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August 18, 2014

The Honorable Gina McCarthy
Office of Pesticide Programs Docket
U.S. Environmental Protection Agency Docket Center
Mail Code: 28221T
1200 Pennsylvania Ave., NW
Washington, D.C. 20460

Re: Proposed Worker Protection Standards; Docket I.D. EPA-HQ-OPP-2011-0184

Dear Administrator McCarthy:

Beyond Pesticides thanks the U.S. Environmental Protection Agency (EPA) for the opportunity to comment on the proposed amendments worker protection standards (WPS). As described by the Agency, the “WPS is a regulation intended to reduce the risks of injury or illness resulting from agricultural workers’ and handlers use and contact with pesticides on farms, forests, nurseries and greenhouses.”¹ Beyond Pesticides supports this intention and EPA’s efforts to actively update protections against the severe risks of pesticides experienced by agricultural workers, their families and communities. In many regards, the proposed rule achieves this intention and improves upon the outdated and inadequate standards that have plagued the agricultural industry. In far too many instances, however, the WPS fails this intention by either including standards that run directly counter to known risks and impacts or by establishing a standard that falls short.

Legal Authority: Why EPA Must Protect Agricultural Workers

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) grants the administrator the authority to issue regulations necessary for carrying out the provisions of the Act.² “Such regulations shall take into account the difference in concept and usage between various classes of pesticides, including public health pesticides, and differences in environmental risk and the appropriate data for evaluating such risk between agricultural, nonagricultural, and public health pesticides.”³

¹ Pesticides; Agricultural Worker Protection Standard Revisions, 79 Fed. Reg. 15444 (proposed March 19, 2014), at 15446.

² 7 U.S.C. § 136w(a).

³ *Id.*

Pesticide Risks and Agricultural Workers: Why We Need Stronger Protections

As EPA is aware and the scientific literature confirms, farmworkers, their families, and their communities face extraordinary risks from pesticide exposures. Application and pesticide drift result in dermal, inhalation, and oral exposures that are typically underestimated. A 2004 study detected agricultural pesticides in the homes near to agricultural fields.⁴ And according to a study by Arcury *et al.*,⁵ workers experience repeated exposures to the same pesticides evidenced by multiple pesticides routinely detected in their bodies.

Using 2,4-D as one example pesticide—a pesticide set to expand in use with the potential entrance of 2,4-D-resistant genetically engineered (GE) crops into the market—the same Arcury study of 196 farmworkers found that 86 percent of workers contained 2,4-D in their urine. The Centers for Disease Control's Fourth *National Report on Human Exposure to Environmental Chemicals*, which analyzes pesticide residues in the U.S. population via the *National Health and Nutrition Examination Survey (NHANES)*, noted that occupational exposure to 2,4-D (production plant workers and forestry workers) results in urinary levels several hundred to several thousand times higher than the 95th percentiles of the NHANES subsamples. In farm families, the average urinary levels of 2,4-D are highest in the farmers who applied 2,4-D; other family members had levels also ranging higher than the U.S average.⁶ Other studies have also reported 2,4-D detections in a majority of samples including those of pregnant workers.^{7,8}

Despite industry attempts to downplay these exposure findings and claim that 2,4-D has low toxicity, farmers and farmworkers continue to bear the brunt of these exposures and chronic health effects. Researchers from the National Cancer Institute and the National Institutes of Health found that increasing acreage of corn and soybean fields within 750 meters of homes is associated with significantly elevated odds of detecting agricultural herbicides. 95 percent of the homes sampled in this study contains 2,4-D.⁹ 2,4-D, detected in the semen of farmworkers in Canada, could be toxic to sperm cells and can be transported to the woman and developing embryo/fetus.¹⁰ Phenoxyacetic acid herbicides, specifically 2,4-D, is associated with non-Hodgkin lymphoma (NHL) and a high incidence of NHL has been reported among farmers and other occupational groups working with 2,4-D. According to the National Cancer Institute,

⁴ Quandt SA, Arcury TA, Rao, P, et al. 2004. Agricultural and residential pesticides in wipe samples from farmworker family residences in North Carolina and Virginia. *Environ Health Perspect.* 112(3): 382–387.

