# The Salem District Should Grow and Make. All the Syrups and the Sugar Used in the Industries and in the Homes of This City and Its Environ

# BEET SUGAR SYRUP MAY BE MADE AT HOME, SAY THE EXPERTS OF UNCLE SAM

All You Need Is a Spade, a Hoe and a Rake, to Raise the Beets, and a Butcher Knife or Kraut Cutter, a Barrel and a Kettle, to Get the Beets Ready and Boil Down the Juice

This bulletin tells how to grow sugar beets in the garden and describes a simple process of making from them a palatable and nutritious table sirup with a pleasant flavor. A patent for the process of making the sirup has been issued to the authors of this bulletin for the benefit of the public, so-that any one is free to use it. Tests by farmers as well as the department have proved the process to be practicable.

Sugar beets may be grown in any locality which has tillable soil that is capable of producing good crops of vegetables, A small piece of ground is sufficlent for planting a few rows of - enough to furnish the family with sirup. The tools needed are necessary in almost any garden operation-a spade. a hoe, and a rake.

All sugar beets, if properly handled, will produce sirup. The beets are cut into thin slices and soaked in hot water to extract the sugar. The liquid is then boiled down to the thickness desired. Detailed directions are given in the following ar-

#### GROWING SUGAR BEETS FOR SIRUP.

sists of two distinct operations; (1) hence, 30 or 40 average beets will to the light, The growing of the raw material, the make a bushel. These facts will ensirup. (A patent for this process of be needed to produce the home sup- a 4-row drill designed especially for in a well-prepared root bed just as making sirup from sugar beets (pat-ent No. 1155806, Oct. 5, 1915) was

If more beets are grown than are
issued to the authors of this bulleissued to the authors of the au farmers, under the direction of Mr.

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("Sugar-Beet Sirup" is the title of William H. Burns, of the office of shape of the root. The ground should Farmers' Buletin 823 of the United Sugar-Beet Investigation, assisted by be plowed or spaded in the fall, but States Department of Agriculture, Mr. Charles G. Crawford, a collabora- good results may be obtained by dopublished in May, 1917. The entire tor in the same office.) The sirup ing this work in the spring provided text of this bulletin is printed below, making embraces two essential oper- the ground previously has been in as, in the opinion of the writer, it is ations, the extraction of the juice good tilth. As early in the spring as of great importance to the people of from the roots and the reduction of conditions will permit the ground this juice to the desired consistency, should be harrowed or raked until it

Sugar beets may be grown and is firm, smooth, and free from lumps sirup produced in any locality which The surface soil should not be too has tillable soil capable of producing fine, especially in those sections good crops of vegetables. Therefore, where high winds are expected duranyone having a small piece of fer- ing the early summer. The ground tile, tillable ground and the usual should be kept free from weeds, but garden implements, a spade, a hoe, should never be worked when too and a rake, is equipped to grow the wet. The proper time, always, for beets necessary for the production of working the ground is when it is fria home supply of sirup. In some lo- able; that is, when it falls apart calities the beets produced are richer readily when handled. in sugar than they are in other localities, but all sugar beets, if properly handled, are capable of produc- tained, at least in small quantities, ing sirup. The richer the roots are in sugar, the larger the quantity of of seed will plant one-tenth of an acre sirup that may be produced from a if the work is done carefully. Usually given quantity of roots and the less a few ounces of beet seed will prothe time that will be required to re- duce a quantity of beets sufficient for

Planting the Seed.

from the large seed dealers. A pound

subsequent growth of the plants.

Caring for the Plants

ble conditions for growth.

If the natural water supply is not

sufficient, the beets should be irri-

gated when they show signs of need

ing moisture for their proper growth

and development. If the beets wilt

retarding the growth of the plant.

to produce satisfactory beets.

should then be topped

Storing the Roots.

will be helpful in storing beet roots.

convenient time.

Sugar-beet seed usually may be ob

To those who are not familiar with lowing brief directions and sugges-

Selecting the Land.

sugar. A few rows of sugar beets in covering should be as shallow as con- in the manner described above.

are generally much richer in sugar ed, are excellent feed for chickens, hogs and other live stock.

