

Transportation, Storage, and Security

Chapter 8

National Pesticide Applicator Certification

Core Manual



Transportation, Storage and Security

This module will help you:

- Understand how to properly store pesticides and restrict access
- Understand inventory and maintenance methods
- Understand how to prepare for potential spills
- Understand how to dispose of pesticide wastes

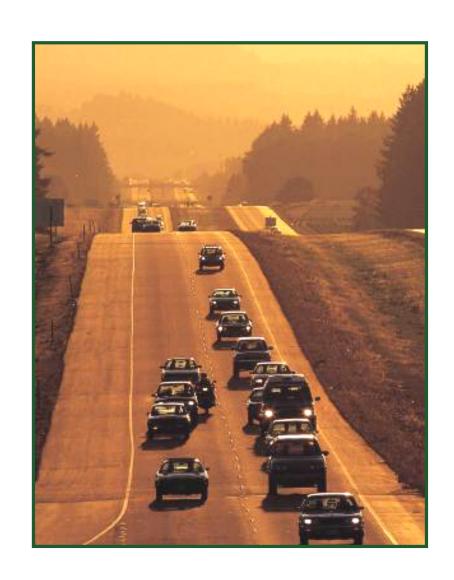


Safety and Security

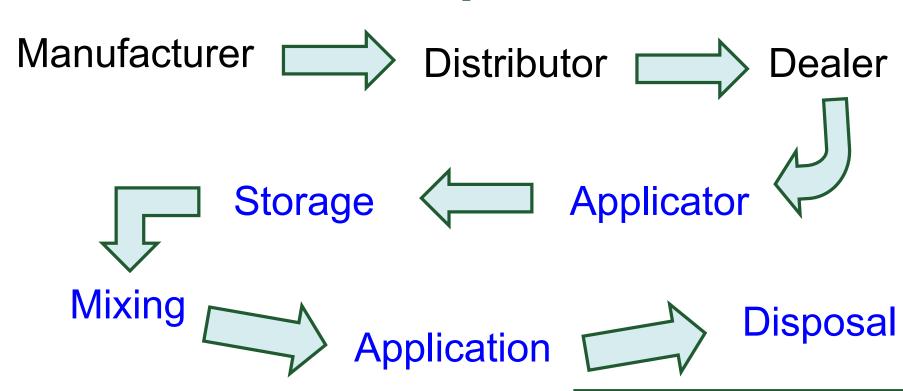
- Unauthorized access to pesticides poses several concerns
- Pesticides that are not secured pose threats
 - Consider transportation, application, lunch time, storage
- Pesticides being transported or stored in an unsafe manner pose threats to human health, animals, and the environment

Transportation of Pesticides

- Carelessness harms
- Some pesticides are highly flammable
- Spills can result in human exposures, pollution, financial loss, legal action
- Vehicles can scatter spilled pesticides



How often are pesticides transported?





Accidents happen!



Maintain Vehicles!

- Use side rails on trucks
- Check brakes, tires, and steering often
- Inspect tanks, fittings, gauges, hoses, booms, nozzles
- Look out for defects, cracks, and punctures
- Carry tools for repair!





Containing Cargo



- Protect from tears, punctures, impacts
- Enclosed boxes are best, but not always practical

Keep children, careless adults, vandals out



Containing Cargo

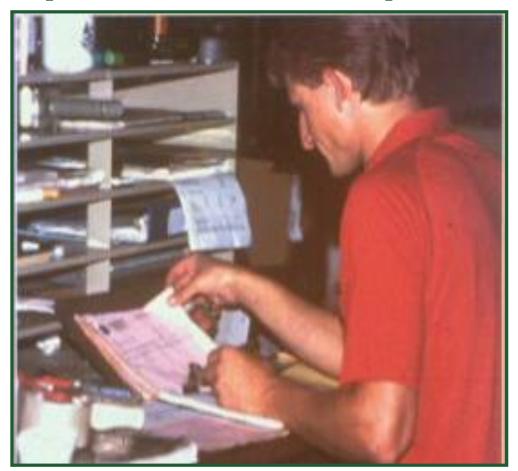
- Truck beds are convenient, but be cautious!
 - Never stack higher than side of vehicle
 - Secure containers and tanks
 - Nails, stones, sharp edges
 - Steel beds are better than wood (easier to clean)





But, how accessible is the load to others?

