A PLAN FOR TESTING EFFICIENCIES OF FERTILIZERS.¹

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INTRODUCTION.

No special plea is needed for the advisability of establishing standard plans for certain classes of fertilizer tests. The chief difference of opinion is concerning the model. When so many fertilizer tests are being conducted with the same object in view, such as tests of the relative efficiencies of different phosphates, it seems there should be some uniform plan, or at least, that there should be certain elements generally recognized as essential to every plan. In a previous paper attention was called to the gross inadequacy of the plans of many fertilizer tests.²

As a step towards more uniform methods, it is desired to suggest here one factor that should be considered essential in all tests of the relative efficiencies of fertilizers furnishing the same element, namely, that several different quantities of the standard fertilizer should be applied.

USUAL PLAN FOR TESTING EFFICIENCIES OF FERTILIZERS.

It is generally considered sufficient in fertilizer tests to use only two quantities of the standard fertilizer, the yield from the larger application merely proving that the smaller application used in the comparison is not applied in excess of the crop's requirements. If the availabilities or efficiencies are to be calculated, as usually has been done hitherto, on the basis of the relative increases produced by certain quantities of the different fertilizers, the use of two quantities of the standard fertilizer is in some respects adequate. This method of calculating efficiencies is, however, open to objections. While it may give an accurate comparison, it is more likely to give a more or less inaccurate one. The method is based on an assumption concerning the law of minimum. It is assumed that up to the maximum of the crop's requirements equal increments of the fer-

¹ Received for publication March 25, 1916.