

**SUGAR DOLLARS**

**Beet Growers See Two Roads to Next Profits**—(By George Frederic Stratton in the Country Gentleman.)

There is a great staple crop raised in this country under more remarkable conditions of both production and marketing than any other from Portland, Maine, to Portland, Oregon, or from Key West to San Diego.

Before the farmer buys a pound of seed for planting, he knows exactly what the crop will sell for when harvested. High freight rates and car shortage cause him no more concern than does Lavater's study of physiognomy, for the crop goes direct to his customers without being loaded onto anything but his farm wagon or truck. The grim specter of over-production never haunts him for his entire crop is sold at a definite price before it is made. No crop raised in America is so independent of middlemen or adverse market conditions as this. Nothing like a severe crop loss has ever been felt.

It is the sugar beet—the source of three-quarters of the sugar produced in this country—the other quarter being cane sugar. The acreage devoted to it runs to nearly one million, producing average times as many tons of the beet for which the growers received last year between \$70,000,000 and \$80,000,000.

It is grown in seventeen states: California, Washington and Nevada, comprising the Pacific Coast area with eighteen sugar factories; Utah, Idaho, Montana, Colorado, Wyoming, Kansas and Nebraska, comprising the Rocky Mountain area with fifty-five factories; and the Midwest, Minnesota, Iowa, Wisconsin, Michigan, Illinois, Indiana and Ohio, with thirty-three factories. Some idea of the size and importance of this crop may be gained from the fact that not one of those 106 factories cost much less than a million dollars; many of them cost far more. The total capitalization of all the sugar companies is nearly \$150,000,000, which is some investment in a crop of which people on the sunny side of the Mississippi River know very little and hear least.

And there is a by-product of the great crop of which nearly all people on the sunset side of the big river, excepting the growers, are as ignorant. Not only do those factories furnish the nation with upwards of a million tons of sugar each year, but cattle and sheep are fattened and the finest quality of beef and lamb is produced from the by-products.

**Farmer-Factory Cooperation**

The factories are all operated by stock companies owning from one to sixteen of the plants each. The largest is the Great Western, of Colorado, with sixteen plants in Colorado, Montana, Nevada and Wyoming. Next comes the Utah-Idaho Sugar Company, of Utah, with fifteen plants in Utah, Idaho and Washington, and the Amalgamated Sugar Company, also of Utah, with eight plants in Utah and Idaho. Some of the others are owned by companies of which the farmers are stockholders. Their production is chiefly in Colorado, Idaho and Utah.

In describing the organization and cooperation which govern the industry it is necessary to explain first that not one of the great factories has been built until the farmers in the proposed district have agreed to grow sufficient beets. From 4000 to 5000 acres is the minimum that will furnish sufficient material to operate a factory and when that quantity is assured the factory is built right in that district. Consequently with a very few exceptions no grower is distant more than three or four miles from his market.

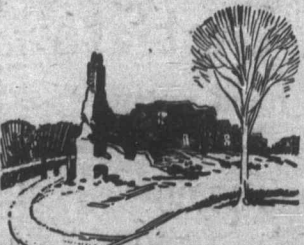
Every winter, meetings are held by the farmers of that district, or it may be of the whole state, to discuss the contracts for the coming year. Representatives of the manufacturing companies attend and the price to be paid for the beets, the acreage each farmer will plant and other minor details are settled—an individual contract being made with each grower.

**Carefully Chosen Seed**

Seed is obtained by the sugar companies chiefly from Belgium, Russia and Germany, although some excellent seed has recently been raised in this country on factory experimental farms and by the United States Department of Agriculture. Whatever the source, it is the companies who obtain the seed and test it thoroughly to insure its perfect fertility and quality. Then it is sold to the growers at cost.

Planting is by the farmers. Deep plowing is necessary and in a new district where perhaps, some farmers have not efficient horse power, the company sends in a tractor gang plow and harrow and prepares the soil, charging the grower actual cost—sixty-five cents an acre, last year.

