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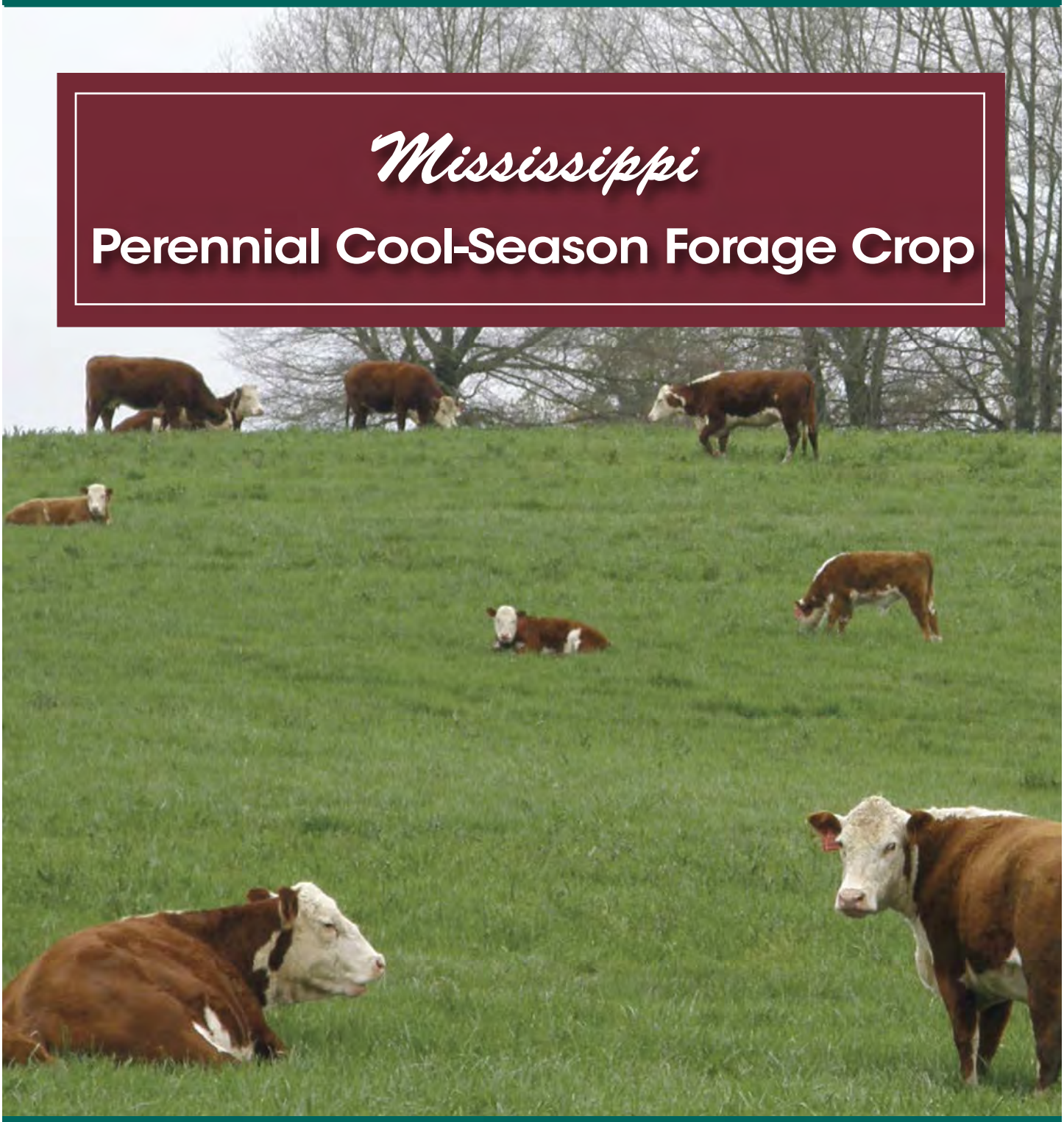
Mississippi Perennial Cool-Season Forage Crop



VARIETY TRIALS, 2014

Mississippi's Official Variety Trials

MAFES

Mississippi Agricultural & Forestry Experiment Station • George M. Hopper, 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 12 is gratefully acknowledged.

