

Sunchokes

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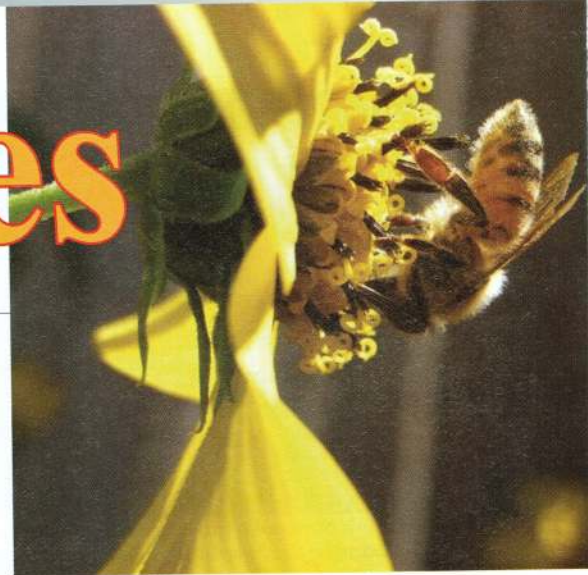
These edible sunflowers are good for people and bees.

In the October 2008 *American Bee Journal*, I discussed the use of sunflowers in the Great Sunflower Project, a program which encouraged tens of thousands of private individuals to watch a sunflower bloom for bee visitors for a set time period in a wide range of conditions around North America. In 2011 there was a Great Bee Count on July 16th. It showed that the average person saw a bee every 2.6 minutes, or about 12 bees per hour. Yet 20% of the participating gardeners never saw a bee (<http://www.greatsunflower.org/>). A map on that site shows the 2010 results indicating that most states had areas with good pollinator numbers, yet nearly all of them had some locations with poor pollinator densities, often not too far away. Poor pollinator numbers appears to be related to issues of entirely LOCAL conditions. In other words, *Every Village needs to support a Beekeeper – as well as a Native Bee Conservationist.*

This is about sunflowers in North America but not the large, cultivated *Helianthus annuus*, supplier of seeds and sunflower oil. Instead let's look at a less well known sunflower, *Helianthus tuberosus*, called the Sunroot by North American native people who undoubtedly selected them for vigorous tuber production and healthy plants (as compared to wild types still found in nature). After Samuel de Champlain introduced tubers to France in 1606, they eventually became known as *girasole articiocco* in Italian. Girasole means turn-toward-the-sun. Americans (without Italian roots) heard this as Jerusalem. Champlain thought the taste of the tubers reminded him of artichokes. Thus Jerusalem artichokes. I will call them sunchokes or sunroots, the newest and oldest names I have discovered for these plants and their roots.

This is not an important honey plant, but it is a valuable addition to the home garden. It is an ideal plant for local growers to produce and market at the area Farmers' Market. The plants can be grown in containers, making them a possibility for rooftops and container gardens everywhere. The plants grow large, and will provide a privacy screen if staked to kept from blowing over in strong winds. Flowering is late in the season – in late Summer and into Autumn in the northern states. Each plant will produce a dozen or more two to three inch flowers. It is not a mass of bloom, but this is a colorful backdrop to the multicolored asters that are in prime bloom at the same time as the sunroot flowers. The vigorous green foliage is a wonderful backdrop for the garden, and one small tuber will generate an enormous plant.

I don't recommend this plant for the new gardener (except in a large container), since the plants become large and will take over any location where they are planted. Under the management of an experienced gardener, however, they can be put into cultivation for tubers, help the



Honey bee foraging for nectar on Sunchoke flower.

bees a bit, and be kept from dominating the entire garden by spreading uncontrollably. There is a tremendous opportunity to go crazy, and grow lots of these plants, and solve the world's hunger problems! Anyone who wants to grow a tuber-based plant in a soon-to-be-forgotten corner of their property should consider sunchokes. Plant them early in the season and let them grow. A little water when the soil cracks will help, but otherwise leave them alone. They can be one of the first things you plant in the Spring, and the last plant you harvest in the Fall!

My first introduction to this plant was through my brother, E. James Connor or Challis, ID. Brother Jim would return to Michigan with all sorts of goodies from his garden, and the sunchokes were a great addition to salads and stews he conjured up in the kitchen. The

Topping the growing Sunchoke plants in late July or early August promoted lateral branches to grow. That increases the number of flowers in September.





Last year's Sunchoke tubers were kept in the refrigerator with few storage or food quality issues.

chokes are a great replacement for water chestnuts. Two years ago he handed me a plastic bag and suggested I plant them "carefully."

And I did, the five golf-ball sized tubers grew well, but I did not harvest them until March of this year. There was no evidence that the Winter damaged the tubers in any manner. Then I dug out a sizable bag and replanted some of them a row against the cedar-stained fence. They look great against the fence, and have done well except for the 70+ mph winds that I mentioned last month writing about the white sweet clover. I just cut out the fallen stems and let them grow back without any apparent harm! I did top (remove the top of the main stem) of all the plants so they have branched out. My goal it to produce more side shoots, and side flowers. Instead of a dozen flowers per plant I aim for 50 to 100. The tallest plants tower over the six-foot fence.

