



Short Communication

THE SUGAR BUSH - MAPLE SYRUP

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ABSTRACT

Maple syrup is the syrup made from the xylem sap of trees like sugar maple, red maple, black maple and some other maple species. From one of nature's true phenomena the process of maple syrup production gets started. During spring when the nights are very cold, the maple tree absorbs water from the soil. In the daytime due to warmer temperature a pressure is created which pushes the water again to the tree bottom which helps in easy collection of the maple syrup which is very precious actually. It takes almost 12 to 20 days to collect the sap depending on the area / region.

KEYWORDS

Maple syrup, spring, warmer temperature.

Maple Syrup Processing

The collection of syrup usually takes place between early March & late April. Before winter the trees usually store starch in their trunks and roots which is then converted to sugar that rises in the sap during the spring season. Holes are bored in the trunk of maple tree from where the exuded sap can be collected .The collected sap is then processed by heating to evaporate the excess water and resulting in concentrated syrup (Figure 1).

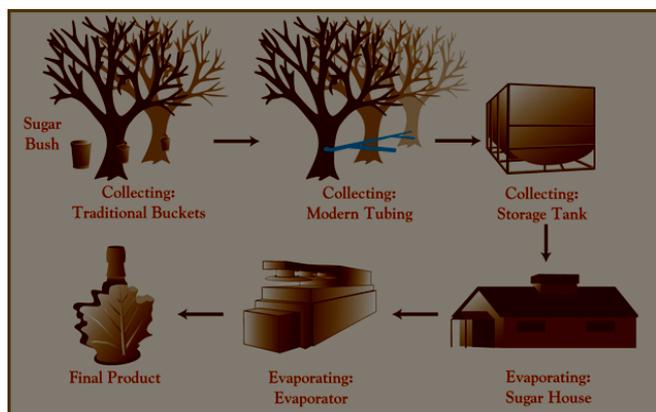


Figure 1. Maple Syrup Processing

The collected sap has to be first boiled to obtain pure syrup without addition of any chemical agents or preservatives. Boiling is usually done at a temperature 4.1°C over the boiling point of water. Boiling point of water may vary with change in air pressure. Syrup can be boiled over one heat source entirely or can be done in smaller batches and boiled at a more controlled temperature. Syrup is boiled in a controlled process to ensure appropriate sugar content. If the sugar is boiled too long it will lead to crystallization and if it is boiled less then it will lead to watery syrup which will eventually spoil quickly

The final syrup should have a density of 66 ° on the Brix scale used to measure sugar solutions.

After this syrup is filtered to remove sugar sand which is made largely of sugar and calcium malate (Figure 2).

Though these crystals are non-toxic but they can create a gritty texture in the syrup if not filtered. It is packed hot at a temperature of about 82 °C or more. It can be packed in metal, glass or coated plastic depending on volume and target market.^[1,2,3]

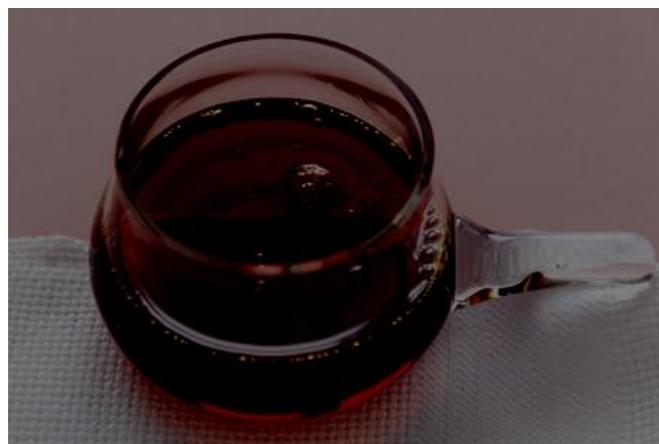


Figure 2. Maple Syrup

Grading:

As of December 31, 2014, the Canadian Food Inspection Agency (CFIA) and as of March 2, 2015, the United States Department of Agriculture (USDA) Agricultural Marketing Service (AMS) issued revised standards on the classification of maple syrup as follows:

Grade A (Figure 3)

1. Very Dark Colour and Strong Taste
2. Dark Colour and Robust Taste
3. Amber Colour and Rich Taste
4. Golden Colour and Delicate Taste

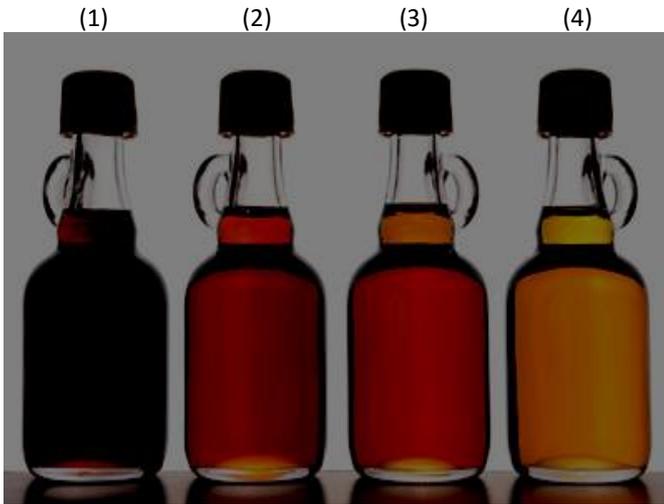


Figure 3. Maple Syrup Grade A

Processing Grade: The Processing Grade of maple syrup meet all the requirement of food safety and quality guideline means good characteristic of maple taste and may contain off flavor but fairly free from damage, turbidity or cloudiness. Instead of these cannot consider in Grade A because it doesn't meet Grade A requirements. It is Suitable as food ingredient but cannot sale as retail pack.

Substandard: Maple syrup that fails to meet the requirement of processing grade consider as substandard Grade.

Is it healthy or Unhealthy?

It has about 2/3rds sucrose and hence 100 gm. of maple syrup has about 67 gms of sugar. Hence sugar based sweetener can replace refined sugar in recipes.

The glycemic index of maple syrup is around 54 whereas table sugar has around 65. Thus the good thing behind this is that maple syrup raises blood sugar slower than regular sugar.^[4] Though it is high in sugar but it also contain a considerable amount of some minerals such as manganese and zinc.

100 grams of maple syrup contains:

- Calcium: 7% of the RDA*.
- Potassium: 6% of the RDA.
- Iron: 7% of the RDA.
- Zinc: 28% of the RDA.
- Manganese: 165% of the RDA.
- *RDA: Recommended dietary allowance

Uses:

Maple syrup is found in different grades or scales based on its density and translucency. In maple syrup sucrose is the most prevalent sugar. It is used as an ingredient in baking and as a sweetener or flavoring agent.^[5]

It is often consumed with pancakes, waffles, french toast or oatmeal and porridge.

CONCLUSION

Maple syrup is a native of North America. Maple syrup is much more than the concentrated sugar solution, it contains organic acid, amino acids, minerals like zinc and manganese and wide varieties of chemicals. It is used due to its sweetness. During the evaporation process that contributes it color, odor and taste. Bottom line is that it is 100% natural sweetener and it is claimed to be healthier and nutritious than sugar. If you are seeking for minerals and lower fructose maple syrup is a good choice.

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