

Mississippi Ryegrass



VARIETY TRIALS, 2006-2008



MISSISSIPPI AGRICULTURAL & FORESTRY EXPERIMENT STATION • MELISSA J. MIXON, INTERIM DIRECTOR

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This report contains data generated as part of the Mississippi Agricultural and Forestry Experiment Station. Joint sponsorship by the organizations listed on page 9 is gratefully acknowledged.

Commercial and public varieties tested in this research project (trade names, experiment code names or numbers, etc.) and source of seed are listed on page 9.

Mississippi Ryegrass Variety Trials, 2006-2008

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Mississippi Ryegrass Variety Trials, 2006-2008

INTRODUCTION

New, improved, and standard varieties of forage crops are evaluated in MAFES small-plot trials each year. Seed for the trials are obtained from commercial seed companies and state universities and tested at a number of locations in Mississippi. All entries from privately owned companies are tested on a fee basis. The Forage Crop Evaluation Committee may enter varieties of interest or proven varieties to be used as standards. This information bulletin contains data collected in 2006–08 on the performance of annual ryegrass over two growing seasons. Trials were arranged in a randomized complete block design consisting of three to four replications with 6x12-foot plots. Plot yield was based on 95% dry matter. Visual notes on botanical composition were used to adjust total herbage yield to yield based upon the variety being evaluated. These data were analyzed within locations and within harvest dates. Due to differences in planting date and growing conditions, the timing and number of harvests during the season varied by location.

The winter of 2006-2007 was gener-

ally moist and relatively mild (Table 1; Figures 1–4). However, the spring of 2007 was extremely dry at both locations. The summers of 2006 and 2007 were droughty with inadequate rainfall throughout the state. The winter of 2007-2008 was moist and mild with favorable planting and growing conditions. Data presented in Tables 2–7 can be used to evaluate the relative performance of each forage variety at each location. Comparisons can be statistically evaluated by using the LSD (least significant difference). The LSD value represents the amount of yield by which varieties must differ by in order to determine if the differences observed were due to chance variation alone.

Table 1. Monthly Rainfall at Starkville and Newton, Mississippi, 2006–2008.

Month	Starkville			Newton		
	2006	2007	2008	2006	2007	2008
January	<i>in</i>	<i>in</i>	<i>in</i>	<i>in</i>	<i>in</i>	<i>in</i>
February	5.90	3.45	2.89	4.87	2.96	3.64
March	9.83	2.71	6.02	5.99	2.11	7.85
April	4.19	0.43	4.49	6.49	0.14	3.47
May	3.40	2.46	5.74	2.87	3.14	3.10
June	2.55	0.81	6.36	6.58	2.16	7.99
July	2.17	2.30	3.59	2.78	2.48	2.39
August	1.32	5.51	4.45	3.26	4.86	4.17
September	2.84	1.45	7.54	3.77	2.84	9.84
October	4.49	4.01	6.11	1.75	2.94	5.90
November	10.50	4.43	2.12	5.65	2.35	2.83
December	3.96	2.48	2.04	2.21	2.13	2.64
Total	4.91	1.39	10.79	5.74	4.68	8.13
	56.10	31.43	62.14	51.96	32.79	61.95

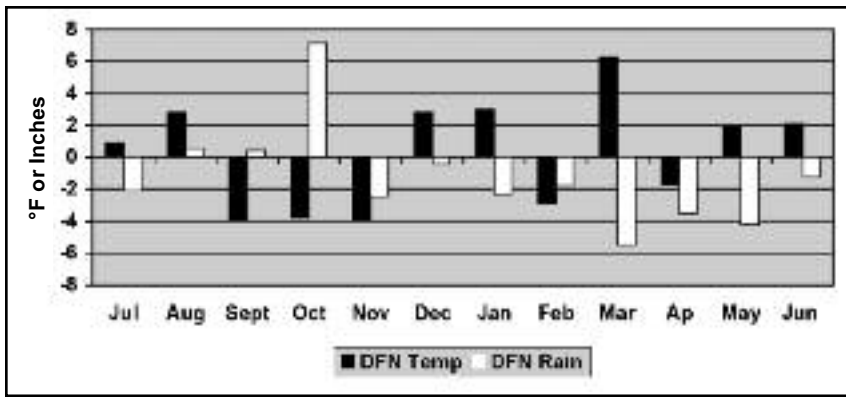


Figure 1. Departure from 30-year normal temperatures and rainfall at Starkville, Mississippi, July 2006 to June 2007. Rainfall deficit of -15.31" and temperature +0.31°F warmer than average.

