

1884, 474.9; 1883, 863. Carrots, aggregate, 1884, 4,197,200; 1883, 364. Turnips, aggregate, 1884, 41,406,363; 1883, 29,879,535; average, 1884, 426.2; 1883, 301.

THE USE OF LIME AS A FERTILIZER.

BY HENRY STEWART.

The best time to apply lime is in the fall, for the reason that it is more easily dissolved in cold water, and is then the more actively effective. It is also a more convenient season for the work than any other. The manner of using it is to draw the lime as fresh as possible from the kiln, and drop it in the field in heaps of one or more bushels a certain number of feet apart, this depending upon the quantity to be used per acre. Thus for spreading the following quantities the sizes of the heaps and the distances apart will be as follows:

40 bushels per acre is a bushel 33 feet apart.
50 bushels per acre is a bushel 30 feet apart.
60 bushels per acre is a bushel 27 feet apart.
80 bushels per acre is two bushels 33 feet apart.
160 bushels per acre is two bushels 30 feet apart.
120 bushels per acre is two bushels 27 feet apart.

The table may be easily carried on up to 300 or more bushels by a simple process of addition to the size of the heap. This method is chosen because at thirty-three feet apart the heaps are easily and accurately spread by casting the lime with a long-handled shovel sixteen and a half feet, or one rod, in every direction, and sixteen and a half feet is an easy cast with such a shovel. The lime having been drawn and dropped in the field, is left until it has absorbed from the air or has received from the rain enough water to reduce it to a fine powder. It is then air slacked and should be evenly scattered without loss of time, because more water would make it pasty, and it could not be evenly spread in that condition. The best way to apply it in the spring is on the ploughed ground or upon the meadows during the present or the next month. It should never be ploughed under, as it works downward very rapidly, and would soon pass below the reach of the roots. It should be harrowed in the soil along with the seed, and it will do no harm if the manure is covered in at the same time, for reasons to be explained presently. It may be spread directly from the waggon, the heaps having been made upon the headlands or in an adjoining field in quantities of one hundred or more bushels. As soon as the lime has been properly slacked, it may be drawn upon the field and scattered upon each side in strips thirty-three feet wide, or sixteen and a half feet (one rod) from the centre of the waggon-box. A waggon-box will hold conveniently for this purpose twenty-five bushels, so that a load of this size will cover a strip fifty rods in length for fifty bushels per acre, or twenty five rods if eighty bushels per acre is used. In this way the quantity spread can be accurately measured. A waggon-box of the usual size will hold forty bushels of lime when slightly rounded up.

The action of lime upon vegetable matter, as has been already stated, is to liberate ammonia from it and to produce nitric acid by hastening its oxidation or decomposition. If mixed with decomposed manure, it rapidly drives off the ammonia in vapour or gas, and it rapidly changes the nitrogen of raw manure into very soluble compounds. Thus, if mixed with manure, either old or fresh, without precautions, it will soon deprive it of its most valuable properties. This is so well understood that there exists among well informed farmers a prejudice against the use of lime, under the impression that it "eats up manure," "impoverishes the ground," and generally acts in a wasteful and prodigal manner. It is

well that this impression exists, because lime is a substance to be used with knowledge and judgment. It should never be mixed with old manure in a heap at all, nor with fresh manure unless it is in the compost heap, where a large proportion of earth, soda, or plaster is used; and these will act as absorbents of any ammonia liberated or nitric acid formed by the action of the lime. But in properly constructed compost heaps lime acts as an active agent to produce an active decomposition of the mass and quickly prepares it for use in the field. Also, when lime is spread upon newly manured soil its action is not wasteful, because the soil at once absorbs the ammonia that is liberated and holds it until it is finally prepared for the use of the crop.

From the above explanation it is readily seen how true may be the old adage that "lime enriches the father, but impoverishes the son," as though the former spent his substance in expensive enjoyments and left his son without inheritance. This is true enough if the lime is used without judgment, just as money may be spent recklessly. But no one blames the money for this, nor should we give the lime discredit for the fault of those who use it. Lime is a food and an active provider of food at the same time. It thus gives the plant what it has in itself, and all that it can draw from the soil as well. In this lies at once its usefulness and the danger of using it. If a farmer uses it to drag from his field all the fertility contained in it as he would drag a fish pond with a net, or spend from his pocket without returning to it, then he injures himself by exhausting his land; but if he gives manure, plows under clover, feeds more stock with his enlarged crops, and returns to the soil the food supplies he has drawn from it, then he uses this valuable fertilizer in a profitable manner, and will find it the most remunerative manure he can use for the money spent in it. The usual price of lime at the kiln is from ten to twelve cents a bushel of eighty pounds when fresh burned, or half that price for slacked or waste lime. The former is the cheaper. One who has limestone to be easily procured, or abundance of clam or oyster shells, can burn it in kilns or pits for five cents a bushel, with wood or coal as fuel. At these prices there is no cheaper way of improving land than by using lime.

