

# Sorghum Sugar Making.

We take from the *Indiana Farmer* the following interesting account of a visit to the celebrated Sugar Works at Champaign, Illinois:—The works are located just outside the city limits. Outside the building, which is a three-story frame and entirely too small for the amount of work required of it, was a busy scene. Wagons were coming, standing awaiting their turn, unloading or driving out of the yard. Two at least were constantly alongside the carrier, or endless apron, unloading the juicy cane. The carrier, by slow but steady motion, carries its load forward and up towards the first set of crushing rollers. By the pressure of these some 75 or 80 per cent. of the juice is forced out and carried through a large spout into an immense tank below. A little further on the cane is passed through another set of rollers, after being saturated with hot water, and some 10 or 15 per cent. more of superior juice is pressed out. The bagasse is now somewhat dry, but far from a fit condition for burning, as it seemed to us; yet it is carried on up over the openings to the furnaces and dumped in in great masses of half a cord or more, and by means of a powerful blast of hot air brought through holes underneath the furnace, is consumed as readily as dry shavings, and at a saving in fuel of \$50 or more per day. Only one-third the amount of coal is required for running the furnaces that would be necessary if the bagasse were not consumed in this way.

From the tanks below the crushers the juice is pumped into two immense tanks of 1,580 gallons each on the roof of the building, 45 feet above. Here it is treated to a certain proportion of carbonate of lime. It is then drawn off into five defecating tanks on the third floor. These tanks hold 500 to 600 gallons each. After remaining here for a few hours, subjected to heat, the scum is removed and the juice is drawn off into two copper evaporating pans of 560 gallons each, which are provided with large coils of pipe, into which steam is admitted. Here a furious boiling takes place for some 30 minutes, in which time the juice is reduced to a condition called semi-syrup, being a density of some 20 per cent. greater than water, or 20° Baume. In the process 14 gallons of water are thrown off every minute. The syrup is now run into a number of settling tanks, and from thence into a number of tall, upright iron cylinders, called filters, in the bottoms of which a quantity of bone charcoal has been placed. This is the first filtering process. The filtered syrup is discharged into tanks in the basement, and is then pumped up into a larger and taller filter than the others, extending through part of two stories, and containing 1,200 gallons. The bone coal used in filtering is reheated and used over and over again. The juice is now forced into a large supply tank connected with the vacuum pan. Here is where the important and careful manipulation is done. The vacuum pan is an immense and costly affair. It has a capacity of 1,500 gallons, but only 1,200 gallons of syrup are usually admitted at a time. Here it is boiled at a temperature of about 160° for from four to five hours, under the personal inspection of Professor Webber, who frequently draws off and examines a sample of it in a glass test tube, to know when to pass on the "strike," as it is called, to the movable pans, in which it is left for a time to settle. It is now in a mushy condition, and, before going through the centrifugal mills, is passed through an odd-looking, many-toothed affair, somewhat like a threshing machine, and called the mixer. Here it is torn to pieces and drops into the centrifugals, hollow wheels some three feet in diameter, with broad rims pierced with numerous fine holes, and enclosed in iron cases. With a speed of 1,200 revolutions a minute the uncrystallized portion of the mixture is sent through the holes in the rim of the wheels and passes down into tanks below in the form of syrup, while the sugar passes into other receptacles. The ordinary work done by centrifugals is 120 pounds of sugar each hour. Much of the cane has been touched by frost, and thus damaged for making sugar, and much of that that was not injured by frost is quite green, so that a smaller proportion than usual is susceptible of crystallization, and some of it requires to be run through the vacuum pan and the centrifugals a second time. We brought away a sample of a lot that had been thus treated that was very fine in appearance and of superior flavor, equal in strength and quality to Orleans sugar of the same grade. The cane, or raw, corn-like taste was entirely removed, and the sugar sells readily at 9c. for brown and 10c. for light granulated in retail grocery stores.

The works are now using about 150 tons of cane per day, and making 1,500 gallons of syrup or its equivalent in sugar. The company is using the product of six hundred acres, two hundred and fifteen acres of which were under their own cultivation, and the remainder belonging to farmers in that vicinity. The average yield of cane the present season is about 9 tons per acre. Under favorable conditions of weather and cultivation it should reach 15 tons. The company pays \$2.50 per ton for cane unstripped, and \$3 per ton for stripped and topped, delivered at the works. The cultivation after the first few weeks is no more difficult than for corn, and with a good yield the profit is much better than on any of the ordinary farm crops. It is safe to predict that a much larger area of cane will be put out next year, and that sorghum sugar works will be multiplied. This company has works also at Hoopeston, Ill., and at Sterling and Hutchinson, Kan., and they propose to put up machinery next year at several other points where sorghum is extensively grown, for the purpose of reducing the juice to what is called the semi-syrup condition. In this condition it can be sent to one of the works already established and run through the vacuum pan and the centrifugals at any time, and thus keep this expensive machinery at work through a large portion of the year. The present season it will have nothing to do after November.

An outsider can only guess at the profits made by the company, but it is evident that they are entirely satisfactory. A reporter of a Chicago paper who was present figures the profit from an acre of cane at \$51.75. At this rate their 600 acres at Champaign would net the company the handsome sum of \$31,050.

## OUR NORTHWEST.

THE EXPERIMENTAL FARMS TO BE ESTABLISHED BY THE C. P. R. WEST OF MOOSE JAW.

