

*Performance of
Ryegrass
Varieties in
Alabama,
2008-09*

*Agronomy and Soils Departmental Series No. 300
Alabama Agricultural Experiment Station
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Auburn University, Auburn, Alabama,
July 2009*

*Printed in cooperation with the Alabama Cooperative Extension System
(Alabama A&M University and Auburn University)*

ACKNOWLEDGMENTS

Appreciation is expressed to the following supervisory personnel of the outlying units whose support is gratefully acknowledged:

Northern Alabama

Sand Mountain Research and Extension Center, Crossville.....R.A. Dawkins, Supt.
J. Treadaway Ducar, Asst. Supt.

Central Alabama

Black Belt Research and Extension Center, Marion JunctionJ.L. Holliman, Supt.
E.V. Smith Research Center, Plant Breeding Unit, TallasseeS.P. Nightengale, Supt.

Southern Alabama

Gulf Coast Research and Extension Center, Fairhope.....N.R. McDaniel, Supt.
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PERFORMANCE OF RYEGRASS VARIETIES IN ALABAMA, 2008-09

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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 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. In 2007, the tests were planted October 30, October 30, October 9, October 11, and November 2 at Crossville, Tallassee, Headland, Fairhope, and Marion Junction, respectively. In 2006, the tests were planted September 29, September 27, October 25, October 24, and November 28 at Crossville, Tallassee, Headland, Fairhope, and Marion Junction, respectively.

DISCUSSION

Strategies to meet seasonal forage needs are an important consideration for livestock producers. Tables 1-5 provide yield data by harvest for 2008-09 at a given location, while Tables 6 and 7 show 1, 2, and 3-year total yields by location. Seasonal and total dry matter yields by locations are provided in Tables 8 and 11. 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, 2009.

Cultivar	Yield by harvest date					†	Season total
	3/19	4/9	4/22	5/5	6/1		
	----- lbs per acre -----						
Marshall	606	1781	1140	1268	1642		6437
Ed	850	1578	1052	1066	1487		6034
Jackson	724	1834	912	1252	1266		5989
FL X2008 Red 4X late	667	1667	973	1344	1280		5931
TAMTBO	492	1605	966	1101	1705		5870
Wax ME-4	551	1615	1152	1176	1282		5776
Gulf (Local)	813	1611	878	1258	1196		5756
Grazer	909	1272	980	1313	1271		5745
Dyna-Gain	671	1494	987	1192	1392		5736
Prine	497	1591	1065	1052	1481		5686
DH-3	709	1676	871	1223	1192		5670
Tam 90	566	1600	1067	1101	1329		5663
Wax ME-94	589	1612	1016	1044	1393		5655
Maximus	427	1579	1197	1030	1394		5627
Flying A	612	1644	891	1294	1155		5597
Diamond T	459	1488	1066	896	1652		5561
FL/NE X 2006 (Misc 2X) LRCT	476	1625	969	1077	1350		5497
Verdure	376	1504	1124	1135	1327		5467
Attain	648	1386	975	1007	1422		5440
TXR2006-T22	605	1444	942	1045	1316		5351
TetraPro	563	1497	974	1103	1183		5321
Chipola2008 (2X)	1049	1240	919	1014	1047		5269
4X	514	1721	938	934	1118		5225
Rio	813	1418	829	972	1136		5168
M/FL X2008 (4X) ER	655	1539	655	1125	1076		5050
Jumbo	375	1264	905	908	1395		4848
Big Boss	419	1272	992	889	1230		4802
Passerel Plus	462	1174	907	860	1153		4556
Test Mean	611	1526	977	1096	1317		5526
C.V.(%)	33	15	11	9	13		9
LSD(0.10)	213	238	112	103	183		518

Planted: 10/16/2008

Soil: Hartsells Fine Sandy Loam

† only five cuts taken at this location

TABLE 2. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE E.V. SMITH RESEARCH CENTER, PLANT BREEDING UNIT, TALLASSEE, 2009.

