

Personal Protective Equipment

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If you're like most of us, you've always had a natural aversion to the notion of wearing personal protective equipment (PPE). Some applicators doubt the importance of PPE, with the idea "that pesticides pose no real threat to me, so why should I worry about it?" Certainly, most applicators are bothered by the lack of comfort that PPE can impart, especially when it's hot in the summer months.

However, in addition to the issue of comfort and styling, there's the law to deal with. The applicator is legally responsible to follow all guidelines for personal protective clothing and equipment listed on the chemical label. Over the past decade, these requirements have become stricter with the implementation of the federal Worker Protection Standards.



Proper PPE is a good investment, especially when working with volatile products.

Photos by Clyde Ogg, UNL.

Protection factors

There are three factors that dictate the type of protection needed:

1. The potential route of exposure to the body—There are three means of entry: oral, dermal and inhalation/lungs. Keep these in mind when choosing which PPE to wear and use.
2. Toxicity of the pesticide—Some pest control agents are inherently more toxic than others. Products bearing the “Danger” or “Warning” caution ratings usually call for additional PPE use in combination with the basic materials.
3. Type of formulation (liquids, granules, powders)—The formulation of the product often determines the need for PPE. Liquids and granules often call for the use of rubberized materials. Powder or dust formulations pose an inherent risk of pesticide inhalation, so a mask/filter apparatus is commonly recommended by the manufacturer.

Most common necessary PPE

Typically, eye and skin exposure is the most common when applying or handling (loading, reorganizing, reading labels, etc.) pesticides. It is also the easiest route of entry to prevent.

For skin exposure, start with gloves, rubber boots and long sleeves/long pants. Chemical-resistant gloves that cover the hand and forearm provide good protection. Unlined gloves made of nitrile, neoprene or butyl rubber are excellent choices. Quality gloves are not expensive, and, depending on the frequency of use, manufacturer and product choice, gloves may last up to a month.



Disposable and regular rubber gloves.

Appropriate footwear is commonly overlooked when applying or handling pesticides. Boots can be a good tool to either prevent or promote pesticide poisoning. Leather boots can easily absorb pesticide products, and the harm can be initial and long term. If a liquid product is spilled on leather boots, it's possible for the pesticide to be absorbed as it soaks through the boot. If this occurs, immediately consult the pesticide label for information on how to reduce harm to your body. Better yet, read the label before mixing or applying the pesticide so that this information is already known and you can act immediately.

Chronic or long-term pesticide poisoning may result from small amounts of product that are absorbed with each application. These are likely to be retained in the leather, creating an unacceptable risk to the applicator. Chemical-resistant boots or shoe coverings should be worn. Use the pesticide label as a guide when choosing footwear.

Covering for leg and arm skin is important as well. Long-sleeved shirts and pants do a good job of preventing exposure if the pesticide product is applied according to label directions.

For eye protection, consider the wide array of choices for goggles. Most are designed to fit over eyeglasses, and some have shielded vents that allow for reduced fogging and heat buildup. All are designed to prevent splash and particle drift during application. Eyewear is important, as in many application scenarios the product mist is quite fine and may be unnoticeable to the applicator.



Quality eyewear is a good protective device, especially when mixing.

In addition for specifics on rates, water pH, reentry time, need for surfactants and compatibility with other pest control agents, additional PPE may be called for. Read the pesticide label thoroughly before using any pesticide product to obtain this and other valuable information.

Laundering pants and shirts

Proper laundering of pesticide-contaminated clothing is essential for applicator safety. The first consideration is to deem any clothing worn while at work as contaminated and in need of washing. It's important to always wash pesticide-contaminated clothing immediately after use (don't let it lay in a heap for a week or leave it in your hamper), and be sure to separate it from other laundry. Start by prerinsing. Research at several land grant universities has indicated that using hot water, heavy-duty liquid detergents and the maximum water level for the washing machine are most effective at removing pesticide residues from clothing.

Just as with rinsing spray tanks and backpack sprayers, removing possible residues from the washing machine is important. When the washing cycle is completed, run the washer through a complete cycle with detergent and hot water without any clothing to clean the machine.

Mixing

During mixing operations, the use of a face shield and rubber apron is essential. As mentioned earlier, think about what parts of the body these pieces of protective equipment cover.



It's important to use a heavy-duty rubber suit or apron when mixing products.

In addition, when mixing, you are working with a more concentrated version of the pesticide than when applying it. As a result, the risk is dramatically increased. Finally, not only are they important, these parts of your body are the most absorptive.

Hygiene

Good personal hygiene while working with pesticides is important. This includes hand washing, avoiding smoking and wearing clean clothes. Also, it's a good idea to frequently change hats. Pesticides are commonly transferred from shirt sleeves to the forehead when wiping sweat in hot weather. Consider the use of a handkerchief instead, keeping in mind that care must be taken when removing gloves to use it. Whenever you touch your mouth, nose or eyes, a small chance of placing a pesticide where it's not wanted exists.

Applicators can reduce potential risks associated with mixing, application and handling of pesticide products by using the proper protective clothing and equipment, as well as through proper washing of pesticide contaminated clothing. If an applicator suspects that they have been overly exposed to a pesticide, be aware of the signs and symptoms of pesticide poisoning and take appropriate medical action.

John Fech is an extension educator specializing in turf and ornamentals at the University of Nebraska-Lincoln.