

Endgame for Glyphosate? The Global Fallout of WHO's 'Probable Carcinogen' Classification

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WHO's official recognition of the health damage caused by glyphosate, the world's most widely used herbicide, is having ramifications around the world, writes Dr Eva Sirinathsinghji. National governments are moving to restrict the chemical, campaigns to ban it are intensifying, and now 'Roundup Ready' GMO crops are coming under the regulatory spotlight.

Could it be that the World Health Organisation's classification of glyphosate as a 'probable carcinogen' (see [1] [Glyphosate 'Probably Carcinogenic to Humans' Latest WHO Assessment](#), SiS 66) will be the final nail in the coffin for the world's most popular herbicide and Monsanto's flagship product.

Recent weeks have seen the intensification of campaigns to ban or remove the product as well as lawsuits being filed against Monsanto; in the US for false safety claims of glyphosate, and in China, for hiding toxicity studies from the public.

El Salvador has already banned the chemical though yet to be signed into law [2], while the Netherlands last year banned private sales [3]. Sri Lanka had a partial ban in place in regions most afflicted by chronic kidney disease that has been linked to glyphosate use (see later).

People have known the truth for years. Industry and government regulators have conspired to bury copious evidence of toxicity for decades, and they feel to some extent vindicated by the latest WHO assessment (see [4] [Glyphosate and Cancer](#), SiS 62) and [5] [EU Regulators and Monsanto Exposed for Hiding Glyphosate Toxicity](#), SiS 51). More importantly, governments are finally beginning to take action.

Outright bans

Colombia has taken the lead, deciding to suspend aerial spraying of illegal coca as well as poppy plants, which is expected to come into effect in a few weeks' time following a majority 7 to 1 vote for the ban by the National Narcotics Council [6].

The day before the ban, the Interamerican Association for Environmental Defence (AIDA) delivered 24,000 signatures to the Minister of Justice who also chairs the Narcotics Council to push for this decision [7].

Colombia had been employing US contractors to spray glyphosate for two decades, covering

an estimated 1.6 million hectares of land. This spraying for the 'war on drugs' has been ineffective in eradicating illegal cocaine production, but has instead caused rising illness in local communities, killing local crops and polluting land and water supplies.

Indigenous and Afro-Colombian communities have borne the brunt of the fumigation programs, prompting protests against both coca production and glyphosate use that has been displacing people from ancestral lands [8]. Colombia is not alone.

Bermuda, the British overseas territory in the Atlantic also banned glyphosate imports with immediate effect following the WHO assessment, as announced by their Minister of Health, Jeanne Atherden, whose decision was supported by local farmers [9]. The Minister said she believes the

"action we are taking today is prudent and in the best interests of a safe environment ... Like any area of science, there are competing studies and a wealth of information on both sides of the argument ... I am satisfied that this action is warranted and we are committed to conducting an open and thorough investigation." [10]

Sri Lanka is the latest country to declare an outright ban. The decision follows the election of the new president, a farmer and previously the Health Minister, Maithripala Sirisena taking the decision due the epidemic of chronic kidney disease [11]. The spread of kidney disease highlights the wide-ranging toxicity of glyphosate not limited to carcinogenicity.

The country's battle to ban the chemical precedes the WHO declaration, coming after studies by Sri Lankan researchers linked the chemical to hard water, heavy metal contaminants and glyphosate use (see [12] [Sri Lanka Partially Bans Glyphosate for Deadly Kidney Disease Epidemic](#), SiS 62).

This prompted an initial ban, which was later restricted to certain regions of the country following intense lobbying pressure. With the government paying for healthcare of over 25 000 residents and supplying them with fresh water, the latest decision for an outright ban could not come soon enough.

Imminent bans, protests, and fresh calls for bans

Brazil is facing growing pressure to follow suit, with the country's public state prosecutor writing to Brazil's National Health Surveillance Agency (ANVISA) asking it to urgently re-evaluate their stance on glyphosate and also revoke authorisations on glyphosate-tolerant GM crops [13].

