

Performance of Ryegrass Varieties in Alabama, 2018-2019



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The Alabama Experiment Station system evaluates variety performance of several crop species each year. Ryegrass studies were conducted in 2018 through 2019 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 2018-19 Ryegrass Variety Trials
Allied Seed LLC, Macon, Missouri
Fria
Barenbrug USA, Tangent, Oregon
Jumbo; Maximus; Ribeye;
BAR LM 18168-1*; BAR LM 18168-2*; BAR LM 18424*
Lewis Seed, Shedd, Oregon
Grits; LSC-B1191*
Oregro Seed, Albany, Oregon
Diamond T; Double Diamond; Flying A;
TAMTBO; Triangle T; Winterhawk
Pennington Seed, Inc., Madison, Georgia
Passerel Plus; Spicer; Marvel
Smith Seed Services, Halsey, Oregon
Attain; Baqueuano; Big Boss; FrostProof; Master; Rapido; Trinova;
SELWLE*,SELWT 11*
The Wax Company, LLC, Amory, Mississippi
Jackson; Marshall; Nelson;
WAX ME-94; WAX ME-4; M2CVS*; WMWL*; WMWL-2*
The University of Georgia, Athens, Georgia
GALM 1516*; GALM 1517*; GALM 1618*

* Experimental varieties

Methods

Ryegrass entries were seeded at 20 lb/acre in 7-inch rows (Table 1). Plots were 5 x 20 ft with three to four replications of each entry arranged in a randomized complete block experimental design. The 2018 – 2019 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 plot forage 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.

At Crossville, the trial was not planted due to excessive rainfall and soil moisture throughout the planting season.

The Tallassee trial was subjected to excessive rainfall and saturated soil conditions, preventing timely harvests. Data from the trial will not be reported due to low yields and high variability.

Table 1. Planting dates and soil textures for Alabama ryegrass trial locations. (Target planting date was 15-Sept to 15-Oct, but several plantings were delayed due to soil conditions.)

		Trial Years		
Location	Alabama Exp. Station & soil texture	2016-2017	2017-2018	2018-2019
		(planting date)		
Crossville	Sand Mountain Research & Ext. Center Hartselle fine sandy loam	22-Nov-16	28-Nov-17	Not planted
Fairhope	Gulf Coast Research & Ext. Center Malbis fine sandy loam	7-Oct-16	7-Nov-17	17-Oct-18
Headland	Wiregrass Research & Ext. Center Dothan fine sandy loam	4-Oct-16	26-Oct-17	19-Oct-18
Tallassee	Plant Breeding Unit, E.V. Smith Res. Ctr. Cahaba fine sandy loam	17-Oct-16	18-Sep-17	4-Oct-18

Performance of Annual Ryegrass Varieties in Alabama, 2019

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.