Thinning the young plants, a very necessary and tedious hand job, is usually done on a fairly large acreage by tramp labor



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Japs or Mexicans. Here again the companies help by bringing in such labor from the Mexican Border or California who contract at so much an acre to do the thinning and topping.

The growers attend to the cultivation and irrigation through the summer. Experienced field agents of the company visit every farm frequently, noting the progress of the crop, diagnosing any appearance of trouble and giving advice—especially on the irrigation.

No harvesting is commenced by any grower until the company gives the word, for the growing season is prolonged as long as it is deemed safe from a hard freeze. Also this delay enables the farmer to get his other crops—potatoes or fruit—out of the way.

Payments are made within a month after delivery on a large portion of the crop; any balance being liquidated when all the beets are worked up, which never takes more than a hundred days. At any time after planting, if the grower needs some cash to pay help or buy some machine, the company advances him money without any delay or red tape.

Up until the days of the late unpleasantness, the price of the beets was flat, irrespective of condition. Since then a sliding scale has been adopted. A minimum price is first fixed and a bonus for sugar content above a definite percentage. Also the wholesale price of the sugar when marketed contributes to that bonus.

Thus, last year the minimum price was fixed at \$5.50 a ton to be paid no matter how low Cuban competition smashed the price of sugar. But through the winter, as the sugar was sold, the price and the then determined quality of the beets made a bonus which gave the growers a total return of from \$7.50 to \$8 a ton.

This past winter, because of the eagerness of the manufacturers to get a great increase of the beets, the price has been increased. The \$5.50 minimum is retained but the bonus, computed on the same quality and condition as those of last year, will bring the total returns up to over \$8.50 a ton.

**A Big Increase in Acreage**

In 1922 the acreage of beets all through the country was 30 per cent below the year before, the growers having been diverted to potatoes, wheat and some other crops; ignoring the fact that returns from such crops could only come after paying freight charges and sales commissions to markets one or two thousand miles away.

Several of the great sugar factories were not operated because of the great shortage of material in their districts. The companies preferred to take what beets were grown and pay railroad charges into the nearest district where they had another factory. The plants which were operated made a lamentably short run, entailing much loss as the operating cost of those gigantic and complicated plants is about as large with a light supply of material as with a full load.

So the new scale of prices, with the nearness to ruin of those growers who went into potatoes last year, is influencing a very large increase in beets this year. One of the officials of the Utah-Idaho Company told me that he felt confident that the increase would be 30 or 35 per cent. It is the same with all the companies in the Intermountain Region and Colorado and I, think, in the other outlying states.

**By-Products**

Agents of some of the companies are working in new districts to get farmers interested in beets and if they succeed in signing up from 4000 to 4500 acres in such districts, factories will be built in time to work up the crops next fall. America is importing over 3,000,000 tons of sugar each year and making only round 1,250,000—sending away up around \$200,000,000 for foreign sugar; which tidy sum would be distributed at home if we only grew all our own.

But there is another very big influence now arising which will undoubtedly help towards a great increase—in the processing of the 8,000,000 tons of sugar beets—

a normal crop—the by-products are 2,500,000 tons of wet pulp and 400,000 tons of molasses. The molasses has never been used for food, having a quality and flavor which are not acceptable to the average palates; but as a mixture with hay or grain for stock fattening purposes, it is very valuable, as is also the pulp.

There are also the tops and crowns which weigh nearly as much as the beets or roughly 8,000,000 tons for the entire production. These are highly valuable for beef cattle or sheep and can be siloed successfully, or in the semi-arid country, may be dried and stacked like hay. These tops are left in the fields and belong to the growers. The pulp and molasses are sold by the sugar companies at seventy-five cents and \$7.50 a ton respectively.

Dr. F. S. Harris, Professor of Agronomy and Director of the Utah Experiment Station, who has made very protracted and extensive study and tests of sugar beet by-products, says that each acre of beets yields as much feed from the by-products as an acre of good corn. The tops when dried in the field contain the same quantity of nutrients as the same weight of alfalfa hay. On an acre of tops there is ample feed for one steer for 100 days. Pork fed on tops is of very good quality. Hogs pastured on the tops with one-third grain ration make excellent gains.

