

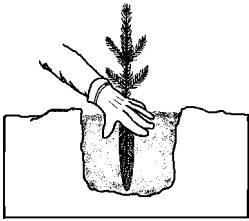
Handle Gently

Handle your seedlings gently and as little as possible. Seedling survival and growth depends on new root growth. Root growth can be reduced by dropping your box of seedlings on the floor or tossing the box into the back of the pick-up.

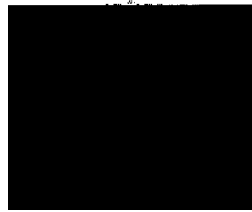
Keep Them Cool

Warm seedlings use stored energy that could be used for growth after planting. If you can't plant your seedlings immediately, store them (even for a day or two) as cool as possible in the packaging material they arrived in. If you must store your seedlings for a week or more, keep them as close to 35 °F as possible. Your seedlings will keep for a couple of weeks at this temperature. Check them frequently.

Only remove from refrigerated storage the seedlings you expect to plant that day. If your storage area is close to your planting site, it's even better to remove the seedlings in batches, allowing seedlings planted later in the day to stay cool as long as possible. At the end of the day, place any remaining seedlings back into refrigerated storage.



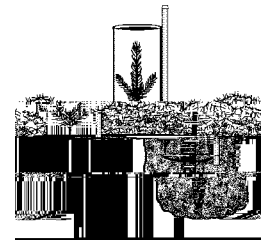
Gently press soil



Correctly planted



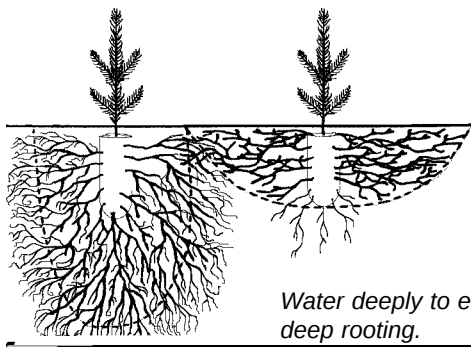
Return forest litter



Add tube to reduce animal damage

Watering

On forest land, if you plant early in spring supplemental water probably isn't necessary or feasible. For windbreak, other conservation plantings, and specialty hardwood plantations regular watering will improve survival and growth. If you decide to water, do so about once a week during hot weather, but remember that how often you need to water will depend on the soil and weather. Sandy soils don't retain moisture well so you'll have to water more often. On the other hand, clay soils hold moisture very well so you may not need to water for 2 or 3 weeks after a thorough watering. Water long enough to thoroughly moisten the root zone and encourage deep rooting. A drip irrigation line is the most efficient way to water your seedlings because it delivers moisture directly to each tree in a controlled and consistent manner—less water is wasted to run-off or evaporation. Stop watering about 1 month before the first frost. After a couple of killing frosts, water evergreens well.



Water deeply to encourage deep rooting.

Shading

Shading can sometimes increase seedling survival. Broad shingles or commercially-available plastic cards placed on the south and southwest sides of seedlings do 3 things: 1) keep seedlings cooler during the heat of the day; 2) reduce moisture loss from soil; and 3) benefit evergreens in winter by reducing dessication.

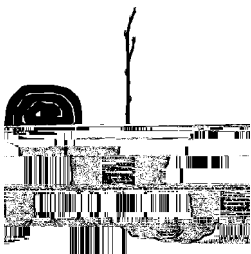
Fertilization

Generally, seedlings don't need to be fertilized during the first year. Thereafter, fertilizer should be applied in spring as soon as soil is frost-free. Many fertilizer formulations work fine. Nitrogen usually gives trees the greatest growth response. Application rates vary by local soils and climate. In general for 1,000 square feet of area, apply 1 to 2 pounds of nitrogen in dryland plantations and 3 pounds of nitrogen for irrigated trees and specialty hardwood crops.

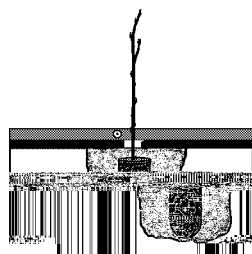
A common problem of trees in southern Idaho is iron chlorosis. Trees whose leaves develop a yellow or light yellow-green color, especially between darker green leaf veins, are probably suffering from a shortage of available iron and will benefit from applications of a chelated iron-rich fertilizer.

