

2009

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Mosali, Jagadeesh; Guretzky, John A.; Saha, M.; and Norton, S., "Forage Yields from 2008-2009 Ryegrass" (2009). *Agronomy & Horticulture -- Faculty Publications*. 564.

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Forage Yields from

2008-2009 Ryegrass Variety Trial

by Jagadeesh Mosali, J. Guretzky, M. Saha and S. Norton

NF-FO-09-02

Introduction

Livestock and forage production are the largest contributors to agricultural income in the primary service region of the Noble Foundation. The ryegrass (*Lolium multiflorum* L) variety testing program is designed to provide up-to-date performance information to cooperators and producers in Oklahoma and Texas about ryegrass varieties that are commercially and commonly available. In addition, the program provides a tool to evaluate and compare experimental breeding lines emerging from the Noble Foundation breeding program as well as other public and private breeding programs.

The program is intended to furnish producers with supplemental information, aid decision-making and idea formation. The information coming from the variety testing program should be a valuable tool when used with similar information from other sources. The objective of this report is to summarize forage yields from the 2008-2009 ryegrass variety trial.

Materials and Methods

The annual ryegrass variety trial was conducted on a Wilson silt loam soil at the Noble Foundation Headquarters Farm, Ardmore, Okla. The experimental design was a randomized complete block with three replications. The experimental unit was a 5- by 10-foot plot of a single variety. The trial consisted of 28 entries that were evaluated during the 2008-2009 crop growing season. Twelve sources contributed entries to the trial (Table 1).

The entries were seeded into a clean-tilled seedbed on Sept. 24, 2008. Each entry was drilled in 5- by 10-foot plots, in 7-inch rows, with 25 lbs/ac (pure live seed) at a ½-inch planting depth with a HEGE 500 drill. Fertilization consisted of preplant incorporation of 120 lbs N/ac and 30 lbs P₂O₅/ac, 60 lbs K₂O/ac during September 2008, and a topdress application of 80 lbs N/acre on March 1, 2009. Broadleaved

weeds were controlled with an application of 2,4-D amine at a rate of one pt/ac during January 2009. Plots were harvested with a HEGE sickle bar forage plot harvester at a 3-inch height on April 21 and May 20, 2009. Data was analyzed with the general linear models procedure in SAS (Statistical Analysis Software, Cary, N.C.), and means were separated by the least significant difference (LSD) method ($P \leq 0.05$).

Results and Discussion

Average growing conditions are reported in Table 1. Even though the total rainfall is almost the same as the 30-year average during the growing season, most of the rainfall occurred within April and May. From September to March, the monthly total rainfall was significantly less than the 30-year average. There was no harvestable forage during fall due to severe drought conditions. Overall, forage yields depended on the ryegrass variety and harvest date. Forage yields are reported in Table 2. Dry matter forage yields for ryegrass cultivars and strains ranged from 700 lbs/ac to 3,270 lbs/ac and 1,372 lbs/ac to 2,442 lbs/ac during April and May harvest periods, respectively; the total forage yield was between 2,619 lbs/ac to 5,189 lbs/ac (Table 3). ME4, Rio and Big Boss yielded more than 5,000 lbs/ac total forage yield followed by Marshall, Flying A and FLNEX2006 with around 4,800 lbs/ac.

Table 1. Average 2008 and 2009 monthly high and low temperatures (°F) and precipitation (inches) for the Noble Foundation Headquarters Farm, Ardmore, Okla.

Month	Year	Temperature		Precipitation	
		Avg. High	Avg. Low	Total	30-yr Avg.
Sept	2008	84	60	1.88	4.17
Oct	2008	77	50	1.37	4.43
Nov	2008	66	40	0.50	2.70
Dec	2008	55	30	0.18	2.32
Jan	2009	55	29	0.58	1.85
Feb	2009	64	39	1.40	2.19
Mar	2009	66	45	1.19	3.20
Apr	2009	74	50	6.19	3.19
May	2009	77	58	10.60	5.08
Sept-May	2008-2009			23.89	29.13

Table 2. Dry matter forage yields of annual ryegrass cultivars at Ardmore, Okla., harvested on April 20 and May 20, 2009

Cultivar [Source]	April		May		Total
	lbs/acre	CP	lbs/acre	CP	
ME4	2,793	27	2,396	17	5,189
Rio	3,270	23	1,877	16	5,147
Big Boss	2,796	23	2,285	17	5,081
Marshall	2,451	24	2,411	17	4,862
Flying A	3,088	22	1,773	16	4,861
FL/NEX2006(Misc2x)LRCT	2,967	25	1,873	20	4,840
Maximus	2,605	27	2,131	19	4,736
FL X2008 Red 4x late	2,722	24	1,955	18	4,677
Jackson	2,658	24	1,983	20	4,641
Marshall X	2,171	27	2,442	19	4,614
TetraPro	2,620	23	1,925	16	4,545
TAMTBO	2,119	26	2,343	17	4,462
TXR2006-T22	2,120	27	2,327	18	4,446
Passeral Plus	2,486	24	1,924	17	4,410
Ed	2,368	24	2,009	18	4,377
ME94	2,252	25	2,106	16	4,358
Jumbo	2,064	23	2,281	15	4,345
Verdure (Smith)	2,189	25	2,121	16	4,309
Attain	2,110	24	2,050	16	4,160
FL X2008 (PE-2X) LRCT	2,417	24	1,713	17	4,129
WD40	2,400	23	1,706	16	4,107
DH-3	2,341	25	1,752	16	4,092
M/FL X2008 (4X) ER	2,185	23	1,849	17	4,034
Tam90	2,164	22	1,750	19	3,914
Diamond T	1,930	28	1,936	20	3,866
Chipola2008	2,392	22	1,372	18	3,764
Akari	1,058	32	2,310	20	3,368
Escal	700	32	1,919	21	2,619
CV	15.81	9.77	14.27	12.92	10.69
LSD	605.06	3.98	471.63	3.7	762.45

Acknowledgments

Thanks to Julie Barrick, Roger Hartwell, Kevin Lynch and Derick Warren who assisted with the establishment, maintenance, harvesting and data collection of this trial. Seed contributors are listed in Table 3.

Table 3. Contributors to the 2008-2009 annual ryegrass forage variety test at the Noble Foundation Headquarters Farm, Ardmore, Okla.

Variety/strain	Contributor
Akari	Proseeds Marketing
Attain	Smith Seed
Big Boss	Smith Seed
Chipola2008 (2X)*	IFAS
Diamond T	OREGRO Seeds
DH-3	OREGRO Seeds
Ed	Smith Seed
Escal	Proseeds Marketing
Flying A	OREGRO Seeds
FL/NEX2006(Misc2x)LRCT	OREGRO Seeds
FL X2008 Red 4x late*	IFAS
FL X2008 (PE-2X) LRCT*	IFAS
Jackson	Wax
Jumbo	Barenbrug
Marshall	Wax
Maximus	Barenbrug
ME4*	Wax
ME94*	Wax
M/FL X2008 (4X) ER*	IFAS
Passeral Plus	Pennington Seed
Rio	Proseeds Marketing
Tam 90	Lloyd Nelson, TAES
TAMTBO	Lloyd Nelson, TAES
TetraPro	Lloyd Nelson, TAES
TXR2006-T22*	Lloyd Nelson, TAES
Verdure	Smith Seed
WD-40	OREGRO Seeds

*Experimental lines