THE NATURE OF SOIL ACIDITY WITH REGARD TO ITS QUANTITATIVE DETERMINATION.¹

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It is probably true that, in recent years, no one phase of soil chemistry has received more attention than the problem variously referred to as lime requirement, soil acidity, or lime absorption coefficient. The problem can hardly be considered, however, as having solely a chemical or physico-chemical basis in its relation to soil fertility, for it is closely correlated with, if not inseparable from, both bacteriological and plant physiological considerations. Until very recently, if even now, little effort has been made or opportunity offered for concerted, authentic action to clarify this intricate problem and to adopt terms or phrases which convey a definite and accepted meaning of the several possible causes and the possible differential intensities of these reactions responsible for the soil condition known most commonly as acid.

Lime requirement for what? For effecting a chemically neutral or near-neutral condition as determined by some arbitrary chemical procedure in the laboratory; for optimum biological development, as recorded in the laboratory; or for maximum growth of certain specific and responsive plants in pots, cylinders, or plats? Some of these considerations were advanced by the writer to the Association of Official Agricultural Chemists at its 1916 meeting in a paper entitled

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