

NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

By John Ferguson

A study from Spain found that organic practices enhanced the flavor of lemons. Those grown organically had more aroma which resulted in people experiencing better flavor. Journal of Agronomy (2022)

A paper in the Journal ChemSusChem (2021) researchers at Leipzig University discovered an enzyme in a compost pile that breaks down PET plastic. They hope this will lead to a new method of recycling plastic.

Along the same lines, researchers at the University of California-Riverside have discovered a group of microbes that can degrade toxic PFAS (fluorinated carboxylic acids) under anerobic conditions. Journal Environmental Science & Technology (2022)

A question I often get asked is “Why do we need fungi in our gardens?”

There are thousands of species of fungi that live in healthy soil which provide many ecosystem services from balancing nutrients to biodegrading toxic chemicals and providing human health benefits.

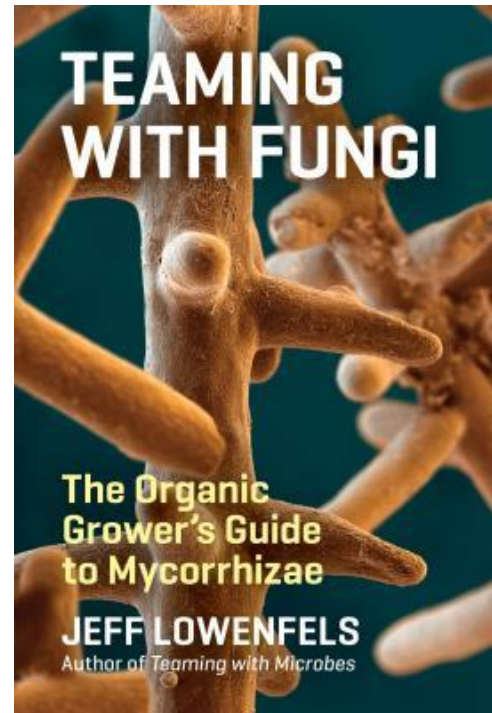
For example, Penn State University researchers have discovered that some fungi produce a chemical called ergothioneine (ERGO) that is sometimes called the “longevity vitamin” due to its potent antioxidant properties.

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Recent research suggests that a lack of this chemical in our diet, often results in increased incidences of chronic diseases of aging, like Parkinson's, Alzheimer's and reduced life expectancy.

Ergothioneine is both an antioxidant and an anti-inflammatory chemical produced by soil fungi. When we till the soil, we destroy the fungi that produce this important nutrient. Journal of Agronomy 2022

Fungi are essential for healthy plants and healthy soil. A great book for gardeners on fungi is **Teaming With Fungi: The Organic Grower's Guide to Mycorrhizae**, by Jeff Lowenfels, Timber Press, 2017, ISBN: 978-160469-729



Recently, a customer called us about mature Red Bay trees dying in the Kingwood area. Texas A&M AgriLife recently sent out a paper on this disease called "Laurel Wilt". The pathogen that causes this disease is *Raffaelea lauricola* which affect trees in the family *Lauraceae*.

This disease has now been found in 14 East Texas counties. The two largest tree groups affected by this disease is red bay and sassafras trees. Other trees that may become affected are swamp bay, spicebush, and California Laurel. The article mentioned that Avocado trees may eventually be affected.

This disease is spread by the ambrosia beetle which can carry the disease from diseased trees to healthy trees. Weakened or stressed trees attract the beetles hence keep susceptible trees healthy.

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Apply a good organic fertilizer like Microlife, apply trace minerals like Re-mineralizer, and use a good compost or composted native mulch out from the trunk to at least the dripline for best results.

Last issue I mentioned a book I had ordered on weeds. It was written in 1950 by Professor Cocannouer from decades of observing the plants we call weeds, how and why they grow.

Many plants benefit from having weeds growing with them and produce larger harvests and have increased insect and disease resistance.

He found that many if not most weedy plants improve the soil. The benefits range from creating soil structure and breaking up compacted layers to bringing up nutrients from deep in the soil.

He wrote this book as the toxic chemical rescue methods were becoming popular after WWII was over and this wisdom was forgotten. In recent years many articles are showing up in the soil science and agronomy literature on the benefits of weeds. Rediscovering what knowledge was lost. ISBN 978-1-329-20916-9.

