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REMEDIES FOR POTASH SHORTAGE

Editor of the Journal of Industrial and Engineering Chemistry:

A good deal of ridiculous although perhaps well-meant material is appearing in the daily and weekly press in regard to remedies for the potash shortage. Some of these are so far from the truth that it seems desirable to make some statement about the matter which is based on fact.

Various suggestions have been made in regard to the steps to be taken by farmers in reference to the shortage of potash in their fertilizers, caused by the greatly reduced shipments of potash from Germany since the first of August. Most of the fertilizer companies have endeavored to make the potash on hand go as far as possible by selling for the present brands of complete fertilizers containing only 2 or 3 per cent of potash and withholding from sale, brands containing larger amounts.

The suggestion that some or all of the potash be replaced by phosphoric acid is absurd, for every school boy knows that one plant food cannot take the place of another. There are some indirect fertilizers, such as lime, gypsum and salt that can release a limited amount of potash from some soils that contain hydrated silicates of alumina and potash. But if these soils have already been treated with lime or have received repeated dressings of the usual forms of fertilizer containing soluble phosphate with its accompanying gypsum, then the potash in the hydrated silicates has to a large extent already been replaced and the use of more lime or gypsum or salt could not be expected to release much additional potash. Ground limestone or oyster shells act too slowly to be used as potash releasers.

The residue of soda left in the soil by nitrate of soda is more effective in releasing potash than is gypsum and hence goods, in which the nitrogen is largely in the form of nitrate of soda, may have a special value in the present emergency.

It is often stated that decaying organic matter releases potash from the soil but there seems to be no direct evidence of this. On the contrary, Dr. S. Peacock states in the *American Fertilizer* of Sept. 5, 1914: "Several thoroughly competent researches have shown that decaying organic matter has little effect on converting inert mineral plant food in the soil into available form."

In any soil the amount of potash capable of being released by these indirect means is a very small fraction of the total potash in the soil, most of which exists in a form about as soluble as window glass. There is no known profitable method for rendering this inert potash of the soil available fast enough to provide for profitable crops. Whatever temporary expedients we may employ in the present emergency, we must keep in mind that the potash thus removed from the semi-available soil reserves must later be replaced if we are to maintain the soil's productiveness.

There is danger in the statement that farmers have been using an excess of potash. Crops use on the average about two and one-half times as much potash as phosphoric acid, while the average fertilizer sold contains only half as much potash as phosphoric acid; yet no one claims that we are using too much phosphoric acid. The potash remaining from previous fertilization is practically nothing except in the limited areas where a ton or more of fertilizer has been used per acre on truck crops.

Very rarely is half as much potash applied to the wheat, oats, corn or cotton crop as the crop removes.

The potash mines are so numerous and the stocks on hand so large that supplies can be promptly sent forward, as soon as European conditions permit freight shipments to be resumed.

H. A. HUSTON

NEW YORK CITY
September 16, 1914

DR. LEO H. BAEKELAND IN JAPAN

The letter printed below has been received by Dr. Jokichi Takamine from Prof. Dr. Joji Sakurai, Dean of the College of Science of the Tokio Imperial University, regarding the visit of Dr. Leo Baekeland to Japan:

"MY DEAR DR. TAKAMINE:

"I have duly received your favor of July 8th, introducing Dr. Baekeland, and also your letter of July 9th, regarding his visit to Japan.

"I had already been advised by your friend Mr. Shiohara concerning Dr. Baekeland's visit, and as I wanted to do my best to give him a rousing welcome, I notified the several members of both the Tokio Chemical Society and Society of Chemical Industry, and held a meeting on July 9th to discuss the plans for welcoming our distinguished visitor. Dr. T. Takamatsu, President of the Society of Chemical Industry, myself and three others were appointed as a reception committee.

"We completed arrangements on August 1st, and sent out over three hundred invitations for a dinner to welcome Dr. Baekeland on August 10th, under the joint auspices of over thirty of the leading members of the Tokio Chemical Society and the Society of Chemical Industry, as well as over twenty leading business men who are connected with chemical industry.

"The dinner was held at the Seiyoken Restaurant at Uyeno-Park, and despite extreme heat there were over sixty people present. It was one of the most successful dinners we have had recently. Dr. Baekeland seemed well pleased with the reception he received. By my colleagues' recommendation I served as the toast-master for the evening; my toast, of course, was in English, but as the majority of the people present were not conversant with English, it was printed in Japanese beforehand and was distributed among those present. Dr. Baekeland spoke for about half an hour on 'Original Research Work,' and Dr. K. Kondo interpreted his speech into Japanese. The event was a most pleasant and interesting one.

"We had expected that Dr. Baekeland's sojourn in Japan would extend to the middle of September, and it was my intention to ask him to deliver a general lecture before the gathering of students after their return to school from holidays, but we had to abandon this plan on account of Dr. Baekeland's limited stay in our country.

Very sincerely yours,

JOJI SAKURAI."

TOKIO, JAPAN, August 12, 1914

Professor Sakurai's toast to Dr. Baekeland was as follows:
"YOUR EXCELLENCIES AND GENTLEMEN:

"I esteem it a great privilege to have been asked to preside over this dinner, and I have now the great pleasure to propose the toast of our distinguished guest—Dr. Baekeland. I am fully aware of the difficulty of the task I have to perform, however pleasant it may be, and I really think it unfortunate that some one more able and eloquent than myself has not been chosen for this important task. But, unworthy as I am of the chair, I can assure you all that I am second to none in the desire of extending a most hearty welcome to Dr. Baekeland. It is, moreover, a relief to me to think that our guest is a man of science, who cares more for plain words and naked facts than flowery speeches and diplomatic etiquette, a circumstance