Notes

PROTEIN DIFFERENCES AMONG VARIETIES OF ALFALFA AND RED CLOVER AND GRASS COMBINATIONS

Several alfalfa and red clover varieties are recommended in the North Central area. Recommendations usually are made on the basis of dry matter yields, winter survival, and disease and insect resistance, with forage quality a secondary consideration. Generally, forage quality is denoted by protein level. However, little information is available as to whether real differences exist in the protein content of alfalfa and red clover varieties.

Jones et al. compared 6 alfalfa varieties over 6 different cuttings and found the protein content to be similar for all varieties. Similar results were reported by Fribourg and Johnson. However, other investigators found that Grimm and Rhizoma alfalfas contained a higher percentage of protein than other varieties.

The object of this study was to investigate dry matter and crude protein differences among various alfalfa and red clover varieties as well as between bromegrass and timothy with different nitrogen sources.

Materials and Methods

The legumes and grasses were seeded on Miami silt loam soil on May 8, 1956, at Madison, Wisconsin. Six hundred pounds of 0–10–30 fertilizer and 50 pounds of nitrogen per acre were applied prior to seeding. A randomized incomplete block design with 2 replications was used. One incomplete block was seeded to alfalfa: Vernal, Ranger, and Buffalo. A second incomplete block was seeded to 3 varieties of medium red clover: Dollard, Pennscott, and Kenland. The third incomplete block was seeded to 6 different grass combinations: Vernal alfalfa and smooth bromegrass, bromegrass with supplemental nitrogen, bromegrass without supplemental nitrogen, Vernal alfalfa and timothy, timothy with supplemental nitrogen, and timothy without supplemental nitrogen.

The species were seeded at a rate such that theаЉmy number of seeds per unit of land area would be equal to 12 pounds for alfalfa based on 100% germination. Mixtures were sown at 1/2 the specified rate for each species. Insects were kept under control in the plots by spraying with methoxychlor and dieldrin. Voluntary legumes were controlled in the grass plots by spraying with 2,4,5-T (esteron form). A 200-pound per acre application of elemental nitrogen was made on the grass plots receiving supplemental nitrogen in a split application: March 30 and June 3, 1957.

Each whole plot, measuring 14.5 by 30 feet in size, was divided into 2 equal parts. One-half of each plot was sampled during the spring and the other half during the summer. Sampling of the spring growth at 4 stages of maturity began on May 14 and con...