⁵ Arcury, T, Grzywacz, J, Talton, J, et al. 2010. Repeated Pesticide Exposure among North Carolina Migrant and Seasonal Farmworkers. *Am J Ind Med.* 53(8): 802–813.

⁶ Centers for Disease Control and Prevention (CDC). *Fourth National Report on Human Exposure to Environmental Chemicals. 2013 Update.* Available at URL:<http://www.cdc.gov/exposurereport/>

⁷ Arcury, T, Grzywacz, J, et al. 2009. Seasonal Variation in the Measurement of Urinary Pesticide Metabolites among Latino Farmworkers in Eastern North Carolina. *Int J Occup Environ Health.* 15(4): 339–350.

⁸ Cooper, S, Burau, K, Sweeney, A, et al. 2001. Prenatal exposure to pesticides: A feasibility study among migrant and seasonal farmworkers. *Am. J. Ind. Med.* 40:578–585

⁹ Ward MH, Lubin J, Giglierano J, et al. 2006. Proximity to crops and residential exposure to agricultural herbicides in Iowa. *Environ Health Perspect.* 114(6):893-7.

¹⁰ Arbuckle TE, Schrader SM, et al. 1999. 2,4-Dichlorophenoxyacetic acid residues in semen of Ontario farmers. *Reprod Toxicol.* 13(6):421-9.

frequent use of 2,4-D, has been associated with 2- to 8-fold increases of NHL in studies conducted in Sweden, Kansas, Nebraska, Canada, and elsewhere.¹¹ Farmers using 2,4-D are associated with an increased risk of NHL in 131 lymphohematopoietic cancers (LHC) in a case-control study embedded in a cohort of 139,000 members of United Farm Workers of America (UFW) diagnosed in California between 1988 and 2001.¹² Occupational exposure to 2,4-D is also associated with an increased risk of Parkinson's disease.¹³

Chlorpyrifos offers another example. EPA's own assessment of this chemical, conducted back in 2010, found that it poses risks to farmworkers, even with the use of protective equipment. Yet EPA's approach to addressing the problems posed by this dangerous neurotoxic insecticide focuses on reduction strategies to come up with "acceptable" rates of illness across the population. In doing so EPA ignored the chemical's widespread use in agriculture resulting in exposure to farmworkers, farm families, especially vulnerable children¹⁴ and others living near agricultural areas.¹⁵ Yet the health impacts of the chemical remain, including short-term effects of chest tightness, blurred vision, headaches, coughing and wheezing, weakness, nausea and vomiting, coma, seizures, and even death.¹⁶ Prenatal and early childhood exposure to chlorpyrifos has been linked to low birth weights, developmental delays and other health effects.^{17,18,19}

The list of example pesticides could continue and with it the well-documented list of exposures for farmworkers and their children^{20,21,22,23} as well as the findings of disproportionate impacts.

¹¹ Zahm SH and Blair A. 1992. Pesticides and non-Hodgkin's lymphoma. *Cancer Res.* 52(19 Suppl):5485s-5488s.

¹² Mills PK, Yang R, Riordan D. 2005. Lymphohematopoietic cancers in the United Farm Workers of America (UFW), 1988-2001. *Cancer Causes Control.* 16(7):823-30.

¹³ Tanner CM, Ross GW, Jewell SA, et al. 2009. Occupation and risk of parkinsonism: a multicenter case-control study. *Arch Neurol.* 66(9):1106-13.

¹⁴ Beamer, PI, et al. 2009 Farmworker children's residential non-dietary exposure estimates from micro-level activity time series. *Environ Int* ;35(8):1202-9.

¹⁵ Harnly, ME, et al. 2009. Pesticides in dust from homes in an agricultural area. *Environ Sci Technol*;43(23):8767-74.

