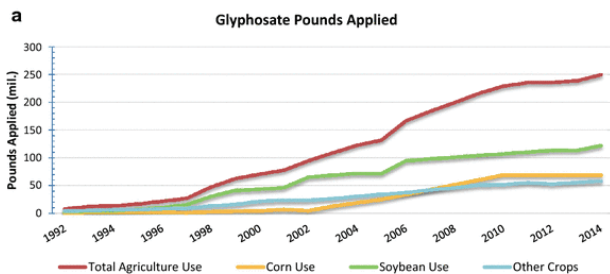
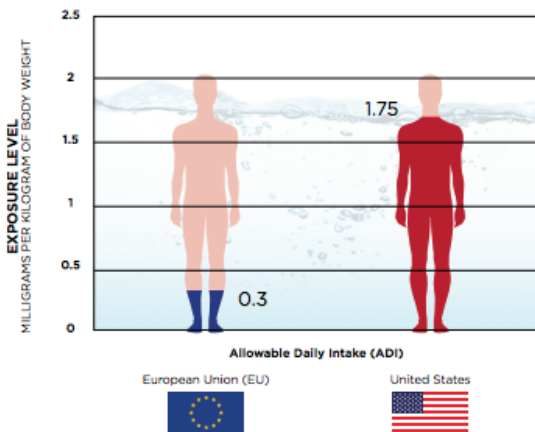


## By The Numbers



- America applied **1.8 million tons** of glyphosate to agricultural lands from 1974 to 2016
- Since 1995, the year when GMO crops started to hit the market, glyphosate use has increased **15-fold**
- GMO soybeans receive more glyphosate treatment than any other crop. In 2014, GMO soybeans received half of all applications of glyphosate on major crops in the U.S.
- The daily allowed exposure level in the U.S. is **6x greater** than what is allowed in Europe

### U.S. Government Allows Nearly 6 Times More Glyphosate in Our Food than Europe



Source: Food Democracy Now! "Glyphosate: Unsafe On Any Plate"

Note: While the EU has taken a much more cautious approach to "standards" for allowable contamination, this is a bureaucratic standard not based in science. There is no truly acceptable level of glyphosate contamination in our food.

## A Path Forward

Communities across the country are deciding to take action against biocides like glyphosate and the dangers they pose to humans and wildlife, including 15 in Massachusetts. By using tools like local municipal ordinances and resolutions, cities and town governments can promote organic landcare practices, limit pesticide use, and protect pollinators and sensitive ecosystems.

Join the *Community Pesticides Reduction* network - a project of NOFA/Mass, Toxics Action Center and Regeneration Mass. - and gain tools and training to organize local efforts to reduce pesticides in your town or city.

Local action builds support for state-level efforts to restrict the use of toxic pesticides like glyphosate. Please contact your state legislators in support of the NOFA/Mass priority bills.

*Want to learn more about glyphosate's health impacts, how you can move your town toward organic solutions and take action at the state level?*

Visit [www.nofamass.org/glyphosate](http://www.nofamass.org/glyphosate) for action resources and links to studies referenced in this brochure.



Follow our sister organization, "Regeneration Massachusetts" on Facebook for daily news articles and emerging science or contact [ed@regeneration-mass.org](mailto:ed@regeneration-mass.org)

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## Support NOFA/Mass

Join NOFA/Mass and help us promote consumer knowledge, choice, and the growth of local, organic production.

Visit [www.nofamass.org](http://www.nofamass.org) to sign up for our email list and become a member today!



# Glyphosate

## A Closer Look At America's Favorite Pesticide



## What is glyphosate?

More commonly referred to as **Roundup**, glyphosate was first patented in 1974 as an industrial pipe cleaner. It is now the most widely used herbicide in the world: It is used to kill weeds in fields growing genetically engineered crops like soy, corn, and canola and is often applied to non-GMO grain and other crops just prior to harvest, also as a desiccant. It is also widely used for weed control in landscapes, lawns, golf courses, and schools. Numerous studies show that even small doses of glyphosate are responsible for alarming health and environmental impacts. It even disrupts soil microbes critical for pulling carbon out of the atmosphere.