Lovell (*Honey Plants of North America*, 1926) only says this about the plants: "Jerusalem artichoke (*Helianthus tuberosus*), cultivated in New York for its tubers, is also a good honey plant."

Other references focus on growing the plants and eating the tubers. They seem to be experiencing a period of rediscovery by local foodies and chefs. They appear at the farmer's markets in October in northern states, with harvest delayed until after the first or second frost. My chokes survived the winter in the ground, as one would expect from a native plant well adapted to the wide range of growing conditions in which it thrives.



Sunchoke and sweet potato (yam) strips were sprinkled with oil and Louisiana spices and grilled in foil. Chicken strips were marinated in honey and lime juice and grilled on a hot, oiled grill.

Culture

The name sunroot is closer to the Native American name for the plant. They should be planted in a sunny location in loose, well-drained soil. They tolerate dry conditions better than potatoes. Dedicate one area for the sunchokes, as they will spread rapidly and will require serious grubbing out after getting established. They form a wonderful five to 10 foot hedge, although they are inclined to fall over in very strong wind. That does not interfere with tuber growth, as the plant will send up side branches from a horizontal plant.

The sunchoke is a hardy perennial that has rough-textured leaves four to eight inches long, and small yellow flowers two to three inches wide. The flowers come late in the season, around the Fall equinox; in my area a deep freeze stops the flowering season – the flowers tolerate light frosts. I feel the number of flowers per plant is relatively low, yet they are very good attracting native pollinators, especially *Bombus* spp., as well as some honey bees. I want to think that the late season pollen and nectar are highly beneficial to all bees. Dedicated choke growers cut off flowers to force energy to the roots. The tubers are ready to harvest after the leaves die – then dig with a spading fork. Tubers left behind will regrow the next year. You may need to screen the soil to get out every tuber, as any that are left behind will be there next season!

Cooking and Eating

Sunchokes may be eaten raw or used in an unlimited number of ways in cooking. They end up in soups, stews, mixed with vegetables, with roasted meat and fish, browned in the oven and deep fried. They are very low in starch, but contain natural polysaccharide called Inulin (related to Insulin but not the same). The flavor is sweet, and is used to replace sugar, fat and flour. It contains 25-35% of the food value of starch or sugar. Inulin increases calcium absorption. It also promotes the growth of intestinal bacterial. It is a soluble fiber and is sometimes classed as a probiotic. The human body is *not* well equipped to digest inulin, which can be very good for diabetics because it has a minimal impact on blood sugar. Note that with refrigerated or ground-stored sunchokes, the inulin eventually is converted to fructose.

The down side of consuming sunchokes is that the inulin stimulates bacteria in the human rectum to digest the material, and carbon dioxide, hydrogen and/or methane result, along with potential bloating. People who are likely to produce gas should be cautious with sunchokes, and consume a very small amount and wait to see that happens. The general rule is to add such a food gradually to the diet. Other plants high in inulin include chicory, garlic and leek.

When food supplies were rationed in World War II, sunchokes were very popular and "one of the most available vegetables in a time of rationing." When the war ended, they were replaced by more popular, less gassy, crops.

My experimentation with this food is just starting. I have stored a bag of the 2010 chokes in the coldest part of my refrigerator, and they have stored well. I simply shook off the soil and stored them unwashed. In late Summer they had a few sprouts, an inch or so long, but were still firm and unblemished. Storing is not an issue, so a few bags of the chokes will last a long time.

Because of the gas potential, I suggest you go slowly with use of the sunchokes. Start with a little added to familiar recipes. Add some to the stir fry instead of water chestnuts. Add to stews and soups as a replacement for or to reduce the number of starchy potatoes. Shred the tubers over a salad, or an omelet. Add strips to the next batch of dill pickles you make, and stand back as they take on the dill flavor. And garlic, if you add it.

The stored sunchokes are high in fructose, so they need to be cooked quickly at a high temperature or they will caramelize and burn. Instead of making or using potato chips, slice the sunchokes as thin as you are able and fry them in a hot sunflower oil as quickly as you can. Watching for rapid darkening and burning – they are extremely fragile to use because of the fructose level.

For years I have roasted thin sweet potato slides in aluminum foil on the grill. I make the slices about ¼ inch thick, and coat with oil and a Louisiana spice I purchased on my last trip (along with chicory coffee). Now I add a few thinly sliced sunchokes to the mixture. The sweet potatoes and sunchoke flavors mix well with the hot spices and steam quickly on a hot grill (wrapped in a thin package of aluminum foil). This I serve with boneless, skinless chicken breasts or thighs (depending on what is on sale), marinated in fresh squeezed lime juice and honey for several hours before grilling. It is a sweet and healthy meal, and there are rarely leftovers when I have friends and family visit.

For those of you who have presented me with some of your honey during my travels, this is probably where I used your honey – in the chicken and lime marinade. I do

not add salt to the marinade – I like the honey and lime flavor to come out of the chicken, and not a briny flavor – my major complaint against many premade marinades! **BC**

References:

<http://www.wemoss.org/profiles/sunchokes.pdf>

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Pappalardo, J., 2008. *Sunflowers (The Secret History) The Unauthorized Biography of the World's Most Beloved Weed*, Overlook Press, Woostock & New York.

Check out a new book coming out from Dr. Connor's Wicwas Press at www.wicwas.com. It has nothing to do with sunflowers.



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