Cultivar	Yield by harvest date						Season total
	12/15	1/9	2/16	3/23	4/16	5/8	
	----- lbs per acre -----						
Wax ME-4	1605	1494	400	1649	1230	757	7136
Dyna-Gain	1291	1471	590	1731	1071	671	6824
DH-3	1286	1723	468	1643	1008	503	6631
Flying A	1339	1500	521	1632	1213	402	6607
Marshall	1340	1326	347	1633	1355	516	6517
Jumbo	1277	1443	466	1698	1113	497	6494
Wax ME-94	1119	1352	397	1747	1207	587	6408
Diamond T	1243	1628	521	1519	919	533	6362
Big Boss	1107	1443	406	1897	966	498	6317
TXR2006-T22	1098	1647	521	1607	861	469	6203
Rio	1247	1383	347	1635	1011	554	6177
FL X2008 Red 4X late	1168	1467	438	1670	888	523	6155
TetraPro	1205	1549	373	1588	878	521	6114
Grazer	1175	1501	369	1696	867	504	6112
4X	1146	1485	356	1446	1089	572	6093
Jackson	1204	1370	392	1609	991	426	5992
Maximus	915	1308	383	1585	1315	482	5988
Attain	1229	1433	383	1427	963	529	5963
Ed	1208	1294	481	1568	876	526	5953
Chipola2008 (2X)	1111	1350	404	1656	728	499	5747
Prine	1041	1235	369	1471	868	684	5669
M/FL X2008 (4X) ER	953	1546	454	1521	724	440	5638
Passerel Plus	1161	1466	201	1377	948	480	5632
FL/NE X 2006 (Misc 2X) LRCT	830	1237	339	1580	1116	411	5514
Verdure	1140	1292	410	1569	793	506	5710
Gulf (Local)	1113	1260	276	1669	827	338	5482
Tam 90	759	1209	350	1505	801	459	5083
TAMTBO	1119	1408	331	1211	805	440	5315
Test Mean	1158	1422	403	1591	980	512	6066
C.V.(%)	28	14	26	9	16	15	11
LSD(0.10)	295	183	97	131	142	68	587

Planted: 10/14/2008

Soil: Cahaba Fine Sandy Loam

TABLE 3. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE BLACK BELT RESEARCH AND EXTENSION CENTER, MARION JUNCTION, ALABAMA, 2009.

Trial seeded but no stand was obtained.

TABLE 4. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE WIREGRASS RESEARCH AND EXTENSION CENTER, HEADLAND, ALABAMA, 2009.

Cultivar	Yield by harvest date					Season	
	1/14	2/25	3/30	5/15	†	†	total
	----- lbs per acre -----						
Attain	1812	2364	2975	1909			9059
Big Boss	1836	2593	2849	1548			8825
Jumbo	1592	2095	3079	1884			8650
Diamond T	1904	2308	2671	1647			8531
Verdure	1499	2427	3064	1466			8456
TXR2006-T22	1361	2071	3153	1828			8414
FL X2008 Red 4X late	1488	2427	3042	1448			8405
TetraPro	1433	2127	3197	1479			8236
Ed	1282	2348	2982	1616			8228
TAMTBO	1592	2111	2685	1704			8091
Flying A	1320	2237	3131	1335			8023
4X	1409	2008	3123	1404			7944
Prine	1499	1945	2611	1884			7939
DH-3	1409	2182	3056	1273			7921
M/FL X2008 (4X) ER	1169	2688	2775	1273			7904
Maximus	1488	2024	2737	1629			7878
Grazer	1231	2324	3027	1142			7723
Dyna-Gain	1334	2150	2856	1273			7613
Jackson	1282	2008	2878	1410			7579
FL/NE X 2006 (Misc 2X) LRCT	1062	1905	2967	1604			7538
Wax ME-4	1526	1866	2596	1485			7473
Wax ME-94	1124	1905	2841	1410			7281
Chipola2008 (2X)	1275	2719	2545	724			7263
Passerel Plus	1310	2103	2812	880			7104
Gulf (Local)	1203	1953	2663	1104			6923
Marshall	1052	1660	2752	1373			6837
Rio	1210	1747	2545	1223			6725
Tam 90	880	1700	2775	1048			6402
Test Mean	1378	2143	2871	1429			7820
C.V.(%)	20	16	11	16			11
LSD(0.10)	258	316	295	213			755

Planted: 10/30/2008

Soil: Dothan Fine Sandy Loam

† only four cuts taken at this location

TABLE 5. SEASONAL DRY MATTER YIELD OF ANNUAL RYEGRASS AT THE GULF COAST RESEARCH AND EXTENSION CENTER, FAIRHOPE, ALABAMA, 2009.