He has even gone as far as launching an investigation into whether regulatory authorisations are legal for the GM crops. ANVISA are stalling their decision however, until the full report by the WHO is published.

In Argentina, 30 000 health professionals belonging to the union of doctors and health professionals (FESPROSA) have come out in support of the WHO decision [14], claiming that glyphosate *"not only causes cancer. It is also associated with increased spontaneous abortions, birth defects, skin diseases, and respiratory and neurological disease."* The statement continues:

"Health authorities, including the National Ministry of Health and the political powers, can no longer look away. Agribusiness cannot keep growing at the expense of the health of the

Argentine people. The 30,000 health professionals in Argentina in the FESPROSA ask that glyphosate is now prohibited in our country and that a debate on the necessary restructuring of agribusiness is opened, focusing on the application of technologies that do not endanger human life.”

Similarly, the Society of Paediatric Haematology-Oncology (SAHOP) issued a statement calling for an immediate ban of glyphosate fumigation, signed by the President of the Paediatric society Pedro Zubizarreta. They objected to the massive use of toxic products being sprayed in ever increasing concentrations in combinations of both insecticides and herbicides, and being sold as ‘technological advancements’.

They also warned of storing the grains in plastic bags, which leaves grains teeming with aflatoxins, categorised by the WHO’s IARC as a known carcinogen since 1993 [15]. Glyphosate has already been previously linked to the growth of these fungi in scientific studies, along with many other crop diseases [16].

Successful protests in Argentina were also recently mobilised to prevent Dr Medardo Ávila Vázquez from losing his job after the agribusiness-funded university threatened to sanction him for conducting and disseminating studies showing the high levels of cancers affecting his region as a result of agrichemical spraying [17].

These protests are a tribute to his work in exposing the toxicity of glyphosate, as well as the groundswell of opposition to glyphosate spraying in the country despite support by the national government.

Local residents are gaining strength to voice their concerns following the WHO news as well as the recent decision by the Ministry of Production in the province of Santa Fe to ban aerial spraying of 2,4-D within 6 km of residents, confirming the health risks of the chemical agricultural system that leaves children covered in chemical and dust particles as they walk to school [18].

In Europe, the International Society of Doctors for the Environment (ISDE) (an influential body with member organizations in 27 countries) has written to officials at the EU parliament and Commission asking for an immediate ban of glyphosate herbicides and for insecticides also judged by the WHO to be carcinogens, without exceptions [19].

A member of the EU commission stated in the 2015 GMO-free conference 2015 in Berlin, Germany that they will include the WHO assessment in their re-evaluation procedures that is due to be completed later this year.

However the corrupt process of reassessment that was led by a consortium of chemical companies (see [20] [Scandal of Glyphosate Re-assessment in Europe](#), SiS 63) means that EU campaigners will have to push hard to force the EU to have some semblance of integrity in their final decision making.

Meanwhile, Germany’s state consumer protection ministers are calling for an EU-wide ban on selling glyphosate for home use, for precautionary reasons [21], and the German retail giant REWE has decided to remove all glyphosate from its ‘toom Baumarkt DIY’ store shelves by September 2015 [22].

Swiss companies are following suite, with Coop supermarkets and Switzerland’s largest

retail company, Migros declaring they will both no longer sell any products containing it [23].

In Denmark, the Danish Working Environment Authority has decided to follow the WHO decision and has now declared glyphosate a carcinogen, with the expected outcome being a switch to alternative, less toxic chemicals (see [24] [Roundup Listed Carcinogen by Danish Authority](#), SiS 67).

The decision is backed by one of the world's leading toxicologists, Philippe Grandjean, a professor at the University of Denmark where he is head of the Environmental Medicine Research Unit as well as being an adjunct professor at Harvard University.

Commenting on the decision he stated, *"It is so common a substance - and our use of it is so extensive - that this WHO report must be taken seriously"*, while encouraging people to rid the chemical from their homes.

