

JOHN'S CORNER:

NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

by John Ferguson

I read an interesting statistic the other day. The Earth's most valuable bio-system is its living soil which provides a minimum of several **trillion** dollars in eco-system services each year!

The toxic chemical rescue approach to agriculture is rapidly degrading this asset to the detriment of all life on Earth. The cultivated soils are eroded, degraded, devoid of organic matter and declining at an unprecedented rate.

This has resulted in a steadily declining quality of our food supply which is directly correlated with the increasing sickness and health problems in society.

I can only speculate, but if we had the same variety and high quality, nutrient dense food, free of toxic chemicals, and GMO free of 100 years ago, I bet the pandemic would not have occurred.

The field of Ecopsychology continues to grow. There are now around 1,000 studies showing the benefits of being in nature. Just two hours per week can make a tremendous difference in our health. Nature is an antidote for stress, it can lower your blood pressure, reduce harmful hormone levels, enhance immune function, increase self-esteem, reduce anxiety, and improve mood.



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These are all great reasons to be an organic gardener. One of the most popular trends in gardening is “Habitat Gardening” which is creating habitats for birds to butterflies. As our gardens fill with all kinds of life the benefits to our health increase.

Research at the University of California published in the journal Scientific Reports (2020) has found that on *sloping* land that shrubs can help increase water infiltration which helps replenish groundwater storage. However, grasslands work better on flat ground.

We often hear about the lost of forests worldwide like the clearing and burning of Amazon forests. This process leads to climate change, erosion, and several other effects bad for life on this planet.

A paper in the journal Landscape Ecology (2020) reporting on studies by several universities has found that a decrease in forests is related to an increase in diseases like covid-19. As we continue to remove forests, we as a society can expect the emergence and spread of more diseases.

It made think that maybe mother Earth is trying to cleanse itself of a disease called humans.

We have often talked about the importance of pollinators. Research at the University of Texas has found that the pesticides flupyradifurone and sulfoxaflor are extremely harmful to beneficial insects like bees, bumble bees, lacewings, etc.



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We have known for years that certain species of bacteria on the plants we call legumes, can fix nitrogen from the air and give it to the plants. Recently we have learned that actinomycetes bacteria and blue-green algae also have the ability to provide nitrogen to plants from the air IF they have the trace elements present.

Algae growing in the top few inches of soil can also fix or make 6 tons of organic matter per acre each year.

This assumes that we do not kill off these beneficial microbes with toxic chemicals or salts.

The problems with our water supply have been steadily increasing like those reported in Flint, Michigan and Newark, New Jersey and many more. Research from the Flint River study research group has found another mechanism for the extreme pollution. They found that the water from the Flint river was 19 times more corrosive to lead than the original water from Detroit.

The Flint river and its tributaries drain an agricultural region where glyphosate is heavily used on area crops. If you remember from our study on this extremely toxic cancer causing chemical a few years ago, the first patent for glyphosate was as a descaling agent for pipes. When this contaminated water flowed through the pipes it pulled the lead out causing the increased contamination.

The above leads to another issue with fluoride and chloramines added to our public water supply. These chemicals also leach heavy metals like lead from pipes leading to 3-4 times higher levels in our drinking water.



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A few months ago, the US National Institute of Health released a study that found the herbicide Dicamba increases the risk of developing numerous cancers, including liver and intrahepatic bile duct, acute and chronic lymphocytic leukemia and mantle cell lymphoma.

This herbicide can drift in the air for miles; hence many people are forced to breathe this very dangerous chemical. Journal of Epidemiology (2020)

A plant I love is the tree known as Black Locust (*Robinia pseudoacacia*) for its many virtues from beautiful flower clusters in the spring, to fixing nitrogen like a legume, very fast growth rate, to its light shade that help grow sun sensitive plants underneath it. The magazine Mother Earth News (June/July 2020) had another use that I did not know about. This was Black Locust fritters or just eat them raw as they are crunch and sweet. The flowers are also used to make syrup.

The Rodale Institute released a paper the other day called "The Power of the Plate".

This was a joint paper by Rodale Institute and The Plantrician Project. Our partnership, and this conversation, are signs of a bright new future. Rodale Institute has always been, at its core, a human health organization. Its mission of building healthy soil to grow healthy food, which supports healthy people, has been the foundation of nearly 70 years of research and education in the area of regenerative organic agriculture.

The Plantrician Project brings a medical perspective to the impact of food on the body and the benefits of a whole foods, plant-based diet. In this way, our partnership is a first step in the



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agricultural and medical communities coming together under a shared goal: human health. This white paper is the result of that partnership.

We hope this paper encourages not only consumers but farmers, medical professionals, and policymakers to rethink the stories we've been told about human health and our food system. It is our sincere wish that this report inspires those who read it to seek out regenerative organic growing practices in their food, incorporate more organic whole foods into their diet, and stand up for a system that actively supports the health of people and the planet.

[This report is free to download and print](#) and is for those whom want to learn more about the connection between soil, plants, agriculture and our health.

Most of us love our butterflies especially our Monarchs. A study by the University of Nevada, published in the journal *Frontiers in Ecology and Evolution* (2020) found 64 different pesticide residues in milkweeds in California's Central Valley.

This amount of toxic chemicals is contributing to the decline of the western populations of Monarchs which are only 1% of the population that it had in the 1980's.

This scares me as much of our food supply comes from this same region. If the chemicals are killing Monarchs, what are they doing to us? Just another reason to buy organic food and use the modern biological methods (organic) in our gardens.

Two new organic herbicides are being tested. They are pelargonic acid and cinnamon plus clove oils. Pelargonic acid occurs widely in nature in products such as goat's milk, apples and grapes.



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This study compared these organic herbicides to glyphosate in killing tough invasive woody vines. Glyphosate required two applications and the organic herbicides required three. For the organic herbicides there were no negative effects on nematodes, mosses, ferns. *Natural Areas Journal* (2020).

The New York University Grossman School of Medicine recently released a study in the journal *Environmental Research* (2020). They found that in children and young adults, those with high blood levels of pesticides and the related chemicals called DDE's (dichlorodiphenyldichlorethylenes) were more likely to develop Celiac disease. They found that females were 8 times more likely to become gluten intolerant. Additionally, young females with elevated levels of non-stick chemicals (PFA's) like Teflon were 5-9 times more likely to have Celiac disease than those without elevated levels.

The reasons to live an organic lifestyle continue to increase daily.

A study by University College of London that was published in the journal *Biology Letters* (2020), has found that moths are a major source of pollination. Moths are very effective pollinators by both their hairy bodies as well as their proboscis. However, they also visit many species of plants NOT visited by bees and other daytime pollinators.

Moth populations have experienced steep decline in recent years all over the world. To have a balanced habitat garden we need to plant flowers and host plants for moths in addition to those for other pollinators.



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For example, at our nursery we have planted several Southern Catalpa trees (*Catalpa bignoniodes*). These plants have beautiful white flowers in spring, long beans that add texture to the visual garden and they will grow to 60 feet tall. Somewhat of an ugly duckling when small as they mature, they become a beautiful shade tree, producing a heavy dense shade that is great to sit under during hot summer days.

The seed pods are used in traditional medicine as treatments for ailments ranging from skin infections to conjunctivitis to asthma, although there is no scientific evidence backing these claims. According to the USDA the seeds and pods were used by pioneers in the 19th century to treat asthma, whooping cough, and various heart diseases.

Now for the best part. The Catalpa is the host plant for the lovely Catalpa Sphinx moth which has a very large caterpillar that makes excellent fish bait. Hence the nickname "Fish Bait Tree".