Preparing the Seed Bed. Having selected a suitable place

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either for sirup-making purposes or for seed production. The simplest and least expensive method of storing the roots is to throw them into a pile on the surface of the ground, selecting for this purpose a well-drained spot. Dirt should then be thrown over the pile until it is almost or completely covered. If the weather is mild, the top of the pile should covered very lightly or left entirely open for a few days until the roots have passed the heating stage. As the weather gets colder more dirt should be added, to prevent the roots from freezing and to keep them from

pitting of roots, is accomplished by digging a hole or pit in a well-drained place, the size of the hole depending upon the quantity of roots to be stored. The roots should then be placed in the hole and the surface covered with dirt, lightly at first, and the covering increased as the weather gets colder. If the beets are stored in a cellar they should be packed in moist sand or covered with sand or dirt to keep them from wilting. The storing beet roots are (1) to keep per cent of sugar with a coefficient of working capital so that help may rows and leave single plants of the roots cool without letting them freeze and (2) to keep them from wilting. They will work up much better if they are kept fresh and crisp, although the wilting does not materially change their quality.

duce the juice to the desired con-strup making and for table use for making of beet strup from year to the average family. The seed should year, especially in the cooler pornot be planted until the ground is tions of the United States, may grow the growing of sugar beets the fol- warm and the other conditions right their own seed if they so desire. Just for quick germination and for the how long seed can be produced in this manner without serious reduction in Sugar-beet seed should be planted the quality of the roots has yet to in rows about 20 inches apart and be determined. However, the indi-The ground selected for growing may be dropped either in continuous cations are that at least several genthe beets should be well drained and rows or in hills. If planted in hills erations of beet plants may be profairly fertile. Extremely poor, shall each hill should contain from three duced without reducing the quality low, sandy, or hard soil should not to six seed balls, and the hills should of the roots too low for sirup-makbe used for beets until it has been be about 10 inches apart; if planted ing purposes. Two growing seasons put in proper condition for crop pro- in solid rows the plants should be usually are required fr the producduction; likewise, ground that has blocked in the manner described be- tion of sugar-beet seed from seedling been very heavily manured should be low as soon as possible after they are plants. It is necessary, therefore, avoided, since such soil sometimes up. The seed should be covered to a that the beets produced the first seaproduces very large roots, poor in depth of one-half inch to 1 inch. The son be gathered in the fall and stored the garden will generally be suffi- ditions will permit; that is, it should case the beets are to be used for seed cient for a supply of sirup for home not be so thin that it will dry out and production they should not be topped. use. A bushel of beets will produce leave the seed without sufficient but the leaves should be removed from three to five quarts of sirup. moisture for germination, and it either by twisting them off or by cut-Beet roots when mature should should not be so thick that the young ting them off with a sharp knife The production of beet sirup con- weigh from 1 to 2 pounds each; plants can not readily get through without removing or injuring any part of the crown. In this condition In growing sugar beets commer-the beets should be stored until beets; and (2) the making of the able one to estimate the area that will cially the seed usually is planted with spring. They should then be planted

> roots may be cooked and served like able, an area sufficient for sirup ward, the root crowded down back of garden beets. All sugar beets are making purposes can be planted easi- the spade, and the spade withdrawn. white, but when properly grown they ly by hand. In this case a shallow The dirt should then be packed furrow may be made with a rake han- around the root, the crown of which than the garden beet and just as ten- dle or other convenient implement should be flush with or slightly beder. Sugar beets, either raw or cook- and the seed dropped by hand and low the surface of the soil, so that covered by using the back of the the crown is covered with a the mangles and potatoes. There is only sod which has previously been well layer of dirt. A light covering over the crown seems to be of advantage cash products, with the possible ex- ar beet grower to produce a large As already indicated, the seed in preventing it from drying out, and for growing the beets, the ground should be planted in solid rows or it also is a protection against late depth, remembering, however, that our rows the plants should be block- plied with moisture during the entire proving the physical condition of the should be plowed under in the fall too much raw soil should not be ed. Blocking consists of cutting out growing season, irrigating them if brought to the surface at one time. with a shoe or other implement a necessary, especially when the seed is crop that presents itself under these manure may be applied at the same pieces of ground that the responsion for a deep root bed for part of the plants so that the re- forming. When the seed is ripe, it circumstances is the surface at one time. sugar beets is apparent from the maining beets stand in tuits about may be gathered by pulling it from circumstances is the sugar beet. 10 inches apart. In blocking the the seed stalks by hand. The habit beets, the direction of the stroke of growth of the seed stalks, indicates should be at right angles to the row. how easily the seed may be gathered. supplied with moisture. It has long manure should be made in the spring used to see As soon as the plants are large It should be spread in a suitable enough to be handled conveniently, place to dry, after which it is ready beet culture depends to a considerthey should be thinned to one plant for the next year's planting. No ar- able extent upon the sunlight of the well to a good, rich soil and this al- factory. At the loading in each hill or tuft. This operation tificial heat should be used in drying locality and it is therefore usually lows a considerably heavier stand of the factory, the beets must be done by hand, since the the seed. Each plant should produce not a good plan to attempt to grow plants. Ordinarily, the seed that is as to topping and for plants in the hills or tufts stand very from a few ounces to a pound of beets in sections where there is a supplied should be passed over a dirt. Usually a sample is to close together. The plants should be seed: hence, a very few roots will be large amount of summer cloudiness. grader which will sort out the excultivated and hoed from time to sufficient to furnish the ordinary time, in order to keep down all family with an abundant supply of beets are great removers of soil fer- which gives a small, medium, and gives the dirt and topped weeds and to furnish the best possi- seed.

