



KNOWING IS ½ THE BATTLE: SOIL THERAPY

Soils are more than just dirt they are **alive**. Healthily soils contain thousands of living organisms from microscopic bacteria and fungi to insects and earthworms. These soil flora and fauna provide multiple benefits to trees and shrubs including freeing essential elements from organic matter. Worms and other arthropods are particularly important because they create macropores that plant roots can inhabit and water can move through.

Numbers of Microbes in Healthy Soil

Microbial Group	No./Gram of soil
Bacteria	100,000,000 - 1,000,000,000
Fungi	100,000 - 1,000,000
Algae and Cyanobacteria	1000 - 1,000,000
Protozoa	1000 - 100,000

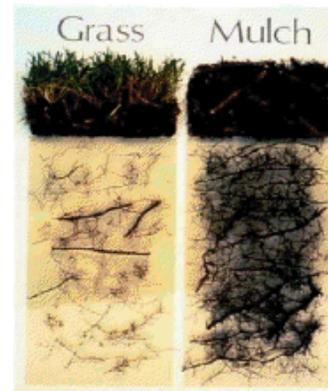
*Sylvia, Fuhrmann, Hartel and Zuberer, 1998.
<http://organiclifestyles.tamu.edu/soil/microbeindex.html>

In forests there is a constant nutrient cycle, but trees in the human environment are removed from that cycle. Leaves are raked in the fall taking away organic material. Many times turfgrass, which produces allelopathic chemicals, is growing under trees inhibiting tree root growth. Studies show that trees mulched properly produce

thicker and healthier fine roots.

In most cases soils have been stripped of there topsoil and compacted during construction activities, which creates an anaerobic environment that microorganisms and invertebrates, like earthworms, can not thrive in.

Plants live in soil, and healthy soils are the key to healthy trees. Our goal as arborists is to return soils in the urban/suburban environment to a healthy state. Our *Fecund Forest Mix* is a blend of organic material (i.e. worm castings), soil microbes (i.e. mycorrhizae fungi and bacteria), and commonly lacking macro and micro elements. Its application method forces the liquid mix into the soil at 150psi breaking up compacted soils and mimicking earthworm burrowing activity.



By performing ‘Soil Renovation’ we are helping trees grow stronger and more resistant to pests and diseases. Annual to bi-annual applications are recommended to mimic the effect of the natural forest nutrient cycle.