

Tree Care and Maintenance

Mulching

Avoid mounding mulch. Apply using the 3-3-3 rule - 3 inches of mulch in a 3 foot ring with a 3 inch space around the tree trunk to avoid creating favorable places for pests and rotting of bark.



WRONG

"Mulch volcanoes" cause many problems for trees.



RIGHT

Mulch wide—not deep.

<http://www.treesaregood.com/treecare/mulching.aspx>

- Inspect plants and soil in the area to be mulched. Determine whether drainage is adequate. Determine whether there are plants that may be affected by the choice of mulch. Most commonly available mulches work well in most landscapes. Some plants may benefit from the use of slightly acidifying mulch such as pine bark.
- If mulch is already present, check the depth. Do not add mulch if there is a sufficient layer in place. Rake the old mulch to break up any matted layers and to refresh the appearance. Some landscape maintenance companies spray mulch with a water-soluble, vegetable-based dye to improve the appearance.
- If mulch is piled against the stems or tree trunks, pull it back several inches so that the base of the trunk and the root crown are exposed.
- Organic mulches usually are preferred to inorganic materials due to their soil-enhancing properties. If organic mulch is used, it should be well aerated and, preferably, composted. Avoid sour-smelling mulch.
- Composted wood chips can make good mulch, especially when they contain a blend of leaves, bark, and wood. Fresh wood chips also may be used around established trees and shrubs. Avoid using non-composted wood chips that have been piled deeply without exposure to oxygen.
- For well-drained sites, apply a 2- to 4-inch layer of mulch. If there are drainage problems, a thinner layer should be used. Avoid placing mulch against the tree trunks. Place mulch out to the tree's drip line or beyond.

- ***Retains soil moisture***
- ***Suppresses weed growth***
- ***Moderates soil temperatures***
- ***Improves soil fertility***
- ***Eliminates need for mowing and weed***

Watering

Browning, wilting, scorch, and dieback are most often caused by lack of water. Don't wait for signs of moisture stress to show before watering.

To make watering even easier, use one of the following techniques:

- Turn on a hose on low for a 1/2 hour at the base of the tree.
- Place a 5-gallon bucket with holes in the bottom at the base of your tree. Fill the bucket up five days a week.
- Add a 25-gallon Ooze Tube or Gator Bag to the base of your tree. Fill it up just once a week, for fully grown trees.

Slow Release Tree Ring Watering System



Nelson Tree Soaker



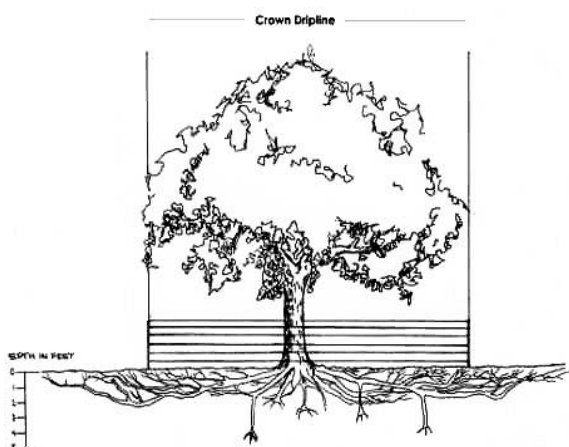
***Water for recently planted trees is essential!
Some water is better than none, but 3-5 gallons a
week, if it doesn't rain is ideal. Water slowly to
avoid wasteful run-off.***

<http://www.caseytrees.org/planting/how-to/tree-care/index.php>
<http://www.bluestonegarden.com/15-gallon-ooze-tube-tree-watering.html>
<http://hardwareaisle.thisoldhouse.com/2009/06/page/3/>
<http://hardwareaisle.thisoldhouse.com/2009/06/page/3/>

Fertilizing

You may begin to fertilize your trees the second year after planting to improve growth rate and density of foliage. Fertilizer should be applied where it is accessible to the entire root system. A tree's root system is approximately twice the radius of the tree's crown, with the smaller nutrient grabbing roots further out and the larger roots closer to the trunk of the tree.

It should also be placed underneath any competing plant systems, such as grass or plants and aligned with the tree's drip zone.



Using the tree's size, determine how much fertilizer the tree needs. Use about one pound of high-nitrogen fertilizer (e.g., ammonium nitrate; 27-3-3), or three pounds of 10 percent nitrogen fertilizer (e.g., 10-6-4) for every inch of trunk diameter at chest height.

http://www.sustland.umn.edu/implement/trees_turf.html

Do not fertilize your tree every year. Remember, too much fertilizer will injure your tree! Scatter or drop the fertilizer under the tree's drip zone.

