

Maintaining Potted Hemlocks in a Nursery

SGH maintains several sapling nurseries for the purpose of making them available for private adoptions, donations to schools and other nonprofits, and planting in public spaces. Each person hosting a nursery should be knowledgeable about the following:

- Rescuing and potting saplings and seedlings
- Treating them while they're still in their pots
- Maintaining them in a nursery setting as described below
- Planting and maintaining them once they're adopted or taken out for other uses

Setting up the Nursery

Access – A nursery should be located where you'll see it often and can get to it easily. While potted hemlocks don't need a LOT of tending, they do appreciate frequent visits for TLC. And whenever you have newly potted trees, you should be able to check on them at least twice a week.

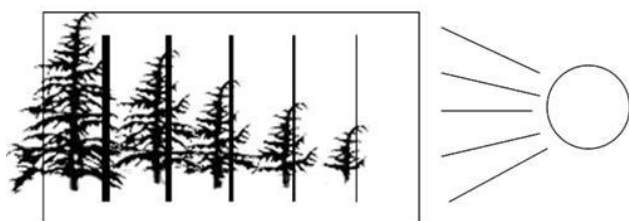
You'll also need easy access to water from a hose or adjacent stream. Carrying gallons of water over a long distance isn't likely to be sustainable.

Light – If possible, it is best to provide three settings to imitate the original light conditions the saplings were growing in: very shaded, lightly shaded, and full sun. The purpose of this is to reduce the shock of changing conditions as much as possible when the saplings are first dug and potted. And for those saplings that were dug from a very shaded site, it also allows for a progression from very shaded to lightly shaded to sunny over a period of about 4 months in each setting.

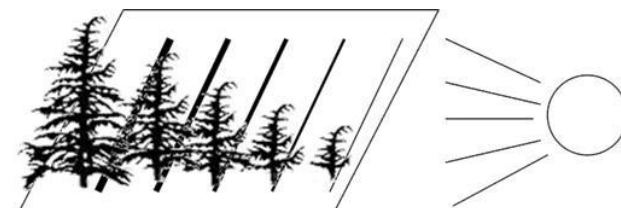
If three light options are not possible, choose a lightly shaded setting that get sunlight in the morning and shade in the afternoon or all-day dappled shade.

Slope – A nursery can be situated on flat or sloping ground. If the site is on flat ground, be sure there is adequate drainage. Hemlocks don't like soggy feet.

If the site is on sloping ground (preferably north- or east-facing), you can either level each row or place some kind of barrier (like a log or a board or stones) on the down side of each row to keep the pots from tumbling downhill.



On flat ground with good drainage:
rows 3 feet apart, shorter trees to the front
toward the sun, taller trees to the back



On sloping ground with barriers on the down
side of each row: rows 3 feet apart,
shorter trees to the front toward the sun,
taller trees to the back

Spacing – Rows should be spaced at least 3 feet apart to give the trees adequate air circulation and allow you to move among them without damaging the branches.

Arrangement – It is likely you'll have trees of different sizes, so be prepared to place the shorter ones toward the sun and the taller ones farther back so they don't shade the babies. And you'll probably have to re-shuffle them as the composition of your stock changes over time.



Work Station and Supplies

The most convenient way to set up a work station and protect your supplies from the weather (and bears!) is to locate it in or near a small shed, your garage, or basement.

For Rescue and Potting

<ul style="list-style-type: none"> • Work table • Trowel or small-bladed shovel • Plastic grocery bags or trash bags for the root balls • Native soil from original growth site • Mr. Natural Woodland Soil Mix • Mr. Natural Worm Castings, Hen Manure, or homemade compost • Large tub for mixing soils & variety of plastic planting pots 	<ul style="list-style-type: none"> • Espoma HollyTone (or any fertilizer labeled for azaleas) • Ironite granules • Soil Moist for water retention • MiracleGro Quick Start liquid • Bayer Advanced Tree & Shrub for HWA protection • Thin bamboo stakes, roll of velcro tape, scissors • Mixing / watering containers & access to water
---	--

For Maintenance

<ul style="list-style-type: none"> • Work table • Pair of hand pruners • A compost pile or bags of shredded hardwood mulch 	<ul style="list-style-type: none"> • Espoma HollyTone (or any fertilizer labeled for azaleas) • Ironite granules • Bayer Advanced Tree & Shrub for HWA protection • Mixing / watering containers & access to water
---	--

Maintenance Tasks

Once your nursery is set up and you have potted saplings in it, here are the maintenance tasks and their frequency.

Weekly (or more frequent) Inspection – Inspect your trees to see if any have fallen over, been damaged by falling limbs, or been disturbed by animals. Look for signs of HWA, *Rosellinia* needle blight, or other insect or fungal pests (see www.savegeorgiashemlocks.org/Photos.htm#Other_Pests_of_Hemlocks or call the Hemlock Help Line.)

