



NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

By John Ferguson

A nationwide study has found a link between the built food environment (fast food) and the connection to chronic diseases like heart disease, type II diabetes, and certain types of cancers. Journal of The American Medical Association (2021)

If you remember researchers at MIT University also found an extremely strong link to getting Covid-19 and fast food. Fast foods use a lot of GE products that are full of the herbicide glyphosate.

The reasons to grow our own fruits, vegetables, and herbs continue to increase every day.

Continuing on with the link between food and health, a research paper published in the journal Frontiers in Nutrition (2022) found that a higher intake of vitamin C was associated with a lower risk of many types of cancers.

Similarly, one of the benefits to being a gardener is exposure to lots of sunshine which allows our bodies to make vitamin-D. A paper in the journal Cancer (2021) found that higher levels of vitamin-D reduced the need for pain medicines in cancer treatment.

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I mentioned the herbicide glyphosate above which is the active ingredient in Round-Up. The University of Konstanz has just released a study that in Germany, the biomass of all insects has decreased by 76 percent between 1989 and 2016.

They found that Bumblebees when exposed to glyphosate, it disrupted their ability to regulate temperature hence they were unable to keep their brood warm enough, so they died. Journal Science (2022)

A new study from Nagoya University has found that when plants are exposed to rain, hair-like structures on the leaf surface recognize rain as a risk factor for causing disease. Hence, they activate their immune system to prevent infections.

Pathogens can be transferred to the plant from raindrops splashing onto the soil or from being washed out of the air. Journal Nature Communications (2022)

In many animals, frequent events triggering of the immune system often weakens the animal, as there is not enough time to recharge and recover. I wonder if this mechanism is one of the reasons people who water all the time from overhead irrigation have more disease problems than those who only water occasionally with deep watering.

We often hear about using plants from prairie grasses to trees to sequester carbon to help offset global warming.

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A study from DOE/SLAC National Accelerator Laboratory has found that some bacteria have enzymes that can fix carbon *20 times faster* than plant enzymes. Journal ACS Central Science (2022)

As a gardener one way to help fight climate change is to use the modern biologic methods often called organic.

For example, when we use artificial chemical fertilizers (which are chemically salts) we kill off a lot of good bacteria, pollute water ways and generate greenhouse gasses. When we use a good organic fertilizer (my favorite is Microlife), we feed and increase the good bacteria and other beneficial microbes.

Not only do these good bacteria sequester carbon in the soil, these carbon-based molecules help create good soil structure that helps our plants grow stronger and healthier.

A study published in the journal Environmental International (2022) by the Barcelona Institute for Global Health, found that children living in a tree filled environment have better childhood development than those living in a grass covered environment.

Both trees and grass provide better outcomes than children living in a paved environment.

“This study reinforces many other studies that green spaces are associated with better attention and memory in early childhood, higher achievement scores, and fewer emotional and behavioral problems.”

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