

for dry gathering. A potato wants to be grown rather slowly, but continuously, and well ripened. It will then be sound and solid, fine grained and of better flavor, also more mellow. Rank growth will give a rank taste, and a watery condition a less concentration of substance.

Experience has demonstrated that it is better to manure in the hill than to apply broadcast. Better a poor soil, with some rich fertilizer in the hill, than rich land; and the best fertilizers are ashes, guano, reduced bones, plaster, &c. Ashes are a special manure for this plant.

Will our farmers who are not in the secret of early planting try it this year? Try it on a small scale, if no other. Put out with the very first mellow soil, if it is March; but be sure and plant deep, never less than six, and better seven inches. When I say better seven, I mean it, particularly with the Early Rose. But do it with all sorts. Do not fear the frost with the seed so deep in the ground. Put a good quantity of unleached wood ashes and hen dung in the hill if the soil is not rich. The ashes and dung should be applied and covered at once, as soon as mixed, or else the strength by the union will escape, and that rapidly. Keep out the grass, keep the ground mellow, and do not kill, avoid a stiff clay, and in no case plant on wet, undrained soil.—Country Gentleman.

BONE DUST IN AUSTRALIA.

Ground bones are one of the most valuable fertilizers known, especially for wheat and garden crops. They are not much used in the West at present, from the fact that farmers do not yet see the necessity of it for our rich virgin soils. Nevertheless, we think it would pay to experiment with this article, one of the chief constituents of which is phosphate of lime, so necessary to wheat. England has ransacked the earth to find bones to apply to her fields, with profit. The West yearly makes vast quantities of this commodity for export. Some of it should be retained at home, for it will pay the farmer, as well as the gardener, to use it as a special manure. The Melbourne, Australia, *Argus*, notices the following method of preparing bones for shipment from that country:

"The manufacture of bone dust and other animal manures has, it seems, greatly increased in Melbourne since meat preserving operations commenced; and as the Australian farmers have not yet got into the way of using artificial fertilizers to any great extent, it has been getting more and more difficult, year after year, to find a profitable market for the manure produced. Considerable quantities are sent to the Mauritius and Ceylon, where it is advantageously used in the growing of sugar and coffee; but this outlet has not proved sufficient, and efforts have lately been made to introduce the manures into the English market. To facilitate this trade, an apparatus has been contrived for compressing bone dust into half its original compass, reducing it at the same time to a form very convenient for shipment. By means of strong pressure, the crushed bones are moulded into cakes of six inches square and three inches thick, something like flooring tiles, each cake weighing a little over six pounds. These bone dust tiles are just adhesive enough to admit of their being handled freely, thrown about like bricks, if necessary, and are yet so free that when required for use they can readily be crushed, or melted by the application of a little hot water. A ton weight of the manure measures twenty-six cubic feet, and contains 252 of the cakes."

ESTIMATED VALUE OF SOOT.

A genuine economist claims that one of the best fertilizers, going constantly to waste, is soot. "It is as valuable as guano and should be carefully saved at least twice a year. You will find soot contains a large amount of ammonia, and on this account is very beneficial to nearly all kinds of plants. Apply it to the soil about the roots, and not to the leaves or stem; or twelve quarts of soot dissolved in a hog-head of water makes liquid manure."

RAISING BEANS FOR MARKET.

In the *Western Rural* for Feb. 27, in answer to inquiries, was stated the commercial names of the principal varieties of beans usually sold in our markets. Pursuant to promise then made, we now give some details of the characteristics of the varieties, the manner of cultivation and curing.

What is known in commerce as "medium beans" are the blue pod, a half dwarf variety with branching stem, dark green foliage, white blossoms, the runners sometimes extending three feet. They are always cultivated without poles, since the runners are abortive and not of sufficient length to interfere with cultivation. This variety may be planted as late as the 25th of June, and will then ripen about the middle of September.

All these varieties that we mention may be cultivated alike. And if implements suitable for cultivating the crop are at hand, we consider two feet to be the proper distance between the rows, the seed to be uniformly drilled at the rate of one bushel to five pecks per acre, since by this system of planting the crops ripen more uniformly and weeds are checked during the later growth. If the rows are two and a half feet apart, one peck less of seed need be used. If planted in hills three feet apart, six to seven seeds in each hill, but twelve quarts will be required. A quart of these beans will contain about 2,700 seeds. On account of the earliness of this variety, it is often planted among corn where the stand is bad, but this plan cannot be recommended, since it seriously interferes with the cultivation, and the crop usually costs more than it is worth.

The variety known as the Pea or Navy Bean is of vigorous growth, branching and sending out many short runners. The foliage is small, deep green, flowers white. It is a late variety, requiring the whole season for maturity. In favorable seasons, however, it will ripen if planted as late as the 20th of June. When pure, the seeds are quite small, of a pure white color, five-sixteenths of an inch long, and a fourth of an inch thick. Planted in drills two feet apart, three pecks of seeds to be used per acre. At two and a half feet apart eighteen quarts will suffice, and if planted three apart, eight seeds in a hill, one peck will plant an acre. About 4400 are contained in a quart.

