



# AgConnections

AGRICULTURAL SAFETY AND HEALTH

Vol. 2, No. 2

NIOSH Agricultural Research Centers Update

## The National Agricultural Workers Survey (NAWS)

The U.S. Department of Labor initiated the NAWS survey in response to the Immigration Reform and Control Act of 1986 for the purpose of monitoring turnover of seasonal agricultural service workers and to forecast labor shortages anticipated in the early 1990s. Since its inception, other federal agencies have contributed to the development of the questionnaire. The survey now also monitors seasonal agricultural wages, work conditions, demographics, legal status, education, national origin, language proficiency, family size, household composition, healthcare access and utilization, and participation in the U.S. workforce.

NAWS data is gathered through interviews with workers performing crop agriculture. The U.S. Department of Agriculture definition of crop work is used; it includes "field work" in the vast majority of nursery products, cash grains, and field crops, as well as in all fruits and vegetables. Crop agriculture also includes production of silage and animal fodder. The sample population consists of farmworkers in crop agriculture, including field packers, and supervisors. However, H-2A temporary farmworkers and unemployed agricultural workers are excluded. Interviews are scheduled at the work site with the employer's permission. The interview is actually conducted in the worker's home or at another location of the worker's choice.

Preliminary data from the most recent survey sample are currently being analyzed. However, it is anticipated that several trends noted from the 1997-98 sample published in 2000, will be maintained. These include: a large share of the farm workforce comprised of recent immigrants. Many new workers with no previous agriculture work experience. NAWS findings of low wages, underemployment, and low annual incomes among U.S. crop workers underpin the instability that characterizes the agricultural labor market, as farm workers seek jobs paying higher wages and offering more hours of work.

For more information on NAWS, to receive published reports, or to view updated findings, visit <http://www.dol.gov/asp/programs/agworker/naaws.htm>.

To order reports or the questionnaire contact Daniel Carroll at [carroll.daniel@dol.gov](mailto:carroll.daniel@dol.gov), at 202-693-5077, Rm.S2312, 200 Constitution Ave. NW, Washington, DC 20210.

## Hired Farm Labor: The California Experience

The Western Center for Agricultural Health and Safety (WCAHS) has had a major focus on the health and safety of hired farm workers. California agriculture is labor intensive, employing up to 1,000,000 people per year with over 15 hired farm workers for every farmer. Hired farm workers provide approximately 85% of all labor on California's farms, and have the greatest need of attention to their health and safety. The vast majority of California's hired farm workers are Hispanic, with most being Mexican immigrants. Among these Mexican immigrants, there is also a growing population of indigenous people, including Mixtec, Zapotec and Triqueño from Oaxaca. These migrants typically face greater hardships than Mexican farm workers.

The importance of focusing on the Mexican immigrant population is further emphasized by the sheer numbers of Hispanic immigrants in the United States. The INS reported that from 1981 to 1996, Mexico ranked highest among countries of birth of immigrants to the U.S., representing over 3 million legal immigrants and 25% of all immigrants during the same time period.

California agriculture is the largest and most diverse in the country, producing over \$28 billion/year, and more than half of all U.S. fruit and vegetable production. The

size, diversity and uniqueness of California agriculture present challenges in studying farming populations and addressing health and safety concerns.

Farm work has been the traditional entry job for Mexican migrants to California. Hired farm workers make a substantial contribution to the productivity of agriculture in California, yet they incur a disproportionate share of occupational injuries and disease. These risks are further complicated by living conditions, nutritional habits and food security, and

stress. Overarching these factors is the overwhelming poverty of this population. A recent survey of California's hired farm workers found the median family income to be \$7,500 – \$9,999/year. Agricultural workers face increased risks of morbidity from respiratory disease, musculoskeletal problems, certain cancers, hearing loss, reproductive disorders, infectious disease, and stress-related mental health disorders.