Regarding the pulp the professor says that rationed with alfalfa it is "almost an ideal feed." With a ration of grain, it puts a fine finish on beef cattle. Range stock wintered on pulp and oat straw will come through in fine condition.

Properly fed with alfalfa or other roughage, wet pulp stimulates the flow of milk in dairy cows and makes a very economical feed, equal in quality to corn silage. Thousands of lambs are annually fattened to the best market condition with pulp and alfalfa without grain. The Colorado Experiment Station shows that a ton of wet pulp has the feeding value of two hundred pounds of corn, which means a cost of seventy-five cents against \$2.50.

Carefully fed, in view of its laxative qualities, pulp is a useful and cheap ration for horses—especially for growing stock and in wintering brood mares. It is also used advantageously in wintering brood sows.

The molasses is highly valuable to feed with alfalfa hay as it contains the carbohydrates that balance the high protein in the hay. Combined, that feed has proved to be equal to grain and at far less cost.

It will be interesting to note the actual total value of these by-products. The dried tops from the million acres are equal in nutrient, our authority, Doctor Harris, affirms, to the same weight of alfalfa. As those tops dried would average at last one and a half tons an acre, the total value of all would be 1,500,000 tons at \$7 a ton—a total of \$10,500,000.

The pulp—2,500,000 tons—at seventy-five cents would bring \$1,875,000, and the molasses—400,000 tons, selling at \$7.50—would total \$3,000,000, a total of \$15,375,000. If all was fed, that respectable sum would easily be doubled by its return to the districts in which the by-products are made. That would increase by 50 per cent the returns from the entire crop of sugar beets.

Colorado has for years been a much more liberal user of the by-products than its sister states west of the Rockies, but the developments of this plan of utilizing these by-products last winter and winter in that great mountain stock country have astounded every man connected with meat and sugar production. Several million lambs and thousands of steers have been fed to a fine market condition on hay and beet pulp or ground alfalfa and molasses with a very small wheat or barley ration.

Beet growers, almost all of whom have large alfalfa acreage, have more than doubled their returns from that hay by feeding instead of shipping out as before; the pulp and molasses largely taking the place of corn. Consequently they're feeling more in love with sugar-beet production than ever before.

**THE APPLE GROWING INDUSTRY**

(Grade 9 Prize Winning Essay—at Sheffield Mills School Exhibition - Written by Alice Pye.)

The young apple trees are procured from nurseries. As there are very few nurseries in Nova Scotia, we get most of the young trees from Ontario. When we get these trees they are quite small about four feet high. The ground is made ready for the trees ploughed, harrowed, and fertilized. They are planted in rows about 30 ft. apart, each way. It is from eight to ten years before a tree bears fruit in any quantity. Each year the orchards are cultivated and fertilized. They are sprayed three or four times a year, with a poisonous mixture, to prevent insect pests from eating the leaves and fruit. Between the trees, some farmers sow cadlock, others buckwheat to prevent weeds from gaining a foothold, and to cultivate the land.

Some apples trees have an excellent crop one year, and a very poor one the next, others have a fairly good crop every year. A well grown tree in a good year, yields from eight to ten barrels of apples. The apples are picked and put in barrels, and taken to the warehouse, where they are graded according to quality. No. 1, No. 2, No. 3 and Domestic. Then they are shipped principally to the English market for fruit growing is the principal industry of the Annapolis Valley, and there we find our finest orchards although there are some very fine ones in Lunenburg, and Northern Queens and in the valley of the Medway and La Have River.

**THE APPLE GROWING INDUSTRY**

(Grade 10 Prize Winning Essay at Sheffield Mills School Exhibition, Written by Ruth Ellis.)

