Exposed *and* Ignored

How pesticides are endangering our nation's farmworkers // *A Report by Farmworker Justice*

FARMWORKER JUSTICE

Report Acknowledgements //

This report is dedicated to Shelley Davis and her tireless work to protect farmworkers from pesticides.

"In this battle, we're fighting for the health and safety of the farmworkers and their children – and for their dignity, humanity and equality. Working in hazardous conditions should not be the price farmworkers have to pay to feed their families."- *Shelley Davis, 2006.*

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Most farmworkers have little to no control over factors that lead to their acute pesticide-related illness such as exposure to off-target pesticide drift, early re-entry into pesticide-treated areas, and being present in the treated area at the time of the pesticide application.[2]

Orchard workers sitting on used pesticide containers while eating their lunch. Pesticide residues are present in the soil, trees, the empty pesticide containers, and workers hands and clothing.

Executive Summary//

A growing number of US consumers have reduced their consumption of produce grown with pesticides to protect their family's health. Despite increased demand for food grown without pesticides, conventional growing practices dominate agriculture production. Little is being done to protect the farmworkers who are routinely exposed to high levels of toxic pesticides in the fields where they work and in the communities where they live. They can be exposed at levels hundreds of times greater than consumers' exposures to pesticides. //

There is an estimated 5.1 billion pounds of pesticides applied to crops each year, and thousands of farmworkers experience the effects of acute pesticide poisoning, including headaches, nausea, shortness of breath, or seizures. Pesticide exposure leads to chronic health problems, such as cancer, infertility (and other reproductive problems), neurological disorders, and respiratory conditions. This report describes the impact of agricultural pesticides on farmworkers and their families and recommends approaches to reduce the unacceptably high rate of pesticide-related injuries, illnesses, and deaths.

The Worker Protection Standard (WPS) issued by the U.S. Environmental Protection Agency (EPA) is the primary set of federal regulations aimed at protecting farmworkers from the hazards of working with pesticides. It has not been updated in over 20 years and has not been effective in preventing workers' exposures to toxins in the fields. Over a decade ago, EPA admitted that even when there is full compliance with the WPS, "risks to workers still exceed EPA's level of concern."[i] It is critical that the WPS regulations be revised without further delay to prevent the detrimental effects of pesticides experienced by farmworkers and their families. The WPS must be revised to reflect the inadequate information workers currently have about pesticide hazards and to require increased safeguards for workers from pesticide exposure. Pesticide labels containing information about exposure hazards and precautions (such as protective gear) are only in English, and thus, obscure safety information from most farmworkers.

Any meaningful revisions to pesticide safety laws must account for the multitude of ways that farmworkers and their families are exposed to these chemicals. They should require employers to offer the most up-to-date methods for the prevention of pesticide exposure to workers and their families. Where medically possible, employers should offer workers the option of blood tests to assess pesticide exposure levels. Farmworker children should be protected from dangerous pesticides that drift onto their homes, schools, and parks. No-spray buffer zones between such areas and adjoining agricultural fields would minimize such exposures.

To develop more effective approaches for protecting farmworkers from pesticides, more research about pesticide use, pesticide-related illnesses, and education is needed. Lack of information hinders public health officials, occupational safety experts, medical personnel, employers, and consumers from making decisions that would best protect farmworkers from pesticide exposure. Data on pesticide use in the United States is insufficient. Only a few states require pesticide applicators to provide regulatory agencies with the name, amount, or location of the pesticide used. Data on pesticide-related illnesses are equally inadequate. Many states do not require healthcare providers or public health officials to report pesticide-related illnesses, and there is no national monitoring system for exposure-related injuries. Most healthcare providers receive minimal training on the identification, diagnosis, and treatment of pesticide-related illnesses. There are few clinical diagnostic tools to confirm pesticide overexposure. There is also little information on the impact of pesticides on farmworker health. More research and data are needed on several issues–determining safeguards for pesticides, medical care for injured workers, and safety precautions for employers.

This report describes the problems of pesticide exposure in agricultural communities and offers recommendations to reduce exposures for workers, families, and communities-at-large. To protect workers from the risks of pesticide exposure, these recommendations focus on steps that the EPA and the federal government can take to ensure that farmworkers understand the dangers of pesticide exposure and how to avoid injury. It is important that all interested parties understand the importance of injury avoidance, protective equipment, health-monitoring tools, and the need for continued education of public health professionals.

KEY RECOMMENDATIONS INCLUDE:

