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## **JOHN'S CORNER:**

### **NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS**

*by John Ferguson*

A while back I was at a lecture at Rice University and it was stated that there are now over 42 million food gardens in the United States. Have you ever wondered why are so many people growing their own food? OHBA's (Organic Horticulture Benefits Alliance) next seminar will address this issue on April 30<sup>th</sup> at the United Way facility. One can register at [www.ohbaonline.org](http://www.ohbaonline.org).

*"The Soil Microbiome, Ground Zero of our Modern Disease Epidemics"*

Dr. Zach Bush, triple board certified with expertise in internal medicine, endocrinology, diabetes, hospice care and chemotherapy is a strong believer that our health is dependent on the quality of our food. From this presentation you will gain incredible knowledge on the connection between the soil & gut microbiome. Learn what foods to eat & what foods to avoid. Discover how to have a healthy, long life & free of diseases.

The connection between our health by microbes in our gut and the microbes in the soil continues to grow. A recent paper in the Journal Nature by the European Molecular Biology Laboratory have identified 2,000 new previously uncultured gut bacteria species. It is believed that thousands more will be discovered as data from Africa, South America, and Asia are included. When we use toxic chemicals on the soil to grow out crops these beneficial bacteria are destroyed, hence they are not in our food and do not make it to our digestive system. Since our digestive system and the microbes that live there are a major part of our immune systems, we become more susceptible to health problems. Another reason to buy organic.



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A paper published in the British Journal of Nutrition reviewed 343 studies regarding the compositional difference between organic and conventional crops. They focused on secondary plant metabolites critical for our health (antioxidants, vitamins, chemical pesticide residues, toxic metal, macronutrients and minerals (trace elements). They found that switching from artificial fertilizers to organic fertilizers lead to significant changes in the plant's gene and protein expression patterns and the secondary metabolites that plants produce. The organic crops contained more antioxidants, phenolic acids, flavanones, stilbenes, flavones, flavonols, and anthocyanins. These chemicals have been associated with a lower risk of chronic diseases like cardiovascular disease and cancer. The non-organic crops (conventional) had more toxic metals like cadmium (Cd) and four times more pesticide residues, that lead to behavioral and learning problems, breast cancer, and a weakened immune system.

A recent analysis by Consumer Reports tested 45 different fruit juices (apple, grape, pear, and blends). They found elevated levels of arsenic, cadmium, and lead. Children exposed to heavy metals experience lowered IQ, cancer, type 2 diabetes, and behavioral problems.

A report by the Organic Consumers Association has found that DowDuPont buried the truth about the dangers of the pesticide chlorpyrifos similar to how Monsanto buried the truth about the toxic herbicide Roundup. Chlorpyrifos is a neurological toxicant that damages the brains of young children and fetuses even at very low levels. Effects include decreased cognitive function, lowered IQ, attention deficit disorder, and developmental and learning delays. This dangerous pesticide is used on over 50 crops and has been banned by most other countries.

There is hope for the future. A new study published in the journal Environmental Research (2019) has found that switching to an all organic diet for just one week reduced the levels of pesticides found in all participants by an average of 60%. They found a drop of 61% on chlorpyrifos mentioned above. Our bodies will heal themselves if given proper nutrition.

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101 Sherbrook Circle • Conroe, Texas 77385-7750  
(936) 321-6990 Metro • (936) 273-1200 Conroe • Fax (936) 273-1655



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Moms Across America funded testing on glyphosate in the top selling brands of orange juice labeled as “Natural”. They found Round-Up in the top six selling brands; Florida’s Natural, Tropicana, Minute Maid, Starter Bros, Signature Farms and Kirkland. The sad part is that they charge customers extra to include this poison in their orange juice products and it is definitely not Natural.

Several times in recent weeks we have had customers asking about problems with their Japanese Maples that appears to be salt damage. Japanese Maples cannot tolerate salt. When I give talks to garden clubs I often talk about the issue with salt and growing plants. Many of the soils around Houston are naturally high in salt. Many common products sold for use in horticulture are high in salt (all artificial fertilizers, cow manure, poultry manure, poultry manure fertilizers, spend mushroom substrate aka mushroom compost, etc.). Even water from some of our wells, recycled irrigation water, and especially water from sewer treatment plants also contain salts. When we think of salts, we most often think of table salt which is sodium chloride (NaCl). However, there are many additional types of salt that can form from sulfates or chloride. When we water with municipal water which has chlorine in it, it will react with many types of metal ions and form salts.

Salt damage may take several years to show up as they build up in the soil. Plants may become stunted, off colored leaves (blue green tint), yellowing, tip burn, etc. If you have a salt problem some species of plants are salt tolerant. For example, Oleanders are very salt tolerant do very well in the soils around Houston. Many desert plants are also salt tolerant.

Research by the University of Oklahoma published in the journal Ecology (2019) has found that insects crave salt (NaCl known as sodium chloride or table salt). They studied 32,430 species of insects and found they all search out salt. All animal life needs lots of sodium but plants only require small amounts. This means that plant eaters like insects require salt and search out plants high in salt to eat. When one uses high salt products like cow manure, poultry manure,



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mushroom compost, etc.) we increase the salt content of the soil and in the plants growing in the soil which then attracts more insects. This is another reason to use a good quality low salt organic fertilizer.

Many artificial fertilizers acidify the soil and when the soil becomes acidic aluminum (Al) becomes soluble and available to plants causing root growth problems, yellowing, stunted growth, or even death of the plant. We then have to add calcium (Ca) to the soil to help neutralize the problem. This is another reason to use a good organic fertilizer. My favorite brand is Microlife™ and it is available at most nurseries all over the region and they are financial supporters of this newsletter.

Cancer and other health problems in our pets has exploded in recent years. The Tuft University School of Veterinary Medicine has found that cancer in the family dog (s), is caused by toxic lawn chemicals. A summary can be found below. If toxic lawn chemicals are causing cancer in our pets then what is it doing to our children?

[https://emagazine.com/canine-cancers-linked-to-lawn-care-chemicals/?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=earthtalk\\_this\\_week\\_march\\_13\\_2019&utm\\_term=2019-03-12](https://emagazine.com/canine-cancers-linked-to-lawn-care-chemicals/?utm_source=newsletter&utm_medium=email&utm_campaign=earthtalk_this_week_march_13_2019&utm_term=2019-03-12)