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Fertilizing Trees and Shrubs

Do Your Trees and Shrubs Need Fertilizing?

Healthy ornamental trees and shrubs do not need fertilizer. A small amount of nutrient stress may be beneficial because this causes woody plants to increase root growth and store more energy. Too much fertilizer results in decreased root growth (as leaves become larger and overall growth accelerates) and increases the sensitivity of plants to drought and pest problems. High-stress, suburban and urban environments are subject to unfavorable conditions that cause symptoms that may be mistaken for nutrient deficiency. Disturbed and compacted soils, wind and heat stress are common causes of reduced growth, poor flowering and eventual decline of woody plants. If you utilize plants that tolerate the growing conditions on your site, they will require less fertilizer or other maintenance.

In nature, trees receive nutrients from the annual drop of leaves and needles; these are often removed from suburban landscapes. If your plants are growing in a bed that is properly mulched with organic materials, the breakdown of these materials will help to replace some of these nutrients. Fertilizer may be useful in conditions where plants have restricted root zones and cannot expand far enough to absorb sufficient nutrients to support healthy growth. Examples are berms, landscape containers, tree pits in sidewalks and parking lots, and narrow planting strips.

Fertilization is not necessary more than once every few years, if at all. We know from years of nutrient analyses that Rockland County soils tend to contain sufficient levels of nutrients. Trees should be fertilized only as needed, as indicated by a soil test. A pH test will determine whether or not the acidity of the soil is in an adequate range (where nutrients will be available) for the plant in question. A nutrient analysis will measure the levels of nutrients in the soil, but cannot tell if those nutrients have been absorbed by the plant.

What's in a Fertilizer?

The major nutrient components in a standard fertilizer are nitrogen (N), phosphorus (P), and potassium (K). A deficit of any of these nutrients will limit growth. Phosphorus and potassium are usually found in adequate quantities in our local soils. Nitrogen is variable, but healthy woody plants generally do not require a boost of this nutrient. Excess nitrogen will encourage the reproduction and survival of some insect pests and increase the potential of disease infection.

A fertilizer label represents a ratio of the percent of N, P and K in the bag, in that order. For example, an analysis of 5-10-5 would indicate 5 percent nitrogen, 10 percent phosphorus, and 5 percent potassium by weight.

The Role of Each Nutrient

Nitrogen promotes leafy growth of the plant, giving it a healthy green color. Nitrates (the source of nitrogen) are water soluble and easily leached by heavy rainfall or watering. Be careful to apply fertilizers where they will not contaminate ground or surface water. When necessary, choose a fertilizer that contains mostly water insoluble (W.I.N.) or slow release nitrogen for a more gradual release of nitrogen over time. Many natural organic or compost based fertilizers release nitrogen slowly, but the soil organisms that release the nutrients require warm weather to work. Do not over-fertilize because this may result in succulent, poor quality, disease and insect prone growth, burning or poor flowering.

Phosphorous is important for root growth and flower and fruit production. Most soils in New York contain adequate phosphorous. If you must apply phosphorus, as indicated by a soil test, make sure it will not run off into a storm drain or other waterway.

Potassium can improve overall vigor, root formation, disease resistance and flower quality of a plant. Like phosphorous, the most effective applications are those made directly to the root zone, as indicated by a soil test.

When to Fertilize

Spring applications of fertilizer may be made just as the leaves are beginning to open. Fertilizers often burn roots if applied in extreme heat. Do not fertilize trees or shrubs from mid-spring through mid-October as an application made at this time may stimulate new growth that may not harden off before winter. Be aware that Rockland County law prohibits lawn fertilizer between December 1 and April 1. This is to protect our water quality; it is wise to avoid fertilizing trees and shrubs at this time as well.

Fertilizer Indications

New Trees and Shrubs

Newly planted trees and shrubs should **NOT** be fertilized the first year. If necessary, begin fertilizing the tree the second year after establishment.

Young Trees and Shrubs:

If indicated, broadcast (scatter evenly) on surface over root zone. Use slow-release fertilizer; follow label directions.

Established Trees:

Fertilizer should not be needed.

Acid-loving Plants (rhododendron, azalea, mountain laurel, holly, andromeda)

If soil pH is above 6.0: Apply up to one pound ammonium sulfate per 100 square feet as shoots begin to grow, as indicated by a soil test.

If soil pH is below 6.0: Since the soil is already acidic, a regular, non-acidic fertilizer may be used. See above.

Methods of Application

Follow fertilizer label directions for rate and application information. Fertilizer “spikes” are easy to apply, but do not break down effectively in Rockland’s heavy clay soils.

Following are the most common application methods:

Broadcast Application

Broadcasting is the simplest means of fertilizer application. Scatter the fertilizer evenly over the root zone. The root zone may extend as much as three times farther than the spread of the canopy of a tree. Water the fertilized area well, but not to the point of run-off. Prevent ground and surface water contamination by avoiding fertilizer applications before a predicted rainstorm.

Subsurface Application

Mostly used by professionals, subsurface applications bring fertilizer close to plants’ roots. This type of application reduces the problem of competition for nutrients with lawn grass. Subsurface water soluble or liquid fertilizers are not more effective than broadcast applications, but may help to keep fertilizer from running off the surface of a slope. Care should be taken to avoid subsurface water contamination.

A Few Precautions

- Do not over-fertilize – use the right amount of fertilizer and make sure it is well distributed. Be particularly careful not to over-fertilize small trees that are susceptible to fire blight, such as 'Jonathon' apple, quince or pear.
- Aphid and adelgid populations are enhanced by nitrogen fertilization. In particular, do not fertilize hemlock with nitrogen; this increases their susceptibility to hemlock woolly adelgid.
- When trees are planted close together, reduce the total amount of fertilizer because the root areas will overlap.
- Don't fertilize trees when the soil is excessively wet. Roots may be damaged by wet soils and adding fertilizer will contribute to root injury. You may also contaminate ground water.

Do Not Fertilize Drought Stressed Plants!

Consider shrubs and turf when fertilizing. Do not punch holes close to the crowns of small shrubs. A heavy application of fertilizer close to these plants can seriously damage their root system or kill them. If you punch holes in turf areas, keep the concentrated fertilizer mixture below the root zone of the grass (approximately four to six inches).

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