



# Eye on Farmworker Health

## Current Developments in Research and Policy

### An Analysis of Injuries to Hired Crop Workers

**Title:** *Injuries to Hired Crop Workers in the United States- A Descriptive Analysis of a National Probability Survey*

**Authors:** S Wang, JR Myers, LA Layne

**Source:** *American Journal of Industrial Medicine, Vol. 54, June 2011*

Despite agriculture being one of the most dangerous industries, little empirical data is available to examine the injury experiences of hired crop workers in the United States. To address this need for nationally representative injury data, the National Institute of Occupational Safety and Health (NIOSH) collaborated with the US Department of Labor (USDOL) to incorporate an injury module into the National Agricultural Workers Survey (NAWS). The NAWS is the only national population-based survey that collects workers' safety and health information for all hired crop farmworkers. The purpose of this study was to provide a descriptive analysis of the injury data from the NAWS.

Data for this study was collected through the NAWS for the fiscal years 1999 and 2002 through 2004. There were 3,612 respondents in 1999, 3,361 respondents in 2002, 3,585 respondents in 2003, and 3,406 respondents in 2004 for a total of 13,604 farmworker interviews. In order for a work related injury to be defined as an injury in the NAWS, the injury must meet two criteria. First, the injury must have occurred on a farm in the U.S. or while traveling to or from a farm for work in the U.S. Second, the injury must have resulted in one or more of the following: rendered the worker unable to work as hard as he or she normally did for at least 4 hours; required the worker to seek medical treatment; or required the worker to take prescription medicine to keep working. The NAWS also provides its own mechanism to measure injuries over time. The injury rate in the NAWS is expressed as the number of injuries per 100 full-time equivalent (FTE) weeks of work.

In the analysis of the NAWS data, the authors found an overall observed injury rate for hired crop workers of 4.3 injuries/100 FTE. Males accounted for 83.7% of all injuries and had a higher injury rate than female workers. The most common types of injuries reported were sprains and strains (38.5%), followed by cuts and lacerations (21.2%), and fractures or dislocations (12.5%).

The authors observed that among different geographic regions in the US, California accounted for the highest percentage of injuries (21%) but the lowest injury rate. Workers from the Southwest region accounted for the lowest

### ARTICLES REVIEWED IN THIS ISSUE

→ [An Analysis of Injuries to Hired Crop Workers](#)

→ [The Community Health Worker Model Helps Prevent Eye Injuries](#)

→ [Pesticide Health Concerns of Female Nursery and Fernery Workers](#)

→ [Housing Violations in Migrant Farmworkers Camps in North Carolina](#)

→ [Policy Updates](#)

percentage of injuries (11.9%), but reported the highest injury rate. Community health centers, hospitals and emergency rooms were reported as the most common places to receive injury treatment. As one would imagine with the corresponding harvest season, the study also showed that the majority of the injuries occurred in the months of June, August, and October.

The authors found that the NAWS data has information not available in other sources. A major benefit of the NAWS face-to-face interviews is that it allows workers to talk freely about the details of injuries experienced on the job. The authors recommend that injury prevention initiatives include a broad based approach, focused as much on the worker's overall health as on more traditional occupational injury approaches such as worker training.



## WHO ARE WE?

---

Eye on Farmworker Health: Current Developments in Research and Policy is an electronic newsletter covering important recent developments in research and regulation on issues affecting the health and safety of migrant farmworkers.

It is a publication by [Farmworker Justice](#), supported by the Health Resources and Services Administration's Bureau of Primary Health Care. Each issue includes summaries of recent articles and reports, as well as recommendations for using the information to help health professionals, outreach workers, *promotores de salud*, and advocates strengthen their efforts on behalf of farmworkers and their families.

The contents of this publication are solely the responsibility of Farmworker Justice and do not necessarily reflect the official views of the Bureau of Primary Health Care or the Health Resources and Services Administration.

## STAY IN TOUCH

---

For more information, please contact Renato Rocha at [rrocha@farmworkerjustice.org](mailto:rrocha@farmworkerjustice.org)

---

## The Community Health Worker Model Helps Prevent Eye Injuries

*Title: Preventing Eye Injuries Among Citrus Harvesters: The Community Health Worker Model*

*Authors: PF Monaghan, LS Forst, JA Tovar-Aguilar, CA Bryant, GD Israel, S Galindo-Gonzalez, Z Thompson, Y Zhu, RJ McDermott*

*Source: American Journal of Public Health, Vol. 101, No. 12, December 2011*

Citrus harvesters constantly confront eye injuries from tree branches, dust, chemical residues, biting insects, sunlight, and falls. More than 90% of eye injuries are preventable by protective eyewear, but less than 2% of citrus farmworkers wear protective eyewear. Barriers to safe practices include a piece-rate pay scale that fosters a rapid and potentially hazardous pace of work; language and literacy barriers that impede safety training; an undocumented work status that encourages hazardous job employment; and a lack of occupational safety and health enforcement. Workers also believe that the glasses slow down productivity, resulting in lower wages.

