

DO MORE WITH *Maple*



MAPLE –
FROM TREE TO TABLE
CULINARY
EDUCATION GUIDE

www.domorewithmaple.com

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OUTCOMES & OBJECTIVES

This culinary education guide provides an overview of the production, grading and flavor of real maple syrup.

Upon completion of this guide and tasting, the student will have a basic understanding of maple syrup production, maple products available and will be able to differentiate real maple syrup from maple-flavored table syrups.

MAPLE PRODUCTION: FROM TREE TO TABLE

Maple syrup is made from the sap of the sugar maple tree.



“Sugaring Off”

Maple sap is the watery fluid that feeds the sugar maple tree’s roots, trunk, branches and leaves. The sap will run when the temperatures move above and below freezing. Maple syrup production or the “sugaring off” season occurs once a year for 6 to 8 weeks in mid-February through April.

Tapping Trees

Maple syrup producers insert a tap into the tree to collect the sap. While traditional maple syrup producers relied on buckets and spouts, today’s maple syrup producers use gravity-fed plastic tubing and pipelines and in some cases vacuum pumps to collect the sap. The vacuum pumps do not suck sap from the trees but rather help lower the pressure in the pipeline system to allow the sap to flow easily.

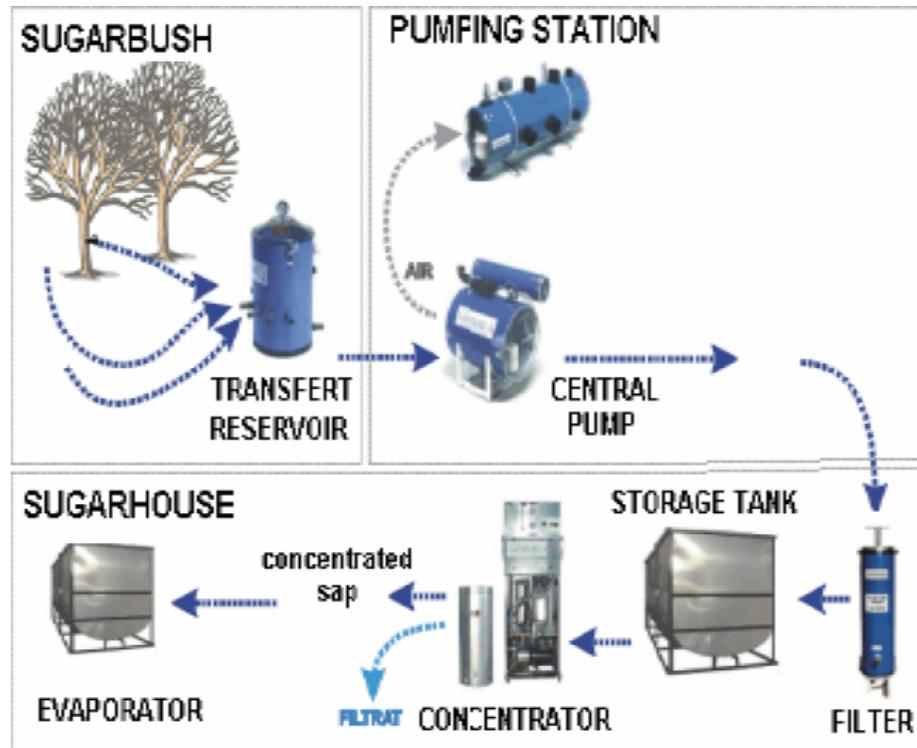
It takes about 40 to 60 years for the sugar maple trees to grow large enough for tapping. Holes are typically drilled on an upward angle to a depth of not more than three inches. Tapping will not injure the tree as long as the sugar maple tree is healthy and the number of taps is limited.

Evaporation

The maple sap is boiled and evaporated to make maple syrup. It takes approximately 40 gallons of sap (also called maple water) to produce 1 gallon of maple syrup. Maple syrup is made when the sugar density reaches 66 percent.

Finishing

Finished maple syrup is filtered to remove any organic materials found in the sap. The maple syrup is then graded based on color and flavor.



Maple syrup production requires optimal temperatures and sugar maple trees and is made in a small geographic area of northeastern North America. Quebec produces more than 80 percent of the world's maple syrup, equal to 93 percent of Canadian production.

MAPLE PRODUCTION: MAPLE PRODUCTS

In addition to maple syrup, Quebec maple producers have developed several natural maple products made from the sap of the sugar maple tree.

