

Peruvian Ground Apple

Eat it raw, dry it, roast it or use it in smoothies. However you use it, the yacon roots, often known as Peruvian ground apples, pack a punch. The low calorie, sweet tasting roots look like sweet potatoes, but have a texture like water chestnuts. Their taste has been described as more like apples, watermelon or celery.

Peter Nitzsche, Rutgers University Agriculture Extension agent, thinks they have potential in the U.S. "I started working with the crop about 3 years ago, looking at it as a way to expand options for small growers," says Nitzsche. "I thought it might offer another crop for winter farmers' markets. There are a limited number of varieties that can be stored and sold through the winter."

Yacon roots are grown commercially in Peru and in a province of China, but are still relatively unknown in the U.S. Unlike their relative the Jerusalem artichoke, they won't overwinter where the ground freezes solid. They are propagated by dividing the rhizomes and starting them indoors 4 to 6 weeks before the last frost. Once they emerge, the plants can reach 4 to 7 ft. tall.

Nitzsche recommends letting the plant grow as long as possible for maximum yield. However, the crop should be harvested before a hard freeze. He advises taking care with the delicate roots when digging them out of the ground. Once out of the ground, they can be separated from the rhizome, washed and stored.

"We are starting to work with mechanical methods of digging them," says Nitzsche. "A potato harvester has worked well in sandy ground. If planted in heavy clay silt loam, they need to be harvested before it rains."

It is suggested that the roots be stored for at least a month before eating. Nitzsche says they can be stored for several months at 40 degrees with high humidity. The rhizomes should be stored at 40 to 50 degrees and kept damp for replanting in the spring.

"Our yields have been anywhere from 3 to 7 lbs. per plant, depending on variety," says Nitzsche. "Bekya seem to have the highest yield and the best flavor. Early White has



Peter Nitzsche, Rutgers University Agriculture Extension agent, and his yacon trial plot in September 2018.



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decent yields and good flavor."

He notes there are a limited number of varieties of yacons, and most rhizome sources are marketed simply as yacons.

"Cultivariable is the one source we found that sells by varieties (www.cultivariable.com)," says Nitzsche. "Once you acquire some rhizomes, you can multiply them rapidly. Each rhizome becomes 10 to 20 for replanting the following spring."

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Every year a field of sunflowers in full bloom draws lots of people to Dan and Teressa Hall's direct market farm in Michigan.

Visitors Flock To Sunflower Field In Full Bloom

When sunflowers bloom, people will come - for photos, picnics, or just to walk through the 6-ft. tall stalks. At least that's what Dan and Teressa Hall discovered at their farm in the Upper Peninsula of Michigan.

Sunflowers are one of the farm's direct market crops along with sweet corn and corn for deer feed. The sight of a field of sunflowers is unusual in Rock, Mich., so when the Halls started getting calls asking permission to take engagement photos they decided to open the field up to the public free of charge. Since posting the invitation on Facebook 3 years ago, the Halls have been surprised at how many people have taken up the offer.

"It's kind of a steady flow for 2 1/2 weeks from the end of July into August," Teressa says. "On the weekends we have about 2,000 people per day and during the week 400 to 500 per day. We recently had our second wedding out there."

There are more than 400,000 sunflowers on the 20-acre field, and Dean makes paths by shutting off a couple rows on the planter. He cuts hay off the field next to the sunflowers so there is plenty of parking and room for picnic tables. A couple of donation boxes give visitors a chance to help fund the extras

the Halls have added - wagons for better viewing, a gigantic Adirondack chair, and wooden sunflower cutouts for photos. Visitors can also cut sunflower stalks to take for \$1 each or 6 for \$5.

"Occasionally you can even see Sunflower Man walking around," Hall adds with a laugh.

The park atmosphere attracts people from rural areas and cities all over the state. Some cry because the flowers are so beautiful, Hall says. Others mark milestones or even make it part of their honeymoon. It was recently cited as one of "Five Epic U.P. Day Trips to Take Before Summer Ends".

Their "open to the public" policy turned out to be an effective, though unplanned, marketing move that makes people aware of other ag products the Halls sell. But it's not the reason they started it or continue it. "It educates the public on farming. Kids need to see what farming is, whether or not they can afford a donation," Hall says.

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He Sells Unusual Tuber And Root Crops

You can get unusual varieties of tubers and other root crops at Cultivariable.com. Specialty plant breeder Bill Whitson has everything from seed to rhizome and tuber starters for yacons, Tartar bread plant, mashua, oca, unusual potatoes and even edible dahlia (the tubers, not the flowers).

"I used to be in software development and started breeding plants as a hobby, but it's been a full-time job for the past 6 years," says Whitson. "I've probably sold to every state in the U.S. However, most of what I sell is best suited for a maritime climate or regions such as the higher elevations of Appalachia and parts of Wisconsin and Michigan that are close to the Great Lakes."

Most of the plants Whitson grows on his land on the central coast of Washington state originated in the Andes. Some of them are or were important food crops there, but didn't achieve the popularity of the potato. For the most part, they have not been adapted for mechanical cultivation or harvest.

He does breed potatoes, but not the big white bakers. "If you want a small oddly-shaped potato in a range of pretty colors and different flavors, you're in the right place," says Whitson. "If you think you would like to breed a weird and wonderful vegetable

of your own, you're in good company. In addition to my varieties, I offer genetically diverse seeds that you can use in your own breeding projects, and I provide a lot of information about the crops I work with."

In addition to an information-heavy website, Whitson also maintains a Facebook page for people interested in plant breeding.

Whitson uses traditional, non-genetic engineering techniques to develop his varieties. In addition to hand pollination and selection, he utilizes more than 250 raised beds on about an acre of land with overflow to several other acres, a small greenhouse and a laboratory. Generally he maintains around 12,000 plants, as well as varietal tissue culture to ensure virus-free sources.

"I grow hundreds of varieties in small quantities," says Whitson. "I serve more as a sort of private gene bank."

Whitson concentrates most of his attention on 5 species: ulluco, mashua, yacon, oca and Andean potato. However, he maintains an interest in another 25 or more species. He warns followers that if they see a variety listed they like, they should order it, as it may not be available the following year.

"Most of what I do is experimental," says Whitson. "In the field, I grow with minimal

inputs, just annual additions of compost, no pesticides or herbicides. I grow this way because I am breeding plants and subjecting them to pests. Weed competition helps select the most resilient varieties. "Consequently, my varieties should perform well under organic conditions."

Most of his crops are clonally propagated from rhizomes or the plant tissue, such as the eyes of potatoes. While he sells seed as well, in many cases it may not breed true. That may be because he allows open pollination, such as with sea kale.

In others, like potatoes and edible dahlias, every seedling is a unique variety. "The only way to know if you have a good Dahlia is to taste it," says Whitson. "If your taste is similar to mine, you might keep one in 30 seedlings. With potato seed, I may keep one in 500 seedlings."

Whitson is a member of the Open Seed Source Initiative, an organization dedicated to open access to breeding material and ensuring availability to seed not restricted by plant patents and intellectual property rights.

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Mauka root (Blanco variety)



Oca tubers (Mocrocks variety)



Bi-color potatoes