

Planting or Transplanting a Hemlock

This instruction is for planting containerized or balled-and-burlapped hemlocks between 18” and 8’ tall or transplanting hemlock saplings between 18” and 5’ tall.

What You’ll Need – These are suggestions; call the Hemlock Help Line for advice regarding substitutions.

<ul style="list-style-type: none">• Work gloves• Sharp-bladed shovel• Plastic bags for root balls if transplanting• Large tub and small shovel for mixing soil amendments• Native soil from original growing site if transplanting• Mr. Natural Woodland Soil Mix• Mr. Natural Worm Castings• Nature’s Care compost• Top soil• Ironite granules• Soil Moist or other water saver granules for water retention	<ul style="list-style-type: none">• Espoma HollyTone (or any slow-release, acid-based fertilizer labeled for azaleas)• 1-gallon jugs for mixing initial watering solution• Miracle-Gro Quick Start liquid• Bayer Advanced Tree & Shrub for 1 year of HWA protection• Shredded hardwood mulch• Bamboo stakes• Roll of velcro tape & scissors• Water
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Sources: See the [Contacts](#) page of our web site for sources of HWA Imidacloprid treatment products. You can get most of the other items at stores such as Home Depot, Lowe’s, Walmart, hardware stores and garden centers. In Georgia, you can usually find Mr. Natural Woodland Soil Mix, Worm Castings, and Hen Manure at Leilani’s Gardens in Dawsonville 706-265-3510, Anderson Feed and Supply in Dahlonega 706-864-3364, Ash Brothers Feed & Farm Supply in Cleveland 706-865-2124, and Little G’s Garden Center in Cherry Log 706-273-2012. Elsewhere, check your local garden supply stores and on-line to see where they may be purchased. If you can’t find Mr. Natural WSM, you can substitute MiracleGro Moisture Control, available at places like Home Depot, Lowe’s, Ace Hardware, or Walmart. **Call the Hemlock Help Line 706-429-8010 for more information.**

Note: Stores/products mentioned above are provided as suggestions only and are not meant as endorsements.

Size – The planting size of a containerized or balled-and-burlapped hemlock is limited only by the space available and your ability to lift the weight and dig an adequate hole. For *transplanting* trees, unless you have large earth-moving equipment, it is not recommended to move one that is more than about 5 feet tall because of the size of dirt ball needed for the tree to survive.

Tree Health – Choose trees that are healthy and have good structure. If a tree is lightly infested with adelgids, it’s still OK because you’ll treat it as part of the planting process. If you attempt to plant or transplant a sickly tree or one that is badly infested, it might not live.

Timing – The best time to plant or transplant a hemlock is early fall when the soil temperature is still warm enough to encourage root development but the air temperature is cooling down. Second best is late winter / early spring before the flush of new growth.

Choosing the Planting Site(s) – Hemlocks can tolerate full sun if they have an adequate amount of moisture, but they prefer semi-shade or at least afternoon shade in a moist but well-drained (not soggy) location. The best setting is on a north- or east-facing slope, in a ravine, or near a stream.

1. Check for drainage patterns that would cause excessive dryness or soggy conditions. Avoid such areas if possible.
2. Note the texture and structure of the soil. Loamy soil or amended clay soil is best. Avoid sandy or pebbly soil.
3. If the goal is to have full, fluffy trees with branches to the ground, space them 15-20 feet apart. Hedge trees can be planted 3-4 feet apart.

Note: Eastern hemlocks (Tsuga canadensis) require a pH range of 4.2 to 5.7. The soil in a woodland setting is normally acidic enough, but in a residential setting it may or may not be within the desired range. If you are in doubt about the pH of your planting site, contact your local Cooperative Extension Service agent about a soil test. If your soil is more alkaline than it should be, your Extension Agent can provide instructions for amending it. Never apply lime near a hemlock.



Preparing for Planting

1. **Mix special soil amendments** using equal parts of Woodland Soil Mix, Worm Castings, Nature's Care, and top soil in the large tub. It's best to add ½ bag of each, one at a time, so you can mix them thoroughly with the small shovel.
2. **Prepare soil additives mix** and put in snack-size baggies. Use 1 teaspoon each of HollyTone, Ironite, and Soil Moist for saplings up to 3' tall; use 1 tablespoon of each ingredient for larger saplings.
3. **Prepare the initial watering mix.** For each gallon of water, add 1 capful of Quick Start liquid and 4 ounces of Bayer Advanced Tree and Shrub. Put the water in the container first; then add the other ingredients. Keep the initial watering mix out of the sunlight until you're ready to use it.

Digging Up a Tree to Transplant

1. **To cut the lateral anchor roots cleanly**, drive the shovel into the soil at a 45° angle to dig a circle around the tree that is as wide as the drip line. The depth of the root ball is based on the height of the tree.
If tree is 1-2' tall, dig 6" deep. If tree is 3-4' tall, dig 8" deep. If tree is 4-5' tall, dig 12" deep.
If the tree is growing on a hill, there are usually more or longer roots on the upside, so try to get as much of them as possible.
2. After making the initial circle around the tree, **continue digging** around the edges of the circle, pushing the shovel at a shallow angle to get underneath the feeder roots and free them and the rest of the root system from the soil beneath.

