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THE JERUSALEM ARTICHOKE—A MOST PROMISING CROP TO GROW — POTATO AND CORN MACHINERY USED—GIANT FRENCH STRAIN BEST

Peculiarities Of the Plant

Artichokes grow well in any soil or climate but viable and desirable seed tubers can only be produced in the north temperate zone. Further south the growth from matured tuber to new plant is so nearly continuous that the seed is not hardened off sufficiently to stand shipment.

In the north temperate zone the fall freezing "sets" the skin on the tuber and holds it sound and crisp against the spring awakening.

It also appears that the seed stock which is frozen during the winter months is much more viable than when grown in warmer sections and replanted soon after maturity.

Only desirable seed can be raised in the lighter or sandy loam soils, although any soil, the richer the better, will produce highly satisfactory tubers for the table, commercial, live stock or processing uses.

WHY NOT GROW ARTICHOKE?

The New Sugar Crop—Artichoke Sugar High in Sweetness, and Pronounced Good for Diabetics—Does Best on Sandy Soils—Tops Used In Making Paper and Insulating Lumber, or Wall Board—Tops Make Good Stock Feed—The Most Promising Crop Added to Our Farm List in Several Generations.

The Jerusalem Artichoke is a member of the sunflower family. It is one of the few plants whose tops and roots are both valuable. U. S. Dept. of Agriculture technical bulletin No. 33 says it is one of the important forage crops of France, both tops and tubers being fed to all classes of live stock. It further states—"It (Jerusalem Artichoke) will give a better account of itself on poor soils than will other tuber crops. It is called in France 'the poor soil beet,' and is largely planted in soils which would return little in potatoes, and nothing at all in beets. The most easily cultivated root crop to be found in the temperate zone."

The Artichoke is as frost resisting as cabbage, and is not damaged by early frosts or freezes.

Official figures show that with several hundred thousand acres under cultivation in France, over a period of 24 years the average yield was about 240 bushels per acre.

The U. S. Bureau of Standards, Washington, D. C., has perfected a method of making granulated sugar from the Jerusalem Artichoke. The sugar made from the Artichoke is called Levulose, while our commercial sugar, both beet and cane, is termed sucrose.

Ten pounds of levulose sugar has the sweetening power of 17 or 18 pounds of sucrose.

We quote the U. S. Bureau of Standards Bulletin: "The Artichoke is a native American plant. When cultivated it yields over 10 tons of tubers to the acre and frequently very large yields are reported.

"The Bureau has developed a semi-commercial factory in which a considerable quantity of levulose is produced from the tubers of Jerusalem Artichokes. The demand for levulose for all purposes, including confectionery, would be enormous were it available at any price within reason."

VEGETABLE

SEED TRIALS

HORTICULTURE

JAN 23 1923

Our government agencies think the artichoke is a plant that we can grow so generally as to supply ourselves with our own sugar.

Economists all realize that our hope of any great increase in the products of the farm depends on finding some industrial use for them. At present we are almost entirely limited in the amount we can profitably grow, to the amount we can eat.

The Artichoke appears to have unusual promise in the industries. Artichoke stalks make a very superior insulating lumber or wall board and when blended with other pulps make print and writing papers.

Dr. Elliott P. Joslin of Boston, perhaps the foremost authority on diabetes, on page 631 of his "Treatment of Diabetes Mellitus" says:

"Tentatively we are inclined to the opinion that levulose can be used with advantage in the diabetic diet." "Jerusalem Artichokes have been used by our patients with pleasure and benefit."

Besides the use for diabetics—industries that are potential users of levulose syrup and sugar are:

Confectioners.

The Baking Industry.

The Canning Industry.

The Tanning Industry.

The Lumber Curing Industry.

In addition to being a source of sugar the Artichoke makes delicious food stuffs as,

Artichoke Flakes—similar to potato chips.

Artichoke Breakfast Food.

Artichoke Pickles.

Artichoke Soup Stock.

Artichoke Flour.

In view of these developments there is a rapidly growing interest in this promising crop.

Indications are that all the Artichoke tubers available for seed for the 1939 crop, will be ordered in advance and interested parties should ask for reservation.

WHAT A LAYMAN HAS DISCOVERED

1. That the lowly, ignored, perennial plant, commonly called "Jerusalem Artichoke" (the name, even, is a misnomer) contains in large volume carbohydrates of a type non-harmful and beneficial to diabetics. Naturally it is equally so for the entire human family, and its use may even prove a preventive of many of our ailments.

2. That it is a native American vegetable, which was eaten by the Indians in combination with corn and wild meat at the time Champlain visited our continent in 1603.

3. That Champlain carried seed of this plant back to France in 1603, from which the French nation developed improved types, and annually increased their production, until now more than two million tons are grown in their sandy districts each year.

4. That the French farmers (and the few American farmers who have been growing this vegetable), are feeding it to their chickens, hogs and livestock with startling results, viz: the chickens lay more eggs, the milk cows give more milk and the hogs (likewise chickens and cattle) are free from disease during the fall and winter months when the Jerusalem Artichoke tubers are available for them.

