

How to Plant a Tree So It Lives

The goal of tree planting is to have a vigorous, healthy tree that lives to the limits of its natural longevity. Achieving this goal begins with careful tree selection. Next, the tree must be handled carefully until it is safely installed in its new home.

Trees — Handle With Care

Trees are perishable products and must be treated accordingly. Reputable nursery operators know how to protect trees in shipment or while on display, but after that it is up to you. These two cardinal rules will help keep your trees alive until you get them into the ground.



Guaranteed disaster! Tiny root hairs of bare-root seedlings dry quickly. Once robbed of their moisture they will not recover. During the planting operation, wrap in wet burlap to protect from sun and wind, and keep moist at all times.

1. **Carry trees carefully.** When transporting, load and unload gently, being careful not to break branches. Always provide support beneath balled or potted plants.

Wrong



Right

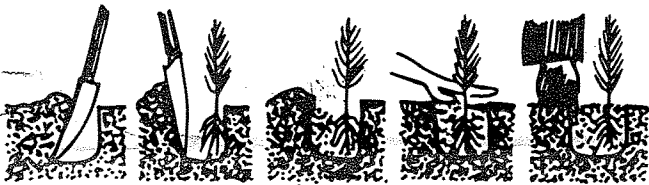


2. **Keep roots moist!** Depending on the trees and how long you must store them before planting, techniques to prevent drying vary. They include re-dampening the packing material around small bare-root seedlings and storing in a refrigerator between 30 - 40 degrees F. Bare-root trees of all sizes may also be stored by placing the roots and their packing material under loose soil in a shallow trench. The garden often is a handy place to do this. While actually planting, continue to protect the roots from wind and sun by wrapping in wet burlap or carrying in a bucket of water, possibly with mud, moss or sawdust added.

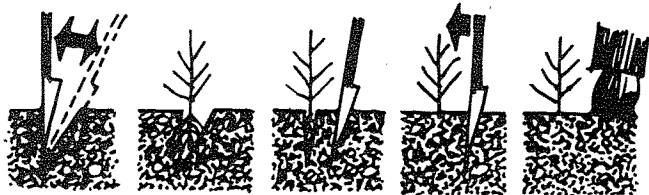
Balled and burlapped or potted trees should be checked for dryness by finger length probing into the soil. Sprinkle or water if necessary. Then store them in a cool garage or shaded area out of the wind.

Tip: Buy early in the season to get the best selection of trees — then plant without delay.

Planting Bare-Root Seedlings

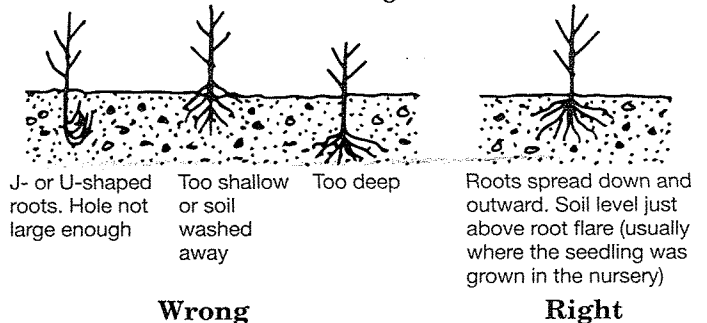


In light or sandy soil, a planting slot makes the job fast and easy. Planting small seedlings in a garden or other temporary spot for the first year is a way to assure better protection, watering and weed control until the seedling is larger. Then it may be transplanted to a permanent location.



In heavier (clay) soil or when planting larger bare-root stock, it is best to use the shovel and hole method. This prevents soil compaction and glazing of the hole's sides, allowing new roots to spread more easily.

