

Glyphosate Questions & Answers

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What is glyphosate?

It's a weed-killing chemical found in Roundup and many other weed killers. Like other herbicides, it is usually combined with one or many [other ingredients](#) to make the final product.

Does OSU have an official position for or against using glyphosate?

No. It is our mission to educate, not to legislate. We're happy to answer questions and help find solutions using any legal, effective methods, while considering the risks.

Does glyphosate cause cancer in humans?

Maybe, at high enough doses. If it caused cancer at realistic exposure levels from using weed-killers, then farmers and other applicators would be the first to show this effect. The [largest study](#) ever published, looking at farmers and other applicators, found no association between glyphosate and solid tumors, including Non-Hodgkins Lymphoma (NHL).

That study found a potential association between glyphosate exposure and a certain type of blood cancer that was not statistically significant. Another [study](#) suggested that using fertilizers could account for this risk.

Why do regulators disagree about this?

They don't. Not really.

The International Agency for Research on Cancer (IARC), an arm of the World Health Organization (WHO), determined in 2015 that glyphosate is a **probable human carcinogen**. That determination was surprising to many. [IARC responded](#) to critics by clarifying its intent – to identify potential *hazards*. They asked, “Can it cause cancer under any circumstances?” They group hazards based on the strength of evidence, not the potency of the carcinogen(s). They defer to national and international bodies to take the next step, which is risk-assessment. Risk assessment is based on expected levels of exposure and background cancer rates.

Many governments have published risk assessments about glyphosate, finding it is **unlikely to cause cancer in humans** when used according to the label directions as required.

- US Environmental Protection Agency, [December 18, 2018](#)

- European Food Safety Authority, [November 12, 2015](#)
- Australian Pesticides and Veterinary Medicine Authority, [March 15, 2017](#)
- New Zealand Environmental Protection Authority, [August 2016](#)
- Health Canada, [April 2015](#)
- International assembly of experts: FAO/WHO [May 16, 2016](#)

To put the IARC determination in context, they put the following items in the same category as glyphosate, Group 2A “Probable human carcinogens.”

- Red meat
- Indoor emissions from burning wood
- High-temperature frying
- Late-night work shifts

The following items were placed in a stronger-evidence category, “Known human carcinogens.”

- Processed meats
- All alcoholic beverages
- Sunlight
- Engine exhaust
- Outdoor air pollution

The work of [hazard identification](#) is important, but it’s only the first step in understanding risk.

What about the other ingredients in Roundup?

[Researchers](#) reviewed the scientific literature on glyphosate, its major metabolite AMPA, formulated Roundup® products manufactured by Monsanto, and the surfactant POEA. They concluded that none of the components caused cancer. However, POEA can be harmful to a variety of aquatic wildlife (i.e. minnows, frogs, micro-organisms).

It can be difficult to determine the risks associated with other ingredients in pesticide formulations, including Roundup. This is because manufacturers are not currently required to identify “other ingredients” on product labels.

How have the courts ruled?

Courts have ruled in different ways on this issue. A California jury found Monsanto liable in August 2018 for causing a man’s cancer. The man used glyphosate weed-killers for years. The case has been appealed. In contrast, a federal judge in California ruled in June 2018 against the state’s case

for placing warning labels on containers of glyphosate under Proposition 65. It would have required warnings about the potential for glyphosate to cause cancer. The judge cited a “heavy weight of evidence” that the risk was very low. The courts will likely evaluate more cases in the future.

Are foods with glyphosate residue safe to eat?

A tiny amount of glyphosate is not likely to cause harm, even if we eat those foods daily. There are residue limits for glyphosate on many fruits, vegetables, corn, grains, milk, and eggs. The [FDA](#) monitors the level of glyphosate on foods in the marketplace. So far, they have not found foods with too much residue, based on risk assessments. The dose makes the poison.

How can I reduce my risk?

If you choose to avoid glyphosate exposure altogether, seek out organic foods with the official logo from USDA. Glyphosate is not allowed to be used in organic settings. Use alternative methods of weed control. Talk with your local [master gardeners](#) about what’s working for them..

If you choose to use glyphosate weed-killers, make sure to follow the product label carefully. The label is the law. While glyphosate is poorly absorbed through the skin, some parts of the body are more absorptive than others. Minimize your exposure, and keep others away until sprays have dried. Talk with your neighbors about any concerns they might have, and take steps to accommodate their needs.

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