Over 20,000 disabling occupational injuries are reported annually among agricultural workers in California, and the actual number may be twice as high. Occupational mortality rates for agricultural workers are approximately four times the rate for all other industries. Hispanic children are at particularly high risk for agricultural-related



Marc B. Schenker, MD, MPH

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## A Study of Injury in Farmworker Children

Sharon P. Cooper, Ph.D., Southwest Center

To build on previous work on injuries among migrant farmworkers, we noted the need for a clear definition of injury and the need to obtain information directly from children. Funded through The University of Texas Health Center at Tyler, investigators at Texas A&M School of Rural Public Health are conducting a three-year cohort study of high school students in Starr County, Texas. Located along the Texas-Mexico border, Starr County is economically disadvantaged, largely Hispanic, and the home to many farmworkers and their families. Regardless of work status, all high school students were asked to participate and to complete a 30-45 minute self-administered web-based survey in English or Spanish asking to recall information from April 1, 2003 through September 30, 2003. The study seeks to describe work patterns and to identify risk factors for injuries in farmworker children, and to compare farmworker adolescents with adolescents working non-farm jobs with respect to their work patterns, demographics, health status, health behaviors, and occupational injury. Based on preliminary first year data on 2,949 respondents, 495 adolescents reported doing farmwork during the previous nine months (2003), among whom 160 injuries were reported in 78 students. Among these young farmworkers, 80% of their farmwork jobs involved 5 or more days a week and 69% involved 8 or more hours a day. Injury prevention efforts have been hindered by a lack of data on specific work patterns and risk factors for injuries to youth working in agriculture and we hope this study will help inform future interventions.

## A Multi-State Migrant Farmworker Study

Northeast Center

This occupational health surveillance project carried out in seven states in the Northeast over three years (2000-2003), has documented close to 1,700 farmworker occupational injuries and illnesses treated at federally-funded migrant health centers. This surveillance system was set up through migrant health centers, and injuries and illnesses were documented by reviewing patient charts anonymously and looking for work related medical conditions.

The states included in this surveillance system were Maine, Connecticut, Massachusetts, New York, New Jersey, Pennsylvania, and Maryland. Injury events involved hand-harvested crops in the Northeast and as a result, a wide range of commodities are represented.

The most compelling results of the surveillance project were:

- Approximately 15-50% of migrant health center visits involved work-related medical conditions.
- 55% of injury/illness events involved musculo-skeletal strain or sprain, 22% exposure to a natural irritant and 5% chemical exposures, such as pesticides or herbicides.
- Most injured farmworkers (90%) did not file workers compensation claims.

Results from the study have been released to participating centers and presented at occupational research conferences around the country. Publication of data is currently underway and results are being used to inform farmworker intervention initiatives at the Northeast Center.

## Assessing Heat Stress in Agricultural Field Workers

John Sabella, Ed.D.

Southern Coastal Center

North Carolina's excessively hot and humid summers challenge individuals to stay cool when working outside. Exposure to direct sun with limited convection and evaporation increases body heat production. If more heat is produced than can be dissipated, potential exists for the body to exceed its capacity for adjustment to heat stressors

and can lead to heat-related illness. Heat-related illness can range from minor to life threatening conditions. Agricultural field workers are especially vulnerable. Over the past several years in North Carolina, three reported events



related to heat stroke have resulted in one Hispanic farm worker dying; one living in a vegetative state and returning to Mexico; and one who has recovered from his illness. Concerned by the increasing reports of heat related illness, researchers from the N.C. Agromedicine Institute, located in Pitt County, along with a team of data collectors, are conducting a study to assess the effects of environmental heat on the physiological health status of farm workers, primarily Hispanic, in Eastern North Carolina. The study is funded jointly by the United States Department of Agriculture and the National Institute for Occupational Safety and Health (NIOSH).