For example, a tree that is 10 inches in diameter at chest height needs about 10 pounds of high nitrogen or 30 pounds of 10 percent nitrogen fertilizer. This amount of fertilizer should be spread evenly around the tree over an area of 1000 square feet, which is equivalent to a circle about 36 feet in diameter. If less space is available, do not apply the full amount all at once; water it in gradually over a period of several days.

- Apply nitrogen on the soil surface and water it in lightly. Loosen the soil first if it is severely compacted.
- Phosphorous, potassium and calcium should be added to the soil if they are found to be deficient. These deficient nutrients can be sprayed on foliage to alleviate symptoms quickly and to determine a plant's response.
- Apply nitrogen in late winter or early spring. Late season release of nitrogen can make plants more susceptible to cold injury.
- For trees in lawns, apply nitrogen before rapid growth begins and when grass is dry. Water it in. A second irrigation the following day will minimize injury to grass from high concentrations of fertilizer, and will help move nitrogen to the tree roots.
- Nutrients that are sprayed on foliage can be applied as soon as leaves are expanded. Phosphorous, potassium and calcium can be applied at any time.
- Avoid soil compaction and try to maintain moisture at moderate levels. Mulching usually helps.
- Follow the directions on the fertilizer package.

<http://edis.ifas.ufl.edu/ep114>

<http://extension.umd.edu/publications/pdfs/fs789.pdf>

Benefits of Trees

- **Improvement of air quality.** By absorbing carbon dioxide and producing oxygen.
- **Reduce storm water run-off.** Trees reduce storm water run-off by capturing and storing rainfall in its canopy then releasing water into the atmosphere through evapotranspiration. Also, tree roots and leaf litter create soil conditions that promote the infiltration of rainfall into the ground.
- **Cool air and provide shade, thus saving energy.** Strategically placed trees can reduce cooling costs of up to 58%. Trees lower local air temperatures by transpiring water and shading surfaces. The evaporation from a single large tree can produce the cooling effect of ten room size air conditioners operating 24 hours a day.
- **Provide habitat for birds and wildlife.** Trees provide shelter and food for many animals.
- **Provide wind breaks.** During windy and cold seasons trees can reduce the effect of the wind, lowering

Urban tree canopy (UTC) is the layer of leaves, branches, and stems of trees in an urban area that cover the ground when viewed from above. Many of the benefits received from trees (reduction of the heat island effect, carbon sequestration, reduction of energy use, improvement of water quality, reduction of air pollution) come from the amount of canopy cover in an area – the more canopy cover, the more benefits received

heating bills by up to 30%.

- **Protect our water.** By reducing topsoil erosion, preventing land pollutants contained in the soil from getting to our water ways, slow down water run-off and replenishes ground water supply.
- **Buffer and reduce noise.** The sound produced by the wind passing through the leaves helps to muffle noise. According to USDA National Agroforestry Center, tree buffers can reduce noise by as much as five to ten decibels, or 50% as perceived by the human ear.
- **Increased traffic safety.** Tall trees create a feeling of a narrower street; they induce traffic calming measures such as extended curbs and roundabouts. Closely spaced trees give the feeling of speed because they go by quickly, therefore slowing people down. Trees also serve as a buffer between pedestrians and vehicular traffic.
- **Life extension of paved surfaces.** The composition of streets contains oil, which heats up in hot temperatures without tree shade. It then volatilizes and leaves the street unprotected.
- **Improvement of economic sustainability.** A community's urban canopy can attract tourists and businesses, also, businesses leasing office spaces in areas with trees, find that their workers are more productive and there is less absenteeism.
- **Increase of real estate value.** Property value increases 5-15% when compared to properties without trees. Offices and industrial space in a wooded setting is in more demand and more valuable to sell or rent.
- **Promote sales in commercial districts.** trees attract tourists and business and people spend more time along tree lined streets,
- **Reduce crime and violence.** Trees give the impression that neighborhoods are better cared for and that the criminal is more likely to be caught.

- **Add aesthetic value to neighborhoods.** Trees give a neighborhood a sense of place and add value.
- **Add pride to communities.** A well managed urban forest adds a sense of pride and community ownership.

<http://www.coloradotrees.org/benefits.htm>

<http://www.state.sc.us/forest/urbben.htm>