

Character and Treatment of Swamp or Muck Soils.

In the Province of Ontario, as in most other Provinces and countries, there are hundreds of thousands of acres of swamp lands, and, while some of these have been reclaimed, and become among the most productive of our soils, the attempt to do the same in other cases has resulted in disheartening failure. Swamps there are that have been drained, and yet, though appearing rich from their dark color, seem to lack in some of the essential elements for the production of good crops.

A bulletin (No. 178) dealing with the nature of these soils and their treatment, has recently been issued by the O. A. C., Guelph, prepared by Prof. W. P. Gamble, and A. E. Slater, B. S. A. In this bulletin the claim is made that, though the cultivation of ordinary farm crops has been abandoned as unsatisfactory on many drained swamp lands, yet there is not the slightest doubt that these soils, if properly understood and cultivated, would form a valuable asset of wealth to the Province.

The term peat, swamp, or muck soil, is applied to a class of soils formed almost exclusively of the more or less decayed residues of vegetation, as roots, leaves and aquatic plants, but especially mosses, particularly partially-decayed sphagnum moss. Analysis of such soils shows, for the most part, a very high percentage of nitrogen, a fair supply of phosphoric acid, and a deficiency of potash. Though the stores of total nitrogen are so great, it is not available, being mostly locked up in inert condition. Some muck soils show strong acidity, but this is not generally the case in Ontario.

The productiveness of muck soils can be judged fairly well by the nature of the subsoil. Where underlaid with clay, yields are frequently excellent. A sandy subsoil invariably yields poor results. And, again, the deeper the black layer, the poorer the crop.

The writers of the bulletin have conducted a great many fertilizer tests on swamp soils, and they have also received for analysis samples of such soil from over 900 farmers of the Province, sent in from at least sixteen counties.

In summarizing the results of their work, attention is drawn to the value to the farmer of having an analysis made of his peaty soil. It is also pointed out that some crops, such as hay, roots and vegetables, often succeed well on such lands, while grain shows a tendency to run to straw, with little grain in the head.

CAUSES OF UNPRODUCTIVENESS.

A summary of the causes of unproductiveness, with suggested remedies, is given at the close of the bulletin, as follows:

1. A deficiency of potash and of available phosphoric acid, both of which frequently need to be applied in the form of commercial fertilizers.
2. An absence of nitrifying germs which act on the inert nitrogen present in the organic matter and convert it into nitrates, a form readily assimilated by plants. The application of farmyard manure or garden loam is needed in this case, together with frequent cultivation.
3. A water-logged condition, owing to the permanent water-table being too near the surface, and thus checking root development and preventing aeration of the soil. Lower the water-table by efficient drainage.
4. A dry, loose condition of the soil, which results in lack of moisture through inability to raise water by capillarity. This condition frequently results from too rapid draining, and subsequently the complete drying out of deep areas of muck. Gradual draining is desirable.
5. The laying of tile in the muck itself, which results in imperfect action of the drain, owing to the inability of the water to penetrate into the drain.
6. Acidity, owing to the presence of an excess of organic acids. This condition is not common with Ontario muck soils. Liming is the remedy.
7. The presence of injurious plant poisons in the soil, as the lower oxides of iron. Frequent cultivation and exposure of the material to the air results in oxidation, and removes the evil.
8. An undecomposed condition of the soil, and the presence of much woody fibre, and thus a general coarseness of the soil particles. Drying out is apt to result. Frequent cultivation, and the application of farmyard manure has a beneficial action, hastening decomposition.
9. The lodging of grain and a light and poorly-filled ear, due to the excess of nitrogen over mineral constituents. An application of potash and phosphoric acid is beneficial.

It will come as a surprise to many to know that silos are in use in Ireland. In a lecture before the Tipperary Farmers' Society, H. de Burgh, J. P., gave detailed instructions regarding the filling of silos. Clover and grasses, unchaffed, are used, and the filling is done gradually, so that the heat necessary to insure sweet silage is developed, and can be regulated. Reference was made to silos with a capacity of 600 tons.

Sugar-beet Culture.

