



Chapter 2: Pesticide Handling and Application



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1.0 Introduction

Below are general procedures to follow when storing, handling, mixing, loading and applying pesticides. A pesticide coordinator, appointed by management, will oversee such tasks as inventory, recordkeeping and adherence to procedures set forth in this manual. It is strongly recommended that all ARS employees who mix, load and apply pesticides have a Commercial Applicator certification and be licensed.

Note: Each individual pesticide should be used, stored, handled, mixed, and applied in accordance with the manufacture's guidelines and all applicable regulations. The manufacturers guidelines can be found on the pesticide label. Anyone handling pesticides must familiarize themselves with the material before handling.

Additional information on pesticides and training including the Worker Protection Standard (WPS) and the UW-Madison Pesticide Use Policy can be found at:

<https://ehs.wisc.edu/pesticides-use/>

<https://fyi.extension.wisc.edu/pat/>

<https://fyi.extension.wisc.edu/pat/wps/>

2.0 Storage and Handling

- Read the entire label carefully before using any pesticide.
- Notify the fire department where pesticide storage is located.
- Label pesticide storage areas with signage that reads, "DANGER PESTICIDE STORAGE".
- Always keep the pesticide storage building locked.
- Keep temperatures at a minimum of 40°F in storage area during the winter season.
- Store all pesticides off the floor.
- Do not store pesticides in a farm shop.
- Wear all required personal protective equipment (PPE) when handling pesticides.
- Ensure adequate ventilation.
- Never eat, drink, or smoke while handling pesticides.
- Wash your hands after handling.

3.0 Mixing and Loading

- Before loading pesticide(s) in a sprayer, add water, and check spray pattern. This will determine if any nozzles are plugged. Sprayers can then be calibrated prior to adding pesticides.
- Use partial and old containers first and bring only amount needed for that load to the loading area.
- After shaking containers, check the bottom to see that all solids are in suspension.
- Mix only as much pesticide as you need.
- Triple rinse empty containers and pour rinsate into the sprayer tank.

- **NEVER** leave the area while filling the sprayer tank.
- Install an anti-siphoning device on the water supply hose used for loading the sprayer.
- The hose should always remain above the mixture.
- Keep containers low, below eye level, when pouring.

4.0 Application

- Always use the proper PPE and equipment to remove and unplug nozzles. Don't use a wire to unplug a nozzle or blow through a nozzle with your mouth.
- Use pre-calibrated rates, making sure the correct tip, speed, and pressure are maintained.
- While spraying, check for plugged nozzles and keep speed slow enough so the booms are not bouncing.
- Be aware of wind speed direction and nearby crops which may be sensitive to spray.
- If others are working in the area, either spray at another time when workers are not present, or take extreme care that drift is minimized and away from workers.
- Be aware of reentry or harvest times and notify appropriate people.
- Carry fresh water on sprayer for rinsing gloves and flushing system after spraying. Apply rinsate in the field on the labeled crop.
- Always try to end the day with an empty sprayer. If the sprayer cannot be emptied, it should be stored in a locked building.
- At least 24 hours before aerial applications are to be made, notify persons living immediately adjacent to the land that is to be sprayed.
- After application, record on furnished sheets:
 - Day and time of application
 - Pesticide applied
 - Rate applied and volume of material
 - Field identification number
 - Department applied for
 - Who applied the pesticide

5.0 Personal Protective Equipment

The proper PPE must be worn when handling, mixing, loading, and applying pesticides. The proper equipment for a pesticide can be determined by reading the pesticides' label.

6.0 First-Aid Procedures

The procedures listed below our general first-aid procedures. Specific first-aid treatment varies according to the type of exposure and the pesticide used. Be sure to read the pesticide's label before use to become familiar with specific first-aid procedures and seek immediate medical attention for any exposure incident.

Contact the following for first-aid/exposure incidents:

- 911 for medical assistance.
- The Poison Control Center at UW-Madison Hospital at 608-262-3702.
- A 24-hour Poison Control Center can also be reached at 1-800-222-1222.

Dermal Exposure

- Remove contaminated clothing.
- Drench skin with water.
- Wash skin, hair, and fingernails thoroughly with soap and water.
- Dry and wrap in a blanket.
- Where chemical burns of the skin have occurred, cover area loosely with a clean, soft cloth. Avoid the use of ointments, greases, powders, and other medications.

Inhalation Exposure

- Get fresh air immediately!
- Loosen all tight clothing.

Eye Exposure

- Hold eyelids open and wash eyes with a gentle stream of clean running water. Continue washing for 15 minutes or more.

Oral Exposure

- If the pesticide has been swallowed, follow specific instructions as listed on the pesticides' label. Never induce vomiting if:
 - The victim is unconscious or is having convulsions.
 - The pesticide is corrosive – a corrosive substance is any material, such as a strong acid or alkali (base), which causes chemical destruction of living tissue.

RBC Cholinesterase Testing Guidelines

Personnel with potential exposure to organophosphates or carbamates as part of their pesticide application assignments may obtain an RBC cholinesterase test at no charge. A baseline test should be obtained prior to the pesticide application season to compare to future test results. Only those who work with organophosphates or carbamates should be tested. Test results require consideration of many factors in order to be properly interpreted; only a physician should interpret these results. Periodic testing should occur after a baseline test has been obtained. Periodic testing should occur after an employee has regularly handled organophosphates or carbamates during a 30-day period, or as determined by a physician or an occupational health officer.