

# THE CANADA FARMER

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## The Field.

### Summer Fallowing.

One of the most ancient methods pursued of restoring fertility to the soil was that of fallowing. The ancient Hebrew law commanded a rest to the land every seventh year. Among the Romans fallowing was a universal practice; in most cases a crop and a fallow succeeding each other, so that their system of farming was but a short two-course rotation. With them the land was ploughed soon after harvest, again in spring, and the succeeding summer it was constantly stirred till seed-time came again, the object being, as an old writer of that day observes, "to let the earth feel the cold of winter and the heat of summer, and to render the soil free, light, and clear it of weeds, so that it could more easily afford nourishment to a crop of value."

The Romans introduced their system into England, and there it soon became established, from proving successful in restoring fertility to the soil. The practice did not, however, extend to Scotland till early in the eighteenth century, when Mr Walker, of Beanston, East Lothian, first introduced it on his farm. So great an innovation was it then that Mr. Walker had to endure the ridicule and contempt of his neighbours, who declared him insane for letting his land lie waste for a whole season. Yet so successful did his practice prove, that in less than twenty years after summer-fallowing had become general throughout the country. Previously to this, the land had been cropped year in and year out, till it ceased to produce enough to pay for the labour of working, when it was left alone and allowed to get self-sown with grass, and remain so till the operation of natural causes again brought back some degree of fertility to the soil.

It has been a matter of much debate as to whether a bare fallow is not a loss rather than a benefit, and there can be no doubt

that in many cases fallowing is resorted to without due consideration of the subject, and in other cases, even where it is absolutely necessary to fallow the land, in order to bring it into a proper state of tilth, and get rid of weeds in the soil, the work of fallowing is so bunglingly and inefficiently done, as to prove of very little real value towards attaining the object aimed at.

On light soils, and those that have been thoroughly drained and kept under a proper course of rotation, with hoed crops in their regular course, over a large extent of land, there can be no necessity for a summer fallow, but there is still a great advantage in fall fallowing such of the land as has been in grain crops not seeded to grass, or clover ley intended to be prepared for the root crops of the next season.

The introduction of turnip culture in Britain has in a measure done away with much of the necessity for summer fallowing, except on strong and tenacious clays. With us that system can only be carried out to a very moderate extent, as our climate, besides being less favourable than that of Britain to the growth of turnips, requires that the entire crop should be taken up, carted away, and put under frost-proof cover for the winter season, instead of, as with them, being left in the ground to be fed off by the stock, as occasion may require. This adds too greatly to the cost of our turnip crop to make it a profitable one to grow largely, except by those farmers who keep a high class of stock, and have the necessary capital to enable them to grow the crop, and turn it into beef, mutton, and manure, with advantage.

At the same time, while the climate of Britain is favourable to the growth of turnips, it is less so than ours to the proper preparation and working of a summer fallow. One of the great objects of summer-fallowing is to render available the stores of plant food locked up in the soil, by exposing it to the ameliorating influence of the sun and the atmosphere. The absorbed heat of the sun has great influence in bringing about chemi-

cal changes in the soil, while ammonia is imbibed from the atmosphere. Hence it comes that the deeper and oftener we can stir up the soil with the plough during the heated term, the more ameliorated and richer it will become, especially if of a clayey nature.

There are three objects to be gained by summer-fallowing, each separate and distinct in itself, and requiring a somewhat different method of procedure in order to attain them:

First in order we may place the proper preparation of those strong clays which form, under good management, our best and most profitable wheat lands. On such soils we cannot well dispense with a summer-fallow, as the best and most certain method of ensuring heavy crops of winter wheat. Such soils contain, in a great measure, all the mineral elements that are needed to make up the bulk of the wheat plant. The object to be aimed at on such soils is to render as much as possible of these mineral elements available, by bringing the soil in contact with heat and air, in order to effect the chemical union of the several elements with the carbonic acid and ammonia derived from the atmosphere, and so set in decomposition, for until this is done they remain dormant in the soil in an unassimilable state, in which they cannot be taken up as plant food. To do this well and thoroughly the land must be ploughed and cross-ploughed at least three or four times during the summer, leaving the land rough and cloddy after each ploughing, till the last one before seeding time. It is no uncommon practice, though a very useless one, to harrow the land down smooth, and even to roll it, after each ploughing. This defeats the very object that ought to be kept in view, of exposing as much of the soil as possible to the sun and air, for the more cloddy and rough the surface is, the more heat, and ammonia, and carbonic acid, can it absorb. In some cases it may be advisable to harrow or roll the land, if very rough, but this should only be done just before the next ploughing opera-