Tables

2018-2019 Dry matter yields

Table 2. Gulf Coast Research & Extension Center, Fairhope, 2019

Table 3. Wiregrass Research & Extension Center, Headland, 2019

1-, 2-, and 3-year average yields

Table 4. Gulf Coast Research & Extension Center, Fairhope, 2017 - 2019

Table 5. Wiregrass Research & Extension Center, Headland, 2017 - 2019

Yield distribution X harvest date

Table 6. Gulf Coast Research & Extension Center, Fairhope, 2019

Table 7. Wiregrass Research & Extension Center, Headland, 2019

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

Planting Date:					
10/17/2018	Dry Matter Yield by Harvest Timing				
	1st Cut	2nd cut	3rd cut	4th cut	Season
Variety	2/18/2019	3/7/2019	3/27/2019	5/14/2019	Total
	(lbs/Acre)				
WMWL-2	1656	1130	1004	2611	6401
TAMTBO	1228	1104	1063	2619	6013
Nelson	1165	1021	1011	2569	5767
Jumbo	1069	1060	984	2633	5745
Wax ME-94	1120	1126	977	2459	5682
Baqueano	1451	1020	919	2266	5656
Marvel	986	1373	1009	2284	5652
GALM 1618	1365	998	904	2374	5641
Wax Marshall	1243	966	870	2518	5598
Triangle T	1223	1066	979	2267	5535
Double Diamond	1101	997	933	2492	5523
Flying A	1287	1053	946	2232	5518
Diamond T	1180	1119	953	2247	5499
Trinova	1230	1047	933	2284	5494
Master	1179	1043	957	2298	5477
M2CVS	1012	970	840	2646	5468
Big Boss	1061	1009	956	2412	5438
Rapido	1179	1006	1010	2188	5382
WMWL	1222	1045	926	2189	5382
Ribeye	1102	983	864	2410	5359
Grits	1216	1092	937	2088	5334
FrostProof	1267	983	897	2176	5323
Maximus	1223	1037	932	2128	5321
BAR LM 18168-1	1224	857	872	2367	5320
Winterhawk	1266	1028	903	2117	5314
BAR LM 18168-2	1186	843	849	2413	5290
Passerel Plus	1026	964	891	2390	5270
Attain	1049	1007	957	2245	5258
GALM1516	1372	1013	987	1833	5205
GALM1517	1163	1033	976	2014	5185
SELWLE	1149	928	946	2160	5183
Spicer	1074	1028	923	2115	5140
Jackson	1118	961	930	2120	5129
Fria	1052	966	920	2174	5111
Wax ME-4	1098	938	889	2164	5088
BAR LM 18424	1256	1029	905	1852	5041
LSC-B1191	1163	922	905	2015	5005
SELWT 110	854	992	828	2008	4681
Trial Mean	1179	1020	934	2273	5406
LSD (0.1)	313	170	107	424	606
CV (%)	23	14	10	16	10
Pr>F	0.3555	0.0735	0.1318	0.1388	0.1136

Table 3. Wiregrass Research & Extension Center - Headland, AL

Table 3. Wiregrass Research & Extension Center - Headland, AL					
Planting Date:					
10/19/2018	Dry Matter Yield by Harvest Timing				
	1st cut	2nd cut	3rd cut	4th cut	Season
Variety	1/10/2019	2/13/2019	3/6/2019	4/16/2019	Total
	(lbs/Acre)				
Triangle T	1279	2021	1539	3361	8200
Wax Marshall	1068	2049	1864	2975	7956
Spicer	2059	1844	1295	2754	7951
Master	1296	2032	1478	2967	7773
Big Boss	974	1846	1523	3305	7649
Trinova	1394	1873	1418	2880	7564
Nelson	1042	1767	1510	3107	7426
TAMTBO	1068	2154	1598	2577	7398
Diamond T	1053	2046	1478	2817	7395
Wax ME-4	884	1937	1785	2750	7356
GALM 1618	985	1881	1496	2838	7199
WMWL	1116	1856	1619	2597	7188
Marvel	1032	1793	1323	3030	7178
Double Diamond	1110	2052	1492	2511	7164
WMWL-2	616	1807	1751	2986	7160
Wax ME-94	1032	1909	1811	2404	7155
GALM1517	782	1867	1606	2790	7045
Jackson	594	2079	1747	2603	7023
Baqueuano	724	1734	1456	3103	7017
LSC-B1191	749	1821	1653	2792	7015
Attain	882	1878	1436	2798	6995
Jumbo	668	1661	1447	3035	6812
Winterhawk	515	1949	1698	2633	6795
Flying A	944	2070	1286	2490	6791
Rapido	980	1923	1351	2523	6776
FrostProof	577	2043	1575	2577	6773
Passerel Plus	840	1950	1503	2463	6755
Ribeye	532	1917	1666	2625	6740
M2CVS	420	1649	1878	2771	6718
Grits	683	1908	1685	2398	6674
BAR LM 18168-2	327	1733	1581	2914	6555
Maximus	608	1737	1299	2873	6517
GALM1516	622	1989	1439	2453	6503
SELWLE	840	1904	1346	2318	6407
Fria	656	1848	1305	2524	6333
BAR LM 18424	642	1689	1490	2496	6317
BAR LM 18168-1	366	1611	1719	2501	6197
SELWT 110	429	1742	1555	2042	5768
Trial Mean	852	1883	1545	2726	7006
LSD (0.1)	250	285	196	322	1106
CV (%)	25	13	11	10	13
Pr>F	0.0001	0.2190	0.0001	0.0001	0.2132

Table 4. Gulf Coast Research & Extension Center - Fairhope, AL			
	Average Dry Matter Production*		
	1 year	2 year	3 year
Variety	2019	2018-2019	2017-2019
	(lbs/Acre)		
Fria	5111	4724	6695
Nelson	5767	4909	6448
Wax ME-4	5088	4797	6257
Big Boss	5438	4706	6085
Wax ME-94	5682	4827	6042
Attain	5258	4511	5713
Jackson	5129	4570	5648
* Ranking based on 3-year average			

