

if it comes up too thickly we strike out any bunches when hoeing, as when the stalks grow too thickly they produce but few cobs. We never use the harrow on the crop, as we find it pulls up the manure and breaks too much corn. We work it with scruffler every week (weather permitting) up to grain harvest; after that time the soil is fully occupied with roots, and any more scruffling would only work injury. Nor is it necessary to destroy weeds, as most are destroyed by then. We go through the crop once or twice afterward with a hoe, and cut out any weeds still growing.

This article is written for the benefit of beginners in corn culture. Be the season what it may, we always need corn. It is a profitable crop grown for the grain alone; the stalks, green or dry, make better feed than timothy hay. We grow from four to five acres each year, and find no trouble in saving or feeding it. We feed liberally from the middle of August till the whole is fed off (feeding no hay or grain), with the result that all our stock are in prime condition and in the best of health to begin the winter feeding.

We advise beginners to sow an acre this season. Buy guaranteed seed of a flint variety (about 1½ pecks will be sufficient); make up your mind to have a splendid crop; find out by personal experience its worth, and you will agree with many readers of "The Farmer's Advocate," that there is nothing like corn.

Simcoe Co., Ont.

FRED FOYSTON.

RENEWING THE FERTILITY OF MARSH LANDS.

Our readers in the Maritime Provinces whose holdings include marsh land, will be deeply interested in a little booklet just published, entitled, "The Principles of Soil Fertility Applied to the Worn-out Diked Lands." It is from the pen of Prof. W. W. Andrews, Professor of Chemistry in the McClellan School of Applied Science, Mt. Allison University, Sackville, N. B., and is published and distributed gratis by the Dominion Agricultural Offices of the Potash Syndicate, 1102-1105 Temple Building, Toronto, Ont.

"One of the most pressing problems in agriculture in the Maritime Provinces," says Prof. Andrews, "is that of restoring the lessening fertility of the wonderful diked lands of the Bay of Fundy. One remedy is certainly effective, viz., opening the dikes and covering the lands with a new tidal deposit. But in hundreds of cases this is practically impossible, on account of its cost. It means the loss of salable crops for six, seven or eight years, and this, with all the incidental expenses, brings the cost up to \$75 or \$100 an acre. One such treatment, however, is probably good for 100 years. Or, we may haul tidal mud from the river banks, and at a cost of from \$30 to \$60 an acre we can cover the land with a coating which will last for eight or ten years; or we may add chemical fertilizers—potash and phosphate—at a cost of from \$10 to \$18 per acre, and, without any loss of crop, we can produce a highly fertile marsh, which will bear luxurious crops of hay for six years at least after one application. Just here let us remark, for the information of Western readers, that it is not the practice to apply barnyard manure to these marsh areas, which are in many cases quite extensive, and a man's parcel of marsh may be several miles from his house and stables, which are necessarily erected on the upland. Besides the drawback of distance, it is always felt that the manure is needed on the upland without sparing any for the marsh.

"Experiments on the marsh at the Nappan Experimental Farm and on some sections of the Wolfville diked lands seem to indicate that artificial nitrates are of doubtful value on the tidal lands. Good results have been obtained by the use of lime, soluble potash salts, basic-slag phosphate and bone meal. These fertilizers stimulate the growth of clovers, and, therefore, by their use, we may indirectly procure for the soil all the nitrogen required without buying nitrogenous fertilizers. These mineral fertilizers are cheap, as compared with the nitrates, and this at once makes easier the profitable solution of the problem."

PRACTICAL TESTIMONY.

In the replies which came to the several hundred lists of questions which Prof. Andrews sent out to the owners of diked hay lands, there was practical unanimity as to the beneficial effect of the above-named fertilizers (lime, potash salts, basic slag, and bone meal) wherever they had been used. In one case, where a few ridges had been treated with lime twenty-five years ago, Mr. Geo. Thompson, of King's Co., N. S., reports that the good effects are yet visible. Rupert Black, of Cumberland Co., N. S., reports that his father treated a piece of diked land with lime fifty years ago, and the effect is still noticeable. P. McNutt Patterson, of Acacia Village School, reports a case in which the effects of a slight dressing of lime were observable after forty years. The use of lime on the tidal mud is summed up thus: "It will tend to cure acidity, with the accompanying mossiness and corkiness; it changes the poisonous iron salts into gypsum and iron oxide; sets free the potash from the silicates of the soil; makes more available the locked-up phosphates, and, with the potash, stimulates the

growth of clovers." The use of gypsum is rather advised against on a soil where lime has been applied, as the gypsum is liable to be useless in such a case, if not actually injurious.

As to the amount of lime, Mr. Geo. Thompson, whose experiments have been made on the largest scale, and carefully conducted, claims three "casks" of lime per acre are generally sufficient, and six casks was the limit of beneficial treatment. A "cask," we infer, amounts to forty-five bushels or thereabouts.