With each thrust of the shovel, it's helpful to rock the shovel back and forth to help separate the root ball from the surrounding soil.

3. Once you can feel that the root ball is free, open a bag on the ground next to the tree, ready to receive the root ball.
4. **Use both your hands to reach under it** and lift it out of the hole, being careful to keep the root ball intact as much as possible. Never pull it by the trunk to prevent tearing the root system.
5. **Place the tree in the bag** and tie the handles of the bag around the root ball, looping them just one time (not a square knot), to retain moisture.
6. Also **dig some extra soil** from the original growth site to use for transplanting at the new planting site.
7. Then **re-contour the site** where the sapling was removed so as not to leave an unsightly or hazardous hole. Replace the needle duff and leaf debris and press it down to restore site to its original appearance.

Preparing the Planting Hole

Note: Dig when the soil is either dry or just damp enough to make a clump when compressed; don't dig when the soil is wet.

1. If you're going to transplant a tree, **prepare the new hole** BEFORE you dig up the tree you want to move.
2. **Dig a hole** 3 times the width of the container or root ball (i.e., you could place the pot or root ball in the hole 3 times in a triangle) but only 2-3" deeper than the dirt in the container or the root ball. Pile the removed dirt next to the hole.
3. **Combine the removed dirt** with soil amendment mix in a ratio of 1 part amendments mix to 2 parts native soil. If you've brought native soil from the original growth site, add some it into the soil mix. Put 2-3 inches of this new soil mix back into the bottom of the hole

Planting the Tree in its New Site

Hemlock trees are shallow rooted, so the key to successful planting is to be sure the tree *ends up* "at grade," i.e., at the same level as it was originally in the ground or pot.

1. **a. If tree is being transplanted** directly from another site, remove the root ball carefully from the bag and place it in the middle of the hole.
b. If tree is in a container, remove container carefully by turning it upside down in your hands and catching the root ball. Gently "tickle" the root hairs so they're facing outwards. If the roots are pot-bound, use a sharp tool to make several half-inch deep slits in the root mass to free them. Place the tree in the center of the hole.
c. If tree is bare-rooted, place it in center of hole and gently spread roots out.
d. If tree is balled and burlapped, remove wire or cord but do *not* remove burlap yet. Place tree in center of hole and refill hole halfway with soil mix. Then open the burlap and lay it out flat in the hole so that no part of the fabric will come in contact with the surface of the ground.
2. Be sure the top of the root ball is **sitting at least 2 inches above the surrounding ground**.
3. **Refill the hole half way** with your soil mix from beside the hole.
4. **When the hole is half full**, sprinkle soil additives mix all around the roots of the tree but *not* on top of the root ball.

5. **Fill hole the rest of the way** with **soil mix** so it just covers the root ball and none of the root ball is still visible. The top of the root ball should still be sitting 1” – 2” above grade level at this point. Firm the dirt *gently* with your foot to eliminate air pockets and make the top of the root ball level with the surrounding ground. Don’t create a watering saucer.
6. **Apply 2 – 3 inches of shredded hardwood mulch** (not pine straw or nuggets) around the tree to conserve moisture, keep the soil temperature stable, and prevent weeds.
Hint: Don’t heap it up like a mulch volcano! Spread the mulch from the trunk out to the drip line and then pull it back a few inches from the trunk to avoid introducing insects or fungal growth.
7. Immediately after planting, **water thoroughly** but slowly, giving about a gallon of the **initial watering mix** per gallon of root ball size. Two or three hours later, firm the dirt again with your foot to eliminate any remaining air pockets and **water again with plain water**.
8. **Staking** is usually not necessary for a small tree up to 3 feet tall, but if wind is a problem, place a bamboo stake in the soil next to the trunk and secure the tree *loosely*, 2/3 of the way up the stem, so it can still sway several inches side to side. Remove stake and velcro tape after the first year.
9. **During the establishment period** of up to a year, water with plain water once a week *if you don’t have rainfall that week*. Keep the soil uniformly moist -- not too wet or too dry. Use 1 gallon of water per gallon of original root ball size.
10. **Continue HWA protection**. If you’re using Bayer Advanced Tree & Shrub, retreat every year in the spring. If you’re using Imidacloprid 75 WSP powder or 2F / 2L liquid, retreat every 5th year in the spring. Call 706-429-8010 for instructions.
11. **Giving additional fertilizer** after planting is usually not necessary, but if it seems necessary, wait until at least two seasons after planting. Sprinkle close to the trunk and out to the drip line, and be sure to *follow the recommended dosage* on the product label as too much fertilizer can kill a plant. Do not apply lime anywhere near your hemlock.