# MAKING SIRUP FROM SUGAR

supply from the root and thereby the sirup unpalatable.

From one to three irrigations should placed in a tub or other suitable re- more tons, when grown under very the seeding of the beets. The sugar be sufficient in most sections where ceptacle and covered with cool favorable conditions and if yields of beets are ordinarily sown early but the rainfall is not abundant enough water, to loosen the dirt and to 12 tons or better are secured, there not so early as to be caucht by cool, make the roots more crisp. After is money in the culture of sugar wet growing season in the spring. soakinng for a few minutes, until the beets. In most sections of the country dirt is loosened, they should be thor- On the other hand, there are cer- rows from six're to thirty inches bought the goods know where from four to six months are required oughly scrubbed. A coarse brush tain obstacles to overcome and cer apart, although the common distance dellar came from for the beets to reach their proper with stiff bristles or wire is useful in tain factors which may appear to be size and stage of development. The this work. After the roots are thor- disadvantageous to this industry. In proper stage for harvesting will be oughly washed they should be cut the first place, it requires a considindicated by a yellowish tinge of the linto thin slices. A 3-bladed kraut erable amount of capital to build and foliage and by the fact that the beets cutter securely fastened on the top of to operate the factory and to provide when pulled leave the ground almost a barrel, has been used in field ex- working capital for growers of the free from dirt. If the patch of beets periments and found very satisfactingar beets. This large amount of is large the roots should be loosened by means of a so-tailed lifter, of which there are two kinds, the double-pointed and the side lifter. The rel. If a kraut cutter is not at hand, extend over from ninety to one hunlatter is similar in appearance to a any slicing device, the simplest of dred and twenty days. However, subsell plew and is operated along- which is a butcher knife, will be sat- numerous factories at places where side the beet row, leosening the beets isfactory. The slices should be very beets are produced successfully, have without breaking them. The plants thin. The thinner the slices the more amply demonstrated that the investthen can be pulled and thrown into rapidly the sugar is extracted. In ment is a paying one so the principle piles or rows. If the patch of beets field experiments slices only one-six- obstacle to be overcome is that of seis small and a lifter is not at hand, teenth of an inch in thickness were curing a sufficient acreage of beets the beets may be loosened by means obtained. The slicing box of the for a long enough period of time that of a spade or a 2-tined lifting fork slicer was not used, the beet root be- the plant may be assured of raw maand thrown into piles. The beets ing held in the hand and pressed terial on which to work. The diffiby cutting against the blades of the slicer.

them off squarely at the point where the lowest leaf was attached. The A bushel of beets will make approximately 2 bushels of slices, which total acreage to about 5000 or more topping can best be done by means of heavy knife; usually a single stroke is sufficient to top a beet. The roots ered at once with hot water. About visable to have a few with extremely can then be made into sirup at once. 10 gallons of water will be required large acreages for the reason that the or they may be stored until a more to cover them. An excess of water crop is one with which most farmers The roots may be stored either on quired to reduce the solution to the great danger of failure if a large the surface of the ground or in a pit desired consistency. If boiling water acreage is undertaken. Five to ten or a cool cellar and kept for several is used, the temperature of the slices acres the first year is enough while months. The following suggestions

(Continued on Page 4.)

