

HIGH-GRADE FERTILIZERS.

Fertilizers may also be divided into high-grade and low-grade materials. Nitrate of soda, sulphate of ammonia, and dried blood are, for example, standard or high-grade nitrogenous materials. They are so classified because they are fairly constant in composition and furnish nitrogen in some constant and definite form, which will act the same under like conditions. Further, they are rich in nitrogen and the element is immediately or quickly available to the plant. Ground rock phosphates differ in this respect from the above mentioned nitrogenous substances, because, in the raw state, the phosphoric acid for which they are valued, though present in large quantities and quite constant and definite in its form of combination, is not available to plants. After it has been treated with sulphuric acid and converted into superphosphate it is high-grade, owing to the fact that the phosphoric acid has been rendered available.

The various German potash salts, such as muriate of potash, sulphate of potash, etc., are also high-grade, since the composition of each grade and kind is practically uniform in its content of potash, which will always act the same under all conditions, and since they are richer in potash than any other potassic compounds suitable for making fertilizers.

LOW-GRADE FERTILIZERS.

The products which are included in the second class differ from the first, in that they may not only vary in their composition, but the constituents contained in them do not show a uniform rate of availability. Different samples of bone derived from the same source, treated in the same way, and ground to the same degree of fineness, would be high-grade, but because these conditions differ, bone from various sources cannot be depended upon to act the same under similar climatic and soil conditions. The same is true of tankage; but it varies also in the proportion of its two main constituents, nitrogen and phosphoric acid, and in the rate at which they become available to plants. In this class we must also place fish scrap, wood ashes, and the miscellaneous substances that may be used in building up mixed or complete fertilizers.

GUARANTEES.

It is, therefore, evident that mixed fertilizers manufactured from these two classes of raw material differ in value; for the nitrogen from nitrate of soda or dried blood will act quicker and is worth more than that from ground leather or horn. In the making of the ordinary complete fertilizers of commerce, in which nitrogenous, potassic, and phosphatic materials are all mixed together, it is impossible for the purchaser to judge of the nature of the materials used by the appearance, weight, or smell of the mixture, and, furthermore, he can form no idea of the probable amount of plant food constituents present.

To aid in the intelligent purchase of fertilizers the Dominion Government have enacted a law whereby it is made illegal for any manufacturer or manufacturer's agent to offer for sale any fertilizer without giving a guarantee of the