From the tree to your senses!

By

Nathalie Martin Ph. D.

Ontario Maple Syrup Producers Association
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Collecting maple sap
Processing of maple sap into syrup

High heat treatment into the evaporator

Evaporate water from the sap

Changes in maple sap physicochemical properties

Colour and flavour development

Photos: Consulat général; www.lagriffedalpha.org and, fr.cookingclass.be
Maple syrup composition

**Carbohydrates**
- Sucrose
- Glucose
- Fructose

**Vitamins**
- Niacin
- Riboflavin
- Thiamin

**Organic acids**
- Malic
- Succinic
- Pyruvic

**Minerals**
- Potassium
- Calcium
- Magnesium
- Manganese
- Zinc
- Sodium

**Other components**
- Polyphenols
- Phytohormones
- Amino acids

And so on…
Characteristic flavour of maple syrup

- Maple syrup represents a unique product by its colour and flavour.

- Current vocabulary varies with taste and experience of tasters and is mainly focused on taste defects of maple syrup (grading system).

- There was a need to establish a scientific basis to accurately and credibly characterize maple syrup flavour.

Flavour wheel for maple products.
Flavour wheel for maple products

Source: Centre ACER and AAC
Flavour wheel for maple products

- **Research**: Explaining the maple flavour differences in terms of chemical composition and of processing parameters

- **Course**: Le sirop d’érable au goût du jour!

- **Workshops**: Initiation, in small groups, on how to taste maple syrup
What is sensory evaluation?

- It is a scientific discipline used to evoke, measure, analyze and interpret reactions to characteristics of foods and materials as they are perceived by the senses of sight, smell, taste, touch and hearing.

- It uses a descriptive glossary and/or specific language, documented and standardized, to describe food flavours.

- It is a useful tool to study various issues in R & D, production, marketing and more…

Pangborn, 1984; Fortin et al., 2004
The perception of odorant molecules

Source: Étiévant et al., 1987
The identification of odorant molecules

HS-SPME-GC/MS

«Vanilla»

«Brown sugar»

Source: Centre ACER
How to taste maple syrup?
The tasting technique

Concentration

Sniffing

Tasting

Source: Centre ACER
And now, have fun...!
The Flavour wheel for maple products...

- Allows us to appreciate the richness of maple products
- Allows us to understand the variation sources of maple flavours
- Serves as a tool to assist the maple industry in evaluation of the quality

- Could be part of the quality management process
- Could be part of the production records
Thank you for sharing our passion!

www.centreacer.qc.ca