



A Quick Guide to GMOs in 2024

Message from Milly

Greetings to all,

It seems there is more and more news surfacing about the harms of glyphosate and GMO crops.

This news coverage has led to many positive changes in the food industry, including new labeling laws.

However, there remains a great deal of misunderstanding about GMOs, including what they are, which food products are most commonly genetically modified, and why we should seek to avoid GMO foods in the first place.

This is completely understandable given the mixed messages we receive about GMOs being "the only way to feed the world"...while simultaneously witnessing glyphosate products, like RoundUp, outlawed and a growing body of research (and lawsuits) linking them to various cancers and other illnesses.

In this newsletter, I intend to help clear up some of the confusion by providing clear information on:

- What are GMOs?
- What foods are most likely to be genetically modified in 2024?
- How do GMOs relate to the "Dirty Dozen" and "Clean



Fifteen" lists?

- Labeling issues surrounding GMO foods
- The potential health implications of GMO foods and glyphosate-based on research

There is also the very real issue of how these crops and the companies who sell and patent their seeds are negatively affecting farmers, entire communities, and the environment, but we'll have to cover that in a future newsletter.

This is a big topic! However, I hope this information will help you understand more about GMOs and why I recommend avoiding them as much as possible.

If you're interested in this content and topic, please let me know, and I'll plan additional newsletters to address the many issues surrounding these crops. In my opinion and that of many others, this may be one of the biggest health, ethical, and environmental challenges of our time.

Blessings to all,

-Milly



What Exactly Are GMOs and How Are They Related to Glyphosate?

If you're already familiar with the basics of GMOs and glyphosate, you can skip this section.

For everyone else, here's a basic overview.

Genetically Modified Organisms, also known as GMOs or bioengineered products, refer to any living thing that has had its genetic code altered.[1]

In the case of seeds and crops, it differs from cross-breeding or hybrids in that instead of cross-breeding the

plants, a gene or two are inserted into individual cells in a lab.

GM technology is also used on microorganisms to produce medicines, such as insulin and vaccines.

This may sound weird and unnatural, but also useful, so what's the problem?

The problem with genetically modifying foods is:[2]

- These seeds are patented, meaning the corporation owns them, not the farmer. This has led to untold hardships for farmers in the form of lawsuits, lack of autonomy, and devastated cropland, as outlined in several documentaries (I link to these in the last section of the newsletter).
- They are engineered to withstand copious amounts of pesticides and herbicides, including glyphosate, without dying. This means GMO crops have higher levels of these dangerous pesticides.
- They are a disaster for the environment because they have increased the use of glyphosate/RoundUp 15-fold, are responsible for the creation of superweeds and superbugs (glyphosate is an antibiotic in addition to being a pesticide)[3], are linked to the reduction in insect populations, and their long-term effects on the environment are unknown.

So, GMOs are linked to glyphosate (commonly known as RoundUp) because GMO seeds are designed to yield patented plants that are resistant to direct and regular application of this dangerous pesticide.

The controversies surrounding these crops are immense.

Proponents argue they are necessary to feed the world and are no different than any other food (never mind that most are used for animal feed and fuel).

At the same time, anti-GMO activists cite concerns about health impacts, lack of transparency in labeling, the devastation of farms and communities who have adopted GMO seeds, and their impacts on the environment and wildlife.

While I cannot address all these issues in this one newsletter, we will examine what studies have revealed about the potential health impacts of regular glyphosate exposure.

These studies have been used in thousands of lawsuits against the manufacturers of GMO seeds and RoundUp.

But first, let's look at which foods are commonly genetically modified in 2024.

