

Glyphosate, The Active Ingredient of Monsanto's Roundup Herbicide

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Glyphosate, the active ingredient in Monsanto's Roundup herbicide, was once used only sparingly. It had to be, as the herbicide kills basically any plant it touches.

This meant that although it killed many weeds, farmers couldn't safely apply it near their crops, lest they risk killing off their crops as well. It was only used where farmers wanted to kill all vegetation, such as between the rows in orchards or in industrial yards.

This all changed in 1996, when Monsanto's so-called "Roundup Ready," genetically engineered (GE) glyphosate-tolerant crops (soy, corn and cotton) were introduced.

The GE crops are impervious to glyphosate's toxic effects, which allows farmers to spray the chemical onto their crops with abandon. And spray they did.

Glyphosate Is the Most Used Agricultural Chemical in History

Since 1996, the use of glyphosate has risen nearly 15-fold, according to a new study published in Environmental Sciences Europe.¹ Since glyphosate was introduced in 1974, 1.8 million tons have been applied to U.S. fields, and two-thirds of that volume has been sprayed in the last 10 years.

Worldwide, 9.4 million tons have been sprayed from 1974 to 2014. The chemical has now earned the ominous title of the most heavily used agricultural chemical *of all time*.²

In fact, the analysis showed that farmers sprayed enough glyphosate in 2014 to apply 0.8 pounds of the chemical to *every acre* of cultivated cropland in the U.S. and nearly 0.5 a pound of glyphosate to all cropland worldwide.

GE herbicide-tolerant crops account for more than half (56 percent) of global glyphosate use. The researchers stated:³

In the U.S., no pesticide has come remotely close to such intensive and widespread use. This is likely the case globally, but published global pesticide use data are sparse.

Glyphosate will likely remain the most widely applied pesticide worldwide for years to come, and interest will grow in quantifying ecological and human health impacts.

Does Glyphosate Cause Cancer?

In March 2015, the International Agency for Research on Cancer (IARC), which is the research arm of the World Health Organization (WHO), determined glyphosate, the active ingredient in Monsanto's Roundup herbicide, to be a "probable carcinogen" (Class 2A).

This determination was based on evidence showing the popular weed killer can cause non-Hodgkin's lymphoma and lung cancer in humans, along with "convincing evidence" it can also cause cancer in animals.

Monsanto has maintained that the classification as a carcinogen is wrong and continues to tout glyphosate (and Roundup) as one of the safest pesticides on the planet.⁴

However, they've now been slapped with a growing number of lawsuits alleging they long knew that [Roundup's glyphosate](#) could harm human health. California resident Brenda Huerta and her husband James filed one such lawsuit in January 2016.

The couple lived on a commercial sod farm for several years, which exposed them to the chemical. Brenda was diagnosed with non-Hodgkin's lymphoma in 2013.⁵

It's probably no coincidence that California has both the highest level of glyphosate usage *and* the most cases of non-Hodgkin's lymphoma, the type of cancer linked to Roundup, in the U.S.⁶

California environmental officials intend to add glyphosate to their Proposition 65 list of cancer-causing chemicals. Established in California in 1986, Proposition 65 requires consumer products with potential cancer-causing ingredients to bear warning labels.

Rather than label their products sold in California as likely carcinogenic, most companies reformulated their product ingredients so as to avoid warning labels altogether, and they did this on a national scale, not just in California.

Monsanto, however, is trying a different strategy. They filed a lawsuit in an attempt to block California from listing glyphosate as a known carcinogen.

Why Isn't the U.S. Government Testing Your Food for Glyphosate Residues?

In December 2015, the U.S. Department of Agriculture (USDA) released data from the 2014 Pesticide Data Program (PDP) Annual Summary.

More than 10,000 food samples were tested, and 0.36 percent contained pesticide levels that were above the tolerance levels set by the U.S. Environmental Protection Agency (EPA).

This means more than 99 percent of foods should contain pesticide residues that fall within "safe" limits.

This isn't as reassuring as it sounds for a couple of key reasons. First, one of the EPA's regular responsibilities is to set a tolerance, or maximum residue limit, for pesticide residues on food, which are designed to protect you from harmful levels of pesticides.

But these tolerance levels are regularly challenged by the pesticide industry, including the likes of Monsanto and Syngenta. These companies *know* how many pesticides are being

sprayed (or applied otherwise) on your food, hence their petitions to increase the allowable limits.

Second, the USDA does *not* test for residues of glyphosate in your food. As for *why* the USDA continues to avoid testing for glyphosate residues in your food, perhaps that's a question we should be posing to *USDA* Secretary Tom Vilsack — a former Monsanto lawyer and advocate. As reported by Reuters in 2015:⁷

A USDA spokesman who asked not to be quoted said that the test measures required for glyphosate are 'extremely expensive... to do on an regular basis ...'