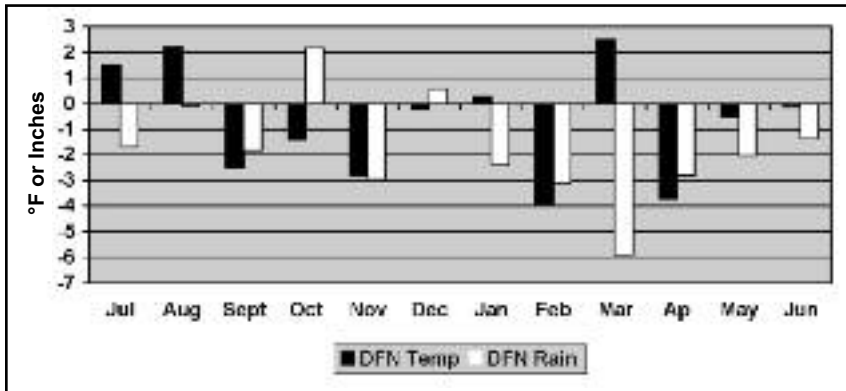


Figure 2. Departure from 30-year normal temperatures and rainfall at Newton, Mississippi, July 2006 to June 2007. Rainfall deficit of -21.28" and temperature -0.72°F cooler than average.

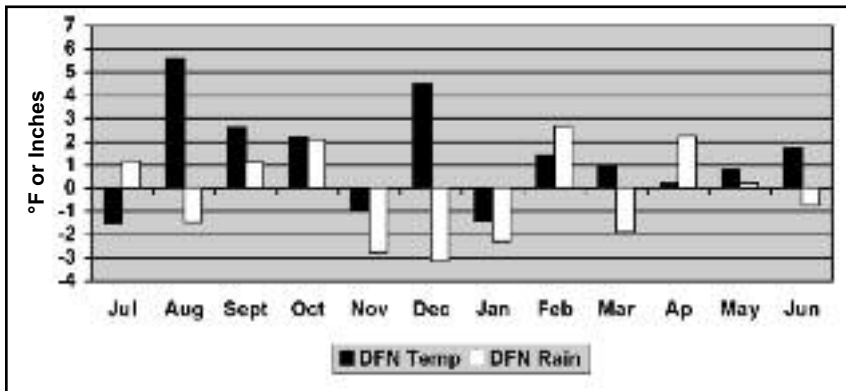


Figure 3. Departure from 30-year normal temperatures and rainfall at Starkville, Mississippi, July 2007 to June 2008. Rainfall deficit of -2.77" and temperature +1.35°F warmer than average.

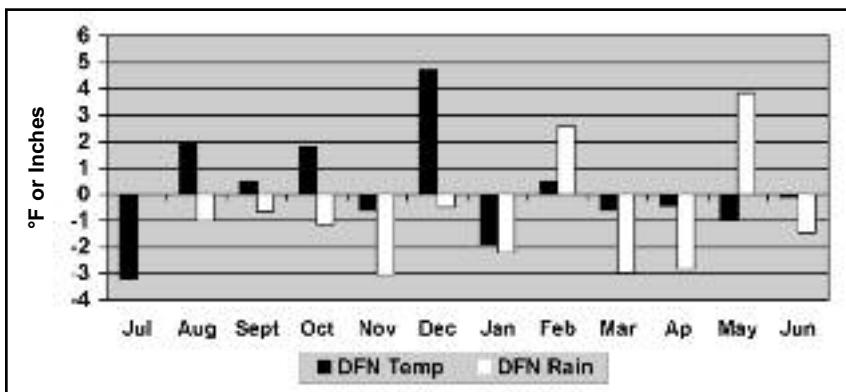


Figure 4. Departure from 30-year normal temperatures and rainfall at Newton, Mississippi, July 2007 to June 2008. Rainfall deficit of -9.27" and temperature +0.13°F warmer than average.