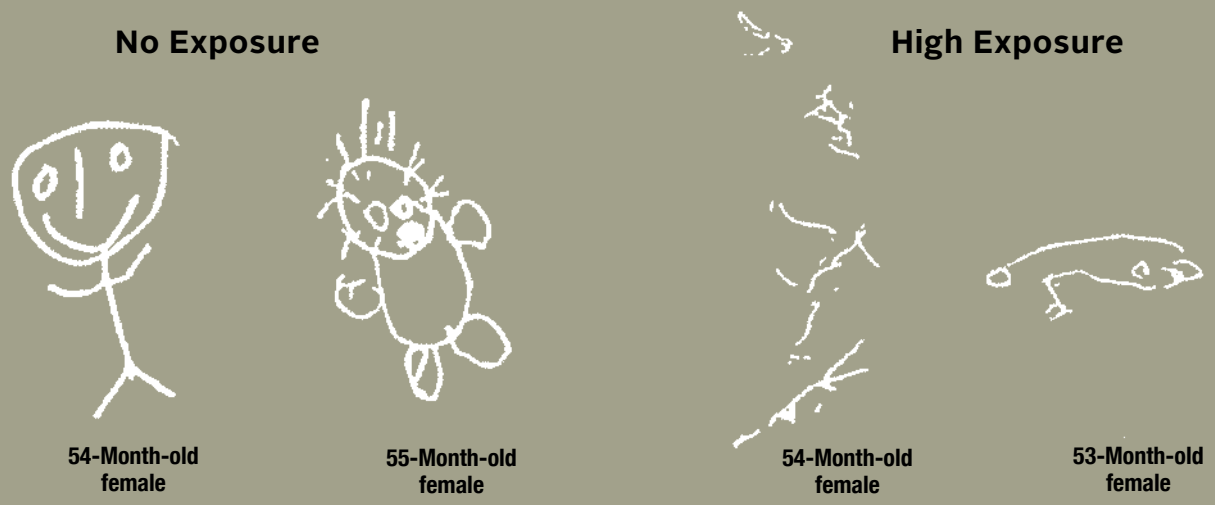
- Revision of the provisions in the Worker Protection Standard. Specifically, the EPA should: (1) require more frequent pesticide safety training in a manner that workers will understand; (2) ensure that workers receive information about the specific pesticides used in their work; (3) require medical monitoring of workers who handle neurotoxic pesticides; and (4) require safety precautions limiting farmworkers' contact with pesticides;
- Spanish translations of pesticide labels;
- Implementation of buffer zones around schools and residential areas to protect farmworker families from exposure to pesticides through aerial drift;
- National reporting of pesticide use and pesticide poisonings to the EPA; and
- Increase funding for research on the health effects of the repeated pesticide exposures farmworkers experience and prioritize investments in technological innovations aimed at preventing exposures.

Chapter 1

Farmworkers Are Regularly Exposed to High Levels of Pesticides //

In July 2005, a crew of farmworkers was poisoned in an onion field in Caldwell, Idaho. During the night, a crop duster had applied three pesticides to the field but had not notified the farm owner. At 6:30 a.m., a crew of 29 workers began weeding the field that had not been posted with warning signs. They noticed that their clothes became wet as they worked but they believed the liquid was just dew. By noon, several workers were vomiting and suffering from headaches, nausea, and diarrhea. //

Differences in the drawing ability of same-aged children who were either exposed or unexposed to pesticides (Guilette, 1998).



Daycare located beside orchards that are frequently sprayed with pesticides.

Many continued to weed the field, not realizing that their symptoms were the result of pesticide exposure. Many of them were new workers and had not received pesticide safety training from their employer as required by federal law. Workers continued to become ill, vomiting and too weak to stand. Their supervisor gave them lemons in an attempt to reduce the nausea. Eventually, everyone stopped working and left the field. Someone made an emergency call, and an ambulance arrived. Local firefighters responding to the call set up a decontamination tent next to the field for clothing removal and washing. In all, 22 workers were hospitalized. Two were admitted to the hospital for critical care. Two weeks after the exposure, the Idaho Department of Agriculture reported the names of the pesticides used: methomyl, cypermethrin, and mancozeb. The Environmental Protection Agency (EPA) includes methomyl in the highest toxicity category for pesticides (Category 1). The farm was fined for failure to train employees properly and failure to provide and maintain proper safety information at a central location on the farm.[1]

More recently, on December 21, 2012, a crop duster sprayed pesticides over 40 farmworkers working in a Yuma, Arizona farm field. Firefighters responding to the incident decontaminated the workers by having them remove their clothes in the cold night air and sprayed them with a fire hose. The workers complained of irritation to the eyes, nose, throat, and skin. Ten workers were treated at a local hospital.[2] Sadly, incidents like these are not uncommon because farmworkers are not afforded adequate workplace protections from pesticide exposure. While these cases are noteworthy for their attention in the news media, many more incidents go unreported in the press and even to appropriate authorities.

Pesticide exposure causes farmworkers to suffer more chemical-related injuries and illnesses than any other workforce nationwide.[3] Occupational exposure to pesticides poisons as many as 20,000 farmworkers every year, according to estimates by the EPA.[4] The numbers are likely much higher. Several factors contribute to the underestimation of the problem, including the inability and apprehension of affected workers to get medical care, medical misdiagnosis, and the absence of a coordinated national incident reporting system.

Farmworkers are exposed to pesticides in a variety of ways. Workers who perform hand labor tasks in treated areas risk exposure from direct spray, aerial drift, or contact with pesticide residues on the crop or soil. Workers who mix, load, or apply pesticides can be exposed to pesticides due to spills, splashes, and defective, missing or inadequate protective equipment.

