

Toxic Corporations Are Destroying the Planet's Soil

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by [Colin Todhunter](#), *OffGuardian*

June 23, 2021

A [newly published analysis](#) in the journal *Frontiers in Environmental Science* argues that a toxic soup of insecticides, herbicides and fungicides is causing havoc beneath fields covered in corn, soybeans, wheat and other monoculture crops. The research is the most comprehensive review ever conducted on how pesticides affect soil health.

The study is discussed by two of the report's authors, Nathan Donley and Tari Gunstone, in a recent article appearing on the [Scientific American](#) website.

The authors state that the findings should bring about immediate changes in how regulatory agencies like the Environmental Protection Agency (EPA) assess the risks posed by the nearly 850 pesticide ingredients approved for use in the USA.

Conducted by the Center for Biological Diversity, Friends of the Earth and the University of Maryland, the research looked at almost 400 published studies that together had carried out more than 2800 experiments on how pesticides affect soil organisms. The review encompassed 275 unique species or types of soil organisms and 284 different pesticides or pesticide mixtures.

Pesticides were found to harm organisms that are critical to maintaining healthy soils in over 70 per cent of cases. But

Donley and Gunstone say this type of harm is not considered in the EPA's safety reviews, which ignore pesticide harm to earthworms, springtails, beetles and thousands of other subterranean species.

The EPA uses a single test species to estimate risk to all soil organisms, the European honeybee, which spends its entire life above ground in artificial boxes. But 50-100 per cent of all pesticides end up in soil.

The researchers conclude that the ongoing escalation of pesticide-intensive agriculture and pollution are major driving factors in the decline of soil organisms. By carrying out wholly inadequate reviews, the regulatory system serves to protect the pesticide industry.

The study comes in the wake of other recent findings that indicate high levels of the weedkiller chemical glyphosate and its toxic breakdown product AMPA have been found in topsoil samples from no-till fields in Brazil.

Writing on the GMWatch website, Claire Robinson and Jonathan Matthews note that, despite this, the agrochemical companies seeking the renewal of the authorisation of glyphosate by the European Union in 2022 are saying that one of the greatest benefits of glyphosate is its ability to foster healthier soils by reducing the need for tillage (or ploughing).

This in itself is misleading because farmers are resorting to ploughing given increasing weed resistance to glyphosate and organic agriculture also incorporates no till methods. At the same time, proponents of glyphosate conveniently ignore or deny its toxicity to soils, water, humans and wildlife.

With that in mind, it is noteworthy that GMWatch also refers to [another recent study](#) which says that glyphosate is responsible for a five per cent increase in infant mortality in Brazil.

The new study, '[Pesticides in a case study on no-tillage farming systems and surrounding forest patches in Brazil](#)' in the journal Scientific Reports, leads the researchers to conclude that glyphosate-contaminated soil can adversely impact food quality and human health and ecological processes for ecosystem services maintenance. They argue that glyphosate and AMPA presence in soil may promote toxicity to key species for biodiversity conservation, which are fundamental for maintaining functioning ecological systems.

These studies reiterate the need to shift away from increasingly discredited 'green revolution' ideology and practices. This chemical-intensive model has helped the drive towards greater monocropping and has resulted in [less diverse diets](#) and [less nutritious](#) foods. Its long-term impact has led to soil degradation and mineral imbalances, which in turn have adversely affected human health.

If we turn to India, for instance, that country is losing [5334 million tonnes](#) of soil every year due to soil erosion and degradation, much of which is attributed to the indiscreet and excessive use of synthetic agrochemicals. The Indian Council of Agricultural Research reports that soil is becoming deficient in nutrients and fertility.

India is not unique in this respect. Maria-Helena Semedo of the Food and Agriculture Organization stated back in 2014 that if current rates of degradation continue all of the world's topsoil could be gone within [60 years](#). She noted that about a third of the world's soil had already been degraded. There is general agreement that chemical-heavy farming techniques are a major cause.

It can take [500 years](#) to generate an inch of soil yet just a few generations to destroy. When you drench soil with proprietary synthetic agrochemicals as part of a model of chemical-dependent farming, you harm essential micro-organisms and end up feeding soil a limited doughnut diet of toxic

inputs.

Armed with their multi-billion-dollar money-spinning synthetic biocides, this is what the agrochemical companies have been doing for decades. In their arrogance, these companies claim to have knowledge that they do not possess and then attempt to get the public and co-opted agencies and politicians to bow before the altar of corporate 'science' and its bought-and-paid-for scientific priesthood.

The damaging impacts of their products on health and the environment have been widely reported for decades, starting with Rachel Carson's ground-breaking 1962 book *Silent Spring*.

These latest studies underscore the need to shift towards organic farming and agroecology and invest in indigenous models of agriculture – as has been consistently advocated by [various high-level international agencies, not least the United Nations, and numerous official reports](#).

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