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NEW SERIES.

The Field.

Liming Land

The application of lime to the land in greater or less quantities is a very common practice in Britain, though but little followed in this country. Considering how cheaply the article can be produced, and the lasting good effect of applying it to the soil, it is a matter of considerable surprise that the practice of liming land is not more general with us.

The properties to which lime owes its chief power in promoting vegetation are twofold. It is an alkali, or rather alkaline earth, that acts as a solvent on many vegetable acids by combination, forming with them a compound soluble in water, and thus more readily taken up by the roots of plants. Thus, on soils containing a large amount of humus it proves extremely beneficial. It is more porous than clay, and has therefore a mechanical effect in rendering clayey soils more friable and workable, as well as being of a manurial value in assisting the decomposition of the vegetable salts in the soil. This is termed correcting its acidity. Wheat and mangolds contain a considerable proportion of lime in their composition, which accounts for the necessity of having sufficient lime in any soil to ensure good crops of wheat or mangolds.

Lime acts most quickly and powerfully when used in its caustic state, in the form of quicklime, and applied in this form to the soil, especially to one abundant in vegetable matter, it soon acts, and reduces the half-decayed weeds and roots into soluble plant food. Hence the value of quicklime when applied to fallows or clover leys a week or so before wheat-sowing.

But lime in this state usually requires great care in handling, or injury to the person using it may result, and so the most general way of applying it is in the milder state of slaked lime.

The best time to apply lime is either in early spring, on the land after ploughing for spring crops, and before it is harrowed down preparatory to seeding, or in the fall on sod land that has been just broken up, to be followed by roots or corn. The lime will then have time during the winter season to decompose the roots of the grasses, weeds, etc., in the soil.

There are some soils that already contain sufficient lime for all practical purposes. These are usually called limestone soils, and overlie the limestone formation of rock, or have gravelly or shaly limestone in their composition.

As lime contains but little, if any actual elements of fertility, but rather acts as a solvent or digester of those already in the soil, its tendency is to cause the soil to become more quickly exhausted of its fertile salts, by enabling larger crops to be grown, unless they are returned to the land in the shape of organic manures. On soils that are poor, or have been already over-cropped and exhausted of these organic matters, the application of lime will be of no benefit whatever.

For the same reason, when once lime has been applied, if the land is still kept well supplied with organic matters through the use of barnyard manure, etc., it is well to renew the liming once every few years, if the greatest degree of productiveness is desired.

The quantity of lime that can be usefully applied to the land depends much upon the quality of the soil. The richer and heavier the soil the greater may be the quantity given.

In England it is no uncommon thing to apply a dressing of three hundred bushels

per acre, while the average rate may be estimated at one hundred bushels per acre. In France it is more commonly applied annually, in smaller quantities of from five to ten bushels per acre. This last plan would probably be most applicable here, as our system of tillage is like that of France, somewhat too shallow, and as lime naturally sinks into the soil after a time, a heavy application all at once, at intervals of ten to fifteen years, would soon settle down to the hardpan, and become inoperative before half its work was accomplished.

Lime needs to be applied evenly over the surface, and when both the lime and the weather are dry; otherwise it will run into lumps before it can be mixed with the soil.

Soils that are wet, or subject to retain surface water, will gain no benefit from the application of lime, unless they are first drained.

Culture of Sugar Beets.

Mr. James Howard, M. P., in his report on European Continental Agriculture, gives an interesting account of his visits of inspection to several large growers and manufacturers of Beet Root Sugar in France, Belgium and Germany. This portion of his paper, as stated in our recent notice of it, we reserved for future consideration, and now give an extract on the practical point of culture and management of sugar beets.

At Cologne he visited a large concern known as the Rhenish Beet Root Sugar Company, that in addition to the roots grown on a farm of their own of 7,200 acres, purchases large quantities of beets from the surrounding farmers at 20s. per ton, the pulp being returned to them free.

This firm has issued printed instructions for the guidance of the farmers, which translated into English are as follows:

" 1. In order to grow good sugar beet it is necessary that the land intended for the roots