PI-119

UF UNIVERSITY of FLORIDA
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Worker Protection Standard: Personal Protective Equipment (PPE)[1]

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The Worker Protection Standard (WPS) is a Federal regulation designed to protect agricultural workers (people involved in the production of agricultural plants) and pesticide handlers (people mixing, loading, or applying pesticides or doing other tasks involving direct contact with pesticides). It has been in full implementation since 1995. A complete reference for the WPS is provided by: How to Comply with the Worker Protection Standard for Agricultural Pesticides: What Employers Need to Know. http://www.epa.gov/agriculture/epa-735-b-05-002.pdf.

Basic responsibilities

Employers must make sure that pesticide handlers:

- Are provided with the Personal Protective Equipment (PPE) the pesticide labeling requires for the task;
- Wear the PPE for the entire handling task; and
- Use the PPE correctly.

Each pesticide handler is responsible for wearing the required PPE during the entire handling task (Figure 1). Employers must also:

- Provide handlers with the appropriate PPE in clean and operating condition.
- Make sure that the handlers wear the PPE correctly and use it according to the manufacturers instructions. If a handler wears a respirator, make sure that it fits the wearer correctly.
- Inspect all PPE before each day of use for leaks, holes, tears, or worn places, and repair or discard any damaged equipment.
- Provide handlers with clean places away from pesticide storage and pesticide use areas to:
  - Store personal clothing not in use,
  - Put on PPE at the start of any exposure period,

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- Take off PPE at the end of any exposure period (Figure 2).

- Take any necessary steps to prevent heat illness (too much heat stress) while PPE is being worn.

- Not allow any handler to wear home or take home PPE contaminated with pesticides.

Figure 1. The pesticide handler is responsible for wearing the required PPE.

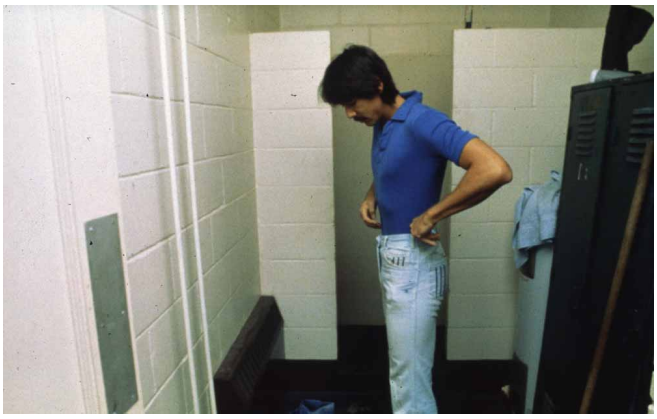

Figure 2. Handlers must be provided an area to change in and out of PPE.

Cleaning and maintaining PPE

Employers must:

- Keep pesticide-contaminated PPE away from other clothing or laundry, and wash it separately.

- If PPE will be reused, clean it before each day of reuse according to the instructions from the PPE manufacturer unless the pesticide labeling specifies other requirements. If there are no such instructions or requirements, wash PPE thoroughly in detergent and hot water (Figure 3).

- Thoroughly dry the clean PPE before it is stored, or put it in a well-ventilated place to dry.

- Store clean PPE separately from personal clothing and away from pesticide-contaminated areas.

Figure 3. PPE should be cleaned in hot water with detergent.

Replacing respirator filters, cartridges, or canisters

Employees must:

- Replace dust/mist respirator filters:

  - When breathing resistance becomes excessive;

  - If the filter is damaged or torn;

  - Whenever the respirator manufacturer or pesticide labeling says to replace them (if the instructions differ, change the filter at the shorter interval);

  - At the end of each days work period, if no other instructions or indications of service life are available.

- Replace gas- or vapor-removing respirator cartridges or canisters:
  - At the first indication of odor, taste, or irritation;
  - When the respirator manufacturer or pesticide labeling says to replace them (if instructions differ, change the cartridge or canisters at the shorter interval);
  - At the end of each days work period, if no other instructions or indications of service life are available.

Disposal of PPE

Employers must:

- Discard coveralls or other absorbent materials that have been drenched or heavily contaminated with an undiluted pesticide that has the signal "DANGER" or "WARNING" on the labeling. They must not be reused. For more information on signal words, refer to UF/IFAS EDIS Document PI-100, Pesticide Labeling: Signal Words http://edis.ifas.ufl.edu/PI137.

Instructions for persons who clean PPE

Employers must inform people who clean or launder PPE:

- That the PPE may be contaminated with pesticides;
- Of the potentially harmful effects of exposure to pesticides;
- How to protect themselves when handling contaminated PPE; and
- That PPE should be cleaned according to label directions. If there are no specific directions, then PPE should be cleaned in hot water with detergent.

PPE definitions

Personal protective equipment: apparel and devices worn to protect the body from contact with pesticides or pesticide residues, including: coveralls, chemical resistant suits, gloves, footwear, aprons, headgear, protective eyewear, and respirators. For additional information on PPE, see UF/IFAS EDIS Document PI-28, Pesticide Applicator Update: Choosing Suitable Personal Protective Equipment http://edis.ifas.ufl.edu/PI061.

Chemical-resistant: allows no measurable amount of the pesticide being used to move through the material during use.

Waterproof: allows no measurable movement of water (or water-based solutions) through the material during use.