Protection

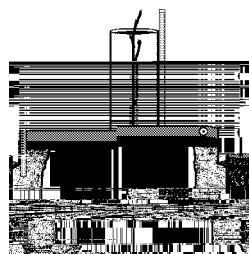
Seedlings can be damaged by livestock, deer, elk, rodents, other small animals, lawn mowers, string trimmers, and herbicides. On forest sites, seedlings will generally be fine without protective devices. If the resident deer and elk population is high, mesh-type tubing may be necessary for seedling establishment. A variety of spray-on repellents are available—they generally reduce, but don't eliminate, browsing. For best results, they should be reapplied



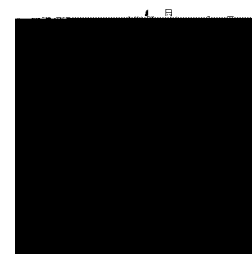
Add weed barrier



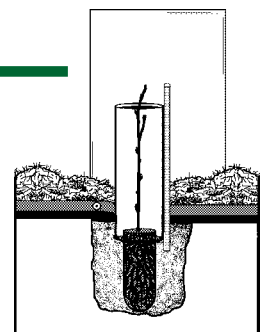
Add drip irrigation



Add tube to reduce animal damage



Add mulch



Add shade

frequently and it often helps to use several different products in a rotation.

When planting into pastures or former farm fields converted to grass, montane voles (meadow mice) can completely destroy a plantation within days. Solid tree shelters can effectively reduce damage. For evergreens, use short tubes (8 to 12 inches tall). For hardwoods, you may consider buying taller tubes to also protect against browsing. Solid plastic shelters that can be folded around the tree work well and can be removed for maintenance or reused. For best results purchase 5 to 6 foot shelters. Position the bottom of the shelter on or below ground level and secure with a sturdy, weatherproof stake. Tree shelters have the added benefit of protecting seedlings from sun-scald and winter dessication. Check tree shelters several times a year. Straighten shelters and replace broken or weakened stakes. Inspect the nylon mesh "hairnets" provided with your shelters—remove them once your trees begin to grow out of the tops of the shelters. Carefully remove bee or wasp nests.

Specialty Hardwood Crops

In addition to the suggestions provided above, the following are highly recommended if you are growing specialty hardwood crops.

Site Selection

In Idaho, hardwoods do best on sites with deep, well-drained soils with a pH between 5.0 and 7.0. Although many are drought tolerant, north- and east-facing aspects provide moister, cooler environments. Areas of poor drainage or flooding should be avoided, as should frost pockets and cold air drainages.

Pruning

Proper pruning is an art and a science and when done correctly can greatly increase the value of your plantation. Pruning should be accomplished while trees are still dormant in late winter or early spring, just before bud break. Corrective pruning should start the winter after seedlings were planted. If you use tree shelters for protection, temporarily remove them and prune any side branches that have formed. To reduce the number of knots in future logs, remove branches before they reach 1 inch in diameter, usually by age 4 or 5. Remember to prune branches at the branch collar—a flush cut or leaving a stub will interfere with proper wound healing. Wound dressing is unnecessary. Do not remove more than 1/3 of the live crown at a time. Continue annual pruning of side branches until you have a clear bole of at least 9 feet. Some owners continue side pruning their trees until there is as much as 25 feet of clear, straight trunk.

Protection

Animals – Nothing will protect your plantation better than a fence. Though expensive, a high-value hardwood plantation would justify the cost of constructing a permanent barrier. A good fence is 8 feet tall with hot wires at 2 foot intervals and the lowest 2 feet of fence, as well as an additional 2 feet underground, protected with hardware cloth to effectively exclude large mammals and rodents.

Individual tree shelters also protect against animal damage (see above). Repellent product success is measured in the reduction, not elimination, of browse damage and are not recommended for high-value specialty crops.

Sun-scald – Winter and spring sun-scald can be a serious problem for young trees but can be prevented by wrapping trees in fall with 2 layers of paper tree wrap or painting the trunks with full strength, white latex paint. Paint alone will protect against some dessication and spring sun-scald. Wrap alone will protect against winter freezes and desiccation. In Idaho, we recommend you use both methods to provide the best protection. Paint the trunks first and then wrap with 2 layers of paper with the tar side in the middle. Remove the tree wrap in spring at bud break and re-wrap each fall. The paint will continue to provide protection against sun-scald. A tree's resistance to sun-scald increases as it ages.

Problems?

If you have any questions or suspect an insect, disease, or

Problems?