In response to growing public concern about the [toxicity of glyphosate](#), the U.S. Environmental Protection Agency (EPA) announced that U.S. regulators may start testing for glyphosate residues on food in the near future.

But keep in mind that current allowable limits may be set too far high to protect your health, so unless that's revised as well, you may be lulled into a false sense of security.

Global Environmental Contaminants

It's not surprising that Monsanto is trying to keep people in the dark about the health risks associated with glyphosate. Not only has the company been steadfastly fighting against [GMO labeling](#), but they also feigned ignorance on the dangers of PCBs for several decades.

Monsanto (and Monsanto-related entities) is now facing at least 700 lawsuits on behalf of people who claim their exposure to polychlorinated biphenyls (PCBs), which Monsanto manufactured until the 1970s, caused non-Hodgkin's lymphoma.⁸ The company claimed the PCBs it produced were "singularly free of difficulties," yet the U.S. government banned PCBs in 1976 due to their carcinogenic potential.⁹

In 2002, Monsanto was found guilty of decades of "outrageous acts of pollution" in the town of Anniston, Alabama, where it dumped PCBs into the local river and secretly buried the toxic chemical in a landfill.¹⁰ Internal documents revealed Monsanto had full knowledge of the severity of the pollution problem it caused for at least three decades, and decided to ignore it.

San Diego has sued Monsanto for polluting the Coronado Bay with PCBs,¹¹ and Seattle recently became the sixth city to file a lawsuit against the company for PCB pollution.

The City of Seattle wants Monsanto to pay to help clean up pollution it caused in the Duwamish River and also wants to hold Monsanto responsible for making the river's fish too contaminated to eat. The city alleges that Monsanto knew all along that PCBs were toxic but continued to market them anyway. According to *Seattle Weekly*:¹²

The lawsuit details internal documents that show Monsanto knew its chemicals were harmful to human health, but continued to market it — all but assuring that PCBs would eventually end up in waterways across the world.

The company formed internal committees on the subject acknowledging that PCBs were 'global environmental contaminants leading to contamination of human food (particularly fish).' But discontinuing production was not an option, one memo reads: 'There is too much customer/market need and selfishly too much Monsanto profit to go out.'

In addition to Seattle and San Diego, San Jose, Oakland and Berkeley, California and Spokane, Washington have also filed lawsuits against Monsanto for continuing to produce and promote PCBs despite knowing their hazards.¹³

Monsanto Has Long Fought to Keep You in the Dark About GMO Foods

Monsanto has spent millions to defeat GMO labeling initiatives. In 2013, the company donated nearly \$5 million to the [anti-labeling campaign in Washington State](#), and in 2012 they donated more than \$7 million to help defeat California's Proposition 37. Curiously enough, Monsanto is more than willing to "support" GMO labeling once they run out of options.

They even ran an ad in the U.K. letting British consumers know how much the company supports the mandatory labeling of their goods — even urging Britons to seek such labels out — ostensibly because Monsanto believes "you should be aware of all the facts before making a decision."

They may feel defeat is near in the U.S. as well, as they've announced in the U.S. that they support GMO labeling. It's a ridiculous statement considering the Grocery Manufacturers Association (GMA), whose 300-plus members include Monsanto, Coca-Cola, and General Mills, is pushing a Congressional bill called the "Safe and Accurate Food Labeling Act of 2014."

The bill, dubbed the "DARK" (Denying Americans the Right to Know) Act, would actually *preempt* all states from passing GMO labeling laws. It would also bar states from enacting laws that make it illegal for food companies to misrepresent their products by labeling GE ingredients as "natural." Last but not least, the DARK Act would also limit the U.S. Food and Drug Administration's (FDA) power to force food companies to disclose GE ingredients.

They are trying to *HIDE* the presence of genetically engineered ingredients and are pulling out ALL the stops to do so. Monsanto can say they support GMO labeling because they want to pass a federal bill to ensure "voluntary" labeling, which already exists today, while banning any state from passing a mandatory labeling law.

The GMA is another organization with a sordid past. In 2013, Attorney General Bob Ferguson filed suit against the GMA, alleging the association violated the state's campaign disclosure laws. Ferguson alleged the GMA illegally collected and spent more than \$7 million on the "No On Initiative 522" GMO labeling campaign, while hiding the identity of its contributors in order to shield them from consumer backlash.

According to the Washington State Office of the Attorney General:¹⁴

Attorney General Bob Ferguson today announced that his office has asked a court to grant summary judgment and penalize the

Grocery Manufacturers Association for GMA's intentional subterfuge in an effort to elude state campaign-finance laws. Ferguson also asked the court to unseal "confidential" GMA documents in the landmark case.

