9872	10562	10347
Marshall	9995	10481	10272
Wax ME-4	9465	10082	10088
M2CVS	9707	9887	9886
Nelson	10269	10192	9776
Fria	9620	9872	9767
Wax ME-94	9267	9624	9698
Diamond T	9189	9518	9529
Winterhawk	9332	9551	9415
Flying A	8985	9287	9326
Passerel Plus	8630	9021	9286
TAMTBO	9234	9275	9218
*Ranking based on 3-year average.			

Table 7. Plant Breeding Unit - E.V. Smith REC, Tallassee AL

Variety	Average dry matter production*		
	1- year 2015	2-year 2014-2015	3-year 2013-2015
	(lb/acre)		
TAMTBO	10148	10645	11075
Marshall	11269	10693	11054
Fria	10465	10625	10488
M2CVS	9867	9455	10250
Wax ME-4	10382	9789	10195
Jackson	9812	10152	10142
07-VWV	10839	9961	10010
Passerel Plus	9344	9439	9943
Flying A	9181	9486	9895
Nelson	10128	9978	9865
Wax ME-94	10121	8991	9841
Diamond T	9358	9671	9647
Winterhawk	8781	9220	9607

* Ranking based on 3-year average.

Table 8. Sand Mountain Research & Extension Center, Crossville AL

Variety	Average dry matter production*		
	1- Year 2015	2-Year 2014- 2015	3-Year 2013- 2015
	(lb/acre)		
Passerel Plus	6584	5738	5707
Marshall	5757	5782	5431
M2CVS	5838	5682	5211
TAMTBO	6187	5434	5114
Jackson	6528	6002	5062
Wax ME-94	5674	5534	5030
Wax ME-4	5901	5625	4882
Winterhawk	5508	5107	4806
Fria	5648	5372	4745
Diamond T	5863	5233	4711
Nelson	5534	4946	4635
07-WW	5206	5068	4586
Flying A	5601	5295	4584

*Ranking based on 3-year average.

Table 9. Wiregrass Research & Extension Center, Headland AL

Variety	Average dry matter production*		
	1-Year 2015	2-Year 2014- 2015	3-Year 2013- 2015
	(lb/acre)		
TAMTBO	6048	6781	7789
Wax ME-4	6136	6715	7584
Passerel Plus	5797	6481	7367
Fria	5790	6475	7299
Winterhawk	5556	6040	7230
Wax ME-94	5532	6323	7215
Marshall	5887	6683	7156
Nelson	5797	6395	7102
M2CVS	5770	6231	7078
Flying A	5777	6504	6981
Jackson	5604	6152	6826
Diamond T	5300	6156	6718
07-WW	5472	5869	6677

* Ranking based on 3-year average

Table 10. Gulf Coast Research & Extension Center, Fairhope AL

Variety	Yield Distribution by Harvest Timing					Season Total
	First 12/17/14	Second 1/14/15	Third 2/27/15	Fourth 3/18/15	Fifth 4/7/15	
	(% of total)					
Nelson	25	16	23	21	15	100
Marshall	26	15	21	21	17	100
Jackson	23	18	22	22	14	100
M2CVS	22	14	21	23	20	100
Fria	24	14	23	23	16	100
Wax ME-4	25	15	20	22	18	100
Attain	25	15	23	21	16	100
Winterhawk	21	15	25	23	15	100
Wax ME-94	20	15	22	23	19	100
TAMTBO	25	15	23	22	15	100
Diamond T	27	16	21	21	15	100
Flying A	26	17	23	22	12	100
TARX 10-6	25	16	24	21	15	100
Big Boss	26	16	23	21	14	100
Gulf (Local)	26	16	23	22	13	100
GA LM 1403	23	16	23	23	15	100
Passerel Plus	28	18	19	22	13	100
Bill	22	15	23	23	16	100
07-WW	22	19	22	23	14	100
GA-102-A	20	14	25	24	16	100
GA-103-F	23	16	25	23	13	100
GA LM 1402	22	17	23	23	16	100
TARX 10-1	20	16	22	23	19	100
Meroa	19	15	21	23	23	100
GA LM 1401	20	15	27	23	15	100
GA-101-M	20	16	21	24	20	100

Table 11. Plant Breeding Unit, E.V. Smith Research Center, Tallassee AL

Yield Distribution by Harvest Timing						
Variety	First 12/9/14	Second 2/3/15	Third 3/4/15	Fourth 3/17/15	Fifth 4/16/15	Season Total
	(% of total)					
Marshall	12	30	12	13	33	100
Gulf (Local)	10	29	17	15	30	100
Attain	11	29	17	12	32	100
07-VVV	12	31	14	15	28	100
Fria	10	29	14	13	34	100
Wax ME-4	9	33	14	14	30	100
GA LM 1401	8	25	16	17	34	100
TAMTBO	11	30	16	13	32	100
Nelson	10	27	16	14	34	100
Wax ME-94	11	23	15	16	34	100
Big Boss	9	30	17	12	32	100
M2CVS	7	40	12	15	25	100
Jackson	10	26	15	14	35	100
GA-103-F	7	29	16	14	33	100
GA-101-M	6	24	13	17	40	100
Meroa	8	30	11	14	38	100
Diamond T	11	24	15	14	35	100
Passerel Plus	7	28	15	13	36	100
TARX 10-6	9	28	16	13	34	100
Flying A	8	26	14	15	37	100
GA-102-A	6	33	14	12	36	100
GA LM 1403	5	30	14	15	36	100
TARX 10-1	8	26	17	13	36	100
Bill	7	27	13	16	38	100
Winterhawk	10	24	17	14	34	100
GA LM 1402	8	24	17	16	35	100

