

Planting and Care Guide for Bare Root Tree and Shrub Seedlings

When planting a bare-root seedling, please keep in mind the following:

1. Even though the tree is not growing, it is very fragile!
2. The plants are very sensitive to temperature—the lower the better!
3. The plants are sensitive to prolonged periods of excessive or deprived moisture--avoid both.
4. One study has shown that plants left in the sun on an 85 degree, windy day for just two minutes without protection on their roots--resulted in a 95% mortality!
5. Your seedlings will have the highest survival rate when prepared and planted immediately after delivery.

Caring for your bare-root tree seedlings upon arrival

1. Keep seedlings in a cold area out of the sunlight. The ideal temperature range for holding dormant seedlings is between 33 and 34 degrees Fahrenheit. If outdoor temperature remains cold when you receive the seedlings, you may place them in a shed or outbuilding. Make sure the building does not heat up during the day and the box isn't exposed to sunlight. If cold storage is not available, place the seedlings in a dark and cool place such as a cellar or basement. Ever so slightly open the bag to allow for a bit of air circulation. Check the seedlings every 24 hours to make sure the roots and sphagnum moss are moist. Gently spray with water as needed.
2. It is important that the roots remain moist but not wet. A good method of holding is to fill the bottom of a bucket or tub with 2"-3" of water. Next, add shredded paper or sphagnum moss and mix well. Place seedlings in the tub, packing the roots with the moist moss. Check moisture content daily. Roots must remain moist, but not soaking directly in water.
3. If the seedlings will not be planted within 3-5 days of receipt or cold storage is unavailable we suggest you use a method known as "heeling in". Choose a protected location out of direct sun. Dig a trench deep enough that the roots fit in without bending them. Keep the bundled seedlings intact. Place the roots of the bundled trees in the trench and completely cover them with soil. Give the trench a thorough watering and let settle for a few minutes. Add a little more soil as needed to ensure the roots remain covered. Firm the soil with your foot. Heeled in seedlings will keep for several weeks if they are watered thoroughly once the soil begins to dry out. Even with this method, it is highly recommended that you plant before any leaves are sprouting.

Day of Planting instructions

1. Place the plants in a half filled 5 gallon bucket of water. They can stay here for up to 6-8 hours, if necessary. This will prepare the plants for out-planting by re-hydrating their roots. This is the time to use the provided root dip.
2. Planting methods: When it comes to planting bare root nursery stock there are two primary methods; the hole method and the slit method.
 - a. **Hole method:** Use a shovel and/or pick axe to dig a hole which is wide and deep enough to accommodate the root structure of the seedling. Next, place the seedling into the hole, spreading the roots out as much as possible. Do not allow the roots to bend or curl around inside the planting hole. Now, break apart the soil that was removed from the hole and place

around the root system up to the root collar of the tree. The root collar is a noticeable line of change in the texture and bark color, which shows where the soil line was before the seedling was harvested. Finally, water the seedling in, making sure all roots are covered and no air pockets exist in the planting hole.

- b. **Slit method:** Drive a planting bar or planting spade into the soil. Rock the implement back and forth to create a V-shaped hole in the ground. Next, place the seedling into the hole so the root collar is at or ever so slightly below ground level when the hole is closed. Be certain the hole is deep enough so the seedling will not experience a "J" root (roots which curl sideways or back up towards the top of the hole due to insufficient hole depth). Now, insert the planting implement into the soil, about 2" - 3" from the slit in which the seedling is placed. Pull the implement towards the seedling to close the hole containing the seedling. The slit must be closed firmly so air cannot reach the roots. Firm the soil around the roots so that it would take a moderate tug to dislodge the seedling from the planting site. Finally, water the seedling in.

Watering Instructions

1. Water during the crucial first year of growth is the most important component to ensure seedling survival. In the event your seedlings are not receiving 1" or more of rainfall each week, it will be necessary to provide supplemental watering. Avoid watering so much that you see standing water.
2. Water in the plants. Water during the crucial first year of growth is the most important component to ensure seedling survival. In the event your seedlings are not receiving 1" or more of rainfall each week, it will be necessary to provide supplemental watering. Deep watering approximately once each week is more beneficial than frequent light watering. Deep watering is achieved when the soil at and around the root zone is thoroughly watered, not just the surface area. This forces roots to grow deeper in search of moisture. We suggest 1-2 gallons of water each week, per plant. The exception to this guideline is when temperatures are warmer than 85F, the planting site is in an area with exposure to hot sun or wind or drought conditions. It is necessary to provide more frequent deep watering under any of those conditions, up to 2-3 times per week.

Maintenance and Monitoring

1. After planting, be sure to keep grasses and weeds at bay. This will further encourage seedlings to flourish without the need to compete for sunlight, water and nutrients in the soil. Your seedlings may be susceptible to deer and/or rabbit browsing. For packages including Northern White Cedar, a tree cage will be provided. Wild Roots participants have agreed to monitor their trees for potential threats and survival. To complete this, Wild Roots participants will complete a citizen-science monitoring form once per year for at least three years. The monitoring form will be provided by CRA at the time of tree delivery.
2. Take some hardwood bark and apply in the form of a pie to about a 6-8" radius from the plant stem. Make it about 2-3" deep. This will keep your weeds down, keep moisture in the root zone, keep the soil temperature down and keep the plants from heaving in an open winter. This will also help you mark your plants to protect them from lawn mowers and to monitor their growth.