

## Tree Planting Tips, Facts, and Common Mistakes

To obtain the best results from a tree planting project, consider the following:

- ↳ Select the right species for the site
- ↳ Properly prepare the site
- ↳ Select good nursery stock
- ↳ Handle the seedlings correctly
- ↳ Use a good planting & handling technique
- ↳ Watch for and provide follow-up care



### ↳ Select the right species for the site

Different tree species prefer particular soil types and water conditions. Know your soils and lay of the land, and select appropriate tree species. Poor selections will result in trees that are more prone to slow growth, insect & disease problems, and mortality. Growth will always be better where water drainage is good and competition from grasses, brush, and weeds is minimized. Consider these soil and site factors

Hardiness Zone	Soil Texture
Wind Exposure	Soil Fertility
Soil Moisture	Frost Pockets
Soil Drainage	Existing Vegetation

### ↳ Properly prepare the site

Site preparation usually means exposing mineral soil for a planting spot and eliminating or reducing grass, weed, and shrub competition ... BEFORE planting. Site "prep" is often done the season before planting. Competing vegetation is probably the most critical factor to control. This sometimes means the use of herbicides.

If you do not wish to use herbicides, consider more work-intensive and expensive methods that may not work as well. Furrowing works for a shorter period of time and removes fertile topsoil from the immediate vicinity of the tree roots. Scalping removes a "patch" of sod and topsoil providing a place to plant the

<u>Site Prep Methods</u>
Furrowing
Scalping
Plowing & Discing
Herbicides

tree. Scalping will create a depression with less topsoil and will sometimes "collect" water. Plowing & discing, like a farm field, gives good soil texture for water infiltration and root growth. In lighter soils, wind erosion and excessive dryness might be a problem.

### ↳ Select good nursery stock

Seedlings are often described as "2-0 stock" or a "3-1 transplant". These numbers refer to the age of a seedling and the growing seasons since transplanting. The first number is the years the seedling grew in a nursery bed. The second is the number of growing seasons since transplanting. Total age is the combination of the two numbers. Transplanted stock is more expensive, but generally will experience a higher survival rate. Spruce, fir, and Douglas-fir should be bought as

Bare Root Seedlings  
or  
Containerized Seedlings?

transplanted stock for best results. Pines usually do well as 2-0 stock.

"Bare root" seedlings have been the normal type of seedling for many years. They are delivered in bundles without soil on the roots.

Bare root stock is planted in the spring. "Containerized" seedlings are grown in polyfoam blocks. Each "cell" in a polyblock contains a seedling, complete with soil and nutrients. These seedlings, with their soil "plugs" are planted just about any time the soil is unfrozen. Spring and fall are generally the best times. Additionally, these seedlings have not experienced the root trauma of bare root stock.

### ↳ Handle the seedlings correctly

Improper handling of seedlings is one of the major factors in planting mortality. When receiving your stock, make sure all the packaging is intact. Exposure from broken seals may cause root mortality. Bare root tops should have a healthy green color (if they're conifers), a fibrous root system, good stem caliper (diameter), and no multiple stems.

Signs of Poor Handling  
Dry Roots  
White Root Tips  
Too Much Soil (bare-root)  
Swollen or Burst Buds  
Mold on Needles or Stems  
Broken/Crushed Stems  
Ripped or Crushed Bags/Boxes

### ↳ Use a good planting & handling technique

Bare-root stock is particularly vulnerable to poor care. Keep bags and containers out of direct sunlight and in a cool place. Don't stack bags and containers, and allow for air movement between bags and containers. Plant bare-root stock as soon as possible. Containerized stock can be more easily stored for periods of time. Water containerized stock if you don't plant them promptly.

Remove only enough bare-root seedlings from their bags to plant for that day. If there are left over seedlings, "heel" them in, which simply means to temporarily bury the root bundle in the soil. While planting, keep bare-root stock

#### Some Planting Rules

- Don't plant in overly wet or sticky (clayey) soil
- Keep seedlings moist and cool at all times
- Plant in mineral soil, not the duff on the surface
- Make the hole deep enough for the whole root system
- Make the hole before removing the seedling
- Remove trees one at a time from planting pouch or container
- Plant seedlings one inch deeper than they were in the nursery
- Plant seedlings upright, not at an angle
- Take care that roots are not curled or twisted
- Pack soil firmly
- Reduce competing vegetation

in a cool, shady spot and unexposed to air. As little as five minutes can kill critical root hairs and small roots! Keep those bags closed!



Plant trees at the proper depth, usually at the root collar (a slightly raised ring where the roots and stem meet). Roots must be oriented straight down in the hole. "J" rooting will kill the seedling. Don't wash or rinse the bare roots. Leave the few soil particles that remain. They are often around critical root hairs and small rootlets. Carefully carry seedlings so that they don't dry out or become excessively rubbed. Make sure there are no air spaces left in the hole.

## ↳ Watch for and provide follow-up care

Planting is hard work! You will want to protect seedlings from grass and weed competition until the seedlings are well above the height of grass and weeds. Intensive root competition from sod may impede tree growth for years, even after tree crowns have grown taller than the grass.

Many plantations experience damage from deer, grazing, and fire. These are preventable. Fence construction can be expensive. If you live an area of high deer populations, consider the cost of a fence BEFORE you order seedlings.

Inspect the seedlings several times each summer for signs of insect and disease problems. Discover the reasons for broken leaders, off-color foliage, unusual growths, and defoliation. Consult a forester for diagnoses.

## Common Mistakes That Kill Tree Seedlings

### Care Errors

- ⊗ Wind exposed roots
- ⊗ Overheated seedlings from direct sun
- ⊗ Temporary storage covers blow away exposing seedlings
- ⊗ Roots dry out from not planting soon enough

### Planting Errors

- ⊗ Soil packed too loosely
- ⊗ Planting too deep or shallow
- ⊗ J-rooting
- ⊗ More than one tree per hole
- ⊗ Second hole not closed (planting bar problem)
- ⊗ Planting in duff rather than mineral soil
- ⊗ Failure to allow good root spread in hole

### Other Errors

- ⊗ Improper spacing (many potential long-term problems)
- ⊗ Failure to control competing vegetation, especially grasses
- ⊗ Planting in low spots and frost pockets
- ⊗ Incorrect match of species and site
- ⊗ Planting at the wrong time of the year
- ⊗ Failure to provide full sunlight (at least with most species)

