



THE TRUE COST OF GOODS

HOW MUCH DOES YOUR FOOD REALLY COST?

SOIL, HEALTH, & THE HUMAN MICROBIOME

This is the final installment of NOFA-NH's True Cost of Goods Column. Join us at our 22nd Annual Winter Conference on Saturday, February 10, 2024 at Southern NH University for a workshop on this topic and how to support our local farms.

There is a growing belief that it's a good idea to convert old buildings or construct massive facilities to grow 'organic' salad greens, tomatoes, berries, etc. without soil. Investors are throwing down big money to get a slice of the latest trend in organic agriculture – entirely supported by the USDA National Organic Program. However, the USDA is violating its own rules by allowing soilless crops to be labeled and sold as organic when Section 6513(b)(1), of the Organic Foods Production Act states, "An organic plan shall contain provisions designed to foster soil fertility, primarily through the management of the organic content of the soil through proper tillage, crop rotation, and manuring."

Does hydroponic agriculture improve soil fertility? Tillage? Crop rotation? Manure? Nope!

Soil is removed from the equation in hydroponic growing spaces. Nutrients are diluted in water and simply delivered to the root zones of plants until they are harvested. The crops are completely dependent upon external inputs - exorbitant electricity, plastics, synthetic fertilizers, and resources in order to produce light and heat. The associated costs are excessive, but the most insidious costs are lack of truth and integrity in organic labeling. There is a startling lack of data on the long term effects of hydroponics on human health, local ecologies and economies, and their consumption of natural resources. Eaters are led to believe they are purchasing a healthy, environmentally sound organic product when they buy "certified organic," hydroponically grown produce, when in fact they are purchasing an energy intensive, ecologically detrimental food which does not provide critical human biological contact with healthy living soils.



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When the citizens' USDA disregards its own organic statutory standards as its doing with regard to hydroponics (and Confined Animal Feeding Operations/CAFOs for that matter as well), it threatens both the national and international meaning of organic certification because so much value is connected to this concept of organic. The USDA - and the corporations who are profiting from this recent hydroponic deception - are actively destroying trust in a certification program that is rooted in respect for the earth's soils and the complex domain of natural biological interactions that enable well-intentioned people to grow food plants sustainably - in harmony with local ecology and biodiversity.

Human health depends on healthy vibrant soils. There's plenty of research showing the positive connections between soil biology and human biology. The human intestinal microbiome has evolved in a functional relationship with local soil rhizospheres. Soil bacteria, microbes, mycorrhizal networks and fungi, and glomalin plant exudates help ensure the synthesis of primary and secondary metabolites, vitamins and amino acids and compounds that help the human digestive system extract nutrients from food and maintain a biodiverse gut flora and healthy gut tissues. This process contributes to optimal immune function and keeps diseases like diabetes, cardiovascular disease, and inflammation in check.

In recent years, the human gut microbiome has changed due to shifting food supplies and lifestyles, processed food and chemical exposures (including hormone mimics and disruptors from plastics or PFAS as well as antibiotics, glyphosate, overfertilization, varied pesticides, etc.), and many other environmental stressors. The effect of all this is often a reduction of the diversity and function of the human microbiome. Microbiome dysbiosis is on the uptick and can manifest as inflammatory bowel disease, atherosclerosis, obesity, colon cancer, Crohn's disease - all dependent on the intestinal microbial community. Surprisingly, the gut microbiome sometimes plays a larger role than genetics in these diseases.



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As more soil communities are lost, the push towards soilless, hydroponic agriculture (labelled as “organic”) and the increasing reliance on pesticides, GMOs, glyphosate, plastics, and other synthetics seems to offer no worthwhile benefits to human populations except perhaps as investment opportunities. And even these are doubtful since many large hydroponic facilities have recently shutdown due to high costs that exceed income.

What then is truly the REAL cost of food and food systems today?

If we truly care about REAL costs, it is critical that we look at our food in terms of its impacts on our bodies and their microsymbionts, on our fellow creatures - from cattle in CAFOs to coral reefs, on our communities, and on the food systems' functioning in light of our heartfelt values such as the essential importance of justice, compassion, sovereignty, and flourishing human cultural diversity, and of course, the integrity of the planet's life support systems. When we look at how we feed ourselves in terms of these long-term costs, we see we must return our attention to small scale, locally controlled growing and eating. We must attend to soil health and remediation using natural, pesticide-free farming and real organic methods. These are the essential ways that we can increase soil biology and strengthen our bodies, our communities, and the planet at large. These are the ways that we can cocreate food systems that just might provide for the resiliency that we must pass on to future generations.

If these thoughts about real costs make sense to you, please take action: Buy and grow non-hydroponic, organic foods! Voice opposition to the USDA'S flagrant disregard of soil as an indispensable feature in organic production. Outreach to family, friends, community, and political representatives about the need for ecologically sound growing and locally based, toxin-free, real organic foods!



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