Sweet, sticky & good for you, too

Maple syrup is a growing business in Connecticut — and may have some real health benefits

By Christina Levere

Chances are you like to drown your pancakes in a sea of pure maple syrup. But have you thought of using your maple syrup in other ways, such as to sweeten your coffee? Or perhaps as an ingredient in your facial mask? A growing body of evidence suggests that maple syrup deserves a closer look for its unique health benefits, and that Connecticut maple syrup farmers could benefit from this sticky staple's rise in popularity.

Pure maple syrup — not the commercial grade, high-fructose corn syrup plus maple flavor stuff — is made from the sap of sugar maple, red maple or black maple trees. Sap is made from the xylem sap of the trees; before winter, these trees store starch in their trunks and roots. The starch is converted to sugar that rises in the sap in winter and spring.

According to the Maple Syrup Producers Association of Connecticut (MSPAC), the traditional season to make maple syrup in Connecticut extends from early February until late March and is called "the sugaring season." Sap flows when daytime temperatures rise above freezing and nighttime temperatures fall below freezing; it flows thanks to the rising temperature, which creates pressure in the tree.

Deciding when to tap a tree to nab the sap can be difficult, as there is no perfect answer. And understanding how to tap — where on the tree, how deep to drill the hole(s), understanding the age and health of the tree, etc. — takes patience and practice. Then there are the buckets and there are tap lines. Then, of course, there's output.

"It's all about the vacuum," James Jahoda of Lebanon-based Sugar Maple Farms said. When you're setting up tubing between trees, vacuum systems turn a fair sap run into a great sap run. Long lines of tubing will cover a lot of area, but your vacuum capabilities will be lower. Conversely, shorter lines will cover a smaller area, but your vacuum capabilities will be greater. Gravity also plays a part.

After the sap has been collected it is boiled until most of the water has evaporated, reducing it to syrup. Because of the large quantity of steam generated by boiling sap, it is not recommended to boil indoors, lest you start to lose your wallpaper. A good sap run will yield about one gallon of sap per tap; it takes 10 gallons of sap to make one quart of syrup.

EARLY ORIGINS

Credit for the idea to turn sap into syrup likely goes to the Native Americans, though there are no written accounts to

Here and opposite page: Jahoda works on laying taplines at the Red House location on Chapelle Road in Lebanon

The inside of one of the valves used to collect sap

Haralson checks the syrup during the boil process at the smoke house

verify exactly when the process was discovered. Various legends contend that a Native American youth saw a red squirrel climb a tree, bite off a twig, and lick the sap, giving the youth a historical "a ha" moment. Another legend tells of an Indian chief who pulled his tomahawk from a maple tree, then went off to hunt. While he was away, the gash dripped sap into a bark vessel at the trunk of the tree, from which the chief's wife took liquid for dinner. Her husband was so impressed, the sweet substance became part of their daily diet.

The first written descriptions of maple sugaring actually appear in letters or journals of early Europeans in North America; it's been proposed that early settlers who came to New England learned the practice from Native Americans, modifying it for their own purposes.

Hundreds of years later, the process is still being modified.

Here and below: Jahoda works on laying taplines at the Red House location on Chapelle Road in Lebanon

During the late 1950s, for example, plastic tubing was invented as a way to access higher yields of cleaner sap. Tap technology has evolved as well. There are some things that haven't changed; the importance of maple tree health is one of them.

"When you tap a tree you're actually wounding it," Jahoda said. "It's why I don't like to put more than two taps in a tree."

It's true: Sap flows out only because the vessels in the wood are severed by drilling. The wound is then exposed to microorganisms. These holes are frequently the source of internal problems that lead to decay — even death — of trees. The good news is that most trees are hardy and able to recover.

GROWING INDUSTRY

Jahoda has been maple sugaring for more than 30 years. He grew up making maple syrup with his grandparents in northern New England. Living in Connecticut, he started maple sugaring 25 years ago as a hobby then got more serious.

