



***Second National People of Color Environmental
Leadership Summit - Summit II***

**Resource Paper Series
October 23, 2002**

**Farmworkers Health and Safety
Teresa Niedda and Joan Flocks**

**Farmworker Health and Safety Institute
4 South Delsea Drive
PO Box 510
Glassboro, NJ 08028
Phone: 856-881-2507
Fax: 856-881-2027
e-mail: fhsinj@aol.com**

**Health Policy and Epidemiology
University of Florida
PO Box 100177
Gainesville, FL 32610-0177
Phone: 352-265-0680 x86526
Fax: 352-265-8047
e-mail: jflocks@hpe.ufl.edu**

Summit II National Office
1612 K Street, N.W. Suite 904
Washington, DC 20006
Toll free: 800-736-0986
Phone: 202-833-1333
Fax: 202-833-9770
e-mail: ejsummit2@aol.com
Web Page: <http://www.summit2.org/>

Disclaimer: The Summit II Resource Paper Series was commissioned and assembled by the Environmental Justice Resource Center at Clark Atlanta University with funding support from the Ford Foundation, Turner Foundation, Public Welfare Foundation, Agency for Toxic Substances and Disease Registry, National Institute for Environmental Health Sciences, U.S. Department of Energy, and U.S. Environmental Protection Agency. The opinions expressed in this commissioned paper represent those of the author(s) and not those of the commissioning institutions or the funding agencies.

Farmworkers Health and Safety

Teresa Niedda
Farmworker Health and Safety Institute

Joan Flocks
Health Policy and Epidemiology

Abstract

Farm workers represent a community of color and low-income that is particularly at risk from exposure to environmental contaminants such as pesticides used in agriculture. One arena where farmworker pesticide exposure is being addressed is within the environmental justice movement. Migrant and seasonal farmworkers are subject to occupational risks such as injuries from farm machinery, trauma disorders from repetitive motion and musculoskeletal and soft tissue problems from lifting, carrying, and stooping. Of all populations that are exposed to pesticides, farmworkers and their families are consistently identified as high risk. Symptoms related to exposure are often nonspecific and most physicians lack training in recognizing and treating occupational health problems such as pesticide-related. Historically, farmworkers have been excluded from the various protective legislations that has been afforded to workers in other industries. Pesticide-related legislation has also fallen short of providing adequate protection for farmworkers and their families, despite the population's high-risk status.

Introduction

Primary routes of farmworker exposure to pesticides are through dermal contact, inhalation, and ingestion. Of these, exposure through dermal contact is the most common and insidious

The Farmworker Health and Safety Institute (FHSI or Institute) is a unique consortium of three community-based farmworker organizations that work with farmworkers along the Eastern Migrant Stream, the U.S.-Mexico Border and in the Caribbean. The member groups include El Comité de Apoyo a los Trabajadores Agrícolas (CATA), the Farmworker Association of Florida (FWAF), and the Border Agricultural Workers Project (BAWP). During the last ten years, the Institute has had a history of developing and implementing innovative training programs and documentation tools for its member organizations. As a result of sharing these experiences and technical expertise with farmworkers both nationally and internationally, the Institute has evolved into the training and monitoring arm of its member groups.

The Institute has developed a high quality Pesticide Safety Train-the-Trainer (ToT) curriculum that has been approved by the Federal Environmental Protection Agencies (EPA) and a dozen state lead agencies throughout the country. Materials and trainings are based on the Popular Education Methodology and have been found to be relevant, accessible, and culturally appropriate by the farmworker community. The Institute trains farmworkers as trainers, based on the belief that they have the capacity to be the best teachers and leaders as well as increase the possibility of using education to work collectively. It also has a greater impact when the trainers themselves are from the same community. The purpose of the Institute's interactive training programs is to strengthen the capacity of the community-based farmworker organizations so that they in turn can facilitate the capacity building of farmworkers around issues related to environmental health and safety.