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 12.

Mississippi Perennial Cool-Season Forage Crop Variety Trials, 2014

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Find variety trial information online at ***mafes.msstate.edu/variety-trials***.

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INTRODUCTION

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 were added by MAFES as a reference for comparison purposes. In addition, varieties of interest were also added when applicable. Seed sources are presented in Table 17. This report contains data from 11 varieties of tall fescue (*Schedonorus arundinaceus*) established in 2011, along with seven varieties of orchardgrass (*Dactylis glomerata*) and six varieties of tall fescue established in 2013. In addition, it includes four varieties of perennial clovers (white clover, *Trifolium repens*; red clover, *Trifolium pretense*) and nine varieties of alfalfa (*Medicago sativa*). Tall fescue entries include endophyte-infected, endophyte-free, and novel-endophyte types. Alfalfa entries include both Roundup Ready® and conventional varieties, and the perennial clover trial includes red and white clovers. Locations included the North Mississippi Branch Experiment Station at Holly Springs, H.H. Leveck Animal Research Farm Forage Unit at Starkville, and White Sands Research Unit at Poplarville.

Separate trials were planted in 2011 and 2013 and will be discussed separately. Alfalfa was planted in the fall of 2011 at Holly Springs, Starkville, and Poplarville, but only a replant of alfalfa in Holly Springs maintained stand persistence into 2013. Tall fescue was planted in the fall of 2011 at Starkville and Holly Springs, the two most northern locations, and persisted for 3 years. Therefore, 2014 and 3-year averages are presented in this information bulletin.

Separate trials for tall fescue/orchardgrass, alfalfa, and perennial clover were planted again in the fall of 2013. Tall fescue/orchardgrass was planted in Starkville and Holly Springs, while alfalfa and perennial clovers were planted in Starkville, Holly Springs, and Poplarville. Perennial clovers in Starkville did not get established, and results are not included. Climate data by location for 2014 is presented in Tables 1 and 2.

Data presented in Tables 4–14 can be used to evaluate the performance of each forage variety or species within that test. Comparisons were statistically evaluated by using the LSD (least significant difference). The LSD represents the amount of yield that must be observed between any two varieties to determine if the differences observed were due to variety variation alone. Coefficient variation (CV) describes the accuracy of the test compared to other test. Highly variable trials between replications will be reflected in a high CV.

Table 1. Monthly rainfall totals for Poplarville, Starkville, and Holly Springs in 2014.

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	1.32	6.61	4.61	3.11	8.48	9.57	5.00	3.59	1.12	0.96	3.67	6.19
Starkville	1.92	6.71	4.44	10.11	3.98	7.51	2.19	3.29	0.34	2.44	4.20	5.27
Holly Springs	1.69	0.51	2.52	1.68	0.00	3.28	0.67	0.9	0.01	1.53	0.46	0.00
MS 30-yr. avg.	5.30	4.70	5.80	5.60	5.10	3.30	4.50	3.80	3.60	3.30	4.80	5.90

Table 2. Mean high and low temperatures by month for Poplarville, Starkville, and Holly Springs, 2014.												
Location	**Jan.**	**Feb.**	**March**	**April**	**May**	**June**	**July**	**Aug.**	**Sept.**	**Oct.**	**Nov.**	**Dec.**
	°F	*°F*	*°F*	*°F*	*°F*	*°F*	*°F*	*°F*	*°F*	*°F*	*°F*	*°F*
Poplarville												
High	58	64	69	78	84	90	90	93	89	83	68	67
Low	30	42	45	56	60	71	71	72	69	55	59	44
Starkville												
High	49	53	62	72	81	85	85	89	85	78	57	55
Low	23	33	37	48	56	67	65	66	64	52	35	37
Holly Springs												
High	44	47	58	69	78	84	83	88	82	73	53	49
Low	22	30	35	48	58	67	65	69	62	52	45	36
MS 30-yr. avg.												
High	56	60	69	77	83	90	92	92	87	78	68	59
Low	34	37	45	52	61	68	71	70	65	52	43	37