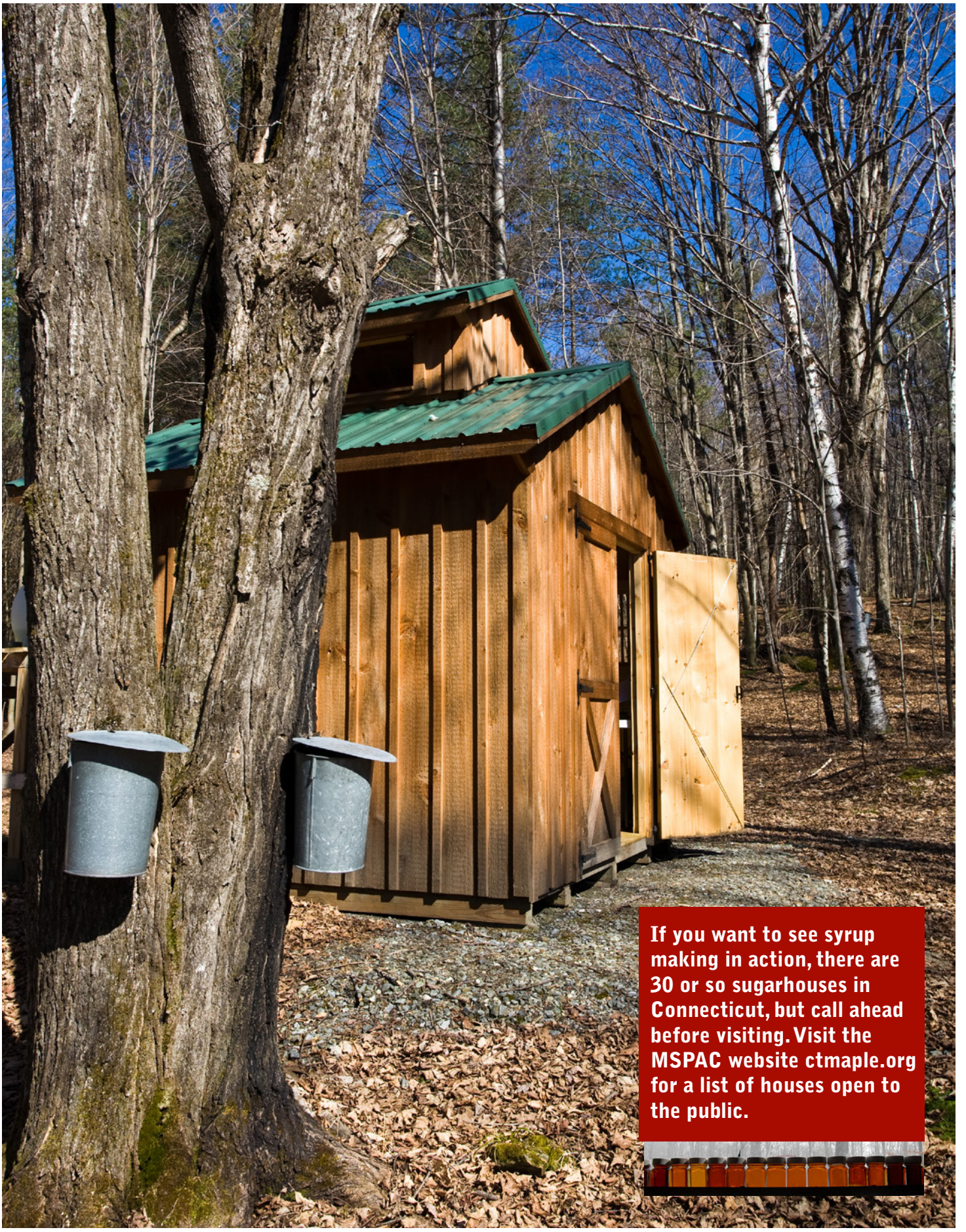
"I was a maple sugar farmer and I was also science teacher in Killingly for 32 years, but I retired early because you can't do both. Maple syrup farming is a year-round job."

Years ago, his friend Chuck Haralson joined the operation to handle bottling and sales.

Jahoda estimates he only puts out 2,000 to 3,000 taps in a given year.

"I'm a small fish," he said. "Some of the larger maple syrup farmers, like Sweet Tree Farm in Vermont, have hundreds of thousands of taps."