5. That within the covers of faded, dusty, forgotten writings of wise men of a century and more ago there were recorded valuable advice and reports of results with this vegetable, indicating its great value as a food for human beings.

6. About 1916 the late Hon. Jos. C. Sibley imported from France seed tubers of the improved variety of Jerusalem Artichokes. He was afflicted with diabetes and discovered he could eat this vegetable with safety and benefit. In 1918 came the call of our government for suggestions as to how to increase the supply of sugar for the nation. Mr. Sibley suggested extracting sugar from the Jerusalem Artichoke and offered to supply the Bureau of Standards tubers for experiment. (It was known that the Germans and French had carried on experiments for years without success.) His offer was accepted and there followed continual experiments until 1924, when the Bureau announced success had crowned their efforts. Next came the big problem of working out the mechanics of a process for commercial production of the sugar. Progress on this problem has naturally been slow, but the Bureau lately announced that it was hopeful of completing the operation during 1929.

Mr. Sibley also interested Dr. Elliott P. Joslin, of Boston, recognized as one of the leading authorities on the treatment of diabetes. After years of careful experiments (including a test under the observation of the Carnegie Nutrition Laboratory, reported in Archives of Internal Medicine, Vol. 1, July, 1928), Dr. Joslin announced: "The results show that Jerusalem Artichokes furnish carbohydrates which can be absorbed and utilized by a patient with diabetes melitus."

7. Some of our highest authorities claim that diabetics can assimilate the inulin in Jerusalem Artichokes, when they cannot safely take any other carbohydrate except in very small quantities. Jerusalem Artichokes do not carry levulose directly in their tissues as the sugar is carried in the tissues of beets or sugar cane. They carry a product called inulin, which is a carbohydrate related to the starch existing in potatoes and corn. By simple chemical treatment the starch in corn and potatoes is changed to dextrose. Inulin by proper treatment can be changed into the doubly sweet sugar known as levulose.—G. E. Harter, Founder-Director Defensive Diet League of America.

Prices for 1929-30, Shipments, December to June, follow:

Choice Hand Sorted Tubers via parcel post (pre-paid) *1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100* .8c per lb.
 Fifty pounds or over, express or freight (not pre-paid)5c per lb.
 One or more tons (not prepaid) \$70.00 per ton

500 pounds will plant one acre, spaced 3 ft. by 2 ft. in rows.

All shipments (except parcel post) made in burlap bags.

Tubers for table use sorted to uniform size and guaranteed of first quality.

Seed stock is smaller and can be planted whole, although cutting will not injure the tuber.

Artichokes may be planted anytime in the south and as soon as ground can be worked in the north, to Middle June.

Orders received in advance of shipping season will be filled in rotation and if supply is exhausted money will be refunded. Send all orders to

H. P. ALBAUGH, Vestaburg, Michigan

No orders filled for less than \$1.00

BRIEF HISTORY OF A NEW CROP

A new crop has been discovered and is rapidly gaining favor. The development of this plant and its possibilities, both agriculturally and industrially, is in step with the rapid fire way in which things are done nowadays. Only a few years ago sweet clover was considered a pest and many people remember tomatoes as poisonous love apples. Just so with that member of the sunflower family known as the Jerusalem Artichoke—a wild weed of the supposed pest order, especially on account of its persistence. This estimate was general until twelve years ago when Congressman Joseph Sibley of Pennsylvania brought some tubers of a greatly improved type of artichoke back to his farm from France and started growing and experimenting with them as human food, especially for those afflicted with diabetes.

Champlain, the explorer, carried the tubers of the wild plant to France in exploration days and Sibley carried them back, greatly improved in type, more than two hundred years later.

Congressman Sibley was so pleased with this plant both as human and animal food that he offered to furnish our government with tubers for planting and laboratory work provided appropriations for the work were made by Congress. This program was started six years ago and now there are several varieties growing on Arlington Farms and the Bureau of Standards has worked out a process for crystalizing the sugar from the artichoke tubers. We quote from this bureau as follows:

"Levulose is the finest of all the sugars. It has long been scientifically the most fascinating and elusive. The human race consumes large quantities of it in honey and in syrup. Physiologically it is probably the most easily assimilable of the sugars. Its sweetness is $1\frac{3}{4}$ times that of ordinary sugar. Exceedingly small amounts have been made by special chemical companies (by the use of alcohol) for scientific purposes, and also, where the patient was rich enough, for diabetics. The Bureau has succeeded in throwing down pure crystalline levulose from water solution. In appearance levulose cannot be distinguished from ordinary granulated sugar. The Bureau of Standards is making it from the tubers of the Jerusalem Artichoke, a weed which has overcome all of its enemies, grows well anywhere in the United States, and produces from 5 to 10 tons to the acre. The Bureau hopes to carry on experiments on a semi-factory scale this winter and to make a considerable quantity of levulose. Through the philanthropy of the Honorable Joseph C. Sibley, former member of Congress from Pennsylvania, the Bureau has made available 1,000 bushels of Mammoth French White Jerusalem artichoke tubers. The value of this material is not less than \$5,000 at the current market price. The artichoke is being grown extensively, not only because of the tubers, but because of the preference of animals for the tops. There is no agricultural problem connected with the artichoke. It is cultivated about the same as corn in the Middle West—three times with the cultivator if possible."

