SEEDINGS of perennial grasses in the Great Plains region each year total many thousands of acres. They are made for a variety of purposes. Some are for lawns, golf courses, roadside cover, airport protection, flood control, and in parks and wildlife refuges. Other seedings are on farms and ranches for pasture, hay production, and seed plots. Also, on the farms and ranches, the seedings are primarily of two classes—those which are a part of the regular crop rotation as a measure to maintain the organic matter content and structure of the soil in crop land, and those intended for permanent cover on sites which are not suited for cultivation.

In the latter class, the ability of the grasses to control erosion is a prime consideration. The farmer, who necessarily must earn a satisfactory living from his land, is therefore concerned with choosing those grasses which best combine erosion-control and production capacities. He is concerned with all of these questions: Yield of vegetation, period of most active growth, height, and density.

The observations reported here indicate the relative value for both yield and erosion control for 12 species of grass and a native-grass mixture seeded on eroded land of relatively low fertility near Manhattan, Kans. This was done in cooperation with the Kansas State Experiment Station. The data should be useful for persons with similar land which is to be seeded to perennial grasses.

MATERIALS AND METHODS

In 1940, triplicated rod-square plots were planted on moderately eroded Idaho silt loam soil with approximately 5% slope. The soil is residual, of limestone origin, and upland. The field is located approximately 7 miles southwest of Manhattan, Kans. Eight warm-season grasses and a native-grass mixture were seeded May 5. The Bermuda grass was planted by placing sod pieces at 30-inch intervals. Four cool-season grasses were seeded September 18. No fertilizer was used. Plots were mowed each fall, but vegetation was not removed except from meter quadrats clipped for yield determinations. Common and scientific names of 12 species and sources of seed are listed in Table 1.

In 1943, meter quadrats were clipped from the rod-square plots in late May, late July, and early October. The same area was clipped each time, the grass being cut about 2 inches above the ground. Air-dry weight of the vegetation was taken about 3 weeks after clipping. Density determinations were made by the line interception method for each rod-square plot in May, 1943. The height of the grass in the quadrats to be clipped was taken just previous to the clipping in late May and late July.

In early August, 1945, a clipping was made on the same plots of bromegrass, western wheatgrass, weeping lovegrass, and the native-grass mixture. A clipping

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3All names are according to F. C. Gate's "The Flora of Kansas," Agricultural Experiment Station, Kansas State College of Agriculture and Applied Science, Manhattan, Kans., 1940.