

Gypsum or Land Plaster.

Gypsum may be valuable agriculturally in furnishing lime for plant growth, as it is fairly soluble in water, but since in this form lime is combined with sulphuric acid and is present in a neutral condition it follows that *gypsum has no value for the treatment of sour or acid soils*. For this purpose it cannot take the place of quicklime, slaked lime, or marl or ground limestone, which are essentially alkaline in character.

The two chief agricultural functions of land plaster are its property of flocculating clay and its effect or influence on the insoluble potash compounds, setting free this element in forms available for plant use. The first of these functions makes it valuable for the dressing of heavy clay loams, which it improves in tilth by rendering them less plastic, more open and friable; in a word, mellowed and more easily worked.

The Application of Lime Compounds.

Quicklime.—In order to facilitate its uniform distribution over the soil, quicklime should be slaked. Place the lime in small heaps of about a bushel each at regular distances on the field to be treated. Pour a little water, about one-third the weight of the lime, so that the slaking may be gradual and a fine powder result, on each; cover the heap with an inch or two of moist soil and allow to remain for two or three weeks, when the lime will be thoroughly slaked and fall into a fine powder. Mix the slaked lime with a little soil and spread with a shovel, choosing preferably a damp day for the work.

Forty heaps of about 50 pounds or twenty-five heaps of 80 pounds each is an application of approximately one ton per acre.

Slaked Lime.—This is in the form of a powder and may be most conveniently, pleasantly and uniformly spread by employing a lime spreader or fertilizer drill. It can, of course, be spread from a wagon box, but the operation is more or less disagreeable. If this method is adopted, the mixing of the slaked lime with a little fine soil is said to make the handling less unpleasant.

For these more caustic forms—quicklime and slaked lime—autumn is probably the best season for application, spreading on the ploughed land and immediately harrowing it in. The aim should be to incorporate the lime with the first three or four inches of soil. The tendency for all lime compounds is to sink to be washed down by the rain, and, therefore, they should never be ploughed under. It is better to make light applications frequently, say once in a rotation if necessary, than large applications at longer intervals. It is well to err on the side of too little than too much, especially if the organic content of the soil cannot be constantly enriched.

Ground limestone.—The essential points to be remembered in the purchase of this form are composition and degree of fineness. If a quick prompt action is desired, a material 75 per cent of which passes through a sieve with 100 meshes to the linear inch, will be found satisfactory. Coarser ground lime may, however, be successfully used—say 50 to 75 per cent passing through a 50-mesh sieve—and all through a 10-mesh sieve—if immediate and, in a sense, quick, dressing is not important.

The application may be from two to ten tons per acre, according to the character and the acidity of the soil and the degree of fineness of the material. Unlike quicklime and slaked lime, excess of ground limestone can do little harm and the same holds true of marl.

The application of ground limestone and marl offers no special difficulty or unpleasantness; a spreader may be used or the material distributed by a shovel from a wagon. They may be applied at any season of the year and are especially suited, as has been stated, for light loams and soils generally that are deficient in organic matter. As with lime they should be harrowed in, not ploughed under, in the case of meadows or pastures, merely spread on the surface.