

SYNGENTA RESPONSE TO AL JAZEERA FAULT LINES - DECEMBER 1, 2023

Syngenta cares deeply about the health and well-being of farmers and agricultural workers. We are dedicated to providing them with safe and effective products. We have great sympathy for the health issues faced by the plaintiffs and others suffering from the debilitating effects of Parkinson's disease. But it is important to note that paraquat is safe when used as directed and the scientific evidence simply does not support a causal link between paraquat and Parkinson's disease.

Despite decades of investigation and myriad epidemiological and laboratory studies, no scientist or doctor has ever concluded in a peer-reviewed scientific analysis that paraquat causes Parkinson's. Nor has any medical textbook or treatise concluded that paraquat causes Parkinson's. In short, the hypothesis that paraquat causes Parkinson's is not accepted in the medical community or peer-reviewed science, nor has it been accepted at any time in the past. In fact, according to the peer reviewed literature: there is a "consensus in the scientific community that the available evidence does not warrant a claim that paraquat causes Parkinson's disease." (Weed 2021 at 180.)^[1]

The Weed publication, in the peer-reviewed journal Neurotoxicology, studied epidemiological metaanalyses between 2006 and 2021. Dr. Douglas Weed, a physician and epidemiologist with over 25 years of experience in epidemiological research with no ties to Syngenta, concluded following a review of the scientific literature, "No author of any published review stated that it has been established that exposure to paraquat causes Parkinson's disease, regardless of methods used and independent of funding source."^[2]

Paraquat, which has been widely used for nearly 60 years, has been the subject of more than 1,200 safety studies submitted to, and reviewed by, regulatory authorities around the world. Two demanding, science-based government authorities, US EPA and the Australian Pesticides and Veterinary Medicines Authority (APVMA), have recently extensively analyzed the potential link between paraquat and Parkinson's disease and found insufficient evidence that paraquat causes Parkinson's disease.^[3]

With regard to some of the specific issues you raised:

The Largest, Most Recent publication from the Independent Agricultural Health Study Finds No Casual Link

The Agricultural Health Study ("AHS"), which is sponsored by the NIH and several independent public health institutions, including the National Institute of Environmental Health Sciences and National Institute for Occupational Safety and Health, has followed more than 66,000 chemical applicators and their spouses since 1993. In 2020, using data from the AHS study, Drs. Srishti Shrestha and Dale P. Sandler, both with the National Institute of Environmental Health Science's Epidemiology Branch, published their 25-year update, focusing specifically on a potential link between the use of pesticides and herbicides (including paraquat) and Parkinson's. (Shrestha 2020). That study found no statistically significant link between paraquat and Parkinson's, and in fact, did not find any increased risk of Parkinson's with the increased use of paraquat³.

Animal Studies Do Not Replicate Real World Paraquat Use Conditions and Syngenta Has Properly Reported its Animal Research

Beginning in the 1990s, researchers injected rodents with near-fatal doses of paraquat—typically into the stomach or abdomen. Syngenta did not believe that injecting mice with massive doses of paraquat necessarily raised concerns about the health of farmers applying paraquat in their fields. As the EPA recently put it in analyzing the mouse-injection studies, “injection is not a relevant route of exposure for pesticidal uses of paraquat and cannot be used to evaluate toxicity and risk for anticipated exposure scenarios.” (EPA 2020) at 94 . Nevertheless, Syngenta took the hypothesis and the method being used to study it seriously.

Syngenta thoroughly complied with all reporting obligations regarding the work it performed in animal studies. In the early 2000s, upon learning that there were some studies reporting losses in dopaminergic neurons, the degeneration of which are thought to play a role in Parkinson’s disease, after injecting a certain strain of mice with large doses of paraquat, Syngenta asked a scientist to conduct several studies to try to replicate these findings as part of Syngenta’s paraquat safety evaluation. Specifically, the researcher conducted four mice-injection studies. Of those four studies, one was unable to replicate the loss in dopaminergic neurons, two were identical to what was already in the public literature, and the fourth was materially identical to what was in the public literature but had a slight difference in dosing regimen. Only the fourth study presented new information for purposes of Syngenta’s reporting obligations—which Syngenta timely reported to the EPA in 2006.

