



Chronicle

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Here a Chick, There a Chick

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Michigan's Hidden Flour**



Nuts About Acorns

Michigan's Hidden Flour

by Barbara J. Barton

Throughout the Great Lakes region, indigenous peoples and wild-food enthusiasts collect and process acorns to create a variety of different delectable dishes. But what is all the fuss about Michigan's "oak corns"? Why do so many birds and mammals—including humans—value them so much?

MICHIGAN'S ACORNS

The mighty oak, whose strength is often evoked in times of human weakness, is among the grandest trees in Michigan. Those majestic beings push their taproots deep into the soils of sandy plains, swamplands, rich floodplains, and upland forests. Thus anchored, they are balanced by a supportive web of secondary roots spread as wide as their crowns, just 18 inches beneath the surface.

Ten species of oak can be found across Michigan, with most preferring the climate of the Lower Peninsula. The exceptions are the red oak (*Quercus rubra*), white oak (*Quercus alba*), Hill's oak (*Quercus*

ellipsoidalis), and bur oak (*Quercus macrocarpa*)—all of which have a wider distribution and occupy both peninsulas, although they are not as common in the Upper Peninsula.

Nuts from Michigan's oak trees were first called "oak corns" by European newcomers, but over time, lazy tongues blended the two words into one, and those nuts became known as "acorns."

The nuts, which hold the promise of a new generation of trees, take one to two years to mature before they fall to the ground and an unknown destiny. They are a very important food item for more than 100 species of birds and mammals and can make

up an astounding 75 percent of the autumn and winter diets of white-tailed deer. Some acorns are planted by squirrels, who bury them in the fall, many of those being relocated and eaten during the winter and early spring. But a few lucky acorns will be forgotten by the hungry rodents and go on to sprout and grow into new trees.

Every so often, oak trees produce a "mast" crop of acorns, a mysterious phenomenon that was not well understood in the past. Masting occurs during those special times when thousands of nuts rain down from the trees and offer a veritable feast for the animals. There have

Acorns which have already lost their caps, signifying that they are ready to harvest. (Photo courtesy of Pixabay.)

been several theories put forth over the years as to what causes masting. Some speculated that it was weather-related or connected to wind pollination, while others believed it an evolutionary strategy involving predator-prey cycles.

But a recent long-term study conducted in 2006 by a team of scientists led by Dr. Ethan Clotfelter of Amherst College may have finally unlocked the mystery. The scientists gathered information on the number of acorns produced by select white and red oak trees over a period of 24 years and compared their findings with weather variables. What they discovered supported one of the early theories—acorn mast years were linked to temperature, precipitation, and dates of last spring frost, which occurred up to two years prior to the mast event.

CREATING A BALANCED DIET

Acorns are packed with nutrition and are high in protein, carbohydrates, fats, calcium, phosphorus, potassium, and niacin. They are also high in calories, providing much-needed energy and fat storage going into winter. Acorns also contain a chemical compound known as tannic acid, which is what gives them a bitter, astringent taste—a familiar experience of many who have tried to eat them as children.

While early Europeans in Michigan used the wood of oak trees for many things, they did not have a fondness for acorns on the dinner table. However, they did enjoy bacon and ham, so acorns were gathered by the basketful to fatten up hogs before they were sent off to slaughter. During that time, it was widely

accepted that a pig fed acorns had better-tasting meat.

According to research done by Dr. James Skibo, an anthropologist at Illinois State University, acorns may have been responsible for the adoption of pottery by the Woodland people of the Great Lakes region nearly 2,000 years ago. The Woodland people were mobile gatherers and hunters who followed their food on a seasonal basis. Many believe that those early inhabitants boiled water by placing hot stones into water-filled containers made of wood or bark.

Skibo studied an archaeological site on Grand Island, located just off the southern shore of Lake Superior near Munising, Michigan. He and his team found residue of acorn oil in some of the pot shards, which provided evidence that one of the

uses of the pots involved processing acorns. Nut oil was also discovered by other researchers in several samples of ceramics found in the Huron National Forest in Michigan's Lower Peninsula. Skibo proposed that the pots may have been used for the purpose of extracting oil from acorns, perhaps in addition to removing tannic acid, given the amount of oil found in the shard samples.

Acorns and other nuts are believed to have been an important food resource for the indigenous people of the Upper Great Lakes Region. The Anishinaabek (Ojibwe, Odawa, and Potawatomi), who moved into the region hundreds of years ago, included acorns in their diet and prepared them in a variety of ways.

