

# Hidden Ingredients in Glyphosate Are the Most Toxic

SECRET “INERT” OR  
“OTHER” INGREDIENTS  
TARGET ORGANISMS

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The ingredients not listed on a pesticide product nor fully reviewed for their adverse effects may be the most toxic chemicals in the formulation. Recent research, *Toxicity of formulants and heavy metals in glyphosate-based herbicides and other pesticides* (*Toxicology Reports* 5, 2018), by Defarge, de Vendôme, and Séralini, demonstrates the need to disclose and test all ingredients in pesticide products, as well as the full formulation. The research tested the toxicity of the herbicide glyphosate, so-called “inerts” in glyphosate-based herbicides (GBH), and the pesticide formulations—looking at toxicity to target organisms, toxicity to human cells, and endocrine-disrupting activity. In addition to the GBH products, they studied a number of other pesticides.

The scientists found that for GBH products, glyphosate was not the major toxic component—to either plants or human cells—and that formulations, as well as glyphosate alone, are endocrine disruptors at low concentrations. Glyphosate alone did not show herbicidal effects on tomato plants for five days following application. Formulations that included POEA (polyethoxylated tallowamine) are the most toxic to plants and human cells, and POEA itself is highly toxic to plants and animals. GBH formulations are no more toxic to plants than the formulants (“inert” ingredients). The researchers concluded, “Hence G [glyphosate] did not appear to be the main active substance of the herbicide, but rather the formulants.”

The researchers also identified a number of other toxic substances in the products, including arsenic, chromium, cobalt, nickel, and lead. Arsenic was present in almost all samples.

## PESTICIDE REGISTRATION FAILURES

This research calls into question the fundamental principles embodied in federal pesticide law, the *Federal Insecticide, Fungicide, and Rodenticide Act* (FIFRA), which distinguishes “active” ingredients, those ingredients in pesticide products for which pesticidal activity is claimed, from “inert” ingredients, now labeled “other ingredients.” “Inert” ingredients receive minimal review (to establish tolerances), compared to “active” ingredients, and are protected from disclosure on the product label as proprietary manufacturer information.

Beyond Pesticides has long worked for transparency in pesticide registration, which would allow the hazards of

“inert” ingredients to be recognized and regulated. In 2014, Center for Environmental Health, Beyond Pesticides, and Physicians for Social Responsibility, represented by Earthjustice, filed a legal complaint against the U.S. Environmental Protection Agency (EPA) for failing to complete rulemaking that would require pesticide manufacturers to disclose the inert ingredients on their pesticide product labels. A federal judge in California agreed with EPA that it has no responsibility under federal pesticide law to complete rulemaking on the disclosure of hazardous ingredients in pesticide products, so EPA will be allowed to keep the public in the dark on the full list of toxic ingredients in pesticides registered by the agency. U.S. District Judge William Orrick stated in his ruling, “The EPA has no mandatory duty to require disclosure of “inert” ingredients in pesticides, even if those ingredients qualify as hazardous chemicals under separate statutes.” Advocates have said for decades that people and communities cannot make informed decisions on pesticide products without full disclosure of all product ingredients and that the stated proprietary interests of chemical manufacturers is bogus, given the burgeoning market of “minimum risk” pesticide products exempt from registration under the FIFRA 25(b) provision, which are required to disclose all ingredients.

## INERTS COMPRISE HIGH PERCENTAGE OF PESTICIDES

According to a 2000 report produced by the New York State Attorney General, *The Secret Ingredients in Pesticides: Reducing the Risk*, 72 percent of pesticide products available to consumers contain over 95 percent inert ingredients and fewer than 10 percent of pesticide products list any inert ingredients on their labels. The report also found that more than 200 chemicals used as “inert” ingredients are hazardous pollutants in federal environmental statutes governing air and water quality, and a 1995 list of inert ingredients identifies 394 chemicals as active ingredients in other pesticide products. For example, naphthalene is an inert ingredient in some products and listed as an active ingredient in others.

“Inert” ingredients are allowed in pesticides used in organic production as well. The National Organic Program (NOP) allows “inerts” formerly listed on EPA’s List 4, “inerts of minimal concern,” as well as a few formerly listed on List 3, “inerts of unknown toxicity,” to be used in organic production. The National Organic Standards Board has voted overwhelmingly to require review of all individual “inerts” used in organic production, but NOP has refused to move forward.