Vehicle owners and operators are held responsible for spills!...



... and **MUST** be trained in emergency response procedures for spills and notification

Vehicle Operators

Special training or certification may be

required

May need to be a certified pesticide applicator



- Check state/local regulation
- U.S. Department of Transportation (DOT) requires special driver training for transporting hazardous materials

Other Vehicle Precautions

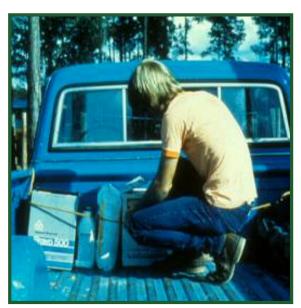
Check with the dealer and the MSDS to see if a vehicle manifest is required

For emergency preparedness, always carry in the vehicle

- manifest, if required
- the label and MSDS
- a spill kit and PPE
- list of emergency phone numbers

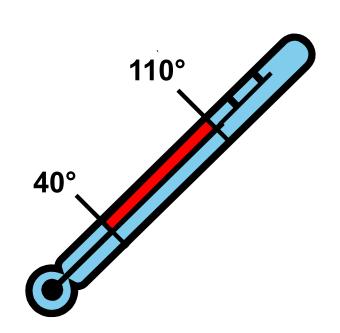
Other Vehicle Precautions

- Inspect containers before loading: legible labels? tight seals? clean surfaces?
- Use tubs and liners for extra containment and easier cleanup
- Less handling of containers equals reduced likelihood of damage
- Secure load with tarps, ropes, and tie downs, even when transporting equipment



Protect from the Elements during Transport

- ❖ Temperature: keep between 40° F and 110° F
- Moisture can destroy paper containers





Use a waterproof cover

Keep Them Separated!

Keep people and animals away

Food, feed, seed, and plants could become contaminated or poisoned

Keep herbicides separate from other insecticides and fertilizers

Transport Security

- Never leave unattended
 - Shipment, products in service vehicle
 - If possible lock pesticides away
 - Use a footlocker
 - Do not allow access to children
 - Protect yourself from theft

Transportation Security

- A few pesticides require placards:
 - Ask your dealer which pesticides
- Also other items require placards
 - Some fertilizers: anhydrous ammonia, ammonium nitrate
 - Fuels: gasoline, diesel, propane
 - Explosives

Transportation Security Plan

- Required for farmers and others who transport materials that require placards
- Plan must include:
 - Protection against unauthorized access
 - Security check of employees
 - Security plan for intended travel routes
- Hazardous Materials Information Center:

1-800-HMR-4922

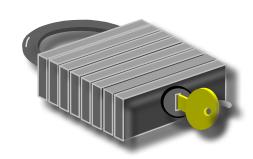
An Ideal Pesticide Storage Site Protects Against:

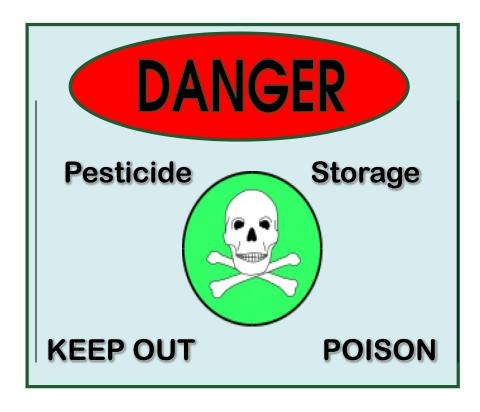
- Exposure to people and animals
- Environmental contamination
- Temperature extremes and excess moisture
- Theft, vandalism, and carelessness
- Liability



Secure the Site!

