



Occupational Health and Safety

The agriculture industry is one of the most dangerous occupations in the United States. While farmworkers face workplace hazards similar to those found in other industrial settings, such as working with heavy machinery and hard physical labor, they also face unique occupational hazards including pesticide exposure, skin disorders, infectious diseases, lung problems, hearing and vision disorders, and strained muscles and bones. Lack of access to quality medical care makes these risks even greater for the three million migrant and seasonal farmworkers who work in the fields every year.

General Information

- Though strides in research, science and technology have been made, agriculture remains one of the most dangerous industries in the U.S.¹
- In 2007, for every 100,000 agricultural workers in the U.S. there were 25.7 occupational deaths in agriculture. This compares to an average rate of 3.7 deaths for every 100,000 workers in all other industries during this same year.²
- Along with construction, mining, fishing and hunting, the agriculture industry had the highest worker fatality rate in 2007.³ The time period from 1992 to 2002 had an annual average of 806 occupational deaths.
- The rate of nonfatal occupational injuries in agriculture has been decreasing, however the injury rates consistently exceed those of the private sector. In 2006, the agriculture industry the second highest rate of occupational injuries and illness resulting in lost days of work of any industry. Only construction was higher.⁴
- While adults are at risk for death and injuries while working in agriculture, children workers experience an even greater threat to their health and well-being.
 - The Centers for Disease Control and Prevention label agriculture the most dangerous industry for young workers in the United States, accounting for 42 percent of all work-related fatalities of young workers between 1992 and 2000.⁵ Fifty percent of these victims were younger than 15 years old.⁶
 - Between 1995 and 2002, 907 youth died on farms, or 43 deaths for every 100,000 children.⁷
- Every day, about 243 agricultural workers suffer lost-work-time injuries, and about 5 percent of these result in permanent impairment.⁸
- In a 2006 study of farmworkers in California, workers faced many barriers in receiving adequate medical care for occupational illnesses and injuries. These included: being sent to company doctors who trivialize injuries; being left without care; being forced to work despite injuries; and being offered cash payments not to report injuries.⁹

Pesticide Exposure

- During their daily work, farmworkers are often exposed to pesticides, which include substances that prevent, destroy or repel pests. Because some pests have systems similar to the human system, some pesticides also can harm or kill humans. The term pesticide also encompasses herbicides, fungicides, and various other substances used to control pests.¹⁰

- Farmworkers frequently encounter pesticides through direct contact with the chemicals, contact with pesticide residue on treated crops or equipment, and drift of pesticides into untreated areas.¹¹
- Farmworkers can also transport pesticides from the fields into their homes through residue on their clothing, boots and skin. This puts the farmworker's entire family at risk, especially because pesticide residue in the home is not degraded by the sun or rain.¹²
- A 2006 study on farmworkers in California found that acute effects of pesticide exposure include headache, nausea, eye irritation, muscle weakness, anxiety and shortness of breath.¹³
- Studies indicate that pesticide exposure is associated with chronic health problems such as:
 - Respiratory problems
 - Memory disorders
 - Dermatologic conditions
 - Cancer
 - Depression
 - Neurologic deficits
 - Miscarriages and infertility
 - Birth defects¹⁴
- In severe cases, pesticide exposure can lead to convulsions, coma and death.¹⁵
- Law violations by employers are estimated to contribute to 41% of pesticide poisonings in California, including "failure to provide useable safety equipment, absence of washing/decontamination facilities, and lack of fieldworkers' access to pesticide training or information."¹⁶
- A study in California tracked farmworkers who handle organophosphate (OP) or carbamate (CB) pesticides. Under that program, workers who regularly handle those pesticides have blood tests before the spray season begins to determine their normal levels ("baselines") of an important chemical in their nervous systems called cholinesterase. During the spray season, they have follow-up tests to track whether exposures are depressing their cholinesterase levels, and thereby putting them at risk of injury. Of the 611 workers tested, 59 (9.65%) had depressions at a dangerously high level of more than 20%.^{16A}
- Another study in 2003 found pesticides in the urine of 92% of the 213 farmworkers tested. This same study examined 571 farmworkers and found that:
 - 96 % of 571 farmworkers studied reported exposures to pesticides at work.
 - 63.4% said pesticides touched their clothes: 33 % daily, 30.4% once in a while
 - 53.3% said pesticides touched their skin: 28.6% daily, 24.7% once in a while
 - 51.6% said they breathed in pesticide dust: 19.7% daily, 31.9% once in a while
 - 17.3% said they were dusted or sprayed with pesticides: 2.5% daily, 14.8% once in a while^{16b}
- A 2002 study examined take-home organophosphorus pesticide exposure among agricultural workers and found pesticides in dust samples from 85% of farmworkers' homes and 87% of farmworkers had pesticides in dust samples in their vehicles. In addition, 88% of farmworker children had organophosphate metabolites in their urine.^{16c}

Heat and Sun Exposure

- Farmworkers work under the sun's harsh and hot rays for 10-to-12 hours a day, often with little access to shade or water.
- Heat stress occurs when hot weather and muscle activity cause body heat to rise. This condition can lead to dehydration, electrolyte imbalance, neurological impairment, multi-organ failure, and death.¹⁷
- From 1992 to 2006, 423 workers in agriculture and non-agricultural industries died from heat exposure.
 - Crop workers have an average annual heat-related death rate of .39 per 100,000 workers, compared with .02 for all U.S. civilian workers.¹⁸
- In the 2005 National Agricultural Workers Survey (NAWS), 20 percent of the farmworkers reported having no access to drinking water and cups.
- Working under the sun also exposes farmworkers to long hours of ultraviolet radiation, which puts