Even when not working in the fields, farmworker families, especially children, are also at risk of elevated pesticide exposure. Workers bring pesticides into their homes in the form of residues on their tools, clothes, shoes, and skin. They inadvertently expose their children through a hug if they cannot shower after work.[5] The close proximity of agricultural fields to residential areas results in aerial drift of pesticides into farmworkers' homes, schools, and playgrounds.[6] Some schoolyards are directly adjacent to fields of crops that are sprayed with pesticides.

Pesticide exposure is an unavoidable reality for farmworkers and their families because pesticides are in the air they breathe, the water they drink, the food they eat, and the soil they cultivate.

Pesticide exposure is attributed to higher rates of birth defects, developmental delays, leukemia, and brain cancer among farmworker children.

Chapter 2

Farmworkers' Pesticide Exposures Have Serious Health Impacts //

Farmworkers suffer serious short- and long-term health risks from pesticide exposure. Short-term (acute) effects may include stinging eyes, rashes, blisters, blindness, nausea, dizziness, headaches, coma, and even death.[7] Some long-term health impacts are delayed or not immediately apparent such as, infertility, birth defects, endocrine disruption, neurological disorders, and cancer.[8] //

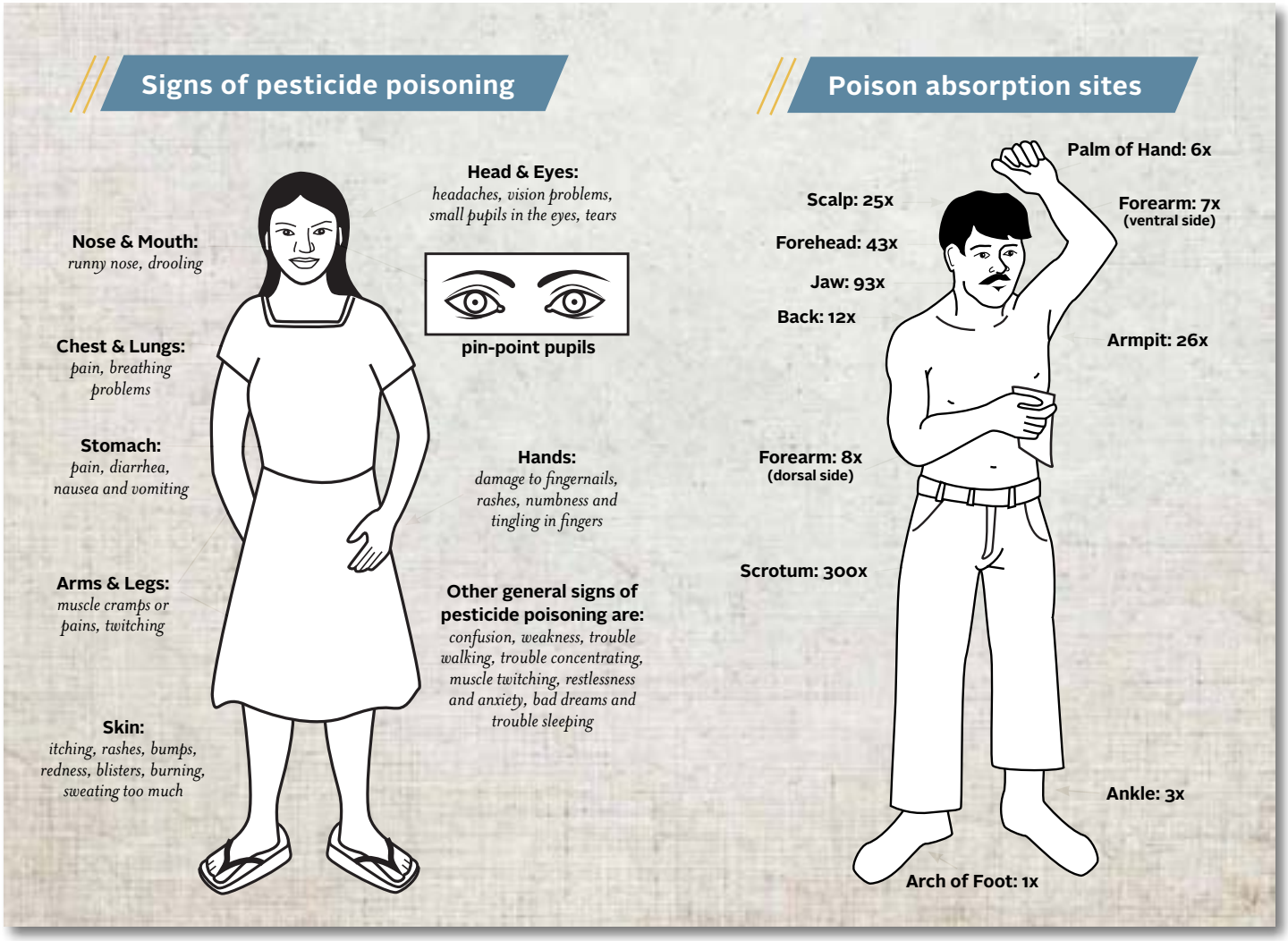
Rural and agricultural communities have been found to experience higher rates of leukemia, non-Hodgkin lymphoma, multiple myeloma, and soft tissue sarcoma, as well as cancers of the skin, lip, stomach, brain, and prostate.[9] Workers who reported farm work as their primary occupation suffered elevated risks for prostate cancer, esophagus cancer, and oral cavity cancers.[10]

The risks posed by pesticide exposure are exacerbated by the vulnerability of migrant and seasonal farmworkers and their communities. Most farmworkers are poor immigrants with limited formal education. Many do not speak English fluently, and most are isolated in rural areas far from supportive networks and services. An estimated 60% of the nation's 2.5 million farmworkers and dependents live in poverty. Most farmworkers (88%) are Hispanic. Others are African-American, West Indian, Southeast Asian, White, and Native American. Approximately 20% of all hired farmworkers are women and approximately 12% are adolescents. A majority of farmworkers lack legal work authorization. This makes them unlikely to report violations of workplace safety laws, to report abuse of other protective regulations, and unlikely to seek medical attention or report poisonings.

