

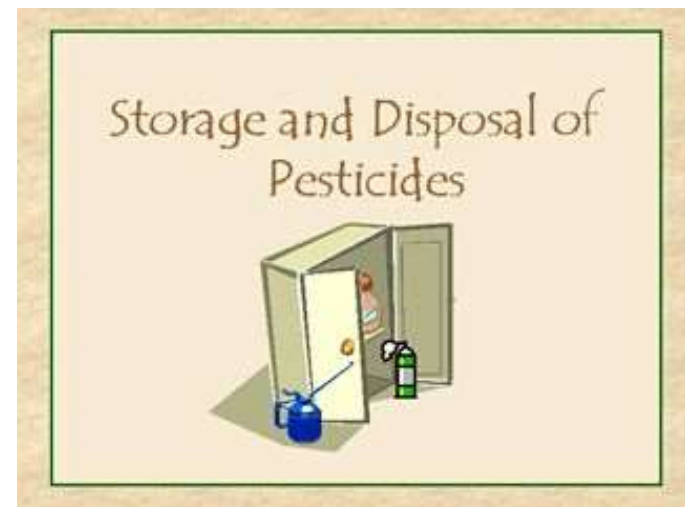
Safety, Storage, and Handling of Pesticides

Storage of Pesticides

Proper storage means:

Pesticides should be stored in a locked posted area.

The area should be a separate building or room sectioned off in a building





Storage of Pesticides

Things to have close at hand:

- Detergent and Hand cleaner
- Water and Broom
- Saw dust, vermiculite, activated charcoal, and absorptive clay, pet litter
- Clorox, and hydrated lime to neutralize the chemicals
- Dustpan and Shovel
- Proper fire extinguisher



The Site

Should be down hill and down wind from any sensitive areas (ponds, houses, ect).

Drainage system should be built with a built-in sump to collect all runoff.

The building should be isolated from other buildings to reduce the chance of fire.



Storage Considerations:

Sacks, cartons, and fiber boxes should be stored on a pallet – **NOT** on the floor.

Should be cool, dry, out of sunlight, and kept from freezing.

Should be on first floor, to prevent materials from leaking into or through the floor.



Leaking containers

- Leaking containers can produce toxic fumes in storage facility.
- Check containers often for corrosion or leaks or loose caps.
- If container is damaged put it in another suitable container and label it.
- Unlabeled pesticides are useless and dangerous.
- Utilize exhaust fans to keep the area cooler and remove fumes.



Safe Containers

Do not store pesticides in any food or drink containers only in containers suitable for pesticide use.





Entrances to Facility

All entrances should be locked and posted.

Proper signage should be used warning people of the danger. “Pesticides – KEEP OUT!”

Never give restricted use pesticides to anyone.

General use pesticides should never be given unless you have a small individual package that is labeled with the manufacturer’s label.





Pre-calibration Check

- Fill sprayer with clean water for calibration.
- While spraying (calibration), check all hoses and connections for leaks.
- Look for and replace all weather-cracked hoses.

Pre-calibration procedures...

- Check and examine all nozzles, and screens.
- Replace damaged nozzles & screens.





Cleaning Screens

- A jar of soapy water and an old toothbrush can be used to clean screens.
- Never blow through the screen with your mouth (note: gloved hands, face covering)
- Store (and lock) jar and toothbrush to prevent others in the containment facility from using them.



Clogged Nozzles...

To clean nozzles, use a wooden toothpick.

NEVER blow through a dirty screen because it might have pesticide residue.



Pre-calibration safety check

- Make sure all shields are in place.
- If PTO driven pump, make sure safety catches are latched.
- Make sure all belts are adjusted correctly.

