Glyphosate Declared a Probable Human Carcinogen Transcript

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Introduction to Glyphosate Series

For those who don't know me yet, I'm Dr. Kristine Dennis, a PhD-trained scientist with expertise in nutrition and public health. At NutritionFacts, I serve as Senior Research Scientist, and alongside Dr. Greger, research and write new video scripts.

In this four-part series, I'm going to be covering glyphosate, one of the most widely used herbicides on food crops. I'll talk about why it was declared a probable human carcinogen, why different leading health organizations drew different safety conclusions, how much we are exposed to it from the foods we eat, how we can reduce our exposure, and the potential health risks. Let's dive in.

Monsanto, GMOs, and Glyphosate Background

"Glyphosate Declared a Probable Human Carcinogen" The discourse about genetically modified organisms is not only controversial, but it continues to be filled with drama.

Drama that goes beyond a simple scientific exercise. Although the state of the GMO debate may be shifting to a slightly less polarized conversation, at least what is presented by the media, Monsanto and its association with pesticides, notably glyphosate, drives negative perceptions toward GMOs.

Why has Monsanto become the archetypal target of environmental anti-GMO groups in Europe and beyond? In the 1970s, Monsanto started its commercialization of broad-spectrum herbicides.

The first glyphosate-based herbicide, Roundup, and others that followed, are mixtures of glyphosate and additional compounds that help get the herbicide into the plant, enhancing its activity, allowing it to indiscriminately kill nearly all other non-GMO plant species.

Once in the environment, glyphosate is metabolized by microorganisms into AMPA, known as its most active metabolite, and MPA. Glyphosate and AMPA can be found in soil, water, plants, food, and animals.

IARC Classifies Glyphosate as a Probable Carcinogen

These "Roundup-Ready" crops were first introduced in the mid-1990s and now account for more than 90% of the corn and soybeans planted in the United States.

So, Monsanto can sell both the seeds of the glyphosate-resistant crops and the herbicides used on those crops, which means it is highly motivated to keep its products on the market.

In 2014, Dr. Greger covered some of the safety concerns of glyphosate, particularly in Roundup, with some evidence of adverse effects on human placental tissue, as well as potential health effects among herbicide applicators and their children, based on information from population studies.

But Dr. Greger concluded that "the bottom line is that there is no direct human data suggesting harm from eating GMOs." But that was before the International Agency for Research on Cancer classified glyphosate as "probably carcinogenic to humans." Its conclusions were based on sufficient evidence in animals, limited evidence in humans, and strong evidence for two cancer-causing mechanisms.

Monsanto Emails and Ghostwritten Science

The release of the IARC report led to a firestorm of criticism and controversy, in particular, because IARC's

conclusions have potentially powerful implications for regulations.

Those unhappy with the report's findings start to question IARC's process, creating doubt, a strategy that can be traced back to the tobacco industry's playbook.

While each side of the debate claims that the other has significant conflicts of interest, there was some particularly shady activity by Monsanto that muddied the scientific waters.

Shortly after the release of IARC's report, multiple lawsuits were brought against Monsanto on behalf of people who blamed their cancer on Roundup. This led to the public release of internal emails revealing that Monsanto had secretly flooded the scientific literature with ghostwritten material.

The uncovered internal documents made clear that while the company was not willing to conduct the proposed long-term product safety studies, it spent millions of dollars on secretive PR campaigns, including $17 million in the year after the IARC evaluation had been published, to finance "ghost-written" studies and editorials aimed at discrediting independent scientists whose work had found dangers with Monsanto's pesticides.

Other activities went beyond just ghostwriting, including controlling what content was released in scientific journals. Here's one example of Monsanto's influence, from an email in 1999.

A Monsanto scientist discusses the need to replace a consulting academic who is unconvinced that glyphosate is not genotoxic with someone who is comfortable with the genotoxicity profile of glyphosate and Roundup so they can influence regulators whenever anyone raises a concern about genotoxicity.

So, certainly some sketchy activity, but being sketchy doesn't necessarily mean glyphosate is giving people cancer. What did all the regulatory agencies conclude after considering IARC's report?

We'll find out next.