

August 10, 2022

Submitted electronically to Docket ID EPA-HQ-OPP-2022-0490

Administrator Michael S. Regan  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Re: Scientists Letter in Support of Petition to Cancel Organophosphate Pesticides –  
Document ID EPA-HQ-OPP-2022-0490-0002

Dear Administrator Regan:

We, the undersigned, write to you as environmental health scientists and healthcare professionals with expertise in understanding the health risks from environmental exposure to harmful chemicals including OP pesticides.

Thank you for the opportunity to submit these comments in support of the petition asking EPA to protect children and workers from organophosphate (OP) pesticides by: revoking all tolerances (residues on food) and cancelling the associated registrations for food uses of OPs EPA cannot find safe; and, cancelling registrations for uses that cause unreasonable adverse effects to workers, as documented in EPA risk assessments.<sup>1</sup>

It has been 30 years since the US National Academy of Sciences issued its seminal report on Pesticides in the Diets of Infants and Children.<sup>2</sup> That committee was convened in response to public concern that pesticides like organophosphates with established neurotoxic mechanism of action were being applied to our fields and food at alarming rates. In the Executive Summary of that report, the committee highlighted that some children may be exposed to organophosphate pesticides (OPs) at levels that exceed EPA's reference dose, and that are high enough to cause symptoms of acute organophosphate poisoning (NRC, p. 7). At the time of its report, the NRC Committee wrote that the evidence was "strongly suggestive" that OPs caused chronic effects including neurobehavioral effects (NRC, p. 63).

In response to the NRC 1993 pesticide report that documented the overwhelming scientific evidence on early life susceptibility to pesticides, Congress in 1996 unanimously passed the Food Quality Protection Act (FQPA) —the only federal environmental statute containing explicit provisions for the protection of children. In this Act, Congress specifically directed EPA to recognize children's great vulnerability to pesticides and to incorporate a default child-protective safety factor of at least 10X into all pesticide standards. In the quarter-century since the enactment of the FQPA, while OP uses have continued to increase at the expense of children whose brains were irreparably impaired, the scientific evidence of neurodevelopmental harm in children from real-world OP exposures has strengthened.

Epidemiologic studies of both urban and agriculture populations repeatedly demonstrate that prenatal exposures to OPs, even at levels too low to induce detectable cholinesterase depression in adults, is associated with an elevated risk of mental and motor delays among preschoolers, decrements in IQ

among elementary school children, and deficits in working memory, verbal comprehension, and perceptual reasoning.<sup>3</sup> In summary, families and children are suffering poor cognitive, behavioral, and social development from being needlessly exposed to OP pesticides.

Laboratory studies of animals exposed to OP pesticides under controlled conditions report toxicity that confirms the epidemiologic findings. Adverse impacts on cognition, motor activity, and social behaviors are consistently reported in rodents exposed to OP pesticides during early life neurodevelopment, at levels so low that little to no brain cholinesterase inhibition was measured.<sup>4</sup>

Because early life developmental processes are extraordinarily delicate and easily disrupted, there exist windows of vulnerability to toxic chemicals in early human development that have no counterparts in adult life.<sup>5</sup> Exposures to even minute quantities of pesticides during these sensitive periods – low-dose exposures that would have no harmful effects in an adult – can lead to permanent injury and increase risk of disease and disability in childhood and across the life span.

Because they are deliberately designed to be neurotoxic and to attack cellular receptors in the brain and nervous system, all OPs pose a clear and present danger to the healthy development of children's brains. For these reasons, and based on substantial scientific evidence, in 2018 some of us published a review of the science that supported our recommendation for government agencies including EPA to phase out OP pesticides.<sup>6</sup>

Therefore, we feel compelled to express our concern that EPA has announced that it will miss the statutory deadlines to complete its review of the remaining OP registrations. Although EPA has an October 1, 2022, statutory deadline to complete the work, it has already announced that it will miss this deadline for all but three of the OPs:

- FY 2022: chlorpyrifos, chlorpyrifos-methyl, TCVP
- FY 2023: chlorethoxyfos, dicrotophos
- FY 2024: acephate, DDVP, dimethoate, naled, terbufos, tribufos
- FY 2025: bensulide, diazinon, ethoprop, malathion, phorate, phosmet

EPA has already determined that all of the OPs listed above are known to pose unacceptable risks. For example, EPA's draft risk assessments find that acephate, dimethoate, and tribufos pose risks of concern by each route of exposure alone, including food, water, and spray drift. Phosmet and malathion both pose excessive risks to adults and children from pick-your-own farm produce. Some food and drinking water risks to children exceed EPA safe levels by more than 100-fold for bensulide, diazinon, ethoprop, and terbufos.<sup>7 8</sup> Despite these findings, EPA has not yet imposed restrictions or bans to eliminate the health threats.

