

5/7/2019

House Committee on Rules
900 Court St. NE
Salem, Oregon 97301
(503)-986-1731

Dear Oregon Legislators,

As academics and scientists in the fields of public health, biology, chemistry, ecology, ecotoxicology, entomology, sustainability and human sciences, we would like to call your attention to the irreparable harm chlorpyrifos has on the environment and human health of Oregon. The 47 signers of this letter urge you to take immediate action to protect your constituents and the environment by passing HB 2619-1, which would ban this dangerous chemical.

Chlorpyrifos is Not Safe for Human Health

Chlorpyrifos is a toxic pesticide derived from a nerve gas developed by Nazi Germany for use in WWII.¹ Although the EPA banned almost all residential use of Chlorpyrifos in 2000, it is still widely used in the agricultural industry.² Oregonians regularly come into contact with chlorpyrifos through residue on food and contaminated drinking water and air. In 2015, a Food and Drug Administration study found that chlorpyrifos is the fourth most common pesticide found as a residue on human foods.³

Scientific studies have linked chlorpyrifos to brain damage in children, autism, cancer, Parkinson's disease and a whole host of other negative human health impacts such as reduced IQ, loss of working memory, attention deficit disorders and delayed motor development.^{4,5,6,7} Farmers, farmworkers, and rural communities have an increased risk of exposure to chlorpyrifos because of their proximity to agriculture, which is associated with immediate and long-term adverse health impacts.^{8,9,10}

A large body of science, including the U.S. Environmental Protection Agency's scientific review demonstrates that chlorpyrifos residues in water and food are unsafe for pregnant women and children.¹¹ In fact, studies indicate there are no safe levels for pregnant women since chlorpyrifos exposure can result in negative health outcomes for both the mother and fetus, such as increasing the chance of having a preterm birth.¹²

Chlorpyrifos is Not Safe for Wildlife

Chlorpyrifos is also extremely damaging to wildlife, namely birds, fish and pollinators. Federal scientists concluded this pesticide poses a risk to about 1,800 critically threatened or endangered species.¹³ Chlorpyrifos contributes to the staggering decline of pollinators because of its sub-lethal effect on bees. Studies have found that chlorpyrifos can have negative physiological, mutagenic, and sub-lethal effects on aquatic life.^{14,15,16}

Alternatives to Chlorpyrifos

Chlorpyrifos is often sprayed on Christmas trees just before they are harvested for sale. This poses a risk of exposure to Christmas tree workers and U-Cut customers and their families. There are safer alternatives that are just as effective as chlorpyrifos. These alternative pesticides and/or pest management practices can address challenging pests on farms, orchards, golf courses and general land care. According to the Pesticide Research Institute—an environmental consulting firm that provides research, analyzes,

technical services and expert consulting on pesticide toxicology and chemistry— there are 67 safer insecticides available to treat Christmas tree or conifer pests, 178 safer insecticides for apple tree pests, and 98 safer insecticides for turf/lawn or grass seed pests.¹⁷ With a significant amount of alternatives available to manage Oregon crop pests, workers and families should not be exposed to this neurotoxin.

Chlorpyrifos in the US Courts

Due to the surmounting evidence of chlorpyrifos' toxicity to humans and the environment, the U.S. Environmental Protection Agency (EPA) experts determined there was no safe way to use the chemical and recommended a complete ban.^{18,19} However, former EPA Administrator Scott Pruitt denied the petition to ban chlorpyrifos as one of his first formal acts in office.^{20,21}

As a result, numerous state attorneys general have filed suit against the EPA challenging its ruling.²² The state of Hawaii responded by banning chlorpyrifos.²³ In August 2018, the U.S. Court of Appeals for the Ninth Circuit ordered EPA to ban chlorpyrifos within 60 days.²⁴ Days before the deadline, EPA and the Department of Justice appealed the decision and requested a re-hearing.²⁵ It is anticipated that federal action on chlorpyrifos, necessary to protect people, drinking water and wildlife, will be mired in the courts for the unforeseeable future.

