A COMPARISON OF BROMEGRASS AND ORCHARD GRASS PASTURES

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The value of a pasture species or mixture of species can be arrived at by purely agronomic methods, or through the medium of observing animals on pasture plus weight gains and losses. Either method is open to criticism, but when combined, they provide a fair measure of the productive ability of both vegetation and animals.

This paper presents data and observations obtained on pasture plots located on the Agronomy South Farm at Urbana, Ill.

METHODS AND PROCEDURE

The pasture plots on which this experiment was conducted are uniform with respect to soil and slope. Previous soil treatment was similar; the entire area was formerly treated as a unit in a standard corn belt rotation. Its use as pasture was dictated by a tendency to wash, although located on a slope of approximately 2%.

In the spring of 1938, 1/5- and 2/5-acre plots were seeded with alfalfa, *Medicago sativa*; smooth bromegrass, *Bromus inermis*, and alfalfa; bromegrass alone; orchard grass, *Dactylis glomerata*, and alfalfa; and orchard grass alone. The seeding rates per acre were as follows: Plot 1, 15 pounds of alfalfa; plot 2, 8 pounds of alfalfa and 12 pounds of bromegrass; plot 3, 15 pounds of bromegrass; plot 4, 8 pounds of alfalfa and 12 pounds of orchard grass; and plot 5, 15 pounds of orchard grass. Good stands were obtained on all plots. No further treatment was given to these plots in 1938.

In the spring of 1939, the plots were separated by fences. Water, salt, and shelters for animals were provided on each plot.

During this and each subsequent grazing season, yearling wether and ewe lambs were provided through the cooperation of the Animal Husbandry Department. The number of sheep grazed on each plot was calculated to give the best comparative results with respect to both vegetation and animals. The usual rate of stocking was 10 to 15 sheep to the acre. Animals were weighed at periodic intervals, usually once a month, or whenever a change in the number of sheep necessitated weighing.

Excepting 1939 and the short 1943 grazing season, the sheep were removed from plot 5 during August and September because of a lack of forage. This plan was followed in these experiments and the sheep were removed or added according to the amount of forage available.

Forage yields were obtained on each weigh day, using 4-foot square, steel cages to protect sampled areas. Sampling methods have been described in previous publications. Dry matter was calculated from composite samples obtained on each sampling date. Composite samples for chemical analyses were obtained at the same time. These were subsequently analyzed for nitrogen, calcium, and phosphorus content. Botanical analyses were usually made either in the spring or fall or both, of each grazing season, using either hand separations or the vertical point quadrat method, depending upon forage height.

In the spring of 1942, the bromegrass plot was disked in an attempt to stimulate greater productivity.

Sheep were used as grazing animals in this experiment because a larger number...