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Volume 21

Wildlife Haven in a Single Tree

by Linnea West, MBG Tree Team

Oak leaves provide food for larvae of 534 species of native butterflies and moths including the Tiger Swallowtail, Polyphemus, and Red-spotted Purple.



Tiger Swallowtail



Polyphemus



Red-spotted Purple

These caterpillars are a rich source of protein and fat relished by songbirds. Baby birds can *only* eat soft-bodied larvae. Their parents pluck thousands of juicy caterpillars off trees and shrubs to raise their broods.

Acorns, the nut of oak trees, are a valuable wildlife food for bluejays, quail, ducks, turkey, chipmunks, squirrels, rabbits, raccoons, deer, boar, and bear. From late fall into winter, 75% of a white-tailed deer's diet can be acorns.

Oak Trees provide branches for nesting shelter for songbirds, as well as cavities for owls, opossum, raccoons, squirrels, and furrowed bark to camouflage tree toads, moths and bats. Leaves persisting into winter help give cover through rain and snow.

The magnificent oak trees of Tennessee provide a bounty of food for wildlife and unmatched grandeur for us to enjoy. Plant an oak and admire the show!

Sources: *National Wildlife Federation; Bringing Nature Home*, Doug Tallamy 2009

Learn to ID the Mighty Oaks

Do you wish you could tell one oak from another? On our Memphis Botanic Garden grounds we have 19 species, providing a special opportunity for close examination. Join us on a series of 1½ hour Oak ID Walks this fall led by Bo Kelley and Linnea West. Learn how to recognize these magnificent trees by their leaves, bark, buds, and acorns. Free with Garden admission. Walks are limited to 15. Prior registration required. Call 901-636-4128 . These tours will require significant walking.
Wednesdays 9:00 am, October 17, 24, 31.

Leave the leaves

by Linnea West, MBG Tree Team
 photos by Jan Castillo, MBG Tree Team



Celebrate the beauty of the season and nurture your trees... by doing less.

This fall, do less raking - Have only as much lawn as you truly *want* to have. Less grass means, of course, less mowing - less watering, too.

What leaves you *do* rake, leave as nourishing mulch over tree roots, extending at least as far out as the drip-line. (Start this mulch layer several inches away from tree trunks to prevent rotting the bark.) *

No shredding, please. Native butterflies, moths, and other pollinators over-winter under cover of fallen leaves. If you shred the leaves, you shred them.

Relax and give up double-digging and roto-tilling. Both practices break up soil structure and decrease nutrients available to plants.

Healthy soil roils with beneficial bacteria, fungi, nematodes, protozoa, earthworms, beetles, millipedes, ants, centipedes, springtails, spiders...

These microscopic and macroscopic organisms work in concert, aerating the soil and creating a **food web** that breaks down soil nutrients into a form available to plants.

And most amazingly, **the Plants are in charge!**

From their root tips, plants secrete carbohydrate and protein substances which attract particular fungi and bacteria that feed on these exudates. Larger microorganisms, protozoa and nematodes, swim over to consume the fungi and bacteria, metabolizing and releasing in their waste, the perfect nutrient formula for the plant to absorb through its roots. All of this takes place in the 1/10" rhizosphere around the root tip.



Plants vary the exudates they release to attract the specific fungi and bacteria that will provide the nutrients each plant needs at that precise time of year.

The plants are initiating this process that brings the food they need right to their root zone.

So, rather than thinking of feeding the plants, **feed the soil food web** with natural leaf mulch.

All you need to do is... Leave the leaves on the soil surface. Soil organisms will decompose and incorporate the leaves into the root zone.

Mycorrhizae are beneficial fungi which connect to plant roots creating a symbiotic relationship with the plant. The mycelial network of fine, white filaments, called hyphae, extend root reach and function, helping plants absorb water and minerals and defend against harmful microbes. In return, the plant provides carbohydrates to feed the fungus.

In healthy, undisturbed, non-chemically treated soil, the majority of vascular plants (not just trees) have mycorrhizae benefitting their roots. Chopping up the soil through rototilling or excessive digging breaks apart this vital mycelial network.

Insecticides, herbicides, and chemical fertilizers all destroy the natural nutrient web of the soil. Instead, work with nature and give plants what they really want **Leave the leaves.**

*Please note: Grass covered with leaf mulch over winter will no longer grow.

Know your plants: Some perennials cannot tolerate a mulch of oak leaves. Plant natives that are at home in an oak/hickory forest or add fallen leaves to a mixed compost pile. See Lowenfels & Lewis book below or any good organic gardening guide.

Sources: <https://xerces.org/2017/10/06/leave-the-leaves/>; *Teaming with Microbes, The Organic Gardener's Guide to the Soil Food Web* by Jeff Lowenfels & Wayne Lewis 2010 ed.; *Mycelium Running* by Paul Stamets 2005

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