PROTOCOL

Tall fescue, perennial clovers, and alfalfa trials across the state were established from October 4 to 9, 2011, in the first trials and September 23 to October 9, 2013, in the second trials. Soil samples from each location were taken and analyzed by Mississippi State University Soil Testing Lab. Each trial area was fertilized with lime, phosphorus (P_2O_5), and potassium (K_2O) according to soil test recommendations. Recommendations for phosphorus and potassium in grass were usually fulfilled with one application of 15-5-10. Tall fescue trials were fertilized with 335 pounds per acre of 15-5-10 at planting, followed by 50 pounds per acre of N using urea ammonium sulfate (33-0-0S) after each harvest. Perennial clover and alfalfa trials were fertilized with 100 pounds of 0-0-60 at planting and an additional 100 pounds per acre of phosphorus and potassium early in the spring using 0-20-20. Plot dimensions were 6 feet × 10 feet. Plots were planted using a precision cone seeder on a prepared seedbed. The experimental design was a randomized complete block replicated four times. Recommended seeding rates were based one pure live seed (PLS) and are presented in Table 3. All grass plots were harvested when 75% of the plots achieved 15 inches of growth. Alfalfa was harvested at 50% bloom, and clovers were harvested when 75% of plots were 10–15 inches in height. Perennial clovers, alfalfa, and tall fescue were harvested to a stubble height of 4 inches. Plots were harvested using a Ferris "Zero-Turn" commercial mower with a bagging system collecting a 53-inch by 10-foot swath to calculate total yield. A subsample was collected and dried at 131°F to calculate dry matter percentage (DM). Data was analyzed using the general linear model (PROC GLM) of SAS, and mean separation was conducted using the least significant difference (LSD) at $\alpha = 0.05$. Alfalfa and tall fescue trials were subject to stand persistent ratings during winter to evaluate stand survival. Ratings were performed visually on a scale of 1–10 with 1 representing very poor stands and 10 representing excellent stands. Data was transformed using log transformation of 10 before analyzed statistically.

Table 3. Seeding rates used in 2014 variety trials.[1]	
Variety	**Seeding rate (PLS)**
	lb/A
Alfalfa	20
Red Clover	12
Tall Fescue	20
Orchardgrass	20
White Clover	3

[1]PLS = Pure Live Seed.

ALFALFA

Alfalfa is a perennial legume common in the Midwest and northern regions of the United States. Alfalfa varieties have been bred for more southern climates, but stand persistence can be a problem. Several diseases and pests, such as crown rot (*Sclerotinia trifoliorum)*, stem rot (*Phytophthora medicaginis*), alfalfa weevil (*Hypera hostica*), and leafhoppers (*Empoasca solana*) are major problems. Alfalfa is also very sensitive to soil pH and should be maintained at 6.5 or greater. Alfalfa also needs 65 pounds of P_2O_5 per acre and 350 pounds of K_2O per acre as fertilizer input. Planting should take place between September and October at a seeding rate of 20 pounds per acre on a firm seedbed. Most of the yield distribution for alfalfa is in early summer to early fall. Protein content of alfalfa ranges from 12% to18%, acid detergent fiber (ADF) 30–40%, and neutral detergent fiber (NDF) 40% to 50%. Alfalfa can also be successfully established in warm-season sod grasses to increase hay quality and yield distribution, especially in low-nitrogen-input situations.

