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Choosing Clothing for Pesticide Safety

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CHOOSING CLOTHING FOR PESTICIDE SAFETY¹

Pesticide use is a common part of agricultural production. While using pesticides can increase crop yields, there is also a potential for health-related problems.

Pesticides can enter the body by being swallowed, breathed into the lungs, and/or absorbed through the skin. Research² has shown that the greatest amount of pesticide enters the body by absorption through the skin. Therefore, protective clothing and equipment can provide an added margin of

safety for the pesticide user. The more the body is covered, the less area exposed directly to pesticides. Also, the more layers of clothing, the further the pesticide must travel to reach the skin.

Clothing can offer different levels of protection. No one garment offers complete protection for all situations. The type of protective clothing system adopted depends on the toxicity and formulation of the pesticide being used, body absorption of

the pesticide, time of the exposure, worker safety habits, and comfort, washability, and availability of clothing and equipment. The pesticide container label and safety fact sheet provide a great deal of information about specific safety precautions for each chemical.

The following information can help you determine the best combination of clothing and equipment to use when applying pesticides and other agricultural chemicals.

FACTORS INFLUENCING THE CHOICE OF A PROTECTIVE CLOTHING SYSTEM

TOXICITY Pesticide labels and information sheets indicate the chemical's toxicity with the following "signal" words:
 DANGER — highly toxic
 WARNING — moderately toxic
 CAUTION — slightly toxic

ROUTE OF ENTRY Label information suggesting specific action to be taken when handling the chemical, such as wearing goggles for eye protection.

FORMULATION Concentrated liquids are more dangerous than diluted liquids. Field strength liquids, wettable powders, and granules may also soil clothing.

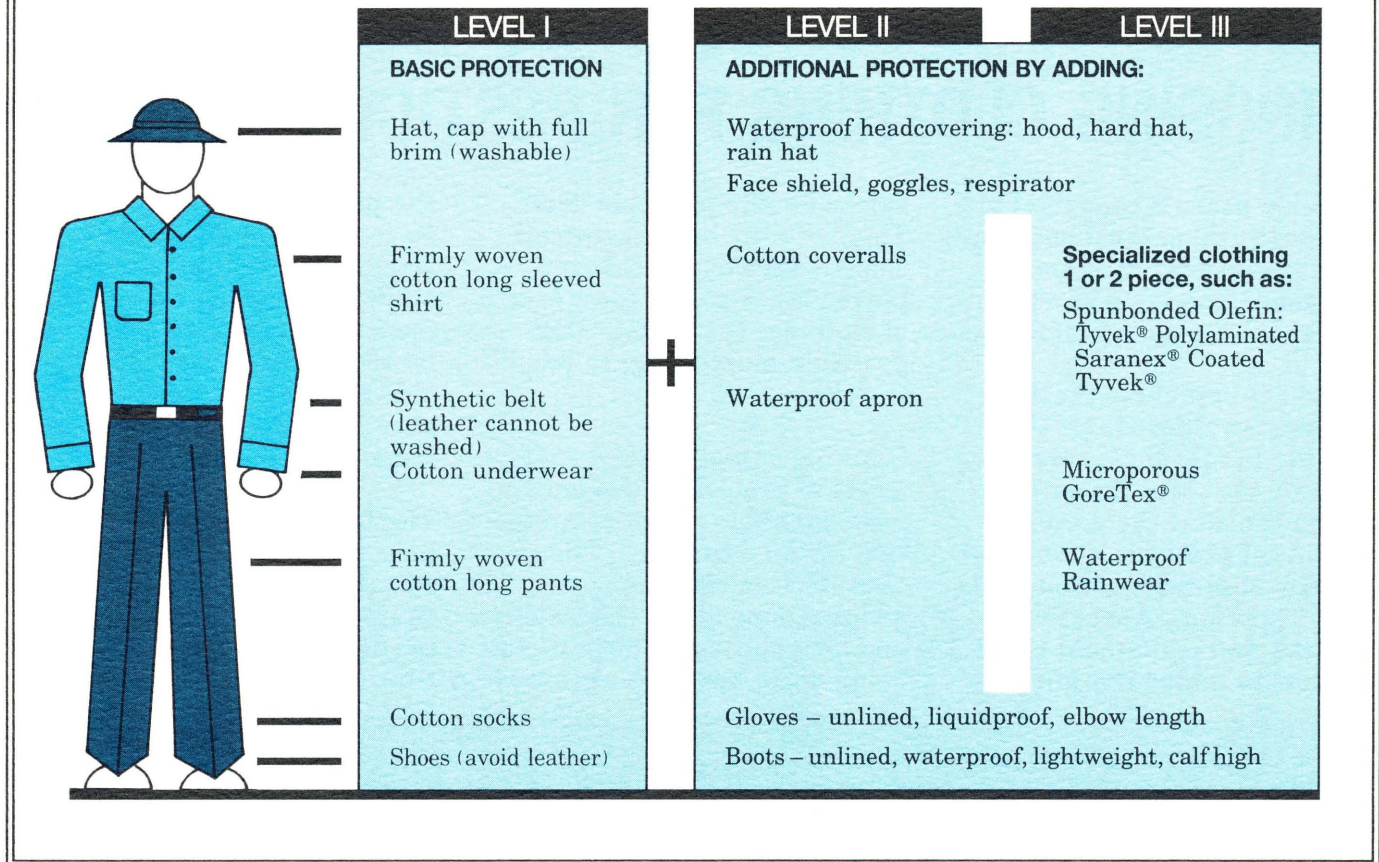
HANDLING More protection is required when:
 Mixing and loading, especially concentrates.
 Spraying, especially when drift lands on the body.
 Exposure lasting for long periods of time.
 First day reentry in a treated field or orchard.
 Cleaning equipment.

