



February 1, 2023

**The Education, Energy, and the Environment Committee**

**In Support of SB158: Pesticide Registration - PFAS Testing – Requirements**

We write on behalf of Farmworker Justice and Migrant Clinicians Network to urge you to support Senate Bill 158, *Pesticide Registration - PFAS Testing – Requirements*. Farmworker Justice is a nonprofit organization that seeks to empower farmworkers to improve their living and working conditions, health and occupational safety. Migrant Clinicians Network is a nonprofit dedicated to migration health and provides extensive training and technical assistance to clinicians across the country serving farmworkers and rural communities.

SB158 would prohibit the registration for use of pesticides contaminated with perfluoroalkyl and polyfluoroalkyl substances (PFAS), and impose PFAS testing requirements on pesticide distributors. PFAS are known as “forever chemicals” due to their persistence in the environment. Because they are extremely slow to break down, these chemicals bioaccumulate in animals and humans. Scientific evidence indicates that PFAS are endocrine disruptors linked with certain types of cancer.<sup>1</sup> Multiple studies have found associations between PFAS exposure and an alarming array of health effects including reproductive toxicity, preeclampsia, reduced birth weight, altered maternal and neonatal thyroid function, negative impacts on childhood neurodevelopment, non-alcoholic fatty liver disease in children, alterations in pubertal development, diabetes, increased blood cholesterol levels, hypertension, myocardial infarction, decreased kidney function, visual impairment, Crohn’s disease, immune system suppression, cerebrovascular diseases, Alzheimer’s disease, Parkinson’s disease (females), downregulation of certain microRNAs, and cancer of the breast, testicles and kidneys.<sup>2</sup>

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<sup>1</sup> Kirk M, Smurthwaite K, Bräunig J, Trevenar S, D’Este C, Lucas R, Lal A, Korda R, Clements A, Mueller J, Armstrong B. *The PFAS Health Study: Systematic Literature Review*. Canberra: The Australian National University. 2018. [https://openresearch-repository.anu.edu.au/bitstream/1885/241032/1/PFAS%20Health%20Study%20Systematic%20Review\\_1.pdf](https://openresearch-repository.anu.edu.au/bitstream/1885/241032/1/PFAS%20Health%20Study%20Systematic%20Review_1.pdf)

<sup>2</sup> Chohan A, Petaway H, Rivera-Diaz V, Day A, Colaianni O, Keramati M. Per and polyfluoroalkyl substances scientific literature review: water exposure, impact on human health, and implications for regulatory reform. *Rev Environ Health*. 2020 Sep 30;36(2):235-259. doi: 10.1515/reveh-2020-0049. PMID: 32990652.

Alarming, research published in 2022 found that six out of 10 common agricultural pesticides tested were contaminated with high levels of PFAS ranging from 3.92 to 19.2 parts per million (ppm). The pesticide with the highest concentration, abamectin, contained 19.2 ppm of PFOS (perfluorooctane sulfonic acid, a type of PFAS).<sup>3</sup> For comparison, the U.S. Environmental Protection Agency's (EPA) drinking water health advisory level for PFOS is 0.02 **parts per trillion** (ppt). This same study found high concentrations of PFAS in soil and food grown in areas treated with these pesticides.

PFAS contamination in agricultural pesticides poses a significant public health threat, not just to the general public who eat contaminated food, but also to farmworkers. Farmworkers are exposed to PFAS when they handle, mix, load and apply pesticides, as well as when they are exposed to pesticide drift or enter treated fields. Farmworker families, many of whom live on or near the farms, are also exposed when pesticide drift and runoff contaminate the air, soil and water around their homes, and when residues are brought home on contaminated work clothing. The risk is particularly high for pregnant women and children, given that exposure to some PFAS is associated with preeclampsia and other reproductive effects, while exposure in early childhood is associated with decreased immune response and neurodevelopmental impacts, among other health outcomes.<sup>4</sup>

Farmworker communities already face serious health challenges due to their low incomes, lack of health insurance, limited access to health care, and language barriers. They also face a myriad of occupational hazards that include heat stress, musculoskeletal injuries, and exposure to pesticides whose active ingredients are associated with some types of cancer, degenerative neurologic diseases, and immune effects.<sup>5</sup> Substandard housing further contributes to the occupational and environmental health threats they endure. PFAS contamination of pesticides can only add to the already high health burdens faced by this population.

SB 158 is a crucial step in protecting farmworkers, their families and rural communities from PFAS contamination. To ensure that the legislation's testing requirements are effective in preventing PFAS-contaminated pesticides from entering the market, the Maryland Department of Agriculture will need to ensure that pesticide samples tested by distributors are truly representative of the products that will be offered for sale. The EPA suspects that at least some of the PFAS contamination found in pesticides may be due to leaching from the walls of fluorinated pesticide containers. Specifically, the Agency has indicated:

“On September 8, 2022, EPA released results from its evaluation on the leaching potential of PFAS from the walls of certain fluorinated HDPE containers into the liquids stored in

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<sup>3</sup> S. Lasee, McDermott K, Kumar N, Guelfo J, Payton P, Yang Z, Anderson TA. Targeted analysis and Total Oxidizable Precursor assay of several insecticides for PFAS. *J. Hazard. Mater. Lett.* 3 (2022). <https://doi.org/10.1016/j.hazl.2022.100067>

<sup>4</sup> Chohan et al. (2020). Supra note 2.

<sup>5</sup> McCauley LA, Anger WK, Keifer M, Langley R, Robson MG, Rohlman D. Studying health outcomes in farmworker populations exposed to pesticides. *Environ Health Perspect.* 2006 Jun;114(6):953-60. doi: 10.1289/ehp.8526. PMID: 16760000; PMCID: PMC1480483.

those containers. Results from this study indicate that PFAS present in the inside walls of the fluorinated HDPE containers can be readily leached into formulated liquid products, with higher total amounts seen for products formulated in organic solvents such as methanol compared with water-based products. For both solvents tested (methanol and water), the study also shows continued gradual leaching of PFAS over time.”<sup>6</sup>

The way in which samples are obtained for testing—and whether they have actually been stored in the same types of containers used for products offered for sale—will determine whether the results are truly representative of PFAS concentrations in pesticide products entering the market.

Farmworkers are one of the most overburdened environmental justice communities in the state. By decisively addressing PFAS contamination in pesticides, the Maryland General Assembly will be ensuring that they are no longer exposed to severe health risks stemming from PFAS exposure. This will benefit farmworkers, rural communities, and every state resident who may be exposed to PFAS in food and the environment. SB158 will protect the health of Marylanders and become a model for states across the nation. Farmworker Justice and MCN urge the committee to support this important public health legislation.

Respectfully submitted,

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<sup>6</sup> U.S. EPA. *Per- and Polyfluoroalkyl Substances (PFAS) in Pesticide and Other Packaging*. Updated December 14, 2022. <https://www.epa.gov/pesticides/pfas-packaging>