A COMPARISON OF VARIOUS METHODS FOR DETERMINING THE FERTILIZER NEEDS OF CERTAIN SOILS

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Many soils are deficient in one or more of the essential plant food elements, and for maximum crop yields these elements must be added. Commercial fertilizers varying widely in composition are available for supplying the elements of plant food most likely to be deficient in soils and the choice of the material to be used depends upon the needs of the particular soil. In order to secure the greatest economic returns from the application of a fertilizer, the needs of the soil should be determined accurately to ascertain the kind and amount of fertilizer which should be used.

A number of biological and chemical tests and also greenhouse and field tests have been proposed for determining the fertilizer needs of soils. The purpose of this investigation was to study several of these methods and to compare the results secured from their use on Carlington loam, an important Iowa soil.

HISTORICAL

Dyer (5) reviewed the literature previous to 1894 on the determination of available plant food constituents in the soil. He found

1Contribution from the Department of Farm Crops and Soils, Iowa Agricultural Experiment Station, Ames, Iowa. Journal Paper No. B 76. Received for publication October 20, 1932.
2Research Associate, Head of Department, and Fellow, respectively.
3Reference by number is to “Literature Cited,” p. 391.