

CORRECTED Testimony of Sharon S. Tisher
In support of L.D. 316, “An Act to Prohibit the Use of Chlorpyrifos,”
before the Joint Standing Committee on Agriculture, Conservation and
Forestry
March 2, 2021

Senator Dill, Representative O’Neil, and members of the Committee. My name is Sharon Tisher. I am a lecturer at the University of Maine and a retired attorney, with joint appointments in the School of Economics and the Honors College. I teach environmental law and policy and Honors courses at the University of Maine.

I have served on the Board of the Maine Organic Farmers and Gardeners Association, and, for approximately ten years commencing in the 1990’s, I attended virtually every public meeting of the Board of Pesticides Control, and reported on those meetings for *The Maine Organic Farmer & Gardener*. I was reminded from time to time that many of the readers of this newspaper, counting in the thousands, were highly interested in the stories I had to tell about Maine’s work in regulating the use of pesticides. At the end of this testimony I will share with you a story that appeared in the *MOF&G* about the good work of the BPC regulating a farmer’s use of chlorpyrifos. But that story underscores the urgent need to take this important step to prohibit the use of this highly toxic chemical generally in Maine.

First, a bit of history, and science.

In 1996, Congress passed the landmark Food Quality Protection Act (FQPA), the first significant revision of pesticide laws in more than 40 years. The Act required a total reassessment over the course of the next ten years of standards for registration and use of pesticides, on a “worst first” basis. The first category of pesticides reviewed, because they were clearly the “worst” in terms of risk to human health, was the class of organophosphates, and one of the very first of those was chlorpyrifos.

This 1996 legislation was in large part driven by a comprehensive 1993 study of the National Research Council of the National Academies of Science (NRC), *Pesticides in the Diets of Infants and Children*. This study concluded that “the toxicity of pesticides is frequently different in children and adults,” that children are often far more sensitive than adults to pesticides, and more highly exposed because of different activities and diets. The focus of this work on exposure to *infants and children* should as well be utmost in your minds as you consider this legislation. The NRC concluded that the present system of regulating pesticides was woefully inadequate to protect the health of American infants and children.

Also playing a significant role in inspiring this legislation was the work of a nonprofit, the Environmental Working Group. EWG took government data on residues of pesticides in the blood and urine of Americans, and presented the data in an accessible way. Two of their presentations are included at the end of this testimony. You will see that chlorpyrifos was found in the urine of 93% of the population tested, the highest of any of the pesticides researched (the only higher result was DDE, a metabolite of DDT, in human blood, though it had been banned

more than 20 years previously, in 1972). You will also see, in the second graphic, that the younger the child, the higher the concentration of the metabolite of chlorpyrifos in their urine, and that chlorpyrifos contamination for both the 6-11 and 12-19 age groups substantially exceeded the cPAD, or chronic Population Adjusted Dose, the officially “acceptable” dose for children.

The EPA completed its FQPA reassessment of chlorpyrifos in 2000. The EPA press release, announcing a decision to halt the manufacture of nearly all residential uses of chlorpyrifos by December, 2000, is available at

https://archive.epa.gov/epapages/newsroom_archive/newsreleases/880b35adc877c301852568f8005399ed.html

The release quotes EPA Administrator Carol Browner: “Chlorpyrifos is part of a class of older, riskier pesticides, some going back 50 years. Exposure to these kinds of pesticides can cause neurological effects. Now that we have completed the most extensive scientific evaluation ever conducted on the potential health hazards from a pesticide, it is clear the time has come to take action to protect our children from exposure to this chemical.” The EPA acknowledged as well chlorpyrifos’ acute ecological risks (“Chlorpyrifos use poses acute and reproductive risks to many nontarget aquatic and terrestrial animals for all outdoor uses assessed,”) and risks to agricultural workers and their families. However, the FQPA only demanded revised standards based on *dietary* risks, so addressing those issues was left to the future.

