



Dermal exposure is the most common type of pesticide exposure and typically occurs on the hands and forearms.

Limiting pesticide exposure

By Ajia Paolillo

When we are caught up in the everyday routine of our jobs, it can be easy to forget some essential safety precautions that all agricultural employees should be taking. All agricultural employees could be exposed to pesticides while working in a grove. Proper training is essential to ensure employees understand the risks associated with their jobs and know how to identify hazardous situations. By understanding and identifying safety hazards, employees will be equipped to limit pesticide exposure and potential harm to themselves and others.

WORKER PROTECTION STANDARD

The Worker Protection Standard (WPS) is a federal requirement for all agricultural pesticide handlers and workers. The provisions under this

rule are listed in the “Agricultural Use Requirements” box found on all pesticide labels.

The purpose of the WPS is to minimize potential pesticide exposure for handlers and workers.

A handler is defined as someone who mixes, loads and applies pesticides. People can also be considered handlers if they serve as a flagger for a pesticide application, transport open pesticide containers or work on application equipment containing pesticide residues.

A worker is defined as an employee at an agricultural establishment who does not handle or apply pesticides or perform other handler duties. An example of a worker would be someone responsible for pruning trees or maintaining irrigation lines. Workers can still be exposed to pesticides from residue on plants or equipment and other sources such as spray or vapor drift.

Annual training for workers and handlers is required for agricultural employers to comply with the WPS. Topics discussed in the WPS training are personal protective equipment (PPE), restricted entry intervals, early-entry workers, pesticide poisoning and the agricultural exclusion zone. This training can be done on site by the employer or through a third party such as the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Extension Service using training materials approved by the Environmental Protection Agency.

Certified pesticide applicators that hold a current restricted-use pesticide license are exempt from the annual training requirement but must follow the guidelines of the WPS. The annual training is still beneficial and can serve as a good safety reminder for pesticide handlers, even if they are certified applicators. New employees are

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required to have training before beginning their job duties.

ROUTES OF ENTRY

Pesticide handlers, applicators and agricultural workers can be exposed to pesticides and residues in the grove. Pesticide handlers have a greater risk of being exposed to concentrated pesticides through mixing and loading procedures. The pesticide label has instructions for first aid and how to minimize exposure.

Pesticide exposure could result in acute or fast-acting injuries and illness or be expressed as chronic, delayed reactions and illness. Pesticide poisoning symptoms can also mimic heat-related illness and result in allergic reactions and sensitivity to the pesticide. There are four routes of entry (dermal, oral, ocular and inhalation) in which pesticides can enter the body and potentially cause harmful effects.



Dermal

Dermal exposure occurs when pesticides encounter the skin through spray droplets, splashes and spills. Dermal exposure is the most common type of pesticide exposure and typically occurs on the hands and forearms. It is primarily due to mixing and loading procedures and when working on contaminated equipment.

If you get pesticide on your skin, immediately wash the area with soap and clean water. Do not scrub hard or use harsh abrasive materials, as this will cause open wounds on your skin. The toxicity level of the pesticide, the amount that contacted your skin and how prolonged the exposure lasted determines the severity of dermal pesticide poisoning. The exposure can result in rashes and even burning and blistering depending on the pesticide.

Pesticide formulations such as emulsifiable concentrates can be easily absorbed into the skin because of the oil-based solvent used as the carrier.

PPE such as chemical-resistant suits, aprons, gloves and footwear can protect the user from dermal exposure.



Oral

Oral exposure typically happens when pesticides are ingested due to negligent actions. Children and adults can mistakenly ingest pesticides, believing they are safe drinks, especially when improperly stored in drink containers. For this reason, pesticides should only be stored in their original containers and not transferred into old drinking bottles or other containers used for food or drink.

Oral exposure can also occur from pesticide residues found on hands. Always wash your hands thoroughly before eating, drinking or using tobacco products. Read the pesticide label for first aid instructions and seek medical attention immediately if pesticides are ingested. Never induce vomiting or consume liquids or charcoal unless the instructions say to.



Ocular

Ocular exposure is when pesticides enter the body through the eyes. Eyes have membranes that allow pesticides to easily get into the bloodstream. Proper eye protection will help minimize this exposure during pesticide handling activities. If a pesticide requires eye protection during the application, you are required by the WPS to carry at least one pint of water on your person for emergency washing if needed.

If you get pesticide in your eyes, use clean water to gently flush the eye for 15 minutes. When rinsing the exposed eye, be sure that you tilt your head, so you do not expose the other eye to the contaminated wash water.



Inhalation

Inhalation exposure occurs when pesticide droplets, particles or vapors are inhaled through the mouth or nose. This exposure can happen during handling and application. Some formulations have more potential for inhalation exposure than others. Formulations such as dusts with very small particles can be carried into the air during use and pose an inhalation risk. Vapors released when pesticides volatilize can then be inhaled during and after application.

Respirators are critical pieces of PPE that protect you from inhalation exposure. Read the pesticide label to ensure you use the appropriate respirator for the product you are handling and applying. Respirators come in many different forms and provide varying levels of protection for the user.

If inhalation exposure has occurred, move to an area with clean air away from the pesticide. Loosen clothing to make breathing easier and seek medical attention.

SUMMARY

Pesticide exposure and poisoning can occur quickly and sometimes even go unnoticed for some time. Employees should receive appropriate training annually to ensure they understand proper safety procedures as a handler or a worker. Employers must provide this training and ensure the regulations are followed to comply with the WPS requirement. These regulations cover the proper use of PPE, decontamination equipment and supplies, and ways to mitigate pesticide exposure. By identifying routes of entry and vulnerable situations for exposure, agricultural employees can help keep themselves and others safe while using pesticides. 🍊

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