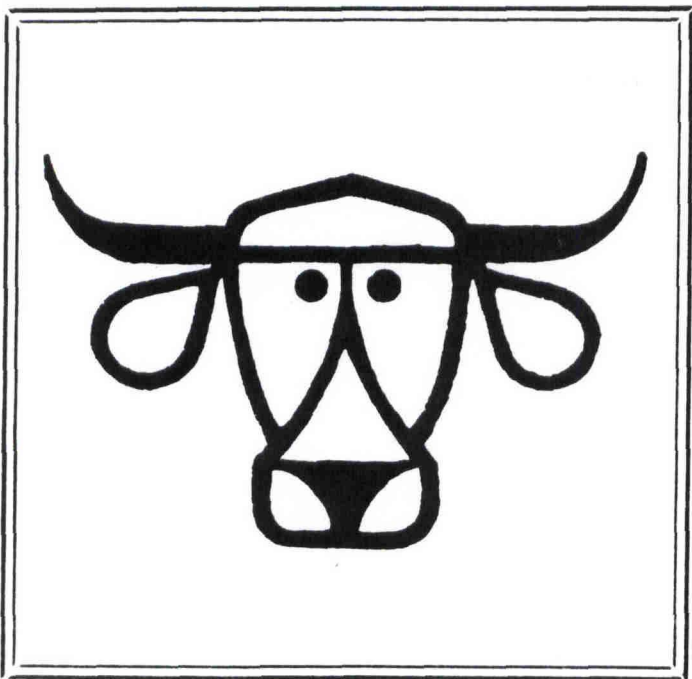
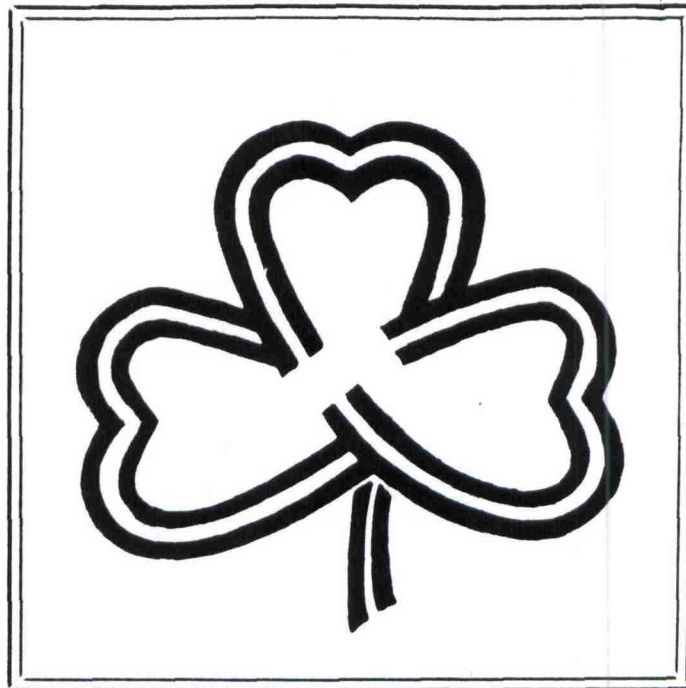


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Cool Season Perennial Grass Test - Dallas

J. C. Read*

SUMMARY

Ten tall fescue and three hardinggrass cultivars were tested for dry matter production and protein content. The experimental line Temple-1 and the cultivars Ky-31 and Kenhy had the highest dry matter production with a three year average of 8662 lb. dry matter per acre. There were no significant differences in yield of the three hardinggrass lines tested. Fawn tall fescue had the lowest production with a three year average of only 5664 lb. per acre. S. D. hardinggrass had the highest protein content of all the grasses tested with an average of 20 percent. There were no significant differences in the protein content of the tall fescues with averages of 17 to 18 percent.

Introduction

Tall fescue is probably the most widely adapted temperate perennial grass and is tolerant of hot, dry summers that exist in Northeast Texas. Tall fescue has not gained popularity in Texas because of toxicity problems frequently encountered. With the discovery that these toxicity problems are greatly reduced in tall fescue free of the endophyte Epichloe typhina syn. Acremonium coenophialum there has been an increased interest in its utilization for forage in Texas. The other temperate perennial grass that have been utilized in Texas is hardinggrass. Although hardinggrass has good tolerance to the hot, dry summers, poor seedling vigor thus difficulty in establishing and maintaining stands significantly reduces its use. This study was undertaken to determine if the experimental lines of tall fescue and hardinggrass developed at Dallas were superior to standard cultivars in production and persistence.

