

Address the Global Public Health Crisis: Ban Glyphosate Now!

Selected key studies documenting serious adverse health impacts of glyphosate

By [Colin Todhunter](#)

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Environmentalist and campaigner Dr Rosemary Mason recently wrote an open letter to the head of the Pesticides Unit at the European Food Safety Authority (EFSA), Jose Tarazona.

(Since this article was written, Jose Tarazona has stepped down from his position and the letter has been forwarded to his successors, Manuela Tiramani and Benedicte Vagenede.)

Mason wrote to Tarazona because the licence for glyphosate is up for renewal in the EU in 2022 and the Rapporteur Member States (France, Hungary, the Netherlands and Sweden), tasked with risk assessing glyphosate and appointed by the European Commission in 2019, said in June 2021 that there was no problem with glyphosate-based herbicides, the world’s most widely used weedkillers in agriculture.

Mason informs Tarazona that the European Commission has colluded with the US Environmental Protection Agency (EPA) to allow Bayer to keep glyphosate on the market. A substance that is toxic to both human health and the environment.

To set out her case, Mason enclosed a 5,900-word report informing Tarazona of the malfeasance and corruption that have resulted in environmental devastation and a severe, ongoing public health crisis. Her report brings together key research and analyses into the toxicity of glyphosate and industry dominance over regulatory processes.

What appears below is the second part of an article based on Mason’s report. Part one can be read [here](#). This second part questions why a proven toxic substance like glyphosate is still sanctioned for use in the EU.

Industry PR and reality

Although the European Chemicals Agency (ECHA) Committee for Risk Assessment agreed that glyphosate causes serious eye damage and is toxic to aquatic life with long-lasting

effects, in December 2017 the then European Commissioner Jean-Claude Juncker still reauthorised glyphosate use in the EU for five more years.

The European Glyphosate Renewal Group (GRG) has lobbied hard to ensure that the licence for glyphosate will again be renewed in 2022. The GRG is a collection of companies that have prepared a dossier with scientific studies and information on the supposed safety of glyphosate. This dossier was submitted to the evaluating member states and the EFSA as part of the EU regulatory procedure to evaluate whether glyphosate and glyphosate-containing products should be kept on the market in the EU.

Current members of the GRG are Albaugh Europe SARL, Barclay Chemicals Manufacturing Ltd., Bayer Agriculture bvba, Ciech Sarzyna S.A., Industrias Afrasa S.A., Nufarm GMBH & Co.KG, Sinon Corporation and Syngenta Crop Protection AG.

Cristina Alonso is the chair of the GRG and is also the head of Regulatory Affairs Crop Protection at Bayer AG. On the GRG website, Alonso writes:

“As GRG Chairman, I am personally committed to ensuring the decisions made during the regulatory process are based on sound science and supported with transparent, honest and cooperative dialogue among all stakeholders, while also respecting different viewpoints.”

Based on what is set out in this article, it could be concluded that Alonso’s notion of “sound science” has little to do with the regulatory process that she refers to.

Bayer CropScience was also part of the European Glyphosate Task Force (GTF) which lobbied for the reauthorisation of glyphosate in the EU back in 2017. Mason argues that the GTF conveniently overlooked many critical papers from South America in its submission as part of the EU glyphosate reapproval process. She fears that what we are currently seeing is a repeat of the previous process which led to the reauthorisation of glyphosate.

It raises the question, do sound science, honesty and transparency really govern how Bayer et al act in general and, more specifically, where the glyphosate regulatory process is concerned?

A pertinent question given the situation described by the [Declaration of the 3rd National Congress of Physicians in the Crop-Sprayed Towns of Argentina](#) in late 2015:

“In the last 25 years, the consumption of pesticides increased by 983%, while the cultivated area increased by 50%. A production system based on the systematic application of agricultural poisons means, inevitably, that nature responds by adapting, forcing farmers to apply greater quantities of pesticides in the field to achieve the same objectives. Over the years, a system has been created by and for sellers of pesticides, who every year increase their net sales (in 2015, the increase was 9%) while our patients, too, year after year are being exposed to this pesticide pollution more and more.”

The doctors stated that the massive and growing exposure to pesticides has changed the disease profile of Argentine rural populations and that cancer is now the leading cause of death. They noted that exposure to glyphosate or agricultural poisons in general leads to increases in spontaneous abortions and birth defects as well as increased endocrine disorders such as hypothyroidism, neurological disorders or cognitive development

problems and soaring of cancer rates to a tripling of incidence, prevalence and mortality.