References:

1: <https://ag.purdue.edu/gmos/what-are-gmos.html>

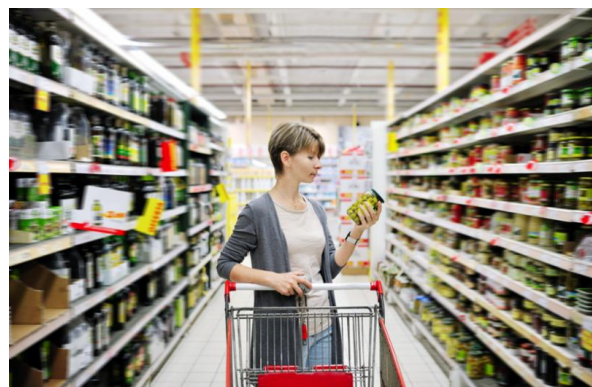
2: <https://www.nongmoproject.org/gmo-faq/>

3: <https://pubmed.ncbi.nlm.nih.gov/33893490/>

Most Common GMO Foods in 2024, Labeling, and How They Relate to "The Dirty Dozen"

Unlike organics, GMO labeling is not where it needs to be.

This is due to powerful lobbying by big ag who do not want this stigma attached to their GMO products.



However, in 2022 a law was passed requiring manufacturers to label certain foods that contain detectable levels of bioengineered food/GMOs. Here's a quote from the FDA:[1]

"Certain types of GMOs have a disclosure that lets you know if the food, or ingredients you are eating, is a bioengineered food. [The National Bioengineered Food Disclosure Standard](#) defines [bioengineered foods](#) as those that contain detectable genetic material that has been modified through certain lab techniques and cannot be created through conventional breeding or found in nature."

So, if you see the label "bioengineered food", you'll know it contains GMO ingredients.

Some companies also go through third-party verification through [The Non-GMO Project](#).

However, that doesn't guarantee that every batch of every product is GMO-free.

And foods labeled "certified organic" cannot be genetically modified.

Although labeling has improved, your best defense against GMOs is to eat organic whenever possible and know which foods are high-risk.

Here's a list of the most common GMO crops:[2]

- **Soy:** Including soy oil, soy lecithin, and other soy products found in processed foods.
- **Cotton:** Cotton is used for cottonseed oil, a common oil used in prepared and processed foods.
- **Corn:** This includes corn used for animal feed and fuel and limited varieties of sweet corn. Corn is in most processed foods in the form of cornstarch, corn syrup, corn flour, corn oil, and other additives.
- **Canola:** Canola oil is in most prepared foods, including organic versions. I do not recommend organic canola oil either, but that's a topic for another newsletter.
- **Papaya:** Most GMO papayas in the US come from Hawaii (which now

has GMO-free growing zones!). [This article from One Green Planet](#) lists non-GMO papaya varieties to look for, most of which come from [Mexico \(a champion of non-GMO crops\)](#) and Belize.

- **Alfalfa:** This is concerning not because people consume a lot of alfalfa but due to its use in feeding cattle and animals raised for meat and milk.
- **White Russet Potatoes:** Also known as baking potatoes/
- **Sugar beet:** Most sugar, unless it's labeled "cane sugar" or "coconut sugar," now comes from GMO sugar beets.
- **Sugar Cane:** This is less high-risk than sugar beets but is still often GMO.
- **Zucchini and Summer squash**

Animal products, such as meat and milk, are also considered "high risk" due to the fact that most conventionally raised animals eat a lot of GMO corn, soy, and alfalfa.

Yes, there are more GMO crops out there, like the Arctic Apple, Pink Pineapples, certain varieties of eggplant, and more in the works, but they are few and far between at this point.

Avoiding processed foods, which almost always contain some high-risk ingredients like sugar from sugar beets, corn products, soy, cottonseed, or canola, is also an excellent way to avoid GMOs.

How Do GMOs Relate to the Dirty Dozen and Clean Fifteen Lists?

Many people rely on the [Environmental Working Group's annual Dirty Dozen and Clean Fifteen](#) lists to help them avoid the most pesticide-laden foods.

These lists do not take GMO status into account directly, so you'll want to keep that in mind.

However, you'll notice in the 2023 [Clean Fifteen list](#), that they do list some items that are potentially GMO, such as sweet corn and papaya, with an asterisk noting a

small amount of these are GMO and to buy organic varieties instead.

