

## AGRICULTURAL SAFETY AND HEALTH

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### Abstract

Worldwide some seventy percent of all workers are engaged in agriculture. While there are differences between developed and developing countries, there are similarities as to the hazards faced, and as the developing world uses more farm related chemicals and more equipment hazards seen in the developed countries will be seen more frequently in developing countries. Much of the risk of agricultural work can be diminished by appropriate preventive measures. Key words: agriculture, health, hazard

### Rezumat

Se estimează că aproximativ 70% din populația lumii își desfășoară activitatea în agricultură. În pofida diferențelor dintre țările dezvoltate și țările în curs de dezvoltare, riscurile implicate de acest tip de activitate prezintă similarități. Deși la acest moment chimizarea agriculturii este mai intensă în țările în curs de dezvoltare, se estimează că riscurile implicate de echipamentele folosite în agricultură își vor crește și aici ponderea, de o manieră similară țărilor dezvoltate. Mare parte din riscul activității din agricultură poate fi diminuat prin acțiuni preventive corespunzătoare. Cuvinte cheie: agricultură, sănătate, hazard

### INTRODUCTION:

About seventy percent of the world's workers are engaged in agricultural activities. For many, this may mean bare subsistence farming, or, as in the United States, less than 1.5% of the workforce feeds the rest of the country, with surpluses left over for export. Another characteristic of agricultural employment is that in both developed and developing countries children, often from a very young age, are engaged in agricultural activities. As developing countries utilize more chemicals, and rely

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secțiune (more on mechanization, the patterns of disease on farms will look more and more like the picture in the developed world.

The term "agriculture" as commonly used should correctly refer to four different activities. These include farming (the raising of crops), ranching (the raising of animals), fishing, including the growing field of aquaculture, and logging. The latter two are often not generally thought of as being "agricultural", but in some settings make up the most significant

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economic basis of agricultural activity. -----Sf

other farm chemical exposures, and other health problems such as hearing loss, respiratory disease, and musculoskeletal injuries.

#### HAZARDS OF AGRICULTURAL WORK:

In developed countries the hazards related to agriculture are quite significant and between traditional farming, logging, and fishing often rank as three of the top ten causes of work related death, similar to mining and transportation.

In America the greatest hazard is represented by use of farm machinery, especially tractors. Many deaths and disabling injuries occur with the use of mechanical equipment, and in many cases of disabling injuries there needs to be significant adaptation of equipment to allow farmers to continue to work.

The demographics of farming is noticeable for the wide age range of farmers. In the United States the average age of farmers is around 60 years of age, compared to the average age in the mid-thirties of workers as a whole, and over time the average age of farmers is getting older as they continue to work late into life, often into their eighties, while relatively few young people take up this type of work. As noted above, farming is also characterized by the extensive use of child labor.

Other significant hazards, at least in the United States, are injuries from animals, especially horses and cows, electrocutions, drownings in farm ponds, hazards of pesticide and

Farm animal injuries are significant in some parts of America, and the animal causing most injuries varies from location to location. Horses and cows are among those most frequently causing injury, but pigs and sheep, in some settings, are significant hazards as well.

Electrocutions can take place when farm equipment inadvertently touches high voltage power lines. Drownings are not insignificant either, especially among children, when farm ponds, used for irrigation or watering livestock remain unfenced.

Pesticides and farm chemicals represent a special hazard. Pesticide poisoning can be either acute or chronic, and increasingly there is evidence of long-term health effects such as development of certain forms of cancer (1),(2). In addition to the hazards of pesticides, other farm chemicals pose other risks as well. These include the use of nitrogen based fertilizers that enter into the water supply, and nitrate laden water then being used for food preparation and for making infant formula. Case of lethal methemoglobinemia in infants have resulted from the use of such water.

There are thousands of pesticide formulations, many with high levels of biopersistence and

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toxic effects. As pesticides are introduced into developing countries there is often a lack of education of farmers as to their use, and the thinking often reflects the idea that if a little bit is good, more is better. In reality, lesser amounts have been shown to epitomize crop yields, but, of course, there is no real incentive for companies to sell less.

Another international issue with regard to the use of pesticides is that compounds that are banned for use in some countries, like DDT or dibromo-chloropropane (DBCP) which are banned in America, can still be manufactured and sold by export for the use of others. DBCP was banned in the United States, in large part because of its ability to cause sterility, but continues to be sold, and has caused sterility in Central America and the Philippines (3).

Farm equipment is often quite noisy and hearing loss has been reported in farmers, even among farm youths (4).

Trauma and long-term musculoskeletal problems are associated with farming. Logging carries an especially high risk of injury, often quite severe from using chain saws and other logging equipment.

Respiratory problems can be both acute and chronic. The relatively new technique of hay bailing, which leaves large bales sitting outdoors instead of being

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stored in barns, leads to a significant increase in the development of mold. This, in turn, has caused asthma rates among farmers using this technique to increase from the handling of such contaminated material. A more chronic form of lung disease can develop from farmers entering closed

silos where the stored crops will cause oxides of nitrogen to be produced, and farmers entering such silos can develop either an acute response to silo gas, or over time develop pulmonary fibrosis which is often not appreciated until late in life when farmers, who often avoid medical care for years, have a chest X-ray taken.

#### PREVENTIVE MEASURES IN AGRICULTURE:

Given the range of hazards related to agricultural activities, there are a range of preventive measures that can be taken to protect agricultural workers. Perhaps the most critical are those related to agricultural chemicals.

With regard to hazardous chemicals, there should be greater uniformity on the banning of such compounds on a uniform basis worldwide. If deemed too hazardous for some, it should be off limits to all. Secondly, there should be greater efforts to properly educate all workers in their own language, or verbally if illiterate, on the hazards of mixing and using hazardous

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materials. More attention should be given to not fouling communal water supplies, especially considering how scarce fresh water is in so many places with about 2 billion of the world's inhabitants having no regular access to clean water on a daily basis. Environmental contamination through chemical run-off needs to be better controlled as well.

With regard to machinery related injuries, more educational efforts are needed, as well as engineering controls such as rollbars and cut-off switches when servicing equipment.

With regard to children, more attention should be paid to age appropriate activities, such as not allowing children as young as five or six to operate tractors alone. Other special groups can be studied as well (5).

### CONCLUSION:

While it is necessary to have agricultural activities since humans need to eat, it is not necessary that the production of food and fiber products should put so many at risks for their health and wellbeing. There is no question that the documented hazards of agricultural activity can be ameliorated through safer equipment, less hazardous chemicals,

and better education of those engaged in agricultural pursuits.

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