As scientists and academics, we agree that the body of evidence on chlorpyrifos' detrimental effects to human health and the environment is conclusive. We urge the state legislature to take action where the federal government has failed. We strongly ask that Oregon legislators champion human health and environmental stewardship by passing HB 2619-1, without any weakening amendments, in order to fully ban the state use of chlorpyrifos this legislative session.

Sincerely,

Catherine Page, PhD
Professor of Chemistry
University of Oregon

Robert Tanguay, PhD
Department of Environmental and Molecular Toxicology
Distinguished Professor
Oregon State University

George Nazin, PhD
Professor of Chemistry
University of Oregon

Eric Selker, PhD
Professor of Biology
University of Oregon

Luke Painter, PhD
Department of Fisheries and Wildlife
Instructor
Oregon State University

William Lambert, PhD
Associate Professor
Epidemiology & Environmental Systems & Human Health
School of Public Health
Oregon Health & Science University
Portland State University

Stephen Machado, PhD
Professor of Crop and Soil Sciences
Oregon State University

Kate Lajtha, PhD
Professor of Crop and Soil Sciences
Oregon State University

Kathleen O'Reilly, PhD
Professor of Biology
University of Portland

Desiree Tullos, PhD, PE
Professor of Water Resources Engineering
Oregon State University

Nathan Tublitz, PhD
Professor of Biology
University of Oregon

Annie Hommel
PhD Candidate in Public Health Policy
Oregon State University

Stephanie Bianco, MS
Instructor of Geography, Environmental Sciences and Marine Resource Management
College of Earth, Ocean, and Atmospheric Sciences
Oregon State University

Mark Reed, PhD
Professor Emeritus of Earth Sciences
University of Oregon

Leigh Torres, PhD
Assistant Professor, Oregon Sea Grant
The Geospatial Ecology of Marine Megafauna Lab (GEMM Lab)
Department of Fisheries and Wildlife, Marine Mammal Institute
Oregon State University
Hartfield Marine Science Center

David Reingold, PhD
Department of Chemistry
Portland State University

Ava Howard, PhD
Associate Professor of Biology
Western Oregon University

Mark Van Steeter, PhD
Associate Professor
Chair of the Department of Geography & Sustainability
Western Oregon University

Melissa Kelly, PhD
Assistant Professor of Biology and Human Anatomy and Physiology
Western Oregon University

Mary Pettenger, PhD
Professor of Political Science
Western Oregon University

Michael Baltzley, PhD
Professor of Biology
Western Oregon University

Daniel D. Roby, PhD
Professor of Wildlife Ecology
Oregon State University

Chris Langdon, PhD
Professor of Fisheries
Oregon State University

Kate Laitha, PhD
Professor of Crop and Soil Sciences
Director, Sustainability Program
Oregon State University

Gregory Hill
Professor of Mathematics and Environmental Studies
University of Portland

Charles B Kimmel, PhD
Professor Emeritus (Active) of Biology
University of Oregon

Alan Shanks, PhD
Professor of Marine Biology
University of Oregon Institute of Marine Biology

Jonathan Fink, PhD
Professor of Geology
Earth, Environment and Society Doctoral Program Director
Former Vice President for Research and Strategic Partnerships
Portland State University

Melissa Kelley, PhD
Assistant Professor of Biology and Human Anatomy and Physiology
Western Oregon University

Scott Beaver, PhD
Professor of Mathematics
Western Oregon University

Betsey Miller, MS
Instructor of Entomology
Oregon State University

Anna Cavinato, PhD
Professor of Chemistry
Eastern Oregon University

Bryan Harper, MS
Faculty Research Assistant
Department of Agricultural Sciences
Oregon State University

Peter Wetherwax, PhD
Research Assistant Professor
University of Oregon

Katherine Donegan,
Instructor of Entomology
Oregon State University

Peter von Hippel
Professor of Chemistry and Biochemistry
Institute of Molecular Biology, University of Oregon
Research Professor of Chemistry at the American Cancer Society

Colby Heideman, PhD
Associate Professor of Chemistry
Eastern Oregon University

Debbie Schlenoff, PhD
Senior Instructor
Department of Biology
University of Oregon

