Planting

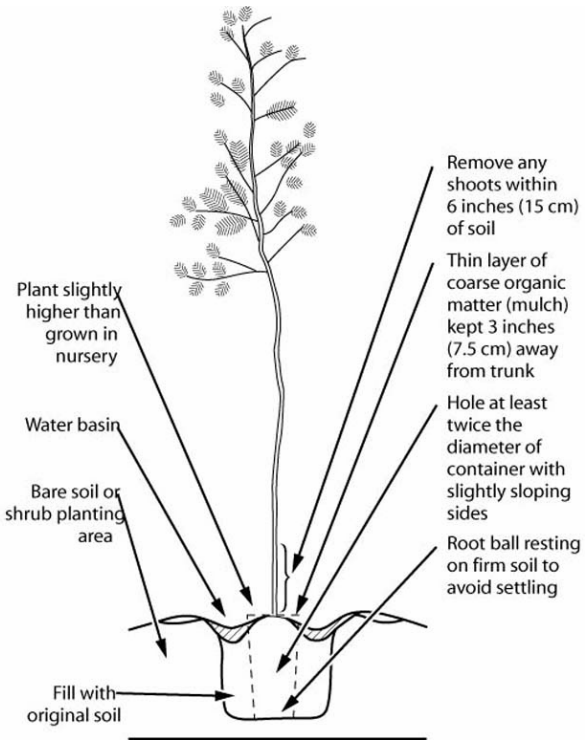
Once you have selected a healthy, vigorous, well-grown plant of the appropriate species for the right place in the landscape, the next step is to plant it properly. The performance of landscape plant material depends a great deal on how it is planted. The spring and fall months are usually the best times to transplant woody plants. Weather conditions are typically moderate, enabling plants to avoid heat or cold stress while they are establishing new root systems.

Digging the Hole

Plant the tree, shrub, or vine "high" and not too deeply. Dig the hole to a depth about 2 inches (5 cm) less than that of the soil in the container or root ball. Planting more deeply or in loose soil that can settle with time, causing the plant to be deeper than intended, may lead to future problems such as crown rot.

The width of the hole should be a minimum of twice the diameter of the container or root ball. The wider the hole, the faster the roots will grow out of the root ball and into surrounding soil. For bare-root plants, spread the roots out evenly without bending or crowding them. If planting in compacted soils, it may be necessary to dig deeper to break up impervious zones or layers. If so, wait 2 to 4 weeks before planting to give the loosened soil the chance to settle. See figure 13.1 for an illustration of how to dig a hole for planting a landscape tree from a container.

Fig. 13.1 Planting a landscape tree from a container. Source Harris and Davis 1984, p. 1.



Backfill

Place the plant's root ball so that it rests firmly on the undug bottom of the hole. Backfill around the root ball with unamended soil dug from the hole, being sure to water the soil thoroughly to remove air pockets. Recent studies have shown that nothing is gained by amending the backfill with organic matter, fertilizer, vitamin B_1, or other substances. In fact, the practice could be harmful. It is much better and more efficient to use organic matter as a mulch spread over the soil after planting to improve soil structure, conserve water, and discourage weeds.

Using the remaining soil dug from the hole, construct a water basin that is initially the same diameter as the root ball. Gradually widen the basin as the plant becomes established. Remove it completely after the first growing season.

Mulching and Irrigation

After planting, add a layer of coarse organic material as a mulch and irrigate thoroughly (flood the basin) to settle the soil. Keep the mulch 3 inches (7.5 cm) away from the trunk. Judicious water management is critical for newly planted landscape material. The original root ball must not be allowed to become completely dry for any extended period during the establishment of a woody plant. Remember that, although the new plant may be large, its root volume still occupies a rather limited area. Root balls of plants that were oversized in their container or slightly pot-bound can dry out more quickly than the surrounding backfilled soil. Until the roots grow out and become established in the parent soil, more frequent but lighter watering may be needed. As the plant becomes established, irrigations can become less frequent but deeper.

Plants in Lawns

If plants are installed in turf areas, keep the grass well away from the trunk of the new plant for 2 to 4 years to reduce competition from the grass for water and nutrients. Keeping the ground free of other plant growth at least 12 inches (30 cm) in all directions from the trunk also prevents damage from mowers, edgers, and weeders. Using plastic guards to prevent this type of mechanical damage may be useful, because such damage can kill or severely dwarf young plants.

