

Paraquat Poison – Another Hazardous Chemical in Your Food

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STORY AT-A-GLANCE

- › The herbicide paraquat dichloride, also called paraquat, has been in use since the 1960s and is growing in popularity with the development of glyphosate-resistant weeds
- › It is nonselective and highly toxic to humans – even one sip can kill a person; exposure to the skin or inhalation can result in seizures, heart failure and lung scarring
- › The company "cherry-picked" research data to determine additives that may help reduce accidental and suicidal deaths from ingestion; documents released during litigation show just how far the company went to protect profits
- › There is an increased risk for neurological damage when paraquat is used on foods containing lectins; while Bill Gates pushes fake meat made with lectins and laced with toxins, it's crucial you reduce your risk using locally sourced organic produce

Each year the Environmental Working Group releases a list called “The Dirty Dozen” of produce that is most heavily contaminated with pesticides.¹ The results are from an analysis of data from the U.S. Department of Agriculture. In 2021, strawberries, spinach and kale occupy the top three spots on the list, of which 90% of the samples tested positive for two or more pesticides.

Data from the U.S. Food and Drug Administration, which evaluates produce for pesticide residue, indicate that every time you eat conventionally grown fruit you're likely consuming a measurable amount of pesticides.² The FDA continues to assert that

pesticide residue is not a cause for alarm, yet the long-term consequences of cumulative exposure are unknown.

The most current FDA report³ using data from 2018 was published in September 2020. The testing methods used in 2018 found 809 pesticides and industrial chemicals, and residues of 212 different pesticides in 4,404 human food samples tested in the program.

The FDA report revealed the list of pesticides included the organophosphate chlorpyrifos, which was detected in 228 samples.⁴ The chemical, known to disrupt brain development and cause brain damage, neurological abnormalities, reduced IQ and aggressiveness in children, has a half-life on food of several weeks, making nonorganic foods a major source of exposure.⁵

Neonicotinoids were also widespread in the samples, including imidacloprid that took the top spot found in 395 samples. These chemicals are known to impair the immune system of bees, making them more vulnerable to infection and death when exposed to viral or other pathogens.⁶

Although the report evaluated 27 selected herbicides, it did not include paraquat, which the EPA states is "one of the most widely used herbicides in the United States."⁷

Paraquat Herbicide Has a History of Poisoning People

Paraquat dichloride, commonly shortened to paraquat, is the active ingredient in Gramoxone, which is an herbicide widely used in agricultural practices to control the growth of grasses and weeds.⁸ The chemical was developed in the 1960s and is active against most plant species.

Glyphosate was first registered in the U.S. in 1974.⁹ However as more glyphosate-resistant weeds are appearing, paraquat is becoming more popular once again.¹⁰ Farmers use it to clear fields of weeds and unwanted plants before planting soybeans and as a desiccant on legume crops.

The chemical is nonselective – meaning, according to the National Pesticide Information Center, that it will kill most plants. It is inactivated when it comes in contact with soil,¹¹ which agribusiness found to be one of the greatest breakthroughs at the time of discovery. This meant that once sprayed on the soil, it would kill the weeds, but no biologically active residues would remain, allowing farmers to plant almost immediately after spraying.

However, it is also highly toxic to humans and even one sip can kill a person. After exposure on the skin or if inhaled during the application, it can result in seizures, heart failure and lung scarring.¹² In the 1970s, the U.S. government encouraged Mexico to spray **marijuana** fields with it in the hope it would kill the crops.¹³

Instead, what it produced were paraquat poisoned marijuana plants that were being harvested for commercial-grade marijuana and then sold.¹⁴ Once the leaves were burned and inhaled it began causing massive damage without a known antidote.

According to The New York Times¹⁵ in 1978, the dangers of inhaling, drinking or skin application of paraquat were not a secret to the U.S. State Department. According to The Intercept, the manufacturer was evaluating ways of ameliorating the danger in 1976 when Michael Rose, a scientist at Imperial Chemical Industries (ICI), which was the current manufacturer of paraquat, produced the “Rose Report.”¹⁶

In collaboration with the French newspaper Le Monde,¹⁷ The Intercept scoured through hundreds of internal documents and thousands of pages disclosed by Syngenta, the successor to ICI and current manufacturer of paraquat. Documents were also supplied by nonprofit organizations that had been extensively researching paraquat and another chemical the company had added to induce vomiting in an effort to stem a rising toll of deaths from people ingesting the paraquat.

