

SOIL TEST INFORMATION SHEET NO. H-850

Prepared by Extension Horticulturist Allen D. Owings and modified by Assistant Professor of Landscape Horticulture Damon Abdi

Trees

1. Recent research shows that trees should be fertilized based on the spread of its root system rather than by the method based on trunk diameter.
2. February and March are the ideal months to fertilize healthy, established trees. If a tree is unhealthy, lacks vigor, or is in an obviously stressful environment, fertilize after leaf-out in April or May. Fertilizing too early can stress the tree, particularly with late spring frosts.
3. Do not apply nitrogen fertilizer to recently transplanted trees. Any fertilization that is done in the first two years after planting should be conducted to promote root establishment and growth. Trees generally do not require fertilizer at, or shortly following, installation.
4. When determining the amount of fertilizer to apply, be aware that trees with columnar shapes (pines, magnolia, bald cypress) have roots that extend three times farther than the reach of the branches. Trees with broad shaped crowns (oaks, maples, elms) have roots extending twice as far as their branches.
5. The first step is to determine the number of square feet in the tree's root zone.
 - a. For columnar shaped trees, multiply three times the distance from the trunk to the tip of the farthest branches, square that number, and multiply by 3.14.
 - b. For broad shaped trees, multiply two times the distance from the trunk to the tip of the farthest branches, square that number, and multiply by 3.14.
6. After calculating the number of square feet in the root zone, apply fertilizer at the rate of 3 pounds of nitrogen per 1000 ft². For example, apply 15-5-10 at the rate of 20 pounds per 1000 ft², 8-8-8 at the rate of 40 pounds per 1000 ft², or 13-13-13 at the rate of 25 pounds per 1000 ft².

Mature evergreen trees can be fertilized at the rate of 1-3 pounds of nitrogen per 1000 ft² every 3 years, while mature deciduous trees can be fertilized at the rate of 3-6 pounds of nitrogen per 1000 ft² every 3 years.

 - a. Calculation explanation: Targeted application is 3 pounds of N per 1000 ft². A 15-5-10 fertilizer is 15% N. Therefore, if 20 pounds of fertilizer is applied to the 1000 ft² area, 15% of the 20 lbs = 3lbs of actual N.
7. If a lawn or ground cover is present under the tree or in the root zone area, do not apply fertilizer in excess of one pound of nitrogen per 1000 ft². This means that the rate should not exceed 7 pounds of 15-5-10, 8 pounds of 13-13-13, or 12 pounds of 8-8-8 per 1000 ft². This applies to broadcast (over the soil surface) application of fertilizer. Remember, fertilize to the needs of the plant that requires the least fertilizer. You can always add more, but you cannot remove it easily once applied.
8. Broadcasting fertilizer over the targeted area is appropriate for most applications. Placing fertilizer in drilled holes is the recommended application method for sites prone to erosion or with compacted soils. Make holes 2" in diameter and 10-12" deep. Holes need to be 2-3" apart in concentric rings around the tree. Be sure to extend holes past the dripline and do not fertilize near the trunk since the tree's feeder roots are at the dripline and beyond. Divide the fertilizer to be applied evenly between the holes and water in.

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9. For newly transplanted trees be careful with “root stimulator” applications. Follow label directions. Do not exceed the recommended application rate or recommended frequency of application.
10. Contact your county agent for additional information and help in your fertilization program. The agent also receives a copy of this report for the parish office files.