Cultivar	Yield by harvest date						Season
	12/19	1/13	2/20	3/30	4/24	5/18	total
	----- lbs per acre -----						
Big Boss	1241	1212	1581	3392	1274	908	9608
Flying A	1122	1345	1430	3432	1270	944	9544
Ed	1023	1239	1578	3404	1193	1017	9455
Wax ME-94	865	1191	1431	3505	1357	869	9218
Marshall	840	1299	1432	3101	1647	812	9132
Diamond T	1145	1146	1470	2754	1544	1003	9062
Jackson	1080	1093	1551	3328	1051	918	9021
Wax ME-4	967	1220	1426	3025	1453	824	8915
4X	966	1209	1521	2866	1408	805	8775
Prine	957	1155	1436	2757	1522	914	8743
Chipola2008 (2X)	776	1041	1404	3507	1112	889	8729
TAMTBO	1077	1183	1517	2609	1324	998	8710
TetraPro	904	1209	1425	3010	1234	899	8680
DH-3	932	1068	1491	3153	1065	941	8651
Rio	672	1051	1500	3116	1218	1066	8622
FL X2008 Red 4X late	964	1091	1488	2993	1250	798	8585
Grazer	593	1085	1488	3419	1218	764	8567
TXR2006-T22	753	998	1446	2943	1358	1015	8512
Attain	1210	1059	1409	2781	1135	913	8508
Verdure	1073	1138	1457	2874	1217	734	8494
Dyna-Gain	678	1068	1483	3185	1162	828	8404
FL/NE X 2006 (Misc 2X) LRCT	516	1041	1497	3127	1229	992	8401
Gulf (Local)	1023	1065	1405	2942	1012	886	8334
Maximus	827	1068	1483	2640	1251	1064	8332
Passerel Plus	810	1077	1423	3124	1004	865	8304
Tam 90	634	1208	1381	3249	1003	797	8273
Jumbo	804	1117	1486	2774	1237	850	8270
M/FL X2008 (4X) ER	562	979	1506	2790	1230	775	7840
Test Mean	893	1131	1470	3064	1249	896	8703
C.V.(%)	15	12	6	7	17	14	5
LSD(0.10)	125	121	87	185	195	111	413

Planted: 10/13/2008

Soil: Malbis Fine Sandy Loam

TABLE 6. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2009, 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
	2009	2008-09	2007-09		2009	2008-09	2007-09
----- lbs per acre -----				----- lbs per acre -----			
Marshall	6437	6448	7282	Wax ME-4	7136	6728	7100
Jackson	5989	6158	7140	Marshall	6517	5924	6859
Wax ME-4	5604	6042	7024	Dyna-Gain	6824	6089	6852
Ed	6034	6241	7008	Flying A	6607	6186	6661
Wax ME-94	5655	6037	6879	Attain	5963	6180	6611
FL/NE X 2006 (Misc 2X) LRCT	5497	6161	6877	Maximus	5988	5962	6579
Dyna-Gain	5736	6016	6830	Ed	5953	5747	6557
DH-3	5670	5956	6797	Jumbo	6494	6179	6537
Diamond T	5561	5647	6725	Big Boss	6317	6050	6533
Tam 90	5663	5888	6635	DH-3	6631	6033	6523
Prine	5559	5913	6610	Passerel Plus	5632	5727	6507
Rio	5166	5688	6598	Wax ME-94	6408	5718	6485
4X	5225	5667	6580	Jackson	5992	5759	6359
TAMTBO	5870	5887	6565	Diamond T	6362	6031	6344
Attain	5344	5911	6552	4X	6093	5697	6239
Gulf (Local)	5756	5809	6536	Rio	6177	5840	6214
Maximus	5627	5655	6524	Verdure	5363	5509	6138
Big Boss	4802	5581	6518	TAMTBO	4939	5317	5787
Flying A	5597	6007	6502	Tam 90	5083	5127	5756
Verdure	5467	5709	6491	FL/NE X 2006 (Misc 2X) LRCT	5514	5331	5630
Passerel Plus	4556	5488	6308	Gulf (Local)	5209	5291	5607
Jumbo	4848	5416	6145	Prine	5669	5463	5404
TetraPro	5321	5656		TetraPro	6114	6040	
Grazer	5745			TXR2006-T22	6203		
FL X2008 Red 4X late	5565			FL X2008 Red 4X late	6155		
Chipola2008 (2X)	5269			Grazer	6112		
TXR2006-T22	5253			Chipola2008 (2X)	5747		
M/FL X2008 (4X) ER	5050			M/FL X2008 (4X) ER	5638		

