



Maple Sugaring: From Sap to Syrup

Maple sugaring season at Howell Farm begins in early February, when slightly warmer days encourage a maple tree's sap to begin running from its roots up to its buds, and then back down again at night when the temperature drops. The exact physics of sap flow is actually much more complicated, but that's the main idea.

Jim McDonough, one of the farm's syrup-making experts, says temperatures at night that are just below freezing, followed by daytime temperatures above freezing, are ideal for a heavy sap run.

Once the sap is flowing, the job of someone who wants to make maple syrup is to tap the maple trees, harvest the sap, boil it down into syrup, filter it, bottle it, and then, finally, enjoy it on some pancakes.

1.

The first step in the annual syrup-making process is tree tapping. Using the old-fashioned method, visiting school children help drill two-inch holes into the trunks of sugar maple trees, out of which sap will start to drip. Metal taps

then get hammered into the holes, channeling the sap into buckets hanging below.

Using more modern techniques, the farm also taps a network of sugar maples located across the road from the former Pleasant Valley schoolhouse. These taps are connected by hundreds of feet of plastic tubing, which deposits the sap into a large central collection tub.

Why tap sugar maple trees instead of another kind of maple? Because the sugar content of their sap is the highest. Forty gallons of sugar maple sap will boil down to one gallon of maple syrup. In comparison, it takes about 60 gallons of red maple sap to make a gallon of syrup.



2.

Most of the sap collected at Howell Farm eventually ends up in the "Sugar Shack," where it gets piped into the evaporator — a wood-fired stove with a large boiling tray and a smaller finishing tray.

Inside the evaporator, the sap is heated to 7.5 degrees Fahrenheit above the boiling point of water. When the sap first goes into the main boiling tray, it's clear and watery, but by the time it comes out of the finishing tray, it's sweeter, thicker, and the color of amber. The wood fire that heats the sap burns as hot as 1,400 degrees Fahrenheit.

Once the sap inside the finishing tray reaches the correct temperature, whoever is working in the sugar shack at the time will "draw it off" by opening up a nozzle on the side of the evaporator. The sap flows through two filters, to remove any impurities, and then into large milk cans for storage. At this point it's almost syrup, but not yet.



3.

Next, the sap-filled milk cans get delivered to the kitchen of the farm's visitor center for final processing.

It's the job of Danielle Houghton, the farm's syrup finisher, to bring the sap up to a boil once again, this time in large pots on the kitchen stove. Using an instrument called a hydrometer to precisely measure the sap's density, she takes the pot off the stove just as it reaches the correct viscosity.

Now, the sap is finally syrup. Danielle will pour it through a filter one more time to remove any remaining impurities, which then drains into a large steel coffee maker to keep the syrup warm. From the coffee maker, the syrup is poured into warm glass bottles that come out of the oven. (The heat keeps the entire process sterile.) The bottles are then sealed with airtight caps, at which point they're ready to be sold, stored, or used immediately.

So far this season, Howell Farm has produced 25 gallons of maple syrup, plus 24 pounds of maple sugar, which is syrup boiled down even further.





A Winter Swim

by Maren Morsch
Farm Intern

As a new intern at Howell Farm, the first public program I had the opportunity to participate in was January's ice harvest. An impressive igloo, a loaded icehouse, a tired bobsled team, and a lot of ice candles were among the day's results. On the whole, the event was a new experience for me from beginning to end.

I was especially impressed by the enthusiasm of a number of the visitors. There were those who showed up at 9:45 a.m. to be the first ones out on the ice, who harvested for hours as if it was their own family farm they were working for, and who left reluctantly only after it was announced several times that the farm was closing. I can only anticipate that this same energy will be found in other programs I experience as my internship progresses.

Also noteworthy is the "polar bear plunge" I took that day. The combination of a sunny day and large number of people working out on the ice caused a great deal of the ice to soften and "go bad" or "get rotten."

I thought that the odds were against me falling in, as only a handful of staff members have ever done so, and the running favorite for such an act was an employee whose reputation as a bit of a daredevil led me to feel a false sense of security in the distribution of the odds in this regard. Yet, while helping a child learn how to use an ice saw, I suddenly found myself floating away from the saw, and sinking rather rapidly. The child and his father were on firm ice, but I had been close to the edge, and I soon found myself wallowing waist deep in the chilly water.

After climbing out of the pond, I made my way to the farmhouse, where a combination of quick thinking, ingenuity, and clothing donations from the ladies tending to the hungry stomachs of visitors and staff alike had me dried off, re-dressed, and back out into the action in record time. (Thanks again to everyone who helped!)

