

With Pesticides Taking a Hit, Will US Agriculture Change?

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Pesticides have been making news headlines lately as the subject of multiple lawsuits and state government actions. They are not faring well. A Superior court in California ordered Monsanto to pay over 2 billion dollars to a couple who developed cancer from routinely using the garden weed killer, [Roundup](#). The US Environmental Protection Agency (EPA) recently withdrew registration of a dozen bee-killing [neonicotinoid pesticides](#) (neonics), containing the active ingredients clothianidin and thiamethoxazm, in response to a California District court order. New York State has joined Hawai'i in banning [chlorpyrifos](#), a pesticide that is notorious as a childhood motor and cognitive developmental toxin — California and other states will soon follow. These high-stake actions against multinational pesticide companies in a short six-month period beg the question of whether this is a watershed moment in the history of US agriculture. Will these actions hurt these companies' reputation and economic bottom-line enough to make a difference? Will they cause a shift away from pesticide-dependent agriculture in favor of more environmentally and human health friendly systems of food production?

Certainly, this succession of decisions aimed at holding pesticide companies accountable for the health and ecosystem impacts of their products is good news. And, many people would agree that probable carcinogens, pollinator disruptors, and neurotoxins have no place in food production. But, for decades, our legal and regulatory systems have evolved entrenched programs that prop-up pesticide use, making it exceedingly difficult to stem their flow onto farmland and into our bodies. Historically, as soon as one pesticide is banned, [agrochemical companies readily propose others](#) to take its place. The new pesticides are not necessarily safer, but the substitute chemicals allow the continuation of business as usual, with pesticide-intensive farming dominating rural landscapes.

Treadmill of Banned and Replacement Pesticides

Neonics provide a case in point. When registered by EPA, neonics were purported to be a more human and ecosystem-friendly alternative to some of the most noxious, post-World War II insecticides, such as chlorpyrifos and other organophosphates. Over time, neonics have become some of the most widely used pesticides in the world. As [systemic poisons](#) that are largely applied as a seed coating, neonics are taken up by plants, permeating every cell from the roots to leaves, pollen and nectar. Their mode of action is to disrupt the central nervous system of insect pests by impairing foraging, homing and communication behavior, causing paralysis and

eventual death for the insects. Researchers have also implicated neonics in honeybee and wild bee die-offs because of the ability of pesticides to compromise bees' immune systems, even at low levels of exposure, making bees more susceptible to parasites and disease. Neonics are [10,000 times more toxic](#) to bees than any other pesticide registered for use in the US and, as such, they pose a notable threat to crop pollination and food production, nationwide.

When pesticides are forced off the market through lawsuits and government bans, agrochemical companies scramble to secure EPA registration for new ones to take their place, even without fully knowing the risks. Neonics are no exception. [Sulfoximine](#) is a new class of insecticides that the agrochemical industry had hoped would replace neonics. On the contrary, a recent study in *Nature* has shown that exposure to the pesticide reduces the number of worker bees and offspring in bee colonies. Another EPA-approved pesticide, [Flupyradifurone](#), also has been promoted as less risky to honeybees and pollinators. Yet, researchers have found that exposure to Flupyradifurone reduces bees' coordination, inducing problems such as stumbling, falling, walking in circles, flying erratically, etc. These pesticides are not more pollinator-friendly than the neonics they were intended to replace and probably should not have been registered in the first place.

Pesticide Facts



[Learn more about Pesticide Use in Our Food System](#)

Pesticides Prevail Despite Overwhelming Evidence of Their Adverse Impacts

Roundup and chlorpyrifos are examples of truly noxious pesticides that remain on the market, despite reams of scientific evidence documenting their egregious human health impacts.

