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JOHN'S CORNER:

NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

by John Ferguson

A multi-university led by Northern Arizona University published in the Journal Science (Science Daily, June 30), was on microbes and carbon dioxide (CO₂) usage by plants. Many studies have suggested that increasing carbon dioxide in the air will make plants grow faster. However, this only holds true if other nutrients like nitrogen (N) are available. They found that Ectomycorrhizal fungi on tree roots can collect nitrogen from the soil even when it is scarce. At the same time the arbuscular mycorrhizal fungi do not provide the same benefits to grass. Without nitrogen, the CO₂ had no effect, which confirms that nitrogen limits a plants response to rising CO₂ in the atmosphere. Arbuscular mycorrhizal fungi specialize in collecting phosphorous (P) not nitrogen. They found, that it was only the plants that form Ectomycorrhizal fungi associations that could use the extra CO₂. This is another reason not to use toxic fungicides, as it will limit plant growth.

Another benefit of mycorrhizal fungi is to help pecan trees obtain water even in drought conditions. Arbuscular Mycorrhizal Pecan Seedlings Alleviate Effect of Restricted Water Supply, HortScience 51(3):212-215, 2016

In the online Journal mBio in June 2016, a study from The University of California has found that the microbes in the soil affected the terroir of wines. The microbes were responsible for specific chemical components in the finished wines. This supports the belief that organically grown wines have better flavor as organically managed soils have much healthier microbiology.

The journal Nutrition had an article showing that eating grapes help counter oxidative damage to our eyes and increase the health of our retina. Note: Other papers I have read found that grapes with seeds had far more of the beneficial compounds.



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A study by the University of Wisconsin-Madison in the journal Scientific Reports July 2016 (Science Daily) confirmed that a good bacterium (*Wolbachia pipientis*) can block the transmission of the Zika virus in mosquitoes. This same bacterium blocks the spread of the diseases from dengue and chikungunya viruses. This good bacterium is found in 60 percent of the worlds insects. They found that mosquitoes carrying this bacterium could not transmit the virus.

For those concerned about the dangerous effects of GMO foods on our health the Organic Consumers Association has published a report on how much money in campaign contributions (bribes) is being paid to our congressional representatives to block GMO labeling. It is found at: https://action.organicconsumers.org/o/50865/p/dia/action3/common/public/?action_KEY=18302

An article on Modern Food Processing on the Dr. Mercola's web site (July 2, 2016) talks about how gluten from wheat and other grains is affecting our health. Wheat and other grains contain many times more gluten than 50 years ago. Then bread makers then often add extra gluten to create a more spongy texture. Gluten stimulates a molecule in our gut that opens up the cell lining leading to what is known as "leaky gut syndrome". The full article can be found at: <http://articles.mercola.com/sites/articles/archive/2016/07/02/gluten-food-processing.aspx>

Many of our common health problems are tied to what's happening to our gut. The problem becomes worse as farmers now spray mature wheat with glyphosate (i.e. not being used for weed control) since it increases the yield and makes the wheat easier to harvest (used as a desiccant). This complicates our health as glyphosate kills good bacteria. It was patented as an antibiotic in 2001 (US Patent #7,771,736)! Glyphosate has firmly been linked to many health problems as the chart below indicates (anything over 0.9 is an extremely strong correlation). As the amount of glyphosate applied has increased (red line), our health problems have increased.

Note: I once heard the numbers in the chart below explained using this analogy. In the game Russian roulette, using a six-shooter there is one bullet or a 0.166 chance of dying. If one puts five bullets in the gun there is still only a 0.83 chance of dying. If the EPA, USDA or FDA was evaluating the dangers of the gun they would say there is no proof of danger, since one time out of six, it does not kill you.