Avoid These Common Planting Errors:



Transplant Shock — and How to Avoid It

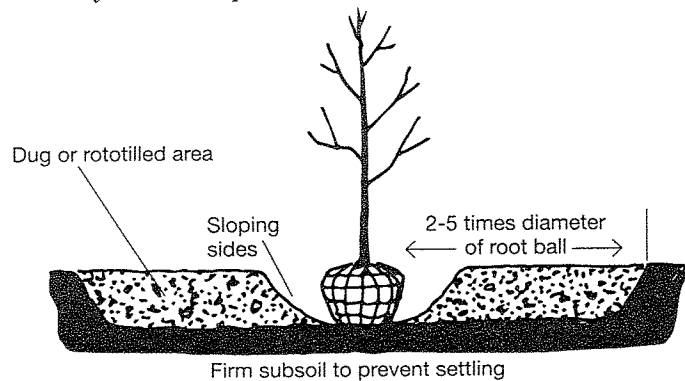
George Ware of the Morton Arboretum explains that any transplanted tree undergoes severe physiological shock. This is because the tree's capacity for water absorption is greatly diminished from root loss while its demands for water continue. The challenge is to keep root hairs from drying or being damaged and to use planting techniques that induce rapid root growth so a favorable root/crown ratio can be restored before drought, insects or some other stress event occurs.

Planting Burlapped or Potted Trees

Recommendations for planting have evolved in recent years as more is learned about the nature of roots and urban soils. Local conditions make generalizations difficult, but here are some guidelines that reflect the latest opinions of tree experts:

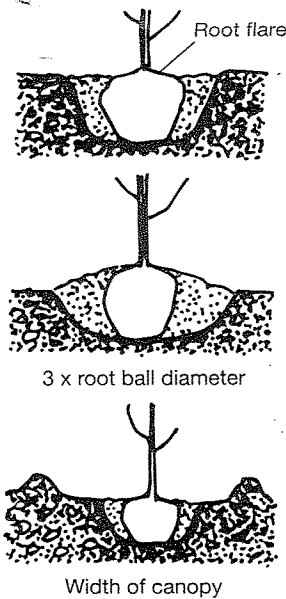
The Planting Hole

More than any other change in tree planting procedures is the new focus on the planting hole. It can be summed up by the saying, "Don't plant a \$100 tree in a \$10 hole!" Proper preparation will encourage root growth rather than adding to the difficulties already challenging the young tree. Here's the way to give your tree a boost toward rapid growth and recovery from transplant shock.

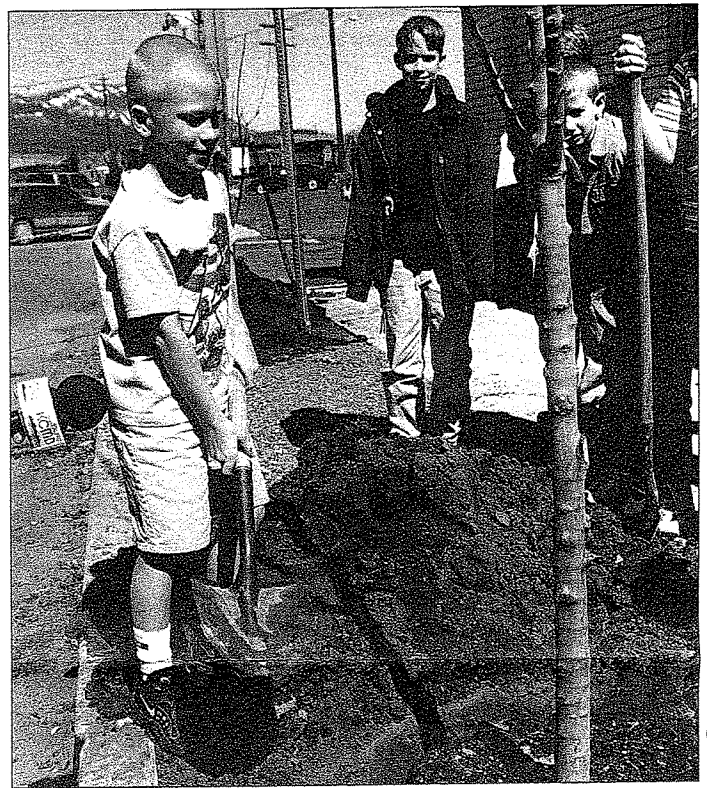


This method recognizes the fact that most roots spread through the top 12" of soil in a wide periphery around the tree. Therefore, slope the side of the hole and dig or deeply rototill an area around the hole at least twice the diameter of the ball or container. An area up to five times the diameter is recommended if the soil is particularly compacted, the roots of other trees will not be damaged, and space and aesthetics allow.