In the Annapolis and Kings Valleys, apple growing is the chief industry. Nearly all of the independent farmers own orchards. The orchards vary in size according to the amount of capital invested by the farmer. The trees are bought from men who raise large quantities of small apple trees, for the purpose of selling these to orchard growers. These trees are set out in rows, the trees being about twenty-five ft. apart, and the rows about 30 ft. but the distances vary according to the ideas of the farmer. They are carefully looked after and are ploughed, harrowed, and fertilized. They are supposed to be ploughed in the spring or Fall, and afterward harrowed as many times as is necessary to remove weeds and loosen the soil. They are fertilized once or twice in the spring. The best kinds of fertilizer are potash, nitrate of soda, bone-meal and mixed fertilizer. There are many different kinds of apples. The best selling kinds are Northern Spies, Golden Russet, Baldwins, Mackintosh Reds, Ben Davis and Wagners. Some kinds ripen earlier than others amongst which are Gravensteins, Duchess, August Apples, Astrachans, and various kinds of Sweet Apples. The apple trees are carefully pruned in spring. In this way all the dead wood, and small shoots, called suckers, which take the sap from the tree, are cut off. Like every thing else the apples and apple trees are eaten and blemished by insects, so to prevent this, the trees are sprayed with poison several times in the Spring. At first

the farmers used a hand spray pump for spraying. This meant the poison had to be pumped through hose and rod by hand. This was slow and tedious work. Soon however the spray engine appeared on the scene, this being worked by machinery.

The next proved even better, it was called the Duster. The poison used in this is like white powder. It is blown by machinery through a large pipe, and covers the tree very quickly, whether the Duster can be improved on has yet to be shown. The fruit grows during the Spring and Summer, and is usually ready to pick about the middle or last of Sept. The fruit is put into barrels which are made in Cooper shops, and hauled to the warehouse where they are packed and graded. The large apples without spots are called No. 1. The smaller clean ones, are called No. 2's, and the small ones with spots No. 3's. A large apple with a spot is called a Domestic. After being packed and headed, they are shipped to different places, most of them going to England. When a barrel is headed, it means that it covers its pound weight in securely. If a tree is heavily loaded with apples, it is propped up with sticks to prevent the limbs breaking. The farmers usually hire extra men, during the picking of the apples and the orchards in the Fall present an animated scene. While some are picked apples, other are hauling them to the warehouse. The fruit is nearly always picked by the middle of October, and

then the farmer's rush is over for a short time.

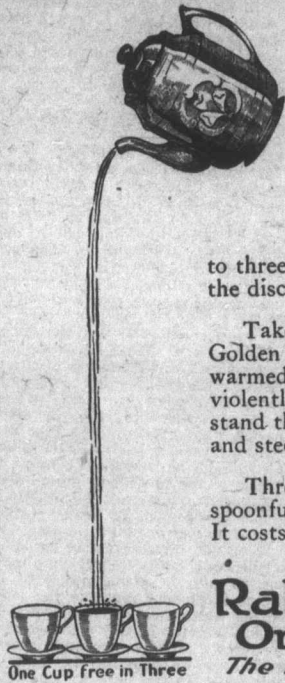
**CROP REPORT**

The crop report issued by the Bank of Montreal, under date of Sept. 27th, has the following to say concerning conditions in the Maritime Provinces:

New Brunswick—Crops generally fairly good, but lack of moisture has done harm. Potato acreage estimated 80% of last year, but production fully as large averaging 100 bbls. to acre. Nova Scotia and Prince Edward Island—All crops in excellent condition but warmer weather needed in some localities to ripen grains. Weather favourable for apples but it is now anticipated the crop will be smaller than in 1922.

**ELECTION SIGNS IN NEW BRUNSWICK**

MONCTON, Sept. 30.—It is said on excellent authority that preparations are now being made by the government party in different parts of the province for the coming general election. Considerable advance work is being done in a quiet way in Moncton and elsewhere, the object being to give as little notice as possible and take the opposition by surprise. It is thought the Legislature will be dissolved in October, with the elections early in November.



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