The other studies did not add any new information to the publicly available body of science that had already existed. And when Syngenta later did submit the studies anyway, the EPA confirmed they were not relevant given the information then already existing on paraquat. In the EPA’s words: “Additional animal and in vitro publications were identified in the public comments that were not included in the literature database compiled for the PD systematic review. . . . The agency reviewed all newly identified and submitted studies and concluded that *they would not impact the PD systematic review conclusions.*” (EPA 2020) at 8 (emphasis added).

Nevertheless, because Syngenta’s work in animal studies yielded inconsistent results, it continued the research to even more thoroughly assess paraquat’s safety. Ultimately, the results of these efforts were published in 2013. (Breckenridge 2013). Dr. Breckenridge et al. found that the injection of “near-lethal doses of PQ” failed to show the “constellation of effects” that would suggest neuron death in the relevant part of the brain. Id. at 12.

Syngenta Acted Appropriately with Regard to Dr. Cory-Slechta

In the 2000s, Dr. Thiruchelvam was one of the researchers using the high-dose mouse injection method discussed above. In 2007, after one of Dr. Thiruchelvam’s colleagues became suspicious of her research, her employer initiated an investigation during which Dr. Thiruchelvam provided investigators with 293 data files that were later determined to be corrupted and falsified.

Soon thereafter, the U.S. Department of Health and Human Services’ Office of Research Integrity (“ORI”) found that Dr. Thiruchelvam intentionally falsified data used in her paraquat publications and presentations. (Office of Research Integrity, Sept. 2012). As a result of her misconduct, Dr. Thiruchelvam entered into a voluntary exclusion agreement, which required her to retract two federally funded papers and effectively barred her from receiving federal funding for seven years.

Dr. Thiruchelvam’s fraud had widespread effects and seriously compromised a significant body of Parkinson’s research. By the time her fraud came to light, her tainted and retracted studies had already been cited in at least one hundred other papers, and her participation in other non-retracted studies called into question those results. The full extent of misconduct by Dr. Thiruchelvam remains unknown.

Dr. Cory-Slechta was Dr. Thiruchelvam's supervisor, mentor, and co-author. The two have coauthored at least 29 publications together based on searches of the PubMed academic database. Indeed, Dr. Cory-Slechta is a co-author on some of the very papers that the ORI retracted as part of Dr. Thiruchelvam's sanction and that Australian regulators declined to consider as potentially fraudulent. (APVMA 2016: Supp. II) at 12. And Dr. Cory-Slechta was the head of the lab where the fraud occurred.

Syngenta's concerns about Dr. Cory-Slechta's research are reflected in the contemporaneous records that were submitted to EPA in 2005: "Although the animal model is simply a model, and a research tool with clear limitations in reflecting a chronic progressive disease in humans (i.e., extrapolation issues regarding short term intraperitoneal [sic] exposure), her presentation and reporting have given conclusions that go beyond what the data reasonably support. Her presentations in meetings, appearances in the press, and her publications often include over-dogmatic statements, and an overinterpretation of data with subsequent conclusions - that are in reality speculation. CS appears single-minded in believing that some pesticides are a primary risk factor for Parkinson's, and data appear to be presented and interpreted with this conclusion in mind. We have found an unwillingness to enter into objective scientific debate with industry regarding her data or the literature in this area. There have also been examples of using low incidence occurrences (e.g. of particular pesticide use patterns) and generalizing them into apparent universal conditions, which then support her conclusions or justify her assumptions."

In 2009, several scientists published a "consensus" in a paper titled [Bronstein 2009](#), which ranked various environmental factors on a scale of proven evidence of causation down to insufficient evidence of an association. With respect to paraquat, those scientists concluded that paraquat was in the lowest possible category—i.e., there was insufficient evidence to determine whether there is even any association between paraquat and Parkinson's, let alone causation. That finding aligns with Dr. Weed's later conclusion—based on a review of the work of 46 scientists across 12 peer-reviewed articles, spanning from 2006 to 2019—that there was a "consensus in the scientific community that the available evidence does not warrant a claim that paraquat causes Parkinson's disease." Dr. Weed further concluded: "No author of any published review stated that it has been established that exposure to paraquat causes Parkinson's disease, regardless of methods used and independent of funding source." Weed at 180. Again, Dr. Weed has no connection to Syngenta.