Table 5. Wiregrass Research & Extension Center - Headland, AL			
	Average Dry Matter Production*		
	1 year	2 year	3 year
Variety	2019	2018-2019	2017-2019
	(lbs/Acre)		
Big Boss	7649	7373	6469
Attain	6995	7101	6213
Jackson	7023	7130	6174
Fria	6333	6758	6068
Nelson	7426	7192	5902
Wax ME-4	7356	7118	5812
Passerel Plus	6755	6747	5787
Wax ME-94	7155	6787	5514
* Ranking based on 3-year average			

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

Planting Date:					
10/17/2018	Dry Matter Yield by Harvest Timing				
Variety	1st Cut	2nd cut	3rd cut	4th cut	Season
	2/18/2019	3/7/2019	3/27/2019	5/14/2019	Total
	(% of Total)				
WMWL-2	26	18	16	41	100
TAMTBO	20	18	18	44	100
Nelson	20	18	18	45	100
Jumbo	19	18	17	46	100
Wax ME-94	20	20	17	43	100
Baqueuano	26	18	16	40	100
Marvel	17	24	18	40	100
GALM 1618	24	18	16	42	100
Wax Marshall	22	17	16	45	100
Triangle T	22	19	18	41	100
Double Diamond	20	18	17	45	100
Flying A	23	19	17	40	100
Diamond T	21	20	17	41	100
Trinova	22	19	17	42	100
Master	22	19	17	42	100
M2CVS	19	18	15	48	100
Big Boss	20	19	18	44	100
Rapido	22	19	19	41	100
WMWL	23	19	17	41	100
Ribeye	21	18	16	45	100
Grits	23	20	18	39	100
FrostProof	24	18	17	41	100
Maximus	23	19	18	40	100
BAR LM 18168-1	23	16	16	44	100
Winterhawk	24	19	17	40	100
BAR LM 18168-2	22	16	16	46	100
Passerel Plus	19	18	17	45	100
Attain	20	19	18	43	100
GALM1516	26	19	19	35	100
GALM1517	22	20	19	39	100
SELWLE	22	18	18	42	100
Spicer	21	20	18	41	100
Jackson	22	19	18	41	100
Fria	21	19	18	43	100
Wax ME-4	22	18	17	43	100
BAR LM 18424	25	20	18	37	100
LSC-B1191	23	18	18	40	100
SELWT 110	18	21	18	43	100

Table 7. Wiregrass Research & Extension Center - Headland, AL

Planting Date:					
10/19/2018	Dry Matter Yield by Harvest Timing				
Variety	1st cut	2nd cut	3rd cut	4th cut	Season
	1/10/2019	2/13/2019	3/6/2019	4/16/2019	Total
	(% of Total)				
Triangle T	16	25	19	41	100
Wax Marshall	13	26	23	37	100
Spicer	26	23	16	35	100
Master	17	26	19	38	100
Big Boss	13	24	20	43	100
Trinova	18	25	19	38	100
Nelson	14	24	20	42	100
TAMTBO	14	29	22	35	100
Diamond T	14	28	20	38	100
Wax ME-4	12	26	24	37	100
GALM 1618	14	26	21	39	100
WMWL	16	26	23	36	100
Marvel	14	25	18	42	100
Double Diamond	15	29	21	35	100
WMWL-2	9	25	24	42	100
Wax ME-94	14	27	25	34	100
GALM1517	11	27	23	40	100
Jackson	8	30	25	37	100
Baqueano	10	25	21	44	100
LSC-B1191	11	26	24	40	100
Attain	13	27	21	40	100
Jumbo	10	24	21	45	100
Winterhawk	8	29	25	39	100
Flying A	14	30	19	37	100
Rapido	14	28	20	37	100
FrostProof	9	30	23	38	100
Passerel Plus	12	29	22	36	100
Ribeye	8	28	25	39	100
M2CVS	6	25	28	41	100
Grits	10	29	25	36	100
BAR LM 18168-2	5	26	24	44	100
Maximus	9	27	20	44	100
GALM1516	10	31	22	38	100
SELWLE	13	30	21	36	100
Fria	10	29	21	40	100
BAR LM 18424	10	27	24	40	100
BAR LM 18168-1	6	26	28	40	100
SELWT 110	7	30	27	35	100

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Outlying Units Involved

Sand Mountain Res. & Ext. Center, Crossville
William Clements, Director

E.V. Smith Res. Ctr, Plant Breeding Unit, Tallassee
Greg Pate, Director

Gulf Coast Research & Ext. Center, Fairhope
Malcomb Pegues, Director
Jarrod Jones, Assoc. Director

Wiregrass Research and Ext. Center, Headland
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