¹⁶ EXTOKNET.1996. Pesticide Information Profile- Chlorpyrifos. Available at <http://extoknet.orst.edu/pips/chlorpyr.htm>

¹⁷ Haviland, J, Butz, D & Porter, W. 2009. Long-term sex selective hormonal and behavior alterations in mice exposed to low doses of chlorpyrifos in utero. *Reproductive Tox.* 29(1):74-9

¹⁸ Venerosi, A et al. 2010. Gestational exposure to the organophosphate chlorpyrifos alters social-emotional behaviour and impairs responsiveness to the serotonin transporter inhibitor fluvoxamine in mice *Psychopharmacology.* 2010 Jan;208(1):99-107.

¹⁹ Davis DL and Ahmed AK. 1998. Exposures from indoor spraying of chlorpyrifos pose greater health risks to children than currently estimated. *Environ Health Perspect.*;106(6):299-301.

²⁰ Ref #1

²¹ Arcury, TA, et al. 2007. Pesticide urinary metabolite levels of children in eastern North Carolina farmworker households. *Environ Health Perspect.*;115(8):1254-60.

²² Bradman, A. et al. 2007. Pesticides and their metabolites in the homes and urine of farmworker children living in the Salinas Valley, CA. *J Expo Sci Environ Epidemiol.* 2007 Jul;17(4):331-49. Epub 2006 May 31.

²³ Simcox, NJ. 1995. Pesticides in household dust and soil: exposure pathways for children of agricultural families. *Environ Health Perspect.*;103(12):1126-34.

Unfortunately, many of these exposure and disproportionate impact issues will not be reduced by the proposed WPS, so long as pesticide use remains a rampant and escalating component of agriculture. If EPA is committed to environmental justice and the health and well-being of farmworkers, and is unwilling to remove chemicals like chlorpyrifos from agricultural use or deny approval of new formulations of 2,4-D, then it must do everything in its power to ensure that the WPS offer the very highest safety standards and assist in moving the agricultural industry towards a less pesticide-reliant system.

Recommendations: Why the WPS Still Need to be Stronger and More Protective

There are a number of areas where the proposed WPS either stop short of instituting meaningful improvements or fail to address pesticide risks altogether. The following categories highlight the most problematic:

Protect children—all children. While setting a minimum age of 16 for pesticide application and handling is an improvement over no minimum age, it belies common sense and the scientific evidence on pesticide exposure during critical developmental periods to allow exposure of adolescents to hazardous chemicals. Additionally, it makes little sense to exempt farm owners and allow them to expose their own children of any age to these dangerous chemicals. The WPS should have a firm stance on protecting children and establish a baseline age of 18 for **all** children.

Provide more comprehensive training and information access that includes alternatives evaluation statements from farm owners. Required annual safety training, improved training content, and mandatory records retention are important steps towards making sure that workers learn about pesticide risks and safety procedures for avoiding those risks. Expanding protections through training and information, however, should also place a requirement on farm owners and operators to provide access to information on alternative management practices and communicate reasons for chemical approaches to pest management. This information access would include a written explanation of the considerations that went into a decision to use specific pesticides, potentially placing farmworkers and other workers at an elevated risk, whether alternative practices, such as IPM or organic were considered, and, if such alternatives were considered and declined, why. Training for farm workers should include an explanation of this farm owner requirement and access to the alternatives assessment statement and information concerning alternative practices.

Equally as important is training that incorporates clear directions to report violations of pesticide use without fear of retaliation or intimidation. Knowledge of safety standards and proper use mean nothing if there isn't an emphasis on how to identify and report violations of those safety standards in a manner that doesn't threaten the livelihood of the farm worker. Providing farm workers a name and a number to call at a state agency is not sufficient.

Require notice of all pesticide applications, both on site and in central area. Workers, families, and agricultural communities need pesticide application notices before and after application.

