

### Rock Phosphate as a Fertilizer

T. O. Clark, B.S.A., York Co., Ont.

In Farm and Dairy of October 30, there appears an article on the application of phosphates which might cause confusion to many farmers not familiar with artificial fertilizers. The article emphasizes the cheapness of ground rock phosphate. This cheapness is essentially due to its non-availability. We are told by authorities that the value of a fertilizer is judged by its "degree of availability," that is to say, its value lies in its power to give up the plant food contained in a comparatively short space of time.

Under present conditions in this country we demand quick returns on money invested. If a farmer does not get profitable returns from an application of artificial fertilizers from the first crop, he invariably speaks of his investment as being a failure.

Ground rock phosphate contains from 20 to 40 per cent. of phosphoric acid in the form of tri-calcium phosphate, practically an insoluble compound. To become available this substance must undergo two changes in the soil before it is available; the available form being mono-calcic phosphate. An average soil contains an excess of phosphoric acid for any crop in the tri-calcic form, yet these soils in many cases do not yield a maximum crop owing to the insolubility of the phosphates. For this reason, why should we apply more of that of which we already have an abundance? Even allowing for its cheapness it would be false economy.

#### RENDERING PHOSPHATE AVAILABLE

By treating with sulphuric acid the phosphates in this insoluble rock form are made available and the phosphoric acid is easily assimilated by plants. By applying phosphates in the form of acid phosphate we get immediate returns, whereas an application of ground rock phosphate will show no beneficial results for three or four years.

These few facts naturally bring up the question of the proper time to make application. Obviously when using the "ground rock" form the time to apply rests entirely upon the point of convenience, as moisture alone has no effect on the availability. If the soil is very rich in humus, small quantities of the phosphates will become available, due to the action of the acids therein.

In applying the more soluble forms, acid phosphate and basic slag, climatic conditions will influence to a large extent the time for applying; basic slag being very slowly soluble may be applied in the fall under most conditions. Acid phosphates is usually applied in the spring, the prevailing tendency being to leave the applications until very late; thus the crop does not get full benefit from the application. Owing to rush of work in the spring, late fall application may be recommended, as there is little, if any, loss caused by rain.

Fertilizers are applied to supplement the amount of available plant food already present in the soil. Thus, when applying phosphoric acid, it is advisable to use nitrogen and potash, mixing the three ingredients in the proportion required by the crop to be grown. If any one of the three is deficient in the soil the crop cannot utilize to the fullest extent those elements which are present in sufficient quantities.

### Milking Machine Experience

Isaac Holland, Oxford Co., Ont.

We have used the milking machine since June of last year, and I am glad that we purchased one. I cannot say that it works first-class on all of my herd, but it certainly saves a lot of time and work. We are not all tied to milking every chore time, as we were when we had to milk altogether by hand.

I don't believe there is any decrease in the amount of milk when using the machine, if the stripping is done well. A person starting to use a machine should be careful for a time that he is getting all the milk from each cow.

I would not advise a person to install a machine for immediate use at this season of the year, unless he has a number of new milkers. I think one would get more satisfaction by starting when cows are giving a better flow of milk.

We did not have much trouble in getting the cows accustomed to mechanical milking. A person must not, however, get discouraged with the machine the first few days that he uses it. We have not noticed any bad effects on the cows'



Machine Milking in the Stable of a Good Farms Competition Winner

Those of our folks who have read Farm and Dairy for the last three years will be well acquainted with the success of Mr. Isaac Holland, Oxford Co., Ont., as a farmer and as a competitor in Farm and Dairy's Prize Farms Competition. The illustration herewith shows Mr. Holland's latest venture—a milking machine Mr. Holland tells of his experience with mechanical milking in the article adjoining.

udders or teats through the use of the machine.

Our machine has never been out of working order a day since we have had it. With what experience I have had with the machine I would not hesitate in purchasing another, in case I did not have one.

### Why are Sheep Decreasing?

J. H. Griadale, Supt. Dominion Experimental Farms

Why are sheep decreasing and so many farmers opposed to raising them?