Pesticide symptoms can often resemble the flu, so many farmworkers might not realize they've been exposed.

Most farmworkers do not receive adequate medical care for work-related injuries or illnesses. Less than 20% of hired farmworkers receive employer-provided health insurance.[11] The majority of states require no or limited workers' compensation insurance coverage for agricultural workers who suffer occupational injuries or illnesses. When such coverage exists, barriers to access deny many farmworkers the medical services and wage-loss benefits that they are owed. The risk of employer retaliation discourages many farmworkers from seeking medical treatment or from challenging illegal or unsafe pesticide practices.

Barriers to medical care for pesticide illness for farmworkers and their families include lack of health insurance, language barriers, immigration status, and lack of transportation.[12] Many farmworkers live in remote, rural areas at a significant distance from health clinics and even further away from a hospital or urgent care center. Federally-funded migrant health centers provide primary care on a low-cost sliding fee scale, but only about 20% of eligible farmworkers and their families take advantage of such clinics.[13] Since few seasonal farmworkers receive paid sick leave, going to the doctor can be a costly endeavor.



Source: *North Carolina Department of Labor.*
Different parts of your body absorb pesticides differently. The skin on your forehead, for example, is 43 times more absorbent than the skin on the arch of your foot. Or, if the same amount of pesticide were to fall on your forehead and your foot, the pesticide would enter your body 43 times more rapidly through your forehead than through your foot.

This figure shows how different parts of the body absorb pesticides in different ways. For example, the skin on your back is 12 times more absorbent than the skin on your foot.

Chapter 3

Workers Lack Adequate Information to Protect Themselves from Pesticides//

Farmworkers are usually unaware of the pesticides to which they are exposed, the health effects of such exposure, or the laws meant to protect them from exposure. They are ill equipped to take the necessary precautions to guard against associated risks. Even physicians can experience difficulty determining whether flu-like symptoms resulted from acute pesticide exposure. Workers often do not know the nature of their illness and are motivated to keep working to support their families. //

The Worker Protection Standard (WPS) is the primary federal law aimed at reducing the risk of pesticide poisonings and injuries among agricultural workers.[14] Administered by the EPA, the WPS contains requirements for safety measures such as pesticide safety training for farmworkers, notification of pesticide applications, and emergency medical assistance. The WPS provides weak protections for workers. It assumes that they will have sufficient information and be willing to complain when the law is violated. For example, employers are required to provide each worker with a pesticide safety training once every five years. This training covers only the general health effects of pesticide exposure and steps that they can take to minimize their exposure. Short training sessions that are years apart and not reinforced are inadequate to ensure that workers appreciate the health risks facing them or their families or to understand how to prevent injury or exposure.

The quality of training is also an important issue. Often, workers simply watch a 20-minute video with no opportunity to ask questions. Workers who receive inadequate training may not even realize they have been trained, since information may be presented to workers in fulfillment of WPS requirements, but not in a manner to facilitate learning.[15] A meaningful effort to ensure comprehension is not required. The unfortunate result is that a significant percentage of workers either do not understand the information that they receive or do not receive pesticide safety training at all.[16]

Farmworkers are the only group of workers not covered by a federal right-to-know regulation that requires employees to be informed of the health effects of specific chemicals they encounter at work. The Occupational Safety and Health Administration's (OSHA) Hazardous Communication Standard (HCS) entitles most non-agricultural workers to training and written information about the short- and long-term health effects associated with the chemicals actually used in their workplaces.[17] In contrast, the WPS only requires farmworkers to receive general information about all pesticides. Specific information about their actual exposures is essential to alert workers to the signs and symptoms of overexposure and to help them take precautions to reduce risks. Such information would save lives and prevent illness. No valid justification exists for excluding farmworkers from this protection.

An example of a home with children's outdoor play equipment within feet of an orchard posted with a Do Not Enter sign.

The WPS requires employers to warn fieldworkers when a field has been sprayed with pesticides, if it is unsafe to enter, and when they may reenter the treated area. For many pesticides, employers are only required to warn workers orally about field reentry restrictions and not to post signs. When signs are required, they do not generally have to include the date and time that these "Restricted Entry Intervals" expire or the name of the pesticide applied to the field.

