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Mississippi *Annual Cool-Season* FORAGE CROP

VARIETY TRIALS, 2011–12

MAFES

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Trade names of commercial and public varieties tested in this report are included only for clarity and understanding. All available names (i.e., trade names, experiment code names or numbers, chemical names, etc.) and varieties, products or source seed in this research are listed on page 13.

Mississippi Annual Cool-Season Forage Crop Variety Trials, 2011–12

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Mississippi Annual Cool-Season Forage Crop Variety Trials, 2011–12

Introduction

Several varieties of forage crops are evaluated every year in MAFES small-plot trials. Seed for the entries are provided by seed companies and state universities and tested at one or more locations across Mississippi. All entries from privately owned companies are tested on a fee basis. Standard varieties may be added by MAFES as a reference for comparison purposes. In addition, varieties of interest may also be added when applicable. Sources of seed are presented in Table 16. This report contains data from 30 small-grain varieties, 36 ryegrass varieties, and nine annual clover varieties. Locations were North Mississippi Branch Experiment Station at Holly Springs, Leveck Animal Research Center Forage Unit at Mississippi State, Coastal Plain Branch Experiment Station at Newton, and White Sands Research Unit at Poplarville. Due to insufficient stands at most locations, data for annual clover were recorded in Starkville only. Ryegrass data was recorded in Starkville, Holly Springs, Newton, and Poplarville. Small-grains data was recorded in Starkville, Holly Springs, and Poplarville.

In Poplarville, precipitation was relatively low from August to December 2011 when compared with the average received at all four locations (Table 1). Low rainfall in September at Poplarville was probably responsible for poor germination observed in the annual clover trial. By February, precipitation increased in the southern Mississippi locations, Newton and Poplarville (Table 2). Holly Springs received high rainfall in November and December, but little growth was achieved until later in the spring because of freezing temperatures until March (Table 3). Starkville received high rainfall amounts in September but not again until December. With the exception of Holly Springs, relatively warm winter weather encouraged forage growth, thus the desired harvest height was achieved relatively early in December and January.

Data presented in Tables 5–15 can be used to evaluate the performance of each forage crop within that test. Comparisons can be statistically evaluated by using the least significant difference (LSD). The LSD value represents the amount of yield (pounds per acre) that must be observed between any two varieties to determine if the differences were due to variety variation alone.

Table 1. Total monthly precipitation by location and the 30-year average for Mississippi in 2011.

Location	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	in	*in*	*in*	*in*	*in*	*in*	*in*	*in*	*in*	*in*	*in*	*in*
Poplarville	6.58	3.49	4.70	1.74	1.53	3.67	9.29	2.25	4.47	0.41	3.24	4.36
Holly Springs	2.81	3.25	5.27	12.65	3.14	4.71	1.84	1.52	5.25	1.43	6.98	7.27
Starkville	5.43	2.62	6.48	12.05	2.10	5.15	4.31	1.80	7.17	1.04	3.50	6.48
Newton	5.08	2.63	8.31	4.27	0.69	4.50	7.00	1.76	7.89	0.98	3.08	5.26
Mean	4.98	3.00	6.19	7.68	1.87	4.51	5.61	1.83	6.20	0.97	4.20	5.84
30-Yr. Avg.	5.92	5.35	6.93	5.62	4.87	3.99	5.45	3.34	3.64	3.28	4.95	5.31

Table 2. Total monthly precipitation by location and the 30-year average for Mississippi in 2012.

Location	Jan.	Feb.	March	April	May
	in	*in*	*in*	*in*	*in*
Poplarville	3.69	6.73	8.21	1.90	1.93
Holly Springs	4.24	2.62	5.42	3.70	3.77
Starkville	3.01	4.05	7.39	3.74	3.30
Newton	4.89	6.98	7.90	2.15	6.38
Mean	3.96	5.10	7.23	2.87	3.85
30-Yr. Avg.	5.92	5.35	6.93	5.62	4.87

Table 3. Monthly high and low mean temperature by location through the duration of the trial.

