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Laundering Pesticide Contaminated Clothing

Carol Bryan Easley, Research Technologist, Textiles, Clothing and Design
Joan Laughlin, Assoc. Professor of Textiles, Clothing and Design
Roger Gold, Extension Specialist—Environmental Programs

The problem of how to launder pesticide contaminated clothing has puzzled many as pesticide use has become widespread. What is the best method? What water temperature should be used? Is there a difference in detergent performance? Must you be careful about washing contaminated clothes with other clothing?

Use the pesticide label as a guide for knowing which chemicals are more toxic. Key words on all pesticides labels identify the toxicity of the product (*Figure 1*).

Key Word	Toxicity	Examples*
DANGER POISON	Highly toxic/ concentrated	Counter Disyston Parathion Furadan Dyfonate
WARNING	Moderately toxic	Diazinon Treflan Chlordane
CAUTION	Slightly toxic	2,4-D Sevin Atrazine Malathion

*Toxicity of the pesticide may vary depending upon the formulated product. Use the key word as an indication of the toxicity level.

Figure 1

Clothing contaminated with highly toxic and concentrated pesticides must be handled most carefully as these pesticides are easily absorbed through the skin. If the clothes have been completely saturated with concentrated pesticides, discard them. Clothing contaminated by moderately toxic pesticides do not warrant such drastic measures. Hazards are less pronounced in handling clothing exposed to low toxicity pesticides. But . . . the ease of pesticide removal through laundering does *not* depend on toxicity level—it depends on the formulation of the pesticide. For example, 2,4-D amine is easily

removed through laundering because it is soluble in water; 2,4-D ester is much more difficult to remove through laundering.

Disposable clothing helps limit contamination of clothes because the disposable garments add an extra layer of protection. This is especially important when you are in direct contact with pesticides, such as when mixing and loading pesticides for application.

Laundering Recommendations

Wash contaminated clothing separately from the family wash. Research has shown that pesticide residues are transferred from contaminated clothing to other clothing when they are laundered together. Know when pesticides have been used so all clothing can be properly laundered!

Pre-rinsing contaminated clothing before washing will help remove pesticide particles from the fabric. Pre-rinsing can be done by:

1. pre-soaking in a suitable container prior to washing;
2. pre-rinsing with agitation in an automatic washing machine;
3. spraying/hosing garment(s) outdoors.

Pre-rinsing is especially effective in dislodging the particles from clothing when a wettable powder pesticide formulation has been used.

Clothing worn while using slightly toxic pesticides may be effectively laundered in one machine washing. It is strongly recommended that *multiple washings* be used on clothing contaminated with *concentrated* pesticides to draw out excess residues. Always wear rubber gloves when handling highly contaminated clothing to prevent pesticide absorption into the body.

Washing in hot water removes more pesticide from the clothing than washing in other water temperatures. Remember . . . the hotter, the better. Avoid cold water washing! Although cold water washing might save energy, cold water temperatures are relatively ineffective in removing pesticides from clothing.

Laundry detergents, whether phosphate, carbonate, or heavy duty liquids, are similarly effective in removing pesticides from fabric. However, research has shown that heavy duty liquid detergents are more effective than other detergents in removing emulsifiable concentrate pesticide formulations. Emulsifiable concentrate formulations are oil-based and heavy duty liquid detergents are known for oil-removing ability.

Laundry additives, such as bleach or ammonia, do not contribute to removing pesticide residues. Either of these additives may be used, if desired, but caution must be used. *Bleach should never be added to or mixed with ammonia*, because they react together to form a fatal chlorine gas. Be careful—*don't mix ammonia and bleach!*

If several garments have become contaminated, wash only one or two garments in a single load. Wash garments contaminated by the same pesticide(s) together. Launder, using a full water level to allow the water to thoroughly flush the fabric.

During seasons when pesticides are being used daily, clothing exposed to pesticides should be laundered daily. This is especially true with highly toxic or concentrated pesticides. It is much easier to remove pesticides from clothing by daily laundering than attempting to remove residues that have accumulated over a period of time.

Pesticide carry-over to subsequent laundry loads is possible because the washing machine is likely to retain residues which are then released in following laundry loads. It is important to rinse the washing machine with an "empty load," using hot water and the same detergent, machine settings and cycles used for laundering the contaminated clothing.

Line drying is recommended for these items. Although heat from an automatic dryer might create additional chemical breakdown of pesticide residues, many pesticides break down when exposed to sunlight. This also eliminates the possibility of residues collecting in the dryer.

When Laundering Pesticide Contaminated Clothing.....REMEMBER

- **READ** the pesticide **LABEL** for information.
- **DISPOSABLE PESTICIDE CLOTHING** provides extra protection.
- **PRE-RINSE** clothing by:
 - *presoaking in a suitable container;
 - *agitating in an automatic washing machine;
 - *spraying/hosing the garment(s) outdoors.
- **WASHING** machine settings: *Hot* water temperature (140°F/60°C), *Full* water level, *Normal* (12 minutes) wash cycle.
- **RE-WASH** the contaminated clothing two or three times, if necessary.
- Wash **A FEW** contaminated garments at a time, using lots of water.
- Wash **SEPARATELY** from **FAMILY** laundry. **DISCARD** clothing if thoroughly saturated.
- **LAUNDER CLOTHING DAILY** when applying pesticide daily.
- **RINSE MACHINE** thoroughly after laundering contaminated clothing.
- **LINE DRY** to avoid contaminating the automatic dryer.
- **BE AWARE** of when pesticides are being used so that clothing can be appropriately laundered.

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