CENTER FOR FOOD SAFETY

March 26, 2019

Chair Representative Brian Clem
House Committee on Agriculture and Land Use
Re: Hearing on SB3058

Dear Chair, Vice Chair and Members of the Oregon Legislature:

We are writing to urge your support and passage of House Bill 3058 with a "do pass" recommendation the full House.

HB 3058 would prohibit the use and sale of a brain-damaging insecticide called chlorpyrifos in Oregon, and would require that pollinator-killing "neonicotinoid" insecticides could only be used by licensed pesticide applicators.

Center for Food Safety (CFS)'s mission is to empower people, support farmers, and protect the earth from harmful industrial agriculture. CFS has long worked to end the use of toxic pesticides in industrial agriculture, to protect public health and the environment. With nearly one million members and supporters nationwide and tens of thousands in Oregon, we represent farmers, eaters, and those that live in communities impacted by farming. We support a truly sustainable food system, one that is healthy for both those producing it, communities, and the environment. Toxic pesticides that harm children and kill off wildlife do not support these values. That is why we urge you to support these bills to protect Oregonians from unnecessary and dangerous chemicals.

Chlorpyrifos and neonicotinoids have serious effects on human and environmental health effects. Hawaii has already banned chlorpyrifos due to its extreme danger to children, and anyone exposed. The need to act on these in Oregon is imperative.

Chlorpyrifos is Dangerous for Anyone Near an Application

Sold under various trade names (Lorsban, Dursban and others), chlorpyrifos is used to kill insects and mites in many grains, vegetables, nuts, and fruit crops, as well as in non-food crops such as grass seed, Christmas trees and nursery plants. Strawberries, apples, hazelnuts and corn are some of the common foods grown in Oregon that are frequently treated with chlorpyrifos.

Chlorpyrifos is so toxic that even those a football field away from an application are at risk. The EPA states in its 2016 risk assessment[1] that, in order to reduce human safety risks from drift and volatilization near an application, buffers greater than 300 feet are needed. But buffers of these widths are not currently mandated on labels, and in Oregon, farmworker housing, schools, and other farms are commonly located much closer to an application than 300 feet.

[1] U.S. Environmental Protection Agency. 2016. Chlorpyrifos: Revised Human Health Risk Assessment for Registration Review. https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0454.

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Chlorpyrifos in Our Food Exposes All of Us to Substantial Doses of a Neurotoxin

Chlorpyrifos is widely used and applied on a wide variety of crops, so perhaps it is not surprising that it is found in our food at dangerous levels. According to the EPA, in an average diet, Americans unknowingly consume high amounts of chlorpyrifos, resulting in exposures many times levels EPA deems safe. Shockingly, children ages one to two consume chlorpyrifos in food at levels 140 times their "safe" level, according to EPA estimates.[2]

Chlorpyrifos is Harmful to Farmworkers and Their Children

While chlorpyrifos was deemed harmful enough to human health that it was banned years ago for most residential uses, those who grow our food are **not** protected, absorbing chlorpyrifos through the skin and inhalation as they pick and pack and tend the crops. Not only is this risky for the workers themselves – it is also bad news for the children of farmworkers.

Several "longitudinal" studies spanning two decades have allowed us to glimpse a fact that might seem amazing – when pregnant women are exposed to organophosphate pesticides like chlorpyrifos, their children suffer brain development disorders.[3] Studies have shown that of the children born to exposed mothers, infants tend to have slower reflexes,[4] toddlers exhibit autism-like disorders,[5] and seven-year-olds tested with IQs, on average, seven points behind their peers.[6]

And the children of farmworkers are often directly exposed to pesticides as well – by their proximity to the fields while living in substandard migrant housing, and by unknowingly coming into contact with the pesticide residues on the clothing or shoes of their parents when they return from the fields.

The EPA was Set to Ban Chlorpyrifos on Food Crops – Then Trump Administration Suddenly Reversed this Decision in 2017

All of the above-listed human health consequences are well known to the EPA and were documented in its 2016 human health risk assessment. EPA proposed to ban chlorpyrifos use on food crops in 2015, then reversed itself in 2017, keeping it on the market despite its known harms. The New York Times reports that the chemical's manufacturer (Dow Chemical Company)

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[2] Ibid.

[3] See studies at https://cerch.berkeley.edu/ for CHAMACOS studies, a longitudinal birth cohort study which investigates pesticide and other environmental exposures on the health and development of children living in agricultural communities in the Salinas Valley, California. Other longitudinal studies have found similar results. See studies conducted by Columbia University at https://ccceh.org/and at the Mount Sinai Children's Environmental Health Study (https://icahn.mssm.edu/about/departments/environmental-public-health/cehc).

