

Lime and its Uses.

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I was informed, in Edinburgh, Scotland, by a highly educated gentleman that many farmers in his neighborhood were accustomed to use from 500 to 1000 bushels of slacked lime per acre; he further said that there were farmers owning peat moss farms in the north of England, and likewise in parts of Ireland, who had used eleven and twelve hundred bushels per acre. They occasionally used, with very good effect, salt with their lime. I saw a farmer living on the domain of the Duke of Buccleugh, near the borders of England, sowing lime, on which he said he had put about six bushels of salt per acre; he was sowing at the rate of 400 bushels. The year previous, by the application of salt and lime, he had produced $3\frac{1}{2}$ tons of hay to the acre, when the contiguous lot only yielded two tons. For the last five years, I have always used a small quantity of salt in all my compositions for grain, grass, and root crops, taking the idea from the Scotch farmer. I invariably soak my cereal grains in a strong salt brine before planting, and have on two occasions used scalding brine upon wheat, with great success. The effect was to swell the grain to a size that it could not attain in the earth, under ordinary circumstances, in three weeks. The aquaspine was in many cases plainly discernable.

In potatoe culture, lime I believe to be a sovereign remedy, if properly applied, against the evil effects of insects, which cause the rot now so prevalent throughout the world; the tops of potatoes contain a very large percentage of lime, consequently, it is indispensable to its growth. Place lime upon a heap of potatoes, the majority of which are half decayed, and you will find decay in the balance will immediately cease. I have sown lime at the rate of 200 bushels per acre, upon half a ten acre field of wheat, and left the balance unlimed. The consequence was, the unlimed portion was entirely destroyed by the weevil and rust—when the limed portion produced fifty bushels to the acre of wheat, weighing 64 1-2 pounds to the bushel. I have seen the same effect produced in oat, rye, corn, potato, and buck wheat fields. When you find a field does not

produce a crop equal to your anticipations, in nine cases out of ten, an application of 200 bushels of oyster shell lime to the acre, at a cost of 12 dollars, will produce capittal crops for six years afterwards—at the expiration of which time, if the ground is not ploughed deep during the interim, you will find at the depth of 11 or 12 inches, a complete level floor of lime, which gradually finds its way to the subsoil, where it forms a level surface, and remains until brought up by deep ploughing; it will then benefit your soil for another term of years, in the form of chalk, its action as a solvent having ceased. Abroad chalk is more used for agricultural purposes than any other, limestone species; it is composed of flint, clay oxide of iron, carbonate of lime, and water. Lime is therefore one half more profitable as a manure than chalk; for the reason that it dissolves hard substances, and fits them as the food of plants, before it again absorbs carbonic acid gas in sufficient quantity to become as chalk. There is one question I have to ask of learned members of this club which is this—how do plants take up in their system carbonate of lime, which is known to be an insoluble substance, and yet in all plants and vegetables, carbonate of lime is found to exist. It can only be, I think by attracting a large volume of carbonic acid from the atmosphere which becomes a bi-carbonate, and in this state is soluble and capable of being taken up by plants.

I had a conversation the other day with a scientific agriculturist, Mr. Wilkins, who has an extensive rice plantation in South Carolina, on the subject of lime. Mr. W. states that a portion of his plantation was considered by his manager, as unfit for rice cultivation, or in fact any other. He advised that it should be thrown out rather than lose the time requisite to reclaim it. M. W. thought otherwise, and determined to lime it—although the land was exceedingly wet. M. W. ordered his slaves to carry the lime on in baskets. It was spread over the field and hord in; the rice was then sown and cultivated in the usual manner.

The result was 56 bushels of rice per acre, a larger yield than was usually attained on any other part of the domain. That piece of land contained all the chemical requisites, eleven in number, except lime; the consequence was, no crop could be grown upon it, and it was considered barren; whereas, by application of perhaps \$2, worth of lime per acre, it was rendered highly fertile, and capable of yielding a fine crop of rice—proy-