Table 2. Dry Matter Yield of Annual Ryegrass at Starkville and Newton Mississippi, 2006–2007.

Variety	Starkville	Newton	Two-location avg.
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
Angus I	6847	6681	6764
Attain	6820	6951	6886
Barextra	7957	7784	7871
Big Boss	7259	6975	7117
Bulldog Grazer	6942	6446	6694
DH-3	7102	7307	7205
Diamond T	7217	7314	7266
Dyna-Gain	6675	7569	7122
Ed	7054	7524	7289
FI/Nex2006 Mrse 2xLrct	7251	7938	7595
FLX2002(LA3)LRCT	7248	7209	7229
FLX2003SM	7036	6673	6855
FLX2006PE LRCT	6831	7614	7223
Flying A	6683	7262	6973
Graze-N-gro	6410	6983	6697
Gulf	6548	6915	6732
Hercules	7581	6678	7130
Jackson	7331	7157	7244
Jumbo	7022	7582	7302
King	7083	8028	7556
M/FL20064XER	5766	6217	5992
Marshall	7050	8114	7582
Maximus	7875	7129	7502
ME4	7053	7852	7453
ME94	7618	8018	7818
Passerel	7705	8459	8082
Prine	7833	6794	7314
Rio	7003	7063	7033
Striker	7702	6913	7308
TAM-90	6454	7282	6868
TRX2005-TBO	7380	7122	7251
TRX2006-T22	7338	6981	7160
TRX2105-T4-1	6987	6928	6958
Verdue	7174	6762	6968
WD-40	7089	7073	7081
WMN97	7720	7916	7818
LSD (0.05)	748	1183	—
CV %	7.5	10.0	—
Mean	7127	7256	7192

Table 3. Dry Matter Yield of Annual Ryegrass at Starkville, Mississippi, 2006–2007.

Variety	Harvest date				Total yield
	12/08/06	3/20/07	4/17/07	5/31/07	
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
Angus I	3026	1564	1730	527	6847
Attain	2914	1359	1902	645	6820
Barextra	2606	1544	2592	1216	7957
Big Boss	2910	1416	2305	629	7259
Bulldog Grazer	3389	927	1849	777	6942
DH-3	3097	1163	1982	860	7102
Diamond T	3071	1216	2314	617	7217
Dyna-Gain	2892	962	1980	753	6675
Ed	2851	1210	2187	806	7054
FI/Nex2006 Mrse 2xLrct	2733	1302	2093	1123	7251
FLX2002(LA3)LRCT	2606	1296	2203	1143	7248
FLX2003SM	2268	1397	2365	806	7036
FLX2006PE LRCT	2721	1387	1818	904	6831
Flying A	2774	1234	2021	653	6683
Graze-N-gro	3259	709	1760	683	6410
Gulf	2274	1291	2135	848	6548
Hercules	2708	1643	2170	1059	7581
Jackson	2814	1911	1984	621	7331
Jumbo	2915	1293	2179	634	7022
King	3051	1385	1987	658	7083
M/FL20064XER	2787	1206	1494	279	5766
Marshall	3110	1195	2129	616	7050
Maximus	3107	1479	2514	775	7875
ME4	2369	1557	2217	910	7053
ME94	3165	1470	2102	881	7618
Passerel	3346	1143	2180	1037	7705
Prine	3177	1284	2273	1100	7833
Rio	2852	1202	2135	815	7003
Striker	3465	1104	2549	583	7702
TAM-90	2716	1008	1984	747	6454
TRX2005-TBO	2571	1380	2591	838	7380
TRX2006-T22	2970	1293	2038	1038	7338
TRX2105-T4-1	2384	1550	2326	727	6987
Verdue	3053	1209	1979	933	7174
WD-40	3456	870	2320	443	7089
WMN97	3093	1426	2133	1069	7720
LSD (0.05)	446	347	373	479	748
CV %	10.9	19.1	12.5	42.8	7.5
Mean	2908	1294	2126	799	7127