TABLE 7. TOTAL DRY MATTER YIELD OF RYEGRASS VARIETIES, 2009, 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
	2009	2008-09	2007-09		2009	2008-09	2007-09
----- lbs per acre -----				----- lbs per acre -----			
Attain	9059	13139	11597	Flying A	9544	9209	8553
Diamond T	8531	12442	10951	Big Boss	9608	9132	8531
Ed	8228	12431	10923	Ed	9455	9263	8504
4X	7944	12670	10922	Marshall	9132	8974	8404
Wax ME-4	7473	12020	10902	Jackson	9021	9001	8395
Big Boss	8825	12557	10775	Wax ME-4	8915	9035	8379
M/FL X2008 (4X) ER	7904	11772	10760	Rio	8622	8913	8338
TAMTBO	8091	12046	10651	Attain	8508	9011	8316
Prine	7939	11817	10563	Wax ME-94	9218	8907	8266
Verdure	8456	11849	10537	TAMTBO	8710	8903	8251
Jumbo	8650	12038	10521	Diamond T	9062	9120	8235
Marshall	6837	11498	10326	Dyna-Gain	8404	8666	8205
Dyna-Gain	7613	11664	10235	Prine	8743	8642	8138
Wax ME-94	7281	11455	10188	Maximus	8332	8543	8130
Passerel Plus	7104	11520	10176	Verdure	8494	8614	8097
Flying A	8023	11422	10124	Passerel Plus	8304	8526	8045
Maximus	7878	11315	10110	Tam 90	8273	8518	8045
Rio	6725	11523	10072	DH-3	8651	8672	8036
DH-3	7921	11687	9993	Jumbo	8270	8279	7874
Jackson	7579	11322	9986	FL/NE X 2006 (Misc 2X) LRCT	8401	8413	7869
Gulf (Local)	6923	11371	9960	4X	8775	8451	7844
FL/NE X 2006 (Misc 2X) LRCT	7538	11502	9805	Gulf (Local)	8334	8466	7768
Tam 90	6402	10774	9717	TetraPro	8680	8450	
TetraPro	8236	11887		Chipola2008 (2X)	8729		
Chipola2008 (2X)	7263	10845		FL X2008 Red 4X late	8585		
TXR2006-T22	8414			Grazer	8567		
FL X2008 Red 4X late	8405			TXR2006-T22	8512		
Grazer	7723			M/FL X2008 (4X) ER	7840		

TABLE 8. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT SAND MOUNTAIN REC BASED ON THREE-YEAR AVERAGES, 2007-2009.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Sand Mountain Research and Ext. Ctr.				
Marshall	20	39	41	7282
Jackson	11	42	47	7140
Wax ME-4	18	40	42	7024
Ed	16	38	46	7008
Wax ME-94	16	41	44	6879
FL/NE X 2006 (Misc 2X) LRCT	15	39	46	6877
Dyna-Gain	12	40	48	6830
DH-3	13	41	46	6797
Diamond T	14	40	45	6725
Tam 90	12	40	48	6635
Prine	13	39	48	6610
Rio	17	40	43	6598
4X	10	45	44	6580
TAMTBO	17	37	47	6565
Attain	17	38	45	6552
Gulf (Local)	13	40	48	6536
Maximus	13	41	45	6524
Big Boss	17	38	45	6518
Flying A	15	40	45	6502
Verdure	14	39	47	6491
Passerel Plus	18	39	44	6308
Jumbo	14	40	46	6145

