

Maple Syrup: History, Production, and Use

Maple syrup is a naturally-organic, edible material that is produced by boiling sap released from maple trees.



During the winter months, maple trees store starch in their trunk and roots. As temperatures rise, the starch is converted into sugar. In late winter/early spring, these trees are tapped by boring holes in the trunks and inserting a spigot or spout. This process does not harm the tree.

Fun Fact

It takes about 40 gallons of sap to make one gallon of maple syrup.

Maple syrup is produced through evaporation — boiling the sap until most of the water is gone, leaving primarily concentrated syrup. This is done in a “sugar shack.”

Vermont is the largest producer of maple syrup in the United States. Other U.S. producers include New Hampshire, New York, and Maine. Canada is the largest world producer of maple syrup — boasting a nearly 80 percent market share.

A (Brief) History of Maple Syrup

Culinary use of maple syrup can be traced back to the Native Americans. Though the exact reasons behind early production and consumption of maple syrup are unclear, some archaeologists believe Native Americans may have used sap to cook venison and other animal meat when water was scarce.

Historians believe tribe leaders later taught early European settlers in America how to tap the trees and produce maple syrup.

During the U.S. Civil War, maple syrup was the favored sweetener for many, because cane sugar and molasses were produced in the South — usually through slave labor.

Due to rationing efforts during World War Two, people were encouraged to seek alternatives to sugar. Maple syrup was suggested as one of these alternatives.

Today — primarily in northeastern U.S. states, as well as the Canadian province of Quebec — “maple festivals” are held as a way to bring friends and neighbors together after the cold winter months, and to celebrate the Spring and Summer seasons ahead.

Side Note

Many people have small sugar shacks on their property where they produce a small, ‘private stock’ of maple syrup each year.

Fun Fact

There are more than 200 species of maple trees.

Setting the Stage

The “sugaring season” begins in the early spring months, when temperatures are at least 40 degrees during the day, and at least 20 degrees at night. In New England, this typically occurs between late February and late April, depending on the region. The “season” for each region usually lasts only about a month, but can be extended if weather conditions are favorable.

Maple trees are typically tapped when they are between 30 and 40 years old. They can continue to be tapped each season until they are up to 100 years old!

Each tree can sustain one to three taps, depending on trunk diameter. The average tree can produce roughly nine to 13 gallons (35 to 50 litres) of sap per season, which averages out to about three gallons (12 litres) per day.

How It’s Made

Though production methods have advanced through the years by use of modern technology and innovative tactics, the core process remains unchanged.

- 1) Maple trees are tapped by drilling a small hole in the trunk area. A spigot or spout is placed in this hole, and a metal bucket is hung from the spout to collect the sap.
- 2) These buckets are either manually carried to and emptied in a large holding tank, or sent directly to the tank via a vacuum-pump system.
- 3) The sap is then transferred from this holding tank to an evaporator, where it is boiled until it reaches the desired consistency for maple syrup.
- 4) The syrup is filtered to remove nitre (or “sugar sand”).
- 5) Once filtered, it is then distributed to containers (via a spout at the base of the evaporator) and the containers are sealed.



Side Note

The [Vermont Maple Festival](#) (held in St. Albans) still signals the end of the school year!

Fun Fact

Maple sap turns into syrup at a temperature of 219 degrees.

Fun Fact

Maple syrup does not freeze (it just becomes thick).

The Importance of Temperature



Maintaining proper temperature is essential to producing a high-quality end product. Syrup that is boiled for too long will crystalize, while not boiling enough will cause the syrup to become watery and unpalatable.

Syrup that has already been produced can later be further boiled down to make other products such as maple butter and maple candy or taffy.

Weather also plays an integral role in the length of the sugaring season. Warmer temperatures trigger the maple tree’s natural biological process, which can alter the taste of the sap.

Grading & Types

Maple syrup is graded differently in the U.S. and Canada, though the grading considerations remain mostly the same.

The Canadian Food Inspection Agency (CFIA) divides maple syrup into three grades and five color classes:

- 1) Canada No. 1 (extra light, light, medium)
- 2) Canada No. 2 (amber)
- 3) Canada No. 3 (dark)

Fun Fact

Maple syrup has 1/3 less calories per serving than white sugar.

In the United States, maple syrup is divided into two major grades and three subgrades, with three color classes:

- 1) Grade A
 - a) Light Amber (Fancy)
 - b) Medium Amber
 - c) Dark Amber
- 2) Grade B

Fun Fact

One gallon of pure Vermont maple syrup weighs 11 pounds.

In both countries, accurate grading is taken seriously. Inaccurate or deceptive grading practices carry an up to \$1,000 (USD) fine for each offense. Commercial producers engaging in deceptive grading practices could face permanent termination of their operations.

U.S. Maple Syrup Grades in Detail

- **Light Amber**

This refers to syrup produced at the beginning of the season. It is lighter in color and sweeter tasting than syrup produced at later dates. Some say this grade has only a 'subtle' maple taste.
- **Medium Amber**

Slightly darker than light amber, this grade is known for a 'smooth' maple flavor. This syrup is produced mid-season, when temperatures begin to rise.
- **Dark Amber**

A 'full-bodied' syrup, this grade is produced during the longer and warmer days of the sugaring season. Both color and flavor are stronger in this variety. It is primarily used in cooking or as a glaze for meats.



