

## Preparation of Soil for Seed Grain.

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I know of no business in Canada where the old adage "whatsoever is worth doing at all is worth doing well," is so applicable as to that of the farmer. Yet the season for the accomplishment of our work is so limited, that great hurry is sometimes necessary in order to be on time. This frequently results in negligent and careless operations which always result in loss.

I am a strong believer in thorough tillage of the soil; I have seen land made to produce fully one-third to one-half more for no other reason than extra tillage. Few farmers in this country work the soil sufficiently; the second field seems to be waiting while they are tilling the first, and the time is so short there is always a temptation, before the work is fully completed to say, "I guess it will do; we have not time for more." The man who succeeds as a gardener does not neglect this part of his work; he does not merely turn the land over, but he is careful to see that it is properly pulverized and put in such a condition that every plant will count in the general product. This ought to be the aim of the farmer in sowing grain in the field. We usually allow a large percentage for waste, that is to say, we expect only a percentage of the grain sown to mature fully and afford an abundant increase. But why should this be? Why should not the farmer aim first to sow seed from which is carefully taken all *inferior* grains, and then look for an increase from *every one* sown. This cannot be expected unless greater attention is paid to the preparation of the soil. In this as in the other matters pertaining to agriculture it is not wise for any man to lay down definite rules. The difference in soil requiring different treatment must always be taken into consideration. What would answer admirably on a light sandy soil could scarcely be followed with great success on heavy clay soils. Yet this one general rule may be applicable in every

case: Let the soil be so thoroughly prepared, so evenly pulverized, that as nearly as possible every grain may count in the general increase.

Who has not seen fall wheat sown in the autumn upon land so lumpy and full of clods that it was quite out of the question to cover the seed, or if covered, to expect it to force its way from underneath these heavy clods. Would it not be wiser first to put on a heavy roller or crusher, and afterwards complete the tillage with other implements, rolling the second time if necessary. This would consume some time, but it would abundantly pay in the end. It is not enough to turn the soil over; it should be thoroughly mixed, and sufficiently tilled afterwards to give it some solidity. Better results will be attained by frequent harrowing to accomplish this end than by rolling, which gives you a solid surface, while underneath is still more or less porous and loose. Where sod is ploughed in the spring for a crop, it will be more necessary to use the roller than in other cases.

A favorite plan which I have adopted is to roll immediately after the plowing. The better the plowing is done the less necessity perhaps for the work; but for the average plowman it will be found an improvement to follow immediately with the roller, which settles the furrows in their places, affords a more solid surface, and prevents the grass roots from being dragged to the top in preparing for the seed. At the conclusion of the tillage it may be rolled again. It should be packed so solid that when decay takes place the ground will still remain firm, which gives the best results in the crop. When land is properly prepared in the autumn, there will be found little necessity for plowing in the spring, and if the plowing be needed it is best that it should not be at too great a depth. An ordinary gang plow would probably answer the best purposes. Where plowing is not needed I have found excellent results from the use of what is called the spring tooth cultivator. The Acme harrow and pulverizer will be found most useful on some soils and under some circumstances.

The difficulty with all these implements being that none will accomplish equally good results at all times. For instance, the chisel tooth harrow while accomplishing splendid results when the soil is dry, will be of little service when the land is very wet and full of weeds or grass. The Acme harrow almost invaluable in some cases, when passed over a hard, dry, uneven surface will scarcely accomplish anything. The same is true of the cultivator. It is like pulling teeth, if you always use the same instrument you will need sometimes to do a great deal of unnecessary pulling.

The object of using any of these tools is to thoroughly pulverize the surface so that the plants when started shall be in the best possible condition for growth. Whatever may be the implements used let no one feel there is danger in any case of too much tillage. It does not do for any of us in the busy season to put all our labor upon one field, yet I seldom go through a season without feeling that the time is too short to put upon the land as much labor as is needed, and as well I give promise of good results.

Many farmers plow unevenly, and therefore, unless the ground be afterwards thoroughly tilled, the field presents a very uneven surface, not only for adding the best return from the seed sown, but preventing the best results from proper harvesting machinery.

All will have seen fields with great variation in the growth of the plants, some short and some of greater length. You will not reap from this field returns equal to that of one of uniform growth, when every plant is up to the proper height, vigorous and healthy. The defect is largely owing to improper cultivation and tillage. If the field had been sufficiently worked to produce an even surface and proper mixing of the soil, every plant if started from a good seed would have an equal chance and equal results would be given.

Let more attention be given to this branch of our work, and there must be large additions to the wealth-producing power of our farming lands.—*Farmers Advocate.*