

# Planting Trees in Landscapes

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Trees in landscapes and natural systems provide many benefits to their property owners and the community. Trees increase property value, provide shading to decrease energy usage, reduce air pollution, and reduce storm water runoff. So go plant one! But before getting out a shovel, you need to plan before you plant. Long term success occurs only when the tree's requirements match the planting site, it is planted correctly, and proper post planting techniques are followed.



## Planting Site and Timing

Trees get taller and bigger. This may seem overly simplistic but many people do not think long-term. Trees must be planted in a location that allows sufficient room without interfering with buildings, pavement, sidewalks, and utility lines (above and below ground). The U.S. Forest Service recommends yard trees be placed at least 3 feet from pavement or fencing on all sides, 15 feet from buildings or other trees, and at least 25 feet from overhead wires if a tree will grow larger than 30 feet.

Make sure that the mature height of the tree will not get into overhead utility lines or interfere with buildings, sidewalks or driveways. Call 811 to determine where underground utilities are located. It's the law. Cutting power lines is extremely inconvenient but also dangerous and you can be held financially responsible for the cost of repairs and any other resulting damage. Landowners should become familiar with their community's right-of-way, street trees, and zoning laws. Several cities restrict the species that can be planted, require a one-to-one replacement for removed trees, or require streets and sidewalks to be free of branches at certain heights.

## When to Plant

Trees that are reliably winter hardy can be planted at any time of the year. But, the very best time is in early fall just after they become dormant. Roots grow throughout the winter whenever the ground isn't frozen. Fall planting allows the tree's roots to get established over winter when there is no foliage on the plant.

## Dig a Hole

Measure the height and width of the rootball. The planting hole should be at least two to three times as wide as the rootball. Planting holes should be no deeper than the rootball is high. Poke around in the top of the rootball and locate where the upper roots come out of the trunk. These roots should be no deeper than 1 to 2-inches below the soil surface. Planting too deep can result in suffocation of the fine, absorbing roots.

Once the hole has been dug, carefully place the tree in the hole. Never pick up trees by their trunks or drop the rootball. This can break the rootball and break the delicate roots. Remove all materials from around the root ball and discard them. This includes all burlap, plastic containers, plastic mesh, wire baskets, twine, or metal. All the material must be removed to ensure there is direct contact between the soil in the rootball and the soil in the landscape.

Once the tree is at the proper level in the planting hole, loosen the soil around the root ball to expose the tiny fibrous roots from the densely packed container. But don't go too deep into the root ball. Just loosen some of these roots out of the extremely dense soil on the outside of the root ball. Then backfill the hole with the same soil until it is half full. Break up large chunks of soil into smaller pieces. Do not pack the soil by stepping on it since this will cause layers of compaction. Settle the soil to remove large air pockets by filling the half-full hole with water. After the water has drained away, fill the remainder of the planting hole with soil and settle this soil by watering it again. Form a raised rim around the outer edge of the hole to catch water.



*Produced in partnership  
with the Kentucky  
Division of Forestry.*

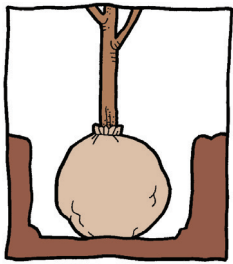
## Watering and Mulch

Most trees and shrubs that die in the first year after transplanting die as a result of too much or not enough water. Long-term watering depends on the amount of rainfall in the area and soil drainage. Soil that drains quickly will require more water than soils that hold water longer. Over watering can be just as dangerous as under watering since tree roots need oxygen.

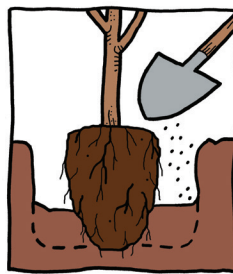
Place about one to two inches of organic mulch on top of the rootball. This mulch can be hardwood or pine-bark mulch from a retail nursery or home improvement store. Bark, sawdust, woodchips, or straw can also be used but do not improve the soil as well as wood chips. Do not use synthetic mulch like rubber, gravel or the weed bar-

rier mats. Also, be careful to not form a 'mulch volcano' by piling mulch against the trunk. The mulch should be about 3 or 4 inches from the trunk. Mulch volcanos increase the chance of diseases and early decay. The large mulch mounds also trick the tree into growing roots in the mulch that will dry out quickly.

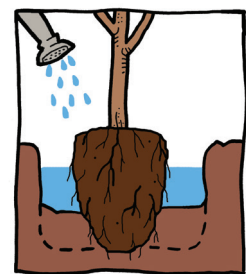
There are many potential problems in planting trees such as circling roots, incorrect soil enhancements, and poor structural pruning. Consult the listed references and websites for more information. With an eye to the future and proper planting techniques, landowners can provide a new tree with a great head start that leads to a long and successful life. Now, go plant a tree!



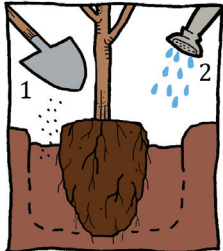
1. Place tree with root ball in a hole at least 2 times as wide (but same depth as the ball). Ensure that the root collar (change in color on tree stem) or surface level of root ball is at soil line.



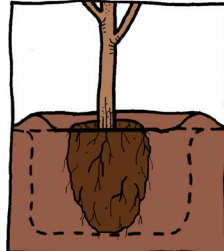
2. Remove and discard the burlap, twine, metal and all other material covering the root ball. Backfill the hole with the same soil until it is half full.



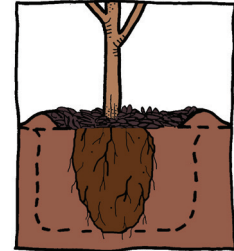
3. Settle the soil to remove large air pockets by filling the half-full hole with water.



4. After the water has drained away, fill the remainder of the planting hole with soil and settle this soil by watering it again.



5. Form basin of soil with raised rim around edge of hole to catch water.



6. Cover soil surface with 1 to 2 inches of mulch (i.e. bark, sawdust, woodchips, straw).

### For More Information

**International Society of Arboriculture:**  
<http://treesaregood.org>

**International Society of Arboriculture Consumer:** [www.treesaregood.org/](http://www.treesaregood.org/)

**University of Kentucky  
Department of Forestry:** <http://ukforestry.org>

### References

Tree Owner's Manual. 2008. USDA Forest Service. Northeastern Area State and Private Forestry. NA-FR-04-07. 39 p.

Fountain, William M. and Sarah Vanek. Planting Balled and Burlapped Trees and Shrubs in Your Landscape. University of Kentucky College of Agriculture Cooperative Extension Service HO-91. 2 p.

Wolf, K. and A. Robbins. 2015. Metro nature, environmental health, and economic value. Environmental Health Perspectives 123, 5:390-8.