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## Up to 40 Percent Decrease of Nutrients in Our Food

Dr. Mercola | September 25<sup>th</sup>, 2017

Politico tells about a young generational farmer, Jonathan Cobb, who'd made the difficult decision to quit farming. Using increasing amounts of chemical herbicides and fertilizers, "planting row upon row of corn on 3,000 acres ... was becoming rote and joyless."

While job hunting one day, he happened to stop at the local U.S. Department of Agriculture office in his Texas town to pick up paperwork. The staff there happened to be conducting a training session and doing a demonstration on healthy and unhealthy soils. The side-by-side comparison contrasted the startling difference:

*"A clump of soil from a heavily tilled and cropped field was dropped into a wire mesh basket at the top of a glass cylinder filled with water. At the same time, a clump of soil from a pasture that grew a variety of plants and grasses and hadn't been disturbed for years was dropped into another wire mesh basket in an identical glass cylinder.*

*The tilled soil — similar to the dry, brown soil on Cobb's farm — dissolved in water like dust. The soil from the pasture stayed together in a clump, keeping its structure and soaking up the water like a sponge."*

Cobb realized he was seeing not just an exhibit on soil types, but the potential for a new farming philosophy and made the instant decision to stay on his farm "and be part of that paradigm shift." Trending in agriculture today is a new viewpoint that may be turning from a push for productivity to one that emphasizes the environment and human health.

### **The Problem With 'Modern' Farming**

Generations of reliance on and insistence on the use of chemicals has rendered farm ground across the U.S. dry and literally lifeless, unable to hold either nutrients or water. The problem negatively impacts not only farmers but our food supply and, ultimately, your health in many ways many have never considered or realized. Drifting topsoil laden with chemical residue is even causing respiratory illnesses in rural areas.

Pesticides leaching into drinking water have exposed thousands to levels the U.S. Environmental Protection Agency (EPA) deems troubling. In fact, the water that 210 million Americans drink is contaminated with nitrate, a routinely used fertilizer chemical linked to cancer and serious developmental problems in children.

Another incident related by Politico is of a group of scientists in a lab at Arizona State University in 1998. Amid luminous glass containers of bright green algae, a biologist told Ph.D. candidate Irakli Loladze they'd discovered something odd about zooplankton, the microscopic critters floating in the world's oceans and lakes that eat tiny algae.

The scientists found the algae grew faster when more light was shined on them; it increased their food supply. The zooplankton should have flourished, but as the scientists focused more light on the algae, even though it grew faster and supplied more food, the tiny organisms were beginning to decline. It turns out that the algae, while plentiful, were greatly diminished in nutrition, essentially becoming a junk food.

### **Not Just More CO<sub>2</sub>, but Sterile and Depleted Soil**

Not just the scientific community but an increasing percentage of the general population are beginning to understand that

many of the foods we've counted on for the highest nutrition are becoming as depleted as the soil they're grown in. Many have assumed it's been due to the farm industry's mass departure from nutrition-based food-growing methods toward higher yields through hybridization.

Some scientists believe that as rising CO<sub>2</sub> increases photosynthesis, plants grow more, but at the same time, they load up with more carbohydrates like glucose, which shuts out other more valuable nutrients such as iron, protein and zinc.

One thing that bothers Loladze is the scarcity of data in the way CO<sub>2</sub> affects crops like rice, which billions of people count on for nutritional sustenance. Further, he notes that the way studies are conducted and funded hasn't made it easy for anyone tracking how CO<sub>2</sub> is impacting human health. "It is simply not discussed in the agriculture, public health or nutrition communities. At all," Politico states.

### **Soil Health and What It Means for Sustainable Agriculture**

One study noted that nearly 3 billion of the world's population is malnourished due to diminished nutritive elements and vitamins in plant-based food. It showed three areas pointing to the sharp decrease in the nutrients of plant-based foods grown in the U.S. and the U.K.:

1. Early studies on fertilization found a link between crop yield and mineral concentrations, known as the "dilution effect."
2. Three recent studies of historical food composition data reported decreases amounting to 5 percent to 40 percent or more in some minerals in certain vegetables and possibly fruits; one study examined vitamins and protein with similar results.
3. Side-by-side plantings of low- and high-yield broccoli and grain cultivars revealed consistently negative links between yield and concentrations of minerals and protein — genetic dilution effect.

Seemingly unable to pull away from the practices put in place to increase yield ostensibly for the sake of "global food security," one study called fertilizers and pesticides a "necessary evil" for industrial agriculture, but noted, too, that soil health is crucial for it to be sustainable and maintain biodiversity.

At the same time, the damage done to soil microflora is something that can't be denied. The study noted it as a key component of agricultural ecosystems in regard to soil being optimally fertile in its ability to produce crops. The study stresses the impact microbial activity has on "pursuing eco-friendly practices like bioremediation and biocontrol of phytopathogens in agricultural soils." Their presence is an indication of soil health.

While such studies cryptically mention how fertilizers and pesticides "influence" nutrients, organic carbon, pH, enzymes and rhizodeposition (the exchange between plants and soil, which plays a role in soil carbon turnover) in plants, one of the biggest problems with the use of chemicals in farming is that the effects linger and cause a "shift" in the number of crucial microflora which, in essence, means "destroy."