

The History of Maple Syrup

It is not known for sure who first discovered the technique of collecting sap and cooking it into maple syrup, but when the first Europeans arrived in North America and had contact with the Native American tribes of the eastern woodlands, they report stories about the consumption of maple sap in Indian lore. Here is a quote from a British Royal Society paper written in 1685: "The Savages of Canada, in the time that the sap rises, in the Maple, make an incision in the Tree, by which it runs out; and after they have evaporated eight pounds of the liquor, there remains one pound as sweet" A publication in 1912 by the Vermont Maple Sugar Makers' Association credits both Native Americans and French Canadians with "passing on the secrets of sugarmaking." Maple syrup and maple sugar became the household sweetener in the Canadian and American colonies throughout the nineteenth century, instead of refined white cane sugar, raw sugar, or molasses. Maple trees were readily available and a supply of syrup and sugar cakes could be made for the year ahead.

The Tree

The magnificent rock maple, hard maple, or sugar maple tree (*Acer saccharum*) are the sources of the sap which is converted to Maple Syrup. Any sugar maple with a trunk diameter of 12 inches or more can be "tapped" for making syrup. It takes thirty years for a maple tree to grow to that size.

Springtime is the season for "sugaring", when nights are cold (below freezing) and days are warm. The sap gathering stops abruptly when the weather turns balmy, for the tree's nutrients are being mobilized to feed the leaf buds, and these metabolites cause objectionable off-flavors in syrup. So the sugaring season may be very short, just a few days, or may last for a couple of weeks or more, depending on the weather.

Tapping the Tree

As the maple tree begins its new growth each spring, the sap which stays frozen during winter, begins to thaw. Once the sap starts to flow within the trunk of the tree, usually in February or March, the owner of the "sugarbush" (grove of sugar maple trees) can capture the sap. A hole is

bored into the tree trunk, usually 7/16" in diameter and no deeper than 2 1/2 inches, and slanted up at an angle of 5 to 10 degrees. A "tap" of metal or plastic is inserted which functions as a faucet. A new taphole must be bored each season, and old tapholes usually heal over in a year or two. Recommended tapping guidelines are observed to avoid shortening the life of the tree. Generally a tree will tolerate two or sometimes even three taps. The sap as it comes from the trees is a sparkling liquid with only a vague hint of sweetness. At this point the sap has a sugar content of 2%-2.75%.

There are two ways of collecting the sap. One is simply to hang a bucket from each tap and travel around at least once a day, emptying each bucket by hand into a big tank on a sled, either drawn by horses (the way it was always done in the past) or by a tractor. A 16-quart bucket of sap, if full, weighs over 30 pounds, and a single gatherer might be expected to retrieve and dump 750 to 1,500 buckets in a day. These days the buckets and covers (to keep rain, snow, and debris out of the sap bucket) are made of metal, but earlier in this century, the buckets and covers were made of wood. Now these old wooden sap buckets command a fine price at antique auctions!

In the 1960s, another method of collecting sap became popular. This method is particularly effective when the sugarbush is on a hillside. Plastic tubing is attached to each tap which then forms a network of tubing from all the taps, allowing the sap to flow into a large storage tank at a location close to the sugarhouse (the shed where the sap is boiled down into syrup). Sometimes pumps are used to facilitate the flow of sap through this pipeline system. It takes 32 to 40 gallons of sap to make one gallon of syrup!

Boiling the Sap

The boiling of the sap takes place in a "sugarhouse". This is a simple building that shelters boiling operations that is usually uninsulated, with a steam vent in the roof, a concrete floor and space for the evaporator, fuel (either wood or oil) to heat the evaporator and sap storage. The sugarhouse is often located at the base of a hillside and accessible by a road.

Sap is highly perishable and must be boiled at once to make fine syrup. The sap is heated in an "evaporator", which causes

large amounts of water to be driven off as steam, leaving syrup. Most evaporators consist of a long firebox (known as the arch) for a wood fire or an oil burner underneath and have shallow, partitioned pans above the heat. The typical sugarmaking evaporator is about five or six feet wide and 16 feet long. After a roaring fire has been started, the cold sap enters the unit at one corner in the rear and moves slowly in a zig-zag flow in the evaporator, around the partitions, steadily increasing in thickness and sugar density. Additional cold sap is fed into the unit in a steady drizzle, float valves maintain the fluid levels and the finished syrup, scalding hot (around 217° F), is filtered and drawn off near the front of the evaporator. When you realize that such an evaporator can process six or seven 40-Gallon barrels of sap in an hour, you can understand how much steam is created which can be seen for miles around, billowing up from the sugarhouse.

It is this boiling process that produces the great maple flavor. Just the right amount of cooking time is crucial! Too much cooking will cause the sugars to start to caramelize, the syrup will darken and a lower-grade syrup is produced; or even worse, it can boil over and scorch, ruining the entire batch! The sugarmaker tests for doneness by holding up a scoop of syrup and letting it drip, watching for "aproning", when the syrup comes off the scoop in a slow curtain or sheet. A thermometer and hydrometer are also employed to ensure perfect density.

These days, a few large operations use superfast evaporators and/or reverse-osmosis units which substantially speed up the boiling time. However, the majority of sugarmakers are without these latest technological enhancements.

When the hot sap is ready and has cooled to 180°-200° F, it is poured into containers such as glass, metal cans, or plastic. While some traditionalists prefer their syrup in metal cans, the new high-density plastic jugs are gaining favor, and some prefer to display the natural beauty of syrup in sparkling clear glass.

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