Table 4. Dry matter yields for alfalfa varieties at Holly Springs, 2014.[1]

Variety	Harvest dates				Total
	5/8/14	6/19/14	7/17/14	9/19/14	
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*
Alfalfagraze 600RR	2502	2715	1320	1569	8106
Ameristand 815TRR	2135	2539	1377	1563	7613
Bulldog 505	3275	3263	1457	1575	9569
DKA41-18RR	2913	2949	1392	1249	8501
DKA65-10RR	3164	2705	1475	1515	8858
DKA84-10	1957	1698	1401	1814	6870
Mean	2657	2645	1403	1547	8253
$LSD_{0.05}$	771	371	NS	295	1190
CV%	19	9	17	13	10

[1]NS = Not Significant
Planted: September 28, 2012 Soil: Grenada silt loam
Fertilized: 315 lb/A 0-0-60 at midseason Lime: 1 ton/A at planting
Herbicide: Paraquat after each harvest @ 1 pt/A; Pursuit (ammonium salt of imazethapyr) @ 4 oz/A after first harvest

Table 5. Dry matter yields for alfalfa varieties at Holly Springs, 2014.[1]

Variety	Harvest dates			Total
	6/3/14	7/17/14	9/19/14	
	lb/A	*lb/A*	*lb/A*	*lb/A*
AlfaGraze 600RR	3411	3132	1311	7854
Bulldog 505	2321	2609	1446	6377
Catalina	2216	2345	1420	5980
FSG 639ST	1580	2045	1614	5238
FSG 903	1917	2011	1783	5711
GA-595	3158	2445	1722	7325
GA-805-M	2660	2468	1396	6524
RD132	2634	2311	1412	6356
Super Sonic	3405	2680	1650	7736
Mean	2589	2450	1528	6567
$LSD_{0.05}$	701	523	NS	937
CV%	18	14	25	10

[1]NS = Not Significant
Planted: September 27, 2013 Soil: Grenada silt loam Fertilized: 1 ton/A lime at planting
Herbicide: Paraquat after each harvest @ 1 pt/A; Pursuit (ammonium salt of imazethapyr) @ 4 oz/A after first harvest

Table 6. Dry matter yields for alfalfa varieties at Starkville, 2014.[1]

Variety	Harvest dates			Total
	6/3/14	7/17/14	9/19/14	
	lb/A	*lb/A*	*lb/A*	*lb/A*
AlfaGraze 600RR	2634	2311	1412	6356
Bulldog 505	3405	2680	1650	7736
Catalina	1580	2045	1614	5238
FSG 639ST	3158	2445	1722	7325
FSG 903	2660	2468	1396	6524
GA-595	3411	3132	1311	7854
GA-805-M	2321	2609	1446	6377
RD132	2216	2345	1420	5980
Super Sonic	1917	2011	1783	5711
Mean	2589	2450	1528	6567
$LSD_{0.05}$	701	523	NS	937
CV%	18	14	25	10

[1]NS = Not Significant
Planted: September 23, 2013 Soil: Marietta fine sandy loam Fertilized: 1 ton/A lime at planting
Herbicide: Paraquat after each harvest @ 1 pt/A; Pursuit (ammonium salt of imazethapyr) @ 4 oz/A after first harvest

Table 7. Dry matter yields for alfalfa varieties at Poplarville, 2014.[1]

Variety	Harvest dates					Total
	3/20/13	5/15/14	7/3/14	8/14/14	10/17/14	
	lb/A	*lb/A*	*lb/A*	*lb/A*	*lb/A*	*lb/A*
AlfaGraze 600RR	807	2013	2188	2892	832	8732
Bulldog 505	824	1860	2261	2964	1035	8944
Catalina	806	1636	2054	2966	865	8327
FSG 639ST	919	2016	2039	2866	932	8772
FSG 903	1158	1970	1594	3230	1074	9062
GA-595	564	2117	1849	2894	529	7953
GA-805-M	1122	2145	2167	2809	1355	9598
RD132	940	1919	2177	3444	347	8827
Super Sonic	1032	1861	2177	3763	985	9818
Mean	908	1948	2056	3092	883	8888
$LSD_{0.05}$	242	NS	NS	NS	NS	NS
CV%	18	22	14	14	30	15

[1]NS = Not Significant
Planted: October 9, 2013 Soil: Basin loam
Fertilized: 315 lb/A of 0-0-60 at midseason Lime: 1 ton/A at planting
Herbicide: Paraquat after each harvest @ 1 pt/A; Pursuit (ammonium salt of imazethapyr) @ 4 oz/A after first harvest

