

To me, these are unheard of things. Since I have been superintending the farm of the Seminary at St. Hyacinthe, I have had occasion to employ men of different working capacity. But for four years, I had in my service a most industrious Frenchman, one who knew perfectly how to do farm work, how to use the hoe, was never troubled with a pain in his back; a man who worked from four o'clock in the morning till seven at night, and who never stopped except for his meals, and twice a day for the time he took to fill and light his pipe (not to smoke it). Well, this man was never able to single (*éclaircir*) an arpent of mangels in less than six days, (1) But, I am speaking of work thoroughly well done. (2)

For, if you want to succeed in the cultivation of mangels, to get a return that will repay you for your trouble, you must leave each plant separate: and that is a serious piece of work. If you leave two plants touching each other, you will have two mangels as big as your finger.

Now, at Three-Rivers, I stated that I could not cultivate an acre of mangels for less than twelve dollars. Remark that I do not speak of the preparation, sowing, etc., but only of the work done after the seed is sown. At the Seminary farm it is easy enough to know what work costs, for we have to pay for all that is done. It is not the same with a man who has a family. He gets a good deal done by his wife and children of which he keeps no account. But he who cultivates a farm entirely by paid labour, can easily, if he pleases, find out the entire cost.

Now, striking an average (it is possible that, in some seasons, the cost I speak of has not been so great, for in some years weeds do not grow so fast as in others) of the last six years, mangels have cost us twelve dollars an acre to cultivate.

I do not mean to say that this is the universal cost. But if any one will offer to undertake for me the care of an arpent of mangels after the sowing is done for three dollars, I will thank him, and return to the cultivation of mangels for a certain length of time.

Some one in the audience there may be who has discovered the secret of singling by chopping out (*à la tranche*) or otherwise, the rows of mangels.

We have 96 rows on the width of an arpent, and a man takes six days to go over these rows and single the mangels. We must not conceal from ourselves, that for mangels, hoeing with the horse-hoe will not suffice. The hand-hoe must necessarily be used, for with the horse-hoe, the mangels are in danger of being out. Besides, to grow a paying crop in a rainy season, three hoeings at least must be given, if we wish to prevent the grass from taking possession of the land and injuring the crop.

The Cultivation of Mangel-wurzel.

M. CASAVANT.

Mr. President and Gentlemen.—I shall not detain you long; I am only about to say a few words on the cultivation of mangels, in support of the address of M. l'abbé Chartier.

account is as follows; v. November number of the *Journal of Agriculture*, 1887, p. 171:

Two horse-hoeings	\$1.00
Two women—chopping out—1 day, at 60 cts.....	1.20
Two " singling by hand after the chopping out....	1.20

	\$3.40

To which M. Guévremont adds: "I think this is the extreme possible cost." Mr. Chartier adds above in his address: *Il trouve moyen, avec deux femmes, de sarcler un arpent de betteraves dans une journée.* M. Guévremont, on the contrary, says "two women chopping out, and two women singling after the chopping out": I believe that two and two still make four.

JENNER FUST.
(1) Six days of 13 hours each, exclusive of meals! equal to 7½ days!!!

(2) So, certainly, was M. Guévremont.

M. Chartier tells us that Mr. Jenner Fust, in the *Journal of Agriculture*, asserts that mangels can be cultivated for \$3.00 an arpent. It would be of great use to the country, if the secret of so cheap a style of cultivation could be revealed to our farmers.

A short time ago, I had the pleasure of meeting M. Denis, agricultural superintendent of the Berthier sugar-factory; he told me that he put the cost of the cultivation of an arpent of mangels at \$12, including the singling by hand. So that his valuation is lower than that fixed by the abbé.

For my part, I think the cultivation of mangels might be done for \$8 or \$9 the arpent. It is absolutely necessary to give the land two good *grubbings*, for a superficial stirring is not enough. If the upper stratum of the soil is not broken up sufficiently to admit of the air penetrating into the subsoil, the crop will not be as large as it ought to be. To save a few dollars of outlay, and, on the other hand, to lose half the crop, is not economy. What is needful is to get the greatest return possible.

M. Chartier fixes the cost of this cultivation at not less than \$12 an arpent. I have no doubt that when it is carried on under the superintendence of others besides the proprietor, it costs still more. By doing the work ourselves, something may be saved. But, at all events, we cannot calculate on getting it done for less than \$8 or \$9 an arpent. (1)

As to the nutritive value of mangels, there is an enormous difference between the different kinds of the root. The great beet, which is called the field-beet, is I am certain no better than ensilage. But if you grow the little white beet, which yields from 15 to 20 tons an acre, you will find it much better in quality. It is very different from the other, so that all depends upon the species of beet you grow.

For my part I should not advise people to give up root-growing. As M. Chartier said, they are very useful in the months of October and November, when the siloes are not ready, and the summer-swath (*coupe d'été*) has failed. There would then be a good lot of forage at the season when the pastures fail, though the cows still retain their milk-giving powers, and this milk is the richest of all the season. It is then that roots are of the greatest use.

In a word, I only spoke to support M. l'abbé Chartier.

M. DENIS.

Mr. President and Gentlemen.—I am not here to make a speech of any kind, and still less to make a fine speech. I am going to speak of the beet-crop. I came to this country to promote the cultivation of the sugar beet.

The lecture, so practical and well expressed, that the abbé Chartier has just delivered, confirms me in several conclusions which I have drawn during the six years I have been in the country.

Still, \$12 for hoeing and putting in order an arpent of beets seems to me to be an exaggeration; though not so great an exaggeration as the *Journal of Agriculture* asserts it to be. For this work, women and children may serve, and their work is not so high-priced as the work of men.

In France, we pay for singling by hand (*l'arrachage*) \$24 the *hectare*—nearly three arpents. Here, I calculate it should cost a little more. For hoeing, you would have to pay \$8 or \$9, and I suppose you might single them by hand for \$12. (2)

I do not come here to make any claim to support for the sugar-factory; but you will understand that I cannot allow this occasion to pass without saying something about it. The factory is in the hands of men of means, men on good terms

(1) Well, M. Guévremont, if his expenses are paid, will, he tells me, be very happy to go next July, to St. Hyacinthe and show the farmers how I taught him to do the work. A. R. J. F.

(2) Yes, but M. Denis is speaking of sugar-beets.