Sap to Syrup

It is important to conduct the evaporation outside because of the large amount of steam produced. To do this, you will need some type of container with high sides. You will also need a fireplace, with high sides, made out of cement blocks or bricks on which to place your container. A chimney will be needed to draw off the smoke, because if it comes in contact with the boiling sap, the syrup will acquire a smokey taste.

Once you have a quantity of sap collected, you can start the evaporation process. Your container should be deep enough so there is 10 inches above the sap level to prevent the sap from boiling over. If much foam occurs, skim the excess foam or reduce foaming by using a small amount of commercial defoaming agent. The key to high quality syrup is cleanliness and rapid boiling. As boiling begins and water evaporates, you can add more sap to the pan. Continue this process until a suitable amount of concentrated sap is left in the pan. Ideally, you should start the boiling process and continue it without adding additional sap. This will produce the highest grade of syrup. You may want to boil down part of the sap in a larger container until it becomes relatively concentrated, then transfer it to a smaller container for finishing. The reason for this is that it takes about 10 gallons of sap to make one quart of syrup.

Finished syrup of the proper density will boil at 7°F above the temperature of boiling water. As the sap approaches this syrup finishing point, it will burn or scorch very easily. Any thermometer with a temperature range of a least 15°F above the boiling point of water can be used in determining the correct temperature for finishing the syrup. Place the thermometer in water and bring it to a boil. Note the temperature at which boiling occurs and add 7°F to it. This is the correct syrup finishing temperature for your location and elevation.

Once the syrup has reached the desired temperature, it is ready for filtering and packaging. Filter the hot syrup through a clean filter of wool or orlon. The filtering process removes sugar, sand and other suspended particles, and improves the appearance of the syrup. After filtering the hot syrup, bottle or can it in tightly sealed clean containers. Syrup must be at least 180°F at the time of packaging to assure good keeping qualities. The containers should be filled, leaving as little air space as possible. After packaging, the syrup can be kept in your freezer if so desired. Now that you have your sap collected, boiled down and packaged, you can enjoy the "fruits of your labor" on pancakes, waffles and ice cream.

You may be able to adapt or use some of the equipment you already have. Other special equipment can be purchased from dealers of maple syrup equipment. There are a number of companies and dealers, but the closest to Indiana are:

Sugar Bush Supplies
2611 Okermos Road
Mason, MI 48854

Reynolds Sugar Bush
Aniwa, WIS 54408

Dodd's Sugar Shack
1654 Dodd Rd.
Niles, MI 49120

Forestry DNR

Prepared By: Eldon R. Campen
Maple Syrup Specialist
Indiana Division of Forestry
Department of Natural Resources

Further information and details can be obtained by contacting the District Forester for your county.

Maple Syrup

Production for the Small Producer

Do you want to provide yourself, relatives or friends with a real delicacy? This treat is rather expensive if purchased at a store, but it can be made at home without a great amount of expense. All you need are a few maple trees at least 10" in diameter, some inexpensive equipment and a way to boil down the sap outside your house. These materials, plus your time and effort, can furnish a few quarts or gallons of genuine, high quality maple syrup.

Trees to Tap

The sweet sap or sugar water from which maple syrup is made is common to all the maples. In Indiana, the best species to tap are the hard maples: sugar and black. The soft maples such as silver, red and boxelder produce sap, but generally are not tapped because their sap is lower in sugar content and will not produce as much syrup per gallon of sap collected. The soft maples begin growing earlier in the spring which results in a shorter tapping season. Remember, if you have a choice, always tap the hard maples — sugar and black.

Although sap will flow anytime after the trees have lost their leaves, the spring flow is sweeter and of larger volume, so most tapping cannot be set by calendar date. You must watch the weather, then tap when conditions are right (freezing nights followed by above freezing temperatures in the day). Nights with below freezing temperatures followed the next day by a rapid warming trend from early to mid-morning will usually result in a good sap run. This type of weather in a typical Indiana year occurs from early February to late March depending on the location within the state. Not all trees should be tapped and the number of tap holes permitted varies by tree diameters. Trees selected for tapping should have a minimum diameter of 10 inches at 4½ feet above the ground. Use one tap for 10 to 14 inch trees, two for 15 to 20 inch trees, three taps for 21 to 24 inch trees and no more than four taps on trees 25 inches or larger.

Tapping the Trees

If the tree was tapped before, new tapholes should be made 6 inches to the side of the nearest visible tapping scar. A 7/16 inch wood bit should be used to bore a hold 2 to 3 inches deep and slightly elevated at the rear of the hole to allow good drainage. If you are going to place more than one taphole in the tree, they should be evenly spaced around the tree.

The tree should be tapped from 2 to 6 feet above the ground. The tapholes should be placed on all sides of the tree and at different levels from 2 to 6 feet up and down the trunk. In trees with little sapwood, avoid boring into brown heartwood or very dark wood. Heartwood yields little sap and may darken the sap.

Collecting the Sap

The sap can be collected in metal or plastic buckets or in plastic bags. Metal spiles are used with these containers. With buckets, you also need to use a cover to keep out debris and rain. Collect sap often and boil it down quickly as possible to produce good quality syrup. Good sanitation, rapid handling of sap and early processing are extremely important in producing high quality syrup.

Bacteria and other microorganisms can build up in sap that is kept in buckets or storage tanks too long. Therefore, sap should be boiled down within 24 hours of when it is produced.

If your trees are located on a slope, you may wish to use plastic tubing instead of buckets or plastic bags. Plastic spiles are used and 5/16" plastic tubing attached to them. All of the trees are connected to one main tube which allows the sap to flow to one collecting point. This saves labor in collecting sap and results in cleaner sap. The plastic tubing is stretched tightly between the trees and should have a minimum slope of 6% (6 feet of descent for every 100 lineal feet).

Keep buckets, storage tanks and/or other collecting and processing equipment thoroughly clean. Between runs, the equipment should be washed with a solution made of one part liquid bleach and nine parts water. Do not use detergent because it may impart an undesirable flavor to the syrup.