The variety known as the "Marrow Bean" is really among the very best beans we have, and if better known would become a general favorite. It is from its size somewhat more difficult to cure. It is one of the best garden beans for shelling green, since it parts easily from the pod, and the beans are remarkably white and farinaceous. As a commercial variety, it is second only to the so-called navy bean. If planted in drills two feet apart nearly one and a half bushels of seed will be required per acre. If in drills two and a half feet apart about five pecks will suffice; 1200 of these beans will have a quart.

The best soil for the cultivation of beans is a rather dry, sandy soil; at all events it must not be wet. Excellent crops are raised on prairie sod trench plowed, that is turning the thinnest possible slice under and covering it with another about four inches thick. However you cultivate, have your rows perfectly straight and equidistant. Any of the larger garden drills will sow and cover the seed; cover about two inches deep. Commence to cultivate as soon as possible after the plants appear, but avoid working in after a rain or when the dew lies on the vines. As soon as the blossoms begin to appear discontinue the cultivation. Do not plant till danger of frost is over and the nights get warm. About the time corn is four to six inches high is a proper time for planting, or from the 1st to the 10th of June in the latitude of Chicago, or latitude 41° 40'; making allowance for difference of latitude.

Keep the crop free from weeds at any cost; and a little hilling is advisable. One of the best implements for cultivating beans after they get some size, if in two foot rows, is a single shovel plow. Allow the crop to get thoroughly ripe before pulling, since the danger of shelling and injury from dampness is less while in their roots than after being pulled. If very dry pull, only when damp with dew. In pulling, when a handful is gathered, squeeze the roots firmly together and let the bunches in regular rows tops down.

If rain intervene they must be moved, so that no one part is allowed to hold dampness, since this blackens the beans and necessitates handpicking. When perfectly dry place on scaffolds in the barn, but never in compact bodies; or thresh immediately, and spread the beans in some airy place, where they will have free air.

USE OF MUCK.

Farmers on small wheat farms often find it difficult to keep up the fertility of the soil, not being able to keep enough stock to make manure. These same farmers buy costly and sometimes useless artificial manure, little thinking that the muck of their swamps and river beds, if judiciously applied, would greatly add to the fertility of the soil.

I tried three experiments with it last season, on three different crops—clover, wheat and

potatoes—on three different kinds of soil. The clover grew on a light sandy loam. The field was summer fallowed for wheat two seasons before, and received a heavy coat of barn-yard manure. Last spring I picked out the poorest strip in the field, and top dressed it with muck at the rate of forty loads to the acre. The result was wonderful. That strip, in comparison to the rest of the field, yielded one ton more to the acre. The wheat grew on a gravelly loam. The field was prepared in a summer fallow the year before, and received a heavy dressing of barn-yard manure—all except half an acre, on which 20 loads of muck were spread. The straw on this spot grew stronger and healthier than on any other part of the field. I had no chance of comparing the grain. The potatoes were planted on a dry limestone shale. Those that received muck were large and dry, with very few small ones, while the potatoes on the rest of the field were of poor quality and too small for market purposes.

To prepare muck properly it should be hauled out of the swamp in the spring, piled on a dry knoll, and mixed with a liberal supply of lime, ashes and common salt. During the summer it should be turned over three or four times, until thoroughly pulverized and the compost completely mixed. Leave it to the action of the frost during the winter, and apply to the land in the spring. Every intelligent farmer knows that the liquid manures are of more value than the solids. There is sometimes great difficulty in saving them, especially if the stables are built on a hill side. Now, muck is a powerful absorbent, and if used freely as bedding and in pits beside and under the stables, the excrements would be absorbed and saved. I have found it to be of great value applied as a mulch to the roots of fruit trees. It seems to supply invigorating elements without the stimulating effects of manure. Don't sell your ashes to the soapmakers, but mix well with this mulch, and Grub & Co. will leave no suspicion.—R. K. K., in *Ontario Advocate*.

SPECIAL MANURES.

A committee of the New York State Agriculture Society have done the farmers much service in buying guano and employing chemical experts, to analyze eleven samples bought from as many dealers in the city of New York. Six of those samples contained so much brick dust and sand as to be only worth about \$31 per ton for the fertilizing elements they contained. And only three samples were worth each \$69, \$65 and \$66 per ton. As the selling price is about \$30 per ton, one would suppose that the profit was large enough for the dealer to dispense with every adulterating substance. There can be no doubt but that the manufacture and sale of special manures, now in its infancy, is soon to be here, as it already is in England, a great and rapidly increasing business. The day is coming when the bones of the great buffalo plains of the West, and the alkaline salts of the desert waste of that region will be articles of transportation for our Pacific railroads. But for the use of concentrated commercial fertilizers at the South, the cotton crop could not be kept up to anything like the yield of the past few years. Cotton seed, guano and superphosphate are their favorite commercial manures; and although Peruvian guano is the richest of all manures in nitrogen, yet the phosphatic Bahama guano, from the solubility of its phosphate, gives great satisfaction, and when mixed with cotton seed pays 200 per cent. on the cost of the fertilizer. When our corn growing Western States are burning Indian corn for fuel, they are burning the candle at both ends, if we consider the organic matter of the ears as an equivalent for the tallow of the candle, and they will soon see the day when the reduced corn crop will increase the price.

