



NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

Before I get started with my column, I want to give a round of applause to The Garden Club of Houston for bringing Dr. Doug Tallamy in for a lecture this past Wednesday.

Doug gave an outstanding talk and the auditorium was overflowing and extra chairs had to be brought in. The lecture was about why and how we need to continue to change our gardening habits

Doug mentioned several states and cities that are paying folks from California to the Atlantic to remove the imported species and replace them with natives.

Plants we used to call weeds are now called lawn herbs and feed our pollinators. Locally, The Woodlands is paying 50% of the cost to purchase natives up to \$300 per household per year. San Antonio has been doing it for years.

Doug made a point that all the residential lots were added up (total acreage), and if only 20% were planted in natives, it would provide more habitat for pollinators, birds and other wildlife than all of our national parks combined! He calls it "Home grown National Park". His website www.homegrownnationalpark.org, is where one can register their yards and gardens or any other property they have and see the progress we are making.

He has written several great books that every serious gardener or homeowner should read.

"Bringing Nature Home - How You Can Sustain Wildlife with Native Plants" by Douglass W. Tallamy, Timber Press, 2014, Edith Printing, ISBN-13: 978-0-88192-992-8

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"Nature's Best Hope- A New Approach to Conservation That Starts In your Yard" by Douglass W. Tallamy, Timber Press, 2019, ISBN-13: 978-1-60469-900-5

"The Nature of Oaks – The Rich Ecology of Our Most Essential Native Trees" by Douglas Tallamy, 2021, Timber Press, ISBN: 978-1-64326-044-0

Personal Note from a previous newsletter: I am a big fan of Dr. Tallamy and his insight into the natural world that God has given us. However, this insight has cost me a lot of money.

After reading his first book ("Bringing Nature Home - How You Can Sustain Wildlife with Native Plants"), I was so inspired that my wife and I accelerated our plans to buy some land in the country near La Grange for our retirement home. Over the last six years since then, I have planted over 2,300 trees and shrubs (142 species) as part of a habitat restoration on the property. It has been very rewarding to watch the land heal and wildlife return.

Next, I read his book ("Nature's Best Hope- A New Approach to Conservation That Starts In your Yard") a few years ago. This caused me to start replacing many imported plants with native plants in both my yard and at our nursery (we now specialize in native plants as much as possible).

After the big freeze a couple months ago (Uri), I am even more interested in hardy native trees and plants. Many of the native plants at the nursery were in full bloom the day after the freeze lifted and just laughed off the cold.

Now he has done it to me again! As soon as I heard about his new book above (Nature of Oaks), I ordered it and it arrived last Friday afternoon. I was fascinated by his description of Oaks and what they do for us hence I finished it on Tuesday of this week (only 4 days). Now

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again he is going to cost me a lot of money. I learned that of the many oaks species I planted as singles for diversity, they are more effective when planted in groves of at least 3-5 trees each. Now I will have to purchase a few dozen more trees of each of the species previously planted, as I want the restoration to be as effective as possible.

Over the last couple years there is more and more research coming out on the benefits of plants and our health, especially with herbs. The magazine Life Extension (December 2021) talked about a few of these a couple months ago.

The herb Bacopa (*Bacopa monnieri*) is traditionally used in Ayurvedic medicine to treat inflammation, pain, asthma, and dementia. Ancient texts state this herb was used to enhance memory and sharpen the intellect. Recent studies have shown this herb can improve cognitive performance.

Another herb to boost brain function is Gotu kola (*Centella asiatica*). As one can guess from its botanical name, it is a flowering plant from Asia. In addition to its cognitive properties, it has also been found to stimulate the growth of new nerve cells in the hippocampus.

Green tea (*Camellia sinensis*) has been found to provide several health benefits including a reduced risk of cardiovascular disease. Journal of Clinical Nutrition 2021

Researchers in Europe have identified a specific strain of Sage (*Salvia officinalis*) which is another herb being studied for its brain boosting effects. They found that sage extracts from this particular strain they identified provided 60% better cognitive performance of memory and 2.5-fold improvement of attention in the test subjects. Life Extension November 2021

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French maritime pine bark (*Pinus pinaster*, *Pinus maritima*) has been studied for over 50 years for its beneficial antioxidant and anti-inflammatory compounds that promote arterial health. Life Extension November 2021

As mentioned above a common lawn herb is common Purslane (*Portulaca oleracea*) often seen growing in cracks in concrete and other tough places. This lawn herb has been found useful in treating spastic paraplegia. It is also an extremely rich source of essential Omega 3 fatty acids, and is considered a delicacy in Mexico. Useful Wild Plants, Fall 2021

A new area of research is using scents as an insect pest control. Many predator insects that feed on the pest herbivorous insects, produce odors that pests can sense. When pests smell these odors, it changes their behavior and sometimes their physiology in an effort to prevent being eaten. (American Chemical Society 2021).