The pastures in wood-lots are generally so poor that they cannot be depended upon. Where a maple grove can be formed by cutting out other trees, the wood-lot can sometimes be profitably used as a pasture. It should be seeded with orchard grass, that being best adapted to growing in the shade.

THERE is so much level arable land in this country that there is no necessity for a long time to come for ploughing steep hill-sides. Such ploughing involves immense losses by the washing of the loosened soil on the level lands below, where there is already an excess of vegetable matter. Many rough hill-sides should never have been cleared of their original forest, or if cleared should have been replanted with timber with as little delay as possible.

Those farmers are unfortunate whose necessities oblige them to sell grain at present low prices. It is better to restrict farm operations than to extend them when the product of the soil, if sold, detracts as much in value from its fertility as the price it brings. This fertility must sooner or later be restored. When grain is cheap the farmer should strive doubly hard to dispose of it in the shape of pork, beef, poultry, or the products of the dairy and henhouse. Even if he does not get full market rates for grain so fed he will be the gainer in the end.

HOUSEHOLD HINTS.

Flowers may be kept very fresh over night if they are excluded entirely from the air. To do this wet them thoroughly, put in a damp box and cover with raw cotton or wet newspaper, and place in a cool spot.

Cut some new turnips into quarters, put them into a sauce-pan with a piece of butter, give them a toss or two on the fire, then pour in enough stock to cover them; add pepper and salt to taste, also a little grated nutmeg, and let them stew slowly till done.

To keep worms from dried fruit place your fruit in a steamer over a pot of boiling water, covered tightly. When thoroughly heated, tie them immediately in a clean linen or cotton bag and hang them up. This method is preferable to heating in an oven, as that is apt to render them hard, even if you are so fortunate as not to burn them.

CARLIFLOWER is particularly good when boiled until tender, changing the water twice, and taking care that no scum is left to discolour it. When done drain off every drop of the water, and pour over the cauliflower, while still in the kettle, some milk, adding a good sized lump of butter and some pepper and salt; let this just come to a boil. Serve hot.

A DELICATE dish for dessert is made by paring six ripe, tart apples, cut them in halves, put half a pound of sugar into a sauce-pan, with half a pint of water, add the juice of one lemon and let this boil until it is thick, then lay in the apples. When they have simmered until they are tender, take them out, drain them on a sieve and let the syrup boil a few minutes longer. When the apples and syrup are both cool, put the apples carefully into a glass dish and pour the syrup over them.

THE latest fancy in sheets and pillow-cases is to make them of black, red, pink, blue, or primrose, yellow Surah, or foulard silk; trim them with cream, ficelle-gray, or black lace, and use them only when necessary to receive, in spite of indisposition, in bed. The coverlet over such sheets and pillow-cases is of silk broche, any colour preferred, lined with satin to harmonize, and bordered with swans' down, feather bands, or light fluffy fur. The camisole or gown must match the colour of the sheets.

For a luxuriant growth of green in winter, put some lumps of charcoal in the bottom of a suitable vessel (I use one of my hyacinth glasses) and fill with water, or take an ordinary flower-pot, making the bottom tight; put in the charcoal, cover with sand to the depth of two inches and fill up with water. Put in thrifty slips of English and German ivy, and the varieties of tradescantia. If sand is used, place the stems firmly in it. As the water evaporates fill with fresh. A beautiful effect is produced by simply placing a handful of the heads of wheat in a vase of water. Each grain will send out bright green leaflets and continue to replace the old one for many weeks together.—*Boston Transcript*.

To make choice and delicate pie-crust, the essentials are: A pound of flour, a quarter of a pound of butter, a quarter of a pound of lard, half a teaspoonful of salt, a cup of cold water, a cool room, and quick movements. Put the flour on the moulding-board, spread the butter and lard through it in flakes, moisten with the water, draw into a heap, dust over with flour, and roll out tenderly. Fold and roll out two or three times, when it will be ready for use. Instructions were given in preparing and baking fruit and berry pies of various kinds so that the juices could all be retained in the pie, and both upper and under crusts be crisp and unsoaked.