When and How to Fertilize Trees, Evergreens, and Shrubs

Soil type is important in determining the need for fertilizer. A fine textured, clay-loam soil will hold more nutrients than a coarse textured sandy loam. However, a tree growing in a heavy compacted soil may still be stunted because of restricted root growth and lack of soil oxygen to facilitate nutrient uptake. Light sandy soils will be low in nutrients and may also restrict growth because of low moisture levels. Alkaline soils may cause iron deficiencies on oaks, birch and silver maples.

Deficiencies in micronutrients and nitrogen will produce a condition known as "chlorosis" or a yellowing of foliage. Low soil oxygen caused by excess compaction can also cause chlorosis. Treat such deficiencies with Super Iron Green ®.

Fertilizers require moisture and oxygen to dissolve and be absorbed by the plant. If excess moisture or a lack of oxygen exists, nutrient uptake cannot take place even with adequate nutrients available. Continued fertilization under such conditions will result in excess fertilizer levels. Then as the soil dries or becomes aerated, excess uptake may occur. Excess uptake will stimulate excessive succulent growth that is structurally weak, less likely to produce flowers, and more susceptible to diseases and insects, such as fire blight or aphids. The high soluble salt concentrations of excessive fertilizer may also damage the tree causing root or leaf burn. Newly planted trees generally should be fertilized at planting time, providing that certain precautions are followed. Fertilization at this time allows deep placement of phosphorus and potassium. Because these nutrients do not move readily in the soil, deep placement will make them immediately available to the new plant to enhance root and top growth. It is extremely important, however, that the fertilizer be mixed into the backfill and not placed in direct contact with the roots. A slow release fertilizer is most desirable for mixing with the backfill. Slow release fertilizers supply only small amounts of nutrients at any one time, so root damage is minimized and a longer-term response is obtained.

A tree under nutrient stress may show:

- slow or stunted growth rate
- reduced leaf, flower or fruit size
- pale green or yellow green coloration of the foliage
- early fall defoliation

When To Fertilize

Most trees in Montana have a single flush of growth in the spring. Now is the time when trees have the greatest need for nutrients. Spring applications may be made as soon as the ground is workable until late May or

early June. Nitrogen should be applied to sandy soils only in the spring.

If a tree is showing symptoms of deficiency, fertilizer may be applied at any time during the growing season to correct the problem. Care must be taken, however, to provide sufficient water for absorption of the nutrients by the plant and prevent fertilizer burn of the roots. During periods of hot, dry weather, two to three inches of water should be applied every two to three weeks to wet the top 12 to 18 inches of an average soil. Heavy clay soils require more water at less frequent intervals, while light, sandy soils require less water at more frequent intervals. Do not apply fertilizer in late August as plants may force a new flush of growth in early September. Likewise do not allow plants to go into the winter under a nutrient stress, as this will also increase winter injury.

Why Do We Fertilize?
Rapid decay of fresh organic materials such as sawdust, leaves and grass clippings can rob the soil of nutrients, leaving your trees "hungry". Proper nutrition will speed growth, improve leaf color and size, make stronger wood and increase resistance to insects and disease.

Methods of Application
All fertilizer must be down where the feeder roots are in order for the tree to benefit. The best way to accomplish this is to put the fertilizer directly into the ground around the drip line, which is the area beneath your tree equal to the spread of the branches. DO NOT apply fertilizers within 2.5 to 4' of the trunk of established trees.

ONE

One method of fertilization is to drill holes in your lawn with a soil auger or punch bar 12 to 18" deep and 2 to 3' apart around the tree's drip line. Fill each of the holes with the recommended amount of tree and shrub fertilizer granules. Top off each of the holes with sand or mulch and water thoroughly, 40 to 50 minutes, to be sure that water has reached the entire root system and allowing fertilizer to begin releasing into the soil. Heavy saturation will also help wash excess salts out of the soil so your trees can make better use of the fertilizer.

TWO (easier method)
Another option for fertilizing your trees and shrubs is the use of a garden hose and the Ross Root Feeding system ®. This is done by connecting the root feeder to your garden hose, and then turning on the water flow valve slightly until a small stream of water flows out of the tip of the feed tube. As water soaks into the soil, insert the root feeder at equal intervals (2-3' apart) all along the drip line until the fertilizer refill has dissolved. The Ross Root feeding system has different refills for trees, shrubs, evergreen and fruit trees, so there is no guesswork.

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