THE TRUFAST TEST FOR SOUR SOIL.¹

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The practical experience of farmers and the investigations of State and Federal agencies show that large areas of soil in humid regions need application of liming materials if their full productive capacity for many important crops is to be attained.

The chemical, physical, and physiological significance of this need for lime in the soil has not been made clear by the investigations conducted thus far. However, there seems to be a fairly good agreement among investigators that this need for lime is usually associated with, if not directly due to, a considerable degree of acidity in the soil. Acidity in this sense is perhaps best defined as the capacity of a soil to absorb calcium, sometimes called the lime absorption coefficient. Whether the capacity of the soil to absorb other bases than calcium bears a direct relation to its need for lime does not seem to have been determined.

It is well known that soils differ widely in their need for lime for the successful growth of some crops. The prevailing practice has been to associate this different need for lime with the presence of different amounts of active or free acid in the soil. Various tests are in use to measure the amount of this so-called acidity which is assumed to be correlated with the amount of lime needed by the soil for the production of crops sensitive to lack of lime in the soil. From the point of view of farm practice such methods of measuring the need for lime in the soil should be rapid, simple, and easily carried out either in the field or in close association with field conditions.

Without presuming to review the essential features or the advantages and disadvantages of existing methods for this purpose, we present a new method that has been devised to meet, as far as now seems possible, the dominant requirements of the problem of so-called acid or sour soils. This test is called the "Trufast" test, the manipulation and most of the essential features of the test having been devised by Mr. A. D. Whipple, who has been associated with the National Lime Association as its chemist and engineer. The underlying chem-