

Don't Use Soil Amendments When Planting



Photo by David W. Marshall, UF-IFAS Leon County Extension: University of Florida research has shown that soil amendments are of little benefit when planting trees and shrubs.

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A question we get frequently about planting trees or shrubs is what kind of soil amendment should be used in the planting hole.

We have the answer, but it often surprises people. In all but exceptional circumstances, where the soil is very poor, extensive research on planting trees clearly shows that there is NO need to incorporate ANY amendments, fertilizers, living organisms, spores, dusts, powders, gels, humic acids, organic products, etc. into the backfill soil. The best thing to do soil-wise is simply use the loosened soil that came out of the planting hole.

Once you understand where the roots are, this really becomes pretty obvious. Within a year after a tree is planted its roots will begin to grow, mostly in the top foot of soil, out past the branch spread. This spreading of roots will continue until the roots are out about three times the branch spread of the tree. As the years go by, the tree will continue to get larger on top and so will its root system. Thus the small amount of soil amendment that you would add at planting time is inconsequential.

The real limiting factor for a newly planted tree is usually water, because its roots are not widespread enough to absorb enough water in a natural rainfall environment. Trees that are freshly dug out of the ground have much of their root system cut off in the transplanting process. Those grown in pots in nurseries have frequent watering to compensate for the limited root space they have. Frequent watering is necessary to continue this compensation until the roots can grow sufficiently so that a tree functions normally under normal weather.

Another thing that often limits tree root growth is lack of sufficient oxygen. The roots need to breathe, and a compacted soil is not very good for that. Most of our urban soils are compacted. This is why it is recommended to dig the planting hole three times as wide as the rootball. And it is also helpful to loosen the soil out past the hole.

Mulch , beneath and past the spread of the branches in a 2-4 inch layer, will also help soften the soil and create a better rooting environment. Mulch helps protect the soil from compaction and creates a soil environment full of organisms, such as earthworms, that help loosen the soil and enable it to breathe. Take care to put very little (if any) mulch directly over the rootball. You should also soak the rootball with water three times per week unless we are receiving good rainfall.

Finally we are often asked how to fertilize the newly planted tree. Here again, research shows that fertilizing at the time of planting is generally of no benefit to the tree. If you bought the tree in a pot from a nursery, the soil it is in is usually well fertilized. Fertilizer is best applied after the tree has been in the ground for a year. Fertilizing a tree at that point and after can speed up its growth rate. To fertilize a tree simply spread the fertilizer over the surface of the mulch and slightly beyond the branch spread of the tree. How much fertilizer and what kind is best can be determined by a soil test. You can get your soil tested by picking up a kit at the Leon County Extension Center, 615 Paul Russell Road. We are open Monday –Friday, 8am to 5pm.

If you don't do a soil test, select a fertilizer with no phosphorus (the middle number on the fertilizer bag) such as 15-0-15. Many of our soils already have sufficient phosphorus, and phosphorus can be a major pollutant in our lakes. Most of the time if you are recycling your nutrients on site (leaving leaves in mulch beds under the tree) you will not even need to fertilize a tree.

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