Month/Year	Poplarville		Newton		Starkville		Holly Springs	
	H	L	H	L	H	L	H	L
	°F	*°F*	*°F*	*°F*	*°F*	*°F*	*°F*	*°F*
Sept. 2011	85	64	85	59	84	59	84	57
Oct. 2011	76	53	76	43	74	44	73	43
Nov. 2011	71	48	68	41	67	42	65	43
Dec. 2011	61	43	61	37	57	35	54	33
Jan. 2012	66	45	64	36	62	36	58	32
Feb. 2012	64	47	62	41	60	39	57	35
March 2012	76	56	76	52	76	54	75	49
April 2012	79	57	78	52	78	55	76	50

Protocol

Ryegrass, small grains, and annual clover trials across the state were established from October 4–9, 2011. At all locations, soil samples were taken and analyzed by the Mississippi State University Soil Testing Laboratory. Trial areas were fertilized with lime, phosphorus (P_2O_5), and potassium (K_2O) according to the soil sample recommendations. The ryegrass and small-grain trials were fertilized with 335 pounds of 15-5-10 at the time of planting, and 50 pounds of N using urea ammonium sulfate (33-0-0S) was applied after each harvest. Annual clover trials were fertilized with 50 pounds of 0-0-60 at planting and an additional 100 pounds of phosphorus and potassium early in the spring using 0-20-20. Plots were 6x11 feet and planted using a precision cone seeder on a prepared seedbed. Trial design was a randomized complete block. Recommended seeding rates for individual trials were utilized and are presented in Table 4. All trials were harvested when 75% of the plots achieved 15 inches of growth. Annual clovers were harvested to a stubble height of 4 inches, and grass plots were harvested to 3 inches. Plots were harvested using a Ferris z-turn mower equipped with a bagging system that collected a 4.3x11-foot swath to calculate total yield. A subsample was then collected and dried at 55°C to calculate dry matter percentage (DM). Data were analyzed using the General Linear Model (PROC GLM) of SAS, and mean separation was conducted using the LSD at $\alpha = 0.05$.

Table 4. Seeding rates.

Species/Variety	lb/A
Small Grains	
Rye	100.0
Wheat	100.0
Triticale	100.0
Oat	100.0
Ryegrass	30.0
Annual Clovers	
Blackhawk Arrowleaf	10.0
Crimson Clover	30.0
CW9092 Berseem	25.0
GO-BAL10 Balansia	4.5
GO-BER10 Berseem	25.0
GO-PER10 Persian	8.0
Grazers Select Ball	3.0
Hairy Vetch	25.0
Yuchi Arrowleaf	10.0

Annual Ryegrass Variety Test 2011–12

Annual ryegrass is the most important and versatile cool-season annual grass for livestock producers in Mississippi. In pasture and hay systems, annual ryegrass is popular forage because of its ease of establishment, high nutritive value, high yields, good reseeding ability, and adaptability to a wide range of soil types. Annual ryegrass can be established in pure stands or mixed with small grains and/or clovers for cool-season forage production. For these reasons, annual ryegrass is a main staple for many cool-season grazing programs in Mississippi. Planting date varies with location. Overall, the best planting time is September for prepared seedbed or October if overseeded on a warm-season perennial grass pasture. Seeding rates are 30 pounds per acre for pure stands and 20 pounds per acre for mixtures with small grains and/or clovers. Annual ryegrass grows best at a soil pH of 6.0 to 7.0. Phosphorus and potassium levels should be at least in the medium range for optimum yields. Annual ryegrass is very responsive to nitrogen fertilizer that is split into two to four applications during the growing season. When established with clovers, a single nitrogen application in early winter is often recommended to limit annual ryegrass competition with the clover. Reasonable productivity can be expected from November to May in the southern part of Mississippi and February to May in the northern part of Mississippi. Annual ryegrass should normally be allowed to reach a height of 8 inches before grazing begins. Normal stocking rates are 700 pounds per acre in winter and 1,400–2,000 pounds per acre in spring. Typically, average daily gains for respective animal class are suckling calves, 2.75 pounds; stocker calves, 2.3 pounds; yearling horses, 1.75 pounds; and lambs, 0.3 pound. However, all of these factors are greatly influenced by environmental conditions and management factors. Tables 5–8 detail the yield performance of ryegrass varieties at four locations within the state ranging from Holly Springs in the north to Poplarville in the south.

Table 5. Ryegrass yields by harvest and total yields in Holly Springs.

