

Ohio State University Fact Sheet

School of Natural Resources

Hobby Maple Syrup Production

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Exerpt: Tapping The Trees

Some sap flow may occur any time during the dormant season, after a maple loses its leaves, when cool nighttime temperatures (below freezing) are followed by days when there is a rapid warming above freezing (ideally, to about 40F). Tapping for maple sap, however, is generally done only in the spring when the weather is more predictable and the sap sugar content is high.

Some producers tap by the calendar, routinely tapping each year on or before a certain date such as the second or third week of February. Others, particularly those with a relatively small number of taps who collect with buckets or bags, watch the weather. When suitable weather is predicted, they tap. Sap flow from a tapped tree will not occur every day throughout the tapping season, but only when conditions are right.

Sap can be collected for syrup production until just before tree buds begin to expand, usually sometime in late March or early April, depending on the weather and location in the state. Sap collected and processed into syrup after bud expansion begins results in "buddy" syrup, which has a distinctly unpleasant flavor sometimes described as "bitter butterscotch."

Trees should be at least 10 to 12 inches in diameter (measured 4.5 feet above ground level) before they are tapped. The number of tapholes a tree can support depends on its diameter and its health and vigor. Traditional tapping guidelines for healthy, vigorously growing trees with no major trunk defects (dead areas, scars, etc.) are to use one tap for trees 10 to 15 inches in diameter, two taps for trees 16 to 20 inches in diameter, three taps for trees 21 to 25 inches in diameter, and four taps for trees larger than 25 inches in diameter (tree diameter = tree circumference divided by 3.14). These should be considered maximum tapping rates and should be reduced for trees that are in less than excellent condition or have trunk defects.

In recent years many syrup producers have gone to a more conservative tapping guideline, placing one tap in trees 12 to 18 inches in diameter, two taps in trees 19 to 25 inches in diameter, and three taps in trees larger than 25 inches. This conservative tapping

level is particularly recommended for trees that have been subjected to severe stresses in recent years from such factors as insect defoliation and drought. Reducing the number of taps does not result in a proportional reduction in sap collected because with fewer taps the sap yield per taphole generally increases substantially.

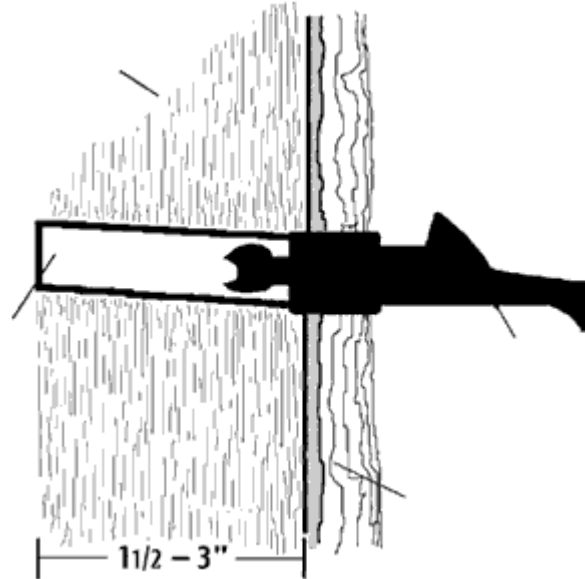


Figure 5. Installation of spile (spout) into maple tree.

Taps can be located anywhere on the tree trunk but for convenience they are generally located between two and four feet above the ground. Tapholes are made by drilling a 7/16-inch or 5/16-inch diameter hole (depending on spout diameter) 1-1/2 to 3 inches deep into the trunk. Slant the hole slightly upward to allow sap to run out and prevent sap from collecting in the hole. On trees with more than one taphole, space tapholes evenly around the tree when possible.

If the trees have been tapped before, locate new tapholes at least six inches to the side and four inches above the height of the old tapholes. Do not tap within 24 inches directly above or below an old taphole. Tapholes should be made only into "sound" healthy, light-colored sapwood. Decayed or discolored wood should not be tapped, and tapholes should not extend into the darker heartwood. Tapholes in healthy young trees should heal in one or two years; larger, older trees may take longer.

A collecting spout or spile is then inserted into the taphole and tapped lightly to seat it in the taphole. Spiles usually have a tapered shoulder that forms a watertight (saptight) seal so that sap does not leak. Do not seat spiles with too much force, or the wood above and below the taphole may split. Also, if possible, avoid seating spiles when the trees are frozen to avoid splitting the tree.

Buckets or bags (or other collecting containers) are then hung on the spiles to collect the sap. Be sure that both buckets and bags are clean and free of debris. Both buckets and

bags are generally hung on the spile by means of a hole in their side. If buckets are used, be sure they have a lid to keep out rainwater and other debris.

Collecting the Sap

Because sap flow depends on weather, it is not always consistent. Some days no sap will flow; other days, as much as a quart to a gallon or more of sap may flow during a flow period (several hours to a day or more). During the season, an average tap will produce 6 to 10 gallons of sap. Slightly more than 10 gallons of 2% sugar-content sap are required to produce one quart of syrup.

To produce high-quality syrup, sap should be collected as quickly as possible. It is best to collect sap the day it runs and process it immediately into syrup. The longer sap is left in buckets or bags the more likely it is to spoil, particularly during warm weather. During periods of cold temperature, sap can often be stored for a couple of days under the proper storage conditions without seriously reducing the quality of syrup it will produce.

However, such storage is usually not recommended or necessary for hobbyists. Usually, the season will provide enough sap in timely runs to make all the syrup you desire and have time to produce. Although not absolutely necessary, it is often desirable to filter sap through a cloth filter before it is boiled. This filtering removes any debris, such as twigs or pieces of leaves or bark, which might have fallen into the sap. Several layers of cheesecloth will serve as a filter or a reusable (cleanable) maple sap filter can be purchased.