Even though the untimely swim put my cell phone out of commission for a few days, and I just today returned the last of the borrowed clothing to its rightful owners, I can't say it dampened my ice harvesting spirit in any way other than physically. I suffered no injuries — although for the remainder of the day people charged me with duties like tending the fire and going for bobsled rides.

In the end, I had a great story to tell my friends when I got back to school that afternoon. While I don't necessarily recommend swimming in January, I certainly don't feel it in any way tainted my first programming experience here.

THE DAISY PROJECT

by Christen Houghton
Historical Interpreter

This winter at Howell Farm I began working with Daisy, a two-year-old Jersey cow who is pregnant and expected to give birth to her first calf in July. Daisy has gained a reputation for trying to use her small horns and bulky weight to bully those who try to test her obedience. Farm manager Gary Houghton (my dad) assigned me the job of spending more time with Daisy, working on simple, routine tasks that will hopefully result in her becoming better behaved. My success or failure will affect Daisy's usefulness to Howell Farm as a milking cow in the public arena. With this goal set before me I resolved to document Daisy's progress.



December 11, 2008

On my first morning of working with Daisy, Farmer Rob, my chief instructor, was waiting for me in the barn. I asked him about a fear of mine, "What should I never do?"

After a moment, Rob said, "I'm not going to address that right now and show you what you should do." He told me it was important to always assert dominance over Daisy; I must learn to be the authority.

Rob then asked me to take Daisy's brush and start combing her on her hindquarters and back legs. He showed me what took him, he said, ten years to discern. As he brushed Daisy's legs vigorously, she outstretched her chin and held her tail slightly aloft, like a cat enjoying a good rub. This showed that Daisy liked what he was doing.

Both Farmer Jim and Rob reminded me that Daisy is just a young cow and loses attention quickly. As I took the comb and started to brush her, the interns on the other side of the barn started cranking the fodder chopper and Daisy was instantly attracted to the noise. I think she didn't even notice me much as I groomed her.

After about ten or fifteen minutes, Rob determined that we should stop while we still had Daisy in a good mood. Later, he showed me the pen markings on the feed-room wall where the weight of Daisy was recorded. Her last weigh-in was in February when she weighed 550 pounds!

December 18, 2008

I headed up to the barnyard at about 9 a.m. Moderate activity going on there with everyday chores. After leading Molly the Aged Cow out, Rob and I walked over to Daisy and began our morning ritual.

Having been inside the barn all day yesterday, Daisy was quite clean. She responded fairly well to my brushing her. After about five minutes, Rob told me I could lead Daisy out to the Market Garden. With a little trepidation I took the lead rope and did my best to authoritatively take control of the journey.

We walked out of the barn with no misbehavior from Daisy, while Rob guided me as to where to stand and how to act. Rob himself walked about twenty feet ahead, imparting to Daisy my leadership role. She stopped once or twice, sniffed a frozen puddle, and continued. But then her head started turning in my direction. As directed, I waved my fist near her face and commanded her, "No!"

Daisy did back off and continue, but shortly after she gave me the full test. Her little horns were headed for me and I tried not to panic. She got her body in front of me, so Rob stepped in and stopped Daisy's bad behavior, allowing me to once again take control. One more time she lowered her head against me and Rob directed me on how to counter this. The main idea was that I had to ignore the behavior and keep walking forward confidently.

We continued on to the Market Garden, with Daisy now walking calmly beside me while I tried my best to quell any signs of fear.

Rob helped me get Daisy into the garden where I took my last test of the morning. Daisy's lead rope had a different style clip that was designed to be escape proof, and it proved to be very difficult to remove. Once again she tried to get the better of the situation, but I was able to grab the clip, hold her by the halter, and remove the lead line before walking away. It was a very exciting event and hopefully beneficial.



Crop Report

by Rob Flory
Historical Farmer

Maple sugaring season is winding down, as the lion of March gave way to the lamb rather early. On the 10th, the fields of spelt and wheat were a beautiful green, and the maple sap was starting to turn yellow. The early, sweet sap is clear, and when the sap turns yellow, it is a sign that the tree is sending other nutrients to the buds, and the sap won't be sweet anymore.

Plowing began on February 28, and it continued in earnest on March 7, when the oxen gave intern Karrin her first chance to plow. Ian drove Chester and Jack that day, while Larry Kidder acted as the "training wheels" for numerous visitors. The first field being plowed is last year's corn field, to be planted with oats this spring.

The first crop planted will be clover, to be sown in the spelt and wheat fields. At this time of year when the soil is freezing and thawing, the soil cracks, leaving a perfect opportunity to plant tiny clover seeds just by broadcasting them onto the field.

The first lambs of the spring arrived on March 11 and more are expected daily. Shearing will begin this month too, when the Sheep Shearing school program begins.