Variety	Harvest date			Total yield
	3/9/12	4/2/12	5/10/12	
	lb/A	*lb/A*	*lb/A*	*lb/A*
07-EW	1402	1894	2782	6078
07-WW	1257	1720	2342	5319
Attain	1148	1476	2537	5161
AU Swipar	1305	1395	1974	4674
Bar LMF 9740	675	1304	2417	4396
Big Boss	1160	1381	2773	5315
Bulldog Grazer	1871	1907	2189	5968
DH-3	1583	2010	2390	5983
Diamond T	1467	1552	2366	5384
Earlyploid	1310	1320	2047	4677
Ed	1200	1740	2476	5416
FIXSH 2011 2XME	1831	1297	1892	5019
FI 2011 4XER	1253	1454	2164	4870
FIXSH 2011 2XER	1776	1414	1922	5112
Flying A	1332	1972	2643	5946
Fria	1164	2021	2841	6026
Jackson	1638	1807	2450	5895
Jumbo	1154	1557	2465	5176
LONESTAR	1496	1594	2515	5605
M2 CVS	1012	1660	2632	5304
MARONA Early 4x	1519	1519	2439	5477
Marshall	1192	1499	2001	4692
Maximus	1246	1536	2525	5307
ME-4	1225	1781	2393	5398
ME-94	1612	1334	1991	4936
Nelson	1220	1587	2577	5384
PPG-lwd-101	1599	2424	2189	6212
PPG-lwt-104	1150	1540	2326	5015
Prine	898	1980	2410	5288
Sumo	1459	2057	2249	5764
TAG 07-ME	1927	1388	2581	5896
TAG 10.0979TA	1134	2128	3544	6806
TAG 8.1441	1207	1745	2383	5335
TAMTBO	1259	1623	2917	5799
TETRASTAR	1527	1703	2228	5458
Winterhawk	1425	1644	2807	5877
LSD (0.05)	NS[1]	409	644	NS
CV%	NS	17	19	NS
Mean	1350	1665	2427	5443

[1]NS = Not significant
Planted: Oct. 4, 2011 Soil: Grenada Silt Loam
Fertilizer: 335 lb/A of 15-5-10 at planting and 50 lb of N (33-0-0S) after each harvest
Herbicide: Glyphosate at 2 qt/A before planting and 1 qt/A of GrazonNext (aminopyralid & 2,4-D) after first harvest

Table 6. Ryegrass yields by harvest and total yields in Newton.

Variety	Harvest date				Total yield
	1/5/12	2/23/12	3/19/12	4/25/12	
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
07-EW	1857	2464	1133	1993	7447
07-WW	1983	2553	1355	2100	7991
Attain	1602	2258	1359	1907	7127
AU Swipar	1823	1890	1056	1957	6726
Bar LMF 9740	2007	2704	1427	1895	8033
Big Boss	1838	2167	1172	2033	7210
Bulldog Grazer	1785	2161	1168	2023	7137
DH-3	1883	2739	1537	1796	7956
Diamond T	1947	2238	1080	1509	6776
Earlyploid	1618	2092	1368	1780	6859
Ed	1871	2537	1389	2137	7935
FIXSH 2011 2XME	1532	2550	1145	1899	7126
FI 2011 4XER	1757	2271	1198	2020	7246
FIXSH 2011 2XER	1733	2575	1246	2057	7612
Flying A	1665	2684	1549	2073	7970
Fria	1862	2257	1563	1816	7498
Jackson	1442	2253	1330	1676	6700
Jumbo	1553	2493	1412	1887	7345
LONESTAR	1894	2348	1250	1949	7441
M2 CVS	1796	2482	1522	1708	7508
MARONA Early 4x	2033	2089	1187	1793	7102
Marshall	1738	2389	1629	1872	7627
Maximus	1890	1706	1167	1940	6703
ME-4	1895	2386	1825	1724	7830
ME-94	1877	2577	1376	1787	7617
Nelson	1670	1819	1419	1659	6568
PPG-lwd-101	1760	2319	1531	1851	7462
PPG-lwt-104	1437	2053	1415	1894	6799
Prine	1852	2138	1352	2051	7393
Sumo	1733	2249	1499	2087	7568
TAG 07-ME	1963	2038	1265	1890	7155
TAG 10.0979TA	1695	2067	1212	2052	7027
TAG 8.1441	1689	2166	1388	2029	7272
TAMTBO	1781	2262	1241	1745	7030
TETRASTAR	1543	2401	1299	1727	6970
Winterhawk	1806	2642	1445	1895	7788
LSD (0.05)	NS	537	301	NS	NS
CV%	NS	16	15	NS	NS
Mean	1774	2306	1347	1896	7321

