

Grazing Preference of Four Bermudagrass Varieties by Bulls

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Story in Brief

Four bermudagrass varieties, two released (Oklan and Midland) and two experimental (OSU-S-15 and OSU-S-23), were evaluated for grazing preference by beef bulls. Fifty lb of nitrogen were added per acre in early spring and midsummer with irrigation being applied as needed. One Angus bull grazed each one-acre pasture. Oklan was grazed more frequently ($P < .05$) than the other varieties; experimental variety OSU-S-15 was least preferred ($P < .05$). Relative yields as estimated by densitometer were highest for Oklan and followed by OSU-S-15, OSU-S-23 and Midland.

Introduction

Many factors are involved in assessing the quality of forages for use by livestock. Among these are digestibility, intake by the animal, weight gain per animal or animal production per unit area. One attribute which may influence the animal's intake of a forage is its preference of palatability. The objectives of this study were to determine grazing preference of four bermudagrass varieties by estimating the time spent grazing each one.

Materials and Methods

Four one-acre pastures of Bermudagrass varieties were used, and the plot design is shown in Figure 1. Each pasture was equally divided and planted to Midland, Oklan, OSU-S-15 and OSU-S-23 varieties which were randomly allotted within each pasture.

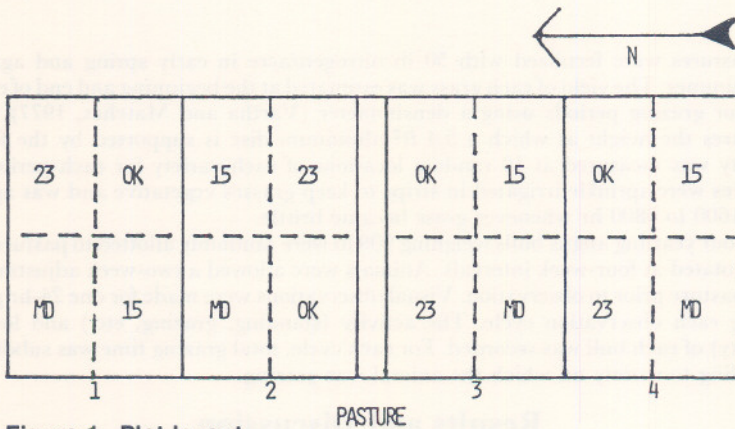


Figure 1. Plot layout.

USDA, Science and Education Administration, Southern Region in cooperation with Oklahoma Agricultural Experiment Station.

Table 1. Influence of variety on hours spent grazing.

Variety	Hours Grazing
Midland	1.19 ^a
Oklan	2.31 ^b
OSU-S-15	.58 ^c
OSU-S-23	1.30 ^a

a,b,c $p < .01$

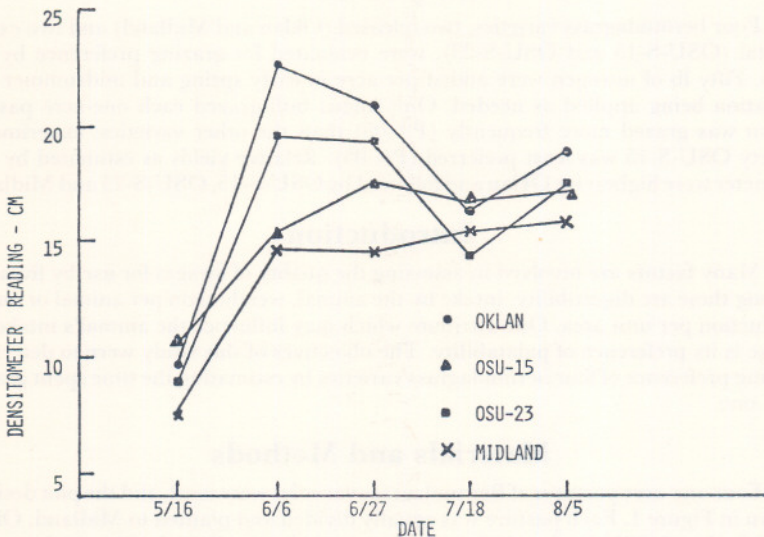


Figure 2. Measurements of density.

All pastures were fertilized with 50 lb nitrogen/acre in early spring and again in mid-summer. The yield of each grass was estimated at the beginning and end of each of the four grazing periods using a densitometer (Vartha and Matches, 1977) which measures the height at which a 5.4 ft² aluminum disc is supported by the forage. Density was measured at 10 random locations of each variety for each period. All pastures were sprinkle irrigated in strips to keep grasses vegetative and was applied from 1600 to 0800 hr whenever grass became brittle.

Four yearling angus bulls weighing 900 lb were randomly allotted to pastures and were rotated at four-week intervals. Animals were allowed a two-week adjustment in each pasture prior to observation. Visual observations were made for one 24-hr period during each observation cycle. The activity (standing, grazing, etc.) and location (variety) of each bull was recorded. For each cycle, total grazing time was subdivided according to variety on which the animal was grazing.

Results and Discussion

Generally, animals grazed in the early morning from about 0600 to 0900 hr and early evening from 1600 to 2000 hr. Very short grazing periods were observed between 1100 to 1300 and 2300 to 2400 hr. Total grazing time was four to five hr per day. The

Oklan variety was preferred by the bulls as indicated by hr spent grazing (Table 1). Experimental variety OSU-S-15 was the least preferred; whereas, Midland and OSU-S-23 were intermediate.

Other trials conducted at the Southwestern Livestock and Forage Research Station (Horn, et al., 1976) have shown that Oklan bermudagrass is higher in digestibility than other varieties included in this test, which may account for the preference shown in this experiment. However, OSU-15 was intermediate in digestibility and lowest in preference while Midland was lowest in digestibility and intermediate in preference.

Densitometer readings for the various species on the various sampling dates are shown in Figure 2. Such measurements are correlated with yield in that the higher the densitometer reading, the more forage available (Vartha and Matches, 1977). These data indicate that Oklan has the highest forage availability which may partially account for higher preference for this variety. However, ample forage was available in all plots and was unlikely to have been so deficient as to affect preference. Because of hot weather, the forage was quite dormant even though irrigation was applied.

There was an infestation of Johnsongrass during the early months of May and June due to the characteristic late emergence of the Oklan variety. When present, Johnsongrass was preferred over any bermudagrass variety. It should be kept in mind that preference of a grass is only one attribute of forage quality and does not necessarily indicate expected performance.

Literature Cited

- Horn, F. P., C. M. Taliaferro, and R. D. Morrison. 1976. Yield and quality of Midland and two new F₁ hybrid bermudagrasses. *Agron. J.* 68:129.
- Vartha, E. W. and A. G. Matches. 1977. Use of a weighted disk measure as an aid in sampling the herbage yield on tall fescue pastures grazed by cattle. *Agron. J.* 69:888.
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