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Annual Ryegrass Forage Variety Tests at Overton and Angleton for 1987-1988

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Summary

Annual Italian ryegrass is an important forage crop in East Texas and the Upper Gulf Coast. This report presents data on forage yields and crown rust ratings of commercial and experimental ryegrass varieties at two locations during the 1987-1988 growing season. Very high forage yields were obtained at the Overton location, where a mean total yield over all varieties of 13,080 lbs/A dry matter was harvested. The mean yield of all varieties at the Angleton test site was 7,026 lbs/A. Crown rust severity levels at Angleton were relatively low; however, several varieties were susceptible.

Introduction

This report presents forage yields obtained in ryegrass variety tests at the Texas A&M Agricultural Research and Extension Center at Overton and at the Texas Agricultural Experiment Station at Angleton. Annual ryegrass is used extensively for winter pasture in the eastern third of the state because of its low seed cost and ease of establishment. Successful ryegrass stands can be obtained by placing the seed in contact with the soil which eliminates the need for extensive land preparation. Mixing ryegrass with small grains extends the grazing season because ryegrass is later maturing. Ryegrass is mixed with clovers to act as a carrier for the small seeded clovers at planting. Ryegrass-clover mixtures also reduce bloat problems which can occur on pure clover pastures. These results are from one year's data and should be used with caution; however, these data are useful in determining which varieties have good forage yield potential in East Texas.

Procedures

Available commercial and experimental ryegrass varieties were evaluated for adaptation and forage yield potential during the cool season at Overton and Angleton during the 1987-1988 growing season. All tests were planted on a prepared seedbed. Planting dates were September 14 at Overton, and October 5 at Angleton. Seeding rate was 30 lbs seed/A at both locations. At Overton, plot size was 4 x 12 ft with seed broadcast and covered with the aid of a cultipactor. At Angleton seed was drilled into six 8-inch rows, with plots being 4 x 15 ft. Preplant fertilization at Overton was 83 lbs/A each, of N, P₂O₅, and K₂O, and 76 lbs/A of sulfur. Nitrogen

applied as ammonium nitrate, was topdressed at Overton at rates of 50, 50, and 30 lbs/A, on November 17, January 20, and February 29, respectively. Preplant fertilization at Angleton was 60 lbs/A of N and P₂O₅, and 15 lbs/A of K₂O. Topdressing was at a rate of 50 lbs N/A each, on January 25 and February 24. At Overton the entire plot was harvested with a Hege plot harvester at a height of 2 inches during five harvest dates. At Angleton a 2.7 x 15-ft. strip was cut from the center of each plot at a 2-inch height with a flail mower. Experimental design was a randomized complete block with four replications at both locations.

Results

Overton

Weather conditions were favorable for high forage yields in 1987-1988. Moisture stress did occur in September shortly after planting and again in May when late maturing varieties were severely stressed. No winterkill occurred. Yield data (Table 1) indicate high yields from the December 4 and the February 9 harvests. Therefore, we obtained good fall and winter yields. Spring yields were also above average and resulted in very high total seasonal yields with a mean yield of 13,080 lbs/A of oven dried forage. The highest yielding variety was Urbana (15,992 lbs/A), followed by Comet, and Max. Tx-R-85-2 and Marshall were above average while Gulf produced a low yield in this study.

Angleton

Favorable weather conditions also occurred at Angleton with some moisture stress during May. No winterkilling occurred. Low yields (Table 2) were obtained in the December 18 and May 24 harvests. High yields were obtained in the February and April harvests. The mean total yield for all varieties was 7,026 lbs/A of dry matter. Highest yields were produced by the experimental Tx-R-85-2 (8,224 lbs/A), followed by Marshall, the experimental HHH, and Florida 80. Crown rust ratings indicated two lines which were very susceptible were Tetra common and Comet. Marshall and Urbana were moderately susceptible. Gulf has remained resistant for the last 25 years in the Texas environment as well as the southeastern United States.

