We Welcome Practical Progressive Ideas

The Recognized Exponent of Dairying in Canada Trade increases the wealth and glory of a country; but its real strength and stamina are to be looked for among the cultivators of the land.—Lord Chatham

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Tile Drains Ensure Crops in All Years

Logic and Experience Bear Testimony to Their Usefulness.

ASTERN Ontario was drought-stricken this last season; at least a large part of it was. On farm after farm the only report was "crop failure." Occasionally, however, farmers were found whose crops were good. One of the fortunate ones was Mr. Fred Mallory in the Belleville district. Part of his grain crops stood four feet high and the threshing returns were excellent. On nearby farms there were crops hardly worth cutting. Mr. Mallory has no doubt as to the explanation of the difference.

"It's tile drains," he said to me recently. Funny, isn't it, that the very thing that is designed to carry water off, holds it in the soil

when it is necessary?"

There are many reasons why crops should grow more vigorously on tile drained fand than on land of a similar character and of equal fertility, but undrained. The most outstanding difference is that surplus water is carried off by tiles. The result is that less heat in the spring s required for evaporation and more is available for warmi-g the soil. Hence we can get on the land sooner, work it more thoroughly, and yet get the crops in earlier than on land that is not tiled. The importance of thorough working, combined with early seeding, is especially notable in the case of spring grains. Farers who have not laid tile always have a prolem in deciding whether they would be wise and skill as to work the soil longer and seed later,

or seed earlier on a poorly prepared soil bed. Any crop will make a more igorous growth on a seed bed that has been well prepared. And tile drains frequently give two weeks more for prearation in the spring.

Tile Drains and Root Systems The effect of tile drainage on the ooting system of plants in many cases is of even more importance than the earlier seeding or more thorough working of the seed bed. Especially is this the case on heavy soils that are nclined to bake. In the undrained field the natural water level is very ear to the surface early in the spring. The consequence is that the crops esablish a shallow rooting system and end to grow out latterly, rather than teep down into the soil. Later on in he season the soil cracks, breaks off he feeding roots from the parent plant, and a stunted crop is the result. On rained land the water table is lowerd to the depth of the drains early in he season. The roots strike right down the subsoil, are not broken off to my extent should the soil bake and we a much greater feeding area than

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in the case of a shallow rooted crop. Likewise it may be noted that land that is tile-drained does not bake and crack so readily as does undrained land.

It has been proved by careful investigations that drained land naturally holds more moisture in the soil above the drains by natural capillary attraction than does similar soil where drains are lacking. The soil is more porous, in finer mechanical condition, and its water-holding capacity is at least 17 per cent. in excess of that not acted on by tile drains.

These are only a few of the factors that explain why tile drains are of advantage in a dry season. The best argument for tile drains in dry years, or in any year, in fact, is found in the experiences of those who have used them, I will relate only one instance of the many that have come under my observation. It concerns the Bishop farm, near the village of Norwich, in Oxford Co., Ont.

From Swamp to Productive Field

The best field on this farm, 10 acres, was little better than a swamp when it was first purchased by Mr. Wm. Bishop. The best crop that it had ever grown was a few tons of inferior Hungarian grass. One line of four-inch tile was run through the lower end of the farm with a couple of threeinch laterals running up the slope and taking in some "springy" points. The whole did not represent an expenditure of \$100. That was some years ago, and labor and tile were both cheaper than they are now.

The following year Mr. Bishop had the field in oats and it yielded well over 60 bushels to the acre and an especially rank growth of straw. Ever since that field has been producing splendid crops of corn, grain, and clover hay. Comparing the value of present crops with the previous value of the field for hay and pasture, the cost of the tiles have been returned several times over in each of the several years since the work was done.

I have been on farms that have been redeemed altogether by tile draining. Without them they would be only swamp pasture. It is not too much to say that whole sections of some of our best counties would be of little use agriculturally if it were not for tiling.

The Government Assists

The old-time farmer who tiled had to be his own surveyor and drainage expert. Nowadays our provincial governments are alive to the importance of tile drainage and are doing all in their power to assist the farmer to tile. In Ontario, for instance, Prof. W. H. Day of the Agricultural College at Guelph, or any of the local district representatives will be glad to make ar-

rangements with any farmer to have his field surveyed, a drainage chart drawn up and complete information given as to digging of ditches and laying of the tile. The other provinces of the Dominion have made similar provisions. The cost of this expert assistance is practically nothing. The farmer must pay the railway fare of the surveyor to his farm and board him during his stay. Where several farmers in a locality have their farms surveyed at the same time the expenses to each are negligible.

The biggest difficulty in tile draining has always been the securing of labor for digging the ditches. In sections where a ditching machine is available the labor problem has been solved and the tile may be laid more cheaply than would be possible where hand labor only must be depended on. This year labor is more plentiful than heretofore, and it will be a wise farmer who lays his plans for tiling that part of his farm in need of drainage before the snow flies. Spring and fall are the tile drainage seasons. Even if actual operations are not begun this From the "Grain Growers' Guide." fall, prepare plans for next spring.



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