[1]NS = Not significant
Planted: Oct. 6, 2011 Soil: Prentiss fine sandy loam
Fertilizer: 335 lb/A of 15-5-10 at planting and 50 lb of N (33-0-0S) after each harvest
Herbicide: Glyphosate at 2 qt/A before planting and 1 qt/A of GrazonNext (aminopyralid & 2,4-D) after first harvest

Table 7. Ryegrass yields by harvest and total yields in Poplarville.

Variety	Harvest date				Total yield
	12/13/11	1/30/12	3/6/12	4/12/12	
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
07-EW	1628	1470	1505	1499	6101
07-WW	1866	1328	1616	1524	6334
Attain	1830	1527	1486	1158	6001
AU Swipar	1824	1631	1503	1733	6691
Bar LMF 9740	1584	1566	1343	1520	6013
Big Boss	1616	1367	1233	1596	5813
Bulldog Grazer	1647	1435	1378	1129	5589
DH-3	1986	1570	1382	2034	6972
Diamond T	1682	1392	1352	1324	5750
Earlyploid	1970	1236	1205	1257	5667
Ed	1667	1358	1615	1644	6284
FIXSH 2011 2XME	2122	1215	1272	1395	6005
FI 2011 4XER	1967	1215	1160	1693	6036
FIXSH 2011 2XER	2012	1634	1193	1220	6059
Flying A	2027	1480	1757	1765	7029
Fria	1846	1516	1519	1419	6300
Jackson	1564	1279	1502	1410	5754
Jumbo	1811	1451	1303	1473	6038
LONESTAR	1968	1461	1466	1819	6713
M2 CVS	2025	1403	1710	1955	7093
MARONA Early 4x	1723	1316	1116	1118	5273
Marshall	2312	1633	1675	1992	7612
Maximus	2256	1206	1203	1440	6105
ME-4	1942	1552	1739	1762	6995
ME-94	2007	1149	1436	1571	6165
Nelson	1973	1453	1372	1377	6175
PPG-lwd-101	2504	1313	1770	2142	7729
PPG-lwt-104	2007	1229	1424	1886	6545
Prine	2224	1377	1373	1329	6303
Sumo	1915	1354	1510	1709	6488
TAG 07-ME	1542	1715	1543	1257	6057
TAG 10.0979TA	1459	1138	1218	1552	5368
TAG 8.1441	2037	1451	1485	1794	6767
TAMTBO	1739	1581	1594	1679	6593
TETRASTAR	1847	1096	1418	1436	5798
Winterhawk	1773	1627	1548	1799	6746
LSD (0.05)	NS	NS	314	450	852
CV%	23	22	15	26	9
Mean	1886	1408	1442	1566	6304

[1]NS = Not significant
Planted: Oct. 7, 2011 Soil: Basin loam
Fertilizer: 335 lb/A of 15-5-10 at planting and 50 lb of N (33-0-0S) after each harvest
Herbicide: Glyphosate at 2 qt/A before planting and 1 qt/A of GrazonNext (aminopyralid & 2,4-D) after first harvest

Table 8. Ryegrass yield by harvest and total yield for Starkville.