## Glyphosate Is In Your Food

The USDA quietly dropped a plan to start testing food for residues of glyphosate in 2017. The FDA began a limited testing program in 2016, but the effort was soon suspended. Glyphosate cannot be washed off of produce, and residues are not necessarily destroyed by cooking. A 2016 study by Food Democracy Now! and The Detox Project comparing over two dozen common processed foods found that all of them had some level of glyphosate residues. The highest foods tended to be those that used cereal crops, presumably because they were treated with glyphosate used as a desiccant just before harvest. Some of the foods with alarmingly high residue levels were:



**Oreos:**  
289 PPB  
(Parts per Billion)



**Stacy's Pita Chips:**  
813 PPB



**Cheerios:**  
1,125 PPB

## Glyphosate Is In Your Body

Contrary to what Monsanto wants us to think, glyphosate does not break down rapidly in the environment. Recent studies have found glyphosate residues in lakes, rivers, rainwater, soil<sup>©</sup> and in human urine.<sup>©</sup>

*"Chronically ill humans showed significantly higher glyphosate residues in urine than healthy populations. The presence of glyphosate residues in both humans and animals could haul the entire population toward numerous health hazards. Global regulations for the use of glyphosate may have to be re-evaluated."*

— Kruger & Scheldorn,  
Environmental & Analytical Toxicology



### Test yourself for glyphosate

NOFA/Mass is partnered with HRI Labs to provide at-home urine and water test kits:  
[http://bit.ly/HRI\\_NOFA](http://bit.ly/HRI_NOFA)  
Use discount code "NOFAMASS"

## Glyphosate's Impact On Your Health

**Exposed before birth:** A 2017 birth cohort study found glyphosate in more than 90% of the pregnant women tested and levels were significantly correlated with shortened pregnancy lengths.<sup>©</sup>

**Generational impacts:** A 2019 study in the journal Nature\* reported increases in obesity, reproductive and kidney diseases, and other problems in the second- and third-generation offspring of rats exposed to glyphosate.

**Cancer:** The World Health Organization<sup>©</sup> declared in 2015 that glyphosate is a "probable human carcinogen." A 2019 jury trial in California resulted in a \$2 billion award to an elderly couple dying of non-Hodgkin Lymphoma. Bayer/santo now faces over 18,000 similar lawsuits.

**Endocrine Disruptor:** Even at very low concentrations glyphosate interferes with the proper functioning and production of hormones.<sup>©</sup>

**Gut Microbiome Disruptor:** A 2018 study<sup>©</sup> reported that low-dose exposures to Roundup at levels considered safe significantly altered the gut microbiota in rats. Another 2018 study reported that higher levels of glyphosate administered to mice disrupted the gut microbiota and caused anxiety and depression-like behaviors.

**Non-Alcoholic Fatty Liver Disease:** A 2017 study<sup>©</sup> revealed that glyphosate causes liver damage at doses permitted by regulators.



### Glyphosate/Roundup Damage

**0.1 ppb:** Roundup (0.05 ppb glyphosate) altered the gene function of over 4,000 genes in the livers and kidneys of rats

**0.1 ppb:** Roundup (0.05 ppb glyphosate) severe organ damage in rats

**0.1 ppb:** Permitted level for glyphosate and all other herbicides in EU tap water

**10 ppb:** Toxic effects on the livers of fish

**700 ppb:** Alterations of kidneys and livers in rats

**700 ppb:** Permitted level for glyphosate in U.S. tap water

Source: Food Democracy Now! "Glyphosate: Unsafe On Any Plate"

## How Can You Avoid Glyphosate?

Reducing glyphosate exposure is not that hard if you look closely at food labels or buy from trusted producers. The easiest ways to avoid the pesticide are to:



### Buy Certified Organic

Since most of us don't have the time or the opportunity to buy most of our food directly from farmers, the easiest way to avoid glyphosate is to look for the "Certified Organic" label when shopping. It's worth noting that Organic food is not guaranteed to be glyphosate-free. While use is prohibited, drift from neighboring fields is possible.



### Certified Glyphosate Residue Free

You can also look for a new label that certifies a food to be glyphosate-free. This label guarantees an even lower glyphosate threshold than the Organic label.



### Buy Direct From A Glyphosate-Free Farm

Many farmers are happy to tell you if they use glyphosate or other pesticides. Next time you go to a farmers market or farm stand, just ask! By supporting farmers who are looking out for our health, we can push the industry towards a safer future.



### Find Alternatives To Glyphosate On Your Property

Healthy soils will have less weeds, and biological pest control provides proven methods for non-toxic weed management. Consider flame weeding, steaming, using organic herbicides, or renting goats before making the decision to use glyphosate. If you work with a landscaper, make sure you ask them about their practices before enlisting their services. See our website for resources on alternatives.