Sheep are decreasing in my opinion for the reason that farmers keep so few that they do not know how to handle them, and since they form such a small part of the farming operations, farmers are tempted to get rid of them if everything does not go just right.

As a further reason for farmers getting rid of the small flocks, as has been the case for many years in Quebec, is the peculiar kind of fencing necessary to restrain or keep sheep in bonds. A fence that will turn cows or horses is quite useless for sheep. Hence the farmer feels as though he has to fence his farm twice if he wishes to keep a few sheep. As woven fences gradually supersede barbed wire fences, sheep farming, I believe, will begin to pick up again to a certain extent. This seems a very insignificant reason for the abandonment or the falling off in an industry, but it is in my opinion one of the most potent influences affecting the sheep population in the province of Quebec to-day.

### The Tariff and P.E.I.

Joseph Reid, Prince Co., P. E. I.

How will agriculture be effected in this province and Eastern Canada by the Underwood American Tariff? Briefly stated, agriculture will be affected very favorably all over Canada, and more especially in this province and the Maritime Provinces generally.

Owing to climatic conditions the farm products of these provinces will, at certain seasons of the year, find a ready market in the United States—indeed, not only a ready market, but so extensive a market that our people will double their output inside of a very short time. The great drawback to the development of agriculture in Nova Scotia and New Brunswick heretofore was the proximity of Prince Edward Island with its self-drained, fertile, easily-tilled soil, void of stones, which would produce in such abundance and at so little cost all kinds of farm produce grown in this latitude that the Nova Scotia and New Brunswick farmers were at the mercy of the Islanders, who could undersell them and make money where the Mainlanders, to compete on even terms as to selling price, would lose money.

#### NEAR MARKETS RELIEVED

Prince Edward Island is placed alongside of the great United States open markets by her water communications and her surplus products will find a market along the Atlantic seaboard, thus relieving the downward pressure on the markets of the industrial centres of Nova Scotia and New Brunswick, which provinces agriculturally will now be pressed into supplying foodstuffs for local wants without fear of being invaded by cheap Island products.

The discouragement of agriculture in this and our near sister provinces was only partly due to low prices. It was due more to the need of a wider market—a market that would avoid gluts. The new tariff gives us this new condition and the farmers here may now produce what Nature encourages them to produce in any quantity and as Nature has endowed this section of Canada with splendid conditions for feeding an immense population. We may expect a great impetus to agricultural development.

#### TRANSPORTATION BENEFITS

Agriculture will also reap a great benefit indirectly by the tariff changes through the economic element involved in the transportation problems; it is not generally realized that we are nearer the United States markets in point of freight rates, which is the real measure of distance between producers and consumers, than even the competing producers of the United States themselves. For instance, the freight rate on potatoes from Aristook, Me., to Boston is higher than it will be from either Charlottetown, Summerside, Halifax, or St. John by water-borne freight, and we can get there quicker also in point of time.

This benefit will be accentuated when our Government takes the duty off potatoes, as it will be forced to do, no matter which party is in power, not because of the countervailing duty, but because the Canadian consumers' demand will be imperative—this means reciprocity in trade in potatoes which, though it will lack the protective features of the Fielding-Knox agreement, will yet give the economic value of an exchange of mar-

(Continued on page 9)

I thorough  
ter, record i  
freshens. Th  
during her d  
portance. An



Warrington 6  
one of the m

during this  
the produc  
referring to  
to the small  
ing from his  
of milk a ye  
The too co  
milk the co  
them' durin  
tion, and I d  
can name h  
in summer,  
winter a r r  
through the  
mixed hay,  
perhaps a fe  
happens to b  
is the bigges  
ration.

why cows

These dair  
tiredly forget  
strain on the  
dry period in  
Consequently  
weakened co  
spring is ext  
ately weak  
condition to s  
lactation peri

I have no  
man who has  
ing in the sp  
on the sum  
give him the  
come. I do i  
believe, how  
cows off as s  
rives. I fee  
keep the cow  
within two m  
they freshen  
as the pastur  
are fed corn  
grain, gener  
and cottonse  
ter feed the c  
of clover hay  
much ensilag  
During this  
efficiency of

During this