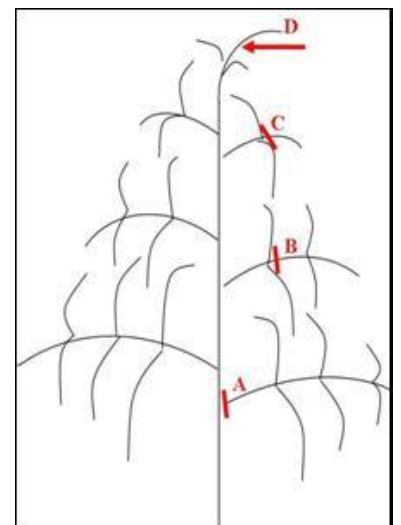
Weekly Watering – During any week that your trees don't receive a good rain, water them. They need 1 to 2 quarts of water per week. Don't do overhead watering with a hose or sprinkler, but apply water by hand directly to the base of the tree in the pot.

Seasonal Feeding – For any trees that have been in the pot for at least 6 months, feed them in spring and fall. Give 1 teaspoon each of Espoma HollyTone (or any fertilizer labeled for azaleas) and Ironite granules per gallon of pot size. Then hand-water it in.

Pruning

- A. To remove a whole branch**, cut straight vertically and leave a 1/4 to 1/2 inch stub next to the trunk so you don't cut into the branch collar. It's not necessary to use pruning tar. If you want to shorten a branch but not remove the whole branch, see step C.
- B. To remove dead / damaged tissue**, cut near the next joint interior to the damaged part. This should be done as soon after the injury as possible.
- C. To stimulate new growth** and make the plant bushier, cut just outside a joint near the end of the branch. Don't cut back into the part of the branch where there are no more branchlets.
- D. Don't prune off the topmost leader** unless it's damaged. This apical meristem is responsible for the tree growing taller.

Note: When small containerized or bare root trees are planted in the ground, they usually get fuller and fluffier on their own. However, if you want to do periodic pruning for shapely growth, it's best to start in early winter of the first year after the tree is planted.



Preparing for Winter – Unlike trees growing in the ground, when trees are in small pots, their root mass is subject to freezing during the winter. To protect them against this problem, you can place a layer of compost, dry leaves, or shredded hardwood mulch around the pots. The layer should be as deep as the height of the pots.

Potted trees should continue to be watered throughout the winter, but avoid doing this right before a hard freeze.

Annual Treatment of Potted Saplings in Nursery – Assuming that most hemlock seedlings and saplings that have been potted will only be retained in a nursery setting about a year before they’re adopted and planted, this instruction is for treating them while they’re still in their pots to provide one year of HWA protection.

This treatment must be repeated each year the little trees are still in their pots. When they are planted in the ground, it is highly recommended to give them the five-year protection at that time.

There are several formulations of Imidacloprid you can use to make the initial watering mix. The chart below shows the mixing ratio and application rate for 1 year and 5 years of HWA protection. The mixture should be applied by pouring it around the base of the tree in the pot.

Product Formulation	Mixing Ratio for 1-Year Protection	Application Rate for 1-Year Protection	Mixing Ratio for 5-Year Protection	Application Rate for 5-Year Protection
Imidacloprid Bayer Advanced Tree & Shrub liquid	<u>Ratio:</u> 1 ½ fl oz product with 1 gal water	<u>Rate:</u> 1/2 qt mixture per gallon of pot size	<u>Ratio:</u> 7 ½ fl oz product with 1 gal water	<u>Rate:</u> 1/2 qt mixture per gallon of pot size
Imidacloprid 2F or 2L liquid			<u>Ratio:</u> 1 fl oz product with 3.6 fl oz water OR 28 fl oz product with 100 fl oz water	<u>Rate:</u> 1/3 fl oz mixture per inch dbh BUT a minimum of 1 1/3 fl oz mixture per tree
Imidacloprid 75 WSP in 1.6 oz packets			<u>Ratio:</u> 1 unopened packet product with 24 fl oz WARM water OR 4 unopened packets product with 3 qts WARM water	<u>Rate:</u> 1/3 fl oz mixture per inch dbh BUT a minimum of 1 1/3 fl oz mixture per tree

Whether you choose the 1-year or 5-year treatment, **IF IT’S THE FIRST TREATMENT FOR THE TREE**, also add 2 fl oz of Miracle-Gro Quick Start Root Stimulator liquid to the initial watering mix.

Transporting Potted Trees to a Planting Site – In order not to lose the good soil the little trees are potted in and keep the transport vehicle relatively clean, start by bagging the pots with plastic grocery bags if they’re small or trash bags if they’re large. During transport it’s important to protect them from wind that would dry out their foliage. So let them ride inside the vehicle if possible. But if they have to ride in the back of a truck, lay them down on their sides and secure them so they won’t roll. Then cover them with a tarp and tie it down well.

When they arrive at their destination, if it’s daytime, they should be unloaded immediately, watered, and placed in a shady or semi-shady location protected from the wind. If it’s nighttime when they reach their destination, they can remain in the vehicle overnight and then be unloaded and watered first thing in the morning. It’s important that the sun not overheat them under the tarp or inside a hot vehicle.

CALL THE HEMLOCK HELP LINE 706-429-8010 WITH ANY QUESTIONS.