5. Filter and Bottle

Niter (sugar sand)
You now have syrup but it looks a bit cloudy. No worries it's just niter, or sugar sand-a naturally occurring sediment of minerals that occurs as sap is condensed into syrup. Filtering during the boiling process and prior to bottling helps to eliminate sugar sand from your syrup.

Filter
Filter-or not-it's up to you. Filtering will give you transparent syrup and you won't see niter settled on the bottom of the jar. Sugar sand is safe to eat and sometimes you can't get rid of it completely. Maple syrup filter kits which contain reusable lightweight filters and finishing filters are available. The key to filtering successfully is doing it at the right temperature (between 180-190°F).

Bottle
Bottle syrup while it is hot (180-200°F). Make sure your bottles or jars are clean and sanitized. Store your bottles in a cool dark place to enjoy or gift later. Unopened maple syrup will last indefinitely, just like honey. Once opened, syrup should be kept in the refrigerator and should last up to 2 years.

Season Ends
When the trees start to bud, temperatures warm, or the sap stops flowing, it's time to remove your taps with a pair of pliers. Then clean your equipment prior to storage.

6. FAQ

What's the difference between maple sap and syrup?
Maple sap is a clear liquid with a sugar content around 2%. Maple syrup is produced by concentrating the sap (boiling) into a sweet syrup with a sugar content of 66-67%. It takes roughly 40-60 gallons of sap to make 1 gallon of syrup.

What makes sap flow?
When temperatures fluctuate from above freezing during the day (positive pressure) to below freezing at night (negative pressure) the change in pressure allows the sap to flow out of the tree through a wound (tap).

How long until the tree heals?
This image is of an old tap hole on a sugar maple tree just 6 months after it was removed. Healing time varies up to 2 years.

Who made syrup first?
Indigenous people were the first to drink sap from maple trees. The sap was also used to produce sugar which would have been easier to store and trade.

How much sap comes out of each tap?
5-15 gallons per tap depending on the weather and other variables.

How is maple syrup graded?

Grade A Golden	Delicate Taste
Grade A Amber	Rich Taste
Grade A Dark	Robust Taste
Grade A Very Dark	Strong Taste

7. Equipment

Sap Collection
- ◊ ID Maple Trees
- ◊ Tap (spile) & drill bit
- ◊ Bucket, lid, hook, or hose
- ◊ Hammer
- ◊ Filters (paper or reusable)

Sap Storage
- ◊ Fridge/freezer space
- ◊ Food grade containers

Making Syrup
- ◊ Sap
- ◊ Outdoor cooker
- ◊ Large pot/pan, small pot
- ◊ Filter kit
- ◊ Bottles, jars

Either:
- ◊ Candy/digital thermometer
- ◊ Hydrometer or Refractometer

8. Resources

A variety of maple syrup starter kits and literature are available to purchase from several different suppliers. For additional information consider seeking materials from cooperative extensions as many have guides and videos available for free.

DCR
Virginia Department of Conservation & Recreation

Claytor Lake State Park
6620 Ben H. Bolen Dr.
Dublin, VA 24084
Phone: 540-643-2500

Virginia State Parks

Claytor Lake State Park

Backyard Maple Syrup

A guide to Virginia Maple Sap Collection and Syrup Making

I LOVE Virginia State Parks

1. Find Your Maple Trees

Throughout the park, and in Virginia, there are three common species of maple trees that are great to tap for maple syrup. They are Sugar, Red, and Silver Maple trees. The best time to identify trees is in the summer since the leaves are present. You want to look for healthy trees that aren't hollow, split, etc., that are at least 10-12" in diameter.

Sugar Maple

These trees have a high sugar content, 2-2.5%, and are best for tapping. Generally these leaves have 5 pointed lobes that have smooth margins without fine teeth like Red and Silver Maples.

Red Maple

These trees have slightly lower amounts of sugar content, 1.5-2%, but debatably a "more maple/caramel" flavor. The leaves have 3 lobes and sharp-toothed margins around the outside edge. The leaf stalk and twigs have a reddish color.

Silver Maple

These trees have almost the same sugar content as Red Maples. These leaves have 5 lobes and fine-toothed margins. The underside of the leaf appears silvery.

2. Get Tapping

In this area of Virginia, we are able to tap trees in January if weather conditions are is right (temps above freezing during the day, below freezing at night). The sap will only flow for 4-6 weeks. Once the trees bud or temperatures warm, that's it.

Tree Diameter	Number of Taps
10"-17"	1
18"-24"	2
>25"	3

Drill

Depending on the type/size of the tap (aka spile) drill a hole with the right sized bit 2-2.5" deep slightly upward at a height on the tree that's comfortable for you to manage. Drill in an area that contains sound wood. Sound wood produces shavings that are light colored, not dark. Try to select the south side of the tree above a large root or below a branch. If you're using multiple taps in the same tree, spread them evenly. If the tree has been tapped before, place the new tap at a minimum of 4" laterally and 6" vertically from it. Keep the tap hole clean as bacteria may cause it to heal and close up.

Tap

After making sure the tap hole is free of shavings, insert the spile and secure it with a light tap of a hammer. Gently tap, don't pound the spile. Seat the spile so that it can support a bucket or tubes. Driving the spile with force can split the bark and damage the tree causing sap to leak. If you notice your spile isn't seated (wet around it) gently tap it further. If the sap is flowing, you will see it immediately.

3. Check Your Buckets

Collection

If the sap is flowing you'll want to check your buckets daily. Sap generally flows during the day and slows or stops at night (freezing). The evening is a great time to collect your sap. Filter the sap using paper or reusable filters and transfer it into food grade 5 gallon buckets, milk jugs, or juice containers for storage. If any of the sap on top is frozen, it's mostly water you can discard in order to aid in the cooking down process.

Storage

The sap should be used within a week of collection and stored at 38°F or colder, or can be frozen for later. If there is snow, you can leave it outside in a shady area and pack it with snow. Since sap is a mixture of sugar and water, it's perfect for bacterial growth. If sap looks yellow, milky or smells, discard it. If you must discard sap, consider doing so in the garden as plants can benefit from the nutrients.

Sanitation

Use cleaned and sanitized storage containers. Sanitize containers and equipment using a 20:1 unscented bleach solution. Dish soap can cause an off flavor if used to clean equipment. If bacteria is present in sap it may result in a darker color or affect the taste. If you use plastic tubing, check it for mold growth routinely.

4. Making Syrup

It's time to make some syrup. You'll want to boil sap outside. Hobbyists typically use a large pot and a propane burner, or boil sap continuously in one pan over an open fire pit or camp stove. Plan to dedicate several hours to monitor your boil.

Boiling

To start, fill your large pot 1/2 to 3/4 full with sap. This amount is in anticipation of the first buildup of foam. Once the sap is boiling for a few minutes, the foam should recede. If not, you can skim it off or add a drop of vegetable oil. Each time you add sap to the boil, anticipate a foam buildup.

Finishing into Maple Syrup

After the majority of the sap has condensed after boiling outside, it's time to move it into a smaller pot inside. Consider a mid boil filtering. Keep boiling until the consistency starts to noticeably change and watch for sudden bubbling. There's 3 ways to figure if you have syrup (66-67% sugar content):

Dip a Spoon

When ready, syrup will run off of the spoon in a sheet. It should not drip off like water.

Digital/Candy Thermometer

Sap becomes syrup 7°F above the boiling point of water. Know your elevation to figure your exact boiling point.

Hydrometer or Refractometer

These tools measure the density/sugar content of the maple syrup. The denser maple syrup is, the more sugar it contains. 67 Brix = done (67% sugar).