How Deep Should You Plant?



- Under normal conditions, root growth is best encouraged by planting so that the root flare (the point just above the first roots) is just below soil level. Note: Sometimes the root flare is covered by several inches of nursery soil or packing material. That should be removed.
- When wet conditions or heavy soil are problems, raising about 1/3 of the root ball above ground will aid the spread of lateral roots.
- In arid climates, a basin can be used to collect precious water.



The Observer, La Grande, Oregon

What About the Wrapping Material?

Research has not yet provided a definite answer about the potential harm of leaving wire baskets in place after planting. However, the most prudent action is to cut and remove the top two tiers of wire after the ball is set in the hole. Problems more serious than wire baskets are treated burlap (feels like plastic) and nylon rope. Twine and rope should definitely be removed, but folding down the top 1/3 of the burlap instead of removing it completely should free lateral roots while serving to keep the root ball from cracking (and thereby damaging roots). Never let remaining pieces protrude above the soil or they can act as wicks, drying the soil. Trees in pots or cans should be gently removed before planting. Cut away the plastic or metal if the root ball does not slide out easily. Paper or plastic trunk wrappers should also be removed. This material was put on the tree to protect it during shipment and will generally do more harm than good if allowed to remain on the tree.

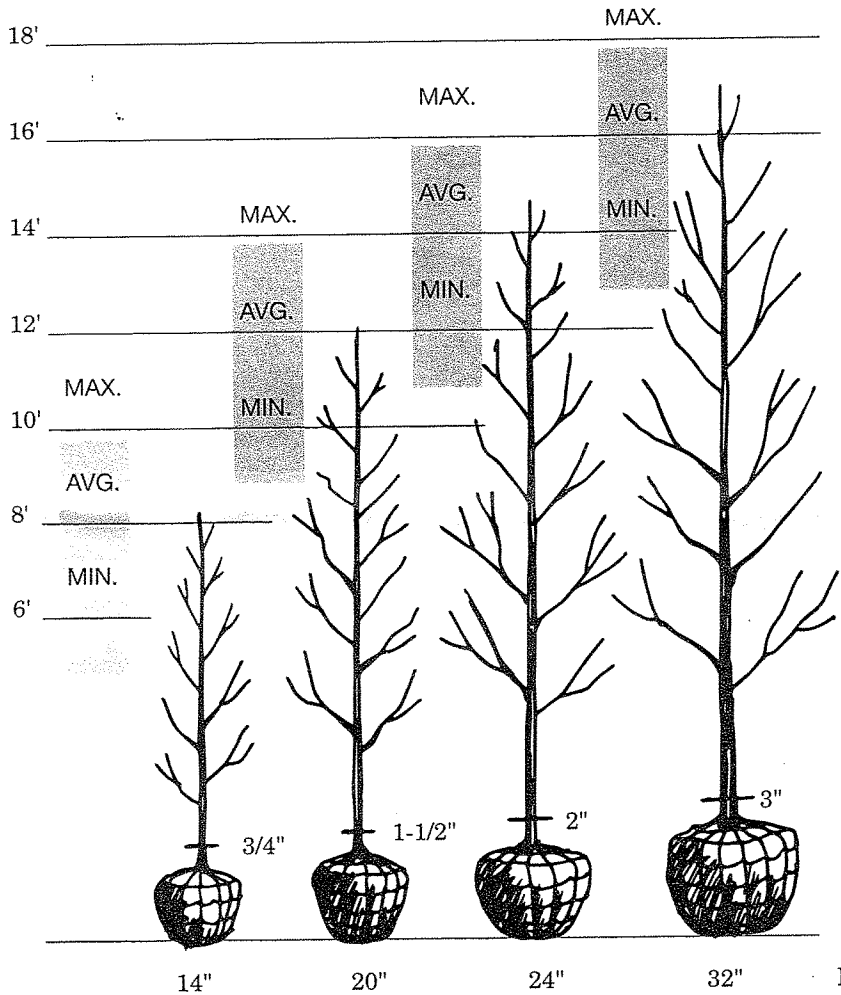
Filling the Hole

Backfill with native soil unless it is clay from basement excavation or other undesirable fill material. In that case, mix in soil amendments according to instructions from a local nursery, or bring in as much good topsoil as possible. Tamp gently and add water to fill large air spaces and to give your tree its first good drink in its new home. As the tree grows, be sure to water the surrounding soil area to encourage root spread.

Call Before You Dig!

Before digging, always contact your local utility offices or dial 811. In most areas, the utilities offer to locate and stake underground cables and pipes at no cost to you.