The physicians warned about the toxic nature of modern agriculture which results from the immense influence of large multinational pesticide companies.

As explained in part one of this article, this public health crisis is not limited to South America. People elsewhere, not least in the US and UK, are experiencing the devastating health impacts because of the huge increase in glyphosate-based herbicides being sprayed on food crops in recent decades.

The agrochemical conglomerates are more concerned with increasing their sales regardless of the damage to the environment and public health. No number of sound-bites about sound science or transparency can disguise their genuine motives and the impacts of their actions.

Glyphosate is a multi-billion-dollar cash cow for these companies and protecting that revenue stream is their priority. In 2015, for example, Monsanto made nearly \$4.76 billion in sales and [\\$1.9 billion in gross profits](#) from herbicide products, mostly Roundup.

Sound science?

A new [scientific analysis](#) confirms the dominance of industry in driving policy and its reliance on selective science and dubious studies when lobbying to keep glyphosate on the market.

‘Evaluation of the scientific quality of studies concerning genotoxic properties of glyphosate’, by Armen Nersesyan and Siegfried Knasmueller of the Institute of Cancer Research at the Medical University of Vienna, concludes that the claim of glyphosate not being genotoxic cannot be justified on the basis of manufacturers’ studies. (Genotoxic substances induce damage to the genetic material in cells through interactions with the DNA sequence and structure.)

Of the 53 industry-funded studies used for the EU’s current authorisation of glyphosate in 2017, the evaluation concluded that some 34 were identified as “not reliable”, with another 17 as “partly reliable” and only two studies as “reliable” from a methodological point of view.

In response to this new research, Angeliki Lyssimachou, environmental scientist at the Health and Environment Alliance, says:

“This new scientific analysis shows yet again that the European Union’s claim to having the most rigorous pesticide authorisation procedure in the world has to be taken with a heavy grain of salt. The authorisation procedure in place is evidently not rigorous enough to detect errors in the execution of the regulatory studies that are blindly considered the gold standard. Yet these were at the heart of the 2017 EU market approval of glyphosate, and they have now been submitted again in an effort to water down scientific evidence that glyphosate may cause cancer and is a danger to human health.”

Helmut Burtscher, biochemist at GLOBAL 2000, argues that if you subtract from the 53 genotoxicity studies those studies that are not reliable and those studies that are of minor importance for the assessment of genotoxicity in humans, then nothing remains. He asks on what basis are the EU authorities claiming that glyphosate is ‘not genotoxic’?

According to Peter Clausing, toxicologist at Pesticide Action Network Germany, in 2017, EU authorities violated their own rules to ensure an outcome that pleased the chemical industry.

A point reiterated by Nina Holland, researcher at Corporate Europe Observatory, who argues that national regulators and EU authorities alike do not seem to pay close scrutiny when looking at the quality of industry's own studies.

Holland states that regulators exist to protect people's health and the environment, not serve the interests of the pesticide industry.

Eoin Dubsy, Campaigner at SumOfUs, goes a step further by saying that people are sick of glyphosate and of being lied to.

Dubsy asks:

“How could EFSA give glyphosate a thumbs-up based on such shoddy scientific studies when IARC warned that it is genotoxic and probably cancer-causing too?”

The IARC is the WHO International Agency for Research on Cancer.

Unsound studies aside, there is sound scientific research that should be driving the risk assessment but which seems to have been overlooked. A point not lost on Dr Mason.

She asks why key scientific studies have been side-lined, especially those from Latin America where Monsanto has grown GMO Roundup Ready crops since 1996 (glyphosate is the active ingredient in Monsanto's Roundup weedicide).

She also asks why was a 2010 groundbreaking study showing that Roundup causes adverse impacts on embryonic development and produces birth defects side-lined? Why have scientific studies that show that glyphosate is an endocrine-disrupting chemical that causes infertility been overlooked? Why have papers that show that glyphosate causes cancer been missed? And why have the effects of exposure to glyphosate-based herbicides on the brain not been properly considered?

Some key studies documenting the adverse effects of glyphosate are listed at the end of this article.

Ban Glyphosate Now!

In April 2017 (before Bayer purchased Monsanto), Bart Elmore, assistant professor of environmental history at Ohio State University, wrote a telling piece for [Dissent Magazine](#) that pointed out some of the real costs of producing glyphosate. These included radioactive waste piles, groundwater pollution, mercury emissions and poisoned livestock.