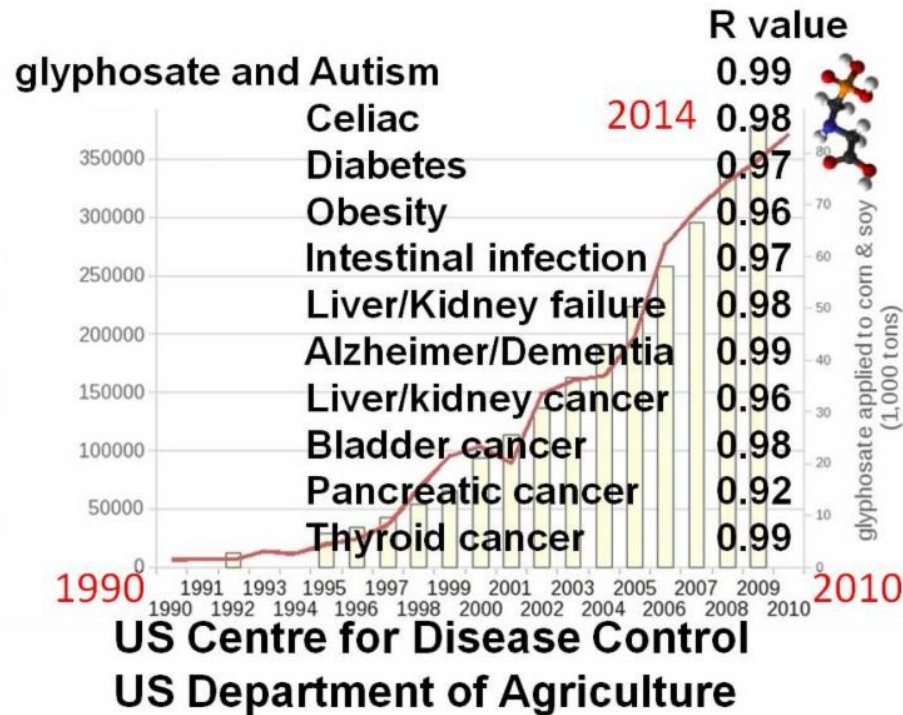


Chart courtesy of Dr. Thierry Vrain from his lecture at Rice University a few months ago sponsored by the Organic Horticulture Benefits Alliance (OHBA).

Many studies have shown that glyphosate accumulates in our tissues over time. Glyphosate was originally patented as a demineralizer to clean pipes (US Patent # 3,160,632). As a result, it ties up the nutrients we need for good health and prevents them from being absorbed by our bodies.

A question that I often hear is "How does this happen?" Here are a couple reports that our government agencies are not doing their jobs.

An article in the Health Freedom Alliance newsletter reported that due to an investigation by the Inspector General's Office, a federal lab was closed in January for falsifying safety data for 18 years.



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The Pulse of Natural Health Newsletter also published an article on corruption in the FDA allowing unsafe toxic drugs, etc. to be released: <http://www.anh-usa.org/systemic-corruption-at-fda-reported/>

A couple good books on the subject are:

PHARMOCRACY - How Corrupt Deals and Misguided Medical Regulations are Bankrupting America -- AND What to Do About It, William Faloon, Praktikos Books, 2011, ISBN: 978-1-60766-011-8

FDA - Failure, Deception, Abuse - The Story of an Out-of-Control Government Agency and What It Means For Your Health, Life Extension Foundation, Praktikoa Books, 2010, ISBN: 978-1-60766-001-9

An article in the Food Revolution Network newsletter (June 29, 2106) summarizes a lot of research on the spice curcumin from the turmeric plant (*Curcuma longa*) which is a member of the ginger family. It was found that it heals spinal cord injuries better than surgery or drugs. Curcumin has also been found to reduce inflammation and to have anti-cancer properties. They found that the chemical piperine, which is in black pepper, helps increase the absorbability of curcumin. The June 2016 issue of Life Extension mentioned that curcumin also interferes with the development of prostate cancer.

A paper presented at the Exposition of the American Chemical Society found that blueberries help prevent cognitive impairment. Fresh blueberries work best. We have many varieties of blueberries that grow well in the Houston area, which can be added to ones garden.