[4] Young. J., B. Eskanazi [and others] 2005. Association between in utero organophosphate pesticide exposure and abnormal reflexes in neonates. Neurotoxicology 26(2):199-209. https://www.ncbi.nlm.nih.gov/pubmed/15713341

[5] Sagiv, S., M. Harris [and others]2018. Prenatal Organophosphate Pesticide Exposure and Traits Related to Autism Spectrum Disorders in a Population Living in Proximity to Agriculture. Environ. Health Perspect. 126(4): 047012. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6071837/

[6] Bouchard MF, Chevrier J, Harley KG, Kogut K, Vedar M, Calderon N, et al. 2011. Prenatal Exposure to Organophosphate Pesticides and IQ in 7-Year- Old Children. Env. Health Perspect. 119:1189-1195. doi:10.1289/ehp.1003185

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conducted heavy lobbying prior to EPA's 2017 decision, and contributed $1 million to President Trump's inaugural committee.[7]

Chlorpyrifos is Detected in Oregon's Streams and Rivers, Sometimes at Extremely High Levels

To cap it off, chlorpyrifos also gets into our streams, threatening our already diminished salmon and steelhead. Chlorpyrifos is regularly detected in Oregon streams at levels far above its Clean Water Act standard, sometimes at levels hundreds of times higher than this safety threshold.[8] And the trend is worsening in some areas, including in the Middle Deschutes, Yamhill, and Walla Walla watersheds. Concentrations similar to those found in Willamette Valley streams have been found to:

- Kill salmon prey, such as caddisflies, mayflies, stoneflies, and daphnids.[9]
- Affect fish ability to smell and swim, both critical salmonid behaviors.[10]
- Become more toxic as water warms. At 66°F, chlorpyrifos is seven times more toxic to trout than at 55°F.[11]

The country's premier fish agency has weighed in on chlorpyrifos and its effect to threatened and endangered salmon and steelhead, with a dire warning. In 2017, the National Marine Fisheries Service determined that chlorpyrifos jeopardizes the survival and recovery of all listed salmon and steelhead in Oregon, Washington and California. Orca whales in Washington are also jeopardized by chlorpyrifos.

Pollinators Need Protection Against Extremely Toxic Neonicotinoids as Multiple Countries Have Recognized

HB 3058 and SB 853 would also make the neonicotinoid class of insecticides "restricted use," meaning that people who don't have an Oregon license to apply pesticides wouldn't be able to buy and use these chemicals, which are widely sold in garden centers and big box stores with no education about their grim effects.

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[7] Lerner, S. 2017. Protect Our Children's Brains. New York Times, February 3, 2017. https://www.nytimes.com/2017/02/03/opinion/sunday/protect-our-childrens-brains.html?_r=0

[8] See monitoring studies under Oregon's Pesticide Stewardship Partnership Program at https://www.oregon.gov/ODA/shared/Documents/Publications/PesticidesPARC/GreaterYamhillSummary.pdf and https://www.oregon.gov/ODA/shared/Documents/Publications/PesticidesPARC/ClackamasSummary.pdf.

[9] U.S.EPA. 2003. Chlorpyrifos Analysis of Risks to Endangered and Threatened Salmon and Steelhead. Office of Pesticide Programs. Cited in National Marine Fisheries Service. 2008. pp. 269-271. See also National Marine Fisheries Service. 2017. Endangered Species Act Section 7 Final Biological Opinion: Environmental Protection Agency's Registration of Pesticides Containing Chlorpyrifos, Diazinon and Malathion, p. B-16.

[10] Sandahl J., Baldwin D. [and others]. 2004. Odor-evoked field potentials as indicators of sublethal neurotoxicity in juvenile coho salmon (Oncorhynchus kisutch) exposed to copper, chlorpyrifos, or esfenvalerate. Canadian Journal of Fisheries Aquatic Sciences 64:404-413. See also Sandahl J., Baldwin D. [and others]. 2005. Comparative thresholds for acetylcholinesterase inhibition and behavioral impairment in coho salmon exposed to chlorpyrifos. Environmental Toxicology and Chemistry 24:136-145.

[11] National Marine Fisheries Service. 2008. Endangered Species Act Section 7 Consultation Biological Opinion. U.S.EPA Registration of Pesticides Containing Chlorpyrifos, Diazinon, and Malathion. See pages 269-270.