<https://www.beyondpesticides.org/assets/media/documents/pesticides/factsheets/LowDown%20on%20Dursban.pdf>

That work to address the serious ecological and farm family risks, as well as ongoing concerns about exposure in our diet, advanced little during the George W. Bush administration, and resumed under the Obama administration. In November, 2016, the EPA released its *Chlorpyrifos: Revised Human Health Risk Assessment for Registration Review*.

<https://www.regulations.gov/document/EPA-HQ-OPP-2015-0653-0454> The press release on the Assessment summarizes a serious ongoing problem, sixteen years after cancellation of most residential uses of chlorpyrifos: “The revised analyses indicate that expected residues of chlorpyrifos on food crops exceed the safety standard under the Federal Food, Drug, and Cosmetic Act (FFDCA). In addition, the majority of estimated drinking water exposures from currently registered uses, including water exposures from non-food uses, continue to exceed safe levels even taking into account more refined drinking water exposures.” The analysis confirms an earlier, October 2015, EPA proposal to revoke all food tolerances for chlorpyrifos.

<https://www.epa.gov/pesticides/updated-human-health-risk-analyses-chlorpyrifos> The health assessment is very technical, but one particular passage is highly worthy of note, in the context of the earlier graphics submitted below: “The steady state dietary (food only) exposures for chlorpyrifos are of risk concern (> 100% steady state PAD for food (ssPADfood)) at the 99.9th percentile of exposure for all population subgroups analyzed. Children (1-2 years old) is the population subgroup with the highest risk estimate at 14,000% of the ssPADfood.” (p. 6)

On March 29, 2017, EPA administrator Scott Pruitt rejected the scientific conclusion of the EPA's chemical safety experts who under the Obama administration recommended that chlorpyrifos be permanently banned in agriculture.

<https://www.nytimes.com/2017/03/29/us/politics/epa-insecticide-chlorpyrifos.html> Andrew Liveris, chief executive of Dow Chemical, a major manufacturer of chlorpyrifos products, was chairman of President Trump's panel on manufacturing jobs, and had given \$1 million to the President's inauguration fund. <https://www.nytimes.com/2017/04/24/opinion/money-talked-loudest-at-trumps-inaugural.html>

An excellent review of the health concerns arising from our children's continued exposure to chlorpyrifos as a result of the Trump administration's failure to act is that by Dr. Virginia Rauh, *New England Journal of Medicine*, March 29, 2018. One insight that should be of great concern to all of us: "one review (assuming a population of 25.5 million children 0 to 5 years of age in the United States) calculates a total loss of 16.9 million IQ points due to exposure to organophosphates, of which chlorpyrifos is the most widely used. Such an estimate is staggering and yet does not begin to capture the full range of economic and health-related costs potentially associated with this toxic exposure." <https://www.nejm.org/doi/full/10.1056/NEJMp1716809>

A few responses to anticipated arguments in opposition to this bill:

1. **"If we ban this product, it may just be replaced by more toxic ones:"** I understand this argument has been submitted already in this session in defense of another pesticide. This one is a no-brainer: no way, chlorpyrifos is the worst of the worst.
2. **"Why not just save energy and sit back and let the Biden administration act?"** What, after all, does "Dirigo" mean? Maine is not the first state to ban chlorpyrifos, but it should not be one of the ones to do nothing. Even in federal administrations friendly to environmental regulation, the states play a major role in spurring responsible action to protect our health and the environment. Maine has always been in the forefront of these efforts. Senator Muskie almost singly crafted the Clean Air Act and Clean Water Act, and Rachel Carson educated the world about the risks of pesticides. Dirigo.
3. **"Regulation is unnecessary, where farmers have financial incentives to follow the rules and use as few toxic chemicals as possible:"** I heard this argument frequently in presentations to the BPC. In this case, it's clear that the underlying rules are inadequate to protect our health and the environment. But even if they were, here is an example of the risks we expose ourselves to when we permit a product like chlorpyrifos to be used on our farms. The story is a testament to the good work of Raymond Connors, then a BPC farm inspector, now Manager of Compliance. Consider the impact on numerous Maine families' Thanksgiving dinners, had Mr. Connors not happened to visit Popp Farm on that September day in 1997. (Taken from my files of *MOF&G* BPC reports, Fall, 1997)

