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Selecting, planting, and caring for your shade trees

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When you buy a tree, you are making an investment for the future. A properly planted tree will prosper if given the necessary care. As the owner, you will reap many benefits for a long time to come from its beautifying presence.

The steps you take while selecting, planting, and caring for your new tree will have a direct bearing on the success or failure of your investment. Through your efforts, you can avoid the disappointment of a tree that fares poorly or one that grows into a hazard or requires frequent maintenance.

This publication outlines the points you should consider when selecting your shade tree. It also describes the necessary steps for planting and for post-planting care.

Selecting the right tree for the right site

Tree selection involves three elements—your needs, the needs of the tree and the conditions at the planting site. You will have to do a little “homework” to match up these elements, but the result will reward the small amount of extra time and effort.

Each tree has special site requirements and some trees have more exacting requirements than do others. The planting site you have chosen can't possibly satisfy the needs of every type of tree. Know the conditions at the site, and then identify the

trees that will grow under these conditions and will fit into your plans for your property. See Extension publication *A Guide to Selecting Landscape Plants for Wisconsin* (A2865), for an extensive list of trees that will grow well in various climatic zones of the state. It also describes the features of the trees and their site requirements.

To avoid making the wrong selection, consider these questions before you buy a tree:

What are the soil conditions at the planting site?

Drainage characteristics and the acidity or the alkalinity of the soil are closely related to the health of the tree. Most trees are sensitive to poorly drained soils. If this condition exists at your site, you can either plant a tree that can tolerate wet soil, or you can make some adjustments at the site. Tree species also vary in their need for acidic or alkaline soil. If you don't know the status of your soil, have it tested.

Can the tree tolerate the extremes of the climate?

Pick a tree that can withstand the rigors of winter as well as hot dry summers. Some species also have “microclimatic” requirements. Many are intolerant of shade and several do poorly on hot, dry, sunbaked soils.

Will the tree fit in the space available?

Utility wires and other overhead obstacles may limit your choice to a low-growing species. Trees with wide-reaching crowns at maturity may interfere with visibility, or branches may come into contact with the side or roof of your home. Also, trees with deep, far-ranging roots can clog nearby sewer lines or a septic system. Those with extensive surface roots can cause pavement to buckle, or they may compete with existing plants or gardens for nutrients and water.

Will the tree be exposed to salt draining into the soil or salt spray from passing cars?

Salt runoff or salt spray can seriously damage most tree species, but several can tolerate these conditions.

How much litter does the tree produce?

Abundant faded flowers, messy fruits, or seed pods can become a nuisance, and thorny trees may present a safety hazard.

Is the tree long lived and strong wooded?

Fast-growing trees offer the benefit of quick shade, but they often deteriorate rapidly and may be easily damaged by storms and decay.

Will the tree require much care?

You should be aware that seedling trees, such as littleleaf linden, honeylocust and ashes, need considerable "training" when they are young. Varieties of these trees, selected on the basis of superior form or branching habit, should be planted instead.

Is the tree highly resistant to diseases and insects?

If not, you may spend a lot of your time and money trying to control these disorders.

In addition to these considerations, there are your preferences and future plans for your property. Trees offer a wide variety of shapes, sizes, textures and colors. Choose one that fits in with your home and its surroundings. For example, a small tree may accent the beauty of your home, but a large one may dwarf your home.

You can also plant trees to frame a pleasant scene, block an objectionable view, attract wildlife, channel pedestrian traffic, or conserve energy. When selecting your tree, keep these options in mind along with any future improvements you plan. The tree should complement improvements to your home rather than interfere with them.

Planting

The best times to plant a shade tree are spring, after the ground thaws and before the buds begin to swell, and fall, after the leaves change color and before the ground freezes. With proper care, balled and burlapped or potted stock may be planted any time during the growing season.

Types of planting stock

When you buy a tree, it will be one of four types of planting stock: bare root, balled and burlapped (B&B), potted or container grown (figure 1). Each type of planting stock has special requirements for handling and planting.

However, all are very susceptible to damage during transportation and during storage. Even when you transport the tree a short distance, keep it covered or sheltered from the wind and sun to keep it from drying out. Pay especially close attention to the roots to keep them damp.

Figure 1. Different types of planting stock.

