

Watering newly planted trees and shrubs

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Quick facts

- Newly planted trees and shrubs need regular and consistent watering until root systems establish.
- Root systems of trees and shrubs, whether bare root, balled and burlapped, or in a container, are severely reduced or restricted.
- After planting, root systems will grow and establish until they are much wider than the above ground portion of the plant.



When to water

Newly planted trees or shrubs require more frequent watering than established trees and shrubs. They should be watered at planting time and at these intervals:

- 1-2 weeks after planting, water daily.
- 3-12 weeks after planting, water every 2 to 3 days.
- After 12 weeks, water weekly until roots are established.

How long does it take for tree and shrub roots to establish?

Newly planted shrubs are considered established when their root spread equals the spread of the above-ground canopy. In Minnesota, this will take one to two years.



How to measure tree caliper

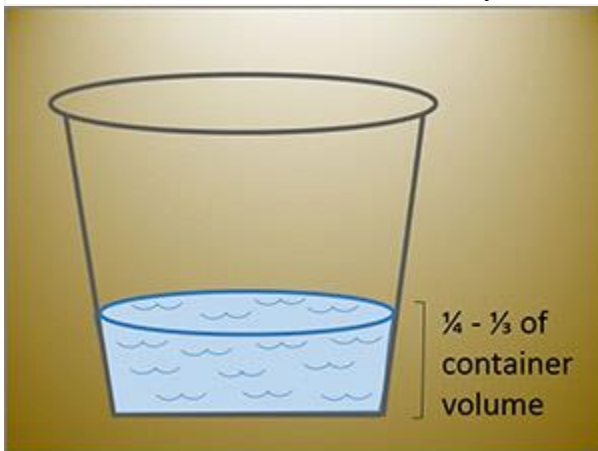
Establishment times for trees increases with tree size. Trunk caliper at planting time can be used to determine the time it takes for roots to establish.

Find the caliper of your tree:

- Measure the trunk diameter at 6 inches above the ground for diameters up to 4 inches.
- If the diameter is more than 4 inches, measure at 12 inches above the ground.

How much to water newly planted trees based on size of trunk

Caliper of tree trunk	Root establishment time	Gallons of water at each irrigat
1 inch	1.5 years	1-1.5 gallons
2 inches	3 years	2-3 gallons
3 inches	4.5 years	3-4.5 gallons
4 inches	6 years	4-6 gallons
5 inches	7.5 years	5-7.5 gallons
6 inches	9 years	6-9 gallons



How much to water newly planted shrubs

How much to water

- When watering newly planted trees, apply 1-1.5 gallons per inch of stem caliper at each watering (see table).
- When watering newly planted shrubs, apply a volume of water that is 1/4 - 1/3 of the volume of the container that the shrub was purchased in.
- As roots grow and spread, irrigation volume will need to be increased.

Where to water

- Apply water directly over the root ball.
- Be sure to keep the backfill soil in the planting hole moist. This encourages the roots to expand beyond the root ball into the backfill soil.
- Tree roots grow approximately 18 inches per year in Minnesota, so expand the area being watered over time.
- Create a water reservoir by making a circular mound of earth 3 to 4 inches high around the plant at the edge of the root ball.
- Use a slow trickle of water to fill the reservoir to allow water to slowly infiltrate into and around the root ball.
- Treegator® bags can also be used to provide a slow delivery of water over the root balls of establishing trees and shrubs.



Make a reservoir over the root ball for watering.



Treegator® bags hold 14-15 gallons of water and release a slow trickle of water over 5-9 hours.



Mulching trees and shrubs maximizes water uptake

When trees and shrubs are planted into turf, competition for nutrients, water, and space occurs below ground between turf roots and woody plant roots. Turf wins because its dense fibrous root system prevents woody plants from producing water- and nutrient-absorbing roots in the top few inches of soil. As a result, woody plant establishment and growth is slower in turf areas than in mulched or bare soil areas.

To optimize root production, water uptake, and establishment of newly planted trees and shrubs:

1. Eliminate turf and weeds from the base of the plant out to several feet beyond the plant canopy.
2. Leave the top of the root ball bare and start the mulch application at the outer edge of the root ball.
3. Apply a 3-inch layer of organic mulch around newly planted trees and shrubs in a circle that extends several feet beyond the tree or shrub canopy.

Mulching around newly planted trees and shrubs with organic materials (wood chips, pine needles, etc.) has several advantages over bare soil cultivation.

Mulch:

- Decreases water evaporation from soil.
- Serves as a sponge that prevents runoff around plants growing in heavy clay soils or on sloped sites.
- Helps to control seed germination and growth of weeds.
- Insulates soil and buffers extreme summer and winter soil temperatures.
- Reduces soil compaction from mowing equipment.
- Prevents damage to stems and trunks by lawn mowers and weed cutters.
- Improves soil health (increases microbial activity, nutrient- and water-holding capacity, soil pore spaces, and air penetration) as it decomposes.

Don't add more than a 3-inch layer of mulch because deep mulch applications may:

- Prevent movement of rain or irrigation water into the root ball of newly planted trees and shrubs. This can result in roots drying up and plant stress.
- Lead to root production and growth in the mulch. This often results in circling and stem-girdling roots.
- Reduce oxygen levels around roots and cause root suffocation.
- Keep poorly drained soils too wet, which favors root rot development.
- Keep bark excessively wet when piled around trunks and stems. This may lead to bark decay.
- Create habitat for rodents that chew bark and girdle trunks and stems.

Kathy Zuzek, former Extension educator

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