

Tech Shares

Deep Root Fertilizer Injection of Landscape Trees with Peters Professional® Fertilizer

By: Fred Hulme, Ph.D., ICL-SF Technical Service Dept.

Most trees and shrubs in the landscape take up the bulk of their nutrients from roots in the top 12" layer of soil. Generally surface applications of soluble or granular fertilizers are quite effective. However deep root injections of Peters Professional® water soluble fertilizer can be advantageous to feed large trees and shrubs grown in heavy clay soils, in compacted soils that are poorly penetrated by soil moisture or in soils that readily fix phosphorus. Additionally this method aerates the soil and does not feed grass or weeds.

Application Details: Fertilizer is best applied in late fall to early spring. First drill holes in the soil 15 to 18 inches deep depending on the injection pressure. Injection sites should be placed two to three feet apart in concentric circles around the tree, beginning 3 feet from the main stem and extending 3 feet beyond the drip-line (adapted from "Fertilizing Trees in the Landscape" KSU extension publication MF-2707).

Fertilizer Selection/ Mixing: Suitable Peters Professional® fertilizers include 30-10-10, 20-20-20, 15-0-15 or 10-30-20 and selection should be based on a soil test. Typically a solution concentration of 5 lb. of fertilizer per 100 gallons of water will work well. Higher concentrations can be considered but will be limited by maximum solubility: 30-10-10 (4.25 lb. per gallon), 20-20-20 (3.5 lb. per gallon), 15-0-15 (5.0 lb. per gallon) 10-30-20 (3.25 lb. per gallon).

Suggested Rates/ Root Area: Apply fertilizer to supply the equivalent of one to two lbs. of N per 1000 sq. feet of root area. Table 1 below breaks this rate down for the Peters® fertilizers listed above applied to specific tree sizes.

- To calculate the root area of any tree or shrub, first measure the distance between the tree trunk and the edge of the canopy (drip line radius). Calculation: Total root area = drip line radius (in feet) x drip line radius (in feet) x 3.14.
- Example: You first determine that the length between the trunk and the edge of the canopy is 2 feet. Calculations: Root area = 2 ft. x 2 ft. x 3.14 = 12.56 sq. feet drip zone area.

Table 1: Rate of Peters Professional[®] fertilizer applied in solution into injection holes per tree/shrub root area (to supply 1 lb. of N per 1000 sq. feet). Double amount of fertilizer applied per tree for high rate.

Distance from trunk to drip line edge	Total root area	Peters [®] 30-10-10	Peters [®] 20-20-20	Peters [®] 15-0-15	Peters [®] 10-30-20
5 feet	78.5 sq. feet	0.26 lb.	0.39 lb.	0.52 lb.	0.79 lb.
10 feet	314 sq. feet	1.1 lb.	1.6 lb.	2.1 lb.	3.1 lb.
15 feet	706.5 sq. feet	2.4 lb.	3.5 lb.	4.7 lb.	7.1 lb.
20 feet	1256 sq. feet	4.2 lb.	6.3 lb.	8.4 lb.	12.6 lb.

Questions regarding use of ICL Speciality Products: Go to <https://icl-sf.com/us-en/>, contact your local ICL Speciality Fertilizer sales person or call customer service at 800-492-8255 or 314-983-7500.

