

Glyphosate: Health Concerns About the Most Widely Used Pesticide

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Glyphosate is a synthetic herbicide patented in 1974 by the Monsanto Company, and now manufactured and sold by many companies in hundreds of products around the world. Glyphosate is best known as the active ingredient in Monsanto's Roundup branded herbicides.

Here are some key facts about glyphosate:

Most Widely Used Pesticide

According to a February 2016 study in [Environmental Sciences Europe](#), glyphosate is the [most widely used pesticide](#). "In the U.S., no pesticide has come remotely close to such intensive and widespread use," according to the study. Findings include:

- Americans have applied 1.8 million tons of glyphosate since its introduction in 1974.
- Worldwide 9.4 million tons of the chemical has been sprayed on fields – enough to spray nearly half a pound of Roundup on every cultivated acre of land in the world.
- Globally, glyphosate use has risen almost 15-fold since so-called "Roundup Ready," genetically engineered glyphosate-tolerant crops were introduced in 1996.

Cancer Concerns

In 2015, the World Health Organization's International Agency for Research on Cancer (IARC) [classified glyphosate](#) as "[probably carcinogenic to humans](#)." The team of international scientists found there was a particularly strong link between glyphosate and non-Hodgkin lymphoma.

On March 28, 2017, the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment confirmed that it would [add glyphosate](#) to California's Proposition 65 list of chemicals known to cause cancer. Monsanto sued to block the action but the case was dismissed.

The EPA convened a Scientific Advisory Panel (SAP) in December 2016 to receive expert feedback from independent scientists about the assessment and the conclusion contained in the issue paper. The panel members were [divided in their assessment of EPA's work](#), with some finding the EPA erred in how it evaluated certain research and reached its conclusion. The EPA's final report on glyphosate is scheduled to be released before the end of 2017.

According to an internal [EPA document](#), two EPA departments disagreed with each other about glyphosate safety. The Office of Research and Development's epidemiologists said the Office of Pesticide Programs had not followed proper agency protocol in determining glyphosate was "not likely to be carcinogenic to humans."

The [European Food Safety Authority](#) and the [European Chemicals Agency](#) have said glyphosate is not likely to be carcinogenic to humans. [A March 2017 report](#) by environmental and consumer groups argues that regulators relied improperly on research that was directed and manipulated by the chemical industry.

The World Health Organization Joint Meeting on Pesticide Residues also cleared glyphosate as unlikely to pose a risk to humans, although that group was tarnished by [conflicts of interest](#) regarding ties to the International Life Sciences Institute, a food industry front group.

Cancer Lawsuits

More than 50 lawsuits against Monsanto Co. are pending in U.S. District Court in San Francisco, filed by people alleging that exposure to Roundup herbicide caused them or their loved ones to develop non-Hodgkin lymphoma, and that Monsanto covered up the risks. The litigation has been consolidated as multidistrict litigation (MDL) for more efficient processing. Several hundred similar actions are pending in state courts.

In March 2017, the federal court judge overseeing the MDL unsealed some internal Monsanto documents that [raised new questions](#) about Monsanto's influence on the EPA process and about the research regulators rely on. The documents suggest that Monsanto's long-standing claims about the safety of glyphosate and Roundup [do not necessarily rely on sound science](#) as the company asserts, but on [efforts to manipulate the science](#).

U.S. Right to Know is posting [key documents and analysis](#) from the litigation.

Endocrine Disruption and Other Health Concerns

Some research has also indicated that glyphosate may be an [endocrine disruptor](#); has been linked to [liver disease](#), [birth defects and reproductive problems](#) in laboratory

animals; and may kill beneficial [gut bacteria](#) and [damage the DNA](#) in human embryonic, placental and umbilical cord cells.

Many scientists have raised concerns about the health risks of glyphosate:

- Is it time to reassess current safety standards for glyphosate-based herbicides? – [Journal of Epidemiology and Community Health](#)
- Concerns over use of glyphosate-based herbicides and risks associated with exposure: a consensus statement – [Environmental Health Journal](#)

GMO Connection

Most genetically modified (GMO) crops – some 94% of soy and 89% of corn [grown in the U.S.](#), according to USDA data – are “herbicide tolerant” crops that have been genetically engineered to withstand glyphosate exposure.

Globally, glyphosate use has risen almost 15-fold since so-called “Roundup Ready” GMO crops were introduced in 1996, according to a study by Charles Benbrook in [Environmental Sciences Europe](#).

Desiccation

Farmers also use glyphosate on non-GMO crops such as wheat, barley, oats, and lentils to dry down the crop ahead of harvest in order to accelerate the harvest. This practice, [known as desiccation](#), may be a significant source of dietary exposure to glyphosate, according to Benbrook.

Glyphosate Found in Food: U.S. Drags Its Feet on Testing

The USDA has quietly dropped a plan to start testing food for residues of glyphosate. Internal agency documents obtained by U.S. Right to Know show the agency had planned to start testing over 300 samples of corn syrup for glyphosate on April 1, 2017. [Now the agency says the plan is dead](#). The U.S. Food and Drug Administration began a limited testing program of its own in 2016, but the effort was fraught with controversy and internal difficulties and the program [was suspended in September 2016](#). Both agencies have programs that annually test foods for pesticide residues but both have routinely skipped testing for glyphosate.

Before the suspension, one FDA chemist found alarming levels of glyphosate in many samples of U.S. honey, levels that were technically illegal because there have been no allowable levels established for honey by the EPA. Here are the most recent findings about glyphosate levels in food:

- Sept. 21, 2016: FDA found glyphosate in [US honey](#) at double the levels allowed in the EU.
- Sept. 30, 2016: FDA tests confirm [oatmeal and baby foods](#) contain glyphosate.
- Nov. 3, 2016: FDA chemist found glyphosate in [honey in Iowa](#) at 10X higher levels than allowed in EU.
- Nov. 18, 2016: Independent testing by consumer group Food Democracy Now found glyphosate in [Cheerios, oatmeal cookies, Ritz crackers and other popular brands](#) at high levels.

Pesticides in Our Food: Where's the Safety Data?

USDA data from 2016 shows detectable pesticide levels in 85% of more than 10,000 foods sampled, everything from mushrooms to grapes to green beans. The government says there are little to no health risks, but some scientists say there is little to no data to back up that claim. See: [New Data on Pesticides in Food Raises Safety Questions](#)

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