A special train made up of fourteen cars and a locomotive went through Regina recently, bound for Moose Jaw. It contained teams, men, and outfit for the establishment of experimental farms along the line of the C. P. R. west of Moose Jaw. So much having been said adverse to the land west of Moose Jaw, the company conceived the idea of establishing farms to test the land thoroughly. This was not on the ground that the directors had lost faith in their lands, as their hopes concerning it are still of the brightest; but their desire was to win others who think differently to their line of thought as while these adverse opinions were held it would be difficult to get farmers to try an experiment in which there was the least chance of failure.

The train was made up of four cars of mules and horses, four cars of fuel, two boarding and sleeping cars, one baggage car, Land Commissioner and assistant's car and caboose. The train was in charge of Land Commissioner McTavish, who was accompanied by Assistant Commissioner L. A. Hamilton and Inspectors Ducker and Struthers, the number of men being about forty. First ground will be broken west of Moose Jaw at the entrance to the co-teen. The system will be to stop at the farm selected, plow during the day, and move to the next farm during the night, arriving in time to repeat the operation of the day before. Farms will thus be started about forty miles apart between Moose Jaw and Calgary, and it is expected that on these the Company will have broken this fall about six hundred acres.

In the spring buildings will be put up and a farmer located on each farm sufficiently equipped with stock and machinery to break four hundred acres next season.

The experiment is one of the deepest importance to the North-West Territory, as it will effectually solve the vexed question as to the adaptability of the lands, through which the railway runs, for agricultural purposes.

## Nibs.

A circular has been issued by the Minister of Education, laying out the course to be pursued in the Farmer's Examinations about to be established. The circular is long, and having already appeared in the leading weekly papers, we have not reproduced it. We hope these examinations will encourage the study of agriculture and keep our farmer's boys at home, where the opportunities to become happy, useful and well-to-do are without a rival. Why select the month of July, the busiest in the year, for the examinations?

During this month and the next the subscriptions for nearly all the periodicals in the country are sent in. Now is the time to introduce to your friends the subject of taking THE FARMER'S ADVOCATE. Send for specimen copies, our illustrated Premium List, and poster.

THE MINISTER OF AGRICULTURE.—We regret that the Hon. James Young has been compelled to retire from the office of Minister of Agriculture for Ontario. A most useful and conscientious career was expected from Mr. Young. We hope that his health will soon improve, and that Col. A. M. Ross, M. P. P. for Huron, may prove a most worthy successor. He has grand opportunities for good.

A N. Y. journal says we lately inserted a cut of their's without credit. As we have not had a cut from them for years, how could we? We did refuse a year ago to insert a stereotyped puff of their paper.

## Brown's Experimental Farm.

We notice by the American papers that Prof. W. Brown, of Guelph Ont., has issued another manifesto about stock feeding. Not having done us the honor of a copy, we await account of results from Dakota and other Western papers.

Being at the Walker House, Toronto, the other day, the Professor kindly furnished the *Globe* with the following:—

SEED EXPERIMENTS—FAVORABLE NOTICE OF THOSE CARRIED ON AT THE ONTARIO AGRICULTURAL COLLEGE.

The celebrated seed-growers, Oaksbott & Co., of Reading, England, having advised with Prof. Tanner, of the Institute of Agriculture, South Kensington, with reference to having some of their selected varieties experimented upon in Canada, Prof. Tanner wrote them as follows:—"I have to thank you for bringing under my notice the series of experiments you propose having carried out in different districts. Let me mention to you that at Guelph College they have facilities for carrying out and testing such experimental results in a manner surpassed by none, equalled by few, if any. I think you should put yourself in communication with Prof. Brown, for it is very probable that Guelph College can give such valuable help as will surprise many in the Old Country. Wishing you every success in this great international work."

Accordingly Prof. Brown has had important proposals from Oaksbott & Co., with regard to testing four varieties of wheat, two of barley, two of oats, and one of peas, which will be submitted to the Department.

The report of the extraordinary fatality among the lambs on this experimental farm was voluntarily furnished by residents thereon. We believe they spoke the truth—believe so still, the Prof. to the contrary notwithstanding.

## The Clinton Stock Sale.

This year the thorough-bred stock sale was held on the 24th of October. There was a good supply of thorough-bred cattle offered, together with horses, sheep, pigs and poultry. The sale was honorably conducted, no spurious bidding was allowed, the vendor having the privilege of one bid. But little stock was sold, buyers feeling they were not as flush of cash as usual, and sellers are not yet fully realizing the fact that the deficiency in the wheat crop must check the circulation of cash to some extent. We asked Mr. Tuber, a noted stock importer there, how his crops were this year. He said he had sown 35 acres of fall wheat, but would have to buy his bread. This at once convinced us that this was the cause of the unusually dull sale. The wheat crop has been much worse than we anticipated in this locality, and we fear that it will materially interfere with the coming season's business. We would strongly recommend our subscribers to be unusually cautious this year against incurring any additional liabilities at the present time. Just wait a few months, and you will be able to use your cash to better advantage. Avoid debt and avoid signing any paper that may make you liable for any unknown sum. You have had good times for years; you may expect a little reverse sometimes.

A movement is on foot to establish the Western Fair on a basis more satisfactory to exhibitors and others, but, perhaps, not so satisfactory to some of the present office holders.