THE EFFECT OF CUTTING METHODS AND SOD TREATMENTS ON THE YIELD AND PROTEIN CONTENT OF CARPET GRASS, AXONOPUS AFFINUS CHASE

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AWN mowers, power-driven lawn mowers, hand knives and shears, hand plucking, and sickle mowers have been used to cut pasture herbage for yield estimates to simulate grazing conditions (2, 8). The height and frequency of cutting influences the yield and quality of herbage. There is no standard clipping or grazing management technique because of the differences in the morphological characteristics and the growth habits of the pasture plants (1, 2, 3, 5, 6, 7).

The experiment reported here was initiated to measure the effect of frequency and height of cutting, type of mower, and mechanical treatment of sod on the yield and quality of carpet grass, *Axonopus affinus* Chase, herbage.

PLAN OF EXPERIMENT

An area of established carpet grass pasture on a Leon fine sand near Gainesville, Fla., was treated in 1938 and each year thereafter with dolomitic limestone, N, P$_2$O$_5$, and K$_2$O applied at the rate of 500, 54, 36, and 25 pounds per acre, respectively. The nitrogen was applied in two applications (March and June) and the other nutrient materials were applied in March. Plots 5 x 11 feet in size were arranged in a latin square experiment. The treatments are shown in Table I.

Yield samples were made by mowing a strip lengthwise through the center of each plot. After this the unclipped portion of vegetation of the plots was mowed and allowed to remain on the plots. The yield samples were oven dried and weighed and used to calculate the dry matter in pounds per acre.

Two types of mowers used were a Coldwell "L" Twin power-driven lawn mower, weighing approximately 450 pounds equipped with a corrugated rubber drive roller and box to catch clippings, and an ordinary 18-inch lawn mower. The canvas catcher supplied with the lawn mower was not satisfactory because some of the grass was thrown out of the box, thus a special box to catch the grass was made out of tin.

Mechanical sod treatments included treading and chopping. A hoof treader, weighing approximately 500 pounds, was made out of two heavy steel rollers with mounted iron hoofs. The iron hoofs were made of a plaster of paris form of a cows foot print. This treader was rolled over the grass after each mowing. A 30-inch rotary chopper from a stalk cutter was mounted on shafts and rolled over the plots four times during the growing season. The chopping treatment of the sod was used because some cattlemen are of the opinion that the aeration and cutting from heavy rotary choppers stimulate grass growth. The rotary chopper used in this test did not penetrate as deeply as the heavy machines used by cattlemen.

The clipping frequencies included weekly, bi-weekly, and monthly periods and a clipping frequency to maintain a vegetative growth stage of grass, which varied from 7 to 30 days.

To measure the influence of cutting height on yield and quality of grass, the power mower was set to cut 0.5 inch and 1.25 inches from the ground.

EXPERIMENTAL RESULTS

The yield data in pounds of dry weight per acre during 1938 through 1941 and the mean yields during a 4-year period are given.