Gardeners have already seen the benefits of using garlic oils to get rid of mosquitoes (highly effective) and it does not kill all our butterflies and other beneficial insects or the birds whom eat the poisoned insects as the mosquito spray systems do.

With spring right around the corner many of us are thinking about mulching our gardens.

A few things to remember, while pine needles make a good mulch most of the time, the chemicals called terpenes in them inhibit the seed germination of many species.

Wood products that have not been composted like raw wood or dyed mulches can cause a nutrient tie up problem hurting the plant as shown in the pictures below.

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Slide courtesy of Randy Lemon



Odors are another warning sign of low quality and potentially dangerous mulches and composts.

1) Anaerobic organic acids have a strong odor from putrefying organic matter. The odor varies depending on feedstock or material and what is going on, however they are all very bad. These type organic acids form under conditions without oxygen (fermentation) which also produce alcohols. Plant roots are very sensitive to alcohols **as little as 1 ppm will kill most plant roots.**

Acetic acid - vinegar smell, loss of N₂ and P, alcohols present

Butyric acid - sour milk smell, alcohols present

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Valeric acid - vomit smell, alcohols present

Putrescine - rotting meat smell, alcohols present

2) Ammonia – implies an immature mulch or compost (phytotoxic) and a loss of nitrogen

3) Rotten egg (H₂S) - implies an immature mulch or compost (phytotoxic) and a loss of sulfur

4) Color: Is often an indicator of potential problems with mulch or compost and other organic materials. A true black color does not occur naturally in mulches or compost under good and healthy conditions, only a deep chocolate brown color. However, many people believe black is good and some unscrupulous vendors like to take advantage of this idea.

Black organic materials in nature occur when materials decompose under anaerobic conditions (without oxygen). These conditions favor disease and other pathogens and use a different set of microbes to decompose the material. As a result, pure “black” compost or mulch does not have good fertility, indicates anaerobic decomposition with its pathogens and other problems. The sulfur is gone (out gassed as H₂S), nitrogen is gone (NH₃) or in wrong form, and alcohols are usually present (1 ppm kills roots). Good composted mulch is a deep chocolate brown when dry and has a wonderful rich earthy fragrance.

Industrial wastes are often used to blacken products for marketing purposes. For example, some companies grind up old railroad ties to help darken material (Illegal in some states). The creosote used as a preservative is a known carcinogen.

Smelter wastes are sometimes used as feedstock to blacken products. Copper sulfate (CuSO₄) or other sulfur compounds may be present. As they breakdown elemental sulfur (S) may be produced which is a natural fungicide that kills the beneficial fungus that helps plants grow and prevents disease.

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Boiler ash (bottom ash) is another industrial waste product used to color or blacken products. Boiler ash tends to be high in salts and extremely alkaline and comes from the burning of coal. The alkalinity is so strong that it will chemically burn raw wood black in a couple days. The black mulches produced using these toxic chemicals tend to be very alkaline with high levels of salt, with very high carbon to nitrogen ratios. Some ashes may contain large amounts of heavy metals that contaminate the mulch exceeding federal regulatory levels for safety. These mulch products will often turn a bleached grayish color in a few weeks after exposure to sunlight. These type products are very common in many areas.

Many of the waste chemicals used to make mulches dark (black) are carcinogenic. As our pets roll around in them guess what happens, cancer in dogs and cats have increased greatly.

Gardeners need to be careful as there are often more bad products than good, as most vendors just want your money and do not care if you get hurt or have bad results.

This picture is from an advertisement for making colored mulch.

COLORED MULCH = INCREASED PROFITS



Broad range of Colorfast colorants

- ▶ Mold and fungus resistance available
- ▶ Can color in any grinder
- ▶ Most cost-effective coloring unit

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As you can see by the photo above dyed mulches are often made from trash wood. If any soil yard is selling dyed mulches, they do not care about you the customer, your health or safety.

The same applies to landscapers and yard service companies whom use these mulches, they are very ignorant or do not care and just want your money.

As the old gardening proverb states: ***I have no quarrel with a man whom has a lower price, whom better knows what his product is really worth.***

Or in other words, one gets what they pay for.

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