Notices should be posted on the site of application and in a central area. It should not be one or the other.

Establish broader, universal drift and volatilization protections. The expansion of entry-restricted areas and buffer zones to include farms and forests, in addition to nurseries and greenhouses, is critical. and it should apply to all pesticide or application methods. Most pesticides have not been adequately assessed for drift and volatilization and thus do not incorporate the appropriate level of precaution when it comes to surrounding community exposures —communities where vulnerable children live. Farmworker studies routinely show high exposure risks and disease from pesticide migration in these communities.^{24,25,26}

Institute the highest level of protective gear, supplies, and systems technology possible. Even with improved education and access to information on pesticide use and hazards, equipment must be consistent and suited to the highest possible protective needs. Standards should also require improved technologies and systems shown to reduce hazardous exposure, such as closed mixing and loading systems.

Provide medical monitoring and better accountability mechanisms. Again, standards are meaningless if unmonitored and unenforceable. Workers should be provided with medical monitoring to better assess exposure and impacts while also providing them with access to medical care if needed. Similar to cholinesterase testing that occurs in some states and USDA's cholinesterase health monitoring program- a program that aimed to prevent and/or reduce overexposure to cholinesterase inhibiting compounds such as carbamate and organophosphate pesticides,²⁷ farmworkers should be routinely tested for occupational exposure hazards. Additionally, the National Institute for Occupational Safety and Health (NIOSH) has recommended that baseline red blood cell cholinesterase activity be measured, and periodic follow-up testing be conducted, on all workers at risk of exposure to organophosphorus and carbamate pesticides.²⁸ While EPA believes that the anticipated benefits of a monitoring program would not justify the costs to handlers and employers, medical monitoring would protect workers who handle not only organophosphate and carbamate pesticides, but others as well in multiple ways: it alerts employees to overexposure before overt symptoms are noticeable (and hopefully before permanent harm results); it alerts employers/workers to unsafe working practices, conditions or equipment that could be affecting other workers as well; and in two states (California and Washington) it has led to substantially fewer pesticide

²⁴ Das R, Steege A, Baron S, et al. 2001. Pesticide-related illness among migrant farm workers in the United States. *Int J Occup Environ Health*. 7(4):303-12.

²⁵ Reeves M, Schafer KS. 2003. Greater risks, fewer rights: U.S. farmworkers and pesticides. *Int J Occup Environ Health*. 9(1):30-9.

²⁶ CDC. 2006. Worker illness related to ground application of pesticide--Kern County, California, 2005. *MMWR Morb Mortal Wkly Rep*. 55(17):486-8.

²⁷ Cholinesterase Testing Program. U.S.Department of Agriculture, Available at http://www.aphis.usda.gov/emergency_response/downloads/health/Appendix%206%20B%20cholinesterase%20teating%20program.pdf.

²⁸ TERESA A. SEITZ. Evaluation Report 95-0074,95-0080-25996. 1996, U.S. Dept of the Interior. Available at <http://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0080-2599.pdf>.

poisonings, and led to reduced use of these highly toxic pesticides. Further, medical monitoring can in turn reduce long-term medical costs to farmworkers and the agricultural economy.

Another request by farmworker advocates that is not included in these new revisions is the provision of contact information of potential legal representation as a part of worker and handler training, should the worker need legal redress. While we understand there may be certain complicating factors towards endorsing specific legal representation, the requirement to provide a framework where farm workers are aware of legal support systems and when they might be necessary should be included.

Conclusion

The opportunity to effect true changes in the lives and health of farmworkers, their families, and their communities should be of the utmost priority in issuing the new WPS. EPA has made significant strides, but needs to do more to reduce the disproportionate impacts that farmworkers have suffered from pesticides. Beyond Pesticides encourages EPA to adopt these recommendations so that meaningful change will occur.

Sincerely,

A handwritten signature in black ink, appearing to read "Aimee Simpson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Aimee Simpson
Policy Director and Staff Attorney