Jahoda noted that the industry is indeed growing — every year he sells all of his product and he knows fellow farmers who fare the same — but that that demand can open the door to an industrialized approach to tapping. Some producers, for



If you want to see syrup making in action, there are 30 or so sugarhouses in Connecticut, but call ahead before visiting. Visit the MSPAC website ctmaple.org for a list of houses open to the public.

example, cut off the tops of the maple trees, cap the top and use a vacuum to suck the sap. As a self-described environmentalist, he said an approach like that just isn't in harmony with nature.

Speaking of nature, farmers have had to keep a closer eye on the forecast to keep their businesses running. The traditional maple sugaring season in Connecticut runs from early February until late March, but Jahoda tapped a month earlier, in January, this year — a practice that's becoming more the norm than not.

"Farmers are tapping earlier in Connecticut and not going as long," Mark Harran, president of MSPAC, said. "The season is generally six to eight weeks long, and now farmers are tapping more in January. The issue in tapping this early is that you may miss the end of the season. Your tap holes may close up as the tree heals. Most people now look at mid- to late-January to tap to maximize the beginning as well as end of season."

If it's pretty clear — definitely not medium amber — that maple syrup production is physically demanding, labor intensive, time-consuming, an inexact science, and messy, why do it?

"It's a labor of love," Jahoda. And: "People want it."

A NEW WAY TO THINK ABOUT IT

Boy, do they. Maple syrup is a lucrative industry and an important agricultural product throughout Canada (Quebec is the world's largest producer of maple syrup) and the United States. In 2017, the United States produced more than 4.27 million gallons of syrup, worth approximately $147 million, according to the United States Department of Agriculture. In a 2018 press release put out by U.S. Senator Chris Murphy he wrote, "U.S. production [of maple syrup] has nearly doubled in the last decade...between just 2015 and 2017 maple syrup production grew by nearly 840,000 gallons."

But why? Harran noted that the old-fashioned "pancake breakfast" is declining because today's breakfast usually takes only 10 minutes, between preparation and consumption, and that "maple syrup isn't conducive to quick and portable breakfast." So if it's not pancakes, what's spurring interest and consumption?

The answer lies not with our taste buds, but with our overall health. As Navindra Seeram, associate professor of biomedical and pharmaceutical sciences in University of Rhode Island's College of Pharmacy, puts it: "Maple syrup is good for us."

"As far as distinguishing between Rhode Island syrup, Connecticut, New Hampshire, Vermont, Canadian, etc. I don't feel we need to. It's syrup. It's us."

Navindra Seeram is among researchers at the University of Rhode Island awarded a U.S. Department of Agriculture grant to study maple syrup's anti-inflammatory properties.

According to his research, some maple species have biochemical substances in their leaves, bark and sap that may counteract inflammation.

Seeram and his URI co-investigator Angela Slitt received last year $470,000 from the United States Department of Agriculture to advance their pioneering work exploring the anti-inflammatory properties of maple syrup phytochemicals. Their two-year study, entitled "Beneficial effects of maple syrup phytochemicals against inflammation associated with metabolic syndrome," will evaluate the anti-inflammatory effects of a polyphenol-enriched maple syrup extract in mice fed a high-fat diet and in human fat cell samples.

"The chemistry of maple syrup is very unique and astounding and exceptional," Seeram said. "It has diverse chemistry. There are 67 compounds in pure maple syrup. It's a cocktail of natural antioxidants" — minerals, vitamins, amino acids, organic acids and phytochemicals.

Harran concurs that someday, maple syrup might actually be considered a health food.

That doesn't mean, of course, you should drink a gallon a day. Seeram advises, "Drizzle, don't guzzle."

U.S. production [of maple syrup] has nearly doubled in the last decade...between just 2015 and 2017 maple syrup production grew by nearly 840,000 gallons. Connecticut, Maine, Massachusetts, New Hampshire,

New York, Pennsylvania and Vermont produced 3.78 million gallons of syrup in 2016, according to a Northeast maple syrup production statistics service run by the U.S. Department of Agriculture.

Ready to drizzle?