As to the use of other fertilizers, Mr. Thompson's testimony is as follows: "In 1894 I dressed a four-acre dike-lot with five casks of lime per acre, and sowed it down to grass with oats, and late in the fall sowed one-half a ton

he laid and covered in the old ditches, covering the joints with strips of zinc. This leaves a level dike, unbroken by ditches, and therefore easier to work. The general testimony has been, as to the advantages of underdraining, as follows: It has resulted in an increase of crop-bearing surface of ten per cent., in an increase of crop from twenty to thirty per cent., in less trouble with surface water, in finer texture of soil, and greater power to withstand drouth.

LET EACH MAN EXPERIMENT.

The pamphlet concludes by recommending a simple plan of experiment, and urging each marsh owner to test the matter upon his own land. If several hundreds of marsh owners would make such experiments, the mass of testimony would prove of immense value. We trust all our marsh-holding subscribers will write to Toronto for the pamphlet.

One warning is given. On old, sour, diked lands, and on the blue dike, the use of lime alone is apt to give results so encouraging that some may be tempted to depend on it alone. While it has great value as a corrective to acid conditions in the soil, and to the poisonous oxalic acid which is produced in the sap of plants, still we must remember that lime is a plant food

in a limited sense only, and its continued use as a stimulant would ultimately result in a more thoroughly impoverished soil. Lime is good in moderation, but the main reliance should be placed on the true plant foods, such as potash and phosphoric acid. These, with lime and clovers, will restore fertility in an economical way.

TRIED IT ON THE QUIET.

Editor "The Farmer's Advocate":

You will be pleased to learn that your campaign in promoting the use of the split-log drag has not been without considerable fruit already. In Prince Edward County there have been several in use, I believe. I

saw an account in a local paper, from one of the local correspondents, where the operators, somewhat doubtful of its work, kept hid until the road was clear and then sallied forth to see what it would do. It wasn't long before they were ready to work in the open anywhere, with great satisfaction to the people of the locality. I was pleased to note that on my own road division there had been one at work. However, in that case there is too much gravel on the roads to see much of an effect. It did useful work, though, in many places, levelling the ridges and filling in the ruts. Of late I have noted with much pleasure that the road grader is

much in evidence in shaping the roadbed this spring, when it can do the work so easily. I saw the most of this kind of work done in the Bay of Quinte counties.

Recent trips over leading roads in the County of Hastings has confirmed past observations, that the system of roadmaking so long in use there by the County Council has won out admirably.

It seems almost incredible, that in so many localities, where for long stretches the roads are really good, and time can be made on them even with heavy traffic, you come to short pieces here and there where even with a light rig one is not certain he will make the passage in safety. There are very many places of this kind which should be looked after right away. It is usually the result of lack of drainage. Then, too, a great many hills wash badly, as little or no drainage is provided at the sides of the road on the hill slopes. Many of the clay hillsides are particularly bad in the spring. They are, if anything, more spongy and rutty than level sections in the same vicinity. It is evidently the lack of tile drainage, and it shows that



Fig. 2.—Mr. Thompson's Experiments on the Wolfville Marsh.

The unfertilized piece.

(1,120 pounds) of basic-slag phosphate per acre. Previous to plowing the lot, it was nearly covered with oxeye daisy, and light at that. The oat crop was good, and last year the grass cut three tons to the acre, the clover a grand growth. I measured some of the timothy stalks, and they stood five feet two inches above the ground. On an adjoining lot last year I spread 500 pounds bone dust per acre, and 200 pounds of muriate of potash in the spring, sowed down to grass with oats, had a fair crop of oats and a good catch of clover and timothy. Late in the autumn I sowed half a ton of basic slag per acre, and now await results." Personal examination the following year, and written reports of the grass sales on these areas from parties in the neighborhood, and



Fig. 1.—Mr. Geo. Thompson's Experiments on the Wolfville Marsh.

Fertilized with 1,120 pounds basic slag, 500 pounds bone dust and 200 pounds muriate of potash per acre.

accompanying photographs, show how well Mr. Thompson's faith has been justified. It has been proven that three tons of hay per acre is an ideal which can be reached. "My conclusions are that a dressing of lime and basic slag are the best for the blue dike, and for red dike, bone meal, muriate of potash (KCl) and basic slag. This has lasted for six years."

As the blue dike is a poorly-aerated soil, which by proper drainage and cultivation will become red, in the end the same treatment is required by both soils. Certainly, after the lime and cultivation have corrected the acidity, and set free some potash for the first crop, the addition of soluble potash and available phosphate immediately after the cutting of the crop will show beneficial results in the following year's growth.

Mr. Thompson is an enthusiastic advocate of underdraining by means of crock tiles at a minimum depth of two feet, and laid with a slope of not less than one inch in one hundred feet. These