Table 12. Sand Mountain Research & Extension Center, Crossville AL

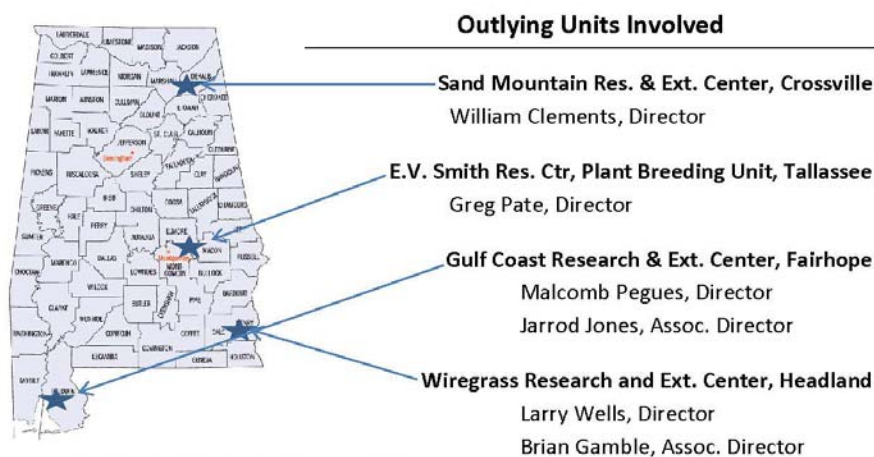
Variety	Yield Distribution by Harvest Timing						Season Total
	First 3/26/15	Second 4/19/15	Third 4/24/15	Fourth 5/15/15	Fifth 5/22/15	Sixth 6/16/15	
	(% of total)						
Big Boss	13	12	27	16	12	19	100
GA LM 1401	11	13	27	14	10	24	100
GA-102-A	13	12	28	14	14	20	100
Passerel Plus	14	13	27	14	12	21	100
Jackson	11	12	27	15	11	24	100
TAMTBO	8	13	29	16	14	19	100
Gulf (Local)	9	12	30	14	13	22	100
GA-103-F	10	12	29	15	13	22	100
Attain	7	13	32	14	14	20	100
TARX 10-6	8	12	28	17	11	22	100
Wax ME-4	7	16	31	13	14	18	100
GA-101-M	12	12	30	15	12	20	100
Diamond T	11	13	30	15	12	19	100
M2CVS	15	11	28	14	13	19	100
GA LM 1403	9	12	31	16	12	20	100
Meroa	9	17	33	12	13	15	100
Bill	12	13	29	13	16	18	100
Marshall	14	10	30	15	11	20	100
GA LM 1402	12	13	31	13	15	17	100
Wax ME-94	14	9	30	14	13	20	100
Fria	6	14	28	14	16	22	100
Flying A	11	13	29	13	15	19	100
Nelson	7	13	28	19	12	21	100
Winterhawk	10	14	28	16	12	20	100
07-WW	13	9	30	15	13	21	100
TARX 10-1	8	13	28	13	16	22	100

Table 13. Wiregrass Research & Extension Center, Headland AL

Variety	Yield Distribution by Harvest Timing				
	First 12/10/14	Second 1/28/15	Third 3/17/15	Fourth 4/21/15	Season Total
	(% of total)				
GA LM 1403	17	17	31	35	100
Bill	16	14	33	37	100
Big Boss	19	14	32	35	100
Wax ME-4	20	15	29	35	100
TARX 10-6	16	16	31	37	100
TAMTBO	14	12	35	40	100
Marshall	19	13	27	41	100
GA LM 1401	11	13	43	33	100
GA-102-A	11	13	34	41	100
Nelson	17	13	30	40	100
Passerel Plus	16	16	35	34	100
Fria	18	13	33	36	100
Flying A	17	14	36	34	100
M2CVS	19	12	25	44	100
Attain	15	15	33	37	100
GA-101-M	15	13	35	37	100
Gulf (Local)	21	17	34	28	100
Jackson	16	10	38	35	100
Winterhawk	15	11	36	38	100
Wax ME-94	18	12	27	43	100
07-WW	15	16	31	38	100
Diamond T	13	14	35	38	100
GA LM 1402	14	13	33	40	100
GA-103-F	13	14	39	34	100
TARX 10-1	14	11	39	35	100
Meroa	19	16	31	34	100

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Map source: http://commons.wikimedia.org/wiki/File:Alabama_counties_map.png



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