

the terms used and know the commercial value of the different plant food constituents.

STATEMENT OF GUARANTEE.

The statement of a guarantee should be as simple as possible. All that is required is the per cent. of nitrogen, potash and available phosphoric acid. The amount of insoluble phosphoric acid may also be given, but as little value is placed on this part of the material it is not important. Sometimes, however, the per cent. of nitrogen is given and its equivalent of ammonia. This is simply two ways of stating the same fact. Again, phosphoric acid may be quoted in terms of "water soluble," "citrate soluble," "available," "insoluble," and "total." Out of all of these statements the only one that is required is the "available," or, if we want to know the amount of other forms of phosphoric acid, the "insoluble" may be included. The potash is also very often stated in two ways, as "potash" and as "equal to sulphate of potash." This again is a statement of the amount in two ways. In rare instances the fuller statement may be of interest to a purchaser. Unfortunately, the Act does not limit the number of times and ways the manufacturer may state the same thing in the guarantee, and consequently he is within his rights in multiplying the number. The purchaser, however, will do well to remember that no matter how complex the guarantee may be the valuation should be made on the three items: (1) "nitrogen," (2) "available phosphoric acid," and (3) "potash." This fact is recognized in the concise statement used in speaking of a fertilizer as being a 3-6-10. The meaning is that it contains 3 per cent. of nitrogen, 6 per cent. of phosphoric acid, and 10 per cent. of potash.

TRADE NAMES

The need of a guarantee is emphasized by the great number of different brands of fertilizers on the market. The trade name given a particular brand is usually an indication of the crop to which it should be applied, as "Potato Manure," "Grape and Small Fruit Special," "Orchard Special," "Tobacco Grower," etc. Doubtless these preparations are well adapted to the requirements of the plants, but it is impossible to make any one mixture that will give the best results with all kinds and conditions of soils. The trade named substances are useful and are an attempt to furnish a fertilizer that is properly balanced for the particular crop named. This, however, does not mean that any fertilizer named for a particular crop will under all conditions give the best results.

To use fertilizers intelligently it is absolutely necessary that a study be made of the fertilizers themselves and the crop and soil requirements. The first can only be got by studying the literature on the subject and by observation. The second can be best got by reading and experimenting.

CALCULATION OF THE VALUE OF FERTILIZERS.

The true money value of fertilizers cannot be estimated. This would be measured by the increased crop produced and it is manifestly impossible to fix a value to any fertilizer which would be correct under the varying conditions of climate, soil, crop, season, and method of use. It is important, however, for