- Maple Syrup** Maple syrup is produced by the evaporation of the sap of the maple tree. It takes approximately 40 gallons of sap (also called maple water) to produce 1 gallon of maple syrup. Maple syrup has a sugar content of about 66 percent and is graded according to color and flavor. As a general rule, lighter-colored maple syrups have a more delicate flavor and darker-colored maple syrups have a stronger taste. The flavor of maple syrup is also influenced by the growing regions of the sugar maple trees.
- Maple Butter** Thick and spreadable, maple butter (also known as maple cream or spread) is a whipped version of pure maple syrup.
- Clearly Maple** Clearly Maple begins as maple syrup and then is altered by the addition of a processing aid that is later removed to create a higher invert sugar content. The result is a honey-like consistency product made of pure maple syrup.
- Maple Concentrate** Pure maple syrup concentrates are produced by removing nearly half the sucrose content found in pure maple syrup.
- Maple Flakes** Fine, medium or coarse, maple flakes are made from pure maple syrup dehydrated by a unique and exclusive process.
- Maple Jelly** Jelly made with pure maple syrup.
- Maple Sugar** Pure maple syrup dehydrated into granulated sugar crystals. Maple sugar can be substituted 1 to 1 for regular granulated sugar in most recipes and formulas. Various granule sizes are available.
- Maple Vinegar** Vinegar made from pure maple syrup through alcoholic fermentation and acetic fermentation processes.

MAPLE SYRUP STORAGE

Unopened maple syrup stores easily, unrefrigerated. Prolonged storage may cause the color of maple syrup to darken and the flavor to deteriorate.

After opening maple syrup, store in an air tight container. To slow the natural crystallization process of syrup, keep maple syrup in a refrigerator.

For extended storage (one to three months), it is recommended to store maple syrup in the freezer. The exception is a bag in a box of maple syrup which can be stored at room temperature at all times.

COOKING AND BAKING WITH MAPLE SYRUP

Maple syrup is more than just a topping for pancakes. Maple syrup can be used in diverse menu items. Following are just a few ways that maple syrup can bring a golden touch to menus:

- Use maple syrup to sweeten lemonade, tea, coffee and lattes.
- Glaze sweet potatoes or acorn squash with maple syrup.
- Create a sweet and savory barbecue sauce with maple.
- Add maple vinegar to create a signature salad dressing.
- Drizzle maple syrup on a pear, walnut and gorgonzola pizza.
- Prepare maple-kissed baked goods and desserts.

Substitution Information

When substituting maple syrup for granulated sugar in baked goods, follow these guidelines:

- For each cup of granulated sugar, use 1-1/2 cups of maple syrup.
- Reduce other liquids in the recipe by about one-half.
- Add 1/4 teaspoon baking soda for each cup of maple syrup used
- Decrease oven temperature by 25 degrees to avoid over-browning.

MAPLE SYRUP NUTRITION

Unlike most refined sweeteners, maple syrup contains several vitamins and minerals. Recent studies have also shown that maple syrup is a rich source of antioxidants.

MAPLE SYRUP GRADES/CLASSIFICATIONS

Maple syrup is graded according to its clarity, density and the characteristic taste of maple. The color classifications are based on measuring the amount of light that passes through the maple syrup.

U.S. GRADE	Description	CANADIAN GRADE	QUEBEC GRADE
U.S. Grade A Light Amber/Fancy	Maple syrup produced at the very beginning of the season. Very pale color and delicate taste. Light transmittance over 75 percent.	Canada No. 1 Extra Light	Quebec Grade AA
U.S. Grade A Medium Amber	Maple syrup produced at the beginning of the season. Pale amber in color with a pure, subtle taste. Light transmittance of 61 to 74 percent.	Canada No. 1 Light	Quebec Grade A
U.S. Grade A Dark Amber	Produced in the middle of the season, this maple syrup is the most popular grade available. A rich amber color with a more pronounced flavor. Light transmittance of 44 to 60 percent.	Canada No. 1 Medium	Quebec Grade B
U.S. Grade B Commercial	Maple syrup produced near the end of the season. Strong maple taste and dark color. Light transmittance of 27 to 43 percent.	Canada No. 2 Amber	Quebec Grade C
U.S. Grade B Commercial	Maple syrup produced at the very end of the season. Very dark syrup used primarily as food processing ingredient. Highest mineral content. Light transmittance of 0 to 26 percent.	Canada No. 3 Dark	Quebec Grade D

MAPLE SYRUP GRADES/CLASSIFICATIONS



Extra Light



Light



Medium



Amber



Dark

As a general rule, lighter-colored maple syrups have a more delicate flavor while darker-colored maple syrups have a stronger flavor. The flavor is also influenced by the growing region of the sugar maple trees.

THE FLAVOR OF REAL MAPLE

Maple Syrup made from maple water tapped at the beginning of the season is generally clearer and lighter in taste. As seasons advance, the maple syrup becomes darker and more caramelized in flavor. The sugar content of maple syrup averages 66.5 BRIX.

According to the scientific literature, the flavor of maple syrup develops during the evaporation process; the taste precursors are part of the sap. In addition to water, minerals and various sugars, maple sap is rich in organic acids, nitrogen compounds and, like red wine, in phenolic compounds and flavonoids. The amount of these compounds in maple sap may vary over the course of the maple syrup season, from one season to the next, according to the area, and from one maple tree to the next.

Among the taste precursors, sugars play an important role. They initiate the caramelization reaction and the Maillard reaction (which gives bread a brown crust) as the water is evaporating. Also, under the effect of the heat, phenols with tasty names such as vanillin and coniferol are released.

