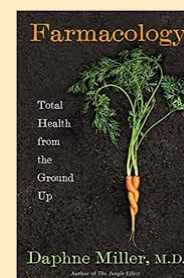


Should soil health concern us? ABSOLUTELY!

Soil Health Is Human Health

Humans should seek to eat plants grown in the healthiest soil available, since a basic function of plants is to absorb nutrients from the soil and pass them on to us through food. Healthy soil pulses with life: It teems with microorganisms, aerating the soil with their movement and augmenting and creating soil with their waste and decomposition. The healthier and more nutrient-dense the soil, the more nutrients in our food.

One of the most insightful books written on the topic of how human health is tied to soil health is *Farmacology: Total Health from the Ground Up* by Daphne Miller, MD (William Morrow, 2013). Written by a practicing family physician, the book discusses biomedical science **and** soil health as the author visits seven innovative farms located all around the U.S. Dr. Miller invented the word *farmacology*, a combination of farming and pharmacology, to convey the idea that a farm, performing at its best, is **our best medicine**. She maintains that human health is connected to the way our food is produced, and so “to the health of the farm.” She encourages all of us, including (and especially) health-care professionals, to think more ecologically. Here’s an interesting [conversation](#) with the author from NourishLife.org, a PBS-affiliated educational initiative. They also have a fun (but tough!) [Food Literacy Quiz](#) to try.



Dr. Miller spent time in Washington State on a biodynamic farm whose owners embrace the teachings of Rudolf Steiner, the founder of Biodynamic Agriculture. Steiner suggested that we see the whole farm as a “self-powered organism,” with no need for outside additives or inputs. This is the true definition of “sustainable.” Shortly before his death

in 1925, Steiner cautioned farmers about the short-sighted solution of nitrogen-based fertilizers, already then widely used and considered quite miraculous in agriculture circles. He warned that these chemicals would quickly degrade the health of the soil and, by extension, animal and human health.

Another person of historic note is Sir Albert Howard, an English botanist and principal figure in the early organic movement. Howard was the first westerner to publish the Vedic Indian principles of sustainable agriculture, now known as **organic farming**. His book, *The Soil and Health: a Study of Organic Agriculture*, first published in 1947, is a summary of his life’s work. He went to India intending to teach western agriculture methods; instead, he spent decades observing and appreciating the sustainable methods of agriculture practiced there. Howard has been called “the father of modern composting,” an agriculture and waste disposal method now practiced worldwide.

Composting is a simple way for home gardeners to improve their soil. Not a gardener? The **Green Team’s Zero Waste initiative** will soon kick off their food waste collection at the Havre de Grace Farmer’s Market. Think “Garbage to Gardens,” as the resulting composted material can be used to augment garden soil.

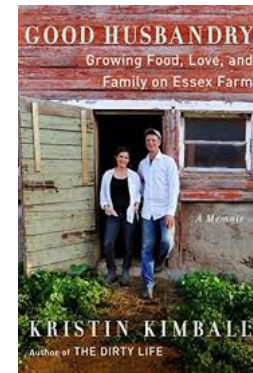
Why compost? In addition to creating a useful material from food waste, composting keeps it out of our landfills. Food waste in landfills generates massive amounts of

TILTH

A discussion of soil health needs to include a conversation on **tilth**, or the physical condition of the soil relative to supporting plant growth. Characteristics of tilth include moisture content, type of particulates (think “crumbs”), aeration, amount of microorganisms, and much more. Good tilth is what biodynamic farmers seek, first and foremost. Tilth can be temporarily increased by mechanical tillage (plowing) or - a better method - by building soil biologically. This method, embraced by many biodynamic farmers, involves no tilling, but is aided by growing plant roots as well as beneficial organisms, constantly turning and creating new soil. For more information on soil tilth than you ever knew was out there, read this [article](#) produced by Sustainable Agriculture Research and Education (SARE), a competitive grants and education organization dedicated to high-quality agriculture.

Tommy Shireman of Third Way Farm in Havre de Grace affirms the health benefits provided to us through no-till, organic farming. The nutrient density of food produced this way will enhance our nutritional intake and boost our immune system, as well as deepen our appreciation of - and human connection to - the land. Critical to these health benefits, says Shireman, are the care and management of soil **and** the integration of livestock into the farm system. This resulting “closed loop” of nutrients and life will ever-increasingly improve soil and animal health over time.

Kristin Kimball, author of *The Dirty Life* (Scribner, 2010), articulates another closed-loop system in her second book, *Good Husbandry* (Scribner, 2019). Kimball and her husband Mark use draft horses for much of the work on their 500-acre New York State farm, and Mark considers the horses as an expression of his desire to use the sun in real time: The energy of the sun creates plants that fuel the horses ... that work with us to tend the plants ... that feed the animals ... that feed us. The author goes on to describe the sun’s energy as “safe, stable and storable” in the dense golden ears of corn harvested in the fall.



Let’s return to *Farmacology* for an uplifting chapter on urban farming in our cities’ food deserts. Dr. Miller spent time in Bronx, New York with a group of dedicated gardeners cultivating abundant produce in small plots carved out of city blocks. These folks see urban farming as preventive medicine, a community health benefit in neighborhoods awash with high rates of obesity, diabetes, and heart disease. Urban produce markets are beacons of hope and education and these enthusiastic farmers strive for “contagious vegetable eating.”



A good farmer takes a holistic approach to agriculture and is concerned with the interaction between all players in their ecosystem: soil, air, microbes, animals, humans, plants. Farmers concerned with effective management of their crops realize that the vitality of a farm is, in a nutshell, the health of the soil.

And how fortunate we are to have like-minded local farmers providing our fresh produce!

SOME GREEN THOUGHTS



"We are not simply nourished by the soil, we are of the soil!"
-Daphne Miller MD, author of *Farmacology: Total Health from the Ground Up*

"The health of soil, plant, animal and man is one and indivisible."
-Sir Albert Howard

"Feed the soil, not the plant."
-Erick Haakenson, biodynamic farmer