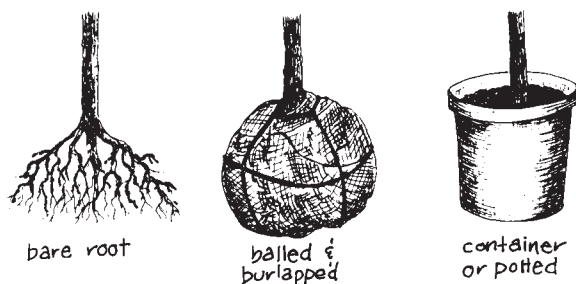


Figure 2. If you're unable to plant B&B or bare-root stock for several days, "heel in" the stock to keep roots from drying out.



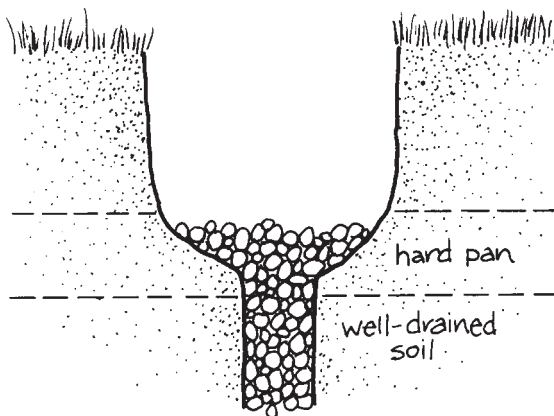
If you have bare root stock, place moist peat moss, burlap, or a similar moistened material around the roots. Keep the roots of B&B, potted, and container-grown stock moist but not soggy.

Plant your tree as soon as possible. If you can't plant B&B or bare-root stock for several days, the stock should be "heeled in." For bare-root stock, dig an angled trench in a shady, sheltered spot (figure 2). Place the stock in the trench on an angle and cover the roots with moist soil or mulch. B&B stock should be heeled in an upright position.

Figure 3. Soil berms or mounds can be built to raise the root systems of trees above a high water table.



Figure 4. If permeable soil lies below compacted soil, punch holes through the compacted soil using a soil auger. Fill the holes with gravel or crushed stone.



Providing proper soil drainage

Most trees won't survive if they are planted in poorly drained soil. If your planting site is poorly drained, you have the options of planting a species that can tolerate wet soil conditions or you can use one of several techniques to improve drainage.

Where appropriate, you can build soil berms or mounds to raise the root systems of trees above a high water table (figure 3).

If hard, compacted soil is underlain by a layer of permeable soil, you can punch holes through the compacted soil at the bottom of the planting hole with a soil auger or a similar device. Fill the holes with gravel or crushed stone (figure 4).

If a well-drained soil layer does not exist beneath the planting hole, you can install a tile system to remove excess water. Place a tile, 3 to 4 inches in diameter, across the bottom of the hole. The tile should extend to a free outlet outside the hole (figure 5).

The outlet can drain into a ground level lower than the planting hole, a dry well filled with gravel or a storm sewer. Never connect the tile to a sanitary sewer because the tree roots may clog the sewer.

Cover the tile with mulching fabric to keep soil out. Place gravel or crushed stone over the bottom of the hole and on top of the tile to hold it in place. Finally, spread a 2- to 3-inch layer of soil over the layer of gravel or stone.

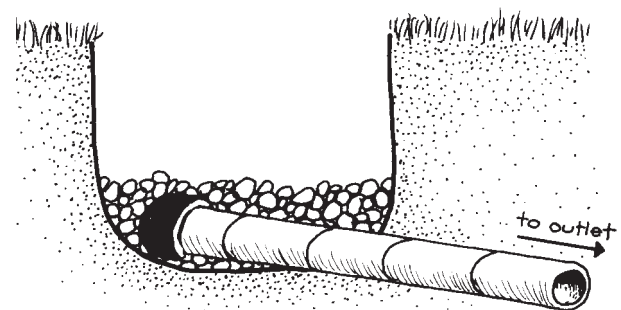


Figure 5. Install a tile system on poorly drained soils to remove excess water. Be sure to extend the tile to a free outlet outside the hole.

Planting your stock

When digging the hole and placing the plant in it, remember that you should set the tree in the ground so that it will be growing at the same level or slightly higher than the level it was growing at in the nursery (figure 6). If it is planted at a deeper level, lack of oxygen may result in root injury or death.

Follow the steps listed for the type of planting stock you have.

1. Digging the hole:

Bare root—Dig a hole that allows the roots to spread. It should be 1 foot wider and 6 inches deeper than the root system.

B&B—Dig a hole 1 foot wider and the same depth as the root-soil ball.

Potted and container grown—Dig a hole 1 foot wider and 6 inches deeper than the size of the pot or container.