Farmhouse in Line for Grant

The New Jersey Historic Trust recently recommended an award of \$360,000 in matching funds for the Henry Phillips Farmhouse Restoration Project.

The funding, which requires the approval of the Legislature and Governor, is part of a \$15.5 million grant round of the 2008 Garden State Historic Preservation Trust Fund. During the round, the Trust received 135 applications requesting over \$38 million in support. Howell Farm was among 60 organizations selected for an award.

Funding will support the second phase of the farmhouse project, which will restore the parlor, hall, stairs and two bedrooms, all built in the early 1860s. An earlier stone section and circa 1900 wing are being restored during Phase I, which is already underway.

meet the interns

The interns at Howell Living History Farm are a valuable addition to the farm's workforce. In exchange for training, housing, and a small stipend, they help work the fields and care for the animals. This winter, the farm welcomed three new interns to the team.

Michael DiSalvi, age 35, is a resident of Lambertville, NJ. He comes to the farm with an interest in learning more about self-sufficient horse farming. "I'm really interested in animal traction as far as farm work is concerned," he says. "I like animals a lot more than I like machinery, plus they make manure and reproduce themselves." Mike has worked as a farmhand on a horse farm previously, and has an interest in one day farming for himself. "I'm hoping to learn the things I need to start out," he says. "Just being able to provide for yourself is I think a really overlooked skill."



Karrin Pearson, age 22, grew up in Lawrenceville, NJ, where she currently lives. She graduated last year from St. Olaf College in Minnesota with a degree in English. She also took classes in environmental and American studies, and it's this combination of interests that encouraged her to come to Howell Farm. "I'm interested in environmental education, and I think the farm is a great place where that happens for people, and it also connects them to history," she says. Karrin hopes that one lesson visiting school children learn from visiting the farm is to be better stewards of the land, and, although she's not sure she wants to be a "farmer farmer" herself, she does hope to one day be able to grow some of her own food.



Maren Morsch, age 20, grew up in Mt. Arlington, NJ. She is a junior at The College of New Jersey, majoring in communication studies with a concentration in environmental studies. Her three months at Howell Farm are part of an internship for which she will earn academic credits. She will be keeping a journal about her experience at the farm, while relating the farm's public programming to communications concepts she is studying in class. "I'm trying to combine my academic interests into a practical application, and I think I've found that here at Howell Farm," she says. Maren also hopes her time here might give her some insight into potential future careers. "Ideally, I want to do something environmentally focused," she says. "I'm hoping through being here I'll get a little more of a handle on what I eventually see myself doing."



The Howell Farm Photo of the Month Contest



Ground Work. Taken two summers ago at Howell Farm, this photo shows volunteer Bill Glenn working the soil with a spring-tooth harrow behind workhorses Buster (left) and Bill. This month's winning picture was taken by June Arcamone of Lawrenceville, NJ.

The Rules:

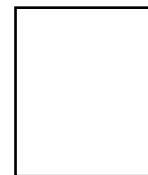
Anyone may enter. Submit the best photo you've taken at Howell Farm by emailing it to us at HowellFarmPhotos@gmail.com.

In the body of the email, please include your name and contact information, and then attach your photo as a JPEG file. File sizes are limited to 5 megabytes. We can only accept digital photos.

Entries are limited to one photo per person per month. Next month's deadline for the contest is April 15.

Winners will be selected by our panel of judges based on composition and originality. By submitting a photo for the contest, you grant Howell Farm the right to print your photo in *The Furrow*, as well as the right to publish the photo on our website.

Monthly winners will receive a jar of Howell Farm honey, a jar of Howell Farm maple syrup, a dozen fresh eggs, and a \$10 gift certificate to our gift shop.



Friends of Howell Living History Farm

101 Hunter Road, Titusville, NJ 08560

The Furrow is a publication of the Friends of Howell Living History Farm. Contributions of artwork, photographs, and articles are welcome for consideration. They may be submitted to the editor, c/o Howell Farm, 101 Hunter Road, Titusville, NJ 08560.

The Friends is a nonprofit organization which lends support and assistance to Howell Living History Farm, listed on both the New Jersey and National Register of Historic Places.

Editor.....Jared Flesher
Assistant Editors....Christen Houghton, Danielle Houghton,
Maren Morsch
Contributors.....Rob Flory, Jeff Kelly

Phone: (609) 737-3299 • Fax: (609) 737-6524
Websites: mercercounty.org • howellfarm.org
Email: HowellFarmFurrow@gmail.com

Howell Living History Farm is a facility of the Mercer County Park Commission
Brian M. Hughes, Mercer County Executive • Kevin B. Bannon, Park Commission Executive Director