reasonable excess of all the fertilizer constituents is required for all garden crops, and where succulency is specially required, nitrogen and potash should predominate.

How to Experiment with Fertilizers.

Every man must study his own soil and crop conditions. Experiment stations may experiment from now until the end of time and still not be able to answer the question for the individual. Principles can be established, the needs of different crops can be learned, the composition of fertilizers can be determined, chemical and physical analyses may show wherein soils differ; but when it comes to the question of the profitable use of the fertilizers, each farm, each field, must answer for itself. That is, careful, intelligent, and accurate experiments must be carried on by every farmer, gardener, and orchardist who wishes to settle this point.

In all fertilizer experimental work it is important that the land used be as uniform in soil condition and previous manuring and cropping as can be procured. The size of the plots may vary according to the nature of the crop from two square rods to one-tenth to one-third of an acre, or larger if desired. The larger plots have some advantages, but, the smaller the plots the more likely they are to be of uniform soil, and the labor involved in harvesting and weighing the crop is less. A space should be left between the plots to prevent the roots of the plants in the border line drawing food from both plots.

The following simple plan for experimenting can be carried out by any farmer without difficulty, and enables him to find out if the land is in need of plant food. The plan as it is can be adopted for vegetables, fruits, and most field crops, except legumes. The amount of fertilizers given are for an acre, and can be reduced according to the size of the plot.

Plot No. I.—Check. No fertilizer.
" II.—600 pounds of superphosphate.
120 " muriate of potash.
180 " nitrate of soda.
" III.—600 " superphosphate.
180 " nitrate of soda.

In this experiment, plot No. I. will show what the land without any fertilizer will produce; plot No. II. indicates what effect an average complete fertilizer will have, and plot No. III. shows the effect of nitrogen and phosphoric acid, and brings out the influence potash has had on the crop.

A simple form of experiment to study the soil deficiencies in respect to a single element of plant food, and the relative needs of the different crops for the various constituents, is as follows:

Plot No. I.—Check. No fertilizer.
" II.—160 pounds of nitrate of soda.
" III.—160 " muriate of potash.
" IV.—320 " superphosphate.