Another barrier to farmworkers' ability to understand pesticide dangers is the pesticide label itself. Pesticide labels communicate important safety information, including warnings and precautionary statements, first aid information, directions for safe use, protective clothing requirements, mandatory safety equipment, and emergency decontamination instructions. According to the National Agricultural Workers Survey (NAWS), the majority of farmworkers are native Spanish speakers, and over half of them cannot read English. Despite the prevalence of Spanish, currently pesticide labels are only required to be printed in English. Spanish-speaking pesticide applicators are directed to get the label translated themselves. The following statement appears buried in the labels of the two most toxic categories of pesticides: "*Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle*." [If you do not understand the label, find someone to explain it to you in detail.][18] Pesticide applicators are at risk of injury or illness, because they are unable to read the pesticide label. In a recent study of pesticide handlers in Washington State, only 29% reported being able to read in English but nearly all of the participants were able to read in Spanish to at least some degree.[19] Researchers found that pesticide handlers who were not able to read English showed significantly higher pesticide exposure, as measured through blood work, than handlers who could read English to some degree.[20]

The current labeling system is inadequate to protect workers from the risks of mishandling pesticides and places a tremendous burden on employers and supervisors. Translation of specific label information can be challenging. Most growers and supervisors are not bilingual and able to translate the important information on the label. In the best-case scenario, supervisors might explain the required protective equipment and directions for use, but they will not translate all of the label material, such as symptoms of exposure. Workers need to know what symptoms indicate exposure and when they should seek medical attention. Under the current system, there is no guarantee that workers and handlers have access to the relevant label information. In the event of an accident, a worker needs to read the first aid instructions immediately. Including Spanish translations on the labels would ensure that this information could be quickly and accurately explained by supervisors and accessed by workers. Without the benefit of a label in the appropriate language, farmworkers are ill-equipped to protect themselves, others, or the environment. Chemical manufacturers prepare the labels; they can and should provide Spanish-language versions.

KEEP OUT OF REACH OF CHILDREN

DANGER POISON

PELIGRO

FIRST AID

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Chapter 4

Employers Must Provide Workers with the Means to Protect Themselves from Pesticide Poisonings//

Farmworkers are exposed to pesticides in a variety of ways – direct spray, spray that drifts from its target, contact with pesticide residues on the crop or soil, spills, splashes, or defective, missing or inadequate protective equipment. Farmworkers' children and other family members are often indirectly exposed to pesticides through residue on workers or through pesticide drift. Pesticide handlers – the workers who mix, load, and apply pesticides– are at especially high risk of coming into direct contact with pesticides. //

Graciela's Story

Pierson, Florida //

"Ever since I was a little girl I worked; first in Mexico and then here in Florida. I always thought that work was a good thing, something that built character. But I didn't realize that someday work would be the cause of so much pain in my family."

Graciela lives in the small community of Pierson, Florida. Despite its size, Pierson still manages to hold the title of "fern capital of the world." Low-hanging tarps stretch over a vast area of land providing the shelter for ferns, destined for the global flower market, to grow. The humid climate and long hours of direct sunlight in this area of Florida provide an ideal environment for this greenery to flourish. Long-time Pierson residents recall that ferneries began as far back as the 1920s, and soon became the staple industry. Because of the strength of the ferneries, immigrant communities flocked to this area building a solid workforce for the busy production of ferns. Graciela's family moved to this area of Florida when she was a young girl.

"I remember heading to the ferneries throughout my summer vacation with my mother. At the beginning, I would play with my friends. We would race through the long rows, and sometimes when the sprinklers went on we would rush under them, trying to cool down our bodies."

The sprinklers Graciela mentions are often used in *chemigation*– the channeling of pesticides through sprinklers or irrigation pipes. Often farmworkers, and children especially, aren't aware that this water could actually contain dangerous chemicals.

As Graciela grew older, she began to work alongside her mother, carefully and quickly cutting the bundles of ferns with sharp shears. Eventually Graciela married and had two daughters. And just as her mother had done, she brought her own children with her to the ferneries.

"It seemed to make the most sense to me. I remember as a young girl how much I loved running and playing in the lush ferns. I also thought it was really important to spend as much time with my daughters as possible. I didn't want to leave them in daycare all day (nor could I afford to) so the obvious solution was to bring them with me."

Graciela brought her two daughters, Ana and Celia, to work with her regularly until Celia was diagnosed with leukemia at the tender age of 15.

"I am so grateful my daughter has been in remission for two years now but I feel so guilty. I wonder every day if my daughter's sickness could have been my fault. My heart hurts when I think that my daughter could have died, and this would have been my responsibility."

Doctors told Graciela that it was hard to know exactly what caused the leukemia, but that her daughter's exposure to toxic chemicals, and certainly from a very young age, created a situation of heightened risk for her.

"I think now about how the very nature of cutting ferns exposes me to pesticides. First of all, we are working under these tarps every day, and because they are so low down, the chemicals can't really escape into the air. And in order to cut the ferns and get those nice long stems that we need, we have to put our faces practically down into them. I realize now how dangerous this is. We are breathing in those pesticides all day long, and how could they not cause us harm."

If Graciela and her family had been fully informed about the health effects of pesticides and how to avoid exposure, they would not have risked the health of their children. Hazard communication and prevention can have far reaching impacts across generations of farmworker families.