Variety	Harvest date				Total yield
	1/6/12	1/31/12	3/6/12	5/4/12	
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
07-EW	1104	729	1244	1030	4107
07-WW	837	643	1098	1120	3698
Attain	936	549	1157	1150	3791
AU Swipar	1084	560	995	882	3521
Bar LMF 9740	2572	447	1279	1062	5359
Big Boss	1042	590	1170	1097	3900
Bulldog Grazer	3372	612	1427	999	6411
DH-3	806	784	1535	1241	4366
Diamond T	979	425	1290	1287	3981
Earlyploid	1065	575	943	878	3462
Ed	809	686	1238	1217	3950
FIXSH 2011 2XME	1256	461	1405	968	4091
FI 2011 4XER	871	519	1122	1058	3570
FIXSH 2011 2XER	1085	435	1257	1127	3904
Flying A	1011	501	1159	1063	3735
Fria	1037	802	1509	1139	4487
Jackson	1309	481	1116	1108	4014
Jumbo	1019	687	908	1126	3740
LONESTAR	1040	831	1109	1143	4123
M2 CVS	923	438	1194	1075	3629
MARONA Early 4x	946	581	1261	1282	4070
Marshall	1203	599	1315	906	4023
Maximus	1236	578	1049	1146	4009
ME-4	934	761	1419	1196	4310
ME-94	1015	604	997	1169	3785
Nelson	959	678	1439	1303	4378
PPG-lwd-101	908	729	1235	1160	4032
PPG-lwt-104	599	599	977	1141	3316
Prine	1525	599	1079	1021	4223
Sumo	1068	759	1375	840	4042
TAG 07-ME	1006	926	1349	1040	4321
TAG 10.0979TA	832	598	1212	1024	3666
TAG 8.1441	732	512	1175	1132	3552
TAMTBO	1047	506	913	992	3458
TETRASTAR	991	544	999	972	3506
Winterhawk	891	759	1303	1118	4071
LSD (0.05)	[1]NS	270	322	280	NS
CV%	NS	31	19	18	NS
Mean	1112	613	1201	1089	4017

[1]NS = Not significant
Planted: Oct. 8, 2011 Soil: Marietta fine sandy loam
Fertilizer: 335 lb/A of 15-5-10 at planting and 50 lb of N (33-0-0S) after each harvest
Herbicide: Glyphosate at 2 qt/A before planting and 1 qt/A of GrazonNext (aminopyralid & 2,4-D) after first harvest

Small Grain Variety Test 2011–12

In Mississippi, small grains (oats, wheat, rye, and triticale) are not utilized as extensively for forage as ryegrass because of lower annual yields. However, some small grains tend to be more drought tolerant than ryegrass and can provide highly digestible forage when other forages are not available. Rye and triticale are the most cold tolerant of forage crops, and therefore have potential to continue vegetative growth during the fall and winter months in Mississippi. At Holly Springs, the most northern location, rye and triticale varieties were harvested for the first time in February and again in March, achieving two harvests (Table 10) before ryegrass trials in the area were harvested. Wheat varieties in both Starkville and Holly Springs were slow to mature in the spring of 2012, resulting in low cumulative yields in both locations (Table 10 and 12). In the more moderate climate observed in Starkville, oat and rye average yields had better distribution from December until almost February despite similar total yields among small-grain species. In Poplarville, small-grain yields were similar among species with the exception of triticale yields, which yielded less than rye or oats (Table 14). Mississippi only utilizes about 154,000 acres in small-grain forages with the majority of those sown in oats or rye. Differences among varieties regardless of species are presented in Tables 9, 11, and 13. Differences among species regardless of variety are presented in Tables 10,12, and 14.

Table 9. Small grain yields by harvest and total yields for Holly Springs.

Variety	Species	Harvest date			Total yield
		2/20/12	3/14/12	4/2/12	
		lb/A	*lb/A*	*lb/A*	*lb/A*
FL04179-L2	Oat	—	1857	755	2612
FL06050-N2	Oat	—	1548	583	2131
FL06107-N3	Oat	—	552	151	704
Harrison	Oat	—	1532	590	2122
LA02065SBSBSBSB-88	Oat	—	1722	494	2216
LA04004SBSB-7-B-S1	Oat	—	2033	511	2544
LA05006GSBSB-97	Oat	—	1805	686	2491
LA05006GSBSB-97	Oat	—	1508	788	2296
NF-27	Oat	—	1441	551	1991
NF95418	Oat	—	434	442	876
PlotSpike LA9339	Oat	—	1233	574	1807
PlotSpike LA99016	Oat	—	1560	610	2169
TX02D079	Oat	—	2013	577	2589
AGS 104	Rye	2138	380	702	3220
Bates RS4	Rye	1876	1265	796	3937
ELBON	Rye	2159	459	763	3381
FORIDA 401	Rye	1560	1066	607	3232
NF95307A	Rye	2251	1131	920	4301
NF95319B	Rye	1746	1156	722	3624
NF97326	Rye	606	2245	856	3707
WRENS 96	Rye	1292	1356	1825	4473
FL0014	Triticale	1288	414	869	2571
FL01008	Triticale	1094	329	353	1776
FL01143	Triticale	1839	295	554	2688
FL01149	Triticale	1151	568	644	2363
FL06207	Triticale	867	498	445	1810
TRIT 342	Triticale	1658	1016	947	3620
ENDURANCE	Wheat	—	—	702	702
NF95134A	Wheat	—	—	1227	1227
NF96131	Wheat	—	—	660	660
LSD (0.05)		626	512	207	534
CV%		28	31	21	21
Mean		1537	1163	696	2461

