

best soil is a deep, mellow, sandy loam, with a permeable subsoil. The land requires to be well manured, and the manure well mingled with the soil; and an additional supply of commercial fertilizer, as rich superphosphate, should be furnished to the drills, along with the seed. About sixteen pounds of seed per acre; and this should be planted in drills, about eight inches apart in the row, (3) and the drills sufficiently apart to admit of one horse with implement to pass between. The nearer these drills are, the better for the sugar yield, as the beets are dwarfed by crowding, and the smaller beets, say from one to one and one-half pounds, are richer in sugar than those of two or three pounds weight. It will always be found desirable to plant this seed with a machine, of which there are many good kinds to be obtained. It is always well to plant considerable seed, so as to escape accidents. When the beets are thinned, as they should be when about three-fourths of an inch high, the surplus plants can be removed more economically than new plants can be grown in the vacant spaces. The depth to plant is from one-half inch to one inch. In Dr. Grovven's experiments, the plants from seed planted from five-eighths to one and one-eighth inches deep were always the most vigorous. The time for germination depends upon the mean temperature, and various other circumstances. In Haberlandt's experiments, at about 40 F., it required twenty-two days for germination; at about 50 F., the plant was equally advanced in nine days; at 60 F., in three and three-fourths days, and at 65 F., in three and three-fourths days.

There is usually one hoeing or cultivating of the field before thinning, and then cultivations after thinning. Like the corn plant, the beet plant requires frequent stirring of the soil during growth; and unless this be attended to, the farmer need not expect success. It is a maxim in Germany that, "The beet requires much hoeing," and again, "Hoeing makes sugar." Yet care must be exercised not to continue the hoeing too late in the season. The beet plant usually makes leaves before it makes much root, and the leaves elaborate the carbonic acid from the atmosphere, form product, and store the product in the root. Hence there are two stages of growth to be observed—the first that of leaf growth, the second that of root growth. During the first stage frequent cultivation is very beneficial; but when the leaves are formed, then all cultivation should at once stop.

In lifting the beets at harvest, a spade is used to loosen the earth and pry up the root, which is then freed from earth by knocking two roots together, and then thrown into a pile, the leaves having been

first cut off by a strong blow with a long knife. The piles are then immediately covered with leaves for protection from the sun, and to prevent the drying effect of wind, so that the beets may not become wilted, which is prejudicial to their value to the manufacturer, as well as diminishing in weight for the grower, who sells by the ton, and is therefore equally interested in preventing evaporation from taking place. Machinery has also been used for the digging, and its action is well spoken of.

When the pulp from the factory is returned to the soil, through the feeding to cattle and using the dung, the beet crop is not very exhausting; and a competent authority, T. T. Fuhling, asserts that the substances resorted to the soil by the manure resulting from the feeding of 2,300 pounds of hay, together with the refuse or pulp, is sufficient to restore the fertility which the average crop has removed, thus:—

	Nitrogen.	Phosphoric acid.	Potassa.
	lbs.	lbs.	lbs.
Substances abstracted by a full sugar-beet crop.....	36.4	15.8	96.4
Substances returned in the manure from the pulp.....	19.8	9.5	19.0
Substances returned in 2,300 lbs. of hay fed out.....	32.0	4.8	33.2

An examination of this table shows that a supply of phosphoric acid and potash is indicated, and that, under circumstances of abundant manure, a supply of phosphoric acid in the form of a superphosphate would be beneficial. Indeed, experience shows that a superphosphate in the drill should generally be used, not only to hasten the early growth of the plant, so as to push it ahead of dangers incident to the young state, but it also acts specifically in increasing the fibrous roots of the plant, and thus renders it better fitted to feed upon the plant food in the land.

The teachings of those who have written on beet culture seem to furnish the following rules:—

1. Use stubble land.
2. Use land of deep and permeable soil.
3. Plough in the manure deeply, and harrow thoroughly.
4. Use artificial fertilizer in the drill.
5. Plant thickly, and as early as possible.
6. Cultivate intensively, *i. e.*, frequently and thoroughly.
7. Harvest as late as the season will allow.
8. Prevent the roots from wilting after they are pulled.
9. Market as early as possible after lifting.—*Liverpool (N. S.) Advance.*

## SUGAR BEETS.

(From the *Agriculturist*, Fredericton.)

THE Sugar Beet Seed imported from Germany by the Department for Agriculture has been pretty well distributed, so that farmers can obtain it with as little trouble as possible. Agricultural Societies and others who have not already sent their order to the Secretary for Agriculture should do so as soon as possible. We would urge every farmer in the Province to give the Sugar Beet a fair trial, so that he may know from actual experiment the cost of raising it. This information is necessary before a company would go to the expense of raising a factory. In adopting this course the farmers run no risk of loss, as there is no doubt but that the beets are as valuable as any other root crop for feeding. We would suggest that a correct account be kept of the cost of producing the crop on a given extent of land—which should be accurately measured—all the details should be put down in writing as they occur, so that there may be no guess work.

We have received the following letter from W. D. Perley, Esq., Treasurer of the Sunbury Agricultural Society, which gives the conditions adopted by that Society, and on which prizes will be awarded:—

MAUGERVILLE, April 20, 1879.

DEAR SIR,—At a meeting of the Sunbury Agricultural Society this day, the farmers expressed a willingness to experiment in growing the Sugar Beet. The following are the conditions: They are to keep an account of the time of sowing, quantity of seed used, the quality and character of the soil as near as possible, the quantity and quality of manure and how applied, if any artificial manure is used state kind, quantity and how applied, the mode of cultivation, the time of harvesting, and the yield by weight and measurement per 1-8 of an acre, with full particulars of cost of cultivation, &c. An accurate account of all the above particulars to be given to officers of the Society on or before the 20th of November.

I am of opinion that thirty or more members of the Society will try the experiment, and I feel satisfied that an honest trial will be made, so that a reliable opinion as regards the cultivation of Sugar Beets can be formed from our experiments. <sup>4</sup> Yours truly,

W. D. PERLEY.

As many enquiries have been made for information as to mode of sowing and cultivating, we may again give the following as essential: The ground should be a rich mellow loam, well drained, drills from twenty-seven to thirty inches apart, a liberal allowance of well rotted manure spread in the bottom of the drill, as usual for root crops; should special manure be used in addition it may be sown on the manure before covering. After the manure is covered, which should be done by a double mould board plough, the drills should be lightly rolled before making a track for the seed; the seed should be sown immediately after the track is opened, before the earth has time to dry, and