Editor "The Farmer's Advocate":

As years go on, the growing of sugar beets in Kent and Essex Counties is passing from the experimental stage. In certain localities, they are grown in rotation with other crops; some farmers even go so far as to claim that, in the rotation there is no other crop that will take their place; that, as a subsoiler, they are more valuable than alfalfa or clover. Up to the present time farmers have paid no particular attention to the fertilizing of the beet crop, but just now there is much talk as to the value of using a commercial fertilizer, what brand to use, and how to apply it. A few farmers tried it last year. Some sowed it broadcast before working up the land, 500 to 600, and even 800, pounds to the acre, but it did not much more than pay for the application. The Michigan farmers, who have been growing beets for fifteen years, have to a certain extent solved the fertilizer problem. They started out by sowing broadcast, but found that it did not pay. They use now a fertilizer attachment for their drills, sowing both beet seed and fertilizer at the same time, sowing from 100 to 200 pounds to the acre. A balanced fertilizer is used, composed, in most cases, of phosphates, potash, and nitrate of soda. The aim is to give the young beet a good start. The fertilizer being in close contact with the roots of the young plant, they feed on it, until they get deep enough in the ground to take care of themselves. After the plant is a month old, it draws its substance from 8 to 10 inches below the surface, and at two to three months from one foot to eighteen inches, and at maturity as deep as three feet. The rootlets, unlike corn, which cover the entire surface of the ground, extend out into the beet rows but very little, so that fertilizer applied broadcast, as far as the beets were concerned, would be more than half wasted. In growing sugar beets, one should prepare his land the year before. A clover sod may be turned down in August, three to four inches deep; fall-plowed to the depth of 10 to 12 inches, working the top up fine as soon as possible in the spring, using some shallow cultivator; plant about May 1st. When the second leaves appear, have them thinned to ten inches. This is an operation which must not be delayed. Hundreds of dollars are lost each year by not having them thinned in time. Cultivate for the next month and a half, once a week; have them hoed again in August. They should be fit to dig about October 1st. Plow them out before topping; have them topped with a knife; this is a little more expensive than topping with a beet-topper or hoe and plowing out afterwards, but is the best, there being a much smaller percentage of beet wasted in the topping. If selling flat rate, they should be delivered and weighed as soon as possible after digging, as they dry out very fast; but, if sold by sugar-test, this does not so much matter, as you get paid for the sugar in the beets.

Kent Co., Ont.

Seed Corn and Seed-corn Trade.

Editor "The Farmer's Advocate":

Kindly allow me a short space for a few thoughts respecting the late corn show in Essex, and also the seed-corn trade in general. Is it not strange that those persons who took all the best prizes at the late corn show, as a rule, have nothing to sell which they can recommend to the public to grow. A few ears are selected with great care, and laid away carefully in a dry place, where they can receive the advantage of the heat from the kitchen stove, and are taken to the show and get all the valuable prizes, while the general crop in the crib would not, under the best and most favorable conditions, show a 50-percentage of sound seed?

I know for a fact that the sweepstakes ear of the show came from a crop which, when put in an ordinary crib, is very poor feed corn, and I doubt if 5 per cent. of it would grow. Again, as to the manner of judging. If you could grow ears that weighed two pounds each, you would stand no chance of getting a prize, because all ears over nine or, maybe, ten inches in length, of the dent varieties, are scored out by an assistant—i. e., turned upside down—and never looked at by the judge. In a crop running, say, 150 bushels of ears to the acre, if one expected to get a prize, he would, of necessity, have to pick out what those who grow big crops would call nubbins—that is, ears about seven inches in length, and weighing about eight or ten ounces each.

Ninety-nine per cent. of the farmers who grow big crops of corn, and have corn to sell that will grow and make a perfect stand for either grain or ensilage purposes, select for seed the finest, largest ears they can get, if the grain is a good length on the cob. The reason we like a long kernel is that corn of this type shells more to the measured bushel.