To date, Campbell Soup Co. is the only major U.S. food company to respond to consumer demand and announce that it will label its products with GE ingredients. Ironically, PepsiCo., which spent \$8.8 million in 2015 to overturn state labeling initiatives, requested a non-GMO Project label for their Tropicana Pure Premium orange juice.¹⁵

Monsanto Loses Syngenta Merger

Monsanto pursued [Syngenta](#), the world's largest pesticide producer, for four years, hoping to take over the company. Monsanto has made at least three takeover offers, but now has lost out on the merger for good.

China National Chemical Corporation has agreed to buy Syngenta for about \$43 billion, a move that has Food & Water Watch calling for antitrust authorities to block the takeover, noting such a merger "would accelerate the hyper-consolidation in the global seed and agrochemical market."¹⁶

When you factor in the 2015 merger between DuPont and Dow Chemical, this latest merger would put just three companies in control of more than 75 percent of corn and 80 percent of soybean seeds in the U.S. Food & Water Watch executive director Wenonah Hauter voiced concerns to Corporate Crime Reporter:¹⁷

The Department of Justice and antitrust authorities of governments across the world must act to block these seed megamergers ... The rapid concentration of economic power and seed patents in the hands of a tiny and diminishing number of global agribusiness giants harms farmers and eaters worldwide. Farmers will undoubtedly be forced to pay more for a reduced selection of options controlled by the gargantuan seed monopoly.

The companies use the patented seed varieties — overwhelmingly biotech crops with accompanying pesticides and agrochemicals — to control not only the selection of what farmers plant, but how they cultivate their crops, what chemicals they use on their fields and how they can manage their farms. The merger has far reaching impacts on the food supply, the environment and consumers ...

There is a growing demand by consumers to know what they are eating, how it is grown and how it impacts their communities. Global agribusiness mega-mergers like the proposed ChemChina-Syngenta deal give a corporate cabal a stranglehold on the world's farmers and the world's eaters. When fewer firms control more of the seed and agrochemical market, both farmers and consumers lose out.

Academics Selling Out to Monsanto

Last year, a New York Times article highlighted the lengths Monsanto will go to seem credible, including enlisting prominent members of academia to push their own self-serving

agendas.¹⁸ One of the most talked-about scandals involved University of Florida professor Kevin Folta, a vocal advocate of GMOs who vehemently denied ever receiving any money from Monsanto.

However, he was caught having been less than forthright about his connections to the company when his email correspondence was released in response to a freedom of information (FOIA) request by U.S. Right to Know. In August of 2014, Folta did in fact receive a \$25,000 unrestricted grant from Monsanto, and Folta wrote back to a Monsanto executive saying: *"I am grateful for this opportunity and promise a solid return on the investment."*

The most flagrant piece of [evidence against Folta](#) showed that not only did he solicit these funds from Monsanto, but he also appeared to do so with intent to hide the financial connection between them. Folta even went so far as to create a bizarre alter ego, Vern Blazek, a supposed radio personality in Tillamook, Oregon, who held podcasts to sort through "the shills and charlatans to distill the scientific truth."

Another example involves former University of Illinois Food Science professor Bruce Chassy, Ph.D. a respected "expert" researcher who often writes about food safety issues and worked as a researcher at the National Institutes of Health.

E-mails revealed through an FOIA request showed Chassy was part of a group of U.S. academics who were, according to Alternet, "quietly collaborating with Monsanto on strategies aimed at not just promoting biotech crop products, but also rolling back regulation of these products and fending off industry critics."¹⁹

The e-mails show money flowing into the university from Monsanto as Chassy collaborated on multiple projects with Monsanto to counter public concerns about genetically modified crops (GMOs) — all while representing himself as an independent academic for a public institution. ²⁰

At least one email exchange between Chassy and the biotech industry involved how to "spin" a government study that revealed high levels of glyphosate in air and water samples. Carey Gillam, research director at U.S. Right to Know, explained:²¹

The revelations in the emails about Chassy, Folta and other assorted academics, leave many questions about who to trust, and how to trust, information critical to understanding our evolving food system. With food labeling issues at the forefront of debate, it's time for more transparency.

GMOs Fuel CAFOs, Which Also Want to Hide Behind a Cloak of Secrecy

Monsanto's glyphosate-laden GMO crops are a staple food for the millions of animals raised on concentrated animal feeding operations (CAFOs) — another industry that is trying to keep the public in the dark about what really goes on behind their closed doors.

