

## Efficient Watering of Trees and Gardens

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Last week I covered how much water needs to be applied to keep lawns and garden plants healthy. As a reminder: the equivalent of one inch of rain per week, or one-half gallon of water per square foot. This week I want to discuss irrigating trees.

I've been promoting keeping trees watered because of some of the stresses and pest problems they've been suffering from in recent years. Pines and spruce that are showing the early stages of decline might be saved by irrigating during the summer. Pin oaks infested with horned oak galls, or tulip poplars covered with scale, will experience less overall stress if adequately watered.

The problem is, many people "irrigate" these trees by placing the sprinkler or a running hose only under the tree's branches. And while this is better than nothing, it does not adequately do the job. As I've mentioned in this column, tree roots spread outwards much further than the end of the branches (also called the dripline). As a rule of thumb, unless blocked by concrete or foundations, tree roots can extend in all directions at least as far from the tree as its height.

As an example: Let's say you have a tree that is 20 feet tall, and its canopy is 20 feet wide, branch tip across to branch tip. If you water only under the branches, you are watering an area of about 300 square feet. If you are watering correctly, you'll need about 150 gallons of water per week.

However, the roots go out 20 feet in each direction, giving a root spread of 40 feet across, root tip to root tip. The roots encompass an area of over 1250 square feet. To irrigate correctly, you would need to apply over 600 gallons of water per week for this tree.

By watering only under the branches, you are applying one-quarter of the water needed for this tree (150 gallons versus 600 gallons). Even worse, about 75% of the roots are not getting any water at all. During a drought, many of the fine feeder roots in this region will die, so even if the tree survives one year's drought, it may have lost a substantial amount of its total root system. That means that if the following year provides abundant rain, the tree won't be able to absorb as much as it needs to recover, because it has to spend time and energy regrowing the lost roots.

Conclusion: the best way to keep your tree healthy is to water your entire yard. And talk your neighbor into watering HIS yard, too, because your roots probably extend into his property. But that's OK...because the roots of HIS trees are in YOUR yard!

For more information on proper watering, or for instructions on how to do a really effective rain dance, contact me by email at [LCaplan@purdue.edu](mailto:LCaplan@purdue.edu).