Planted: Oct. 4, 2011 Soil: Grenada Silt Loam
Fertilizer: 335 lb/A of 15-5-10 at planting and 50 lb of N (33-0-0S) after each harvest
Herbicide: Glyphosate at 2 qt/A before planting and 1 qt/A of GrazonNext (aminopyralid & 2,4-D) after first harvest

Table 10. Cumulative small grain species yields by harvest and total yields for Holly Springs.

Species	Harvest date			Total yield
	2/20/12	3/14/12	4/2/12	
	lb/A	*lb/A*	*lb/A*	*lb/A*
Oat	—	1510	606	2116
Rye	1749	1154	744	3647
Triticale	1255	423	551	2229
Wheat	—	—	1251	1251
LSD (0.05)	316	739	351	822
CV %	37	45	36	33
Mean	1537	1163	696	2310

Table 11. Small grain yields by harvest and total yields for Starkville.

Variety	Species	Harvest date				Total yield
		12/14/12	1/6/12	1/31/12	3/21/12	
		lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
FL04179-L2	Oat	911	—	960	—	1871
FL06050-N2	Oat	1261	—	1062	—	2324
FL06107-N3	Oat	1135	—	421	—	1556
Harrison	Oat	919	—	1124	—	2042
LA02065SBSBSBSB-88	Oat	868	—	1073	—	1941
LA04004SBSB-7-B-S1	Oat	1008	—	1122	—	2130
LA05006GSBSB-97	Oat	1095	—	1022	—	2118
LA05006GSBSB-97	Oat	1150	—	977	—	2127
NF-27	Oat	800	—	1177	—	1977
NF95418	Oat	1115	—	1539	—	2654
PlotSpike LA9339	Oat	934	—	1091	—	2025
PlotSpike LA99016	Oat	1259	—	990	—	2249
TX02D079	Oat	1220	—	1166	—	2386
AGS 104	Rye	1546	—	630	—	2176
Bates RS4	Rye	1585	—	1029	—	2614
ELBON	Rye	1480	—	916	—	2396
FORIDA 401	Rye	1335	—	636	—	1971
NF95307A	Rye	1411	—	1253	—	2663
NF95319B	Rye	1716	—	1481	—	3196
NF97326	Rye	2027	—	1189	—	3216
WRENS 96	Rye	1302	—	1215	—	2516
FL0014	Triticale	—	1281	—	—	1281
FL01008	Triticale	—	1061	—	—	1061
FL01143	Triticale	—	4333	—	—	4333
FL01149	Triticale	—	1232	—	—	1232
FL06207	Triticale	—	1461	—	—	1461
TRIT 342	Triticale	—	1330	—	—	1330
ENDURANCE	Wheat	—	—	977	1220	2197
NF95134A	Wheat	—	—	1477	1315	2792
NF96131	Wheat	—	—	1805	1144	2949
LSD (0.05)		447	[1]NS	458	NS	NS
CV%		24	NS	29	NS	NS
Mean		1241	1783	1097	1226	2226

[1]NS = Not significant
Planted: Oct. 8, 2011 Soil: Marietta fine sandy loam
Fertilizer: 335 lb/A of 15-5-10 at planting and 50 lb of N (33-0-0S) after each harvest
Herbicide: Glyphosate at 2 qt/A before planting and 1 qt/A of GrazonNext (aminopyralid & 2,4-D) after first harvest

Table 12. Cumulative small grain species yields by harvest and total yields for Starkville.

Species	Harvest date				Total yield
	12/14/12	1/6/12	1/31/12	3/21/12	
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
Oats	1052	—	1055	—	2107
Rye	1550	—	1043	—	2593
Triticale	—	1783	—	—	1783
Wheat	—	—	539	1226	1765
LSD (0.05)	148	NS[1]	552	NS	NS
CV %	26	NS	35	NS	NS
Mean	1241	1783	1097	1226	2062

[1]NS = Not significant

Table 13. Small grain yields by harvest and total yields for Poplarville.