Table 8. Stand persistence ratings (SPR) of alfalfa taken in December 2014.[1]

Variety	Holly Springs	Starkville	Poplarville
AlfaGraze 600RR	10.00	9.03	4.64
Bulldog 505	9.77	6.00	5.42
Catalina	8.12	1.51	5.64
FSG 639ST	9.29	4.81	4.37
FSG 903	9.40	4.81	4.20
GA-595	9.40	2.70	4.77
GA-805-M	9.40	8.66	9.77
RD132	9.03	5.12	2.50
Super Sonic	8.19	4.06	5.56
Mean	9.18	5.19	5.21
$LSD_{0.05}$	1.15	4.01	NS
CV%	8	52	50

[1]NS = Not Significant
SPR: 1–2 = very poor; 3–4 = poor; 5–6 = good; 7–8 = very good; 9–10 = excellent

PERENNIAL CLOVER

Red clover is a short-lived perennial in Mississippi, rarely surviving the summer. In central to southern Mississippi, it should be treated as an annual. Red clover tolerates wet, acidic soils and withstands shading during the seedling stage, which gives it potential to be overseeded in sod grasses. When seeding in an established pasture system, it is best to plant between October 15 and November 20. In grass mixtures, plant red clover at 4–8 pounds per acre, but in pure stands 12 pounds per acre will be sufficient. Red clover performed well when 60 pounds of P per acre and 40 pounds of K per acre are applied and pH is above 5.5. Two to three harvests can be expected if cutting for hay in late spring to early summer.

White clover is much more persistent than red clover, but yields are typically less. It does offer more opportunity in grazing situations than in hay harvest because of its prostrate growth habit. White clover is tolerant of wet soils and prefers a pH of 6 or above. Plant white clover at 3–4 pounds per acre in pure stands or 2–3 pounds per acre in mixtures between September and October. White clover is responsive to K, and a starter fertilizer of 20-60-20 pounds per acre will aid in establishment. Like red clover, white clover acts as an annual in the southern part of the state, but it has a greater reseeding potential. Both species of clovers have excellent forage quality, but white clover tends to have a greater potential to cause bloat. When grazing white clover, it is recommended to interseed with grass to reduce bloat potential.

Table 9. Dry matter yields for perennial clover varieties at Poplarville, 2014.[1]

Variety	Yield
	lb/A
Red Clover	
B-11.1814	723
Cinnamon+	1309
Southern Belle	1365
White Clover	
Durana	872
Ocoee	744
Patriot	653
Mean	944
$LSD_{0.05}$	354
CV%	24

[1]Planted: October 9, 2013 Soil: Basin loam
Lime: 1 ton/A at planting
Herbicide: Pursuit (ammonium salt of imazethapyr) @ 4 oz/A after first harvest

Table 10. Dry matter yields for perennial clover varieties at Holly Springs, 2014.[1]

Variety	Harvest dates		Total
	5/8/14	6/19/14	
	lb/A	*lb/A*	*lb/A*
Red Clover			
B-11.1814	1322	2335	3656
Cinnamon+	1945	1972	3917
Southern Belle	2512	2619	5132
White Clover			
Durana	1501	1406	2908
Ocoee	1399	1535	2935
Patriot	1417	1719	3137
Mean	1683	1931	3614
$LSD_{0.05}$	633	585	902
CV%	25	20	17

[1]Planted: September 27, 2013 Soil: Grenada silt loam Lime: 1 ton/A at planting
Herbicide: Pursuit (ammonium salt of imazethapyr) @ 4 oz/A after first harvest

TALL FESCUE

Tall fescue is a perennial grass with short rhizomes and is primarily grown in the northern part of the state. It does well on poorly drained soils, making it popular in lowland areas. Tall fescue should be established from September to October at a seeding rate of 15–20 pounds per acre. During the establishment year, avoid grazing below 4 inches to minimize stand failure. Tall fescue tolerates soil pH of 5.5 to 7.5 and responds well to nitrogen. Tall fescue requires 60–70 pounds per acre of phosphorus and potassium. Endophyte toxicity can be a problem. However, grazing management, the inclusion of clovers, and the use of novel-endophyte and endophyte-free varieties can be used to mitigate the harmful effects of the toxin.