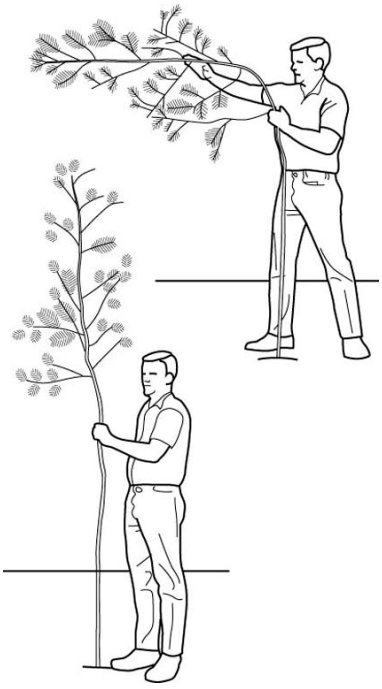
Staking

Trees should be staked for support, protection, or anchorage when needed. With few exceptions, there is little need to stake trees for trunk support if they were grown properly with adequate space in the nursery. Trees with large tops in proportion to their roots may need to be staked. Even these trees can often stand alone, however, without staking by simply thinning out about a third of the branches to lighten the crown and reduce its wind resistance.

If newly planted trees will not stand upright without support or if frequent, heavy winds are a problem, staking may be necessary. Staking to support a tree should be as low as possible on the trunk but still high enough that the tree will return to an upright position after being deflected. To determine the proper point at which to stake and tie a tree, hold the trunk in one hand, pull the top to one side, and release. Attach the ties at the height at which the trunk will return to upright when the top is released (see figs. 13.2 and 13.3).

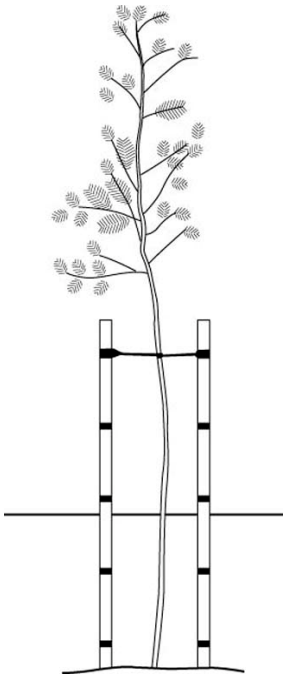
Use two support stakes, one each on opposite sides of the trunk, positioning them so that a line drawn between them would be at right angles to the most troublesome wind direction. Make the stakes as short as possible but high enough to hold the tree upright under calm conditions. The tree should return to vertical after the wind has bent the top. Loosely tie the trunk to each stake at just one level, at the point near the top determined by the technique shown in figure 13.2. This technique allows the trunk below the tie to bend in the opposite direction from the top during a wind. Material used for ties should have a broad surface to minimize rubbing or girdling and have some elasticity to provide greater flexibility as well as support. Each tie should form a loose loop around the trunk, one right above the other one, and the two together should provide the necessary support at the right place (see figure 13.3).

Fig. 13.2



Stakes should be no higher than necessary to hold the tree upright, while allowing the top freedom to move in the wind. To find the correct height, grasp the trunk with one hand and bend the top (left). If the top returns to its upright position when released, tie the trunk to the stakes at the height of the bend (right). Source: After Harris et al. 1978,

Fig. 13.3



Tie tree to stakes at the correct height using flexible webbing material. Source: After Harris et al. 1978, p. 9.

Provide flexible movement at the tying point without allowing the tree to contact the stakes. Trees whose trunks and tops are allowed to flex, give, and move a little develop greater trunk caliper and taper, stronger wood, a larger root system, and less wind resistance, because the top is free to bend. They become self-supporting at an earlier age than trees that are rigidly staked.

As the tree grows and becomes better established, remove or lower ties and shorten the stakes so that they do not rub against the trunk and cause rubbing or girdling injury. Ties probably can be removed by the end of the second growing season. Use stakes for the shortest possible time.

To provide extra protection from lawnmowers and other mechanical damage, drive three stakes that are 2 inches by 2 inches (5 cm by 5 cm) thick and about 3 feet (0.9 m) long at equidistant positions around the root ball. Drive the stakes into the undisturbed soil until about 12 inches (30 cm) remains above ground level.

Even on newly planted trees whose trunks do not need support, trunk movement could break new roots growing out of the root ball into the parent soil if the root system is not well-anchored. Two or three short stakes placed as suggested above provide protection from mechanical damage and enough anchorage for the roots. Ties from each of the stakes to the trunk will usually be sufficient to keep the roots firmly in the ground. The top may need thinning to decrease wind resistance and weight. Ties can be removed after the first growing season and the stakes left for trunk protection.

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