The additive was named PP796 and the problem appeared to be the concentration at which the chemical was added to paraquat. In the “Rose Report,” it appeared the scientists had “cherry-picked” the data to determine the concentration at which PP796 should be added.

At issue was the life-saving additive's cost, which was the reason the company did not add the emetic to the chemical until deaths were being recorded around the world.¹⁸

The EPA Has Not Protected US Citizens

The company's apparent motivation to finally add PP796 to Gramoxone in the U.S. came in 1986 when the U.S. EPA was considering subjecting the chemical to a special review that may have resulted in banning it from the market.¹⁹

In 1990, Jon Heylings, a junior scientist at Imperial Chemical Industries, discovered the concentration of PP796 was much less than would be needed to induce vomiting in case of accidental or suicidal consumption as was being reported globally. He reported the discrepancy to his superiors and believed it was being addressed.

More than 40 years after the "Rose Report" was published with the doctored calculations, Syngenta has not made alterations to the concentration of PP796, which Heylings describes as "a conspiracy within the company to keep this quiet."

Additionally, papers released during litigation revealed that just one week before the "Rose Report" was released, another scientist at the company also reported the planned concentration of PP796 did not induce vomiting.²⁰

PP796 was added to Gramoxone in other countries years before it was added in the U.S. In 1981, an ICI scientist discovered reports from the U.K. and Japan clearly showed the emetic was not effective. In a memo released by Syngenta, ICI scientist Peter Slade wrote:²¹

"No statistical evidence has emerged that the emetic has reduced the number of deaths with the product. At best, only a few people have survived paraquat poisoning because of the inclusion of the emetic."

The company responded to questions from The Intercept, sending an email that emphatically denied that PP796 was ineffective at the concentration reported in the "Rose Report."²² According to Syngenta, Heyling's claims that the concentration of

emetic is much too low have been investigated and dismissed by the current company scientists.²³

In November 2019, EPA published new requirements,²⁴ hoping to mitigate risks associated with the application of paraquat. To meet standards under these new rules companies only had to include label changes, target training materials for those using paraquat, restrict the use to people who are certified to apply the chemical and use a closed packaging system for applications of less than 120 gallons.

In other words, the EPA added a label to a highly toxic chemical that is lethal when just drops are consumed. Mandatory training can be taken online, and certification is given after the individual takes a quiz.

Paraquat Associated With Neurological Diseases

Evidence of an association between paraquat and **Parkinson's disease** (PD) emerged in the 1980s.²⁵ After the release of studies showing that animals and humans exposed to paraquat had an increased risk of Parkinson's disease, Syngenta mounted a defense.

The Intercept reported²⁶ that documents released in the litigation showed the company had developed a strategy to address issues of neurotoxicity, which they believed to be a threat to their “business objectives,” and documents showed the company’s global regulatory manager advised taking steps to “shift the focus of serious PD research to other environmental factors.”

Based on scientific evidence, the European Union Court of Justice banned the pesticide in 2007, all while paraquat use continued to increase in the U.S. The number of poisonings and deaths continued to rise.

Although researchers continue to work on identifying the mechanism through which pesticides impact the neurological system,²⁷ these chemicals are known neurotoxins, including paraquat, organophosphates and organochlorine. In addition to the immediate effects, long-term, low-dose exposure may also be harmful.²⁸

Evidence has suggested that cumulative exposure can contribute to the development of Alzheimer's disease as well.²⁹ In one animal study, researchers investigated the effects that paraquat had on the development of beta-amyloid plaques and changes in cognition, finding there was an increase in oxidative damage in the mitochondria of the cerebral cortex that directly correlated with impaired learning and memory.

Other animal studies³⁰ have demonstrated the chemical impairs memory, learning and cognition in offspring when exposed during development. Beyond Pesticides³¹ reports that there is mounting evidence in the past years indicating low levels of exposure to pesticides have an adverse effect on the central nervous system, including the development of amyotrophic lateral sclerosis (ALS), Parkinson's disease and dementia-like diseases.

Many of the pesticides share features, including the ability to induce neuronal cell loss, mitochondrial dysfunction and oxidative stress.³² Another study³³ used MRI imaging to look at the poison's effects on humans by focusing on the acute neurotoxic damage caused by paraquat. They found a significant number of abnormal signals in the brains of survivors after the acute toxic phase.