Table 11. Dry matter yields of tall fescue varieties at Starkville, 2014.[1]

Variety	Type	Harvest date			Total
		4/1/14	5/1/14	10/10/14	
		lb/A	*lb/A*	*lb/A*	*lb/A*
AGRFA 148	NE	1604	3022	3263	7888
BarOptima Plus E34	NE	1183	2257	2950	6390
Cowgirl	EF	1509	2333	3263	7105
Estancia	NE	1382	2475	3485	7341
Kentucky 31	EI	1430	2586	3339	7355
Max Q	NE	1494	2730	3326	7551
NFTF 1044	NE	1523	2797	3510	7830
NFTF 1051	NE	1511	3453	3300	8264
NFTF 1411	NE	1631	2518	3045	7193
Rustler	EF	1652	2529	3169	7350
Teton II	EF	1977	2936	3043	7956
Mean		1536	2694	3245	7475
$LSD_{0.05}$		338	NS	NS	NS
CV%		15	18	15	11

[1]NS = Not Significant
NE = Novel Endophyte; EF = Endophyte Free; EI = Endophyte Infected
Planted: October 8, 2011 Soil: Marietta fine sandy loam
Fertilized: 325 lb/A of 15-5-10 at planting and 50 lb/A of N using urea ammonium sulfate after harvest
Herbicide: GrazonNext (aminopyralid + 2,4-D) @ 1 pt/A at maturity and Banvel at seedling stage (dimethylamine salt of dicamba) @ 4 oz/A

Table 12. Dry matter yields of tall fescue varieties at Holly Springs, 2014.[1]

Variety	Type	Harvest date			Total
		4/25/14	6/3/14	10/23/14	
		lb/A	*lb/A*	*lb/A*	*lb/A*
AGRFA 148	NE	2749	3173	2041	7963
BarOptima Plus E34	NE	2382	2629	1657	6667
Cowgirl	EF	2215	2372	1306	5894
Estancia	NE	2383	2927	1947	7257
Kentucky 31	EI	2275	3248	2145	7668
Max Q	NE	1938	2582	1474	5995
NFTF 1044	NE	2924	2837	1833	7594
NFTF 1051	NE	2188	3006	2063	7257
NFTF 1411	NE	2598	2590	2012	7201
Rustler	EF	2847	2957	1974	7778
Teton II	EF	2206	2647	1746	6599
Mean		2428	2815	1836	7079
$LSD_{0.05}$		NS	459	461	1216
CV%		20	11	17	12

[1]NE = Novel Endophyte, EF = Endophyte Free, EI = Endophyte Infected
Planted: October 8, 2011 Soil: Grenada Silt Loam
Fertilized: 325 lb/A of 15-5-10 at planting and 50 lb/A of N using urea ammonium sulfate after harvest
Herbicide: GrazonNext (aminopyralid + 2,4-D) @ 1 pt/A at maturity and Banvel at seedling stage (dimethylamine salt of dicamba) @ 4 oz/A

Table 13. Total dry matter yields of endophyte-infected tall fescue types at Starkville and Holly Springs, 2014.[1]

Type	Starkville	Holly Springs
	lb/A	*lb/A*
Endophyte Infected	7354	7667
Endophyte Free	7470	6757
Novel Endophyte	7370	7133
Mean	7398	7185
$LSD_{0.05}$	NS	NS
CV%	11	14

[1]NS = Not Significant
Data pooled from across varieties

Table 14. Dry matter yields of tall fescue varieties in Holly Springs, 2012–14.[1]

