Glyphosate: Get the Facts

NEPPSC

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I am not affiliated with Monsanto, Bayer or any entity with interests in glyphosate or its commercial formulations.

I am not involved in any litigation or legal proceedings with regard to glyphosate or its commercial formulations.

My opinions are my own and do not represent any corporation, government, or NGO.
Glyphosate found in cereal | Learn what to avoid with EWG | EWG.org
www.ewg.org/pesticides
An EWG study found a probable carcinogen in popular cereals. Learn more now. Get Consumer Guides. Sign Up For Updates.

Skin Care
Find safer skin care products like makeup remover and moisturizer.

Consumer Guides
Keep your family safe from toxic ingredients and contaminants.

Active Ingredient in Roundup | Dangerous Effect Of Glyphosate
www.organicconsumers.org/
Upcoming Events · Organic Retail & Consumer · Dump Dirty Dairy
The Evidence (as of 2016)

• 23 epidemiological studies

• 15 animal carcinogenicity studies

• Over 90 genotoxicity studies
Evaluations

The Environmental Protection Agency (EPA)/ Office of Pesticide Programs (OPP)

European Food Safety Authority (EFSA)

The World Health Organization (WHO)/ Joint Meeting on Pesticide Residues (JMPR)

WHO/ The International Agency for Research on Cancer (IARC)
Evidence in Humans
“In epidemiological studies, there was no evidence of an association between glyphosate exposure and numerous cancer outcomes; however, due to conflicting results and various limitations identified in studies investigating NHL, a conclusion regarding the association between glyphosate exposure and risk of NHL cannot be determined based on the available data.”

Evidence in Animal Studies
“Increases in tumor incidence were not considered treatment-related in any of the animal carcinogenicity studies.”

Mutagenesis (DNA damage)
“The overall weight of evidence indicates that there is no convincing evidence that glyphosate induces mutations in vivo via the oral route.”

CONCLUSION ON PESTICIDE PEER REVIEW

Conclusion on the peer review of the pesticide risk assessment of the active substance glyphosate¹

European Food Safety Authority (EFSA)²

European Food Safety Authority (EFSA), Parma, Italy

“...all the Member State experts but one agreed that neither the epidemiological data (i.e. on humans) nor the evidence from animal studies demonstrated causality between exposure to glyphosate and the development of cancer in humans.”

“Regarding carcinogenicity, it is unlikely that this substance is carcinogenic.”

In view of the **absence of carcinogenic potential in rodents** at human-relevant doses and the **absence of genotoxicity** by the oral route in mammals, and considering the **epidemiological** evidence from occupational exposures, the Meeting concluded that glyphosate is **unlikely to pose a carcinogenic risk to humans** from exposure through the diet.

https://www.who.int/foodsafety/jmprsummary2016.pdf
Evidence in humans
“There is limited evidence in humans for the carcinogenicity of glyphosate. A positive association has been observed for non-Hodgkin lymphoma.”

Evidence in experimental animals
“There is sufficient evidence in experimental animals for the carcinogenicity of glyphosate.”

Supporting evidence
Genotoxicity and oxidative stress

Overall evaluation
“Glyphosate is probably carcinogenic to humans (Group 2A).”

Why are IARC’s conclusions different?

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| **Epidemiological Studies** | 28 individual studies  
1 reanalysis  
1 meta-analysis | 58 individual studies  
1 reanalysis  
2 meta-analyses |
| **Animal Carcinogenicity Studies** | 6 rat studies  
2 mouse studies  
Only publicly available data | 9 acceptable rat  
6 acceptable mouse  
5 unacceptable  
Access to all acceptable studies |
| **Genotoxicity Studies** | Technical, formulation, and metabolites | Technical only  
(107 assays)  
Access to all except 17 |
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It’s a Fan!

It’s a Wall!

It’s a Rope!

It’s a Spear!

It’s a Snake!

It’s a Tree!
“The Blind Man and The Elephant”

And so these men of Indostan, disputed loud and long, each in his own opinion, exceeding stiff and strong, Though each was partly in the right, and all were in the wrong!

So, oft in theologic wars, the disputants, I ween, tread on in utter ignorance, of what each other mean, and prate about the elephant, not one of them has seen!

-John Godfrey Saxe