Variety	Species	Harvest date				Total yield
		12/13/11	1/30/12	3/5/12	4/12/12	
		lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
FL04179-L2	Oat	672	1353	1095	1765	4885
FL06050-N2	Oat	923	1313	1070	1032	4338
FL06107-N3	Oat	1125	974	661	915	3675
Harrison	Oat	1181	1494	959	1598	5232
LA02065SBSBSBSB-88	Oat	683	1055	698	1191	3627
LA04004SBSB-7-B-S1	Oat	896	1472	1056	1657	5081
LA05006GSBSB-97	Oat	1063	1351	933	1428	4775
LA05006GSBSB-97	Oat	1340	1542	1068	1261	5211
NF-27	Oat	1094	1683	1162	1637	5576
NF95418	Oat	903	1426	969	1265	4563
PlotSpike LA9339	Oat	910	1294	1073	1629	4906
PlotSpike LA99016	Oat	910	1223	928	1366	4427
TX02D079	Oat	1092	1095	999	1855	5041
AGS 104	Rye	1469	1539	639	—	3647
Bates RS4	Rye	1509	1784	1154	—	4447
ELBON	Rye	1650	1400	1644	—	4694
FORIDA 401	Rye	1866	719	460	—	3045
NF95307A	Rye	1671	1827	970	—	4468
NF95319B	Rye	1480	1630	976	—	4086
NF97326	Rye	1309	1779	1085	—	4173
WRENS 96	Rye	1315	1712	1296	—	4323
FL0014	Triticale	1005	1344	370	—	2719
FL01008	Triticale	1120	1387	251	—	2758
FL01143	Triticale	1419	1402	254	—	3075
FL01149	Triticale	1093	1456	245	—	2794
FL06207	Triticale	1138	1631	291	—	3060
TRIT 342	Triticale	1315	1391	241	—	2947
ENDURANCE	Wheat	920	1644	1563	—	4127
NF95134A	Wheat	975	1680	1588	—	4243
NF96131	Wheat	1047	1663	976	—	3686
LSD (0.05)		422	509	457	360	830
CV%		25	25	36	20	14
Mean		1172	1440	889	1431	4120

Planted: Oct. 7, 2011 Soil: Basin loam
Fertilizer: 335 lb/A of 15-5-10 at planting and 50 lb of N (33-0-0S) after each harvest
Herbicide: Glyphosate at 2 qt/A before planting and 1 qt/A of GrazonNext (aminopyralid & 2,4-D) after first harvest

Table 14. Cumulative small grain species yields by harvest and total yields for Poplarville.

Species	Harvest date				Total yield
	12/13/11	1/30/12	3/5/12	4/12/12	
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
Oats	985	1329	975	1431	4720
Rye	1534	1549	1028	—	4111
Triticale	1182	1435	276	—	2893
Wheat	975	1662	1412	—	4049
LSD (0.05)	440	550	511	NS[1]	984
CV%	26	27	41	NS	17
Mean	1172	1440	889	1431	3943

[1]NS = Not Significant

Annual Clover Variety Test 2011–12

Annual clovers may reduce nitrogen input and improve forage quality. For this reason, they are heavily relied upon in Mississippi when interseeded into annual cool-season grass pastures. Arrowleaf clover has been a highly productive clover with excellent reseeding potential. It matures later than most annual legumes and can grow 2 to 4 feet tall. Arrowleaf clover remains more productive if grazed to a height of 2 to 4 inches in early spring. However, if it is cut too late in maturity, regrowth will be limited. Table 15 shows that by the second harvest in March, arrowleaf varieties Blackhawk and Yuchi had greater yields than the other legumes. Crimson clover also is a winter annual legume. Although it produces excellent forage, it has relatively poor reseeding abilities, necessitating reseeding each fall. Crimson clover will produce more forage at lower temperatures than other clovers as was evident in the first harvest in March (Table 15). Hairy vetch is a dependable, widely adapted, cool-season annual legume. However, it has very poor regrowth after harvest. If allowed to mature, hairy vetch has good reseeding capability. Ball clover is very tolerant to poor drainage. Bloat can be a problem. Ball clover is more tolerant to acidity than crimson clover. It tolerates heavy grazing and has good reseeding potential. Berseem clover resembles alfalfa in the field. It is tolerant of alkaline and wet soils, but most varieties are not cold tolerant. One variety of berseem performed similar to arrowleaf varieties and crimson clover in total yield.