The Institute has conducted its ToT program with numerous organizations during the last ten years. The diverse organizations trained by the Institute demonstrates the replicability of its ToT program which can be adapted and utilized by farmworkers from different cultures who work in various agricultural industries and live in different geographical locations. As a result, farmworkers and staff who have participated in the Institute's program have been certified as Promotores or Pesticide Safety Trainers and are thereby authorized to train farmworkers as required under the Worker Protection Standard (WPS). The organizations trained by the Institute include:

- CATA (New Jersey, Pennsylvania and Puerto Rico)
- Farmworker Association of Florida (Florida)
- Border Agricultural Workers Project (Texas and New Mexico)
- La Esperanza (Maryland)
- Centro Independiente de Trabajadores Agrícolas (New York)
- Frente Democrático Campesino (Chihuahua, Mexico)
- CONFENACA (Dominican Republic),
- Farmworkers' Project of North Carolina (North Carolina)
- Union Sin Fronteras (California and Arizona)
- Clean Water Fund, Goodwill Easter Seals and Centro Cultural
(Red River Valley in North Dakota and Minnesota)

Farmworkers Health and Safety

Farm workers represent a community of color and low-income that is particularly at risk from exposure to environmental contaminants such as pesticides used in agriculture (Moses, 1989; Strigini, 1982; U.S. General Accounting Office, 1993;). One arena where farmworker pesticide exposure is being addressed is within the environmental justice movement. This movement is a response to the disproportionate impact that environmental hazards have on communities of color and low-income. Proponents of the environmental justice movement believe that this imbalance is due to discriminatory policy development and implementation in relationship to such things as hazardous, toxic, and radioactive waste facility siting (Grossman, 1994).

Much of the effort to promote change and to remedy the damage that has already occurred because of environmental injustices has taken place at the grassroots, community level (Landrigan & Carlson, 1995). Grassroots movements are often initiated when an individual or a community becomes concerned about a specific environmental event or exposure that has caused adverse health effects. Campaigns to investigate and remedy these situations are becoming an increasingly common response. Examples of successful grassroots organizations that are addressing local environmental health issues can be found in communities from Southeast Chicago and West Harlem to Gainesville, Georgia - all areas surrounded by hazardous waste sites, factories, and highways (Grossman, 1994; Mott, 1995; Spears, 1998).

These efforts have brought attention to the need for a shift in environmental health research perspectives. The mutual influences that humans and the environment have on each other require a more holistic perspective and approach to examining environmental health - without sacrificing effective, quality research (Farmer & Albrecht, 1998). Within the past decade, federal agencies have responded to this need by inviting researchers, community-based organizations and health care providers to form innovative collaborations to examine the broad relationship between environmental and human conditions (NIEHS, 1997; NIEHS, 1998).

General health

Agriculture is among the industries with the highest rates of occupational illnesses, injuries, and fatalities. By the early 1990's agriculture ranked only behind construction in occupational injury and illness rates and surpassed all industries in work-related death rates. More telling, however, is that while other industries had experienced a decline in occupational injuries, illnesses, and fatalities, agriculture's rates remained relatively steady (Luginbuhl, 1997; Schenker, 1996).

Migrant and seasonal farmworkers are subject to occupational risks such as injuries from farm machinery, trauma disorders from repetitive motion and musculoskeletal and soft tissue problems from lifting, carrying, and stooping (Bernhardt, 1997). Most data regarding farmworker illnesses, some of which are related to occupation, are clinic-based. Problems commonly reported at migrant health centers include upper respiratory infections, hypertension, diabetes, dermatitis, urinary tract infections, anemia, and

gastroenteritis. Other problems common to farmworkers that may not be reported to clinics include communicable diseases and eye problems (Wilk, 1986).

The National Agricultural Worker Survey reported that from 1994 to 1995, more than three-fifths of the farmworker population lived below the poverty line (Mines et al., 1997). This low socioeconomic status can make farmworkers more susceptible to illnesses because their health can be compromised by factors that commonly affect low-income groups. For example, poverty forces many farmworkers to live in substandard, unsanitary and overcrowded housing, which can contribute to the spread of bacterial, viral and parasitic diseases. Nutritional deficiencies can exacerbate health problems (Coye, 1985; Wilk, 1986; Wilk, 1993). Often, farmworkers do not have access to adequate health care because they are restrained by lack of insurance, time off from work, transportation, financial resources, and ability to communicate in English to health care providers (Bernhardt, 1997; Schenker, 1996).