The research team is comprised of a nurse, a culturally competent bilingual interpreter, and a trained assistant who assess physiological measures and cognitive function for each subject every two hours during the workday. Heat load obtained from environmental instruments at three locations in the field. Observations of appearance as well as self-reported data are also recorded. Worker productivity is measured by tracking the number of buckets picked over the period of the workday.

Information gained from this study will be useful in identifying and incorporating best management practices in the field aimed at maintaining and/or improving workers' sense of well-being, their cognitive function, and their productivity. In addition, educational programs/materials based on findings of these studies potentially will benefit both farm workers and farm owners by promoting health, preventing heat-related illness, and increasing productivity. To learn more about the Heat Stress Study and the Southern Coastal Agromedicine Center, please contact John Sabella at (252) 744-1005 or [sabellaj@mail.ecu.edu](mailto:sabellaj@mail.ecu.edu)

## HIRED FARM LABOR,

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injuries and deaths.

The desperate health condition of California's hired farm workers has recently been documented in the California Agricultural Worker Health Survey, a study done in collaboration with the WCAHS. This cross-sectional survey found that almost every measured health parameter was worse among farm workers than in reference populations. Eighteen percent of male participants had two of three nutrition-related risk factors (high serum cholesterol, high blood pressure or obesity) for chronic disease. Health care services were infrequently used. For example, 70% had no health insurance, and 30% of men and 12% of women reported never visiting a doctor or clinic. Over 66% reported never having had an eye care visit, and almost 50% of men and 40% women reported they had never been to a dentist.

This is one of numerous studies conducted by WCAHS investigators addressing health among hired farm workers. This work has addressed a wide range of health and safety outcomes. It is challenging because of the poverty of the farm workers, the need for bilingual and bi-cultural investigators, the mobility of the population and fears about legal status. Despite these challenges, center investigators have been successful in successfully doing research in this population, and leading the way to improving the health and safety in the important agricultural population. Future research is being developed to focus on the status of recent immigrant farm workers and the changes in health related to farm work, poverty and acculturation.

## Agricultural Centers



### Development of a Community Theater Troupe: Health and Farm Safety Training for Hispanic Agricultural Workers

*PNASH Center*

This Pacific Northwest Agricultural Safety and Health Center project was conducted through the Eastern Washington University Center for Farm Safety and Health. It developed a successful program using Spanish-language theatre to provide farm workers with information on health hazards and prevention strategies. Four one-act plays were created for farm workers in the state of Washington on ergonomically sound bending and lifting, safe handling of pesticides, pre-natal issues, and disease prevention. To extend the usefulness of the effort, videos have been produced of the plays on pesticides and ergonomics, and are available for distribution.

Contact Chris Woodruff, [cwoodruff@mail.ewu.edu](mailto:cwoodruff@mail.ewu.edu), (509) 359-7995.

### Clarkson College Bridges the Gap

*Great Plains Center*

Clarkson College (Omaha, NE) is bringing attention to the health needs of Hispanics involved in agricultural occupations through a feasibility project grant from the Great Plains Center. According to Grant Coordinator Dr. Heather Goertz, the study confirms barriers that continue to keep Hispanic farm workers from seeking needed health services and, that providing health care education to Hispanic community members is key to eliminating health disparities.

Over 90% of the study participants would seek health careers if offered the opportunity. Differences in educational and licensing standards prevent Hispanic doctors and nurses in our communities from working in their profession. A Clarkson College program provides education to Hispanic residents who are trained as health care providers in their native country, and are dedicated to becoming practitioners in Nebraska and Iowa.

## The National Center for Farmworker Health

The National Center for Farmworker Health, Inc. (NCFH) is a national, private not-for-profit corporation established in 1975 to address the healthcare needs of farmworkers and their families as they migrate to follow the harvest. NCFH functions as an information resource for the nation's network of migrant health centers. Its mission is to improve the health status of migrant and seasonal farmworkers through the innovative application of human, technical and information resources. Three critical goals of the organization are: 1) to provide training, technical assistance and culturally appropriate educational materials on farmworker health related topics through NCFH's Leadership Development and Training Center. NCFH hosts the annual Midwest Migrant Stream forum as a mechanism for professional development for health care providers and advocates. In 1998 with support from the SW Center, a research track was inaugurated to facilitate interaction, collaboration, and mutual respect between researchers and clinic/field staff who serve as gatekeepers as well as caregivers to the migrant farmworker population.

