Effect of Method of Grazing Unimproved Kentucky Bluegrass on Beef Production, Botanical Composition, and Herbage Yields

MAURICE L. PETERSON

Despite proved methods of pasture improvement through the use of lime, fertilizer, and the introduction of legumes, the major part of the pasture acreage of the corn belt still consists of unimproved Kentucky bluegrass. These pastures vary tremendously in productivity, with many of them heavily infested with ragweeds, povertygrass, and other undesirable species, which compete with bluegrass for moisture, light, nitrogen, and other nutrients.

There is good evidence that in many cases the differences observed may be attributed to the method of grazing. Aldous (2) found that deferring grazing of bluestem pastures until about June 15 gave an increase of approximately 25% in carrying capacity and a 33% increase in livestock gains over pastures grazed season long. The closeness of clipping Kentucky bluegrass in one year was found to influence yields the following year in studies by Graber (5). Daubenmire (3) and Sarvis (9) found that certain unpalatable species increased under heavy grazing, while Hein and Cook (7) reported that Kentucky bluegrass and white clover predominated over taller species, such as timothy and orchard grass, following 6 years of continuous heavy grazing of a complex pasture mixture. Ahlgren (1) found moisture and fertilization more important than cutting treatments in determining productivity of bluegrass.

The object of the study here reported, undertaken in 1939, was to determine the effect of grazing management of unimproved Kentucky bluegrass on beef production, botanical composition, and forage yields. The results indicate some of the reasons for the deterioration of pastures and provide information of value in developing better grazing management systems.

METHODS

Six pastures, ranging in size from 4.45 to 5.20 acres of typical permanent pasture on the College Pasture Improvement Farm near Albia, in Monroe County, Iowa, were used in this study. The predominant soil types are Clinton silt loam and Lindley silt loam, much of the latter sloping more than 13%, and with only 2 to 4 inches of top soil remaining.

The area had never been plowed, limed, or fertilized. At the beginning of the experiment Kentucky bluegrass, Poa pratensis L., was the predominant species with some redtop, Agrostis alba L., a trace in spots of white clover, Trifolium repens L., and a very few weeds.


2Research Assistant Professor.

3Numbers in parenthesis refer to "Literature Cited", p. 421.