Field conditions can also contribute to poor health. Although the field sanitation provisions of the Occupational Safety and Health Act and the Worker Protection Standard require employers to provide basic protections such as toilets, handwashing and decontamination facilities and pesticide safety training, employers often violate these regulations without penalties (Davis & Schleifer, 1998).

Pesticide exposure-related health

Scientists have focused on the adverse human health effects of pesticides for many decades. A substantial amount of research has linked pesticide exposure to increased risks of acute (Demers & Rosenstock, 1991) and chronic (Steenland et.al. 1994) health problems such as skin and neurological disorders, cancer, reproductive and developmental impairments and respiratory problems.

Of all populations that are exposed to pesticides, farmworkers and their families are consistently identified as high risk. Yet, it is difficult to document health problems among this population. The barriers mentioned above that limit farmworkers' access to health care providers also result in underreporting of pesticide-related illnesses. Symptoms related to exposure are often nonspecific and most physicians lack training in recognizing and treating occupational health problems such as pesticide-related illnesses (Coye, 1985; USEPA, 1998; Wilk, 1986).

Primary routes of farmworker exposure to pesticides are through dermal contact, inhalation, and ingestion. Of these, exposure through dermal contact is the most common and insidious (Moses, 1989). The majority of farmworkers are exposed in the following ways: by being sprayed directly or being exposed to drifting pesticides; by handling recently sprayed crops or crops contaminated with residue; by eating, drinking and smoking with pesticide-contaminated hands; by eating contaminated fruits and vegetables in the fields; and by drinking, washing, and cooking with contaminated water. Some farmworkers also live in or near agricultural fields where their homes can be exposed to drifting pesticides (Wilk, 1986).

Acute exposure

Different classes of pesticides cause different acute health symptoms. Toxicity depends on various independent factors such as pesticide dose, duration of exposure and susceptibility of the particular worker. However, an exposure to commonly used organophosphate or carbamate pesticides that is sufficient enough to depress cholinesterase levels can overstimulate nerve fibers that regulate vital organs. This depression can cause diarrhea, nausea, rashes, irritated eyes, fever, increased perspiration, increased anxiety, dizziness, headaches, blurred vision and muscle pain, among other symptoms (Ciesielski, 1994; Wilk, 1986).

In addition, the introduction of pesticides into the body can make other health problems worse. For example, a worker suffering from heat stress, poor nutrition or dehydration will be more susceptible to pesticide toxicity. If a worker's immune system has been weakened by pesticides, then he or she is more susceptible to other diseases (Ciesielski, 1994; Moses, 1992; Repetto & Baliga, 1996; Wilk, 1986).

Chronic and long-term exposure

Animal and some human studies have shown that chronic and long-term exposures can affect the neurologic, cognitive, respiratory, immune, and reproductive systems and that long-term exposure can be carcinogenic, teratogenic, and mutagenic (Ciesielski, 1991; Moses, 1989). A review of 440 papers published from 1975 to 1991 concluded that positive reports existed that linked long-term pesticide exposure to multiple myeloma, leukemia, non-Hodgkin's lymphoma, brain cancer, cancer of the gonads, prostate cancer, and genetic damage (Maroni & Fait, 1992).

A number of studies have attempted to evaluate the chronic disease risks specifically in agricultural communities (Blair, et. al, 1985; Greaves, 1992; Wiklund, et.al, 1989). However, most of this effort has been concentrated primarily on studying the cancer incidence among farmers and farmworkers, and relatively few studies have looked at other long-term health effects from pesticide exposures.

Legislative Protection for Farmworkers

Overview. Historically, farmworkers have been excluded from the various protective legislation that has been afforded to workers in other industries. For example, the Migrant and Seasonal Agricultural Worker Protection Act (MSPA) exempts employers from minimum wage and overtime laws as well as certain provisions of the Occupational Safety and Health Act (OSHA). Farmworkers are also one of the groups excluded in the recent OSHA Ergonomic Standards and much of the Fair Labor Standards Act (FLSA) does not cover agricultural work.