Potential health benefits of pure maple syrup

Maple syrup is rich in calcium, which helps build strong bones and teeth. It contains approximately 1/3 fewer carbohydrates than granulated sugar. Pure maple syrup is 100 percent fat free. Compared with 58 for white sugar and 75 for corn syrup, maple syrup has a glycemic index of only 54.

¼ cup of maple syrup contains:

100% of the daily value (DV) of manganese

100% of the daily value of manganese

4% of the daily value magnesium

37% of the daily value of riboflavin

11% of the daily value of zinc

Maple Sugaring Activities in Connecticut

Matteson's Maple Manor Open House
Field House Farm, Madison, Feb. 24
Visit this Open House for demonstrations on the Native American tradition of making maple syrup using a modern, stainless steel, Small Brothers evaporator. This small batch operator will also have a variety of maple syrup grades for sale in pint, quart, half gallon containers, and 500ml fancy gift bottles with the Matteson's Maple Manor label.

Plymouth Maple Festival
Plymouth Green, Plymouth, March 3
Delight in the New England tradition of making maple syrup. Tapping the trees begins at 10 am. Discover how to identify sugar maples, use an old-fashioned drill to tap them, insert the spiles, hang the buckets and watch the sap drip into metal pails. Sample maple sugar on snow, maple sugar candy and other maple products. There's even a historical scavenger hunt for kids on the Green.

Maple Sugar Festival Weekend
Stamford Museum & Nature Center, Stamford, March 3-4
Visit the little red sugarhouse on Heckscher Farm and observe firsthand how sap is turned into sweet maple syrup. See how trees are tapped and sap is collected, make a maple-themed craft, go on a scavenger hunt, have your face painted and more.

Annual Maple Sugaring Festival
Institute for American Indian Studies, Washington, March 10
Enjoy pancakes, local maple syrup, coffee and orange juice (served from 11 a.m.-1 p.m.), and learn how Native Americans traditionally made maple syrup at the Institute for American Indian Studies.

Maple Sugar Madness
Welles Shipman Ward House, South Glastonbury, March 11
Watch and see how maple trees are tapped and how the sap is boiled down to syrup. Tour the Connecticut River Valley mansion built in 1755, the English-style bank barn and the 1830 Tobacco Shed. See 19th-century horse-drawn vehicles and Glastonbury's first motorized fire engine.

Hebron Maple Festival
Douglas Library, Hebron, March 17-18
Learn how maple syrup is produced at this town-wide celebration of maple-related events. There'll be demonstrations and a variety of maple products from local sugarhouses. And there's so much more to enjoy – an antique tractor parade, crafts, an ice cream-eating contest, face painting, a silent auction and lots of tasty treats including maple cotton candy, fried dough, hot dogs, chili, soup and more.

Source www.ctvisit.com

"Humans are hard-wired to want sugar, but we have to remember that sugars are bad," Seeram said. Limiting consumption is key, even though pure maple syrup has a low glycemic index. He recommends people access the health benefits of pure maple sugar by using it as a sweetener in their coffee and smoothie or by using it for baking, substituting it for corn syrup or other processed sugars. He also sees the potential for the maple syrup industry to diversify.

"You see maple in products other than syrup," Seeram said, "like maple water, which has less sugar than coconut, and maple in cosmetics, to protect skin's elastin. Maybe there's room for maple extracts, like with cranberries, for the darker syrup that doesn't taste as good."

"It's a sustainable industry," he said. "It has rich tradition. And Connecticut and Rhode Island could do better. Maple syrup supports the economy. So tap more trees."

(As reference, only a small percentage of trees in Connecticut — about one-tenth of one percent of all the sugar maples in the state — are tapped.)

It's good advice if you're a nature lover looking for income, or perhaps a college graduate looking for a steady profession. Jahoda estimated a newcomer would only need about $30,000 to $40,000 to get started.

"Anybody who makes maple syrup in Connecticut is going to sell all of their maple syrup," Harran said. "The demand is there. About 90 percent of the maple syrup sold in Connecticut is brought in from out of the state, so the state has great opportunity to expand their businesses. There's lot of room to grow."

That's good news for the state economy — and for the maples.