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Neonicotinoids are a class of insecticides that are highly persistent and highly toxic to bees, beneficial insects, and aquatic invertebrates. Because they are highly soluble they are also prone to drifting from yards and fields to water, resulting in massive contamination of surface waters with neonics across the country.[12]

Numerous incidents involving bee deaths have been tied to neonicotinoids. As one result, multiple other countries and jurisdictions have banned or regulated neonicotinoids. In 2018, the European Union banned three neonicotinoids (clothianidin, imidacloprid and thiamethoxam) for all outdoor uses. Ontario has restricted the use of neonicotinoid seed treatments. And multiple cities in the United States and elsewhere have banned use of neonicotinoids on city property.

The persistence of neonicotinoids in plants results in a risk for a toxic exposure to pollinator-visiting insects long after the application. Bayer, the chemical manufacturer for imidacloprid (the most widely used neonic), found in its own studies very high residues of imidacloprid from soil applications to landscape plants, long after application.[13] An independent university study corroborated the high residue rates documented in the Bayer data, with residues ranging from 6,000-45,000 ppb in treated plants, and also documented impacts to butterflies and beneficial insect predators.[14]

These residue levels are mostly far higher than those known to cause lethal effects to honey bees (185 ppb) and illustrate the very high persistence of neonicotinoids in woody flowering plants.

Less obvious types of toxic effects ("sub-lethal" effects) from neonicotinoids can also occur. Bumblebee colonies exposed to field-realistic concentrations of imidacloprid had significantly reduced growth rates and an 85% reduction in queen production.[8] Various studies have also documented reduced bee foraging ability after very low, field realistic exposures. Sub-lethal effects can gradually result in population level effects – and the amounts at which impacts have been documented are vanishingly small. An EPA risk assessment considering the effects of a neonic (imidacloprid) identified a nectar residue level for imidacloprid of 25 ppb, above which the assessment concluded that effects on honey bee hives are likely. These effects may include reduction in numbers of pollinators as well as the amount of honey produced.[15] In addition, the EPA acknowledges "major (and statistically significant) effects" to bumblebee colonies fed imidacloprid-spiked sucrose at 10 ppb.

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[12] Hladik, M.L., Kolpin, D.W., 2016, First national-scale reconnaissance of neonicotinoid insecticides in streams across the U.S.A., *Environ. Chem.*, v. 13, pp. 12-20, https://ca.water.usgs.gov/pubs/2015/HladikKolpin2015.pdf.

[13] Bayer measured dogwood flowers 17 months after application containing 1,038–2,816 parts per billion (ppb) of imidacloprid. Other Bayer studies found residues of 27–850 ppb in rhododendron flowers at 6 months after application; and residues of 66–4,560 ppb in serviceberry flowers at 18 months after application. Data cited in Krischik V, M. Rogers [and others]. 2015. Soil-applied imidacloprid translocates to ornamental flowers and reduces survival of adult Coleomegilla maculata, Harmonia axyridis, and Hippodamia convergens lady beetles, and larval Danaus plexippus and Vanessa cardui butterflies. PLoS ONE 10(3): e0119133. doi:10.1371/journal.pone.0119133.

[14] Krischik V., Rogers M. [and others]. 2015. (Previous footnote).

[15] Environmental Protection Agency. 2016. Preliminary Pollinator Assessment to Support the Registration Review of Imidacloprid. https://www.regulations.gov/ #!documentDetail;D=EPA-HQ-OPP-2008-0844-0140.

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Requiring a License for the Most Toxic Pesticides Makes Sense

We support the move to make neonicotinoids restricted use in Oregon. Requiring a license guarantees that the person using a pesticide has had the benefit of training and can pass a test demonstrating knowledge about basic pesticide safety practices. Licensed applicators need to get continuing education to keep up with the latest science and rules. Anyone who wants to use a pesticide, especially those known to be as dangerous as neonics, should have an applicator license.

Farmers Adapt and Lead the Way

Farmers are already working together to share information about safer practices, leading the way to less toxic food production. First, organic farmers have been producing healthy food for years without the use of chlorpyrifos or any neonicotinoids. And for the conventional or non-organic growers, they too recognize that it is in their long term best interest to move to more sustainable and healthy pest manage practices. For example, in Oregon's nursery industry, educational efforts by Oregon State University Extension and leadership by growers and insectaries has greatly expanded the number of growers using biological control to manage insect pests. Many growers already recognize that harsh, broad-spectrum pesticides like chlorpyrifos and neonicotinoids result in resistance – the bugs evolve a tolerance to the pesticide and come back even stronger.

Conclusion

We urge you to please support these bills, which will protect Oregon children, farm workers, farmers, and fish.

Sincerely,

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