Pesticide-related legislation has also fallen short of providing adequate protection for farmworkers and their families, despite the population's high-risk status. For example, the 1996 Food Quality Protection Act (FQPA), which has been important in protecting the general population of children from non-occupational exposure, does not take into account that certain special populations at risk, such as farmworkers and their family members, are exposed at an even higher rate than the general population of children.

The Worker Protection Standard.

One regulation that does address occupational exposure by attempting to reduce the risk of pesticide exposure among farmworkers is the Worker Protection Standard (WPS). The Environmental Protection Agency (EPA) established the WPS under the FIFRA in 1974. After review in 1980, the WPS was found to be inadequate in its protection of agricultural workers. In 1992, EPA made major revisions and the WPS was fully implemented in 1995. This regulation covers both agricultural workers and pesticide handlers who work in farms, forests, nurseries, and greenhouses. The main requirements of the WPS address pesticide safety training, notification of pesticide applications, use of personal protective equipment, restricted entry intervals following pesticide application, decontamination supplies and emergency medical assistance.

While the WPS is a significant step in protecting farmworker health, lack of compliance and enforcement have undermined the law and, as a result, it is not adequately protecting farmworkers. Recent reports by the General Accounting Office (GAO, 2000) as well as assessments by EPA itself, illustrate this.

Authors:

Teresa Niedda. As Director of the Farmworker Health and Safety Institute (Institute or FHSI), Ms. Niedda coordinates the training and research documentation efforts among the three farmworker member groups (CATA, Farmworker Association of Florida and the Border Agricultural Workers Project). She has supervised the data collection and analysis for the Risk Reduction Project with CATA and the Farmworker Association of Florida. She is a Master Trainer and has experience in conducting Train-the-Trainer trainings as well as Worker Protection Standard trainings. She has also participated in the Handler training and coordinated the development of the Institute's newest training programs for farmworkers and the community on organic agriculture and on leadership development. Ms. Niedda has her masters degree in child psychology. She was a research assistant and interviewed children and their caretakers as part of a longitudinal study that examined post-traumatic stress in sexually abused children. While in Mexico, she worked on a government sponsored project that investigated the living and working conditions of farmworkers in the state of Guanajuato. Ms. Niedda is fluent in Spanish.

Joan Flocks. Joan Flocks, J.D., M.A. is a Research Assistant Professor at the University of Florida's Department of Health Policy and Epidemiology. She is the project director of a four-year NIEHS-sponsored Community-Based Prevention/Intervention Research (CBPIR) project, in collaboration with the the Farmworker Association of Florida. The goals of the Together for Agricultural Safety (TAS) project are to design, implement and evaluate a social marketing health intervention to decrease the adverse health effects of pesticide exposure among fernery and nursery workers in Central Florida. Before she began managing the TAS, Ms. Flocks worked as a legal services attorney for five years in the areas of housing, consumer, family, health and individuals rights law. As a graduate student, Ms. Flocks conducted an ethnographic and visual study of an immigrant and farmworker community in South Florida. During this period, Ms. Flocks also worked part-time as a social worker for the Haitian, Guatemalan Mayan, Mexican, Jamaican, and African-American farmworkers in the area. She has a working knowledge of both Spanish and Haitian Creole.

