

following. On light pea land, preceding fall wheat, a gang plowing, followed by the grubber, is sufficient.

Shallow cultivation has proved as perfect in practice as it is in theory, and the splendid clover leys and the wonderful crops of the O. A. C. speak highly in its favor. Since its introduction a few years ago by Mr. W. Rennie, the superintendent of the farm, lands lacking in humus have been restored to their natural fertility, the production has steadily increased, and this year the crop averaged no less than 70 bushels to the acre for the oats, and 37 bushels for the fall wheat. The use of grubbers and the adoption of a four years rotation, including 2 of clover, one of hoed crops and one in cereals have done away with fall plowing and sub-soiling. Clover, used as green manure once in the course of the rotation, besides its power of gathering the nitrogen of the air and of bringing up plant food from the depths of the soil, and one coat of dung, suffice to keep up and even increase the fertility of the land. Without any doubt, a system of cultivation which enables us to keep our soils well tilled, to derive the greatest benefit possible from our manures, and to keep up the fertility of the land without the need of commercial fertilizers, deserves consideration (1).

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LAYING DOWN LAND TO GRASS

The immediate preparation of the land for laying down to grass.—When, in the course of the rotation, the break is to be laid down to grass, it must first have a good autumn furrow, after the root-crop is harvested; if the land is light, nothing but simple stubble-cleaning need be done, to kill the insect-pests, such as maggots, cut-worms, etc., and the ploughing is to be done in the spring. But before this furrow, all largish stones, bush-stubs, must be cleared off, the rails, post-butts, that might encumber the field, must be taken away, so that, when the time comes to use the mower, it may meet with no obstacles. The ridges or lands should be, where possible, made wide and well rounded, with the furrows between them well cleared out to allow the escape of the water. This

will make the work of the mower much more easy, and in wet seasons, the grass will grow much more equally on wide ridges, well rounded up, than on narrow ridges, which multiply furrows in which the grass is never so strong, and which make the work of man and horse much harder, to say nothing about the wear and tear of the machine. Here, on the ploughed land, may be applied the chemical manures, especially super-phosphate, at the rate, when the previous root crop was fairly manured, of 300 lbs. to the *arpent*. It may be affirmed without fear that a surplus of a ton of hay to the *arpent* may be expected from this dressing, and this certainly deserves the attention of all those who aim at the best results.

A few remarks on grass-seeds.—Before speaking of the sowing of grass-seeds, I will say a few words about the proper seeds for meadows. Here is a list of those that are generally offered for sale by seedsmen, and which ought, at least some of them, to be employed more than they usually are in the mixtures sown for laying down land to grass. As most of these are only known, most frequently, by their common French name, and some even by their English name, I append a small table, giving with their botanical name in French and Latin, both their French and English common, or vulgar names. I also add the weight of a bushel of each variety, the number of seeds contained in a pound of each kind, as well as the percentage of seeds that may be expected to grow, if the seed is of the best quality. This latter point is important, for if it happens, especially when seeds of new varieties are in use, that one only finds that one-half of the seeds germinate, as is the case with orchard-grass, one is apt to think that the seedsman is a rogue.

In naming the different grasses in the table, I do not mean to say that they have in all cases the same value. Some of them answer best for meadows, others for pastures, and others again only appear in the table because they appear in the lists of the seedsmen, although are not really worth much. Such are the "Sweetscented vernal grass," and the "Meadow soft grass." Even Pacey's perennial rye-grass, so highly valued, and properly so, in Europe and the United States, hardly succeeds in this province, except in the Montreal district. Many repeated trials, with mixtures containing this seed at the rate of ten pounds to the *arpent*, have only shown me a few stems of this plant, while of foxtail, the fescues,

(1). And how long will it be before this frequent repetition of clover will have the effect of preventing the growth of that plant at all? Ed.