Protective clothing is often ineffective at preventing exposure.[21] Mechanisms do exist that reduce pesticide handlers' exposure. The WPS should be revised to require the use of engineered equipment or technology to create a physical barrier preventing pesticides from coming into direct contact with pesticide handlers. For example, rather than have workers spray pesticides on fields while sitting in the open cab of a truck, the WPS should require enclosed cab equipment and a ventilation system.

When workers handle organophosphate and N-methyl carbamate pesticides, two particularly dangerous classes of pesticides, employers should give workers the option of blood tests to monitor exposure to these neurotoxic chemicals before symptoms or illness. California and Washington have implemented a system to monitor workers who handle these types of pesticides. The number of poisonings involving these pesticides has gone down considerably.[22] Notably, in employment sectors other than crop production, medical monitoring of workers who handle these pesticides is routine, recommended, and often mandatory.[23] For example, the United States Department of Agriculture (USDA) has a cholinesterase health-monitoring program that is mandatory for all employees of the Animal and Plant Health Inspection Service whose responsibilities include potential exposure to organophosphate and carbamate pesticides.[24]

Pesticide residues are often invisible and odorless, so workers are not always aware of exposures.

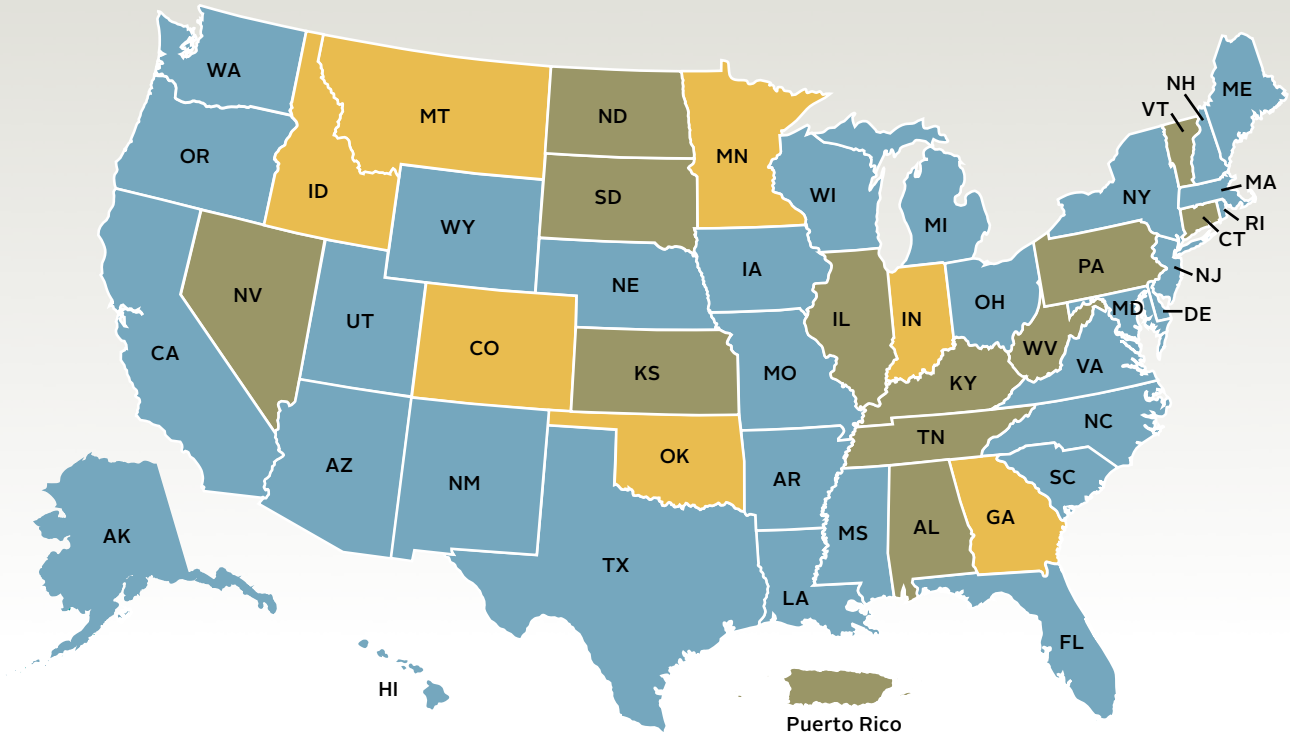
Re-Entry Intervals (REIs) can last anywhere between 4 hours and 30 days, depending on the toxicity of the pesticide, the crop, the pesticide used, and the location. Most REI violations occur because of a lack of notification to farmworkers.

Chapter 5

Regulators and Health Care Providers Lack Basic Information about Pesticide Exposure //

Farmworkers are not the only ones with minimal information about pesticides. Public health researchers, regulatory agencies, healthcare providers, and the public also lack key information about pesticides used in agricultural and rural areas, the number of individuals injured by pesticides, and the health effects of exposure. Obtaining this key data could help to prevent thousands of illnesses and injuries each year. //

REGULATORY ISOLATION: Pesticide Exposure Reporting Map



Pesticide Reporting Requirements:

Required Optional None

SOURCE: Migrant Clinicians Network & Farmworker Justice Pesticide exposure reporting map.