A paper by the American Academy of Pediatrics (April 30, 2016) found that in areas where mosquito spraying occurred there was a 25% higher chance that children would have an autism disorder.

In the Journal Nature Plants, there was an article by researchers at Washington State University called "Organic Agriculture key to feeding the world sustainably". They reviewed hundreds of studies that showed organic farming can produce sufficient yields, be profitable for farmers, protect and improve the environment and be safer for farm workers.



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There was a good article in the February 2016 issue of the journal Environmental Health Perspectives called "Healthy Ground, Healthy Atmosphere: Recarbonizing the Earths Soils". Things like using cover crops increased corn yields by 36-44%. They found that conventional agriculture practices deplete carbon levels in the soil (organic matter) and reduce the amount of micronutrients in the soil. The result is that plants growing in this soil and that livestock that eats the plants contain lower amounts of vitamins and minerals necessary for optimum human health. If we want healthy soils, to grow healthy plants from flowers to fruits and vegetables, gardeners need to use good quality sources of organic matter that is found in good compost and humates.

Several studies have now confirmed that people whom eat butter from grass fed cattle (not feedlot, grain fed beef) have fewer heart attacks. Butter from grass fed beef is a major source of heart healthy nutrients. Butterfat is highly complex as it contains 400 different fatty acids, and many fat-soluble vitamins. Many of the fatty acids in butter can affect our physiology and biochemistry leading to major health benefits. Grass fed butter is much higher in Omega 3 fatty acids and vitamin K-2. CLA (conjugated linoleic acid) found in butter has powerful health effects and is popular as fat loss supplement. Grass fed butter has five times more CLA than grain fed. A study from Australia found that people whom ate the most full-fat dairy has a 69% lower risk of heart disease than people whom ate the least.

As I was writing this article another report on butter came in. In the July 06, 2016 newsletter from the Health Freedom Alliance, there was another article on the benefits of real butter. Between 1920-1960 the consumption of butter dropped from eighteen pounds per person per year to four pounds per year. At the same time, incidents of heart disease rose to become the number one killer! A few points they mention is: butter contains the most easily absorbed form of vitamin A, it contains a number of antioxidants to protect against free radical damage that weakens our arteries, it contains vitamin E, and it is a rich source of selenium (Se) containing more per gram than herring or wheat germ. One study found that men that ate butter had half the risk of developing heart disease than those whom ate margarine. I quote "People have been eating butter for a long, long time. Heart disease, cancer, and diabetes were virtually unknown until the last century or so. When we started eating Crisco, margarine, soybean, canola, and cottonseed meal we got sick". Just a tablespoon of butter per day was linked to a 4% reduced risk of type 2 diabetes. Cows fed GMO grains, that are drugged, vaccinated, and

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kept in small quarters (feed-lots) result in toxic milk and butter. Only purchase butter from organic grass fed cattle then the health benefits are endless. Note: Conventional butter contains pesticides, antibiotics, and added growth hormones. Butter's beneficial components include antioxidants, butyric acid for colon health, CLA, iodine (I) lauric acid for the immune system, lecithin to protect our cells from oxidation, vitamins A, D, and E, and vitamin K for proper blood clotting and bone health. Every cell in our body contains saturated fat and cholesterol, which contributes to proper digestive function, growth and other essential processes.

Speaking of omega-3 fatty acids, a paper in the Journal Translational Psychiatry has found that eating omega 3's supports a reduction in major depressive disorders.

We have known for some time that eating fresh broccoli 3-5 times per week can reduce the risk of breast, prostate, and colon cancers. Research from the University of Illinois has found that it helps protect against liver cancer also. The reasons to have a vegetable garden or at least buy fresh local foods continues to grow.

Our health starts with the soil and how we take care of it (do not destroy it with toxic horticultural chemicals). We are told in the bible to "study nature and let it teach us". The more this is being done we find how marvelous God's creation is.