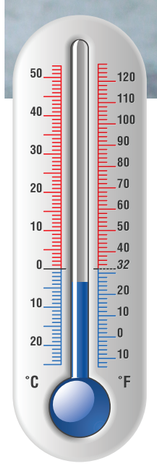
New Hampshire
Agriculture in the Classroom

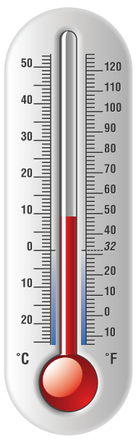
Tapping into Maple Tradition

Evaporation:

Applying high, even heat to the sap causes it to boil – water is removed and the sugar content is concentrated from around 2% to more than 66% ultimately producing maple syrup. Several chemical reactions are also involved.



When the temperature is below freezing, the pressure in the tree is reduced creating a vacuum or suction.



When the temperature is above freezing, the pressure in the tree increases creating positive pressure, which pushes sap out of any hole in the tree. A healthy tree has extra sap which flows into the bucket.

Sap flows out holes in the tree when there are changes to internal pressure.

The tap goes into the sapwood where the sap is flowing

Xylem: moves water and dissolved nutrients from the roots to the top of the tree – as water evaporates from the tree, it creates negative pressure inside the xylem.

Phloem: carries products of photosynthesis, especially glucose, which absorbs water from the nearby xylem making a sugary sap to transport the sugar.

Grading:

Maple syrup is graded or categorized based on the flavor and how much light passes through (translucence). Variations are due to weather, soil, climate, point in season, boiling and more. The quality of all grades is the same.

Golden: Generally from the first sap of the season when days are warmer and nights are colder.

Amber: Usually made mid-season when there have been slight changes to the sugar content of the sap.

Dark: Made later in the season when the sugar content of the sap has dropped and it takes more to make syrup.

Very Dark: Typically made from sap at the end of the season. Natural chemical reactions help to darken the color.

40 Gallons of Sap makes 1 Gallon of Maple Syrup

Paid for in part with funds provided by the NH Dept. of Agriculture, Markets & Food

Tree Illustration — Robert O'Brien Design
Photos — CanStockPhoto
Poster Design — dschaeferdesign