IS THE SOIL TYPE HOMOGENEOUS WITH RESPECT TO ITS FERTILIZER NEEDS?¹

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It has frequently been assumed that the results of a fertilizer test on a given soil type will, if accurate for the field on which the test was made, be applicable to any soil representing that type. This assumption does not appear to have been subjected to much experimental confirmation. There are few instances in which fertilizer experiments have been duplicated on fields located at some distance apart on the same soil type. Even tests in greenhouse pots designed to accomplish the same end have not come to the attention of the writer. Experiments are recorded in which the results of field tests have been compared with similar tests in greenhouse pots, or wire baskets, but soil for the latter has been taken from a check plat or land adjacent to the former.

If fertilizer experiments on a given soil type are to serve as the criterion for recommendations of fertilizer treatment on that type it would seem to be desirable to ascertain to what degree of precision such recommendations can be made. It has never been claimed by the persons who developed the classification and correlation of soils in this country that soil type has any relation to fertilizer response. The classification was not designed with that in view. If it should turn out to be the case, it would be accidental, at least so far as the intentions of the originators are concerned.

At an earlier time in the history of the experiment stations results of fertilizer tests were regarded as of more or less general application. With the adoption of the present system of soil classification it became the custom for experiment stations to establish fertilizer tests on outlying fields located on certain soil types. These local fields have the advantage of subjecting the tests to a number of local conditions which involve, among others, drainage, altitude, topography, temperature, and length of growing period. Some specific conditions of this kind may always be associated with certain types. For instance, good or poor drainage may be one of the conditions which determines the type. Again certain soil types are found mainly at high altitudes, others on bottom land, while others occur predominately on hillsides. To the extent that these conditions affect the action of fertilizers and are characteristic of the regions in which a given soil type

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