

in the previous crops.....	\$12.00
Ploughing.....	4.00
Cultivation, horse cultivator and hand, 2 hours.....	0.50
Twice more before sowing...	1.00
Seed, \$2.25; Sowing worth 75 cents.....	3.00
First hoeing.....	4.00
Second hoeing, thinning, and transplanting, to supply de- ficiencies.....	4.00
Hoeing again, and loosening the ground with machines..	2.00
Harvesting.....	9.00

39.50

Now, I will give the manner of making Beet Sugar.

The first operation is to clean the roots; some effect this by washing, others prefer scraping and paring them with a knife, although by this means one sixth part of the root is wasted, as the scrapings mixed with earth cannot be safely given to cattle, and even the pigs eat but little of it; but it adds to the manure and is not altogether lost.

Then the pulp is ground, it is put into strong canvass bags, and placed under a powerful press to squeeze out the juice. The residue is stirred and subjected to a second and third pressure, if necessary, till every particle of juice is extracted. As the liquor is pressed out it runs into a copper until it is two thirds filled. The fire is now lighted, and, by the time the copper is full, the heat should be raised to 178° of Fahrenheit's thermometer, but no higher. In the meantime, a mixture of lime and water has been prepared by gradually pouring as much water upon ten pounds of quicklime as will make the mixture of the consistency of cream.

This is poured into the copper when the heat is steadily at 178° and is well mixed with the juice by stirring it—The heat is then increased till the mixture boils, when a

thick and glutinous scum rises to the surface. As soon as clear bubbles rise through this scum, the fire is suddenly put out by water poured on it, or by a proper damper. The scum hardens as it cools, and the sediment being deposited, the liquor becomes clear and of a light straw colour. The scum is then carefully taken off with a skimmer having holes in it, and is put into a vessel till such time as the liquor remaining in it can be pressed out. A cock is now opened about five inches above the bottom of the boiler, and all the clear liquor is drawn off. Another cock lower down lets out the remainder, until it begins to appear cloudy; what still remains is afterwards boiled again with what is extracted by pressure from the scum. The clear liquor is now subjected to evaporation in another boiler, which is wide and shallow. The bottom is but slightly covered with the juice at first, and it boils rapidly. As the water evaporates, fresh juice is let in. When a certain degree of coagulation or thickening has taken place so as to show five or six degrees of strength, animal charcoal is gradually added till the liquor arrives at 20°. One hundred weight of charcoal is required for the juice of two and a half tons of beet, which is now reduced to about 400 gallons. The evaporation by boiling continues till the thermometer marks 25°, and a regular syrup is obtained. This is now strained through a linen bag, and the liquor is kept flowing by means of steam or hot air, and assisted by pressure. In two or three hours all the clear syrup will have run through.

The syrup thus prepared is again boiled and skimmed until it is sufficiently concentrated which is known in the following manner: The skimmer is dipped into the syrup and drawn out; some of the thick syrup which adheres to it, is taken between