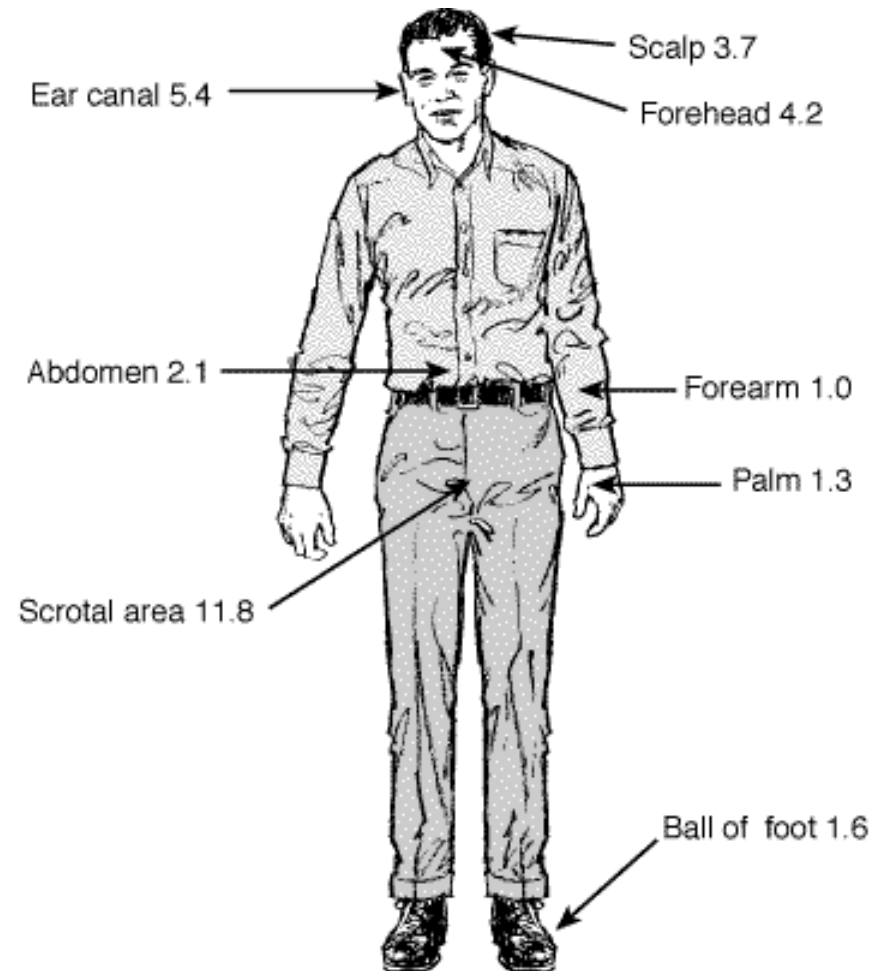


Mixing and Loading the pesticide

- This is the **most dangerous** part of handling pesticides so special precautions should be taken.
- Keep in mind that the operator is **exposed to higher concentrations** of the chemical than at any other time.

Dermal Absorption Rates

- The most common entry into the body is through the skin
- The highest absorption is through the scrotal area, ears, scalp, forehead are the next highest.
- Suitable Protective clothing can help minimize dermal absorption.



Minimum Clothing

Long sleeve shirt, Long trousers or coveralls, Hat or Cap, Gloves and Goggles.

Rubber boots and apron.

All clothing should be tightly woven fabric.

Sleeves and pant legs should be worn outside to keep spray from getting inside.

If you are going to get wet wear a waterproof suit .





Respiration Devices:



Three types ...

- Chemical Cartridge type (chemical filter, cartridge respirator)
- Chemical Canister type (gas mask)
- Self-Contained Respirator (breathing apparatus) may have a self-contained oxygen cylinder for operator.

Self Contained Breathing Apparatus:

- Approved by NIOSH
- Good seal to face
- Glasses, sideburns = not
- Change every min 8 hours
- Wash with soap & water
- Dry with towel
- Stored and allowed to dry
- Stored away from pesticides
- Stored in plastic clothes bag





Gloves



- Never wear cloth gloves because loosely woven fabric takes in pesticide and holds it close to the skin.
- Unlined** rubber or neoprene gloves should be worn, but remember, some pesticides absorb into neoprene!
- Wash gloves with Soap and Water BEFORE removing them from your hands.

http://www.vtpp.ext.vt.edu/htmldocs/safety_regs.html#protective_clothing



Head and Foot Protection

Boots and Shoes

- Light weight and Unlined
- Washed and Dried thoroughly daily
- Steel-toed



Protecting the Head and Neck

- A hard hat: can be washed easily.
- In cool weather a hooded parka and a billed cap.



<http://www.gov.on.ca/OMAFRA/english/crops/facts/protective.html>



Mixing pesticides

- When mixing toxic pesticides you should always mix outside if at all possible.
- If inside, make sure there is proper ventilation and good lighting.

Always work with a partner- never work alone.





Pouring Pesticides

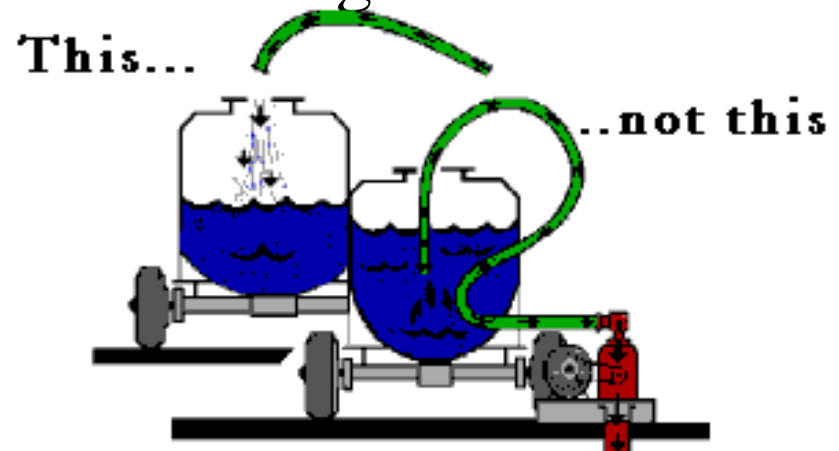
When pouring pesticides into a mixing tank keep your face away from the hole you are pouring into. This reduces the chances that you will inhale toxic fumes. It also reduces the chances that you will splash pesticides onto your skin.