Jennifer Morse, PhD
Assistant Professor of Environmental Science and Management
Portland State University

Lorene Yokoyama Becker, MS, GISP
Senior Instructor
Geography and Geospatial Sciences
Oregon State University

J. Wilson White, PhD
Assistant Professor
Coastal Oregon Marine Experiment Station
Oregon State University

Emily Plec, PhD
Professor of Communications Studies
Western Oregon University

Andrea Allan, PhD
Instructor of Geography and Atmospheric Sciences
Oregon State University

Paige Hall, PhD
Professor of Chemistry
University of Portland

Monte Westerfield, PhD
Professor of Biology
University of Oregon

(The above signatures indicate individual support and does not reflect their affiliation's view unless stated)

¹ Associated Press. (2017). Dow Chemical is pushing Trump administration to ignore studies of toxic pesticide. *Los Angeles Times*. Retrieved from <http://www.latimes.com/business/la-fi-dow-pesticides-trump-20170420-story.html>

² Environmental Protection Agency (2018, September 24). Chlorpyrifos. *Environmental Protection Agency*. Retrieved from <https://www.epa.gov/ingredients-used-pesticide-products/chlorpyrifos>

³ Smart on Pesticides Maryland. (2019). The 2019 Maryland Chlorpyrifos Ban Bill, HB275/SB270. *Maryland Pesticide Network Maryland Pesticide Education Network*. Retrieved from <http://www.mdpestnet.org/take-action/smart-on-pesticides-maryland/>

⁴ Rauh, V. A., Perera, P. P., Horton, M. K., Whyatt, R. M., Bansal, R., ... & Peterson, B. S. (2012). Brain anomalies in children exposed prenatally to a common organophosphate pesticide. *PNAS*. Retrieved from <http://www.pnas.org/content/pnas/early/2012/04/25/1203396109.full.pdf>

⁵ Shelton, J. F., Geraghty, E. M., Tancredi, D. J., Delwiche, L. D., Schmidt, R. J., ... & Hertz-Picciotto, I. (2014). Neurodevelopmental Disorders and Prenatal Residential Proximity to Agricultural Pesticides: The CHARGE Study. *Environmental Health Perspectives*. Retrieved from <https://ehp.niehs.nih.gov/wp-content/uploads/122/10/ehp.1307044.alt.pdf>

⁶ Lee, W. J., Blair, A., Hoppin, J. A., Lubin, J. H., Rusiecki, J. A., ... & Alavanja, M. C. (2004). Cancer incidence among pesticide applicators exposed to chlorpyrifos in Agricultural Health Study. *J Natl Cancer Inst*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/15572760>

⁷ Wang, A., Cockburn, M., Ly, T. T., Bronstein, J. M., Ritz, B. (2014). The association between ambient exposure to organophosphates and Parkinson's disease risk. *Occup Environ Med*. Retrieved from <http://oem.bmj.com/content/71/4/275>

⁸ Rastogi, S. K., Tripathi, S., & Ravishanker, D. (2010). A study of neurologic symptoms on exposure to organophosphate pesticides in the children of agricultural workers. *Indian journal of occupational and environmental medicine*, 14(2), 54. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2992866/>

⁹ Rauh, V., Arunajadai, S., Horton, M., Perera, F., Hoepner, L., Barr, D. B., & Whyatt, R. (2011). Seven-year neurodevelopmental scores and prenatal exposure to chlorpyrifos, a common agricultural pesticide. *Environmental health perspectives*, 119(8), 1196. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3237355/>

¹⁰ Khan, K., Ismail, A. A., Rasoul, G. A., Bonner, M. R., Lasarev, M. R., Hendy, O., ... & Rohlman, D. S. (2014). Longitudinal assessment of chlorpyrifos exposure and self-reported neurological symptoms in adolescent pesticide applicators. *BMJ open*, 4(3), e004177. Retrieved from <http://bmjopen.bmj.com/content/4/3/e004177.short>

¹¹ Environmental Protection Agency. (2016). Chlorpyrifos Revised Human Health Risk Assessment. *Regulations.gov*. Retrieved from <https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0454>

