

Fertilizing Trees and Shrubs (published 2024-11-16)

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Landscaping can be expensive. So, naturally, we want to take care of all our plants and lawns. Fertilizing is sometimes necessary for the overall health of our investment. Why to fertilize has to do with the type of soil you have, organic matter in the soil, and soil pH (whether it is acidic, neutral or alkaline). These factors affect the availability of nutrients that plants need. A soil test can help you understand your soil and can also guide you in improving the soil. Other considerations include your goals for the plants. Young trees may benefit from fertilizer to promote growth. Older trees may also need fertilizer to maintain growth and overall health. Fruit and flowering trees and shrubs may produce better results with the addition of fertilizer. The bottom line is fertilizers can help plants thrive when deficiencies exist. And deficiencies may be present even with the addition of organic matter. Sometimes, it's just not enough.

First, know when fertilizer is NOT needed. If your trees and shrubs look healthy and are growing, fertilizer is not needed. During drought, if plants are suffering from lack of water, withhold fertilizer. If plants seem okay, fertilize IF you can provide adequate water. Fertilizer can harm plantings during this time. Finally, overfertilizing is harmful to ground water systems, and can cause algae blooms. It can also be harmful to plants, leaving them susceptible to insect damage and stress.

Newly planted trees and shrubs don't necessarily need fertilizer. Their root systems aren't developed, so they may not absorb nutrients, and fertilizer may actually harm them. If a soil test indicates that the pH needs to be adjusted for your plant, then the supplement can be added to the backfill soil.

If you have mature trees and shrubs, fertilize in early spring before new growth begins or in mid-summer for best results. Avoid fertilizing in later summer. If needed, apply fertilizer in early fall to allow trees and shrubs to store nutrients over the winter and use them when spring growth starts.

To know how much fertilizer is enough, there's math involved. Sorry. You need to know how large an area requires fertilizer. The University of New Hampshire has these formulas to calculate area:

“square or rectangular areas: length in feet x width in feet = area in square feet

circular areas: the radius of the circle (in feet) times itself, times 3.14 = area in square feet

half circular areas: ½ times the radius (in feet) times itself, x 3.14 = area in square feet

triangular areas: ½ times the length in feet x maximum width in feet = area in square feet”

Choose a fertilizer with the right proportions of nutrients based on soil needs. Apply the amount of fertilizer per label instructions or as directed by your soil test results. Broadcast the fertilizer to cover the canopy area of the plant. That's where the roots are that take up

nutrients. For trees that are cropped or altered such that the canopy is altered, there's a way to calculate where the root zone is. More math! Clemson University has a formula:

“Diameter at 4.5 feet above the soil level in inches \times 1 or 1.5 = Radius of root zone area to be fertilized in feet.”

One more tip: apply fertilizer in divided doses, meaning instead of one big application, do a few smaller applications. It may help plants absorb more.

Here's an excellent summary from Clemson University, College of Agriculture, Forestry and Life Sciences:

- “Apply fertilizers to shrubs and trees when the soil does not provide these nutrients in adequate amounts that allow for normal growth and development.
- Use visual inspections and a soil test or plant tissue analysis results to determine the need for fertilizer
- Practice the 4Rs of fertilizing plants to maximize plant uptake and minimize losses to the environment: apply the right fertilizer, in the right place, in the right amount, and at the right time.
- Slow-release nitrogen fertilizers are best for woody plants, with one-third to one-half of the nitrogen in a water-insoluble, slowly available or slow-release form.
- Shrubs and trees absorb fertilizer during their active growth period: from spring, when growth begins, to late summer and early fall. Water must be available to dissolve the nutrients so they can be absorbed by roots.
- Broadcasting granular or pelletized fertilizers over the root zone area is an economical and effective method of fertilizing trees and shrubs.
- When shrubs or trees are growing in fertilized lawns, it may be unnecessary to add additional nutrients. Visually inspect the shrubs and trees to see if fertilizer is necessary.”

For more information about gardening, visit UTHORT's YouTube site for helpful videos:
<https://www.youtube.com/channel/UCjS3d1IkIH1OZ1Z2qPvhgfQ>

Or Washington County's YouTube site:
<https://www.youtube.com/@utextensionwashingtoncounty>

How do I ask a question?

If you have a question for the Master Gardeners, submit them to us on our website at www.netmga.net. Click the link at the top of the page, “ASK A MASTER GARDENER” to send in your question. Questions that are not answered in this column will receive a response from a Master Gardener to the contact information you provide.

Resources

“Fertilizing Trees and Shrubs – Fact Sheet,”
<https://extension.unh.edu/resource/fertilizing-trees-and-shrubs-fact-sheet>

“Fertilizing Trees and Shrubs,” <https://hgic.clemson.edu/factsheet/fertilizing-trees-shrubs/>

“Quick guide to fertilizing plants,” <https://extension.umn.edu/manage-soil-nutrients/quick-guide-fertilizing-plants>

“Care of Ornamental Plants in the Landscape,” https://uthort.tennessee.edu/wp-content/uploads/sites/228/2023/11/B%201065_7%20Care%20of%20ornamental%20plants%20UGA.PDF