This study sought to assess the utility of a community health worker (CHW) approach for increasing the acceptance and use of safety glasses among citrus harvesters. CHWs can disseminate health information and make personal connections more effectively than traditional health care providers can because CHWs know local norms. The CHWs recruited for this study were all men recommended by their fellow crew members.

The authors observed 13 harvesting crews from two of the largest citrus companies in Florida with both in-house crews and outside contractors. Personnel from the Florida Prevention Research Center conducted 20 hours of CHW training in Spanish, which covered eye hazards specific to citrus harvesting, eye diseases, first aid, and methods for distributing, fitting, and promoting the use of safety glasses. This study had two major evaluation components: (1) repeated observation of workers during harvesting; and (2) interviews with workers in all crews at the end of the season.

The evaluations found that crews with CHWs had significantly higher rates of eyewear use than control crews (crews without CHWs) and that this approach is effective in promoting the use of safety glasses among citrus harvesters. For crews that had CHWs, the average level of safety eyewear use was 27.5% while the

average level of safety eyewear for crews without CHWs was 2.6%. In conclusion, the authors recommend the use of peer educators in occupational settings to model and encourage safety behavior change among farmworkers. The CHW approach minimized the risk of injury and challenged the myth that safety glasses impede harvesting efficiency.

---

## **Pesticide Health Concerns of Female Nursery and Fernery Workers**

*Title: Female Farmworkers' Perceptions of Pesticide Exposure and Pregnancy Health*

*Authors: J Flocks, M Kelley, J Economos, L McCauley*

*Source: J Immigration Minority Health, November 2011*

In 2008, the Bureau of Labor Statistics estimated 518,000 women were working in agriculture. One component of the agricultural work environment that is particularly hazardous to pregnant farmworkers is pesticide exposure. Workers of enclosed nurseries and ferneries are especially susceptible to pesticide exposure because pesticides cannot dissipate as easily as in open fields.

The purpose of this study is to examine how female workers in Central Florida nurseries and ferneries perceive the link between certain environmental and occupational risks, including pesticide exposure, and reproductive health. The authors accomplished this by conducting five focus groups with 35 female nursery and fernery workers that explored occupational risks and pregnancy health. The majority of the women were of Mexican descent (28) and the remainder Haitian (7). Four focus groups were conducted in Spanish and one group was in Haitian Creole.

In the focus groups, nursery and fernery workers shared that they were displeased with their employers' particular approach to pesticide safety. Many workers described practices such as application of pesticides that are too close to where workers were located or early reentry into areas that have been recently treated. The two most commonly discussed pesticide-related health problems were dermal irritation and infected and irritated eyes. When asked how pesticides specifically affect women of childbearing age, the qualitative data showed that workers mentioned headaches, dizziness, neurological effects, nausea, nose and throat irritation, rashes in the genital area, and infertility.

Focus group participants felt that all workers, especially pregnant women, should wear long-sleeved shirts, long pants, gloves, and other protective gear to reduce exposure. The authors also noted that participants knew to take off their contaminated clothes before entering their homes to protect their family members from pesticide exposure carried home on their bodies and clothing.

The study found that farmworker women consistently believe that pesticide exposure can adversely affect pregnancy and child health, but they do not receive information about these specific risks in mandated pesticide training. The authors highlighted that most of the focus group participants felt the only way that a pregnant woman could protect herself against pesticides at the workplace is by not working there. The authors plan to use the focus group qualitative data to develop a large community survey on occupational health risks and pregnancy outcomes.

---

## **Housing Violations in Migrant Farmworker Camps in North Carolina**

**Title:** Migrant Farmworker Housing Regulation Violations in North Carolina

**Authors:** TA Arcury, M Weir, H Chen, P Summers, LE Pelletier, L Galvan, WE Bischoff, MC Mirabelli, SA Quandt

**Source:** American Journal of Industrial Medicine, 2012

A major source of occupational and environmental exposure for migrant farmworkers is their housing. In this study, the authors collected data from migrant farmworker camps to address three aims: (1) describe the general characteristics of camps located in North Carolina; (2) determine the total and individual housing law violations of camps; and (3) determine the associations of camp characteristics with the presence of housing violations.

