Laundering Pesticide-contaminated Work Clothes
Introduction

- Work clothing is often the primary form of Personal Protective Equipment (PPE)
- Work clothes are also worn under other PPE, such as:
  - Aprons
  - Chaps
  - Chemical resistant suits
- Clothing will become contaminated with pesticides as part of the loading, mixing, and application process
- Contamination is inevitable, but manageable
Common sense approaches for cleaning pesticide-soiled clothes

- Review the pesticide label, it should explain if PPE can be laundered or not
- Handling, segregating, storing, and washing clothes
- Using optimum wash settings
- Decontaminating the washing machine
- Notifying commercial laundering firms
- Checking with laundromat owners/managers
Reducing residue in homes

- Shake, sweep, dust off clothes outdoors, and remove any dry material
- Remove clothes outside the home (if possible)
  - If necessary, set up a changing spot in the house that can be easily decontaminated
- Contaminated clothes should be stored and washed separately from household laundry
When & how to handle the clothes

- Launder clothes as soon as possible
  - Waiting more than 24 hours reduces wash efficiency
  - If you have to wait, store clothes in a designated bag or container that can be decontaminated easily
  - If possible, store outside of the home
- Wear a long-sleeved shirt and gloves to reduce skin exposure when loading the machine
Optimizing wash settings

- Read the manual for operation tips
- Wash small loads (50-75 percent of capacity)
- Use max. amount of high-quality detergent
  - Avoid gentle detergents
- Use hot water at the highest setting
- Use a pre-rinse or soak and an aggressive wash cycle with a high-speed spin
- Preferably, dry clothes on a clothesline
- Run an additional empty cycle without clothes, with detergent, before using on household laundry
Additives & detergents

- Certain additives have not been proven to help decontamination, such as:
  - Bleach or ammonia
  - Pre-treating garments with stain removers
  - Fabric softeners
- Pouches and pods have not been evaluated in their ability to remove pesticides from clothing
- Regardless of detergent, if proper laundering procedures are used, work clothes that are lightly to moderately contaminated can be cleaned to an acceptable level

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Other points to consider

Research on laundering work clothing occurred in the 1980’s and early 1990’s
Pesticide toxicity has changed

- Today, generally, pesticides have lower toxicity and the amount of active ingredient is significantly lower.
- Manufacturers have improved formulation and packaging to reduce applicator exposure.
- Pesticides are still toxic and can pose health risks.
- A good laundering routine helps protect the applicator and other family members.
Detergents have changed

- No longer contain phosphates
- Generally much better at dissolving contaminates
- More liquids being used
- Pouches and pods are being used, but they have not been evaluated in their ability to remove pesticides from clothing
- Regardless of detergent, if proper laundering procedures are used, work clothes that are lightly to moderately contaminated can be cleaned to an acceptable level
Washing machine design has changed

- Washing machines are being moved towards:
  - Digital controls
  - Programmable pre-soak cycle
  - Wash cycles that can be set for aggressive and for an hour or more
  - Customizable spin setting
  - Rinse cycle duration and intensity
  - Steam-assisted cleaning
  - Front or top load machines without agitators
More on washing machine design

- Superheated water will likely help sanitize heavily soiled clothes
- Basic or simple machines pose challenges, but can still be used
- Water and energy conservation can be an issue
  - Applicators should minimize exposure when handling pesticides
  - Use loads that are closer to 75% of capacity
  - Extend cycles, may help, but not researched
New fabric and finishes

- No research has been done
- All recommendations are based on conventional fabrics
- Consult supplier or manufacturer
For more information, go to...

http://tinyurl.com/NDSU-ps1778