

plowed under in the spring, (2) clover, and (3) buckwheat. The latter could be sown rather early and plowed under, and this would be especially useful in destroying quack grass and Canada thistles.

Sometimes, according to Mr. Raynor, commercial fertilizers are not kept up to the formula but are of very inferior quality. In order to prove this, it is best to send samples of any fertilizer we are using to the Experimental Farm, at Ottawa, where they will be analyzed free of charge. The actual value of the fertilizer can then be easily reckoned by knowing the following market-value of the various constituents, viz. : Nitrogen twelve to eighteen cents per pound; phosphoric acid, five to nine cents; potash, three to five cents. The value of a commercial fertilizer further depends upon the amount of the above elements which are in a soluble state, or available condition for plant food.

Superphosphate is especially difficult of advantageous application, owing to the fact that the presence of lime in soils tends to render this soluble phosphoric acid insoluble. Superphosphate is found to give the best results on clay soil.

Nitrogen is one of the important elements of commercial fertilizers, but, on light soils, it is apt to leach away, unless there is some green manure to retain it. Nitrogen is largely brought down from the air in the shape of nitric acid. It is also supplied in stable manure, and is the principal constituent of the urine of animals. This latter valuable fertilizer is frequently allowed to waste in the stables, and absorbents should be carefully employed to absorb it. Gypsum is frequently used as an absorbent, and is invaluable for fixing the nitrogen in the form of nitrate, a condition of the nitrogen which is soluble, and thus available for plant food.

Nitrate of soda can be purchased as a special fertilizer for the orchard and garden and is found to be highly beneficial in its immediate effects on growing crops; but, on account of its being soluble, it needs to be applied in the growing season, that it may not be carried away beyond the reach of the roots of the plants.

The fact is that, in gardening or orcharding, we need to make use of every kind of manure within our reach, for the secret of success in this line pre-eminently is found in the abundant use of fertilizers in connection with constant cultivation.

