

For the reasons above-stated, this mode of applying lime is preferable to all others. By it we mix the lime thoroughly with the soil, and obtain immediate return for its cost, a consideration of the highest importance with farmers, who have not the ability to lay out of the profits of their money for several successive years, but need an immediate return. Again this mode gives not only the speediest reward, but gives a much greater profit than any other mode in the same number of years, which is the ultimate end of the application of all manures.

It has been a much mooted question, whether lime should be applied in its *caustic* or slaked state. Pure limes, i. e. those which are not magnesian limes, should be applied, if possible, in their caustic state. We save by this nearly fifty per cent. in the hauling, always a large item in the application of lime; but great as this is, it is not the chief reason. I have spoken of the necessity of the perfect solubility of manures before they can enter into the structure of plants. A soil sometimes may contain all the necessary constituents, but not in a form capable of assimilation. The application of quick lime to soils sets free and renders soluble all the necessary constituents. Chemists frequently avail themselves of this power of quick lime in rendering soluble substances, which otherwise would take a very long time to dissolve. In the laboratory this effect is aided by heat, and takes place immediately; the same effect takes place more slowly in soils, but with equal certainty, without heat.

Some clays have all of the necessary constituents in good proportions, but these are held together so firmly by their affinities that plants cannot obtain enough for their support. The addition of quick lime disturbs their affinities, sets the different substances free, so that plants thrive and grow on land which before scarcely produced any thing.

Quick lime also decomposes the organic (vegetable) matter in a soil giving salts to the nourishment of crops.

*Every soil should be thoroughly drained* before lime or any other manure is applied to it.

Lime should always be applied to the soil in as dry a condition as possible, for when it is wet it becomes cemented into lumps which become very hard, and a long time elapses before they are broken down and mixed with the soil. While it remains in lumps it is of no use to the crops, and those who apply it in this condition not only lose actually the lime, but also its effect on their crops; each a matter of great consideration. Magnesian limes should not be spread on the lands until the lime in them becomes slakened. If put on in the caustic state, water will cause the magnesia and lime to form a cement, and small balls will be formed which require a long time to fall to pieces. There is a custom prevalent in some sections of the State, of mixing caustic lime