Variety	Type	2012	2013	2014	3-yr. avg.
		lb/A	*lb/A*	*lb/A*	*lb/A*
AGRFA 148	NE	5715	5750	7963	6476
BarOptima Plus E34	NE	5510	5011	6667	5730
Cowgirl	EF	5049	5574	5894	5505
Estancia	NE	6225	5607	7257	6363
Kentucky 31	EI	6098	5370	7668	6378
Max Q	NE	5423	5118	5995	5512
NFTF 1044	NE	5986	5075	7594	6218
NFTF 1051	NE	5869	5590	7257	6239
NFTF 1411	NE	6011	5361	7201	6191
Rustler	EF	5981	5146	7778	6302
Teton II	EF	6093	5411	6599	6035
Mean		5815	5365	7079	6086
$LSD_{0.05}$		676	NS	1216	NS
CV%		8	12	12	8

[1]NS = Not Significant
NE = Novel Endophyte; EF = Endophyte Free; EI = Endophyte Infected
Planted: October 8, 2011 Soil: Grenada Silt Loam
Fertilized: 325 lb/A of 15-5-10 at planting and 50 lb/A of N using urea ammonium sulfate after harvest
Herbicide: GrazonNext (aminopyralid + 2,4-D) @ 1 pt/A at maturity and Banvel at seedling stage (dimethylamine salt of dicamba) @ 4 oz/A

Table 15. Dry matter yields of tall fescue varieties in Starkville, 2012–14.[1]

Variety	Type	2012	2013	2014	3-yr. avg.
		lb/A	*lb/A*	*lb/A*	*lb/A*
AGRFA 148	NE	10204	12598	7888	10230
BarOptima Plus E34	NE	9540	12882	6390	9604
Cowgirl	EF	9674	13279	7105	10019
Estancia	NE	10810	12802	7341	10318
Kentucky 31	EI	10232	11845	7355	9810
Max Q	NE	8550	12451	7551	9517
NFTF 1044	NE	10447	14121	7830	10800
NFTF 1051	NE	9687	12419	7401	9836
NFTF 1411	NE	10057	13480	7193	10243
Rustler	EF	9281	13112	7350	9915
Teton II	EF	10193	13177	7956	10442
Mean		9880	12924	7396	10067
$LSD_{0.05}$		1220	NS	NS	723
CV%		8	7	11	5

[1]NS = Not Significant
NE = Novel Endophyte; EF = Endophyte Free; EI = Endophyte Infected
Planted: October 8, 2011 Soil: Marietta fine sandy loam
Fertilized: 325 lb/A of 15-5-10 at planting and 50 lb/A of N using urea ammonium sulfate after harvest
Herbicide: GrazonNext (aminopyralid + 2,4-D) @ 1 pt/A at maturity and Banvel at seedling stage (dimethylamine salt of dicamba) @ 4 oz/A

Table 16. Dry matter yields of tall fescue and orchardgrass varieties at Holly Springs, 2014.[1]

Variety	Species	Harvest date			Total
		4/25/14	6/3/14	10/23/14	
		lb/A	*lb/A*	*lb/A*	*lb/A*
Cajun II	TF	1869	2809	2515	7193
GO-SOMO	OG	903	2399	1539	4841
GT213	TF	1463	2742	2595	6800
K-31	TF	1643	2831	2952	7426
NFTF 1370	TF	1659	2899	3154	7712
Olympia	OG	1191	2278	1411	4880
Pennlate	OG	1344	2376	1701	5422
Persist	OG	1355	2271	1557	5183
Potomac	OG	1473	2403	1377	5253
Profit	OG	1468	2784	1216	5468
Quickdraw	OG	1279	2260	1551	5090
Rustler	TF	1485	2886	2325	6696
Texoma Max Q II	TF	1659	3062	2764	7484
Mean		1445	2615	2051	6111
$LSD_{0.05}$		410	527	494	1094
CV%		19	14	17	13

[1]Planted: September 27, 2013 Soil: Grenada silt loam
Fertilized: 325 lb/A of 15-5-10 at planting and 50 lb/A of N using urea ammonium sulfate after harvest
Herbicide: GrazonNext (aminopyralid + 2,4-D) @ 1 pt/A

Table 17. Dry matter yields of tall fescue and orchardgrass varieties at Starkville, 2014.[1]