Planting Date: 9/27/06
 Soil: Marietta Loam
 Fertilizer: 400 lb 15-5-10 at planting and on 12/08/06 and 3/20/07
 Herbicide: None

Table 4. Dry Matter Yield of Annual Ryegrass at Newton, Mississippi, 2006–2007.

Variety	Harvest date				Total yield
	12/14/06	2/07/07	3/21/07	5/10/07	
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
Angus I	1214	1913	1386	2168	6681
Attain	1434	2038	1276	2203	6951
Barextra	1192	2028	2080	2484	7784
Big Boss	1136	2021	1542	2277	6975
Bulldog Grazer	1424	1781	1342	1899	6446
DH-3	1849	2024	1292	2142	7307
Diamond T	1538	2006	1430	2340	7314
Dyna-Gain(UAP)	1856	2016	1456	2241	7569
Ed	1836	2084	1455	2149	7524
FI/Nex2006 Mrse 2xLrct	1135	2245	1901	2656	7938
FLX2002(LA3)LRCT	896	2220	1767	2326	7209
FLX2003SM	840	2127	1423	2283	6673
FLX2006PE LRCT	1248	2203	1621	2543	7614
Flying A	1816	1947	1299	2199	7262
Graze-N-gro	1817	1823	1288	2054	6983
Gulf	823	1952	1881	2259	6915
Hercules	555	1772	2088	2263	6678
Jackson	1725	2044	1439	1950	7157
Jumbo	998	2296	1929	2359	7582
King	1631	2274	1624	2498	8028
M/FL20064XER	650	2104	1445	2018	6217
Marshall	1964	2111	1769	2271	8114
Maximus	1291	2037	1577	2224	7129
ME4	1765	2068	1727	2292	7852
ME94	1821	2042	1956	2199	8018
Passerel	1399	1974	2265	2821	8459
Prine	544	1989	1714	2548	6794
Rio	1282	1946	1700	2134	7063
Striker	1311	1926	1400	2276	6913
TAM-90	1451	1968	1513	2349	7282
TRX2005-TBO	1476	1930	1529	2186	7122
TRX2006-T22	1379	1909	1413	2280	6981
TRX2105-T4-1	1011	1964	1541	2412	6928
Verdue	1701	1650	1311	2100	6762
WD-40	1604	1854	1091	2524	7073
WMN97	1453	1957	2114	2392	7916
LSD (0.05)	438	296	665	592	1183
CV %	19.8	9.0	25.5	15.9	10.0
Mean	1363	2007	1600	2287	7256

Planting Date: 9/27/06
 Soil: Prentiss Sandy Loam
 Fertilizer: 400 lb 15-5-10 on 10/13/06 and 200 lb 34-0-0 on 12/14/06, 2/07/07, and 3/21/07
 Dolomitic limestone applied at 1.5 tons/A on 9/27/06
 Herbicide: None

Table 5. Dry Matter Yield of Annual Ryegrass at Starkville and Newton, Mississippi, 2007–2008.