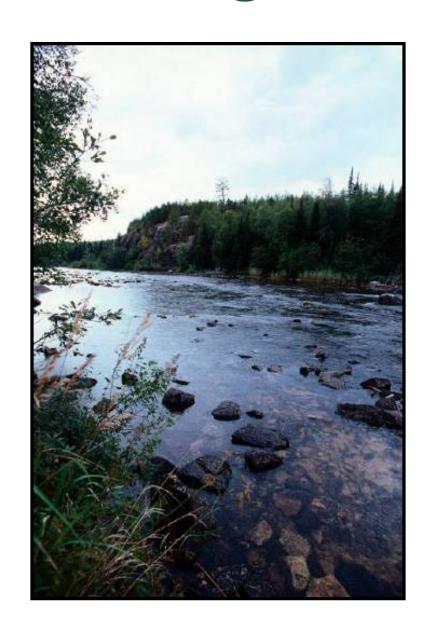
- Use a dependable lock
- Post highly-visible warning signs on doors, windows
- Post "No Smoking" warnings, since many pesticides are highly flammable!



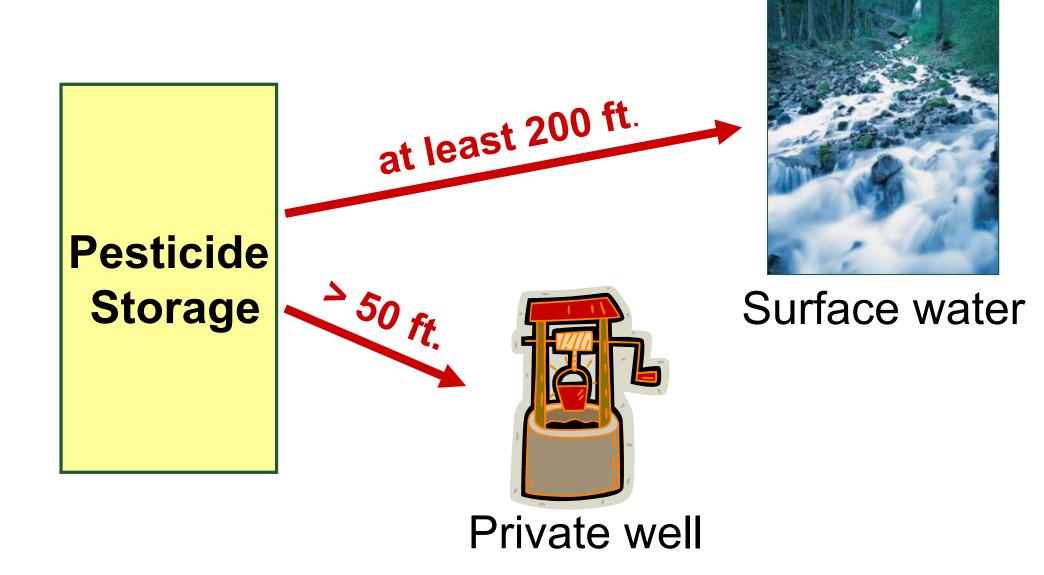


Prevent Water Damage

- Carefully plan storage facility location
 - Avoid areas with wells
 - Avoid areas near streams and slopes
 - Avoid areas where runoff or leaching is likely to occur

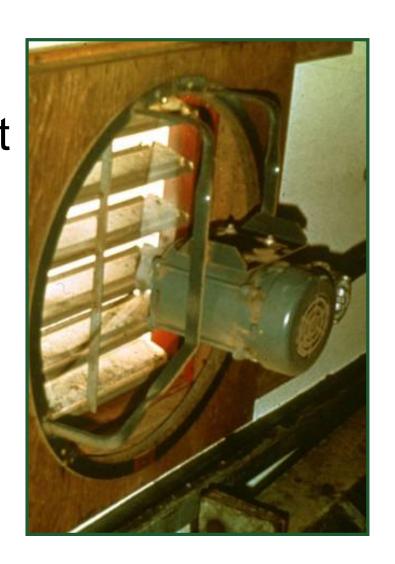


Pesticide Storage



Control the Conditions

- Keep storage area cool well-ventilated, and dry
- Excessive freezing or heat may cause containers to break, melt, explode, and some pesticides to volatilize, drift, degrade
- Use exhaust fans to reduce temperature, remove dust and vapor to the outside



Provide Adequate Lighting

- For reading labeling, spotting leaks, and cleaning up spills
- Use spark-proof fixtures and switches!