## THE GROWING OF SUGAR BEETS IN OREGON, ACCORDING TO THE LATEST O. A. C. BULLETI

WelNeed Such a Crop Here, for Inter-tillage of Lands-Sugar Beets Fit Into Rotations Ve Well Our Climatic Conditions in General Are Favorable-The Directions for Cu

Pollowing is Circular 23, being beet culture the large acreages may spart is about twenty-one to t the regular bulletin on sugar beet be safely tried. growing in Oregon by the Oregon Ag- The crop is an intensive one re-G. R. Hyslop, professor of farm crops, careful hand labor and this is a land is still cold and wet nor

of purity above 80 per cent.

Comparative world total producmetric tons is as follows: In 1840, beet 50,000; cane 1,100,000; 1916, and hoeing and the harvest time for beets or blocks of beets at beet, 8,503,970; cane, 8,566,814 the crop. Germany, Russia, Austria Hungary, France and the United States are very favorable for the culture of their hands and knees astride Those who are interested in the leading producers of beet sugar in sugar beets in that we may get them rows, pull all but the stronge the order mentioned.

Here in this section, we have for a long time needed some cultivated our long, dry periods on the unirri- avoid pulling all of the crop in order to give us the benefits gated soils will limit to some extent beets and also to be sure that derived, from inter-tillage on lands the yield of beets unless very good tire beets are removed by the which have been producing little but cultural methods are practiced. Howcessful beet sugar culture means tillage and that the crops must be ro- in order to avoid serious second tated, because sugar beets grown the land is carefully hoed and cultivated throughout the summer, that it is occupied by a very deep rooted plant, and that the soil is deeply stirred in the fall in harvesting the beets makes the crop a particularly

clover is seeded in February. The ond growth but also to avoid the exclover may be left one or, in some pensive digging in the mud. As far will are excellent for the table. When These planters can be set so that they partly grown the entire plant may be grown the will plant seed either in solid rows or thrusting a long spade into the earth; valley, cultivated crops for our rounded as green, and when mature the in hills. In case a planter is not available, will successfully produce them. produce them the produce them the produce them the produce them the produce them. vated crops that can be grown on an vided proper cultural methods are ably manufactured. extensive basis that will yield cash used. a limited use for each of these as manured. It is the desire of the sug-

been known that the success of sugar and be plowed under later.

tility, and it is true that considerable large size of seed. It is always a is applied to the load as a amounts of nitrogen and potash are good plan to screen out the exceed- that amount is deducted taken away but, if on the other hand, ingly large seeds because they frethe sugar beet pulp is brought back quently clog up the drill. Also, by sliding scale or from the factory and fed to the stock eliminating these large seeds, it is the case of the there is practically none of this fer- possible to so regulate the drill that sum is paid for each to The first step in making beet sirup tility which escapes. Also if sugar it sows more nearly the number that gardiens of their sugar during the day and fail to recover at consists in toppinng and cleaning the beets are grown in a good rotation are desired. Usually rifteen pounds vided they are above the night, they should be watered. In roots, As already stated, the crowns with clover, it is very likely that the per acre of common, ungraded seed 12 per cent. On the other case of irrigating, a furrow should should be cut off at the point of the fertility conditions of the soil will are used. Fifteen pounds per acre the sliding scale, the amount be made several inches from the beet lowest leaf scar. The reason for this improve rather than run down as a of the large seed and about ten for the beets is proportional row and the water should be allowed is that the crown or upper part of result of the culture of this crop. pounds per acre of the medium need amount of sugar which they to run down this furrow until the the beet contains a large part of the other and most desirable feature and about eight pounds per acre of although beets having less ground is thoroughly wet. In no case saits taken from the soil in the pro- of the sugar beet crop, aside from the very small seed will provide an per cent sugar are ran should the surface of the ground cess of growth. It is desirable to have its being a cultivated one, is that it ample stand if the seed is good and around the beets be flooded, since the sirup as free as possible from means a considerable cash return for thus graded seed will save several many advantages to flooding often causes a crust to form these mineral salts which if present each acre in beets if that acre is pounds of seed per acre. around the beet, cutting off the air in too large quantities, would render properly handled. The yield of beets The land must be kept harrowed hands, there is money in the varies from ten tons per acre up to, and should be carefully leveled up of the intensive cultivated In cleaning the roots, they may be in some cases, as much as 16 to 20 or by going over it with a float before sugar beets.

