**Sweet Maple Syrup**

1. **What is it?**
   1. **Maple syrup** is syrup usually made from the sap of sugar maple, red maple, or black maple trees – because of their high sugar content in these species, although it can also be made from other maple species. In cold climates, these trees store starch in their trunks and roots before the winter; the starch is then converted to sugar that rises in the sap in the spring.
      1. The red maple has a shorter season because it buds earlier than sugar and black maples, which alters the flavor of the sap.
   2. Maple trees can be tapped by boring holes into their trunks and collecting the flowing sap.
   3. Maple sap, as it comes from the tree, is a clear liquid with a slightly sweet taste. The characteristic color and maple flavor is developed during the processing. The sap is processed by heating to evaporate much of the water, leaving the concentrated syrup – which is the maple syrup.
   4. It takes approximately 40 gallons of maple sap to make one gallon of finished maple syrup!
   5. Maple syrup should never be confused with blended pancake syrups or toppings. These are usually corn syrup or cane sugar- based with only 1% maple syrup.
2. **History of Maple Syrup and its production**
   1. While there are written accounts of “maple sugaring” in North America dating back to 1557, the exact origins of sugaring are unknown. Without written documentation to guide scholars, the history is left to speculation about the discovery of maple syrup and sugar, but it is believed that Maple syrup was first collected and used by the indigenous peoples of North America. They used the Maple Sugar as a nutritious sweetener for treats, cooking, and a means of providing the energy needed to survive the long winters.
   2. Aboriginal tribes developed rituals around sugar-making, celebrating the Sugar Moon (the first full moon of spring) with a Maple Dance. At the beginning of the spring thaw, they used stone tools to make V-shaped incisions in tree trunks; they then inserted reeds or concave pieces of bark to run the sap into buckets, which were often made from birch bark. The maple sap was concentrated either by dropping hot cooking stones into the buckets or by leaving them exposed to the cold temperatures overnight and disposing of the layer of ice that formed on top.
   3. History also remains silent on whether Native Americans boiled down the sap to maple sugar, or if these techniques were introduced by the French explorers and missionaries. But by the 1700s, Native Americans and European settlers alike were using iron and copper kettles to boil down and make syrup and sugar.
   4. It wasn’t until the Civil War that the maple syrup industry was born, with the introduction of the tin cans and the invention of metal spouts and evaporator pans. Most early producers were dairy farmers who made maple syrup and sugar during the off-season of the farm for their own use and for extra income.
   5. Technology remained largely the same for that century until the energy crisis of the 1970s forced maple syrup producers to change their labor-intensive process. With another surge of technological advances, tubing systems were perfected, taking the sap directly from the tree to the sugarhouse. Vacuum pumps were added to the tubing systems, pre-heaters were developed to "recycle" heat lost in the steam, and reverse-osmosis filters were designed to take a portion of the water out of the sap before it was boiled.
3. **Processing Maple Syrup: Taping Trees and Boiling the sap**
   1. **Tapping trees:**The flow of sap is highly dependent upon weather conditions.  Flow does not begin until after a time of hard freeze, followed by several sunny days with temperatures in the 40s.  The peak flow occurs early in the sugaring season when it freezes at night and is bright and sunny the next day with the temperature in the 40s.  The flow will stop when daytime temperatures do not go above freezing, or when night temperatures do not go below freezing.  The flow usually lasts roughly three to four weeks.  While it flows, people collect sap daily.
   2. **Making the syrup:** Syrup is made by removing water from the sap, so that only the sugar remains. Sap contains only about 98 % water/2% sugar. You can use an evaporator, which is a machine made specifically for boiling sap into syrup, or a less expensive alternative like a good, hot fire. The process of boiling sap down to syrup takes many hours, and you can't take any breaks or you'll end up with burned maple syrup. The fire needs to be hot enough to keep the sap boiling constantly, and you need to keep adding more sap when the liquid gets low – you continue until it hits a certain temperature.
4. **Health Benefits of Maple Syrup**
   1. Maple Syrup is an excellent source of natural energy, minerals, and antioxidants.
   2. Maple syrup provides small amounts of minerals such as iron, calcium, zinc, manganese and potassium.
   3. Pure maple syrup, like honey, is commonly labeled as a healthy and natural sweetener, often as an alternative to sugar or sugar substitutes.
   4. Maple syrup contains small amounts of polyphenols—which are antioxidants that may help reduce inflammation.
   5. There is roughly 50 calories in 1 tablespoon.
5. **Using and Storing Maple Syrup**
   1. You may use maple syrup as a healthier alternate to sugar in baked goods and desserts. Follow these simple conversion tips:
      1. Substitute sugar for equal amts syrup
      2. Decrease quantity of liquid ingredients by half
   2. When storing maple syrup, best practice includes immediately storing in the refrigerator even if not opened. Consider freezing. Good for 1 year if refrigerated or frozen. Can be stored in tin, glass or plastic.
   3. Maple syrup is often eaten with pancakes, waffles, French toast, or oatmeal. It is also used as an ingredient in baking, and as a sweetener or flavoring agent. Culinary experts have praised its unique flavor. Don’t forget that maple syrup isn’t just for breakfast; it isn’t just for sweets. Maple syrup plays a supporting role to many other foods: roasts, sauces, marinades, salad dressings, baked goods, and coffee flavoring.
6. **Fun Facts**
   1. Wisconsin has a Maple Syrup Producers Association
   2. The sugar maple is the Wisconsin State tree
   3. Many producers in Wisconsin are family-run businesses that have been producing syrup for up to four generations; maple syrup production undoubtedly has an important cultural significance in Wisconsin. In many school districts in northern Wisconsin, students are taken to local sugar bushes to learn how to collect and process sap.
   4. It takes ~40 gallons of sap to make one gallon of pure maple syrup.
   5. Maple syrup is graded according to the Canada, United States, or Vermont scales based on its density and translucency.
   6. Sucrose is the most prevalent sugar in maple syrup.
   7. In Canada, syrups must be at least 66 percent sugar and be made exclusively from maple sap to qualify as maple syrup.
   8. In the United States, syrup must be made almost entirely from maple sap to be labeled as "maple".
   9. The Canadian province of Quebec is by far the largest producer, responsible for about three-quarters of the world's output.
   10. Vermont is the largest producer in the United States, generating about 5.5 percent of the global supply.
   11. Maple syrups can have different colors and flavors.