2008

Forage Yields from 2007-2008 Annual Ryegrass

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Introduction

In an effort to assist cattle producers in Oklahoma and Texas judge forage crop performance, a trial was held to determine forage yield of commercially available varieties and advanced experimental lines of annual ryegrass. The objective of this report is to summarize results from the 2008 trial.

Materials and Methods

The trial was conducted on a Wilson silt loam at the Noble Foundation Headquarters Farm near Ardmore, Okla. The trial consisted of 25 entries contributed from seven sources (Table 1).

The entries were seeded in a clean-tilled seedbed on Sept. 17, 2007. Each entry was drilled in 5- by 15-foot plots, in 7-inch rows, at 25 lb/acre (pure live seed basis) at a ½-inch planting depth with a HEGE 500 drill. Fertilization consisted of preplant incorporation of 23 lb P_2O_5/acre and 20 lb K_2O/acre on Sept. 13, 2007. Plots were topdressed with 80 lb N/acre on Oct. 29, 2007, and Feb. 4, 2008. Plots were harvested with a HEGE sickle bar forage plot harvester at a 3-inch height on Jan. 4, March 14, March 31, April 29 and June 3, 2008.

The trial was a randomized complete block design with three replications. Data were 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

Precipitation was below the 30-year average for Ardmore (Table 2). The deficit occurred primarily during the fall, limiting fall forage production. Good precipitation during the spring allowed for good spring forage production. Consequently, yields on average were 1000 lb/acre greater than average yield of entries in the 2007 trial.

Forage yield depended on the harvest date and entry (Table 3). Entries that stood out for producing the most forage during early spring, more than 4000 lb/acre by April 1, included Attain, Big Boss, Diamond T, Ed, Fantastic, Flying A, ME4, ME94, Surrey II, TXR2006-T22 and WD-40. Ed, ME4, ME94 and WD-40 also produced good forage yields during this same time period last year.

Entries that stood out for producing more forage during late spring (April 29 harvest) included AM-4T, Attain, Barextra, Big Boss, Florida 4N, Hercules, ISI-LWD4, Jumbo, Marshall, MO 1, Surrey II, Tam TBO, TXR2006-T22 and Verdure (Table 3).

When forage yield was examined over the whole season, differences among entries were mostly not significant. Forage yield among the top entries ranged from 6079 to 7420 lb/acre (Table 3). Any entry producing more than 6000 lb/acre across the season performed well.

Table 1. Contributors to the 2008 annual ryegrass forage variety test at the Noble Foundation Headquarters Farm, Ardmore, Okla.

Code	Contributor
TX AES	Lloyd Nelson, Texas A&M University, Overton, Texas
DLF	DLF-International, Inc., Halsey, Ore.
Wax	The Wax Company, Amory, Miss.
Smith	Smith Seed Services, Halsey, Ore.
Barenbrug	Barenbrug, USA, Tangent, Ore.
Oregro	OreGro Seeds, Inc., Albany, Ore.
Ampac	Ampac Seed Company, Tangent, Ore.

Table 2. Average 2007 to 2008 monthly high and low temperatures (°F) and precipitation (inches) for the Noble Foundation Headquarters Farm, Ardmore, Okla.

		Temperature		Precipitation	
Month	**Year**	**Avg. High**	**Avg. Low**	**Total**	**30-yr Avg.**
Sept	2007	87	66	0.70	4.20
Oct	2007	78	55	2.10	4.20
Nov	2007	66	44	0.90	2.60
Dec	2007	53	32	1.80	2.30
Jan	2008	53	29	0.10	1.80
Feb	2008	59	34	1.60	2.10
Mar	2008	66	42	5.30	3.20
Apr	2008	73	49	2.70	3.20
May	2008	82	60	4.50	5.10
Sept-May	2007-2008			19.60	28.70

Table 3. Dry matter forage yields of annual ryegrass cultivars at Ardmore, Okla., harvested on Jan. 4, March 14, March 31, April 29 and June 3, 2008

	Harvest dates					
Cultivar [Source]	**1/4**	**3/14**	**3/31**	**4/29**	**6/3**	**Sum**
	lb/acre					
AM-4T [Ampac]	984	1171	1558	2039	536	6288
Attain [Smith]	1107	1236	1662	1970	691	6666
Barextra [Barenbrug]	831	879	950	1856	1087	5605
Big Boss [Smith]	1319	1277	1470	1875	751	6692
Diamond T [Oregro]	1215	1580	1249	1714	815	6573
Ed [Smith]	1837	1863	1167	1386	622	6876
Fantastic [Ampac]	946	1728	1467	1827	976	6496
Florida 4N [DLF]	961	1298	1434	1986	543	6223
Flying A [Oregro]	1392	1367	1341	1443	923	6467
Hercules [Barenbrug]	696	1167	1283	2113	569	5828
ISI-LWD4 [DLF]	169	625	1842	2458	1304	6398
Jackson [Wax]	1104	1415	1321	1720	666	6228
Jumbo [Barenbrug]	104	971	1606	1939	1071	5691
Marshall [Wax]	1200	1236	1458	2102	680	6678
ME4 [Wax]	1154	1425	1624	1595	1213	7011
ME94 [Wax]	1242	1189	1715	1835	865	6846
MO 1 [DLF]	1019	751	1482	2000	706	5959
Surrey II [DLF]	1258	1743	1345	1888	982	7216
Tam 90 [TX AES]	741	1376	1401	1800	761	6079
Tam TBO [TX AES]	201	1147	1425	2153	1210	6137
Tetra Pro [TX AES]	678	957	1321	1476	863	5295
TXR2006-T22 [TX AES]	1293	1488	1501	2239	899	7420
Verdure [Smith]	1136	1281	1435	2232	688	6772
WD-40 [Oregro]	1565	1548	1296	1678	504	6593
WMN97 [Wax]	1141	1209	1089	1765	878	6083
Mean	1011	1277	1418	1884	832	6423
LSD	409	541	425	620	437	1397
P value	0.001	0.01	0.05	0.15	0.01	0.364
CV	25	25	18	20	32	13

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