PERSONAL HABITS Use care when handling food around pesticides. Food carried in pockets may become contaminated with pesticides. Wash hands before eating, smoking or using oral tobacco, or going to the bathroom. Be aware of the risks associated with any agricultural chemical or pesticide.

¹Lois C. Shern and Ann C. Slocum, Human Environment and Design. Larry Olsen, State Pesticide Coordinator, Michigan State University, East Lansing, MI 48824-1323.

²Wolfe, H.R. (1973, April). Workers should be protected from pesticide exposure. *Weeds Trees and Turf*, pp. 12, 36-7, 52-3.

CHOOSING A PROTECTIVE CLOTHING SYSTEM BASED ON EVALUATION OF NEEDS



Level I

Minimum protection can be provided by covering as much of the body as possible with regular work clothing — a long sleeved shirt, long pants, hat, and socks. Increasing layers of clothing, wearing an undershirt and shorts, adds more protection. 100% cotton is a better choice than synthetic fibers of equal weight. Liquids tend to be absorbed by the cotton fibers rather than passing through the fabric to the skin.

Avoid leather shoes, watch bands, and hat bands. Leather absorbs pesticides and cannot be decontaminated.

Waterproof boots offer good protection.

Level II

Wearing 100% cotton coveralls over regular work clothing provides greater protection than regular work clothing alone. Studies in Florida have shown that cotton coveralls are wearable in hot temperatures.

A chemical resistant lab apron for mixing and loading adds additional protection against accidental spills. Since absorption of pesticides is so complete in the scrotum, the crotch area should be well protected.

A hard hat, hood, or wide-brimmed, rain hat should be worn when spray drift can land on the head.

Moisture-free, chemical resistant gloves can reduce exposure to pesticides. They should always be worn when mixing and loading, handling concentrates, and cleaning equipment. **KEEP GLOVES CLEAN.** Some studies have shown that when the inside of gloves are contaminated, absorption of pesticides can be increased.

Level III

Specialized clothing may be needed when handling liquid concentrates and highly toxic materials, or when clothing can become wet from spray drift.

Spunbonded garments such as Tyvek® provide good protection against dry pesticides and are disposable. However, they are uncomfortable to wear in hot weather.

Poly laminated Tyvek® or Saranex® coated Tyvek® provide more protection when using liquid spray.

Rubberized rainwear provides excellent protection even against liquid concentrate spills. It can be cleaned by hosing off. However, it is bulky to wear, adds warmth, and is

relatively expensive.

Microporous film laminates provide excellent protection and studies have shown them to be comfortable in hot weather. GoreTex® is one manufacturer's trade name. They are often relatively expensive.

Wear respirators, goggles or face shields and other specialized equipment if the chemical label/information indicates they are needed.



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FILE 27.2 (Pesticides—general)