Endnotes

- Bernhardt, JH. Health and Safety of Migrant Seasonal Farmworkers and their Families. In: *Safety and Health in Agriculture, Forestry, and Fisheries*, Rockville, MD: Government Institutes, 1997.
- Blair A, Malke H, Cantor KP, Burmeister L, Wiklund K. Cancer among farmers: a review. *Scand J Work Environ Health* 11:397-407, 1985.
- Ciesielski, S. Pesticide Risk Assessment and Reduction Among Migrant Farmworkers in North Carolina. *Public Health Reports* 106:207-208, 1991.
- Ciesielski S, Loomis DP, Mims SR, Auer A. Pesticide Exposures, Cholinesterase Depression, and Symptoms among North Carolina Migrant Farmworkers. *Am J Pub Health* 84: 446-451, 1994.
- Coye, MJ. The Health Effects of Agriculture Production: I. The Health of Agriculture Workers. *Journal of Public Health Policy*, Sept: 349-370, 1985.
- Davis S, Schleifer R. *Indifference to Safety: Florida's Investigation into Pesticide Poisoning of Farmworkers*. Washington, D.C.: Migrant Farmworker Justice Project, 1998.
- Demers P, Rosenstock L. Occupational injuries and illnesses among Washington State agricultural workers. *Am J Publ Health* 81:1656-1658, 1991.
- Farmer FL, Albrecht SL. The Biophysical Environment and Human Health: Toward Understanding the Reciprocal Effect. *Soc Nat Res* 11:707-717, 1998.
- Greaves, IA. Agricultural health: exposure to toxic substances. *Health Environ Digest* 6:1-4, 1992.
- Grossman, K. Environmental Racism, In: *The Racial Economy of Science, Toward a Democratic Future*. Bloomingham, IN: Indiana University Press, 1994.
- Landrigan PJ, Carlson JE. Environmental Policy and Children's Health. *The Future of Children*. 5(2), 1995.
- Lunginbuhl, RC. Occupational Safety and Health Regulations in Agriculture, In: *Safety And Health in Agriculture, Forestry, and Fisheries*. 1997.
- Maroni M, Fait A. *Health Effects in Man from Long-Term Exposure to Pesticides*. Ireland: Elsevier Scientific Publishers, Ltd., 1992.
- Moses, M. Pesticide Related Health Problems and Farmworkers. *AAOHN Journal*. 37(3): 115-130, 1989.
- Mott, L. The Disproportionate Impact of Environmental Health Threats on Children of Color. *Environ Health Perspectives*. 103(Supp 6): 33-35, 1995.
- National Institute of Environmental Health Sciences. *Advancing the Community-Driven Research Agenda, Conference Report*. Research Triangle Park, NC, 1997.
- National Institute of Environmental Health Sciences. *Environmental Justice, Partnerships for Communication and Community Based Prevention/Intervention Research, Conference Proceedings*. Jackson, MI, 1998.

- Repetto R, Baliga SS. Pesticides and the Immune System: The Public Health Risks. A World Resources Institute Report. Washington, D.C.: World Resources Institute, 1996.
- Schenker, MB. Preventive Medicine and Health Promotion Are Overdue in the Agricultural Workplace. *J Health Policy* 17(3):275-305, 1996.
- Spears, EG. *The Newtown Story, One Community's Fight for Environmental Justice*. Atlanta, GA: Center for Democratic Renewal, 1998.
- Steenland K, Jenkins B, Ames RG, et al. Chronic neurological sequelae to organophosphate pesticide poisoning. *Am J Publ Health* 84:731-736, 1994.
- Strigini, P. On the Political Economy of Risk: Farmworkers, Pesticides, and Dollars. *Int J Health Services* 12(3): 263-292, 1982.
- United States Environmental Protection Agency. *Pesticides and National Strategies for Health Care Providers: Workshop Proceedings, April 23-24, 1998*. Office of Prevention, Pesticides and Toxic Substances, EPA #735-R-98-001, 1998.
- United States General Accounting Office. *Pesticides on Farms: Limited Capability Exist to Monitor Occupational Illnesses and Injuries*. Report to Chairman of Committee on Agriculture, Nutrition and Forestry, U.S. Senate, 1993.
- United States General Accounting Office. *Improvements Needed to Ensure the Safety of Farmworkers and Their Children*. Report to the Committee on Government Reform, U.S. House of Representatives, 2000.
- Wiklund K, Dich J, Holm LE, Eklund G. Risk of cancer in pesticide applicators in Swedish agriculture. *Br J Ind Med* 46:809-814, 1989.
- Wilk, V. *The Occupational Health of Migrant and Seasonal Farm workers in the United States*. Farmworker Justice Fund, 1986.
- Wilk, V. Health Hazards to Children in Agriculture. *Amer J of Ind Med* 24:283-290, 1993.