Remember – your face readily absorbs pesticides.



Filling the sprayer with Water...

- When filling a sprayer with a hose, be sure to **NOT** let the hose get into the tank so that it does not back-siphon and contaminate the clean water supply.
- Never leave tank unattended while filling. An overflow can produce toxic puddles.



Source:
Protecting Our
Groundwater -
A Grower's Guide

**Air-Gap to
Prevent Backflow**



Skin Contact with Pesticides

- If you come in contact with pesticide to the skin be sure wash immediately. **SPEED** is essential.
- Washing facilities must be readily available.
- Change clothes daily. Regardless of soiled condition.
- Wash all clothes after mixing pesticides and keep away from family laundry even if you don't think you got any on you. Warn the person who is washing the clothes.



Cleaning Application Equipment

- Suitable clothing should be worn.
- Immediately after use.
- You should have a wash pad with a sump to catch all of the run off.
- If 2-4d was used with the tank, then the tank should be rinsed with ammonia then rinsed with clean water.



Minor Pesticide Spills

- Keep unauthorized people away
- Wear suitable clothing
- Confine the spilled pesticides
- Absorb the spilled pesticides
- Collect the absorbed pesticides
- Cover the area with neutralizer
- Rinse the area with water





Major Pesticide Spills

Call for assistance! Call the toll-free hotline!

1-800-858-7378; fax: 1-541-737-0761

<http://npic.orst.edu/>

- Name of agencies and persons reporting the spill.
- Exact location of spill
- Name of company involved and location
- Specific pesticide spilled and amount
- Source and equipment involved in spill
- Location of nearest body of water
- Actions taken concerning containment, & cleanup
- Keep unauthorized people away !



Preventing a Pesticide Surplus

- Only buy what is needed for the job.
- Only mix enough for the job that you are working on
- If you do over estimate for the job and have surplus, find a field with the same pest or dilute the mixture and reapply on the same field.

Rinsing Pesticide Containers

- All containers should be triple rinsed and punched so not to be reused.
- Put the rinse water in the spray tank.
- Large drums returned to MFG.
- Triple rinsed cans sent to metal recycling.
- Punched to prevent re-use.
- Placed in sanitary landfill.

FOLLOW THIS RINSE AND DRAIN PROCEDURE FOR PESTICIDE CONTAINERS



1 Empty container into spray tank. Then drain in vertical position for 30 seconds.



2 Add a measured amount of rinse water (or other diluent) so container is 1/5 to 1/4 full. For example, one quart in a one-gallon container.

Rinse container thoroughly, pour into tank, and drain 30 sec. Repeat three times. Puncture container before final drain.



3 Crush pesticide container immediately. Sell as scrap for recycling or bury. Do not reuse.



Figure 9. Triple-Rinse procedures for pesticide containers



Classification of Pesticide Containers

Type 1: Combustible containers except ones containing Mercury, Lead, Cadmium, Arsenic or inorganic Materials (burnable)

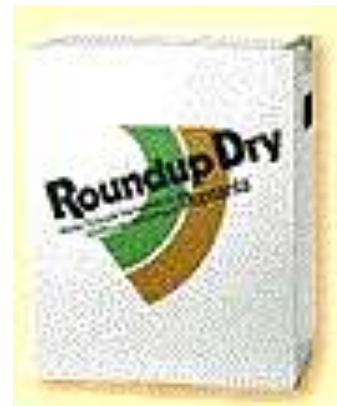
Type 2: Noncombustible containers except those, which contain Mercury, Lead, Cadmium, Arsenic or inorganic Materials (non-burnable)

Type 3: Combustible and Noncombustible containers that contained Mercury, Lead, Cadmium, Arsenic or inorganic Materials



Disposal of Type I Containers

- Small Quantities may be burned by applicator.
- In accordance with State & local regulations.
- Do NOT breathe the smoke.
- Do not burn herbicide containers – smoke can damage nearby plants.
- Large volumes? Incinerator or landfill.





Disposal of Type II Containers

Triple Rinsing

- Fill the empty container about 20% full with water.
- Replace cap, shake.
- Pour rinse into spray tank and drain for at least 30 seconds.
- Repeat steps 1-3 twice more
- Inspect the container (inside and out) for formulation residues. Repeat as needed.

Pressure Rinsing

- Use special nozzle & water hose.
- Hold the container upside down. Puncture container with nozzle.
- Pressurized water cleans, rinsate flows into the spray tank.
- Rinse for 30 seconds or longer
- Inspect the container (inside and out) for formulation residues. Repeat as needed.



Disposal of Type III Containers

- Rinse and puncture, then it may be stored in sanitary landfill
- If cannot be rinsed & punctured, then may need to be encapsulated