Maple syrup is defined by much more than just the degree of caramelization. The richness of the maple syrup flavor is a result of the various reactions of the other compounds in the maple sap. The Maillard reaction (sugar and amino acids) is important. It can be assumed that the phenolic compounds and flavonoids also have an important role in producing the flavor of maple syrup, like in the case of red wine. However, this effect has not yet been confirmed.

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MAPLE SYRUP TASTING SENSORY PROFILE

Maple Tasting - Sensory Profile Vocabulary

Dominant Flavors

- Roasted
 - Light – golden sugar, chicory, toast
 - Medium – cooked sugar – caramelized, burnt wood, ground coffee, brown coffee bean, chocolate
 - Strong – burnt sugar, ground black coffee, black coffee bean, smoked

- Confectionery
 - Light - white sugar
 - Medium - corn syrup, light brown sugar
 - Strong - dark brown sugar, molasses, sponge toffee

- Maple*
 - Maple, roasted dandelion root

Variable as a Dominant Flavor

- Woody
 - Firewood, wet wood, softwood (pine, fir, larch, juniper, cedar, etc.)

- Vanilla
 - Marshmallow
 - Vanilla pod

Minor Flavors

- Herbal
 - Fresh Herbs - stem, grassy, shoot, bud
 - Dry Herbs - crushed leaves, nutshells, dry herbs, hay
 - Fermented Herbs – silage

- Plants, Humus, Forest, Cereals
 - Humus, Forest – mushroom, mold, potato
 - Cereals - malt, oat, wheat, rye

- Fruity
 - Nuts - bitter almond, hazelnut, nuts
 - Peach, fruits with pits or seeds

- Milky
 - Fresh - butter, cream, milk
 - Heated - butter, milk

- Floral
 - Flowers
 - Honey

- Spicy
 - Cloves
 - Cinnamon
 - Anis – black licorice

***Important Note:** During production, maple syrup is often blended to achieve a consistent flavor.

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CLASSROOM ACTIVITY - MAPLE SYRUP TASTING

Have your classroom taste and compare simulated maple sap, various colors of maple syrup and maple-flavored table syrup.

You can mimic the taste of maple sap by combining 1 Tablespoon of granulated sugar and a dash of extra light maple syrup with 1 cup of water.

Compare the sap with various colors of maple. Start with the lightest color of maple syrup and build to the dark amber maple syrup.

Taste maple sugar.

Finally, compare real maple syrup to table syrups with maple flavoring.

Tasting Steps

To taste maple syrup, follow these steps:

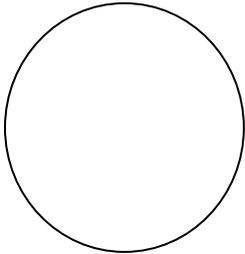
1. Smell the syrup by taking three quick sniffs. Make a mental note of your impression.
2. Take a small sip of the syrup and swirl it around in your mouth. Concentrate on the full range of flavors.
3. Associate the flavor with your own experience (for example, the aroma from a bag of marshmallows)
4. Assess the degree of intensity (mild, medium or strong)
5. Share your reaction with others.

Discussion Questions:

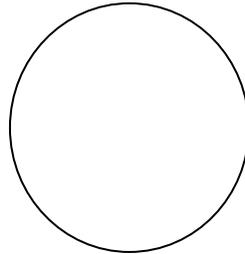
1. How does the flavor of maple syrups vary with color?
2. How does real maple syrup flavor compare to table syrups with maple flavoring?
3. What are the benefits of using real maple syrup in recipes?
4. How does the sweetness and flavor of maple sugar compare with granulated sugar?
5. How could maple syrup and sugar be used in menu items (think beyond a topping for pancakes and waffles)

CLASSROOM ACTIVITY - MAPLE SYRUP TASTING

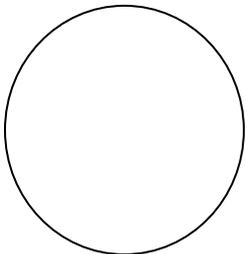
Sap



Extra Light or Light Maple Syrup



Medium Maple Syrup



Amber or Dark Amber Maple Syrup

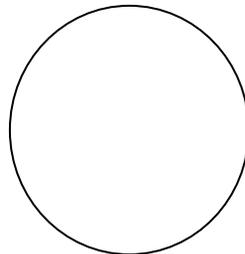
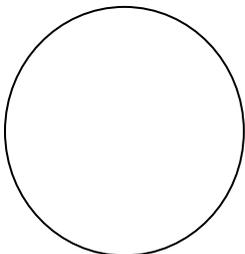
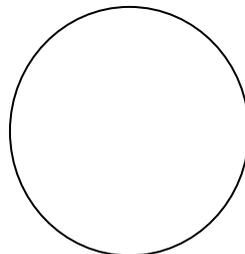


Table Syrup with Maple Flavoring



Maple Sugar or Flakes



RESOURCES

For more information about maple products, visit www.domorewithmaple.com or one of the following websites:

www.citadelle-camp.com

www.decacer.com

www.foodsofquebec.com

www.heritageyamaska.com

www.maplesyrupfederation.com

www.maplesyrupusa.com