

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

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Some of the Difficulties of Maintaining Soil Fertility on Large Wheat Farms.

To the Editor FARMER'S ADVOCATE:

In endeavoring to comply with your request for some opinions regarding the question of preservation of the soil, I fear that you are broaching a subject to which the writer and a large number of his fellow farmers in the West have given but little attention heretofore. I would, therefore like to warn your many readers in advance that, in attempting the laudable duty of giving them the benefit of what little I know about this subject, they need not be surprised if I disclose to them at the same time the vast amount I do not know about it. However, it is all the same price, and they are equally welcome to both.

When the great body of pioneer farmers arrived in this Province in the early '80's, they found a large portion of its land surface free from timber, scrub, rock or surface stone, covered with a deep, rich loam, promising the production, with a very small outlay of either capital or labor, of a great many abundant crops, without any perceptible loss in fertility to the soil. It is well that nature had provided these advantages, which acted to some extent as a counterbalance to the many commercial disadvantages with which the early settler had to contend in his efforts to make a home for himself in this new and untried country. Had it been otherwise—had the farmer been compelled to clear the land of stone or timber, or had it been necessary to re-fertilize the soil at the end of the second or third season in order to secure a reasonable crop, and had the then existing freight rates and exorbitant prices of goods which the farmers were forced to pay continued to the present time I doubt if there would be to-day a dozen settlers west of the Red River in Manitoba. But the apparent inexhaustible nature of our soil has wonderfully helped the pioneer "mossback" to stay with his job of securing for himself a home and a livelihood on the western prairie in spite of many hardships and exactions imposed upon him by his fellow man.

Now, however, it is beginning to be realized that, in some of the older districts at least, some provision will have to be made for sustaining the strength of the soil, or farmers will have to be content with a continual decrease in the average yield of their crops from year to year. It is also becoming

ing a debatable question whether, owing to increased yield arising therefrom, it would not be a profitable investment to provide some cheap system of fertilizing lands that are comparatively new and fairly rich. The business man (and farmers are simply men engaged in the business of farming) very naturally here inquires, "Will it pay?" Some years ago, when farmers were selling grain at cost or even less, they might have felt disposed to answer this question in the negative, but with wheat bringing about 60 cts. per bushel and other cereals in proportion, it is safe to conclude that, while it might not pay to import expensive fertilizers, it would certainly be profitable to use farm manure—the cheapest obtainable source of strength for the soil. When we add to this the fact that farm stock has also reached a value lately that renders it possible for the farmers to raise horses, cattle, sheep and pigs at a fair profit, surely no further inducement should be necessary to persuade the average farmer to adopt a system of farming whereby that portion of his crop which will make animal fodder should be largely returned to enrich the soil or retain its fertility.

Having decided upon the proper course to pursue, as a matter of theory, I would like to draw the attention of your readers to a few of the difficulties that have come to my notice in putting this theory into practice:

1. A want of capital to supply sufficient stock to consume all the food products of the average farm, and also to provide the necessary winter protection for such stock. I see no remedy by which this difficulty can be overcome immediately; but a close application of business principles, coupled with industry and economy, will soon place the farmer in a position to make a start in this direction, and it is astonishing how rapidly a few head will multiply into a flourishing herd of stock. I would not advise the beginner to invest very much in expensive buildings. Seeing that the farmer is generally better supplied with *physical* than *financial* ability, the building that might suit his purpose best would probably be the one requiring the more labor and less expensive material to erect.

2. The cost of hauling fodder to stables and manure to distant parts of the farm. The farmer on a quarter-section of land, with his buildings centrally located, may not have noticed the amount of time consumed in this work, but on larger farms one is not long in noting the small amount of manure that can be hauled a distance of perhaps a mile and a quarter or a mile and a half from his buildings in a day. From my own experience, I am led to believe that this can be largely overcome by the erection of a structure or framework of poles at several points on the farm, and covering the same with straw distributed from the carriers or blower of the separator while threshing. The building can be so constructed that a large space for feed, reaching down to the ground, will be left in the center, with a covered space for the stock surrounding it. A partition of boards or poles reaching to within three feet of the ground, separating the feed space from the stock, compels the latter to eat the feed from the bottom, so that little is wasted or destroyed. This arrangement, to a considerable extent, saves the hauling of fodder and very much lessens the distance of hauling the manure; in fact, by leaving the shed open all the time (except in stormy weather), no small portion is distributed by the stock themselves.

3. Applying manure to the land so as to retain moisture in the soil, instead of assisting in its evaporation. Few who have made any efforts to utilize this fertilizer have not early discovered the difficulty of properly covering the unrotted straw usually connected therewith, as well as the unsatisfactory results to the crop arising from evaporation, due to the presence of this straw, even where it has been fairly well covered. This can be avoided to a considerable extent by using only well-rotted manure. Of course, in our dry climate it often requires a long time to accomplish this, but it will decay in time, and when applied in this condition it will produce a much better crop, and more free from weeds, owing to seeds being destroyed through decomposition. Where it is necessary to apply green manure, I think it would be well to use Campbell's or some other suitable packer to fill up air spaces caused by undecayed straw, etc.