Dangers of Chlorpyrifos

Even [low levels of exposure](#) to chlorpyrifos during pregnancy have been shown to alter children's brain functions and impair the learning ability of children into adulthood. [High levels of childhood exposure](#) cause attention deficit, hyperactivity, slow cognitive development and a significant reduction in IQ scores. These health risks and others provided the basis for EPA's own [scientists to recommend eliminating chlorpyrifos](#) use on food crops back in 2015. Yet, EPA has ignored this advice by [refusing to take action](#) to protect public health until the agency completes a protracted, seven-year review of neurodevelopmental studies, in October 1, 2022.

Dangers of Roundup

Roundup is another toxic pesticide that is not going anywhere despite its documented threats to human health. Its active ingredient, glyphosate, has been labeled a "[probable carcinogen](#)," by the World Health Organization. Even in the face of the [2 billion dollar settlement](#), and with an estimated 13,000 lawsuits awaiting trial over the pesticide's cancer risks, [Bayer](#), owner of Monsanto, maintains that "glyphosate will continue to play an important role in agriculture." In addition, the company plans to expand its portfolio of agrochemicals, genetically engineered seeds, and other technologies to the tune of 5 billion Euros (\$5.6 billion) over the next decade.

No Exit Strategy for Pesticide Use

Clearly, our country has no vision or exit strategy for eliminating or even reducing toxic pesticide use in agriculture. Yet, the environmental and human health toll of releasing billions of pounds of agrochemicals into the environment annually, many of which remain in the soil, water, food and our bodies indefinitely, is debilitating for our nation. It is time to change course because our health and ecosystems depend on it. Even though the US has been a world leader in the development of organic agricultural practices and regulations, our government continues to pigeonhole organic as a market niche or fringe method of food production.

EU Organic Action Plan Prioritizes Organic Agriculture

This is not the case in the European Union (EU), which has had a [National Organic Action Plan](#) (NOAP) since 2004 to promote and strengthen the organic sector. EU member nations understand the importance of organic in preserving biodiversity, nurturing pollinators and their habitats, mitigating climate change, and protecting public health. They acknowledge organic agriculture's vital service of providing innovations in farming technologies that benefit

nonorganic agriculture as well. A revamped NOAP will come into force in 2021, with the intent of increasing organic farms, acreage and consumers, raising awareness about the public health and environmental benefits of organic, eliminating fraud, and increasing consumer confidence in the EU organic label. Already, EU countries are making moves to restrict glyphosate, with France announcing plans to ban it by 2020 and Austria moving in that same direction.

These critical steps to sustain and expand organic agriculture for the benefit of the nation have not yet taken root in the US. Instead, our government is still relying on twentieth century pesticide-intensive technologies, pinning its hope on genetic engineering (GE) to solve 21st century agricultural challenges. But, contemporary agricultural challenges are often exacerbated by increases in pesticide use, which are inextricably linked to both GE crop production and notable rises in [pesticide resistant weeds and insects](#).

A Watershed Moment in US Agriculture

Incontrovertible scientific evidence from around the world has identified pesticides as a major contributor to innumerable and far-reaching environmental and health problems. This growing body of scientific evidence has precipitated lawsuits against Bayer/Monsanto, the withdrawal of pesticide registrations and other government actions described here. The recent UN [Intergovernmental Panel on Climate Change](#) (IPCC) has warned us that “rapid and far-reaching” steps must be taken by agriculture and other sectors, within the next 12 years, to prevent further, unprecedented climate-related catastrophes, worldwide. Clearly, we need to immediately change course, and organic agriculture has an important role to play in helping to solve these global crises. Organic practices can serve as a viable substitute to toxic pesticide use. They can also [sequester carbon](#) in the soil through the use of compost, cover-crops and diverse crop rotations and make agriculture more resilient during extreme weather-induced events such as floods, fire and drought.

It is incumbent upon our government to take a hard look at the policies and programs of its European partners and begin embracing organic as a critical tool for addressing agricultural problems and improving public health without the use of toxic pesticides. The moment is ripe for the creation of a US National Organic Action Plan — one that would supplant pesticide-dependent agriculture with organic agriculture and enable the country to reassert itself as a world-innovator in organic food production for generations to come.