COMPARATIVE RANGES OF ADAPTATION OF SPECIES OF CULTIVATED GRASSES AND LEGUMES IN OKLAHOMA

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INTRODUCTION

The location of our great and rather well-defined forage provinces, such as the bluegrass, timothy, orchard grass, red clover, white clover, or bermuda producing regions, are determined primarily by the degree of adaptation shown by the respective grasses and legumes to prevailing climatic conditions. Soil factors, while having local effects on the utilization of specific forage plants, do not exhibit the regional influences of the climatic factors. The distribution of specific forage plants is not as general as that of the cereal crops. This is to be expected, since perennial forage plants must survive through the favorable as well as the unfavorable portions of the year. Grasses and small-seeded legumes produce plants very delicate during their early phases of development. Such plants are consequently not well adapted for a struggle against an unfavorable environment. The production of forage plants slow to establish themselves becomes especially hazardous in regions with severe climates. Yet, from an experimental standpoint, the specific ranges of adaptation of such plants may best be determined in such regions. Since the great forage provinces of the northeastern states do not extend as far to the west or to the south nor many of the forage-producing regions of the southern states as far north as north-central Oklahoma, the Oklahoma Experiment Station promised to offer a favorable location for a study of specific ranges of adaptation of northern and southern forage plants.

SELECTION OF FORAGE CROPS FOR CENTRAL OKLAHOMA

The producer in the eastern more humid sections of the United States has a great variety of forage plants to select from in the choice of grasses and legumes for his meadows and pastures. In the Great Plains area, and especially in the southern portion of this area, the number of cultivated forage plants to be chosen from becomes exceedingly limited. Due to the rigor and irregularity of climatic factors, only the more hardy plants can survive. To complicate the