BPC Inspector Catches Dangerous Levels of Pesticide on Cranberries

On September 11, 1997, BPC inspector Ray Connors was conducting a routine pesticide use inspection with David Popp at Popp Farm in Dresden. Reviewing Popp's pesticide application records, Connors noted that Popp reported on his pesticide applicator log applying 4 pints per acres of the cholinesterase inhibitor Chlorpyrifos 4E AG to his cranberry bog, though the label instructions direct 3 pints per acres for cranberries. Popp had also applied the pesticide to his bog three times over the summer, although label instructions limit applications to two applications per year. A Maine Department of Agriculture Quality Assurance Inspector was dispatched to the bog to take a sample of the cranberries to check for Chlorpyrifos residues on the cranberries. Sample results showed 4.3 ppm Chlorpyrifos, more than four times the 1.0 ppm tolerance. Upon being advised, Popp agreed not to allow the cranberries to be harvested, resulting in a net loss of between \$3500 and \$5200. He also agreed to pay a fine of \$250, as part of a Consent Agreement approved at the BPC's September 11, 1998 meeting. In commenting on the enforcement action BPC Chief of Compliance Henry Jennings acknowledged that Popp's conduct was "pretty inexcusable...Popp's problem is that he is trying to do everything at once."

Respectfully submitted,

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<http://umaine.edu/soe/faculty-and-staff/tisher/>

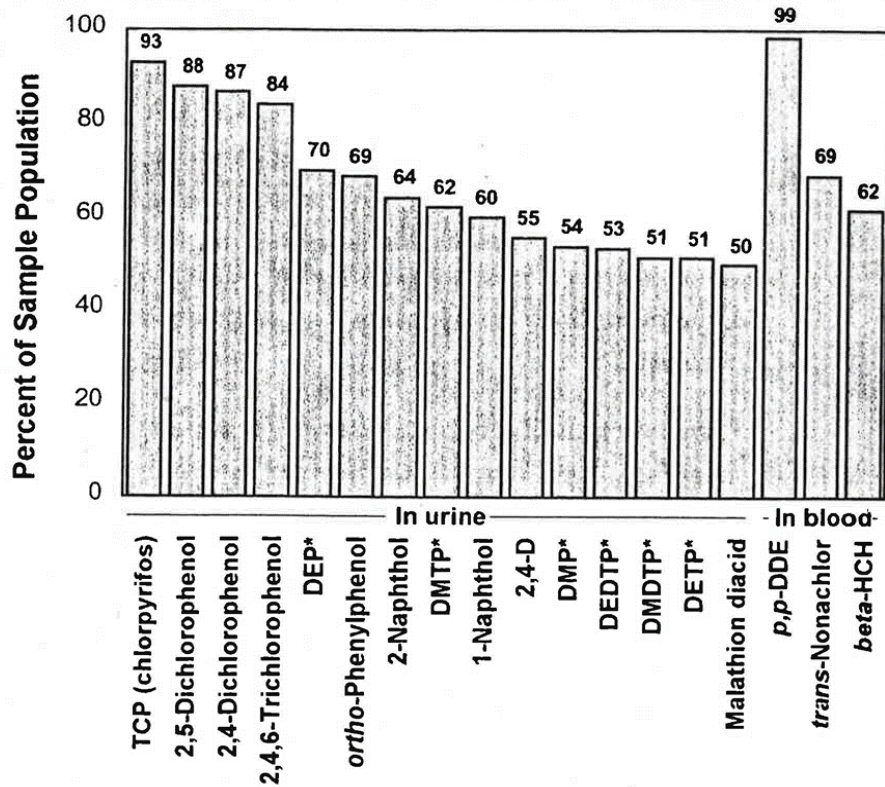


Figure D. Eighteen Pesticides Found in at Least Half of People Sampled. Fifteen of the pesticides or metabolites found in urine and three of the six found in blood were present in at least 50% of the study subjects. (Metabolites common to many organophosphorus insecticides are indicated with an asterisk.)