TABLE 2. DRY MATTER PRODUCTION AND CROWN RUST RATING OF ANNUAL RYEGRASS VARIETIES FOR 1987-1988 SEASON AT ANGLETON, TEXAS

Cultivar	18 December	23 February	18 April	24 May	Total	Crown rust rating
Tx-R-85-2 ^a	978	2,316	4,495	436	8,224	0.7 ^b
Marshall	1,111	2,099	4,353	385	7,947	2.7
HHH	955	1,914	4,464	535	7,868	0.2
Florida 80	931	2,037	4,110	412	7,490	0.7
FL-LR	933	2,222	3,801	488	7,444	1.7
Tx-R-86-1	923	1,858	4,112	447	7,339	0.7
Tx-R-86-2-L	1,020	2,183	3,670	443	7,316	0.2
MSR-86-1	886	1,949	4,014	456	7,305	0.2
NF-32	849	2,186	3,626	441	7,102	2.0
Tetragold	783	2,029	3,839	369	7,020	1.7
NF-2	709	2,228	3,655	382	6,973	0.5
Tx-R-85-1	917	1,777	3,822	341	6,856	0.2
Tx-R-87-Bulk	846	1,890	3,773	345	6,854	0.5
Tetra common	1,036	2,218	3,091	452	6,796	6.7
Bulldog	1,074	1,915	3,455	321	6,764	1.2
Gulf	898	1,859	3,640	294	6,690	0.2
Comet	897	2,195	3,059	487	6,637	7.7
Tx-R-84-1	759	1,713	3,843	272	6,586	0
Dama	675	2,148	3,141	368	6,332	0.7
Urbana	838	2,069	2,792	347	6,047	4.7
Max	833	1,966	2,823	338	5,959	3.2
LSD .05	218	492	534	208	751	

Planted on October 5, 1987.

Preplant fertilizer:

Topdressed:

Seeding rate was 30 lbs/A.

60 lbs/A of N and P₂O₅, and 15 lbs/A of K₂O.

50 lbs N/A on January 25 and February 24.

^aTX lines are experimental breeding lines being evaluated and are presently not available to growers.

^bCrown rust rating, 1 = 10%, 2 = 20%, etc. (Mean of four replications).

TABLE 1. RYEGRASS FORAGE VARIETY CLIPPING TEST THROUGH FOUR HARVESTS AT OVERTON FOR 1987-1988

Variety	Harvest Dates					Total Yield
	12-4-87	2-9-88	3-7-88	4-4-88	5-5-88	
	pounds of dry matter per acre					
Urbana	2,239	1,148	1,727	3,667	7,211	15,992
Comet	2,321	1,449	1,864	3,589	6,150	15,373
Max	1,977	922	1,798	3,677	6,305	14,679
Tetracommon	2,255	1,339	1,939	3,090	5,774	14,397
Tx-R-85-2 Exp	1,589	1,132	2,440	4,211	4,645	14,018
Marshall	1,496	1,142	2,023	4,482	4,756	13,899
Tetragold	1,780	1,296	1,973	3,609	4,933	13,591
Noble Foundation 2	1,794	1,304	2,345	3,675	4,336	13,454
Fla. 80	1,423	1,261	2,801	3,477	4,446	13,408
Tx-R-87-Bulk Exp	1,707	1,242	1,996	3,683	4,579	13,207
Tx-R-86-1 Exp	1,638	1,379	1,993	3,956	4,048	13,014
MSR 86-1	1,553	907	2,411	3,745	4,380	12,996
Fla. LR	1,323	1,156	2,415	3,426	4,645	12,965
Bulldog	2,034	1,012	1,927	3,636	4,203	12,813
Noble Foundation 32	1,368	1,059	2,364	3,382	4,159	12,334
HHH	1,108	869	2,020	3,800	4,358	12,155
Tx-R-86-2-L Exp	709	827	2,157	3,470	4,601	11,764
Tx-R-84-1 Exp	1,046	911	2,138	3,365	4,225	11,685
Dama	1,083	671	1,411	2,880	5,021	11,066
Tx-R-85-1 Exp	766	924	2,068	3,300	4,003	11,061
Gulf	905	1,380	1,916	3,204	3,407	10,812
Mean	1,529	1,111	2,082	3,587	4,771	13,080
LSD (10% level)	812	399	301	444	674	1,799
CV	44	30	12	10	12	11

Planted on Sept. 14, 1987.
 Preplant Fertilizer: 83 lbs/A of each N, P₂O₅ and K₂O and 76 lbs/A of Sulphur.
 Topdressed: 50 lbs/A of Nitrogen on Nov. 17, 1987
 50 lbs/A of Nitrogen on Jan. 20, 1988
 30 lbs/A of Nitrogen on Feb. 29, 1988.