Since the discovery of the process for extracting levulose sugar from the artichoke tubers, the interest in artichoke culture has grown so rapidly that the demand for tubers of the improved type exceeds the supply although the price range has been from \$3 to \$5 per bushel.

Some of the food products to be produced from artichoke tubers, in addition to levulose sugar, are flakes, similar to potato chips, Pickles, Breakfast Food, Flour and Syrup. The tubers are also baked, used in salads, soups, chop suey and numerous other ways.

One hotel in Chicago has worked out thirty recipes for using the tubers in their menus. The tubers are relished by all livestock, poultry and such furbearing animals as eat vegetables. They are especially valuable for feeding muskrats.

The tops yield from 5 to 15 tons of silage or fodder to the acre and of high quality, especially for dairy cattle. The stalks also can be used in manufacturing wood substitute board and insulating material.

The plant of the artichoke is resistant to disease, corn borer and other pests, thrives everywhere but particularly well in sandy soils, yields from 200 to 500 bushels of tubers to the acre, is not injured by freezing, so that the tubers may be harvested either fall or spring. Ordinary potato machinery is adapted to use in planting and digging.

Address for further information,

H. P. ALBAUGH, Vestaburg, Michigan

EXTRACTS AND COMMENTS RELATIVE TO JERUSALEM ARTICHOKE

While foraging for food in 1692 in the district where lies the lake which bears his name, Champlain discovered and lived partially upon small tubers, known today to the English speaking nations as the Jerusalem Artichoke. That wild type is about the size and shape of a peanut. He carried a supply to his ship for food on his return trip, saved some for planting in France, and from that start the French nation developed an improved type of mammoth size, which has become a most valuable farm crop. Today they grow more than 300,000 acres annually, with a yield averaging 15,000 pounds to the acre, which is double their potato yield.

A German scientist in 1860 concluded a report to his government on this plant with the remark, "God is wise. He gave us sand and therewith the artichoke." Big tonnage is raised every year in the sandy districts of Europe, where little else of food value will grow.

Best of all for the farmer, it is a perennial plant and therefore not affected by frost, plus the fact that winter storage is done by simply leaving under ground in the field that portion of the crop not needed until spring time. Another advantage is no hand labor. You plant the tubers the same as potatoes, give them two or three cultivations, the same as is done with corn, and then forget them until harvest time.

COLORADO SPRINGS FARM NEWS.

I am enclosing herewith two checks for \$6.00 each, one of which is in payment of your invoice of November 16th covering two bushels of artichoke tubers.

The other six dollars is in payment of two bushels more which I would appreciate your shipping to the same address.

We have begun making experiments in connection with these tubers, and will be glad to let you know the result of our findings later on.

E. G. LIEBOLD,
General Secretary to Henry Ford.

We should like nothing better than to put on the market in an ethical manner any product found of benefit to the diabetic. We should like to have you submit to us any samples you may have of the food ready for consumption, the analysis of the same, also the inulin content of your artichokes.

LISTER BROS., INC.,
New York, N. Y.

The flakes are excellent and apparently enjoyed by all, as attested by the fact that I am unable to keep them on my desk. Everyone entering tried them and consumed them with such gusto that they disappeared before I was able to even suggest they were here for diabetics. I, myself, think they are superior to the potato flake for general consumption, and they certainly afford the diabetic a source of supply during the season in which the fresh tuber is not procurable.

S. L. VAN VALZAH,
Major, Medical Corps., U. S. Army.

The artichoke is certainly a wholesome food and ought to be more widely used. It is rich in salts and other useful elements and is a very desirable addition to our rather too scanty list of vegetable products. I would be glad to have another bushel of artichokes.

JOHN HARVEY KELLOGG,
Superintendent, The Battle Creek Sanitarium.

I spoke to Mr. Geismar about artichokes and the chips manufactured from them. I believe that this would be an industry which would have a manifold benefit to endow this district. First of all, there would be a crop for the farmer which would find a ready market at reasonable prices and furthermore, it would be a new industry entirely. Could not capital be found for such an enterprise?

J. A. JASBERG,
General Colonization Agent, Duluth, South Shore &
Atlantic Railway Co.

My interest in artichokes is principally that of the investigator, and I am particularly interested in the adaptation of artichokes to successful poultry keeping.

We planted artichokes this spring to provide shade for our experimental poultry pens. The attached pictures show you one of the laying houses before and after planting the artichokes. I thought you might be interested in these pictures, which you may use in any way you see fit.

I think the price you are stating for seed tubers is very satisfactory. We are planning to plant all our poultry yards with artichokes this year.

CARL H. SCHROEDER,
Research and Service Department, The Larowe Mill-
ing Co.

Orders for tubers either for table use or seed stock should be sent direct to the undersigned grower.

H. P. ALBAUGH, Vestaburg, Michigan
Northern Grown Giant White French Strain Seed
Should Be Demanded By All Planters.

