IMPROVEMENT OF PERMANENT BLUEGRASS PASTURES
WITH SWEET CLOVER

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About 231,000,000 acres of land, constituting approximately one-ninth of the total land area of the United States, is classified as "humid grassland pasture." Much of this is located in the north central and eastern states and such pastures are made up largely of bluegrass (Poa pratensis) in mixture with varying amounts of redtop (Agrostis alba), white clover (Trifolium repens), and other grasses and legumes. Popular comment has dealt largely with the unproductivity of such pastures and the superiority of sweet clover by virtue of its greater carrying capacity and its ability to supply pasturage during the dry periods of the summer, as well as during the early spring months. This treatise is an attempt to show, with limited data, how sweet clover may be utilized to increase and extend the productivity of permanent bluegrass pastures which now largely occupy land that is too rough to till.

Too often the failure of bluegrass to yield satisfactory returns has been ascribed to an exhaustion of the fertility of the soil when in reality the plant itself has become exhausted. Heavy premature grazing occasioned by increasing numbers of livestock has reduced, in many cases, the organic food reserves of the rhizomes and roots of bluegrass and other pasture plants to such a degree that such plants become unproductive even on very fertile soils. Where soils are deficient in fertility growth is, of course, limited accordingly, but it is also true that where such deficiencies do not occur, growth is limited by deficiencies in stored organic foods within the plant. Such results occur from continuous premature overgrazing.

No effort is made in this paper to establish evidence, either pro or con, that organic reserve foods may become limiting factors in the growth of perennial herbaceous plants, as indicated by previous statements, but an attempt will be made to offer certain suggestions, with some data for their support, as to practical means for the improvement of permanent bluegrass pastures.

These suggestions are based largely on the established value and popularity of sweet clover (Melilotus alba) for soil improvement and for grazing purposes. The utilization of this legume and other plants for temporary early spring pasturing will make possible, to

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