¹² Hertz-Picciotto, I., Sass, J. B., Engel, S., Bennett, D. H., Bradman, A., Eskenazi, B., Lanphear, B., Whyatt, R. (2018). Organophosphate exposures during pregnancy and child neurodevelopment: Recommendations for essential policy reforms. *PLOS Medicine*. Retrieved from <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002671>

-
- ¹³ Associated Press. (2017). Dow Chemical is pushing Trump administration to ignore studies of toxic pesticide. *Los Angeles Times*. Retrieved from <http://www.latimes.com/business/la-fi-dow-pesticides-trump-20170420-story.html>
- ¹⁴ Urlacher, E., Monchanin, C., Rivièrè, C., Richard, F. J., Lombardi, C., Michelsen-Heath, S., ... & Mercer, A. R. (2016). Measurements of chlorpyrifos levels in forager bees and comparison with levels that disrupt honey bee odor-mediated learning under laboratory conditions. *Journal of chemical ecology*, 42(2), 127-138.
- ¹⁵ Henry, M., Beguin, M., Requier, F., Rollin, O., Odoux, J. F., Aupinel, P., ... & Decourtye, A. (2012). A common pesticide decreases foraging success and survival in honey bees. *Science*, 336(6079), 348-350.
- ¹⁶ Williamson, S. M., Moffat, C., Gomersall, M., Saranzewa, N., Connolly, C., & Wright, G. A. (2013). Exposure to acetylcholinesterase inhibitors alters the physiology and motor function of honeybees. *Frontiers in physiology*, 4, 13.
- ¹⁷ Pesticide Research Institute. (2019). Pesticide Product Evaluator. *Pesticide Research Institute*. Retrieved from <http://pesticideresearch.com/site/evaluator/>
- ¹⁸ Charles, D. (2017). EPA Decides Not To Ban A Pesticide, Despite Its Own Evidence Of Risk. *NPR*. Retrieved from <https://www.npr.org/sections/thesalt/2017/03/29/521898976/will-the-epa-reject-a-pesticide-or-its-own-scientific-evidence>
- ¹⁹ Earth Justice. (2018). What you should know: Chlorpyrifos. *Earth Justice*. Retrieved from <https://earthjustice.org/features/what-you-need-to-know-about-chlorpyrifos>
- ²⁰ Environmental Protection Agency. (2017). EPA Administrator Pruitt Denies Petition to Ban Widely Used Pesticide. *EPA*. Retrieved from <https://www.epa.gov/newsreleases/epa-administrator-pruitt-denies-petition-ban-widely-used-pesticide-0>
- ²¹ Lipton, E. (2017). E.P.A. Chief, Rejecting Agency's Science, Chooses Not to Ban Insecticide. *New York Times*. Retrieved from <https://www.nytimes.com/2017/03/29/us/politics/epa-insecticide-chlorpyrifos.html>
- ²² New York State Office of the Attorney General. (2017, July 6). A.G. Schneiderman Leads Legal Challenge Against EPA Over Toxic Pesticide. *New York State Office of the Attorney General*. Retrieved from <https://ag.ny.gov/press-release/ag-schneiderman-leads-legal-challenge-against-epa-over-toxic-pesticide>
- ²³ Kay, R. (2018). First In The Nation to Ban Chlorpyrifos! *Hawaii Reporter*. Retrieved from <http://www.hawaiireporter.com/first-nation-chlorpyrifos-ban/>
- ²⁴ Lipton, E. (2018). Court Orders E.P.A. to Ban Chlorpyrifos, Pesticide Tied to Children's Health Problems. *New York Times*. Retrieved from <https://www.nytimes.com/2018/08/09/us/politics/chlorpyrifos-pesticide-ban-epa-court.html>
- ²⁵ SB3095. (2018). Mandatory Pesticide Disclosure; Pesticide Reporting and Regulation Program; Chlorpyrifos; Pesticide Use Revolving Fund; Pesticide Drift Monitoring Study; Appropriation. *Hawaii State Legislature*. Retrieved from https://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=SB&billnumber=3095&year=2018