Glyphosate is derived from elemental phosphorous extracted from phosphate rock buried below ground. Monsanto got its phosphate from [mines in Southeast Idaho](#) near Soda Springs, a small town. The company has been operating there since the 1950s.

Elmore visited the site and watched as trucks dumped molten red heaps of radioactive refuse over the edge of a mountain of waste. The dumping happened about every 15 minutes. Horses grazed in a field just a few dozen yards away and rows of barley waved in

the distance.

When phosphate ore is refined into elemental phosphorous, Elmore explains, it leaves a radioactive by-product known as slag. Monsanto's elemental phosphorous facility, situated just a few miles from its phosphate mines, produces prodigious quantities of slag that contains elevated concentrations of radioactive material.

In the 1980s, the EPA conducted a [radiological survey](#) of the community and warned that citizens might be at risk from elevated gamma ray exposure and thus cancer.

Of course, the cancerous effects of glyphosate are not restricted to the community of Soda Springs. Due to its prevalence in agriculture and its use by municipal authorities, glyphosate is in our food and in our bodies. Marius Stelzmann of the [Coordination gegen BAYER-Gefahren](#) (CBG), refers to the ongoing court cases in the US regarding glyphosate use and cancer.

Marius says:

“... despite more than a year and a half of negotiations for a settlement in the glyphosate affair, the global player (Bayer) still cannot present a solution. It still has not reached agreements for compensation with all of the 125,000 US plaintiffs who accuse the herbicide of being responsible for their cancers. As a response to these actions, the CBG has launched the campaign ‘Carcinogen. Climate killer. Environmental toxin. Ban glyphosate now!’”

In a recent [press release](#), the European Federation of Food, Agriculture and Tourism Trade Unions (EFFAT) demanded an immediate ban on glyphosate. It also called for more investments in the promotion of alternatives to the use of glyphosate and other harmful pesticides and urges a clear governance in charge of a smooth transition with the involvement of trade unions.

The EFSA, ECHA and the European Commission should carry out their current assessment of glyphosate in a transparent and reliable way. Instead, it seems that, as in 2017, the agrochemical industry is still manipulating and driving the process.

The EFFAT says that alternatives to the use of glyphosate and other harmful chemicals already exist and must be further promoted, not least appropriate agronomic practices, mechanical and biological weed control, animal grazing and natural herbicides.

Selected key studies documenting serious adverse health impacts of glyphosate

Avila-Vazquez, M. et al (2017). [Association between Cancer and Environmental Exposure to Glyphosate](#). International Journal of Clinical Medicine, 8, 73-85.

Carlos Javier Baier, C.J. et al. (2017). [Behavioral impairments following repeated intranasal glyphosate-based herbicide administration in mice](#), Neurotoxicology and Teratology 64:63-72.

Cattani, D. et al. (2014). [Mechanisms underlying the neurotoxicity induced by glyphosate-based herbicide in immature rat hippocampus: Involvement of glutamate excitotoxicity](#), Toxicology 320:34-45.

Nardi, J. et al. (2017). [Prepubertal subchronic exposure to soy milk and glyphosate leads to endocrine disruption](#), Food and Chemical Toxicology 100:247262.

Lesueur, C. et al (2022). [Urinary glyphosate concentration in pregnant women in relation to length of gestation](#). Environmental Research 203, January 2022, 111811.

Martínez, M. A. et al. (2018), [Neurotransmitter changes in rat brain regions following glyphosate exposure](#), Environmental Research, 161:212-219.

Mesnage, R. et al (2021), [In-depth comparative toxicogenomics of glyphosate and Roundup herbicides: histopathology, transcriptome and epigenome signatures, and DNA damage](#), bioRxiv.

Paganelli, A. et al (2010). [Glyphosate-based herbicides produce teratogenic effects on vertebrates by impairing retinoic acid signalling](#). Chem. Res. Toxicol., August 9.

Readers can access Rosemary Mason's new report, with all relevant references, [here](#). All of Dr Mason's previous reports can be accessed [here](#).

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Colin Todhunter specialises in development, food and agriculture and is a Research Associate of the Centre for Research on Globalization in Montreal.

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About the author:

Colin Todhunter is an extensively published independent writer and former social policy researcher. Originally from the UK, he has spent many years in India. His website is www.colintodhunter.com
https://twitter.com/colin_todhunter

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