GIVE WATER FREELY.

Horses and oxen at work need water often. The plowman carries his jug of water, or leave his team to rest while he goes to the house for a drink. But the team works harder than the driver, and probably needs drink as often; yet many teams are taken out early in the morning to the field, where there is no water, except in the driver's jug, and worked five or six hours before they can get a drop. Is it any wonder that they are injured by drinking too much when led to the spring at noon? As an act of kindness to the horses and oxen that serve man so faithfully, and as a matter of economy, we recommend that in all cases where water is not in, or very near the field, in which the team is at work, a tub or barrel be furnished, and filled with water as regularly as the plowman's jug. This, with a bucket, may easily be set in the wagon and taken to the field, and the team should be permitted to drink once, at least every half day, and oftener if the weather is warm. If every one would adopt this plan, we should hear no more of "water founder." The teams would be more vigorous and hardy, and perform more labor for their owners.—*Ex.*

COMPOSTING MANURES.

I bought the farm upon which I now live last April. On looking over my resources of manure, I found enough under the tie-up to dress one acre pretty well. There was a fine granite cellar 40 by 50 feet under the barn, but there had never been a hog in it, and the scuttle through the barn floor had never been taken up.

There was nothing in process of manufacture of manure, and after planting, I don't think five loads could have been scraped up, and there was not a load of muck out of the swamp. The outlook was anything but encouraging, but the case did not admit of delay or debate. Something "had got to be done," and I "went for it." First, I put three old hogs under the barn, and dumped them down half a dozen loads of soda and loam, not forgetting to put in a liberal sprinkling of corn and small potatoes, and, upon the top of these, two loads of white birch waste. As soon as the brakes and weeds were large enough, I began to put them down, and upon this, all the waste water from the house, not only upon washing days, but upon all days. I had a cask set outside the wash-room door into which the women folks put the waste, and I carried it to the cellar after the rest were done work for the day. In the meantime I kept putting in the loam as fast as I thought best, digging it over once in a while and putting in the corn. After it was time to shut up the hogs to fatten, I put in four shoats. The first of November we hauled from this cellar forty loads as large as we could pile on a forty bushel cart. Also at the same time after the spring work was done I hauled twelve loads of loam and sods into the barnyard, harrowed it down fine, and yarded twelve head of cattle on it nights.

I put on a load or two of the waste as often as I could get it, and once a week plowed and harrowed it, sowing on a peck of plaster. Each time it was plowed it was from the centre, leaving a dead furrow, and before harrowing, I put two loads of loam into the furrow. The saw dust and turnings acted as a divisor, and this was as fine when hauled out as any pile of manure I have ever seen.

It was so very wet in the fall that the plowing and replenishing was abandoned after the first of September. On the last days of October we hauled from this yard thirty-four loads, and I had put three loads on my winter wheat and flat turnips; making seventy-seven loads, and besides this I have enough in the hog pens made by the shoats through the summer, and the hogs while fattening, to manure an acre of corn well. Now, Mr. Editor, don't you think this worth telling of, and haven't I reason to be just a little proud. I have now four hogs in the cellar, the cattle and horses are all bedded every day, and every time they are cleaned out there is a little corn thrown in and all the waste water of every description goes there, too, and next Spring the manure from the stock will be worth well nigh twice as much as it could be without the hogs.

All this has cost time, labour and pains—sometimes of the back and sides—and has kept me from gunning, fishing, riding around and loafing, but I have got my seventy-seven loads of manure to show for it, and am fully reconciled with the privations.

I forgot to say that when snow came I had the leaves as high as the hogs' backs in the cellar. In addition to the manure I have the weeds destroyed, roadsides and fence corners cleared up, brakes and weeds mowed in the pastures, and what otherwise would have been a nuisance, was turned into a blessing.—*Cor. Maine Farmer.*

BONES AND ASHES.

Bones and ashes pass through the housekeeper's hands every day. Wood is still the chief fuel in the farm house, and the value of the ashes is pretty well understood. They are prized for the lye they yield, and if there is a surplus from the soap making, they help the kitchen garden and the back door. The bones are generally thrown to the dog and lost. Now the careful housewife could practice a wiser economy, and help her garden twice as fast. Bones are worth twice as much as ashes for manure, if dissolved, and ashes will reduce them. Put both into a barrel in the cellar, and after mixing them half and half, having them constantly moist with soap suds, the hotter the better. The suds should not be poured on in such quantities as to leach the ashes. In a few months the bones will be so disintegrated that the whole mass will readily mix, and will be an excellent fertilizer for the flower border or the garden.—*Savannah Republican.*

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