Variety	Starkville	Newton	Two-location avg.
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
4X	10955	9954	10455
Attain	10716	10527	10622
Barextra	11884	9307	10596
Big Boss	11982	10349	11166
DH3	11022	9821	10422
Diamond T	11977	9898	10938
DynaGain	11048	10100	10574
Ed (L5-1-AR102)	10916	10007	10462
FL/NE2006(misc2x)LRCT	11162	9964	10563
FLX 2002 (LA 3) LRCT	11696	10270	10983
Flying A	12245	10847	11546
Hercules	12423	9291	10857
Jackson	11619	10496	11058
Jumbo	10974	9237	10106
Lonestar	11512	9534	10523
Marshall	11289	10737	11013
Maximus	12443	9839	11141
ME4	10786	10577	10682
ME94	11196	10549	10873
Passerel Plus	11533	10562	11048
Pasture Sweet'ner Mix	9824	8979	9402
Prine Tetraploid	12089	10191	11140
Rio	11057	10391	10724
TAM 90	10719	9625	10172
Tam TBO	10585	10193	10389
Tetra Pro	11132	9869	10501
Tetrastar Tetraploid	12236	9952	11094
TXR 2006 T2	10953	9399	10176
TXR 2006 T22	11713	10496	11105
Verdure	11123	9703	10413
WD40	10863	10318	10591
WMN97	11347	10526	10937
LSD (P < 0.05)	1230	893	—
CV%	7.7	5.4	—
Mean	11344	10047	10696

Table 6. Dry Matter Yield of Annual Ryegrass at Starkville, Mississippi, 2007–2008.

Variety	Harvest date						Total
	11/20/07	1/15/08	3/06/08	4/02/08	5/06/08	6/11/08	
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
4X	1317	2044	1197	1948	3672	776	10955
Attain	1077	2023	1353	1825	3575	862	10716
Barextra	740	1565	1494	2483	4419	1183	11884
Big Boss	1693	2003	1392	1918	4200	775	11982
DH3	1079	2132	1114	1982	3894	821	11022
Diamond T	1020	1924	1701	2088	4172	1071	11977
DynaGain	1208	1989	1179	2193	3692	787	11048
Ed (L5-1-AR102)	1344	1945	1434	2041	3289	863	10916
FL/NE2006(misc2x)LRCT	869	2043	1774	1959	3540	977	11162
FLX 2002 (LA 3) LRCT	1222	2079	1782	1874	3711	1028	11696
Flying A	1572	2190	1310	2235	4002	936	12245
Hercules	1130	1831	1689	2343	3953	1477	12423
Jackson	1218	1756	2075	2067	3631	872	11619
Jumbo	539	2137	1416	1996	3954	933	10974
Lonestar	1242	2057	1365	2146	3734	966	11512
Marshall	1223	1969	1644	1939	3636	878	11289
Maximus	1027	2085	1747	2318	4278	988	12443
ME4	1327	1486	1723	2095	3270	884	10786
ME94	1302	1873	1526	2044	3501	951	11196
Passerel Plus	1282	1938	1529	1942	3665	1177	11533
Pasture Sweet'ner Mix	530	1800	1213	2156	3208	917	9824
Prine Tetraploid	1063	1962	1418	1952	4814	880	12089
Rio	1445	1994	1341	2142	3310	825	11057
TAM 90	1050	1977	1341	1928	3673	748	10719
TAM TBO	830	2092	1434	1805	3497	927	10585
Tetra Pro	877	1984	1448	1947	3746	1130	11132
Tetrastar Tetraploid	1278	2069	1352	2573	4222	743	12236
TXR 2006 T2	914	2112	1583	1799	3630	915	10953
TXR 2006 T22	1332	2104	1390	1980	3954	954	11713
Verdure	1276	1882	1257	2077	3844	787	11123
WD40	1581	1734	1058	2155	3702	633	10863
WMN97	1222	1978	1364	1968	3772	1044	11347
LSD (P < 0.05)	521	355	420	425	548	268	1230
CV %	32.2	12.9	20.5	14.7	10.3	20.6	7.7
Mean	1151	1961	1458	2060	3786	928	11344

Planted: 9/27/07
 Soil: Savannah sandy loam
 Fertilizer: 400 lb/A 15-5-10 at planting and after each harvest
 Herbicide: glyphosate at 1 qt/A 2 weeks prior to planting

Table 7. Dry Matter Yield of Annual Ryegrass at Newton, Mississippi, 2007-2008.

