Productiveness of Bromegrass Strains from Different Regions when Grown in Pure Stands and in Mixture with Alfalfa in Michigan

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STUDIES of smooth bromegrass, Bromus inermis Leyss, made of individual plants have shown marked differences in growth characters. Nursery row plantings likewise have shown these differences to exist among strains from different sources. Investigations by Newell and Keim in Nebraska indicate that some strains are more adapted to certain areas than others and that production is influenced in part by choice of strain grown. Strains (planted in pure stands) were grouped as northern, or late, and southern, or early. Southern strains were more vigorous, made most of their growth earlier, and were more productive than northern strains.

In order to compare the yielding ability of bromegrass strains from different seed sources under Michigan conditions, seedings were made in mid-August of 1940 and 1942 in pure stands and in mixtures with Hardigan alfalfa.

MATERIAL AND METHOD

Seed was secured from several of the bromegrass-producing states, from Canada, and from Russia. Information regarding these strains is given in Table 1. Some of the strains occur only in the first test, some are included in only the second test, while several are in both trials.

Plots were 15X29 feet from which a 6-foot plot was harvested 29 feet long. Strains were randomized and planted in duplicate. Seed was broadcast by hand on a Brookston loam soil which had previously been fertilized with 400 pounds per acre of an O-20-20 commercial fertilizer. The field was cultipacked immediately after seeding. Heavy rates of seeding were used for both the bromegrass (10 pounds per acre) and the alfalfa (12 pounds per acre). The 1942 seedings were made in the same manner as those in 1940 except rates of seeding of bromegrasses were adjusted for differences in purity and germination. Good stands were secured for all plots in both trials.

Analyses to determine the percentage of bromegrass and percentage of bromegrass leaves and tillers were made just previous to harvest. Moisture determinations were made in an oven dryer for each plot. Data are presented only for one series each year for the 1940 seedings because of serious damage to some plots caused by water and ice. Yield data for the 1942 seedings are the average of duplicate plots.

RESULTS

HAY YIELDS

All of the bromegrass strains were productive the first year after seeding. From the 1940 seedings the average yield of all bromegrass