References:

1: <https://www.fda.gov/food/agricultural-biotechnology/how-gmos-are-regulated-united-states>

2: <https://www.ams.usda.gov/rules-regulations/be/bioengineered-foods-list>



As always, the information in this newsletter is provided for educational purposes only and is not meant to replace the advice or care of your medical provider.

All the links to products are provided for educational purposes and are not affiliate links.

Health Impacts of Glyphosate

Glyphosate, aka RoundUp, America's most-used pesticide, has been called the DDT of our time, which should call into question issues of safety.

You've probably heard about the tens of thousands of lawsuits in which plaintiffs have accused Monsanto (the maker of glyphosate/RoundUp, owned by Bayer) of RoundUp causing their cancer.[1]

Many of these suits have been won.

In addition, mounting evidence has shown glyphosate in RoundUp may be related to genotoxicity,[2] cancers,[3] developmental problems, neurotoxicity, and spectrum disorders,[4] endocrine and hormonal dysfunction, including fertility issues.[5]

There are also concerns and evidence about the many potential effects of multigenerational toxicity.[5]

This is a short list of potential side effects, but it should paint a picture of what this pesticide does to human and wildlife populations.

I also want to emphasize that glyphosate is also an antibiotic.[6]

So, every time we ingest food with glyphosate residue or are exposed to RoundUp, we get a dose of antibiotics.

And we all know how detrimental excess antibiotics can be to our

microbiomes, which relate to nearly every organ and system in the body, and the antibiotic resistance crisis.

The soil, the earth, and the animals also have microbiomes, so you can imagine the widespread devastation this single pesticide is causing, **to the tune of over 130 pounds per mile in the United States per year.**[7]

As we come to the end of this dense newsletter, I want to encourage hope.

News has gotten out about the dangers of glyphosate, and its use is being banned more and more.

So, the truth will eventually prevail, as it always does.

It's also important to remember that we, the people, wield tremendous power in these matters.

In addition to avoiding GMO crops (vote with your dollars!), we can also take action by asking our local governments, like the Parks Department and your local school board, for example, not to spray RoundUp in our parks and schools and to take GMOs out of school lunches.

We can research the stance of those running for various offices to see whom they support.

We can buy organics, shop at the farmer's market, and get involved or donate to groups who are fighting the big GMO fights.

Some additional helpful resources include:

- [The Non-GMO Project](#)
- [The Environmental Working Group](#)
- [Dr. Zach Bush](#)
- [Cornucopia Institute](#)
- [Food and Water Watch](#)

- [Organic Consumer's Association/Millions Against Monsanto](#)

There are many excellent documentaries on GMOs. Here are a few good ones to begin with:

- [Is Glyphosate Making Us Sick?](#) By MIT PhD Dr. Stephanie Seneff (Dr. Seneff is controversial for many reasons, but she is a pioneer in the GMO movement and worth a listen)
- [Food Inc.](#) Featuring Michael Pollan, this came out in 2008 but is still an excellent and relevant film.
- [Seeds of Freedom](#) This film gives a first-hand look at how the business of GMO seed is a war on property rights and farmers' rights.
- [The Seeds of Vandana Shiva](#) This documentary shares the life's work of the anti-GMO movement's most influential activist.

References:

1: <https://www.theguardian.com/us-news/2022/aug/23/bayer-roundup-monsanto-epa-trial-cancer-victims>

2:

<https://ehp.niehs.nih.gov/doi/10.1289/EHP12834>

3:

<https://pubmed.ncbi.nlm.nih.gov/34052177/>

4:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9101768/>

5:

<https://pubmed.ncbi.nlm.nih.gov/34305812/>

6:

<https://pubmed.ncbi.nlm.nih.gov/3389349/>

7: <https://www.nbcnews.com/data-graphics/toxic-herbicides-map-showing-high-use-state-rcna50052>

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