Variety	Harvest date				Total
	12/17/07	2/18/08	4/3/08	5/14/08	
	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>	<i>lb/A</i>
4X	2390	2266	2748	2551	9954
Attain	2388	2544	2983	2612	10527
Barextra	1942	2368	2713	2285	9307
Big Boss	2520	2552	2737	2541	10349
DH3	2321	1932	2961	2607	9821
Diamond T	2337	2273	2744	2544	9898
DynaGain	2607	2159	3032	2302	10100
Ed (L5-1-AR102)	2004	2606	2965	2432	10007
FL/NE2006(misc2x)LRCT	1921	2403	3014	2625	9964
FLX 2002 (LA 3) LRCT	2236	2879	2677	2477	10270
Flying A	2670	2350	3179	2648	10847
Hercules	2019	1999	2975	2298	9291
Jackson	2464	2540	2873	2618	10496
Jumbo	1941	2029	2856	2412	9237
Lonestar	2236	2210	2658	2430	9534
Marshall	2536	2831	2966	2404	10737
Maximus	1950	2274	3104	2511	9839
ME4	2618	2688	2863	2409	10577
ME94	2516	2841	2944	2248	10549
Passerel Plus	2276	2736	3132	2417	10562
Pasture Sweet'ner Mix	1655	2005	2884	2434	8979
Prine Tetraploid	2366	2212	2924	2689	10191
Rio	2398	2465	3023	2505	10391
TAM 90	2202	2313	2783	2328	9625
Tam TBO	2146	2837	2750	2461	10193
Tetra Pro	2051	2472	2912	2434	9869
TetraStar Tetraploid	2244	1988	3054	2666	9952
TXR 2006 T2	2213	2212	2569	2406	9399
TXR 2006 T22	2362	2578	2940	2616	10496
Verdure	2165	2406	2732	2400	9703
WD40	2671	1993	3021	2632	10318
WMN97	2506	2568	3373	2079	10526
LSD (P < 0.05)	361	488	413	424	893
CV%	9.7	12.5	8.7	10.5	5.4
Mean	2277	2392	2909	2469	10047
Planted: 9/28/07 Soil: Prentiss Fine Sandy Loam Fertilizer: 500 lb/A 13-13-13 on 10/16/07 and 200 lb/A 34-0-0 following each harvest Herbicide: None					

Table 8. Sources of Ryegrass Seed, 2006-2007.

Variety	Seed Company/Source	Variety	Seed Company/Source
4X	Oregro	Lonestar	Grassland Oregon
Angus I	DLF International	Marshall	Wax
Attain	Smith Seed	Maximus	Barenburg
Barextra	Barenburg	ME4	Wax
Big Boss	Smith Seed	ME94	Wax
Bulldog Grazer	Athens Seed	Passerel	Pennington Seed
DH3	Oregro	Passerel Plus	Pennington Seed
Diamond T	Oregro	Pasture Sweet'ner Mix	Grassland Oregon
DynaGain	Oregro	Prine	Ragan and Massey
DynaGain(UAP)	United Agri-Products	Prine Tetraploid	Regan and Massey
Ed	Smith Seed Services	Rio	Pro Seeds
Ed (L5-1-AR102)	Smith Seed	Striker	Seed Research of Oregon
FI/Nex2006 Mrse 2xLrct	University of Florida	TAM 90	Texas A&M
FL/NE2006(misc2x)LRCT	Oregro	TAM TBO	Texas A&M
Flying A	Oregro	Tetra Pro	Texas A&M
FLX 2002 (LA 3) LRCT	Lewis Seed	Tetrastar Tetraploid	Grassland Oregon
FLX2003SM	Lewis Seed	TRX2005-TBO	Texas A&M
FLX2006PE LRCT	Univ of Florida	TXR 2006 T2	Texas A&M
Graze-N-gro	Seed Research of Oregon	TXR 2006 T22	Texas A&M
Gulf	Commercial Seed	TRX2105-T4-1	Texas A&M
Hercules	Barenburg	Verdue	Smith Seed
Jackson	Wax	Verdure	Smith Seed Services
Jumbo	Barenburg	WD40	Oregro
King	Lewis Seed Company	WMN97	Wax



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