Health Hazards In Agriculture - An Emerging Issue

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Perhaps more than any other occupational group, agricultural workers are exposed to a tremendous variety of environmental hazards that are potentially harmful to their health and well-being. Farmers and farm workers suffer from increased rates of respiratory diseases, noise-induced hearing loss, skin disorders, certain cancers, chemical toxicity, and heat-related illnesses. There are precautions that can be taken to minimize or eliminate these potential hazards.

RESPIRATORY HAZARDS

Farming situations present several respiratory hazards to farm workers. Exposure to these hazards has been linked to excessive coughing and congestion in 20 to 90 percent of farm workers and families. Symptoms of chronic bronchitis were observed in as many as 50 percent of swine confinement workers and grain handlers.

Organic Dust Toxic Syndrome (ODTS) is a common respiratory illness manifested by temporary influenza-like illness with fever, headache, and muscle aches and pains. Although much less common than ODTS, Farmer's Lung is an allergic reaction caused by inhaling dust from moldy hay, straw, and grain. Dairy and grain farmers are the most common victims. The months when moldy crops are handled indoors are the most dangerous. For those who are susceptible, repeated exposure damages lung tissue, ca sing shortness of breath and a growing inability to perform strenuous work. Victims eventually may find it a struggle even to get out of a chair.

Dust from moldy hay, grain, and silage can also cause ODTS, which has symptoms resembling Farmer's Lung. However, ODTS does not produce long-term illness or cause permanent lung damage.

Nuisance dusts and gases also are hazards. Suspended dust particles not containing spores from moldy organic matter are considered nuisance dusts. Repeated exposure can turn portions of the lung into hardened, nonfunctioning tissue and cause chronic bronchitis and occupational asthma.

A variety of disabling gases, including nitrogen dioxide (NO_2), hydrogen sulfide (H_2S), ammonia (NH_3), Carbon dioxide (CO_2), and methane (CH_4), are produced during many routine operations. Exposure to low levels of NO_2, H_2S, or NH_3 will produce lung and eye irritations, dizziness, drowsiness, and headaches. High levels of H_2S, particularly, and NO_2, secondarily, will quickly render a worker unconscious and death will follow.

The best prevention of respiratory disease is to wear a respirator approved by the National Institute of Occupational Safety and Health (NIOSH). Air-purifying respirators remove contaminants from the air, but can only be used in environments with enough oxygen to sustain life. Supplied-air respirators must be used in oxygen-limited environments, or in environments with acute toxic gas levels.

NOISE

Agricultural noise is another common health hazard on the farm. It is estimated that 10 percent of U.S. farm

SKIN DISORDERS

Contact dermatitis is a skin disorder that occurs among agricultural workers. There are two general categories: irritant and allergic. Irritants act directly on the skin at the place of contact. Allergic sensitizers, however, cause changes in the immune system so that subsequent contact produces a reaction. Phototoxic or photoallergic reactions occur when light, in combination with certain substances, causes skin disease. Other types of agricultural dermatitis include heat rash, origin infections, and insect and plant irritants.

A number of factors predispose an individual to dermatitis, such as age, sex, race, temperature and humidity, previous skin disorders, skin damage, and personal hygiene. Work-related skin diseases are often easy to detect, but difficult to diagnose. It is important for the physician to know chemicals and other agents to which an individual has been exposed. Wearing proper protective clothing, and washing frequently are the most effective means of prevention.

CANCERS

Skin cancer is a concern on the farm due to the long hours farmers spend in the sun. Skin cancer is the most common form of cancer, with about 450,000 newly diagnosed cases in America each year. People at high risk include those with fair skin, blue eyes, and red or blond hair. Ninety percent of all skin cancers occur on parts of the body not usually covered by clothing. A place of particular concern for farmers is the back of the neck. Avoid overexposure, especially between 11 am. and 2 p.m.; use sunblocks that absorb or deflect ultraviolet rays; wear protective clothing, such as long-sleeved shirts, pants, and wide-brimmed hats; and conduct regular self-examinations for early detection.

There are three major types of skin cancer: basal cell carcinoma, squamous cell carcinoma, and malignant melanoma. Basal cell carcinoma is the most common form. It rarely spreads, but if left untreated, can spread to underlying tissues and destroy them. It usually occurs as a small, shiny, pearly nodule that may ulcerate and crust. Squamous cell carcinoma, although rarely life- threatening, is more dangerous than basal cell carcinoma because it spreads more rapidly. It may begin as a nodule or as a red, scaly, sharply outlined patch. Malignant melanoma is the least common, but most deadly, type of skin cancer. It starts as a small, mole-like growth that increases in size and forms irregular borders. It may change color, ulcerate, or bleed from a slight injury. Melanoma is completely curable in its early stages, but if left untreated, spreads rapidly through the lymph system

Studies at the University of Iowa show that leukemia and lymphoma occur almost 25 percent more frequently in Iowa farmers than in the general population. Agricultural causes of these concerns have not been conclusively identified, but agents of concern include nitrate, pesticides, viruses, antigenic stimulants, and various fuels, oils, and solvents.

CHEMICAL HAZARDS

Many agricultural workers are exposed to chemicals on a daily basis. If they do not observe proper

precautions, illness or even death may ensue. The Environmental Protection Agency estimates that there are close to 10,000 poisonings each year in America. Only about 28 percent of these occur on the job. The majority are the result of home-related poisonings.

Pesticides can enter the body through many routes, but the most common ways are through the skin and by inhaling. To prevent dermal (skin) contact and inhalation of pesticides, applicators should wear personal protective clothing and equipment.

When using diluted pesticides, the applicator should wear chemical-resistant coveralls or an apron. When handling concentrates during mixing and loading, a face shield, unlined rubber gloves and boots, and a lightweight rubber apron should be worn. Boots and aprons should be washed daily with soap and water and dried thoroughly, inside and out, to remove pesticide residues. All clothing worn while handling pesticides should be washed daily, separately from other clothing.

Wear a NIOSH-approved respirator when the chemical label calls for it, and be sure to choose the type that protects specifically against the pesticide you are using. Respirators must fit the face well to ensure a good seal. Long sideburns, beards, or glasses may prevent a good seal

HEAT STRESS

Heat stress occurs when the body builds up more heat than it can handle. High temperatures, high humidity, sunlight, and heavy workloads increase the likelihood of heat stress. Use fans, ventilation systems, and shade whenever possible. A work area sometimes can be shaded by a tarp or canopy. Drink plenty of water before, during, and after work, and consider wearing cooling vests, which are garments with ice or frozen gel inserts.

Allow time to adjust to the heat and workload. People who are used to working in the heat are less likely to suffer heat stress. To become adjusted, do about 2 hours of light work per day in the heat for several days in a row; then, gradually increase the work period and workload for the next several days. An adjustment period of at least 7 days is recommended. If the warm weather occurs gradually, workers may adjust naturally.

Good health has long been acknowledged as one of the most critical elements to quality of life. The health of farm workers is a vital resource to protect. Following recommended precautionary measures to protect your health can go a long way to enhancing your quality of life.

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