TABLE 9. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT PLANT BREEDING UNIT BASED ON THREE-YEAR AVERAGES, 2007-2009.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Plant Breeding Unit				
Wax ME-4	41	44	15	7100
Marshall	40	45	15	6859
Dyna-Gain	44	42	14	6852
Flying A	44	45	11	6661
Attain	41	44	16	6611
Maximus	41	45	14	6579
Ed	45	42	13	6557
Jumbo	38	46	16	6537
Big Boss	41	44	15	6533
DH-3	46	42	11	6523
Passerel Plus	44	41	15	6507
Wax ME-94	40	45	15	6485
Jackson	42	46	12	6359
Diamond T	41	43	15	6344
4X	38	47	15	6239
Rio	39	47	14	6214
Verdure	38	45	17	6138
TAMTBO	39	44	17	5787
Tam 90	41	47	12	5756
FL/NE X 2006 (Misc 2X) LRCT	37	48	15	5630
Gulf (Local)	36	48	16	5607
Prine	33	48	19	5404

**TABLE 10. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT WIREGRASS REC
BASED ON THREE-YEAR AVERAGES, 2007-2009.**

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Wiregrass Research and Ext. Ctr.				
Attain	35	50	16	11597
Diamond T	36	50	14	10951
Ed	35	51	13	10923
4X	33	53	15	10922
Wax ME-4	30	56	14	10902
Big Boss	35	50	15	10775
TAMTBO	33	53	14	10651
Prine	33	50	17	10563
Verdure	38	49	14	10537
Jumbo	31	52	17	10521
Marshall	28	60	13	10326
Dyna-Gain	33	53	14	10235
Wax ME-94	30	57	13	10188
Passerel Plus	31	57	11	10176
Flying A	36	50	14	10124
Maximus	33	52	15	10110
Rio	31	57	12	10072
DH-3	33	55	12	9993
Jackson	30	56	14	9986
Gulf (Local)	31	57	12	9960
FL/NE X 2006 (Misc 2X) LRCT	28	58	14	9805
Tam 90	31	57	12	9717

TABLE 11. SEASONAL DISTRIBUTION OF RYEGRASS PRODUCTION AT GULF COAST REC
BASED ON THREE-YEAR AVERAGES, 2007-2009.

Brand-Variety	Fall	Early spring	Late spring	3-yr avg
	----- % of total seasonal yield -----			
Gulf Coast Research and Ext. Ctr.				
Flying A	36	45	18	8553
Big Boss	36	44	20	8531
Ed	36	46	18	8504
Marshall	34	45	22	8404
Jackson	35	46	19	8395
Wax ME-4	35	46	19	8379
Rio	35	46	19	8338
Attain	38	43	19	8316
Wax ME-94	34	47	19	8266
TAMTBO	37	44	19	8251
Diamond T	37	43	20	8235
Dyna-Gain	35	46	19	8205
Prine	35	44	21	8138
Maximus	34	45	21	8130
Verdure	38	43	19	8097
Passerel Plus	33	47	20	8045
Tam 90	33	47	20	8045
DH-3	34	47	19	8036
Jumbo	34	45	20	7874
FL/NE X 2006 (Misc 2X) LRCT	29	50	21	7869
4X	36	45	18	7844
Gulf (Local)	35	47	18	7768

SOURCES OF RYEGRASS SEED

Cultivar	Company
Jumbo	Barenbrug USA, Tangent, Oregon
Maximus	
Prine	Ragan & Massey, Inc., Ponchatoula, Louisiana
4X	OreGro Seeds, Inc., Shedd, Oregon
DH-3	
Diamond T	
Dyna-Gain	
FL/NE 2006(Misc 2x)LRCT	
Flying A	
Gulf (Local Source)	Piedmont Fertilizer Co., Opelika, Alabama
Passerel Plus	Pennington Seed, Inc., Lebanon, Oregon
Rio	ProSeeds Marketing, Inc., Jefferson, Oregon
Attain	Smith Seed Service, Halsey, Oregon
Big Boss	
Ed	
Verdure	
TAM 90	Texas A & M University, College Station, Texas
TAMTBO	
TetraPro	
TXR 2006-T22	
Jackson	The Wax Company, LLC, Amory, Mississippi
Marshall	
WAX ME-94	
WAX ME-4	
M/FL X2008(4x)ER	University of Florida, Gainesville, Florida
FL X2008 Red 4x late	
Chipola2008 (2x)	
Grazer	University of Georgia, Athens, GA