> culty is to secure enough farmers interested in the culture of beets on should be placed in a barrel and cov- acres for the factory. It is not adshould be avoided, since it would in- are not familiar and one who has had crease the amount of evaporation re- no experience with the crop is in

ricultural college, the author being quiring a considerable amount of up well but should not be and the date being April of this type of work which many grain and the seeding be delayed until the hay growers are not accustomed to, season is advanced. Usualty Sugar is one of our important ar- It will mean the securing of a con- seeding in various parts of the ticles of diet. According to statistics siderable amount of transient labor ern and Western Oregon of 1916, the average per capita con- for such periods as the thinning and should take place from the sumption in the United States was beeing and the digging and topping April up to about the tenth of 79.9 pounds. From inferior roots of the beets. In order to grow the When the fourth leaf having two to four per cent sugar crop successfully and without fric- workmen with hoes with a low coefficient of purity they tion and labor troubles, it is neces- rows and cut strips of have been developed to as high as 25 sary to have a considerable amount as the width of their bees from be paid off promptly. It probably where possible or blocks of costs from \$60 to \$90 per acre to sometimes as much as two \$

Our climatic conditions in general ally small boys or girls, work seeded rather early and we have ex- This leaves the thinned cellent growing conditions for them row at about ten to fourte during the summer. It is true that apart. Great care must be ever, in the fall, it will be necessary to get the beets dug moderately early up and thinning will not have growth. The fall rains which come done before the beets get on are likely to start the second cost of thinning after the f growth of the beets which will lower has appeared very rapi their sugar content and if this is car- with the devel ried on to too great an extent it will make them less valuable for manufac- land should be carefully farmer, as well as the manufacturer, covering the beets. In many to have the beets dug reasonably early. Our season by the middle of September is cool enough that the beets will keep very satisfactorily and if we leave them in the ground until it gets muddy, it will add mawell. Systems may be used, usually ordinary conditions, the beets should consisting of sugar beets one year, be harvested by the first to the midfollowed by fail-sown cereal, such as die of October not only from the season advances, there wheat, oats, or barley on which standpoint of avoiding serious sec-

a few crops which are ordinarily cul- sugar beets should, if possible, inception of the potatoes. It is, there-number of the medium sized beets fore, desirable to introduce some and in order to do this it is necessary in one hand and the to deep-rooted root crop capable of im- to have a rich soil. The clover sod soil and at the same time giving a or early in the spring and then a They are then thrown in valuable cash return. About the best good, heavy application of barnyard time. If you are in the section where The beet tops are usually As a plant, it is adapted to rather there is some necessity for re-plowwarm, sunny sections that are well ing, the application of the barnyard for feeding purposes

The sugar beet crop responds very then hauled to the dump It has also been stated that sugar ceedingly large and small seeds and dirt is scraped off and weigh

Sugar beets are untily sown in its employes and the

tion of beet sugar and cane sugar in produce the beets and a good deal of length, then cut out another this must be paid out for thinning and so on. This

#### DATES OF SLOGANS IN DAILY STATESMAN (In Twice a Week Statesman Following Day)

Loganberries, Oct. 9 Prunes, Oct. 16. Dairying October 23 lax, October 30. Filberts, Nov. 6 Walnuts, Nov. 13 Strawberries, Nov. Apples, November 27 Raspberries, December 4. Mint, December 11. Great Cows, December 18. Blackberies, December 25. Cherries, January 1, 1920, Pears, January 8, 1920. Gooseberries, January 15, 1920. Corn. January 22, 1920. Celery, January 29. Spinach, February 5, 1920 Onions, February 12, 1920. Potatoes, February 19, 1920. Bees, February 26, 1920. Mining, March 4, 1920. Gosts, March 11, 1920. Beans, March 18, 1920.

Paved highways, March 25, Broccoli, April 1, 1920, Silos, April 8. Legumes, April 15 Asparagus, April 22, Grapes, April 23. Drug Garden, May &. Sugar beets. May 11, Sorghum, May 20. Land, May 27, 1920. Natoinal Advertising, June 3 Sheep, June 10. Dehydration, June 17. Hops, June 24. Poultry, July 1. Late Cabbage, July 8, Hogs, July 15, Paper Mill, July 22.

for sale at 5c each, mail address, if ALL are taken; ; first 15 copies, 10c cuch.)

Statesman are on hand.

(It will interest some people to know that these back ear selling fast-that pearly every day, orders are received from near one is gaining experience. After have distant points for the whole series. They will be sold out before ing learned the ins and outs of sugar fifty-two Slogans are completed, without doubt -Ed.)