

rich in nitrogen often give off bad odours, therefore, the fouler the odor given off by a fertilizer, the richer it is likely to be in nitrogen. But the fatal insufficiency in this course of reasoning consists in the fact that there are a great many bad smelling substances, and cheap ones too, that contain little or no nitrogen; and it is an easy matter, therefore, to make a fertilizer that shall have a strong disagreeable odor, and yet shall contain no nitrogen, or only a quantity so small as to add the merest trifle to its value.

The length of time which must elapse before a farmer can decide by his own experience in the field whether the use of a certain fertilizer is profitable to him, and the troublesome pains which must be taken in order to make such a decision perfectly satisfactory, are also circumstances which greatly favour the manufacturer in his practice of overcharging.

It is possible to ascertain the real value of a fertilizer in two ways, either by an actual trial of it in the field, or by a partial chemical analysis of it. Considering all the vicissitudes to which the crop is exposed, upon which the trial is made, a fair and satisfactory result may not be obtained without a repetition of the trial for two or three seasons; on the other hand, the results of the chemical analysis constitute quite as trustworthy data for estimation, or for mere comparison of values, as do the results of the field trial, if indeed they are not much more trustworthy. They show conclusively what there is in the fertilizer that has any value, and how much it is worth; and these results can be had in a few days.

It is safe to assert, then, that a profitable use can be made of the chemical examination of commercial fertilizers. I base the assertion not only upon the course of reasoning just laid down, but also upon the facts that this application of the chemist's skill has been found by experience elsewhere to be profitable. In Germany, where a greater amount of good results has been derived from the application of chemistry to agriculture than in all other countries put together, commercial fertilizers are most frequently subjected to the test of chemical examination, by competent chemists, and attempted swindles are very soon brought to light.