Bur oak acorns, some of the largest in Michigan, are bitter due to a high tannin content. They can be boiled

A basket of bur oak acorns. (All photos courtesy of the author, unless otherwise noted.)





Acorns after going through a nutcracker.

or roasted in ashes, mashed, and eaten with grease or duck broth. They can also be boiled and simply eaten as a vegetable. White oak acorns, which are sweet and low in tannic acid, were often dried and stored. Both white and bur oak acorns could be pounded into flour after they were dried and used as a thickener for soup or mush. To remove tannic acid, the nuts were treated with lye made from hardwood ash. Another method to make acorns palatable involved leaching them with water, which involved placing the acorns in net bags, soaking them, and rinsing them several times.

COOKING WITH ACORNS TODAY

Acorns are still used today by indigenous people and wild-food enthusiasts throughout the Great Lakes region. However, they remain

one of the most labor-intensive nuts to process, and there are many methods used. So how does one process acorns?

First, the acorns must be collected. It makes sense to gather the largest nuts, which, in Michigan, are those produced by red, white, and bur oak trees. For people who take frequent autumn walks in the same oak woods year after year, a familiarity with the trees develops. They know when the acorns are falling, which trees produce the most nuts, and where the largest acorns can be found. Armed with that knowledge and a large basket, an acorn collector heads out into the woods to the best trees for the harvest. Acorns with worm holes or damaged crowns are discarded, while the rest are kept.

Once one has gathered all that he or she is prepared to process, it is time to head home—where the real work begins. Because acorns that are ready for harvest have already lost their caps, the next thing to be done is to remove their thin, hard shells. Red oak acorns can be dried and stored to be shelled later, while white oak acorns must be shelled right away, since they begin germinating soon after they've left their parent trees. The shells can be removed in many imaginative ways, such as placing them under a board and then driving over them in a vehicle or by using a modern tool called a DaveBilt nutcracker, which shells multiple nuts at a time. The nutmeats are then sorted from the shells, and only those that are creamy white in color are kept.

Next, the tannic acid must be removed from the nutmeat, which is accomplished either by boiling or leaching the meat with water or lye. The shortest process involves soaking the acorn nutmeats in a lye solution, while leaching with water



Acorns after having their shells removed.

takes a longer amount of time. My preferred method involves grinding the nutmeats with water in a blender to make a coarse meal and then leaching it.

Next, seat a honey strainer in a gated five-gallon bucket, which has an opening at the bottom; place a flannel pillow case inside the strainer; and pour in the blended acorn meal and water. Once all the meal has been poured into the strainer, put the bucket in a sink, open the gate, and let the water from the faucet drip into the strainer at about the same rate that it is leaving the bucket. If the water is running too fast, it will spill over the edge of the strainer and take some of the meal with it. This process provides a continuous flow of water that mimics placing the acorns in a stream.

After a day passes, one should administer a taste test to determine if the tannic acid has been removed from the nutmeat, keeping in mind that the bitterness disappears first but the astringency may still be there. Patience is required, for leaching must continue until both the bitter taste and acidity are gone.

The last step involves drying the meal. The strained acorn meal is placed into a pillow case, suspended, and twisted to wring out as much water as possible. Then the meal is spread out on a bedsheet in a protected area to dry, being stirred several times a day. Once it is dry to the touch, the meal can be spread onto a large, cloth-covered screen in a warm, dry place that is protected from pets, animals, and dust. That process ensures that every last bit of moisture is removed. Once the acorn meal is fully dried, it can be stored in glass jars and milled into flour at a later time.

Acorn flour is delicious in pie crust, breads, and muffins. My favorite acorn muffin recipe includes

cranberries, maple syrup, and hickory nuts. I spend hours every autumn harvesting and processing acorns, knowing that this delicious, nutritious food can be enjoyed all year long—and that it keeps the tradition of acorn harvesting in the Great Lakes region alive for future generations. 🌱

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Acorn meal in its near-final form, having been leached in a bucket and then dried.



Acorn Muffins

2 cups acorn flour
1 cup wheat flour
1 tablespoon baking powder
2 eggs
1 cup of milk
1 cup of maple or black walnut syrup
2 cups fresh or frozen cranberries
Handful of hickory nuts

Mix all the dry ingredients together. Then add the eggs, milk, and syrup. Fold in the cranberries. Then spoon the mixture into muffin tin, using paper muffin liners. Sprinkle hickory nuts on top of the muffins. Bake for 12 to 15 minutes at 400 degrees.