

Planting, staking success lies in the technique

By LAURA MILLER

Although properly prepared and protected stock can often be successfully transplanted during any season, tree planting is most successful at specific times of year. Winter is a good time to determine which trees you want to plant. Correct timing encourages the growth of healthy trees.

In general, plants are best moved when shoots are not actively growing — the resting or dormant stage. Deciduous trees are normally planted in the fall after leaf drop and before the soil freezes, or in early spring before bud break.

Narrowleaf evergreens also may be planted in the fall or spring before new growth starts. Broadleaf evergreens should be planted in the spring in climatic zones where soils freeze. In the North, the soil freezes early and deep spring planting of evergreens is perhaps the safest, said Len Burkhart, Ph.D., a horticulturist with Davey Tree Experts.

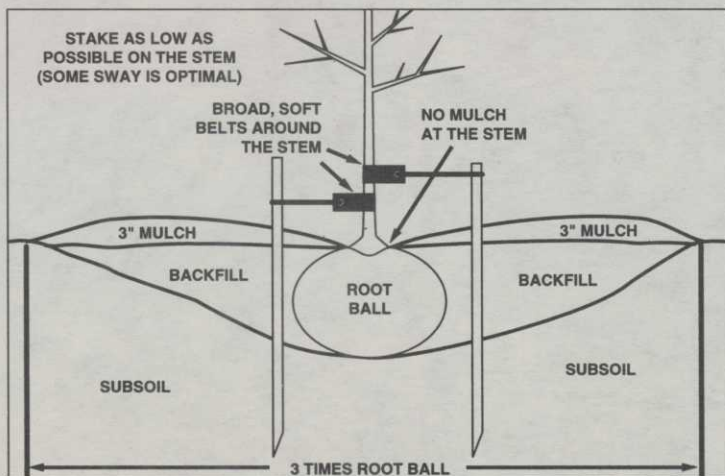
"In the South, with its mild winters, fall planting is preferred," Burkhart said. "Winter planting is fine for plants with a root ball large enough to contain undisturbed roots that supply branches with water until spring."

Transplant success often depends on soil temperatures. The soil must be warm enough to permit the growth of new roots immediately after planting and continue until adequate root growth can support the plant's water-absorbing potential. "Roots grow best when soil temperatures are between 40 and 90 degrees F," Burkhart said. "Trees should be transplanted at least four weeks before soil temperatures drop below 40 degrees F to allow proper root development in the fall."

Research shows that a shallow planting area should surround the transplant hole. To make a planting area, the ground around the hole should be shovel-dug or rototilled to at least a 10- to 12-inch depth. This depth is appropriate because the tree's roots that absorb water and nutrients are located within 18 inches of the soil surface.

The planting area should be three to five times the width of the root ball or, at least, the soil should be loosened or tilled well past the current-year drip line so roots can spread horizontally into the native soil. Roots spreading out in this manner create a stronger base for the tree, especially in times of drought.

A hole should be dug near the center of the planting area after the area has been rototilled. The hole should be deep enough so that the tree's base is at or slightly



Drawing courtesy of Davey Tree Experts

higher than ground level. The root ball should not sit on the fill soil, but on the bottom of the hole. This prevents the root ball from sitting too low in the ground.

"No plant should be planted deeper than it was at its original planting site," Rathjens said. "Err on the side of planting too high, as opposed to too deep."

The size of the plant's hole should be at least two times the root system (for bare-root plantings), or root-ball diameter. The hole should be larger when possible and dug with sloping sides at about a 45-degree angle from the ground surface. The slanting sides direct roots to spread horizontally.

If a hole is dug deeper than necessary, some fill soil should be added to the bottom of the hole. Stone, rocks or cement chips should not be added.

ADDING BACKFILL

Soil removed from digging the hole should be used as backfill. Organic matter can be added for sandy or heavy soils. No more than 10 to 20 percent of the volume should be added because as

the organic matter decomposes, the backfill settles, causing the root ball to fall below ground level.

If the backfill is more than 20 percent organic matter, it changes the backfill's physical characteristics. Backfilling with soil that is lighter or better drained than the native soil can result in stunted or dead plants because roots may have difficulty growing into the surrounding soil.

The area around the soil ball should be watered to eliminate air pockets. Watering puts the soil into direct contact with the roots. Backfill and water then should be added alternately.

Include mulch application in your planting. Mulch has many benefits. It is attractive and helps suppress weed growth and protect trees from moisture loss. Mulch slows soil water evaporation, providing trees with a consistent source of water.

Mulch also protects root systems from temperature extremes by insulating the roots. Mulched soil doesn't cool as quickly in the winter or warm as quickly in the summer as unmulched soil.

For mulch to be effective, it should be applied before temperatures change drastically.

It should be 2 to 3 inches deep, and should never be piled against the tree's trunk. Too much mulch reduces air and water exchange, and the roots suffer.

STAKING TREES

Improper staking is one of the most common planting mistakes. Many people don't know when to stake (and not stake) a tree. Generally, most trees with a diameter greater than 3 inches don't require staking.

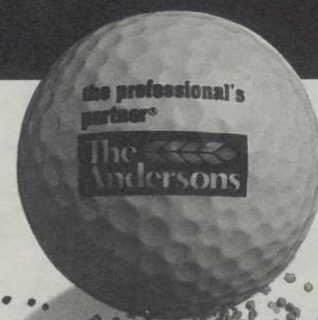
Proper staking can help newly planted trees withstand strong winds. It anchors and supports trees that can't stand alone after transplanting. However, staking

is expensive and time-consuming. So, it should only be done when it is necessary to the tree's health.

If staking is done correctly, the tree roots and trunk will become strong enough to stand unsupported. Trees should be staked to bend with the wind only if they are unable to stand against the wind.

A common staking mistake is the use of only one stake. Two stakes with a flexible tie on each will provide better trunk support and reduce the potential for injury.

A tie should have a flat, smooth surface and be somewhat elastic to allow slight movement of the tree. Rubber hosing is a good staking material. Wire covered with a hose or tubing should not be used.



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