Financial and Market

Syngenta is only one of 750 companies worldwide that has registered paraquat for sale. Today, Syngenta only sells paraquat-based formulations in five countries – U.S., Australia, New Zealand, Japan and Indonesia – with some of the most demanding regulatory requirements worldwide. Syngenta leads the market in our commitment to ensuring the responsible and safe use of paraquat in the markets where we are present.

Syngenta will not sell a product if it is not safe for its intended use. Paraquat contributes less than 2% of total sales, and less than 2% of overall profit for Syngenta. But it is an important product for farmers in their quest to produce food for an increasingly populated world.

In a market where there are more than 750 other companies with licenses to sell paraquat, our product is typically the most expensive, reflecting the high standards and service we provide aimed at safe and effective use.

Our products are designed for specific farmer benefits where they are needed. Such products are not one size-fits-all; they are used where the conditions warrant. For example, paraquat is particularly effective to eliminate a variety of weeds in fields before planting a crop. In such fields, paraquat enables farmers to eliminate weeds without tilling the soil to retain nutrients, moisture and carbon.

Syngenta has always taken seriously the safety of its products. The scientific consensus is that paraquat does not cause Parkinson's disease. Paraquat continues to be sold because of the benefits it provides to farmers to produce the food the world needs."

Litigation

In the US, mass tort litigation has become a multi-billion-dollar industry for plaintiff's lawyers as they target manufacturers of everything from pharmaceuticals and medical devices to herbicides and military grade ear plugs. Syngenta is among the latest targets of the 'Mass Tort Machine' in the U.S. as plaintiff law firms allege that people have been harmed by a product used to control weeds. The firms advertise heavily on television, radio, online and with mailings (spending tens of millions of US dollars). Those advertisements are often misleading or make false claims, such as suggesting that gardeners or golf course players can be exposed to paraquat when it is – in fact – illegal to use paraquat in either environment. The goal of these lawyers is to sign up enough claimants, (often in the thousands) to then pressure companies that manufacture or sell the product to settle the cases out of court for staggering amounts (often in the billions of dollars). The law firms keep 30 to 40 percent and divide the remainder among the claimants. Using this strategy, law firms can make a significant amount of money without ever having to prove their clients were harmed.

Syngenta estimates that there have been more than 200 law firms in the U.S. engaged for more than two years to recruit as many people as they can who say that they have Parkinson's disease and used paraquat.

- **\$40 million** - estimate that law firms have spent on television advertising over a two-year period. This does not include expenses for radio, online and direct mail advertising.
- **Misleading content** - images in much of the advertising is misleading. Paraquat would not be applied to healthy crops and is not allowed, by regulation, to be applied on U.S. golf courses.
- **Dead plaintiffs** - more than 20 plaintiff law firms improperly filed dozens of actions on behalf of already-deceased plaintiffs, served sworn questionnaires to the Court on behalf of deceased plaintiffs without disclosing their deaths, and apparently even copied the signatures of deceased plaintiffs to make it appear they were attesting to facts after their deaths. This is pervasive misconduct and given the limited information available to Syngenta, it is likely these discoveries are only the tip of the iceberg.
- **300+ claimants** - dismissed due to lawyers' failure to properly vet them - including bellwether cases.
- **American Tort Reform Association**, an organization Syngenta has long supported, has more information about the Mass Tort Machine's practices:
[ATRA website](#)[The Hidden Money Behind the Litigation](#)

Here are links to interesting news media articles:

- [Syngenta, Chevron identify 611 questionable paraquat claims after discovering some active litigants were deceased](#) – Madison-St Clair Record
- [Does paraquat cause parkinson's disease? An academic review of reviews says 'No'](#) - Genetic Literacy Project
- [The Hottest Mass Tort Leads for 2023](#) - LeadingResponse
- [The Time for Tort Reform Is Now](#) - Inside Sources
- [Inside the Mass-Tort Machine That Powers Thousands of Roundup Lawsuits](#) - The Wall Street Journal (Subscription required)