Poor housing conditions are a major occupational health risk for migrant farmworkers. In the review of literature, the authors noted that poor housing increases the risks for injury, the transmission of infectious disease, exposure to toxicants, such as pesticide and lead, exposure to mold and particulates that increase the risk of respiratory disease, and mental illness. Migrant housing in North Carolina must comply with laws that provide standards for living and sleeping space, kitchen facilities, bathroom facilities, laundry facilities, and general safety and sanitation.

In an effort to measure the extent of housing violations in North Carolina, the authors collected data from 186 migrant farmworker camps. Two-thirds of the camps in the data set housed farmworkers with H-2A temporary guestworker visas. Barracks were present in 31.1% of the camps and the number of residents ranged widely. Half of the barracks housed 1-10 residents, one-quarter housed 11-20 residents, and another quarter housed 21 or more residents.

The authors commonly found housing violations in migrant farmworker camps, ranging from 4 to 26 violations per camp. The authors observed that every camp had at least 4 total violations, with 110 (60.1%) having 10-14 total violations, and 26 (14.2%) having 15-22 violations. In addition, the authors also observed a relationship between camp characteristics and the number of violations found in the camp. Camps with residents having H-2A visas had fewer total violations than did camps with residents without such visas (11.0 vs. 12.3), while camps that were assessed early in the season had fewer total violations than did camps assessed in the middle or late in the season (11.6 vs. 12.1). Furthermore, camps with a Certificate of Inspection posted also had fewer total violations than did camps without a Certificate of Inspection posted (11.0 vs. 11.9).

This study found that migrant farmworker housing is often in violation of the standards that govern its quality and safety. The authors conclude that two of the camp characteristics consistently associated with a lower number of violations (H-2A program participation and the presence of a Certificate of Inspection) indicate the importance of stronger regulations and more rigorous enforcement of existing regulations.

## **Contaminated Drinking Water Poses Public Health Risks for California Farmworkers**

In January 2012, the University of California, Davis published a report on groundwater contamination for the California State Water Resources Control Board and the California State Legislature. The report, “Addressing Nitrate in California’s Drinking Water: With a Focus on Tulare Lake Basin and Salinas Valley Groundwater” found that 254,000 people in four large agricultural counties are currently at risk of nitrate contamination in drinking water. The authors assembled nitrate data from nearly 20,000 wells for a total of 100,000 samples. They found that 57% of the region’s residents use a community public water system with nitrate concentrations that exceeded the acceptable threshold at least once between 2006 and 2010. 96% of the nitrate contamination comes from fertilizers used in agriculture. It will cost an estimated \$20 to \$36 million per year to provide safe drinking water to the 85 identified communities with water systems that exceed the nitrate limit. This amount translates to roughly \$85 to \$142 per affected person per year. Unfortunately, many communities in the affected area are among the poorest in California and have limited economic means or technical capacity to maintain safe drinking water free from nitrate and other contaminants. The report stresses that while no single solution will fit every community affected by nitrate contamination in groundwater, certain steps must be taken to ensure access to safe drinking water. The complete report can be found on the [UC Davis web site](#).

## **Child Labor and Agriculture: Department of Labor Proposes New Regulations**

As discussed in the January 2012 issue of *Eye on Farmworker Health*, the U.S. Department of Labor (DOL) recently proposed new child labor regulations which would prevent young agricultural employees from engaging in hazardous farm work. A recent study published by the American Academy of Pediatrics, “Incidence and Cost of Injury Among Youth in Agricultural Settings, United States 2001-2006” provides a comprehensive analysis of the annual incidence and cost of agricultural youth injuries in the United States. The study found that between 2001 and 2006, an average of 26,655 agricultural injuries occurred annually to youths (ages 0-19) in the United States. According to the authors, the annual cost for these injuries was \$347 million, with an estimated average cost of \$53,385 per injury. Workers aged 15 to 19 accounted for 52.4% of the total work-related agricultural youth injuries. The authors conclude that agricultural youth injuries tend to be more severe and more costly than other types of injuries among young people. They recommend controlling both child access to agricultural recreational activities and child assignment to agricultural work tasks that exceed their developmental norms. The complete study can be found [here](#). **For more information on how the child labor regulations will impact migrant farmworkers and their families, please review materials developed by the [Child Labor Coalition](#) and the [Association of Farmworker Opportunity Programs \(AFOP\)](#).**

Published by Farmworker Justice and Migrant Clinicians Network  
Farmworker Justice  
1126 16th St., NW, Suite 270  
Washington, DC 20036  
202-293-5420 phone  
202-293-5427 fax  
[www.farmworkerjustice.org](http://www.farmworkerjustice.org)

\* Photo by Earl Dotter © <http://www.earldotter.com/>