With such a decision, it now seems unlikely that the post-harvest spraying of crops for desiccation will go ahead this year, which contributes to it being the most widely used herbicide in the country. This is big news in a country about to face an election, with the highly-respected Professor Grandjean's media appearances drawing much public attention, leaving little room for industry to defend themselves.

US citizens file class action lawsuits against Monsanto for false safety claims

A group of citizens in Los Angeles County are taking court action against Monsanto for falsifying safety claims that Roundup® *"targets an enzyme found in plants but not people and pets"* in its labelling of the herbicide [25]. The lawsuit applies to residents of California who have purchased Roundup at any time during the last four years. This lawsuit, if successful can encourage similar actions elsewhere in the country.

The claim that glyphosate targets an enzyme (EPSP synthase) that does not physically exist in people ignores the fact that EPSP synthase is present in the bacteria that live inside people. Moreover, these microbes are intimately linked to many physiological functions in the body that are vital to human health, and their disruption is increasingly linked to illness.

The plaintiffs state in the lawsuit that *"... this claim is absolutely, positively false because glyphosate does indeed target an enzyme 'found in people' - in our gut bacteria"*, making Monsanto's claim *"objectively false (and inherently misleading)"*.

The class action further alleges that Monsanto, *"cannot deny that Roundup targets an enzyme that is physically located inside of people ... this fact lay beyond dispute."*

Monsanto's claim that glyphosate targets a single enzyme is also a fallacy. It has been shown to disrupt the function of many enzymes at least in part due to its metal chelating activities, a property for which the chemical was originally patented in 1964. Metals act as co-factors for many enzymes which is why metals are key to any healthy diet.

Anyone wishing to support the suit filed by T. Mathew Phillips can visit the attorney's website [26].

Chinese citizens sue government for hiding toxicity studies from public

Three Beijing residents, have filed a lawsuit against China's Ministry of Health requesting full disclosure of the toxicology report submitted to the Chinese government for registration of the chemical almost three decades ago [27].

The case, a rare example of private citizens against the Chinese government comes after more than a year of the Ministry of Agriculture failing to meet the requests of the Beijing food volunteers after they submitted the first application of disclosure in February 2014. So far, the government has refused to disclose the report for privacy and business reasons, protecting Monsanto's commercial interests.

The toxicology report was not performed independently by Chinese institutions, but was instead conducted by US-based Younger Laboratories and commissioned by Monsanto [28]. The tests were restricted to acute toxicity in rats and rabbits being exposed via the mouth and skin, hardly a comprehensive safety test that the Chinese people can have confidence in.

Further, while Monsanto filed the report for registration of the formulation product Roundup, the tests were performed on glyphosate alone. The case has not yet been heard, but the Ministry of agriculture has added Monsanto as a defendant [29].

The country is by far the largest producer of glyphosate, producing an estimated 70% of the world's supply [30]. It is also the largest importer of GM foods.

Despite it being a centre of origin for soybean plants, China is now importing most of it from overseas, the majority of which is GM, making the country not only the leading producer, but also one of the leading consumers of glyphosate (see [31] '[How Grain Self-Sufficiency, Massive GM Soybean Imports & Glyphosate Exports Led China to Devastate People & Planet](#)', *SiS* 67).

If successful, the suit will only further expose the toxic effects of this herbicide, which go beyond its carcinogenic properties, with evidence of teratogenic and endocrine disrupting effects among others (see [32] [Roundup of Roundup® Reveals Converging Pattern of Toxicity from Farm to Clinic](#), *SiS* 65).

The beginning of the end for glyphosate?

The fight against glyphosate is gaining momentum, and where governments are not stepping up to enforce bans, citizens and private companies are taking it upon themselves with major successes.

A major campaign to stop local governments from spraying glyphosate has just been launched by a group of 81 scientists/medical professionals ([Independent Scientists Manifesto on Glyphosate](#)).

In less than two days, the number of scientists who have signed the Manifesto has more than tripled, while over 300 non-scientists have endorsed the Manifesto. Add your name now.

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