- them at a higher risk for developing skin cancer.¹⁹
- Though sunscreen use can help lower this risk, a 2005 study of 326 male farmworkers found that only 2.8 percent reported to have ever used sunscreen and only 19.3 percent knew what sunscreen was.²⁰
 - More than 90 percent did not wear sunglasses or any sun-protective eye equipment
 - 75 percent reported not wearing a wide-brimmed hat, which leaves the ears, neck and face exposed to ultraviolet rays.²¹
- Another danger for farmworkers is that pesticides are absorbed through hot, sweaty skin more quickly than through cool skin.²²

Hazardous Tools and Machinery

- From 1992-2001, the leading cause of fatal occupational injuries in the agriculture industry was farm tractors, which accounted for 2,165 farmworker deaths.²³ Deaths from other machines and tools include:
 - Trucks, at 795 deaths
 - Harvesting machines, at 253 deaths
 - Mowing machines, at 228 deaths
 - General agriculture machines, at 168 deaths²⁴
- As for non-fatal injuries in agriculture, machinery was the leading source from 1993 to 1995, with 99,402 reported injuries.²⁵
 - 41,777 injuries from hand tools
 - 24,590 injuries from tractors²⁶

Infectious Diseases

- Infectious diseases among the farmworker population are caused by poor sanitation and crowded conditions at work and housing sites, including inadequate washing and drinking water.²⁷
- In the 2005 National Agricultural Workers Survey (NAWS), 5% of the farmworkers reported having no access to water for washing, while 7% had no access to toilets in the fields, both of which the U.S. Department of Agriculture calls significant percentages.²⁸
- A 2006 study of farmworkers in North Carolina found that 46 percent of farmworkers lived in very crowded and unsanitary conditions. Conditions such as these increase farmworkers' exposure to environmental toxins and communicable diseases.²⁹
- Farmworkers are six times more likely to develop tuberculosis when compared with other workers, and rates of positive TB results between 17% and 50% have been reported throughout the United States.³⁰
- The prevalence of parasitic infestation is an indicator of the health, social, and economic conditions within a community. One study of 422 migrant farmworkers and their families found a prevalence of parasitic infestation of 11.4%.^{30a}
- Migrant workers are also at increased risk for urinary tract infections, partly as a result of a lack of toilets at the workplace and stringent working conditions that promote chronic urine retention. Urinary retention in turn encourages bacterial growth and stretches and weakens the bladder wall; this in turn promotes chronic infections or colonization.^{30b}

Musculoskeletal Injuries

- Because farm labor consists of constant bending, twisting, carrying heavy items, and repetitive motions during long work hours, farmworkers often experience musculoskeletal injuries. Furthermore, workers are often paid piece-rate, which provides an incentive to work at high speed and to skip recommended breaks.³¹
- Farmworkers most often report pain in the shoulders, arms, and hands. The most common injuries that cause farmworkers to miss work are: sprains and strains, accounting for 30 percent of missed work, and back pain at 25 percent.³²
- From 1999 to 2004, almost 20 percent of farmworkers reported musculoskeletal injuries.³³

Respiratory Illnesses

- Because agricultural work takes place in rural areas, farmworkers are exposed to organic and mineral dusts, animal and plant dusts, toxic gases, molds and other respiratory irritants.³⁴ All of these have been associated with respiratory illnesses, such as asthma and chronic bronchitis.³⁵
- Farmer's Lung, an allergy-related disease, is caused by breathing in dust from moldy hay, straw, corn, silage, grain or even tobacco. The disease can be a sudden attack or a slow, progressive disease that can cause permanent lung damage, physical disability and even death.³⁶
- Farmworkers have a significantly higher death rate for a number of respiratory conditions, including hypersensitivity pneumonitis (proportionate mortality more than 10 times higher than expected), asthma, bronchitis, histoplasmosis, tuberculosis, pneumonia, and influenza.³⁷
- Farmworkers who work in the following areas are most at risk for respiratory illnesses:
 - Dusty fields and buildings
 - Handling of moldy hay, grain, corn, etc...
 - Working in silos or with feed
 - Working around bird droppings or dust from animal hair, fur, or feathers³⁸

Skin Disorders

- The agriculture industry has the highest incidence of skin diseases when compared with all other industrial sectors.³⁹
 - In 2003, the U.S. annual incidence of skin diseases was:
 - 30.0 workers per 10,000 workers in the crop production sector
 - 18.5 workers per 10,000 workers in the agriculture industry
 - 4.9 workers per 10,000 workers in all private industry sectors combined⁴⁰
- Skin disorder risk factors that are characteristic of farm work include wet working conditions, hot and humid climates, and exposure to hazardous chemicals and plants.⁴¹
- A 2006 study of farmworkers in North Carolina found that 77.7 percent of male farmworkers were diagnosed with a skin disease, with nail fungus being the most commonly diagnosed disease, followed by foot fungus and acne.⁴² This study also found that the odds of farmworkers having a skin disease were 80% higher for those with less than six years of education.
- A 2003 study revealed that 37 percent of Latino migrant and seasonal farmworkers reported having a skin disease sign or symptom in the past two months. This is much higher than the 10.4 percent of the general population who reported having a skin disorder in the past year.⁴³

Eye Injuries

- Farmworkers encounter multiple eye irritants in their work environments, including dust, sand, tools, branches, allergenic agents, pesticides, wind, sun, water, and insects.⁴⁴
- These foreign objects can cause infections, allergic reactions, eye irritations, and corneal and other eye trauma. Chronic irritation and sun can cause cataracts, a clouding of the eye lens, and pterygium, a growth that obstructs the cornea.⁴⁵
- Agricultural workers experience eye injuries and illness at a rate of 8.7 per 10,000 workers. This is more than two times higher than the rate of 3.8 per 10,000 for general workers in the U.S.⁴⁶

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