

Safe Application Of Pesticides And Herbicides



How Might I Be Exposed To Pesticides And Herbicides On The Job?

Exposures to pesticides and herbicides are very common especially for applicators who use these chemicals on a daily basis. Pesticide exposure on the job can happen for many different reasons. Lack of knowledge of personal protective equipment (PPE), improper laundering of work clothes, or simply not washing up after application, may all contribute to exposures on the job. This fact sheet provides you with answers to some commonly asked questions about how exposure to pesticides and herbicides may affect your health, and what you can do to reduce your risk of exposure.



Routes Of Exposure To Pesticides And Herbicides

A person has to come into direct contact with pesticides and herbicides before injury and illness can occur. The three main entry routes for these compounds into the body are dermal, (exposure through the skin or eyes), respiratory (inhalation into the lungs), and oral (ingestion by mouth).

Dermal: Absorption is a common route of pesticide exposure for the applicator. Contact with the concentrated product during mixing and loading presents the greatest risk for exposure. The level of absorption depends on the properties of the pesticide, its formulation, and parts of the body exposed. The hands and forearms are the most common sites of pesticide accumulation during pesticide use, and unwashed hands cross-contaminate other parts of the body. Eyes are extremely absorptive, and eye injury can occur when pesticides or herbicides are accidentally splashed or sprayed on the face.

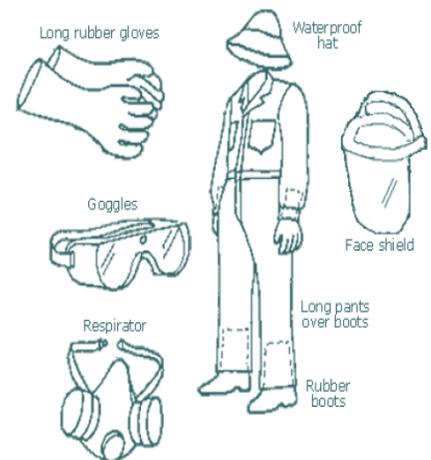
Respiratory: Exposures by inhalation can occur during the mixing of wettable powders, dusts, or granules. Poisoning can also occur while fumigating or spraying without a self-contained breathing apparatus or a proper respirator in an enclosed or poorly ventilated area. Larger inhaled particles tend to stay on the surface of the throat and nasal passages and do not enter the lungs. Smaller particles directly enter the lungs. The number of particles needed to poison by inhalation depends upon the concentration of the chemical in the particles. Once chemicals are inhaled into the lungs, a fast route of entry is provided into the bloodstream.

Oral: Avoid eating, drinking, or smoking prior to washing your hands, as oral exposure in the occupational setting is most often the result of the ingestion of pesticide and herbicide residues from the hands into the mouth. In addition, keep pesticides and herbicides in their original containers; never transfer them into food or drink containers. Ingested materials can be absorbed anywhere along the gastrointestinal tract; the major absorption site is in the small intestines, and once absorbed they circulate throughout the body.



Protect Yourself From Herbicides And Pesticides With PPE!

Personal protective equipment (PPE) is your first line defense against potential exposures to pesticides and herbicides. The types of PPE required vary according to the toxicity and physical form of the chemical. Always read the pesticide label for complete instructions and specific requirements relating to PPE. Remember, the PPE listed **IS NOT A SUGGESTION**, it is the minimum amount of PPE that must be worn. Mixing concentrated pesticides most often requires more PPE, because you are working with concentrated pesticide chemicals. Once you obtain the proper PPE, seek appropriate training for you and your staff to assure that you are using the equipment in the recommended way. This includes fit testing for respirators. In addition when choosing a respirator to use, identify your chemical, as not all respirators are created equally. Use a “R” or a “P” series filter when working with an oil-based chemical, and remember the higher the efficiency of the filter, the more protection you will receive. “N” series particulate filters can only be used when working with chemicals that are not oil-based. Be sure to visit the Occupational Safety and Health Administration’s website at www.OSHA.gov for safety requirements and relevant training



TIP: Remember to always calibrate liquid hand pump and backpack sprayers. Proper calibration reduces over application of pesticides and herbicides.



Guidelines For Handling Pesticide Contaminated Clothing

During application, pesticides and herbicides may settle on you and your clothing, where they can be carried into your vehicle and your home. Assume clothing that has been used while working with pesticides or herbicides has been contaminated. **Always remove your contaminated clothing and gear prior to leaving the application site;** and place it in a plastic garbage bag for laundering. Wash clothing separately from the rest of the family's clothing; this prevents any possibility of cross-contamination. It is best to presoak contaminated clothing in hot water containing a heavy-duty liquid detergent. Start the cycle after the prewash water has been drained. It is important to clean the washing machine after the wash cycle by running a complete cycle of water and detergent through it. In addition, boots, gloves, goggles, and other protective equipment used on application sites, should be adequately cleaned prior to leaving the site, and stored in a non-living area of the office or home.



What Are The Health Effects Of Pesticides And Herbicides Exposure?

Human health risks from pesticides and herbicides may be caused by acute (short term) or chronic (long term) exposures. Acute effects of exposure to pesticides and herbicides are most often the result of misuse, including application inconsistent with the product labeling. Symptoms of acute exposure include skin rash, headache, dizziness, muscle pain, stomach cramps, nausea and vomiting, and breathing difficulties. If you experience any of these symptoms while working with these chemicals, **seek medical attention immediately.** Chronic effects of pesticide and herbicide exposure can include immune system suppression, birth defects, cancer, and neurotoxicity. If you work regularly with pesticides be sure to consult with your physician, to discuss additional ways to prevent possible exposure, and to be aware of any signs or symptoms of pesticide exposure. In addition, if you work with organophosphate-type pesticides, you should discuss the possibility of a baseline acetylcholine esterase blood test with your physician.





Where Can I Find More Information?

For more information about safe pesticide and herbicide use, please visit the following websites:

Fact Sheet: Pesticides and Personal Safety, Purdue Pesticide Program, Purdue University Cooperative Extension Service

<http://www.btny.purdue.edu/pubs/ppp/ppp20.html>

Toxicity of Pesticides, Pesticide Applicator Core Tutorial

<http://pmep.cce.cornell.edu>

National Safety Council, What is a Pesticide?

<http://www.nsc.org/issues/poison/pesticide.htm>

For Pesticide Poisoning Management, please visit:

Environmental Protection Agency, Recognition and Management of Pesticide Poisonings

<http://www.epa.gov>

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Who Can I Call?

Connecticut Department of Public Health

Environmental and Occupational Health Assessment Program
410 Capitol Avenue, MS# 11OSP
PO Box 340308
Hartford, CT 06134-0308
(860) 509-7744
<http://www.ct.gov/dph>

Connecticut Poison Control Center

263 Farmington Avenue
Farmington, CT 06030-5365

For a poison Emergency:

1-800-222-1222.

Hearing Impaired:

1-866-218-5372.

General Information:

860-679-3531

Connecticut Department of Environmental Protection

79 Elm Street
Hartford, CT 06106-5127
(860) 424-3000

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