Pesticide use reporting

An important gap in information available to the public is the amount and location of pesticides applied in the U.S. every year for agricultural production or other uses. The EPA estimates that approximately 5.1 billion pounds of pesticides are used annually in the U.S.[25] This is an estimate and provides no detailed or accurate information on the patterns of pesticide use. Such information on a national level would allow the EPA and health researchers to identify risks to human health and the environment. Obtaining this type of information would require the adoption of a national pesticide use reporting system to collect information on all agricultural pesticide applications.

With accurate information on the pesticides that farmworkers and their families are exposed to, health researchers and regulators could improve research models to understand the relationship between exposure and illness. Such information would help to improve pesticide regulation enforcement and worker protections and produce data to improve the EPA's decisions about pesticides.

The California Department of Pesticide Regulation (DPR) established such a system for full agricultural pesticide use reporting in 1990. California continues to be the only state that requires detailed reporting on agricultural pesticide applications and includes information on the name of the product applied, the date, the geographic location, and the amount applied. The California reporting system is effective and functional. This well-established system could serve as a model for the development of a system to report pesticide usage on a national level.

Pesticide Incident Reporting

Many obstacles prevent a complete count of pesticide exposure incidents for farmworkers and their families. An EPA study conducted nationwide in the early 1990s suggested that doctors treat approximately 10,000–20,000 cases of pesticide poisoning per year, and possibly as high as 40,000.[26] In 1992, the EPA estimated that, including unreported and misdiagnosed incidents, "each year farmworkers suffer up to 300,000 acute illnesses and injuries from exposure to pesticides."[27] A number of studies suggest that the number of pesticide poisonings is much larger than that actually reported. There are several reasons for this discrepancy. First, there is no national recording or monitoring system for exposure-related injuries. Many states do not require healthcare providers or public health officials to report pesticide illnesses.[28] While 30 states require health professionals to report pesticide poisonings, only 12 have the resources and capacity to actively investigate, classify, and document reported cases. Second, most farmworkers do not seek medical attention for mild or moderate symptoms. Workers face many obstacles when seeking medical care for pesticide-related illnesses, including language barriers, lack of access to medical care, lack of information about hazards they face, lack of awareness of poisoning symptoms, and fear of employer retaliation.[29] Finally, clinicians face significant hurdles in identifying and diagnosing pesticide poisoning. Mild or moderate signs of acute pesticide poisoning, such as nausea, vomiting, diarrhea, and skin rashes, are similar to those caused by other illnesses and can be easily misdiagnosed. Most healthcare providers receive minimal education or training on how to identify, diagnose, and treat pesticide-related illnesses. Even if a clinician recognizes a farmworker's symptoms as a result of pesticide exposure, there are currently few clinical tests capable of identifying the pesticide.

Accurate and comprehensive data about pesticide poisoning incidents are vitally important in determining worker safeguards and in keeping dangerous products off the market. When the EPA registers or licenses pesticide products, it must consider adverse environmental or human health effects caused by the product. Such information helps to determine the conditions when pesticides can be applied, the safety equipment, the time lapse between the treatment of fields and reentry, and the crop harvest time. In a few instances, the EPA has banned or restricted the use of pesticides following reports of serious worker poisonings. A national mandatory pesticide incident reporting system would help to ensure that such data are captured in a comprehensive manner.

Medical Monitoring

Very little is known about the occupational pesticide exposure of farmworkers. California and Washington mandate blood monitoring for agricultural workers who regularly handle neurotoxic pesticides. By periodically measuring nervous system effects of exposure to organophosphate and N-methyl carbamate pesticides, excessive exposure can be detected before symptoms appear. Establishing a national requirement to monitor the exposure levels of workers who regularly handle such pesticides would provide information about occupational pesticide poisonings. Medical monitoring not only protects workers by alerting them to overexposure before overt symptoms present, but also helps to capture pesticide exposure incidents that might otherwise go unreported.[30]

Farmworker Health Research

In addition to the lack of reliable statistics on pesticide use and pesticide-related farmworker injuries, there is insufficient research on pesticides' impact on farmworkers' health. Government funding limitations continue to restrain regulation, enforcement, and research on the issue. For instance, the 2008 Farm Bill included language authorizing a pesticide research program, which would conduct longitudinal studies of farmworkers' and their families' increased risk of cancer or birth defects from pesticide exposure. Congress never appropriated funding for this important research. The Farm Bill that passed the Senate in 2012 no longer contains any mention of pesticide research.

The WPS requires employers to provide to farmworkers and pesticide handlers enough water, soap, and towels to wash their hands on a regular basis and to wash themselves in case of an accidental exposure to pesticides.

Current budget proposals seek to provide for less funding for such information. President Obama's budget for fiscal year 2013 eliminated funding for several programs aimed at gathering data on pesticide use and preventing occupational exposure to farmworkers including: (1) the Pesticide Recordkeeping Program (PRP) at the USDA, which is the sole federal recordkeeping tool for pesticide applications. It requires certified restricted-use pesticide applicators to maintain records of what pesticide is used, when, and where. The data gathered under this program is used by health professionals providing treatment to persons with known or suspected exposure to pesticides. (2) The Education Research Centers (ERCs) were established to help develop and expand existing occupational health and safety training programs and to provide continuing education courses for healthcare specialists practicing in the field. These centers offer an important training forum for clinicians to address occupational health and safety. (3) Agricultural, Forestry, and Fishing (AgFF) program within the National Institute for Occupational Safety and Health (NIOSH) was established to identify the most critical issues in workplace safety and health within the industrial sector and to develop goals and plans for addressing those needs.