Procedure

Ten tall fescues and three hardinggrasses (Table 1) were planted 14 Oct 80 in a randomized block and good stands were obtained in all plots. Plots were 4 feet wide (4 rows spaced 1 foot apart) by 15 feet long. Eight feet of the two center rows were harvested using a flail harvester for yield determinations. Samples were collected and oven dried at 149F. This material was

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*Associate professor, The Texas Agriculture Experiment Station, Dallas.

used to determine protein content by micro-Kjeldahl. Fertility consisted of 200 lb. per acre of 33-0-0 and 100 lb. per acre of 18-46-0 in February, 1981 and then 200 lb. per acre of 33-0-0 and 100 lb. per acre of 18-46-0 each fall.

Results and Discussion

Temple-1, Ky-31 and Kenhy had the highest mean yield of all entries with Fawn being the lowest (Table 2). There were no differences in the average protein content of the tall fescues with mean of all harvest being 17 or 18 percent protein. Yield of the three hardinggrasses was similar (Table 2). S. D. hardinggrass had the highest percent protein of all entries (Table 3).

If the average yields of the 80-81 growing season, the year of establishment, are excluded then the mean yield of PI-26 and PI-144 with 9291 and 8669 would have the highest yields. This indicates that Temple-1, Ky-31 and Kenhy probably has greater seedling vigor than the other entries and to adequately test for yield and presistance a test should be conducted longer than 3 years. The lack of variation among the tall fescues indicate little progress could be made through breeding for protein content using this material.

Table 1. Source of seed for tall fescue and hardinggrass material tested.

<u>Cultivar</u>	<u>Species</u>	<u>Source of seed</u>
Ky-31	Tall fescue	University of Kentucky
Kenhy	"	"
Temple-1	"	TAES Dallas
PI-144	"	"
PI-26	"	"
S-Sel	"	"
PI-25	"	"
Kaspa	"	Ring Around Products
Jepel	"	"
Fawn	"	Oregon State University
TAM Wintergreen	Hardinggrass	TAES Foundation seed
S. D.	"	TAES Dallas
S. G.	"	"

Table 2. Dry matter production of tall fescue and hardinggrass at Dallas.

Cultivar	80-81 Growing Season		81-82 Growing Season		82-83 Growing Season		Mean per growing season			
	7May81	29Jun81	7Dec81	13Apr82	20Dec82	9Jun83				
	Total	Total	Total	Total	Total	Total	Total			
Temple-1	4351	6201	10552	793	3188	4280	8261	7977	8930a	1/
Ky-31	4206	6336	10542	455	3216	4014	7685	8143	8323	8850a
Kenhy	4065	6155	10220	456	2260	4240	6956	7207	7441	8206ab
S. G. 2/	3071	3888	6959	2016	842	4697	7555	8133	8574	7696 b
TAM Wintergreen ^{2/}	3785	3751	7536	1319	599	4533	6451	8409	8777	7588 b
PI-144	1288	3880	5168	1515	2906	4016	8437	8542	8902	7502 b
PI-26	933	2847	3780	3076	1351	3982	8409	9540	10173	7454 b
Kaspa	1500	3649	5149	1681	2530	4009	8220	8353	8821	7397 b
S. D. 2/	2938	3468	6406	1915	625	4167	6707	7694	8285	7133 bc
S-Sel	503	1750	2253	1065	2070	4007	7142	9047	9494	6296 cd
Jepel	1329	3830	5159	1012	900	3569	5481	7379	7707	6116 cd
PI-25	458	2020	2478	1435	1859	3626	6920	8176	8818	6072 cd
Fawn	1859	3742	5601	341	2254	2395	4990	6184	6402	5664 cd

1/Means with a common letter are not significantly different at the .05 level.

2/Hardinggrass lines. All others are tall fescue.

Table 3. The mean protein content of tall fescue and hardinggrass.

Cultivar	Mean Protein Content -----%-----
S. D.	20a 1/
Jepel	18 b
TAM Wintergreen	18 b
S. G.	18 b
Kaspa	18 b
PI-144	17 b
PI-26	17 b
Kenhy	17 b
Fawn	17 b
Temple-1	17 b
PI-25	17 b
S-Sel	17 b
Ky-31	17 b

1/Means with a common letter are not significantly different at the .05 level.