2. Placing the tree in the hole:

Bare root—Put a 6-inch mound of topsoil in the bottom of the hole. Prune off any dried or injured roots and place the tree in the hole.

B&B—Place the plant directly in the hole, using care to handle only the ball, not the trunk of the tree. Untie all twine from the base of the trunk and lay back the burlap so that none extends above the soil level. Do not attempt to remove the burlap from the remainder of the soil ball.

Potted and container grown—Put a 6-inch mound of topsoil in the bottom of the hole. Keeping the root ball intact, carefully remove the tree from the plastic, papier mâché, or metal container. If the roots are matted around the surface, unravel them with your fingers. Roots that were at the base of the container may be wound in a spiral fashion. Cut these roots to encourage new root development. Place the tree in the hole.

3. Fertilizing:

You may place slow-release fertilizer (premeasured packet or pill form) in the planting hole. An alternative is to apply a dilute solution of water-soluble “starter” fertilizer after you have finished planting. Do not put ordinary commercial fertilizer in the planting hole. This may injure the roots.

4. Filling the hole:

Fill the hole halfway up with soil and add water to help eliminate air pockets. Continue filling the hole with soil and press it firmly around the roots. Do not step on the soil to press it down. This will compact the soil and may injure the roots. Do not add peat moss, manure or other organic amendments to the soil used to fill the hole. Leave a shallow, dished out area near the base of the tree to allow for easy watering in the future.

5. Water and mulching:

Water well, soaking the entire root area. Apply a 2- to 3-inch layer of mulch on the soil surface above the tree’s root system. Mulch helps to preserve moisture, control weeds, and moderate soil temperature extremes. Wood chips, shredded bark, ground corncobs, or similar materials make good mulches.

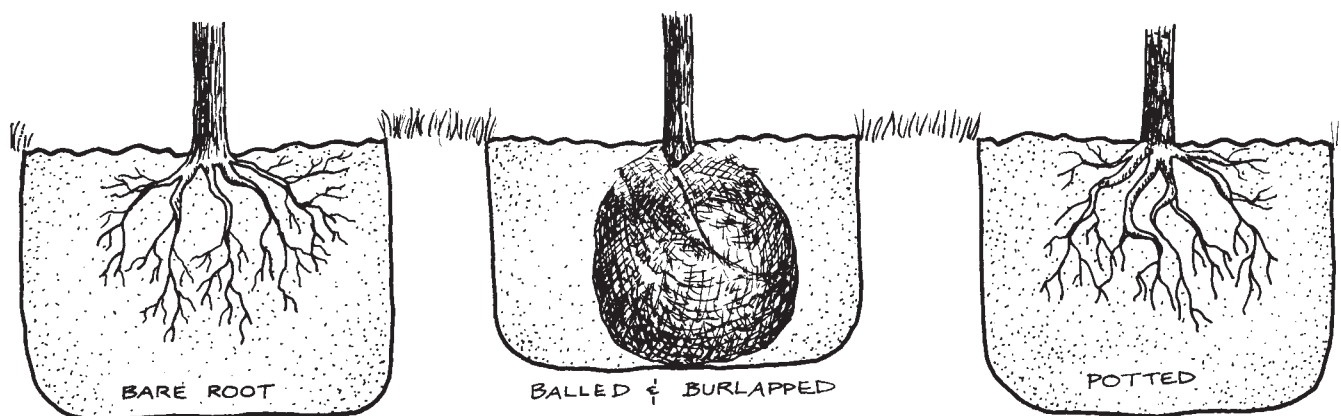


Figure 6. For bare-root or container-grown stock, dig a hole that is 1 foot wider and 6 inches deeper than the root mass. Put a 6-inch mound of soil in the hole and set the tree on the mound. For B&B stock, the hole should be the same depth as the ball. For all types, be sure to set the tree at the same depth or slightly higher than the level it was growing at in the nursery.

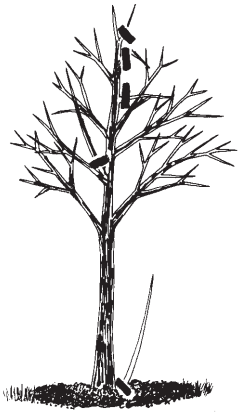


Figure 7. At planting, prune only to remove broken or poorly placed branches.



Figure 8. Wrap young, smooth-barked trees to protect them from winter sun scald.