Given the scarcity of current research efforts on farmworker health, programs of this nature should be expanded and fully funded to provide adequate information that will allow the EPA to make informed decisions during the risk assessment process.

Chapter 6

Recommendations for Reducing Pesticide Exposure for Farmworkers //

Farmworkers and their families are exposed to pesticides on a daily basis, in large quantities and over sustained periods. Consumers have become aware of the risks that pesticides pose to their health. We should not continue to ignore the dangers such exposures pose to farmworkers' health, in both the short and long term. //

Juana's Story // *Arizona* //

With an intense gaze, Juana describes her childhood experiences of crossing the border into Arizona every morning with her parents. They would dress her in multiple layers of clothing to protect her from the harsh rays of the sun. "We were always so worried about the sun because in Arizona and Mexico it is so very strong.

What I didn't realize was the real danger was actually the pesticides that were all around us."

During her first pregnancy in her early 20s, she worked in the lettuce harvest. "I was in charge of packing the boxes with heads of lettuce. It wasn't heavy work; I just had to be quick. At that time, I didn't know how important it was to wear gloves and protect myself from those pesticide residues. I would lean right into the boxes, breathing those residues in. I thought it was important to do the work as quickly as possible; I didn't realize it was more important to think about protecting myself and my baby."

Juana lost her baby when she was well into her pregnancy and even now wonders if her miscarriage was due to working so intensely with a crop loaded with pesticides.

About 10 years after her miscarriage she was diagnosed with lymphoma, and shortly thereafter her youngest son was diagnosed with the same disease.

"Our house was (and still is) right along the edges of the lettuce fields. When we started living there I still didn't know about how dangerous pesticides could be. I would hang the clothes outside to dry in the fresh air, and my son would play in the water that collected in the irrigation ditches. We didn't know the risks."

Both she and her son have been cancer-free for a number of years, but she still fears for their health because they are living in the same house, and Juana continues to work in the lettuce harvest.

"I try to be so much more careful now. I understand how important it is to wear clothes that can help protect me when I'm working. We drink bottled water instead of the water from our land because I just don't trust it. And I try to have my son play in places that are truly safe for him and won't cause him any more danger."

"I think it's so important that every single person know about how dangerous pesticides really are. If you are living in our community or any other farming community in this country, you could be at risk because pesticides don't have boundaries. They can freely cross wherever they want and we all need to know this."

Juana's experience demonstrates that with knowledge, farmworkers are able to take precautions to minimize their exposure to pesticides. However, even these precautions are inadequate to prevent all risks, as some exposures are beyond their control.

Achieving effective and comprehensive protections against occupational pesticide exposure for farmworkers requires swift and sustained action by the federal government. To accomplish this goal, the following recommendations are suggested.

Give farmworkers and their families the information they need to protect themselves from pesticides. The WPS should be revised and strengthened. The EPA has delayed issuing revisions to the WPS for far too long.

- Revisions should include: (1) improved and more frequent safety training for workers, (2) a method of verifying comprehension of the information, (3) improved hazard communication about the specific pesticides they are exposed to (including short- and long-term impacts of exposure), and (4) more meaningful enforcement mechanisms to prosecute those who put workers' lives at risk.
- Require Spanish translations on pesticide labels to ensure that this information can be quickly and accurately explained by supervisors and accessed by workers who have questions about proper usage and safety precautions.
- Federal and state agencies should work more closely with farmworker organizations to develop effective educational materials and to ensure that workers are fully informed of the dangers posed by pesticides, understand how to protect themselves and their families, and can exercise their right to a safe workplace.

Demand better information about farmworkers' pesticide exposures and implement stronger protections for workers and their families

- Require reporting of pesticide use and pesticide poisoning incidents on a national level. Such information is necessary to make important decisions regarding medical treatment, public health, and pesticide regulation.
- Require medical monitoring of workers who regularly handle neurotoxic pesticides to identify overexposures before there is irreversible harm and to understand the human health effects of exposure.
- Impose no-spray buffer zones around homes, schools, parks, and other areas where farmworker families can be exposed to dangerous pesticides that are prone to aerial drift.
- Expand research on the long-term impacts of pesticides to farmworker health, on measures to reduce farmworkers' exposure to pesticides, and on safer alternatives to pesticides.

Participants throughout the entire food system need to recognize their responsibility for reducing preventable injuries, illnesses and deaths from pesticides. Supermarket chains, food service companies and other institutional purchasers of produce should collaborate with farmworker organizations and growers to reduce health risks to farmworkers and consumers. In addition to taking voluntary action, these entities should support stronger governmental protections and oversight to assure that our food supply is safe for consumers and for the people who labor on our ranches and farms.

Appendix //

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[22] See Cal. Code Regs. tit. 3, § 6728 and Wash. Admin. Code § 296-307-148.

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