In President Biden's first day in Office, he issued an Executive Order on Protecting Public Health and Restoring Science that included a commitment to "limit exposure to dangerous chemicals and pesticides," particularly for low-income and communities of color.<sup>9</sup> There can no longer be any doubt that all OP pesticides are dangerous chemicals.

Considering what is known about the widespread exposure of our Nation's families to this brain-damaging class of chemicals, we respectfully urge EPA to protect farmworkers, families, and future generations from continued unsafe exposure to these neurotoxic chemicals, as documented by the NAS pesticide report in 1993, in hundreds of published scientific research papers since then, and required under law by the FQPA.

Thank you for your consideration of these comments.

Respectfully,



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<sup>1</sup> On July 12, 2022, EPA published a notice in the Federal Register seeking public comment on the petition to revoke tolerances and cancel use of organophosphate pesticides. 87 Fed. Reg. 41,310 (July 12, 2022). The petition was submitted on November 18, 2021, by United Farm Workers, United Farm Workers Foundation, Earthjustice, California Rural Legal Assistance Foundation, Farmworker Association of Florida, Farmworker Justice, GreenLatinos, Labor Council for Latin American Advancement, League of United Latin American Citizens, Learning Disabilities Association of America, Pesticide Action Network North America, and Pineros y Campesinos Unidos del Noroeste.

<sup>2</sup> National Research Council (US) Committee on Pesticides in the Diets of Infants and Children. Pesticides in the Diets of Infants and Children. Washington (DC): National Academies Press (US); 1993. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK236275/> doi: 10.17226/2126

<sup>3</sup> Bennett DH, Busgang SA, Kannan K, Parsons PJ, Takazawa M, Palmer CD, Schmidt RJ, Doucette JT, Schweitzer JB, Gennings C, Hertz-Picciotto I. Environmental exposures to pesticides, phthalates, phenols and trace elements are associated with neurodevelopment in the CHARGE study. *Environ Int.* 2022 Mar;161:107075. doi: 10.1016/j.envint.2021.107075. Epub 2022 Jan 24.

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<sup>4</sup> Abreu-Villaça Y, Levin ED. Developmental neurotoxicity of succeeding generations of insecticides. *Environ Int.* 2017 Feb;99:55-77. doi: 10.1016/j.envint.2016.11.019.

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<sup>5</sup> Heindel JJ, Balbus J, Birnbaum L, Brune-Drisse MN, Grandjean P, Gray K, Landrigan PJ, Sly PD, Suk W, Cory Slechta D, Thompson C, Hanson M. Developmental Origins of Health and Disease: Integrating Environmental Influences. *Endocrinology.* 2015 Oct;156(10):3416-21. doi: 10.1210/EN.2015-1394.

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<sup>6</sup> Hertz-Picciotto I, Sass JB, Engel S, Bennett DH, Bradman A, Eskenazi B, Lanphear B, Whyatt R. Organophosphate exposures during pregnancy and child neurodevelopment: Recommendations for essential policy reforms. *PLoS Med.* 2018 Oct 24;15(10):e1002671. doi: 10.1371/journal.pmed.1002671.

<sup>7</sup> See Earthjustice for details about uses and hazards of the OPs. *Organophosphate Pesticides in the United States*. August 4, 2021. <https://earthjustice.org/features/organophosphate-pesticides-united-states>

<sup>8</sup> Earthjustice report, *Poisoned Food, Poisoned Brains: Mapping dangerous pesticides in the foods we eat* (August 2021). [https://earthjustice.org/sites/default/files/files/report\\_final\\_chlorpyrifos\\_aug-2021.pdf](https://earthjustice.org/sites/default/files/files/report_final_chlorpyrifos_aug-2021.pdf)

<sup>9</sup> White House Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. January 20, 2021. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/>