SOME FACTORS AFFECTING THE PREVALENCE OF WHITE CLOVER IN GRASSLAND

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WHITE clover (Trifolium repens) is the most important legume found in the permanent grassland of the northeastern United States. As shown by several investigators (1, 4, 5, 7, 9, 10), grassland with a considerable proportion of its area occupied by white clover yields much more than grass alone, and frequently as much or more than can be stimulated by the addition of large amounts of nitrogenous fertilizers. Not only are total yields greatly enhanced, but the palatability, nutritive value, and the seasonal distribution of the pasturage are improved by white clover. It is, therefore, of much economic importance that permanent grassland be managed so as to assure this legume a prominent place in the sward. It should be admitted, however, that in spite of the widespread interest in and amount of research with white clover, no one knows the reasons for the amazingly sudden changes in its prevalence.

During the nearly 20 years of pasture research at the Storrs, Conn., Agricultural Experiment Station, there have accumulated many data pertaining to factors affecting the prevalence of white clover. Although these results have not led to definite conclusions, it seems advisable to publish them at this time.

An important factor affecting the prevalence of white clover, but one on which the author has few data, is that of soil type. All of the experiments reported in this paper were conducted on Charlton fine sandy loam soil. This soil is well adapted for grasses and clovers if provided with the proper fertilizers.

Most of the lawn mowing in these experiments has been done with a roller driven type of power mower.

WHITE CLOVER AND YIELDS OF GRASSLAND

The importance of white clover to yields of grassland is indicated by the data in Table 1, which summarizes this Station’s results on that subject when only volunteer clover is concerned.

Under either grazed or lawnmowed conditions, production was 5 to 10% higher with PKL than PKN fertilization when clover occupied 30% or more of the area. The reverse was true when the area with clover fell to 10% or less.

The effects of seeding Ladino or Kent white clover on plats of nine grasses in pure culture and also of fertilizing these grasses with varying amounts of nitrogen are shown in Table 2. In this experiment, seeding Ladino clover resulted in more dry matter than adding nitro-