If the soil is extra fertile, and the season is favorable for growth, the ears will be not only large in circumference, but the best specimens will reach twelve inches in length, and the crop will yield from 125 to 150 bushels to the acre. In

stances have been known where a field of nine acres extra-well-prepared, and well cultivated, gave eighty bushels of shelled corn to the acre, the field having been carefully measured, and the grain weighed for market. It is unfortunate that, after all that has been said and published in "The Farmer's Advocate," so many people are depending on shelled corn for seed purposes. Corn is an extremely sensitive grain to climatic conditions. The year 1909 was one of the worst in my experience, the months of September and October being abnormally cold, and very unfavorable to the proper drying of the cob and grain. People put off husking as long as they dared, and yet the crop went into the crib with the cob containing probably fifty per cent. more moisture than in 1908. And yet dealers have been shelling and shipping away corn for the past two months. With no drying weather from December 1st to March, what can be expected from such seed but a miserable failure? As a rule, farmers put the whole crop in the crib. The dealer comes along and offers ten or fifteen cents over the price of feed, and the whole thing, nubbins and all, goes through the sheller, and is bagged up and sent to the seed-houses, with failure the result. It is also a well-known fact that corn will spoil very much more quickly in the bag than in the bin.

There is a great deal of fraud connected with the seed business, as well as with the nursery or fruit-tree business.

A dishonest dealer will buy a job-lot of trees, and label them anything the customer wants. A seed dealer may advertise corn or other seeds as his own growth, with scores of varieties and years of experience, greater than the years of his life, and yet he may never have grown on his own or anyone else's land a bushel of any kind of seed, and our advice is get the advertiser's record before you trust him, and never buy seed corn, except on the cob, and be equally particular never to shell till ready to plant.

L. C. PALMER.
Essex Co., Ont.

Power to Run Grain Crusher.

Editor "The Farmer's Advocate":

I notice in your issue of April 7th the question asked, "What horse-power gasoline engine to get to crush with?" and I think your answer very misleading, because I know, if a man bought a 3-horse-power engine, thinking he was going to grind, he would be very much disappointed. He could grind, but very slowly—too slow to be profitable. In my opinion, he would want twice that power to do much of a business, or, if I was buying a Canadian engine, I would not buy less than an 8-horse-power. But, for a farmer who intends to grind, to buy a 3 or 4-horse-power engine, he is getting something he does not want, as the larger engine will do the light jobs, as turning the cream separator, pumping water, turning fanning mill or grindstone, as cheaply and well as the small engine; and then, if you want to do heavy work, you have power to do it with, although, with an 8-inch-plate grinder, you can give a 6 or 8-horse-power engine a lot more than it can do. I write this from experience, and in the interest of a brother farmer, and not to criticise your answer.

ROBERT ASSELSTINE.

[Note.—Reference to our answer will show that, while we stated that it was possible to run an 8-inch-plate grinder with a 3 h.-p. gasoline engine, yet an overplus of power was desirable.—Editor.]

Steel Silo and Frost.

Editor "The Farmer's Advocate":

You wanted to know how the steel silo stood the test during the cold spell this winter. Well, the silage froze badly enough, but I don't think it froze any worse than in cement silos, judging from the appearance of them. Naturally, you would think it would freeze a little further into the silage, the steel being quite thin. We kept our silage nearly level all winter from wall to wall, while our neighbor, with a concrete silo, had a circle all round, and about twenty feet high. One advantage the steel has, it being thin, with the least warmth or sun, it peels off the steel.

Perth Co., Ont.

D. A. CAMPBELL.

The Crop-reporting Board of the Bureau of Statistics of the United States Department of Agriculture estimates, from the reports of correspondents and agents of the Bureau, that the average condition of winter wheat on April 1st was 80.8 per cent. of a normal, against 82.2 on April 1st, 1909, 91.3 on April 1st, 1908, and 87.0 the average condition for the past ten years on April 1st. The decline in condition from December 1st, 1909, to April 1st, 1910, was 15.0 points, as compared with an average decline in the past ten years of 4.5 points.

The average condition of rye on April 1st was 92.3 per cent. of a normal, against 87.2 on April 1st, 1909; 89.1 on April 1st, 1908, and 89.5 the average condition for the past ten years on April 1st.