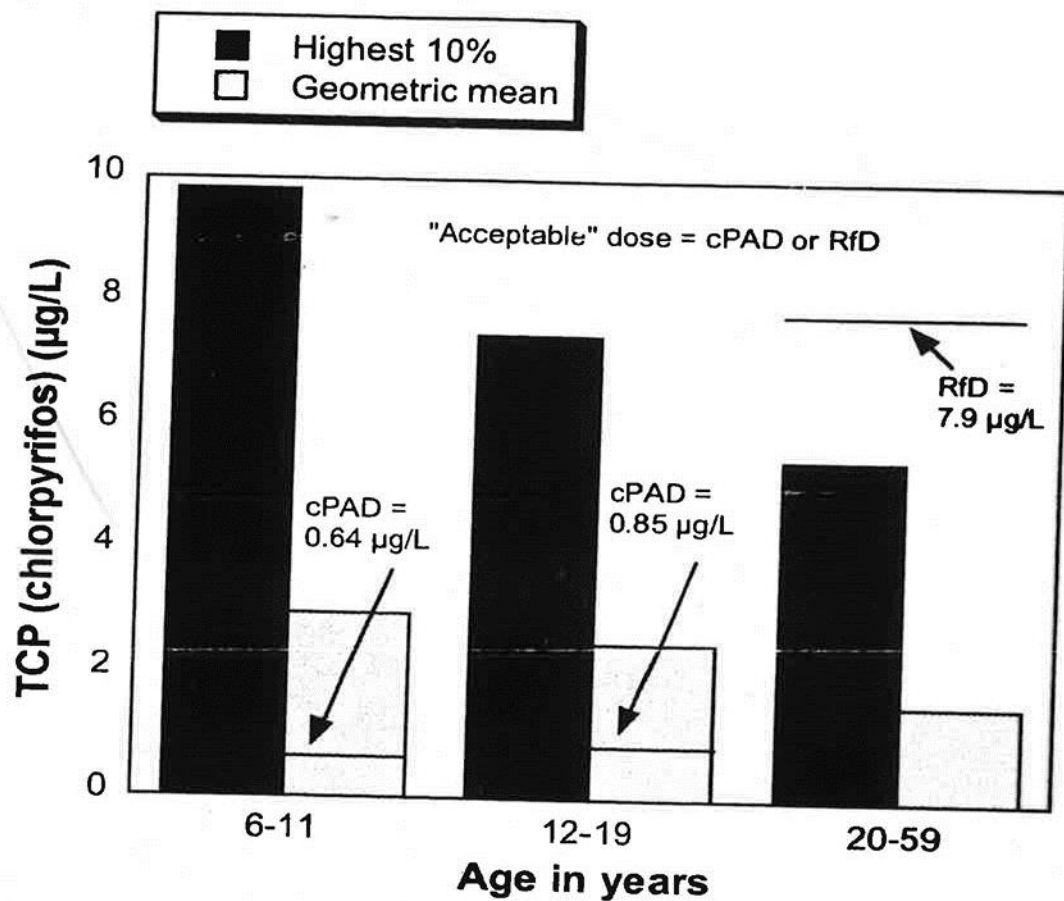


Figure A. Chlorpyrifos Exposure Above "Acceptable" Levels for Many. We compared levels between CDC's three age categories of the chlorpyrifos metabolite (3,5,6-Trichloro-2-pyridinol or TCP) measured in urine. The cPAD refers to the chronic Population Adjusted Dose, the officially "acceptable" dose for children,³ and RfD refers to the Reference Dose, the officially "acceptable" dose for healthy adults (excluding pregnant or nursing women). See Section 2 and Appendix B for more details.