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Forage

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EVALUATION OF BERMUDAGRASSES FOR EAST TEXAS

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SUMMARY

Nine bermudagrasses were harvested at 7, 14, and 28-day intervals throughout the 1977 growing season. The average yield of all entries decreased from 11,570 lbs/ac at the 28-day interval to 7,270 and 5,824 lbs/ac for the 14 and 7-day frequency, respectively. The weekly harvest frequencies, which simulated high grazing pressure, produced only half the dry matter tonnage as the monthly harvests. Although the experimental selection S-66 had the highest numerical production at all frequencies, there was no statistical differences between S-66, 'Alicia', 'Coastal', and 'Coastcross I'. These four bermudagrasses consistently produced more forage, however, than 'Callie'. Since these test plots had been established 18 months prior to the initiation of the harvest frequency treatments, the "first year" production traits of some of the bermudagrasses were not a factor. Selection S-83 had significantly less production at each frequency than all other bermudagrasses. And, furthermore, common bermudagrass was progressively occupying more of the S-83 plots with time. Common bermudagrass represents the biggest weed problem to many of the newer selections, and especially to 'Coastcross I' and 'Callie'. The results of this first year evaluation provides no justification, from the standpoint of dry matter production, to replace the standard bermudagrass varieties with those that have been recently released. Caution should be taken in a broad interpretation of the data due to the climatic conditions of the test site, and the fact that this represents only the first year of a 5-year trial.

OBJECTIVES

The primary objectives of this experiment are to evaluate selected bermudagrasses for total yield and regrowth potentials, nutritive characteristics, vigor, and resistance to weed invasion at harvest frequencies of 7, 14, and 28-day intervals throughout the growing season.

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PROCEDURES

Bermudagrass entries are arranged in a randomized complete block with four replications. Whole plot size is 8' x 24' and is split into three subplots of 8' x 8'. Data was analyzed according to a split-plot. Fertilizer was applied at the rate of 100-100-100 lbs/ac of N-P_2O_5-K_2O in mid-April and 60 lbs/ac N per month thereafter for a season total of 400-100-100. The 7 and 14-day harvest frequencies were cut with a reel-type mower. The 28-day frequency was first cut with a sickle mower and cleaned with a reel mower. All harvest frequencies were cut to a height of 2 inches.

RESULTS

Dry matter production of the bermudagrasses harvested at 7-day intervals is shown in Table 1. Yields ranged from 7,359 lbs/ac for S-66 to 2,707 lbs/ac for S-83. There was no statistical difference between S-66, 'Alicia', 'Coastal', and 'Coastcross I'. These top four bermudagrasses did, however, produce more than 'Callie'. The relatively low yields in general are a result of the clipping frequency and the lack of summer rainfall. Both the 14 and 28-day frequencies produced nearly identical ranking of bermudagrasses (Tables 2 and 3). Nutritive analyses have not been completed, but certainly must be given equal consideration in the selection of new bermudagrasses for this area.

Monthly rainfall data for this growing season is presented in Table 4. Total rainfall for the 5-month peak production months was 10.39 inches. This was 7.5 inches or 58% less than the 30-year average. May was the most variable rainfall month since the precipitation that occurred represented only 20% of the recorded average.

Table 1. Total dry matter production of selected bermudagrasses cut at 7-day intervals.

Selection	Dry Matter Yield[1] lbs/acre
S-66	7359 a
Alicia	6799 ab
Coastal	6790 ab
Coastcross I	6756 ab
SS-16	5661 bc
S-16	5654 bc
S-54	5644 bc
Callie	5043 c
S-83	2707 d

[1]Yields followed by the same letter do not differ significantly at the 0.05 level of probability. Yields that differ by more than 1217 lbs/ac (LSD) are statistically different

Table 2. Total dry matter production of selected bermudagrasses cut at 14-day intervals.

Selection	Dry Matter Yield[1] lbs/acre
S-66	9516 a
Alicia	8579 ab
Coastcross I	8105 abc
Coastal	8074 abc
S-54	7233 bcd
S-16	6961 bcd
SS-16	6723 cd
Callie	6232 d
S-83	4006 e

[1]Yields followed by the same letter do not differ significantly at the 0.05 level of probability. Yields that differ by more than 1709 lbs/ac (LSD) are statistically different.

Table 3. Total dry matter production of selected bermudagrasses cut at 28-day intervals.

Selection	Dry Matter Yield[1] lbs/acre	
S-66	14,816	a
Alicia	13,418	ab
Coastcross I	13,026	ab
Coastal	12,627	abc
S-54	11,721	bcd
S-16	11,550	bcd
SS-16	10,303	d
Callie	10,135	d
S-83	6,533	e

[1]Yields followed by the same letter do not differ significantly at the 0.05 level of probability. Yields that differ by more than 2319 lbs/ac (LSD) are statistically different.

Table 4. Monthly rainfall distribution for 1977.

Month	Rainfall inches
January	3.89
February	4.35
March	5.11
April	3.61
MAY	1.05
JUNE	2.59
JULY	2.14
AUGUST	2.98
SEPTEMBER	1.63
October	1.14
November	3.60
December	1.38
TOTAL	33.47