

Pesticide Safety and Prevention for Farmers

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Farming ranks as one of the most dangerous occupations with many chemical related and non-chemical hazards. Non-chemical hazards involve potential physical, biological, and psychological threats to the health and safety of farmers. These include farm machinery and motor vehicle related hazards; noise, extreme temperatures, repetitive motion and vibration; electricity, hand and power tool hazards, animal odors, dust, gases, and infectious

agents. In addition, many farmers hold non-farm jobs; thus farm-related injuries and illnesses can be costly in terms of lost work time, medical and life insurance.

Although non-chemical hazards constitute the single largest source of fatal injuries in farming (National Institute of Occupational Safety and Health - NIOSH 2009), exposure to agricultural chemicals constitute the single most unreported and hidden source of injury to farmers today, especially limited resource farmers and their workers. Over 1.1 billion pounds of pesticides are used in the US each year for weed, pest and disease control, improving crop quality, and increasing yield. This fact sheet will provide a better understanding of farm-related hazards in Kentucky (especially chemical hazards) and strategies for reducing them.

Why are chemical hazards (especially pesticides) the single most unreported and hidden source of injury to farmers?

Ease of exposure: Persons using pesticides are potentially exposed to concentrates while mixing sprays, or to drift while making applications. It is critical to use all of the personal protective equipment (PPE) listed on the pesticide labelling. Pesticides may also be carried by wind, rivers, streams, rain water and fog far from the site of application, potentially affecting our environment and our health. Farm workers are exposed to pesticides through the nose and eyes (breathing or inhaling spray drifts), hand/mouth (contaminated food and drinking water), and skin (work clothes). In addition, tobacco farm workers are exposed to nicotine especially from dried (or cured) tobacco.



What are some health effects of pesticides?

Acute Health Effects: These include nausea, dizziness, vomiting, headaches, abdominal pain, skin and eye problems, respiratory failure, shock or even death.

Chronic Health Effects: These pose a passive, long-term threat to health and safety of farmers and their workers, the environment and wildlife, including respiratory, neurologic, genetic, teratogenic, immune-toxic, estrogenic, depression, reproductive and memory problems.

Our research with farm worker who work in tobacco fields has shown that exposure to pesticides produces changes in the blood that could increase the chances of illness after a lifetime of work in fields. We also learned that most workers take very little care when spraying or working pesticides and other agricultural chemicals (Panemangalore et al. 2006).

How can farmers reduce exposure while working with pesticides?

- a) Compliance with the Federal Insecticide, Fungicide and Rodenticide Act (FRIFA) and the Kentucky Fertilizer and Pesticide Storage, Pesticide Use and Application Act (KRS217b) of 1966, which provide for federal and state control of agricultural chemical and pesticide distribution, sale and use.
- b) Compliance with EPA's Worker Protection Standard (WPS, US EPA 2005) which provide for Pesticide Safety Training (licensing and certification), notification for pesticide

- applications, use of personal protection equipment (PPE), restricted entry interval after application, among other requirements.
- c) Avoid spills, sprays, splashes, and dusts during pesticide application.
- d) Wear the Personal Protection Equipment (PPE) listed on the manufacturer's label when mixing or loading pesticides, applying pesticides, cleaning or repairing equipment, or cleaning up pesticide spills.
- e) Avoid breathing, swallowing or getting pesticides into skin, cuts or eyes.
- f) Wash hands, face, and other exposed body parts thoroughly with soap and water.
- g) Do not carry tobacco and food, and eat or drink where you work.
- h) Read pesticide labels (including first aid directions) and respective Safety Data Sheets before working with pesticides.
- i) Avoid transporting chemicals in passenger vehicles except in trunks or back of trucks. Tie or secure containers to avoid spills.
- j) Make sure pesticide containers are stored tightly and upright in separate storage rooms or cabinets under lock and key.
- k) Use the right PPE when cleaning spills. Practice the 3 C's of spill management – Control the Spill (stop the release by plugging it), Contain the spill (keep the solution from spreading), and Clean up the spill (using absorbent material).
- l) Rinse pesticide containers properly (3 times); dispose left over pesticides and containers as directed; do not use empty containers for any other purpose.





- m) Check functioning of equipment prior to use; Check area for human and animals within the application zone.
- n) Keep and wash clothing exposed to pesticides separate from family clothes; clean washer after use; dry outside.
- o) Do not allow children in sprayed fields.
- p) Eat a well-balanced diet with more fruits and vegetables
- q) In case of emergency, stop and leave source of exposure; contact poison center (1-800-222-1222) or hospital ER. Bring a copy of the label and Safety Data Sheet.

References

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