EFFECT OF DISEASES UPON SURVIVAL OF WHITE CLOVER, TRIFOLIUM REPENS L., IN ALABAMA

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WHITE clover, Trifolium repens L., although generally classified as a perennial legume, behaves largely as a winter annual in Alabama. It has been commonly accepted that white clover frequently fails in the South due to its inability to withstand the extremely hot weather prevalent during the summer. No attempt is made here to disprove this belief, but evidence is presented which suggests that certain diseases are responsible for the disappearance during the summer of much of the white clover in Alabama pastures.

METHODS

This study of the effect of diseases on white clover was begun during the summer of 1940 when it was observed that a number of the 1,700 individual plant selections growing in the breeding nursery were becoming infected with several diseases. Notes were taken on the effect of the diseases on only 750 of the plants growing in one section of the field. The extent of injury each disease caused to each plant and the rapidity of recovery of survivors from disease attack were noted.

Plants which escaped attack by one or several diseases in 1940 were propagated vegetatively in another section of the same field so that they could be tested again in 1941 for possible resistance to disease. No plants were artificially inoculated with any organism.

Surveys were made of pastures in all sections of the state in 1940 and in 1941 to determine whether the diseases which were common in the nursery at Auburn were also prevalent in farmers' pastures. While there was no difficulty encountered in recognizing the diseases that occurred on white clover growing in these pastures, it was often impossible to judge the extent of injury which the diseases caused. In a number of cases, however, certain diseases were found to be so prevalent that there is little doubt that stands of white clover growing in pastures were substantially reduced due to disease attack.

RESULTS AND DISCUSSION

Diseases may attack white clover in Alabama in early spring, but they appear to cause their greatest injury to the plant late in June and in July after the major seed crop has been matured. Ten organisms have been recognized as attacking white clover in Alabama:

1. Sclerotium rolfsii Sacc.
2. Heterodera radicicola (Greef.) Muell.
3. Stagonospora meliloti (Lasch.) Petr.

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3 The organisms discussed in this paper were identified by Doctor J. L. Seal, Head, Department of Botany and Plant Pathology, Alabama Agricultural Experiment Station.