So-called "[ag-gag](#)" laws, which legally prevent people from filming or photographing conditions on factory farms, are being heavily promoted by lobbyists for the meat, egg, and dairy industries to essentially prevent anyone from exposing animal cruelty and food-safety issues at CAFOs. Montana, Utah, North Dakota, Missouri, Kansas, and Iowa already have

such laws in place preventing people from taking photos or videos of CAFOs.

On January 1, 2016, a law took effect in North Carolina that not only makes secret filming on CAFOs illegal but also secret videos or photos at nursing homes, day care centers and veterans' facilities, among others. Anyone who violates the law can be sued by the business owners for bad publicity!²²

Do You Want to Avoid Pesticides in Your Food?

Glyphosate has a number of devastating biological effects beyond being a probable carcinogen, including the following:

Nutritional deficiencies, as glyphosate immobilizes certain nutrients and alters the nutritional composition of the treated crop	Disruption of the biosynthesis of aromatic amino acids (these are essential amino acids not produced in your body that must be supplied via your diet)
Increased toxin exposure (this includes high levels of glyphosate and formaldehyde in the food itself)	Impairment of sulfate transport and sulfur metabolism; sulfate deficiency
Systemic toxicity — a side effect of extreme disruption of microbial function throughout your body; beneficial microbes in particular, allowing for overgrowth of pathogens	Gut dysbiosis (imbalances in gut bacteria, inflammation, leaky gut, and food allergies such as gluten intolerance)
Enhancement of damaging effects of other food-borne chemical residues and environmental toxins as a result of glyphosate shutting down the function of detoxifying enzymes	Creation of ammonia (a byproduct created when certain microbes break down glyphosate), which can lead to brain inflammation associated with autism and Alzheimer's disease

Your *best* bet for minimizing health risks from pesticide exposure (even those the government claim are “safe”) is to avoid them in the first place by eating organic as much as possible and [investing in a good water filtration system](#) for your home or apartment. If you know you have been exposed to pesticides, the lactic acid bacteria formed during the [fermentation of kimchi](#) may also help your body break down pesticides.

So including [fermented foods](#) like kimchi in your diet may also be a wise strategy to help detox the pesticides that do enter your body. One of the benefits of eating organic is that the foods will be free of GM ingredients — and this is key to avoiding exposure to toxic glyphosate. Following are some great [resources](#) to obtain wholesome organic food.

Eating locally produced organic food will not only support your family's health, it will also protect the environment from harmful chemical pollutants and the inadvertent spread of genetically engineered seeds and chemical-resistant weeds and pests.

What You Need to Know About GMOs

Genetically modified organisms (GMOs), or genetically “engineered” (GE) foods, are live organisms whose genetic components have been artificially manipulated in a laboratory setting through creating unstable combinations of plant, animal, bacteria, and even viral genes that do not occur in nature or through traditional crossbreeding methods.

GMO proponents claim that genetic engineering is “safe and beneficial,” and that it advances the agricultural industry. They also say that GMOs help ensure the global food supply and sustainability. But is there any truth to these claims? I believe not. For years, I've stated the belief that GMOs pose one of the greatest threats to life on the planet. Genetic

engineering is NOT the safe and beneficial technology that it is touted to be.

The FDA cleared the way for GE (Genetically Engineered) Atlantic salmon to be farmed for human consumption. Thanks to added language in the federal spending bill, the product will require special labeling so at least consumers will have the ability to identify the GE salmon in stores. However, it's imperative ALL GE foods be labeled, which is currently still being denied.

The FDA is threatening the existence of our food supply. We have to start taking action now. I urge you to share this article with friends and family. If we act together, we can make a difference and put an end to the absurdity.

QR Codes Are NOT an Adequate Substitute for Package Labels

The biotech industry is trying to push the QR code as an answer for consumer concerns about GE foods. QR stands for Quick Response, and the code can be scanned and read by smart phones and other QR readers.

The code brings you to a product website that provides further details about the product. The video below shows you why this is not an ideal solution. There's nothing forcing companies to declare GMOs on their website. On the contrary, GE foods are allowed to be promoted as "natural," which further adds to the confusion.

These so-called "Smart Labels" hardly improve access to information. Instead, by making finding the truth time-consuming and cumbersome, food makers can be assured that most Americans will remain ignorant about the presence of GMOs in their products. Besides, *everyone* has a right to know what's in the food. You shouldn't have to own a smartphone to obtain this information.

Non-GMO Food Resources by Country

If you are searching for non-GMO foods here is a list of trusted sites you can visit.

- [Organic Food Directory \(Australia\)](#)
- [Eat Wild \(Canada\)](#)
- [Organic Explorer \(New Zealand\)](#)
- [Eat Well Guide \(United States & Canada\)](#)
- [Farm Match \(United States\)](#)
- [Local Harvest \(United States\)](#)
- [Weston A. Price Foundation \(United States\)](#)

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