How to Check Proper Size and Root Ball Proportions



To reduce transplanting shock and assure that adequate feeding roots are moved with the tree, the American Nursery and Landscape Association has established standards for height-diameter relationships and root ball sizes. This chart illustrates these standards for most deciduous shade trees. A more complete range of sizes may be found in *American Standard for Nursery Stock*.

What is Caliper?

Trunk diameter on young trees is referred to as its caliper size. For standardization, this measurement is taken 6" above the ground on trees with a diameter of 4" or smaller, and 12" above the ground on larger planting stock. The diameter of larger trees is measured approximately 4-1/2 feet above ground level and is expressed as diameter breast height (DBH).

Minimum Ball Diameter or *approximating by rule of thumb: 1 foot for each 1 inch of caliper.*

When is Arbor Day?

The original Arbor Day was celebrated on April 10, 1872. In 1885, this tree planting holiday was moved to April 22 to honor the birthday of its founder, J. Sterling Morton. Later, in 1970, this date was selected as the first Earth Day. Today, by proclamation, National Arbor Day is the last Friday in April.

Trees, however, do not respect legislative fiat. This is why many states have their own unique date for

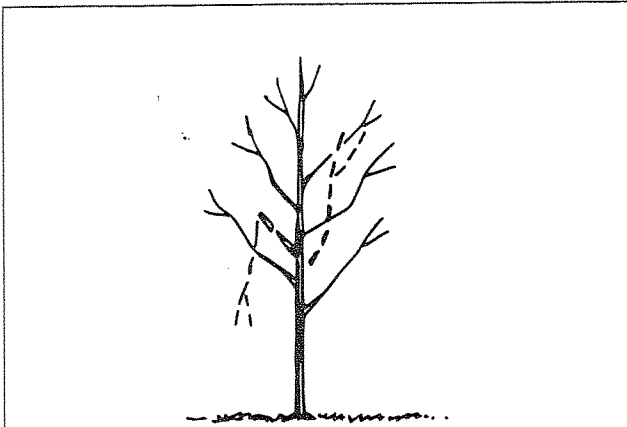
Arbor Day, such as Florida's third Friday in January or Alaska's third Monday in May. States can set the date to coincide with the best time to plant trees.

For a complete list of Arbor Day dates by state, visit the Arbor Day Foundation's website at arborday.org or contact Member Services at 888-448-7337.

Acts of creation are ordinarily reserved for gods and poets, but humbler folk may circumvent this restriction if they know how. To plant a pine, for example, one needs be neither god nor poet; one need only own a shovel. By virtue of this curious loophole in the rules, any clodhopper may say: Let there be a tree — and there will be one. If his back be strong and his shovel sharp there may eventually be 10,000. And in the seventh year he may lean upon his shovel, and look upon his trees, and find them good.

