

Again, it is not all crops that call for special potassic manuring. On our staple cereal crops, wheat and oats, potash seldom gives a remunerative return, save on the lightest and driest soils. Barley for malting purposes is to some degree an exception among the cereals, frequently responding profitably to potassic manures and particularly so on sandy soils.

If potassium is one of the essential elements for growth, as we have stated, it must perform certain vital functions in plant nutrition. The most important of these, it would appear, is related to and indispensable for the production of the carbohydrates—starch, sugar and cellulose—within the plants. Hence it is that crops rich in those constituents—mangels, sugar beets, potatoes, etc.—are those which are specially benefited by potassic manures. Fruits, large and small, and the leguminous plants—clover, peas, etc.—must be added to the list of those responding to potash. These are the crops, then, on sandy, gravelly loams, for which potash should be reserved, whether it be contained in a purchased fertilizer or one of the home resources, as wood ashes, seaweed, etc.

#### THE PRESENT SUPPLY.

It is impossible to state what quantity of German potash salts there may be at the moment in the American market, probably the stock is almost entirely in the hands of the fertilizer manufacturers, who will find it more profitable to sell it in mixed goods, that is, with nitrogen and phosphoric acid as complete fertilizers, rather than to dispose of it as the muriate and sulphate directly to the farmer. The outlook therefore, is that these latter compounds will be unattainable until such times as a fresh supply is obtained from the Stassfurt mines. But as it is stated on fairly good authority that three-eighths of the annual supply was received before the war began, it will be obvious that we are not yet entirely destitute.

The results of the cutting off of the supply will naturally lead the manufacturers to the putting out of brands with a low potash content; they will endeavour to make their stock go as far as possible. There will be brands containing two and three per cent of potash that of late years contained eight or ten per cent. These will be in a large measure comparable to those on the market twenty years ago. It has only been in quite recent years that the potash content in mixed fertilizers has been raised, in response to a demand from farmers for a larger proportion of this element, especially in brands intended for potatoes. This demand has arisen more particularly from good returns from the use of high potash fertilizers on sandy loams and soils rich in organic matter, but it is a question whether results generally, and especially on soils containing a fair amount of organic matter, warrant the large dressings of potash that have of late been used. Certain experiments conducted by the Experimental Farm system have not furnished any definite evidence as to the profitable employment of high potassic fertilizers, on ordinary soils in a good state of cultivation.

#### POSSIBLE COMMERCIAL SOURCES.

Before drawing attention to the farmer's home sources of potash it may be well to attempt an answer to those inquiring if Canada has not some larger sources of potash—raw material—that could be worked commercially and thus place us in an independent position with regard to the German salts. She probably has such stores, in orthoclase feldspar and certain allied minerals, in saline deposits at greater or less depths and in the seaweeds on her coasts, but hitherto these have not been commercially exploited for the reason that the cost of extraction of their potash would not have permitted the product being placed on the open market in competition with the Stassfurt salts. And it is even now doubtful if capital could be induced to venture on the scale necessary to success, seeing that the initial stages of such an enterprise are seldom wholly successful and that the output of the German mines,