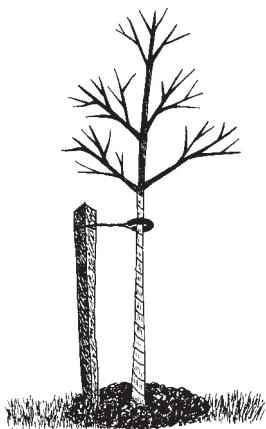


Figure 9. Support small trees by driving a stake into the ground on the west side of the trunk.

6. Pruning:

Limit pruning to the removal of broken, crossing or inward growing branches. Remove multiple leaders, suckers, and watersprouts if present (figure 7).

Caring for your tree

Wrapping

Young trees, smooth-barked ones in particular, are very susceptible to winter sun scald. For protection, cover the trunk with tree wrap paper or strips of burlap. Wrap the trunk from the base up to the first branches and secure with twine. Remove the wrap at the end of the second winter (figure 8).

Watering

Your new tree will require periodic watering for two or three years after planting. A thorough weekly watering is much better for the tree than light daily water.

Don't overwater. If the soil is still wet from a recent rain or previous watering, delay watering until the soil is dry or just slightly damp. Too much water can be just as harmful as not enough water.

Staking and guying

Staking and guying are recommended only for trees that will require support to hold them in an upright position. This support is necessary for trees located in congested or vandal-prone areas or for trees planted on exposed, windswept sites.

For trees with a trunk diameter of less than 3 inches, drive a stake into the ground on the west side of the tree (figure 9). If space is limited and you have to place the stake near the tree, drive the stake in before you plant to avoid injuring the roots.

To prevent bark injury, string wire through a section of rubber hose. Place the hose around the trunk and fasten the wire to the stake. The wire should be tight enough to hold the tree firmly without causing the trunk to bend. Cloth webbing may also be used to attach the tree to the stake.

Trees with a larger trunk diameter, 3 inches or more, should be supported by guy wires. Drive three stakes into the ground around the trunk at equal distances. Remembering to use hose sections to protect the bark, guy wire the tree as shown in figure 10.

You can remove these supports in about a year.

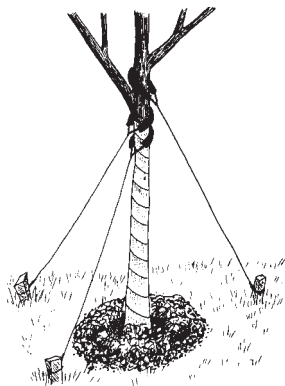


Figure 10. For larger trees requiring support, use guy wires.

Additional information

For more information on tree selection and care, consult the following University of Wisconsin-Extension publications.

A Guide to Selecting Landscape Plants for Wisconsin (A2865)

Caring for Deciduous Shrubs (A1771)

Caring for Your Established Shade Trees (A1817)

Controlling Deer Damage in Wisconsin (G3083)

Evergreens—Planting and Care (A1730)

Landscape Plants that Attract Birds (G1609)

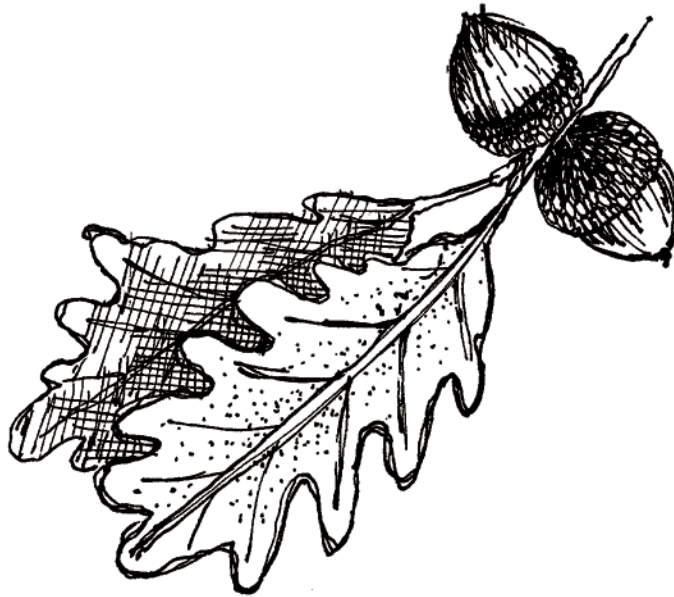
Plants Not Favored by Deer (A3727)

Preserving Trees During Construction (A3072)

Protecting Gardens and Landscape Plantings from Rabbits (G1654)

Salt Injury to Landscape Plants (A2970)

Tree and Shrub Fertilization (A2308)



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