A BOTANICAL AND YIELD STUDY OF PASTURE MIXTURES
AT BELTSVILLE, MARYLAND

PAUL R. HENSON AND MASON A. HEIN

FUNDAMENTALLY, the purpose of sowing a complex mixture for permanent pasture is to increase the total production of the pasture, improve the quality, and at the same time provide more uniform production during the grazing season. Since each grass has its peak period or periods of production, the end to be attained is to so blend the seed mixture that the periods of maximum production of the individual species do not occur simultaneously. Mixtures of different grass species also may insure a more uniform cover because of their adaptation to varying environmental conditions. Old permanent pastures in the Middle Atlantic States on soils of medium to high fertility are composed largely of Kentucky bluegrass and white clover. The objection to this mixture is that it usually provides little grazing during the seasons of dry warm weather from June 15 to August 15. Although Kentucky bluegrass is one of the most important pasture grasses in this region, it is obvious that if another grass could be found which would thrive in association with it and increase the carrying capacity during this period the value of pastures in this region would be greatly improved.

While the changes in the botanical composition of many complex pasture mixtures have been reported in pasture experiments in this region (4, 5, 7, 11), comparative information on specific mixtures for permanent pastures is meager. Herein are reported the results of 4 years' study of the botanical composition and yields of plots sown on an area of Sassafras silt loam on the Bureau of Dairy Industry farm at Beltsville, Md.

PROCEDURE

The area was plowed in November 1935. Limestone, in accordance with the requirements as determined from acidity tests, was applied at the rate of 2,000 pounds per acre in April 1936, followed by an application of 600 pounds of 16% superphosphate and 200 pounds of muriate of potash per acre. The area was thoroughly disked following the limestone application and again after the fertilizers were applied. During June, well-rotted barnyard manure was applied at the rate of 14 tons per acre and disked thoroughly into the topsoil. The area was fallowed during the summer until the seedbed for the pasture mixtures was prepared in early September.

The eight mixtures tested consisted of Louisiana white clover in combination with one or more grasses adapted to this region. The seed combinations and the rate of seeding are given in Table 1. The seed of the mixtures were carefully

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1Contribution from the Division of Forage Crops and Diseases, Bureau of Plant Industry, U. S. Dept. of Agriculture. This experiment was conducted at the Beltsville Research Center, Beltsville, Md., on land furnished by the Bureau of Dairy Industry. Received for publication March 15, 1941.

2Associate Agronomist and Agronomist, respectively. The experiment was inaugurated by the late H. N. Vinall, Senior Agronomist.

3Figures in parenthesis refer to “Literature Cited”, p. 708.