— Aldo Leopold

Following Up After Planting



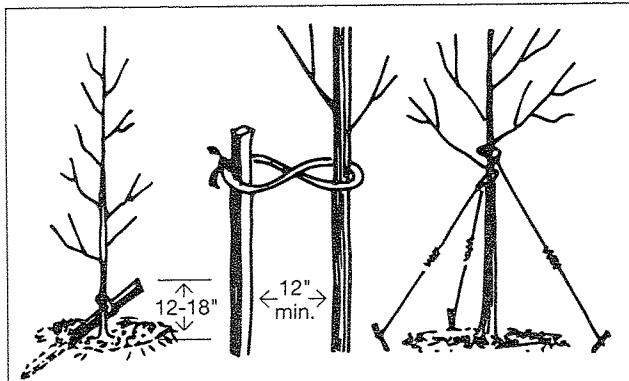
Leave as much leaf area as possible to help the tree build food reserves. Properly prune out dead or broken limbs, or those that rub. Do corrective pruning for shape the second year.

Watering

Watering is the key to tree survival. It should be used when filling the planting hole to eliminate large air cavities, firm the soil around fine roots, and make nourishment available to the new tree. During planting, bare-root trees can be dipped in water-absorbing polymers. This amazing chemical comes under a variety of brand names and is available from nurseries. Its function is to attract water when abundant and hold it longer than soil when conditions get dry. It can also be used with balled and burlapped trees, being mixed with the backfill. The effects last for about two years. With or without the aid of polymers, water deeply around your tree once a week during warm dry spells.

Pruning

Unless directions specify otherwise, it is better not to prune after planting if the tree will be watered regularly. Leaves manufacture the food needed for root growth, so the young tree needs as much of its crown as possible. Always prune dead or broken branches. (See *Bulletin No. 1*)



Inexpensive

For narrow spaces

For large trees. Springs in the guy wires provide flexibility.

Stakes vary with space available and personal preference, but should be used only when absolutely necessary.

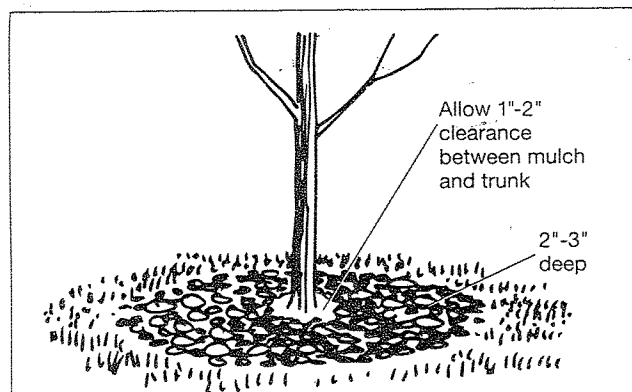
Fertilizing

Avoid fertilizing shade trees until late spring of the second year following planting. Fertilizers can "burn" roots or stimulate crown growth faster than the roots can supply water.

Staking

Stakes and guy wires should be used only if support is necessary. Stakes sometimes create tripping hazards and can weaken a young tree. However, when using, avoid common problems by following these guidelines:

- If the main stem droops, find the best place for support ties by moving your hand up the trunk to locate the point above which the top can stand up on its own. Place the support ties about 6" above that point.
- Ties can be made many ways, but a loosely-fitted figure 8 tie made of polyethylene, cloth or webbed strap is easy to install, provides good support and cushions the tree from rubbing against the stake. Using two ties will also minimize the chance of bark damage from rubbing.
- Regardless of the tie used, allow slack for the top to sway.
- Avoid driving stakes through the root ball, or using stakes with flanges that will break roots when removed.
- Remove support ties after one or two years.



Mulch is any material placed on soil to protect it and that does not cause the plant problems. Common mulches include bark, wood chips, decorative gravel and crushed lava.

Mulch

Mulch is a young tree's best friend. It holds down competing weeds or grass, retains soil moisture, prevents soil cracking that can damage new roots, protects the trunk from lawnmower damage, and helps prevent soil compaction. Organic mulches such as wood chips or pine needles also contribute to better soil structure and aeration as they decompose. Avoid limestone rock and allow no mulch to touch the tree's trunk or be piled higher than 3 inches.