Chemical-resistant footwear: chemical-resistant shoes; chemical-resistant boots (Figure 4); or chemical-resistant shoe coverings worn over shoes or boots. Leather boots may be worn in rough terrain, if chemical-resistant with sufficient durability and a tread appropriate for wear in such terrain is not obtainable.

Figure 4. Chemical-resistant boots.

Protective eyewear: goggles, a face shield, or safety glasses with front, brow, and temple protection (Figure 5). A full respirator may be worn instead of protective eyewear.

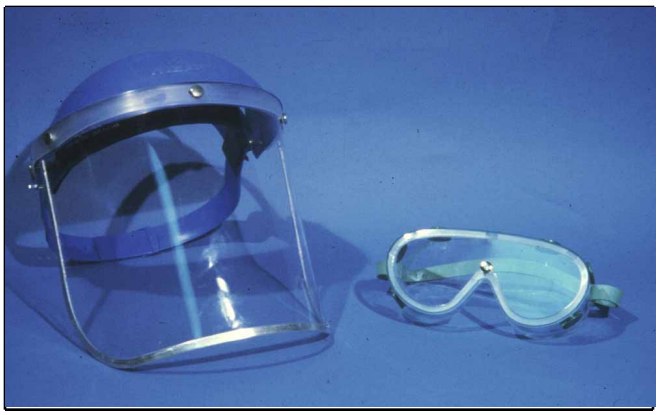

Figure 5. Protective eyewear.

Chemical-resistant suit: a loose-fitting, one- or two-piece garment that covers, at a minimum, the entire body except head, hands, and feet (Figure 6).

Figure 6. Chemical-resistant suit.

Coverall: a loose-fitting one- or two-piece garment that covers, at a minimum, the entire body except head, hands, and feet. Coveralls are made of fabric such as cotton or a cotton-polyester blend, and are not chemical-resistant. The pesticide labeling may specify that the coveralls be worn over a layer of clothing. A chemical resistant suit may be worn instead of coveralls and any required inner layer of clothing.

Chemical-resistant apron: an apron that is made of chemical-resistant material and that covers the front of the body from mid-chest to the knees (Figure 7). If a chemical-resistant suit is worn, no apron is required.

Figure 7. Chemical-resistant apron.

Respirator: a device that protects the respiratory system (Figure 8). It must be the type listed on the pesticide label (or one that is more protective) and must be appropriate for the pesticide product being used and for the activity being performed (Figure 8). A respirator with a canister approved for pesticides or with an organic-vapor cartridge equipped with a pesticide prefilter may be worn instead of a dust/mist filtering respirator. For more information regarding respirators, see UF/IFAS EDIS Document PI-77, Respirators for Pesticide Applications http://edis.ifas.ufl.edu/PI114.

Figure 8. The respirator used should be the type listed on the label.

Chemical-resistant headgear: a chemical-resistant hood or a chemical-resistant hat with a wide brim (Figure 9).

Figure 9. Chemical-resistant hat with a wide brim.

Gloves: hand-coverings that are the type listed on the pesticide label. For detailed information on suitable gloves available for handling pesticides, refer to UF/IFAS EDIS Document PI-120 Glove Selection for Working with Pesticides http://edis.ifas.ufl.edu/PI157.

- Gloves made of leather, cotton, or other absorbent materials must not be worn for handling or early entry activities unless these materials are listed on the pesticide labeling as acceptable for such use.
- Chemical-resistant gloves with non-separable absorbent lining materials must not be worn for handling or early entry activities (Figure 10). Absorbent materials hold pesticides and may cause dermal exposure. A chemical-resistance chart is provided in UF/IFAS EDIS Document PI-28, Pesticide Applicator Update: Choosing Suitable Personal Protective Equipment http://edis.ifas.ufl.edu/PI061. The document provides reference to materials that are approved for working with pesticides.
- Leather gloves may be worn over chemical-resistant liners, if chemical-resistant gloves with sufficient durability and suppleness are not obtainable. However, after leather gloves have been worn for protection from pesticide exposure, they may only be worn with chemical-resistant liners and may not be worn for any other use.

Figure 10.a

Figure 10.b

Figure 10. Chemical-resistant gloves come in a variety of materials and styles.

Separable glove liners: separable glove liners are separate glove-like hand coverings, made of lightweight material, with or without fingers.

- Work gloves made from lightweight cotton on poly-type material are considered to be glove liners, if worn beneath chemical-resistant gloves.
- Unless the pesticide product labeling specifically prohibits their use, separable glove liners may be worn beneath chemical-resistant gloves, provided the liners do not extend outside the chemical-resistant gloves that are worn over them.

- Once used for handling or early entry activities, separable glove liners must be discarded immediately after a total of 10 hours of use or within 24 hours of first use, whichever occurs first. The liners must be replaced immediately if they come into direct contact with pesticides. Pesticide-contaminated liners must be disposed of in accordance with any Federal, State, or local regulations.

Additional information

Dean, T.W. 2003. Pesticide Applicator Update: Choosing Suitable Personal Protective Equipment. UF/IFAS EDIS Document PI-28. http://edis.ifas.ufl.edu/PI061.

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How to Comply with the Worker Protection Standard for Agricultural Pesticides: What Employers Need to Know. United States Environmental Protection Agency. Revised 2005. http://www.epa.gov/agriculture/epa-735-b-05-002.pdf