2) to operate a Resource Center and Library to meet the information needs of migrant constituencies; all materials in the Resource Center and Library have been digitized to facilitate dissemination. NCFH publishes and disseminates nationally, a bi-monthly, low-literacy, bi-lingual newspaper of health and occupational safety information for farmworkers.

3) to create access to additional service delivery resources by developing and enhancing partnerships with other organizations through the Call for Health Program. As a primary resource for migrant and community health centers and the agricultural workers they serve, NCFH sponsors this toll-free phone line to link individuals with information on health services for farmworkers, (1-800-377-9968).

Visit the website at: [www.ncfh.org](http://www.ncfh.org) for details about available resources and services, or call (512) 312-2700.

Agricultural Research Center Initiative Centers funded as of October 1, 2003

#### Great Lakes Center for Agricultural Safety and Health

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#### Great Plains Center for Agricultural Health

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Center Director: Wayne Sanderson, PhD, CIH

#### High Plains Intermountain Center for Agricultural Health & Safety

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Center Director: Steve Reynolds, PhD, CIH

#### Northeast Center for Agricultural Safety & Health

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Cooperstown, NY 13326  
(607) 547-6023

Center Director: John May, MD

#### Pacific Northwest Agricultural Safety & Health Center

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University of Washington  
Seattle, WA 981543-1452

Center Director: Richard Fenske, PhD, MPH

#### Southeast Center for Agricultural Health and Injury Prevention

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*Funds for this newsletter provided to the Southwest Center for Agricultural Health, Injury Prevention and Education by the National Institute for Occupational Safety and Health (Contract # 000025170)*

## LATEST CATCH HOT TOPICS



### Cultivating a Sustainable Agricultural Workplace

September 12 – 14, 2004

McMenamins Edgefield, Troutdale, Oregon

Sponsored by Pacific Northwest Agricultural Safety and Health Center at the University of Washington and the Western Center for Agricultural Health and Safety at the University of California, Davis.

Poster topics should address research or intervention projects in agricultural worker safety and health or social aspects of sustainable agriculture. Abstracts must be sent by August 13, 2004.

Details and other information at:

<http://depts.washington.edu/pnash/conf04/index.htm>

### 14th Annual Western Migrant Stream Forum

January 28-30, 2005 in San Diego, CA

This conference offers a variety of workshops and sessions designed to meet the needs of clinicians, administrators, educators, advocates, researchers, and students dedicated to serving migrant and seasonal farmworkers. Join us as we learn about current issues, policy, and programs related to the health of this population.

#### CALL FOR ABSTRACTS!

You are invited to submit an abstract.

Visit: <http://www.nwrpca.org/downloads/05Abstract%20form.doc>

## LOGGING IN VALUABLE RESOURCES



**Extension en Espanol (EEE)** is a grass roots organization of educators seeking to better serve Spanish-speaking clients by sharing materials and expertise across the Cooperative Extension System. A website to improve access to educational materials has been in operation for over a year. EEE is planning workshops on strategies to reach Hispanic audiences effectively.

You can help by completing a short on-line survey - issues, strengths, needs - about your Spanish-speaking constituents. Survey location: <http://extensionenespanol.net/survey.cfm>

For more information contact: Bill Watson  
Extensión en Español, <http://extensionenespanol.net>

**The Migrant Clinician's** network comprises a group of health care professionals who provide support to colleagues who provide care for farm workers through migrant specific resources for clinicians. For more information visit: [www.migrantclinician.org](http://www.migrantclinician.org)

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