Table 15. Annual clover yield in Starkville.

Variety	Harvest date		Total yield
	3/8/12	3/29/12	
	lb/A	*lb/A*	*lb/A*
Blackhawk Arrowleaf	450	1229	1679
Crimson Clover	1164	581	1745
CW9092 Berseem	458	458	916
GO-BAL10 Balansia	—	439	439
GO-BER10 Berseem	990	684	1674
GO-PER10 Persian	236	443	679
Grazers Select Ball	318	758	1076
Hairy Vetch	956	170	1126
Yuchi Arrowleaf	805	985	1789
LSD(0.05)	459	269	473
CV%	46	29	26
Mean	672	651	1236

Planted: 10-9-2011 Soil: Marietta fine sandy loam
Fertilizer: 50 lb of 0-0-60 at planting and 100 lb of P & K in the spring using 0-0-20
Herbicide: Glyphosate at 2 qt/A before planting and 1 qt/A of Poast (sethoxydim) in the spring

Table 16. Source of seed, 2011–12.

Variety	Seed company/source	Variety	Seed company/source
07-EW	Oregro Seeds, Inc	LA02065SBSBSBSB-88	LSU AgCenter
07-WW	Oregro Seeds, Inc	LA04004SBSB-7-B-S1	LSU AgCenter
AGS 104	The Noble Foundation	LA05006GSBS-65-S1	LSU AgCenter
Attain	Smith Seed Services	LA05006GSBSB-97	LSU AgCenter
Bates RS4	The Noble Foundation	LONESTAR	Grassland Oregon, Inc.
Big Boss	Smith Seed Services	M2 CVS	The Wax Company, LLC
Blackhawk	Gerald Smith- Agrilife	MARONA Early 4x	University of Florida
Bulldog Grazer	Athens Seed Co	Marshall	The Wax Company, LLC
DH-3	Oregro Seeds, Inc	Maximus	Barenburg Research
Diamond T	Oregro Seeds, Inc	ME-4	The Wax Company, LLC
Earlyploid	Ragan and Massey	ME-94	The Wax Company, LLC
Ed	Smith Seed Services	Nelson	The Wax Company, LLC
ELBON	The Noble Foundation	NF-27	The Noble Foundation
ENDURANCE	The Noble Foundation	NF95134A	The Noble Foundation
FIXSH 2011 2XME	University of Florida	NF95307A	The Noble Foundation
FI 2011 4XER	University of Florida	NF95319B	The Noble Foundation
FL0014	University of Florida	NF95418	The Noble Foundation
FL01008	University of Florida	NF96131	The Noble Foundation
FL01143	University of Florida	NF97326	The Noble Foundation
FL01149	University of Florida	PlotSpike LA9339	Ragan and Massey
FL04179-L2	University of Florida	PlotSpike LA99016	Ragan and Massey
FL06050-N2	University of Florida	PPG-lwd-101	Mountain view seeds
FL06107-N3	University of Florida	PPG-lwt-104	Mountain view seeds
FL06207	University of Florida	Prine	Ragan and Massey
FIXSH 2011 2XER	University of Florida	TAG 07-ME	Thomas Ag Services
Flying A	Oregro Seeds, Inc	TAG 10.0979TA	Thomas Ag Services
FORIDA 401	The Noble Foundation	TAG 8.1441	Thomas Ag Services
Fria	Allied Seed, LLC	TAMTBO	Oregro Seeds, Inc
GO-BAL10	Grassland Oregon, Inc.	TETRASTAR	Grassland Oregon, Inc.
GO-BER10	Grassland Oregon, Inc.	Trit 342	Segenta Cereal
GO-PER10	Grassland Oregon, Inc.	TX02D079	Texas Agrilife Research
Grazers Select	Fairlie Seed Company LLC	Winterhawk	Oregro Seeds, Inc
Harrison	The Noble Foundation	WRENS 96	The Noble Foundation
Jackson	The Wax Company, LLC		
Jumbo	Barenburg Research		

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