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Agriculture.

Barnyard Tanks.

It requires no great stretch of veracity to say that Canadian farmers do not derive nearly as much benefit from their ordinary manure heaps as they might. In nine cases out of ten these are left exposed to wind and rain, clouds and sunshine, with no protection whatever. If, as frequently happens, they stand upon elevated grounds, every successive shower of rain that falls leaches them of their very essence, and carries it off to be wasted. Thus the heaps, in spring, when, through fermentation and other changes, they should be in the best condition possible for fertilizing, are little better than so much dry straw. With facts like these staring him in the face, one naturally wonders why the barnyard tank, so highly prized in Britain, is such a phenomenon in Canada. It is easily constructed and attended with but trifling expense, for the digging may be done by anyone at odd hours, while the benefits accruing from the application of its liquid contents to certain crops, or even to the heap again, are simply incalculable. Tanks are constructed either square or round, and finished after the manner of an ordinary rain water cistern They should have a capacity of at least two to five hundred barrels each. Round ones are perhaps preferable as regards the plastering, for they are devoid of those troublesome corners which, in the square tank, often prove future weak spots. Having completed the tank, let it be furnished with a large-bored, strong wooden pump, and closed over. Of course its location should be such that all streams or leachings from the heap will find their way into it. The farmer will thus find himself, every spring, the possessor of a large quantity of excellent liquid manure. Several methods of application are followed. A common one is to pump the liquid into large hogsheads perforated as for street watering purposes, wheel it out to the fields, and apply it as required. This, however, entails a good deal of rather disagreeable labor. A simpler and less troublesome plan is to thoroughly saturate the manure heap with it from time to time, at intervals say of two weeks or thereabout. Applied in this way, accompanied by occasional sprinklings of plaster to retain the ammoniacal qualities, it greatly facilitates fermentation, aids decomposition, and renders the manure in every way more effective as an immediate fertilizer. Authorities on the subject in Britain claim that common barnyard manure, treated in this manner, will decompose half-inch bones quite as rapidly as sulphuric acid, and fit them in one week for application to the land. In a series of experiments with liquid manure applied directly to the plants, the following results were obtained · A grass crop, with a dressing of 20,000 gallons to the imperial acre, was doubled in quantity. With wheat it answered well on light, but not at all on heavy or wet soils. The crop was increased about one-fourth. With barley it proved rather injurious than otherwise, rendering the straw so soft that the crop lodged; and, applied to potatoes and turnips, it increased the growth largely, but the tubers were very watery. In all these cases however, when the liquid was properly mixed with barnyard manure, the yields were still farther increased, and the quality most excellent—showing that the saturating method, while the simpler, is also the better of the two.

The Cost of Fertilizing.

Will it pay? What will it cost? These are the points that first, and most naturally, occur to experimenters. Not, will the increased returns five or ten years hence justify the outlay? That is not sufficient to the purpose with a great many. "The present time," say they, "is only ours," and a present affair they make of it. Will it pay, and will it pay *now?* Let us examine the question briefly in this light. According to the various experiments thus far recorded by professors and others, all are agreed as to the essential ingredients of plant food, viz., nitrogen, phosphoric acid and potash. What will they cost to begin with? Of course this must be calculated from the lowest market rates of the commercial substances containing them. Ammonia sulphate, the main source of the first, nitrogen, costs about 6 cents per lb., and contains from 20 to 30, say 25 per cent, of the desired element; Nitrogen therefore will cost about 24 cents per lb. Phosphoric acid, the second essential, constitutes from 9 to 12, say 10 per cent. of most phosphatic guanos or mineral phosphates, and these latter are sold for about $25 per ton—making the acid, at this rate. worth 12½ cents per lb. Bone dust however is a much more fruitful source of it, containing nearly 30, say 25 per cent of the acid, and also a small quantity of ammonia. Fine bone dust is worth $30 per ton. Phosphoric acid obtained from it would therefore cost (allowing for the contained ammonia) say 4 cents per lb. The third ingredient, potash, is most cheaply obtained from its own muriate, which costs about 3 cents per lb., and contains some 50 per cent. of potash, which will consequently be worth 6 cents per lb. We have thus the value of the three essentials, viz.—Nitrogen, 24 cents; sulphuric acid, 4 cents; potash, 6 cents per lb. Let us apply these to one or two of the tables published in previous numbers of the FARMER. To produce 100 bushels of potatoes, for example, over and above the ordinary yield we must use 21 lbs. of nitrogen at 24 cents, which makes $5.04; 34 lbs. potash at 6 cents, $2.04, and 11 lbs. phosphoric acid at 4 cents, $0.44—making a total amount of $7.52 for the extra hundred bushels. Of course, something more must be allowed for the time and labor of application. Say then that the whole costs $12, instead of $7.52, and still the profit must be very handsome if we succeed in producing anything like a hundred extra bushels of produce. At the very lowest rate, potatoes are worth 30 cents per bushel, or $30 per hundred bushels; the margin of profit here would therefore be $18. Again, for 35 bushels extra, per acre, of wheat, we require, according to the table, 41 lbs. nitrogen, $9.84; 24 lbs. potash, $1.44; and 20 lbs. phosphoric acid, $0.80—in all $12.08. Wheat is rarely sold under $1 per bushel. Should the experiment prove successful therefore, the profit here would be $12.50, or say $10, allowing for the application. For 25 bushels extra of oats, nitrogen 23 lbs., $5.52; Potash 20 lbs. $1.20, phosphoric acid, 12 lbs. $0.48; total, $7.20. In this case the profit would be almost unappreciably small, but still it would be something. These, it will be observed, are in every instance the profits per acre. In order to put the matter in a fuller and better light, we must take into consideration the average quantity of ground put under each crop, and get the profits per annum. Suppose then 30 acres wheat, 5 acres potatoes, and 10 acres oats:

30 acres	Wheat	at $10	$300
5 "	Potatoes "	18	90
10 "	Oats, say "	5	50
	Total profit		$440

Here then is a profit of $440 on 45 acres, and only three different kinds of produce. Assume that the figures are too favorable; make a liberal allowance for contingencies; reduce the whole one half, and still there remains a profit of $220—not to be laughed at, let us add. Evidently the experiments are worth trying at all events; but we would recommend them on a small scale, say a quarter or half an acre, to begin with. If they prove nearly as successful as the advocates of artificial manuring claim, they can easily extended. For our own part we have not quite as much faith in the new theory as it possibly merits, and we should be happy to hear of its being thoroughly tested in Canada.

If any of our readers furnishes us with particulars during the coming season, we shall take great pleasure in publishing them.

Leaves from Farming Experience—No. 8.

The box of a Scotch farm cart is usually about 6 feet long by 4 wide, and 16 inches deep. It will contain about 44 cubic feet when well heaped, and if a board 6 inches wide is fastened on the front and sides, that cart will hold two cubic yards more. Spread from 15 to 20 cart loads on every acre, once in four years, all hay and straw to be cut short. Get as much of the water evaporated as possible; it is of no use as manure, and costs three times as much to draw and spread as if it were nearly dry. In 100 pounds farmyard dung there may not be more than 50 pounds of plant food. It appears that from 30 to 40 bushels of lime shells are necessary to the acre every nine or ten years, and as more than a fourth part of all inorganic substances taken off the field by a crop are used up or assimilated by cows giving milk, or young cattle, besides the grain sold, these substances must be returned in dressings in addition to all the stable manure which can be collected on the farm.

The green crops need from three to four times the amount of inorganic substances that grain crops do, but as the yard manure is put on the crop just before the grass, and again in the fall, before the third or last year of hay, it gives the grass more than an equal share of the cattle manure. Thus, pearl ash bruised, 22 pounds; ammoniated superphosphate, 33 pounds, common salt, 25 pounds; plaster, 25 pounds per acre yearly, will cost about $437.40, and $140 for lime, also, 20 pounds of cement or waterlime are wanted per acre yearly. I spared no expense in making compost heaps on the most approved methods, but it was a very expensive way to get nitre or ammonia. Nitrate of soda and sulphate of ammonia can be brought from Britain to Montreal at five cents per pound, not half the cost of it made in nitre beds. In a cart load of compost there will be only a few pounds of nitric acid, whereas in 100 pounds nitrate of soda you will have 63.40 of nitre, and 36.60 of soda. Sulphate of ammonia might be made now in America since the acid is so much cheaper. I have paid six cents per pound for it, now it is less than three cents. I have tried to show that by cultivating and manuring well, crops will be good, and by feeding well, and dairying, the profits will be still greater. Manure is the great question; water in it is worse than useless; rotten straw, too, is of little value; a small quantity of ammonia may be in it, and a few pounds of inorganic substances per ton. I have seen the leaves of turnips and mangolds recommended as food for cattle. I altogether differ from this opinion. In 100 pounds of leaves there are over 6½ pounds nitrogen, over 5 lbs. phosphoric acid, and nearly 7 pounds of potash. In an acre of mangolds there are said to be seven bushels of salt, most of it in the leaves. But, if dangerous to cattle, these leaves are good to make crops grow. My turnips were commonly very good. Sometimes, where the leaves were plenty, we carted away the half, and spread them, ploughing down immediately. There was always a good crop after doing so. The annual cost of the top-dressing will be about $2.60. It will be an advantage to use 100 pounds of salt, which will supply 40 pounds of soda; also, 100 pounds of plaster, to supply plenty of sulphuric acid, and attract nitric acid from the atmosphere. A good crop of hay will use that amount, and turnips 25 per cent. more.

Bell's Corners, Ont. JOHN ROBERTSON.

Continued next month.

Plaster of Paris.

The vexed question of plaster, its properties, its application and results, continues to occupy a large space in the Agricultural literature of the day, and yet in the deductions made, and conclusions drawn, writers are apparently as far in the dark as ever. A's experiments conflict with B's and even with themselves. C tries his hand and arrives at results which entirely upset A's and B's, and so the