I would like to add, in conclusion, that I see more clearly every year the necessity of adopting some plan of renewing root fiber in our sandy loam soils. This, of course, will necessitate seeding down to grass of some kind for a term of years—taking off perhaps one or two crops of feed and pasturing for perhaps a couple of seasons. This latter involves the additional outlay for fencing, but perhaps a cheap portable fence may shortly be forthcoming which will render this plan more feasible. Two results might be expected from this course—prevention of shifting soil by high winds and increased fertility of the land so operated upon.

W. A. ROBINSON.

A Credit to Canada.

The FARMER'S ADVOCATE, of London, is one of the best agricultural papers in existence, and is a credit to the country. Every issue is filled with valuable information, but the Christmas number was a specially interesting one, being much increased in size, and containing many fine illustrations. No farmer who desires to succeed should be without a paper like the ADVOCATE. *Canadian Epoch*, Feb.

Can We Not Repay the Soil for What it Gives Us?

The beginning of a century, or even the end, is not a bad time to stop and consider our ways as agriculturists, or even as farmers, to see if we are fulfilling our task of making two blades to grow instead of one, and, at the same time, conserving the fertility of the soil. How best can this be done? This is a case, perhaps, where theory and practice may not fully agree. I am writing from a western farmer's standpoint. When we consider our immense fields we naturally shrink from the thought of manuring; although here let me ask: Are we not cultivating too much land in raising wheat, and is there not some way in which we can repay the soil for what it gives us? These two questions may be answered by: Yes. In the first place, would recommend cultivating less land and trying to manure a small quantity each year with well-rotted stable manure, which would be clear of noxious weed seeds. (This would seem more reasonable than setting fire to the manure pile.) It would, of course, take some years to get over the whole farm, but something would be accomplished that would be of lasting benefit. In the second place, would recommend the keeping of some stock, say cows, sheep, or pigs, according to the individual taste. The pigs to be fed on the skim milk, with chopped grain (frozen wheat, if you are unlucky enough to have any). Raise sufficient roots to winter the cows, with enough for the sheep at lambing time. This raising of roots would be a good way of preparing the land for wheat, while the manure made from the roots, if returned to the soil, would be very valuable. No doubt many will say, that won't pay. Have you tried it? Allow me here to say, *en passant*, re this mixed farming, that some who will read this article will not require any reminder of the narrow escape of 4th August last, when two degrees more frost would have paralyzed this section, so that even a few head of cattle, sheep or pigs would have been considered good stock. What are we living for? Is it only for the present, or are we ambitious to leave the world better than we found it? What has been the factor of success in this western country, after individual energy? Is it not the large yield of grain per acre? While all must admit that we cannot compete in the markets of the world with such countries as the Argentine, on account of their cheap labor, surely we can stay in the ring if we do our duty in husbanding the fertility of the soil, and endeavor to raise our yield instead of allowing it to decrease. Is this not the case in the country to the south of us, or even in our much-lauded, and deservedly so, Province of Manitoba? Does their average keep up to what it was? If not, there is something wrong. Prevention is certainly easier than cure. "Give the land a rest? And have it grow up to weeds?" Not so. As grazing land is becoming more scarce, would recommend seeding down a portion of cultivated land to Brome or other grass which would yield hay for two years, give good grazing in the fall and early spring, and the following year summer-fallow. The fibrous roots of this grass will help to prevent the soil drifting. Perhaps the most direct way of adding to and retaining the fertility of the soil would be by seeding down to clover. Of the practicability of this in the far West I have my doubts, on account of winter-killing. To undertake any system of seeding down to grass for hay or pasture for any length of time would necessitate fencing. This, at the present price of wire and posts, would prove expensive, yet in the end would no doubt prove a profitable investment.

Indian Head District. WM. DICKSON.

Wants No Better Grass than Brome.

I have grown Brome grass for 5 years, and this year threshed thirty-five acres for seed, but only about ten acres was a good crop; the rest was a poor catch in '98, as I sowed with wheat. But last spring was so late that I had no time to plow it up; it was a good sample, but poor yield of seed from it. From my experience with Brome, it should not be sown with any other crop, but on fall plowing. My way of seeding now, and, I believe, also followed by Mr. Bedford and Mr. McKay, of the Experimental Farms, is immediately after seeding. The land intended for grass, if stubble, should be disk harrowed to start weeds, and in about ten days plow deep, then harrow at least twice, and then sow. Have a boy or man drive a three-section flat harrow ahead, and the sower follow close behind, sowing the width of the harrow, which is about 9 feet. I have tried this plan, and got an even catch; about 12 or 14 lbs. to the acre is enough. I cut most of it for seed, and feed the straw. I have never tried other grass, but want no better than Brome. I believe it is rather hard to kill out; have not tried it yet. I run a steam thresher and have no trouble to thresh it; shut off all wind and run without any teeth in concave. This does not cut up straw, and it can be threshed clean enough for market. Of course, some will blow out, if you want to make a good clean job. As for pasture, if any of my neighbors lose stock they are generally found on my Brome, as I am the only farmer here that grows much, as this is mostly a wheat-growing country. Two years ago I cut some for hay, and the first time I gave my horses a feed of it they cleaned up the hay and left their oats untouched. This may seem rather much for most men to believe, but it is a fact.

As to harvesting, it should be left till the seed is red or a dark brown.
Regina District. H. ANTICKOP.