The results demonstrated that paraquat exerted a sustained neurotoxic effect during the acute and recovery stages of poisoning. Another animal study demonstrated that long-term, low-level inhalation of paraquat caused some male mice to lose their sense of smell.³⁴ The researchers³⁵ suggest that this data supports the importance of identifying the route of exposure when evaluating neurotoxicity.

Danger Increases When Pesticide Is Used on Lectins

Choosing nongenetically modified plants can help to reduce your exposure to pesticides and herbicides. But even if you manage to **avoid GMO foods**, you still might be paraquat-affected because, at harvest, some farmers may use herbicides as a desiccant to quick-dry the plants and speed ripening in preparation for the harvesting machine.

Farmers can be penalized if grain is moist at harvest, so desiccation also helps to improve profits. Paraquat is one of the chemicals used as a desiccant, which becomes

exponentially more hazardous when it's combined with plant **lectins**.

Data published in the journal NPJ Parkinson's Disease in 2018³⁶ revealed that when paraquat is combined with lectins it can trigger hallmark damage found in people with Parkinson's disease. Lectins are compounds found in many plant foods, especially legumes such as peas, lentils, soybeans, beans and nuts.³⁷

The study suggests that these changes to lectins are the key link between paraquat and the resulting increased risk of Parkinson's disease. To address these concerns, in 1997 the EPA set residue tolerance levels for paraquat for 80 raw agricultural commodities, processed foods and animal feed.³⁸

However, during the re-registration, their updates for the acceptable dietary exposure tolerances for certain crops, included more than doubling the levels allowed in sorghum, soybeans and hops, and establishing a tolerance level for popcorn.

In 2014,³⁹ they updated residue tolerance levels for tuberous and corn vegetables, including ginger, potato and true yam, to 0.5 parts per million, which is one of the highest acceptable levels.

Between **GMO crops** and the act of desiccating the others with herbicides, this means that most plant-based foods that are conventionally grown are laced with dangerous levels of residual herbicides. Paradoxically, if the raw food found in your local grocery store isn't enough worry, Bill Gates is now advocating that all rich countries should move to 100% synthetic "beef" like that manufactured by Beyond Meat and Impossible Foods.

According to the ingredient lists found on these fake meat products, many ingredients come from plants commonly sprayed with herbicides and desiccants. These include pea protein, mung bean, potatoes and soybeans.⁴⁰

You can read more about Gates' investments and plans to push many nations into a "full solution to the protein problem globally"⁴¹ in "**Bill Gates Says He Will Force You to Eat Fake Meat.**"

The irony that Gates, who lives in a 66,000 square-foot mansion and travels in a private jet that burns 486 gallons of fuel each hour, is talking about how we can save the environment, is not lost on everyone. The Nation criticized Gates' contradictions, calling him a "Climate Warrior. And Super Emitter." writing:⁴²

"According to a 2019 academic study⁴³ looking at extreme carbon emissions from the jet-setting elite, Bill Gates's extensive travel by private jet likely makes him one of the world's top carbon contributors – a veritable super emitter. In the list of 10 celebrities investigated – including Jennifer Lopez, Paris Hilton, and Oprah Winfrey – Gates was the source of the most emissions."

Reduce Your Risk With Locally Sourced Organic Produce

So, while Gates lives in a carbon-emitting heated and air conditioned 66,000 square-foot home, he advocates "saving" the environment by forcing the rest of us to eat highly processed plant-based foods laced with toxic chemicals. Now also the **biggest U.S. farmland owner**, Gates is calling plant-based and lab-grown meat substitutes "sustainable" and something that people can "get used to."⁴⁴

As I've already pointed out, it's important to realize that exposure to pesticides and herbicides is not restricted to GMO plants. Even non-GMO foods may be contaminated when the herbicide is used as a desiccant immediately before harvest. And remember: The poison paraquat is considered one of the "best" drying options for legumes, which are high in lectins and therefore present an increased risk for toxic overload.

This means many of the foods that vegans and vegetarians rely on currently as their protein source pose a significant health risk. To avoid or at least minimize these hazards, it is important to buy organic beans, peas, **potatoes** and other foods high in lectins from a reliable source, ideally a local farmer you can trust and with whom you can discuss his farming methods.

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