Variety	Species	Harvest date		Total
		5/16/14	10/1/614	
		lb/A	*lb/A*	*lb/A*
Cajun II	TF	1401	2732	4132
GO-SOMO	OG	1177	1280	2457
GT213	TF	1456	2565	4020
K-31	TF	1584	3352	4935
NFTF 1370	TF	1681	3695	5377
Olympia	OG	1269	2129	3399
Pennlate	OG	1168	1931	3099
Persist	OG	1008	2405	3413
Potomac	OG	1043	2057	3100
Profit	OG	1134	3782	4915
Quickdraw	OG	1247	1648	2895
Rustler	TF	1552	2409	3961
Texoma Max Q II	TF	1660	3195	4855
Mean		1337	2552	3889
$LSD_{0.05}$		325	1369	1445
CV%		16	38	26

[1]Planted: September 23, 2013 Soil: Marietta fine sandy loam
Fertilized: 325 lb/A of 15-5-10 at planting and 50 lb/A of N using urea ammonium sulfate after harvest
Herbicide: GrazonNext (aminopyralid + 2,4-D) @ 1 pt/A

Table 18. Total 2014 dry matter yields of tall fescue and orchardgrass from Starkville and Holly Springs pooled from across varieties.[1]

Type	Starkville	Holly Springs
	lb/A	*lb/A*
Orchardgrass	3726	5162
Tall Fescue	3990	7095
Mean	3858	6128
$LSD_{0.05}$	NS	418
CV%	26	12

[1]NS = Not Significant

Table 19. Stand persistence ratings (SPR) taken in December 2014.[1]

Type	Starkville	Holly Springs
	SPR	*SPR*
Cajun II	9.89	10.00
GO-SOMO	9.16	7.26
GT213	10.00	9.89
K-31	9.89	9.77
NFTF 1370	10.00	10.00
Olympia	9.66	5.12
Pennlate	9.53	7.02
Persist	9.53	5.42
Potomac	9.89	6.00
Profit	9.54	2.26
Quickdraw	9.89	8.28
Rustler	10.00	9.64
Texoma Max Q II	10.00	9.89
Mean	9.77	7.73
$LSD_{0.05}$	0.29	2.71
CV%	2	24

[1]Stand Persistence Rating: 1–2 = very poor; 3–4 = poor; 5–6 = good; 7–8 = very good; 9–10 = excellent

Table 20. 2014 tall fescue, orchardgrass, alfalfa, and clover seed sources.

Species	Variety	Company
Alfalfa	Alfalfagraze 600RR	Forage Genetics International
	Ameristand 815TRR	Forage Genetics International
	Bulldog 505	Athens Seed
	Catalina	S&W Seed Company
	DKA41-18RR	Monsanto
	DKA65-10RR	Monsanto
	DKA84-10	Monsanto
	FSG 639ST	Farm Science Genetics
	FSG903	Farm Science Genetics
	GA-595	University of Georgia
	GA-805-M	University of Georgia
	RD132	S&W Seed Company
	Super Sonic	S&W Seed Company
White Clover	Durana	Pennington Seed
	Ocoee	Allied Seed, LLC
	Patriot	Pennington Seed
Red Clover	B-11.1814	Agrilife
	Cinnamon+	Allied Seed, LLC
	Southern Belle	Allied Seed, LLC
Tall Fescue	AGRFA 148	The Noble Foundation
	BarOptima PLUS E34	Barenburg USA
	Cajun II	Smith Seed Services
	Cowgirl	Rose Agri-Seed, Inc.
	Estancia	Mountain view seeds
	GT213	AgResearch USA Limited
	Kentucky 31	Starkville Coop
	Texoma Max Q II	Pennington Seed
	NFTF 1044	The Noble Foundation
	NFTF 1051	The Noble Foundation
	NFTF 1370	The Noble Foundation
	NFTF 1411	The Noble Foundation
	Rustler	Grassland Oregon, Inc.
	Teton II	Mountain view seeds
Orchardgrass	GO-SOMO	Grassland Oregon, Inc.
	Olympia	Pennington
	Persist	Smith Seed Services
	Quickdraw	Grassland Oregon, Inc.

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