

organic farming climate change

Experts Agree: Organic Farming Is Revolutionary

It's time to get back to the roots of farming to save the planet.

By Julia Westbrook

"Organic" is just another word for "expensive." It's a joke bandied about in supermarkets, illustrating that people are widely unaware of the connection between the contents of their carts and its impact on the health of our bodies and the planet.

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"I would say that [organic farming is] a 100-percent solution to the health problem, to the unemployment problem, the poverty problem, the biodiversity problem, and the water problem," says Vandana Shiva, PhD, founder of The Research Foundation for Science, Technology, and Natural Resource Policy. She was one of several speakers to discuss regenerative organic agriculture at an expert panel event hosted by the Rodale Institute, the Carbon Underground, and Organic Consumers Association.

But the benefits go way beyond these comparably "small" issues because organic farming is also the solution to our carbon problem. According to the Rodale Institute, the answer to the looming climate catastrophe is right under our feet: soil. The researchers found that, through regenerative organic agriculture, the soil will be able to sequester carbon in a way that not just limits, but also reverses, the threatening levels of atmospheric CO₂.

Kristine Nichols, PhD, chief scientist at the Rodale Institute, explained that if we shift to a regenerative organic model of agriculture, 40 percent of the total annual carbon emissions will be taken out of the atmosphere and stored in the soil. (That's an estimated reduction of 21 gigatons of CO₂ every year, or equal to about 4.25 billion cars off of the road). Additionally, the Rodale Institute found that this organic model would apply to pasture and rangelands, too, sequestering another 71 percent of annual carbon emissions.

"This is tipping that needle past 100 percent that we're going to be able to sequester more carbon in the soil than the emissions that we have on an annual basis," she says. The positive conclusion? She and other experts say this will reverse climate change.

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Farming as the Problem and the Solution

"Most figures say that farming is about 30 percent of greenhouse gases output," says Andre Leu, president of the International Federation of Organic Agriculture Movements. "What we're saying here today is that we can turn the biggest emitter into the biggest solution."

Mark Smallwood, executive director of the Rodale Institute, elaborates:

"Regenerative means that you're leaving behind better than what you found."

Smallwood and his colleagues have pinned down practices that don't just help farmers grow great food, but also make farms stronger with stronger soil that is able to take up carbon emissions.

The beauty of these solutions, the experts point out, is that they already exist. For the same research and development cost of developing one GMO, many farms could instead be converted to using sustainable, carbon-storing solutions. Here is a sampling of those solutions:

Conservation Tillage

Unrestrained plowing is the antithesis of restorative farming and is counterproductive for carbon sequestering by the soil, as explained by Kristin Ohlson, author of *The Soil Will Save Us*. She says, "The heavy machinery compacts the soil further, requiring deeper plowing to loosen the soil. As greater volumes of soil are churned up and exposed to the air, the soil carbon meets oxygen combines with it to form CO₂, and departs for the upper atmosphere."

Cover Crops

Left in nature, an empty plot of dirt will usually sprout and slowly turn from dusty dirt to living and green. But this isn't "clean" enough for farmers using modern techniques that strip fields naked between growing seasons. Using cover crops ensures that the carbon-based soil isn't exposed, and that carbon stays in the ground, not in the air. The researchers from the Rodale Institute cite other benefits of cover crops, including reduced weeds, decreased water runoff, and stronger soil structure and water infiltration.

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Crop Rotation

Nichols compares monoculture farming to a "doughnut diet:" If you eat nothing but doughnuts, your body cannot function because it lacks the nutrients you need for everything to work properly—calcium for your bones, protein for your muscles, and so forth. Same thing happens when farms plant one type of crop in the same field year after year: The nutrients become depleted. Plus, the researchers point out that, like cover crops, enhanced rotations result in continuous ground cover.

Compost

It's not a surprise that composting makes stronger, healthier soil. It increases biodiversity, microbial biomass, and boosts nutrients. And rather than using chemical fertilizers (which do way more harm than good), compost uses the waste materials farms naturally produce, so, for farmers, it's a win-win.

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Forget Band-Aids; We Need Solutions

The message presented by these experts is clear: It's not enough to just reduce emissions. We need to find a real solution. Tom Newmark, cofounder and chair of The Carbon Underground, compares our situation to a morbidly obese man going to the doctor to get healthy. If the doctor just puts the patient on a diet that will slow his rate of weight gain, he isn't going to get better. It's only when the doctor prescribes a way to lose weight that patient's health will improve.

This is the same approach we take when we only look at limiting carbon emission rates: It doesn't solve the problem.

Surprisingly, this avenue of research to prevent or reverse climate change is fairly new. "Climate change is reversible. Nobody is talking about that," said Larry Kopald, cofounder of The Carbon Underground. "Eight or nine months ago, I had never

heard this story. And I sat there and I said, 'How is it possible that the single biggest cause of climate change, nobody is talking about? And the only solution that we know of right now is not being discussed?'" That's what makes this announcement promoting organic farming as a true a solution is so groundbreaking. Pun intended.

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So why soil? Why now? Leu says that it's been our lack of understanding of the soil that has been holding us back. "The whole idea of soil and agriculture is relatively new," he says. "When I was learning agriculture in the '70s, we were told that the only reason you need soil was as a medium to hold the plants up; otherwise, they'll fall over. We were told we were idiots for adding organic matter to the soil because plants get all their carbon from the air. This whole concept of soil and soil health is relatively new."

Walk to DC

With this greater understanding of the soil, we're not doomed to trudge towards catastrophic weather patterns caused by global warming. That's why Smallwood will be marching from Kutztown, Pennsylvania, to Washington, DC, with the findings from the Rodale Institute to take real steps toward a solution.