Enjoying Maple Syrup

Maple syrup is a versatile product that can be used on a variety of foods. Often used as a sugar or honey alternative, it can also be enjoyed with:

- pancakes and waffles
- hot cereal (such as oatmeal)
- fresh fruit
- breakfast meat (sausages, bacon, etc.)
- candied sweet potatoes
- ice cream
- hot tea
- and more



Health Benefits

Pure maple syrup (in moderate amounts) has long been touted as a beneficial addition to health-conscious diets. Supporters of this idea base their beliefs on several factors.

Maple Syrup:

- is a 100% natural, organic, fat-free food, with no preservatives
- can speed the wound-healing process
- aids in fertility and reproductive health
- aids in calcium retention, which can prevent osteoporosis
- contains antioxidants that may help reduce the risk of diabetes and other diseases
- is a good source of vitamins (B2, B5, B6), niacin, biotin, and amino and folic acids
- contains iron, calcium, potassium, magnesium, and phosphorous
- is a good source of zinc, manganese, and thiamine

Zinc aids in immune system health, and helps prevent heart disease and stroke. It also reduces the risk of prostate cancer in men. **Manganese** is an antioxidant linked to energy production and proper thyroid function. It also helps repair damaged muscle and cell tissue. **Thiamine** helps prevent against cataracts and memory loss. This nutrient also reduces the effects of aging, and helps with digestion.

Side Note

Convinced of its health benefits, many people start each day with a tablespoon of maple syrup.

Fun Fact

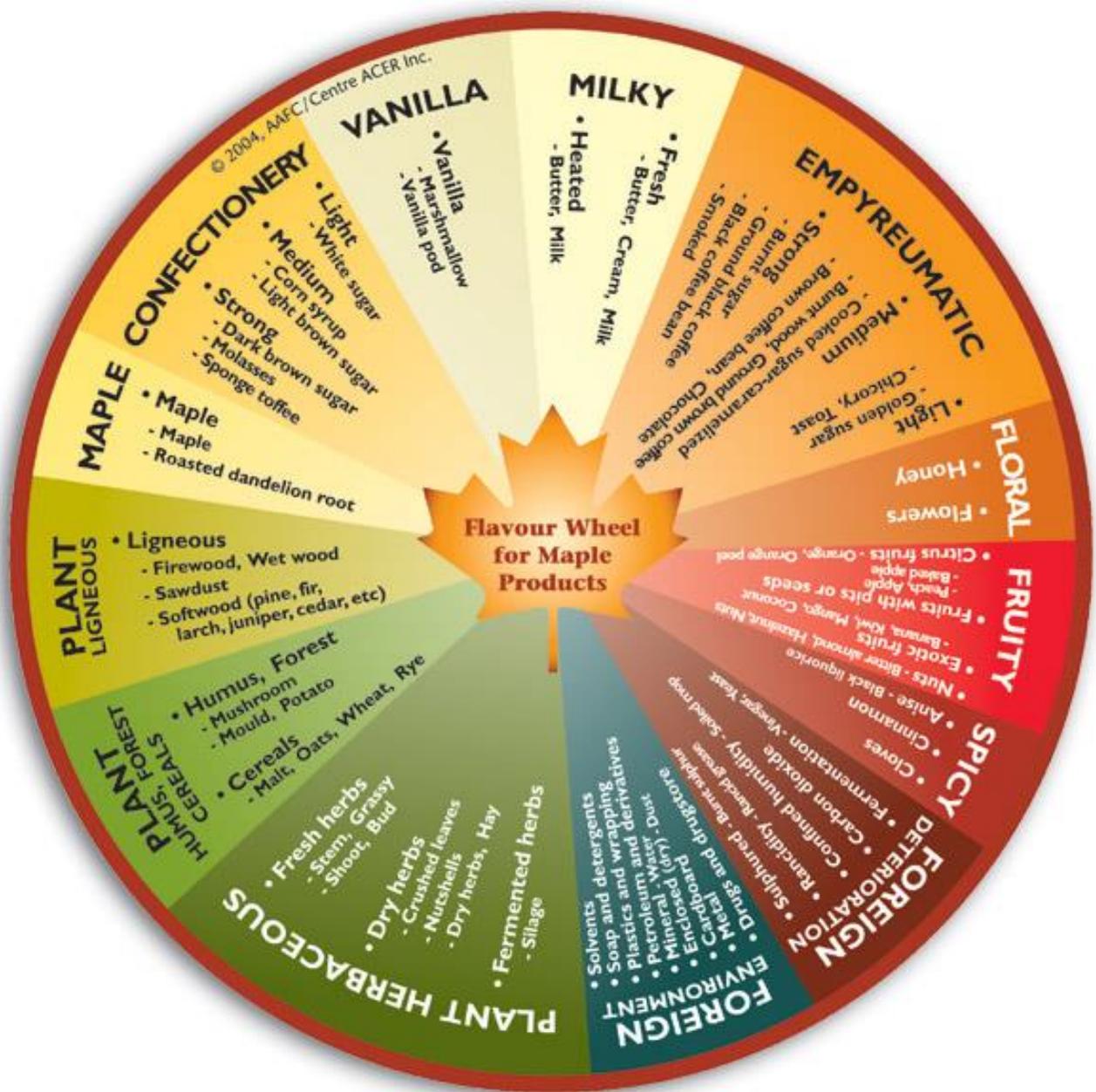
Maple syrup has the same calcium content per serving as whole milk.

Fun Fact

The wood from maple trees is used to make fine furniture, sports equipment (bowling pins, pool cues, baseball bats, skateboards), and musical instruments.

Maple wood is a 'tonewood,' which carries sound waves.

Appendix



Appendix 1: Maple Syrup Flavor Wheel ([Agriculture Canada](#))