

thing, therefore, determines us to advocate the idea of working up the roots into some merchantable article at the farmer's own home. An acre of roots may safely be calculated to yield fifteen tons under favourable circumstances. The yield of ten per cent. of such syrup, as heretofore described, is but average, and will often be exceeded, according to all authorities. The price of such may be set down at 5 cents per pound, as it will be almost, if not quite sugar; and the gross return from an acre of beet root would be about \$168 without calculating any value for the cake.

CULTIVATION

In the British mode of raising the roots the greatest care is taken to secure absolutely genuine seed as any faulty or old seed will result in "rips," as they are termed, by which a considerable reduction in the yield per acre is often produced.

The White Silosian is generally supposed to be the best, although several kinds are in use in Prussia, Germany and France, and each has its special advocates.

Examining the construction of the shell containing the seed, we find it composed of two or more cavities, each holding a small brown seed. If these seeds are quite fresh, one sown every six inches is a plentiful seeding, but unfortunately this is rarely the case. It is a class of seeds very subject to natural depreciation, or to wilful adulteration. Absolute trial of its germinating powers will alone determine its value. In former years, when in England, I have often grown this plant, and have experimented on its culture in many ways, and after all have decided that the best course to pursue is to drill in the seed, and not under any circumstances to bury it more than one to one and a half inches deep; a roller should follow to cover all securely. Previous to sowing, the seed should be steeped for 24 hours in water; this greatly facilitates its germination.

In preparing the land, it is by some considered very important not to use any manure the same year; the previous crop, however, ought to have been well manured. Many farmers dissent from this opinion, and manure highly the same year. The land must be clean and well pulverized, and never worked except when quite dry. Beets and mangolds abhor hard baked earth, and never do as well in it.

The most approved way of preparing the land is to manure heavily in the fall, about September, and at once ridge and furrow the land with deep ploughing; the manure will then be all thrown together under the ridge, and be fully decayed by the spring, and as a very much larger surface will also then be exposed than if the land lay flat and level, there will be a proportionate number of weed seeds germinated, and all there is in the manure will grow or decay

Early in the spring, after the land is dry, split the ridges with the plough, so as to leave it quite rough, turning another side up,

thus exposing more surface for the growth of weed seed. In two weeks harrow well across; this will again destroy all weeds; and repeat the harrowing about the middle of May. The land will now be quite free from weeds, all having grown within the influence of the atmosphere, and the soil will be very fine and loose. Now drill in the seed about two feet apart, and thick enough in the row to be sure of a plant every four or five inches at least. Directly the rows can be seen, run the horse hoe through them, passing as close as possible to the young plants, so as to be quite sure not to injure them, and in two weeks, or about the second week in June, hoe the rows carefully by hand, leaving all the plants, so that the grubs may be supplied without danger of losing the crop. This, of course, costs more in seed, but much less in loss of plants. In a week or two hoe again, still leaving all the young plants, until they are about four or five inches high, when they may be considered out of reach of their enemies, and may be thinned out to nine inches, or even less. Seven inches apart will not be found too close. A moderately small root yields much more sugar than large ones. The chief work is thus done with horse power, and a man will easily hoe an acre a day, when he has only to strike the hoe through the rows, the centre part being kept quite clean by the horse hoe. You will now find the great advantage of your previous care with respect to seeds, and the crop will soon begin to cover the ground. As soon as this is the case, you must have a peculiarly and properly constructed plough, that will earth up the rows somewhat, but at the same time not cover the hearts of the plants in the least—such as will leave the land in a succession of little ridges, one on each side of each row, about four inches above the level, but not overflowing towards each other. We used such a plough for many years and one of this kind will do three acres a day. This will effectually finish the weeds, and will prepare the roots to produce the greatest quantity of sugar from a given quantity grown, as all portions of the root that are out of the earth are almost, if not quite worthless for sugar. The plants will now take care of themselves until the end of September or beginning of October, when, if required, pulling may be commenced.

Of course, they will continue to increase in size until the frost stops Nature's operations, as all roots whose leaves are green in autumn grow twice as fast the last month as during any month previous. This is the case with turnips and mangolds, as is well known; but with beets, frost must be carefully guarded against, and harvesting the roots must be commenced and completed before any injury from frost is apprehended.

Opinions as to the best mode of digging differ most materially. Some advocate the spade or fork, while I most certainly never used either, but always the plough. This requires very careful manipulation, but is

better and much cheaper than any other mode. When a deep furrow is run close to one side of the row, and another in the bottom of that, the roots will be quite easily thrown out, so as to be readily taken by the greens, and after shaking off the loose earth that adheres to them, a smart blow of a knife will sever the crown, and allow the root to drop into a basket placed to receive it. Care must be taken that as little injury as possible is inflicted on the root in the act of digging, and absolute freedom from frost is requisite in any place where they are stored. Pitting in the field, from this cause, is bad, as if they are to be exhumed during winter, many will be frozen and injured in the process. It is infinitely better to use a root-house, carefully ventilated, underneath the rails that are to form the floor on which the roots rest, and the current of air, so admitted, is to be directed by corresponding apertures to an exit above, wherever the roots may show some signs of vegetation or heating.

Almost, but not quite freezing, is the correct temperature. Germination from heat will totally destroy the sugar they contain, and constant care in this particular must be exercised.

In another article I propose to offer some suggestions as to the construction of such cheap but efficient machinery as will enable the syrup to be obtained sufficiently pure for home consumption.

C.

The Wild Oat.

A correspondent from Howick, who signs himself "a constant reader," makes enquiries respecting this terrible pest to farmers. He was referred to the June number of the CANADA FARMER for 1868; but as there are many new subscribers, who may not have our back numbers, and as it is impossible to say too much against this pestilent weed, or to caution farmers too strongly against allowing its introduction into their farms, the following information will doubtless be acceptable.

The wild oat, the botanical name of which is *Avena fatua*, is well known all over Britain and Europe, and is universally dreaded, and no expense or pains is spared to keep it under. Notwithstanding this, although possibly it does not increase in the old country, it certainly holds its own, and still maintains its existence. It is a winter oat, lives and thrives through our severest seasons, never winter kills, has no parasite or special insect destroyer that has, as far as we know, ever been described. Its seeds have a most unrivalled vitality, and an unlimited power of adaptation.

It flourishes everywhere when it once gets a foothold, and, let the crop be what it may, it fraternizes with it. It starts with the fall wheat, grows taller and faster, and more luxuriantly, and ripens its seeds before the wheat ripens; consequently, by the time the wheat is gathered its seeds are principally self-sown, or they are sown when harvesting the crop. If a spring crop is sown, it