Use Non-porous Materials

- Carpet, wood, soil are difficult to decontaminate
- Sealed cement, glazed ceramic tile, no-wax sheet flooring -- free of cracks, easy to clean
- Slope the floor into a containment system
- Use plastic or metal for shelving and pallets





Storage Site



- Store in original containers
- Do not store food, drinks, tobacco, feed, medication, vet supplies, seed, clothing, PPE

Have clean water available for decontamination



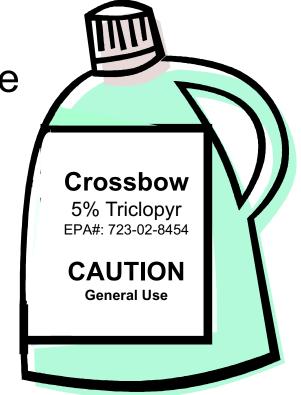
Store Pesticides Separately!

Keep Labels Legible

If a product label is destroyed or damaged, immediately mark the container with:

Trade name and common name

- EPA registration number
- % of each active ingredient
- Signal word
- Use classification
- Request a replacement label from the dealer or distributor



- Store pesticides only in original containers
- Never lend or borrow pesticides in unmarked or unlabelled containers
- Securely close containers when not in use





- Store on sturdy metal shelving
- Place heaviest containers and liquids on low shelves
- Place large drums and bags on plastic pallets
- Seal dry materials in plastic bags



Store volatile pesticides separately

Place bulk tanks on a concrete containment

collection pad

Dike to keep spilled/leaked pesticide in a confined area



- Containment area inside dike should contain the tank's volume + additional volume
 - Additional volume requirements vary by state
- All containment area drains should be connected to a holding tank
- Fence off/lock the area to prevent tampering







SOA DEC Regulations storage

- (c) A person shall store restricted-use pesticides as required under (d) (h) of this section.
- (d) The storage requirements of this section apply to empty, full, or partially full pesticide containers that are the responsibility of the persons identified in (b) and (c) of this section. These containers must be stored in one of the following enclosures that, when unattended, is **locked** to prevent unauthorized persons, or livestock or other animals from gaining entry:
 - (1) a closed vehicle;
 - (2) a closed trailer;
 - (3) a closed building or room;
 - (4) a fenced area with a fence at least six feet high; or
 - (5) a truck or trailer with solid side racks and secured tailgate at least six feet above the ground.



SOA DEC Regulations storage: warning label

- (e) A warning notice must be posted on the outside of an enclosure listed in (d)(2) (4) of this section. The notice must
 - (1) include the name and telephone number of a person to contact in an emergency;
 - (2) be a minimum size of 8 by 10 inches;
 - (3) use **lettering** at least **three-fourths inch** high;
 - (4) be a sign as follows, if the stored pesticide has an **EPA-approved label containing a** skull and crossbones and the signal word "danger"; and
 - (5) be a sign containing the **signal word of the most hazardous pesticide being stored**, either "warning" or "caution", as follows, if none of the stored pesticides has an EPA-approved label containing a skull and crossbones and "danger" signal word:
- (f) The notice described in (e) of this section must be repeated in an appropriate language other than English if it is probable that persons who do not understand English will come to the enclosure.
- (g) The posting of a warning notice other than as specified in (e) of this section must be approved by the department.
- (h) The words "POISON" or "CHEMICAL" may be substituted for the word "PESTICIDE" in a warning notice required under (e) of this section.

Example of signs that are required:







Look for Damaged Containers

- Inspect regularly for tears, splits, breaks, leaks, rust, and corrosion
- If found, put on PPE, clean up spills, and use immediately according to label instructions!



Transfer to an appropriate container and label it

Shelf Life of Pesticides

- Keep inventory mark each container with its purchase date
- Be aware of each product's shelf life
- Watch for excessive clumping, poor suspension, layering, abnormal coloration
- Poor pest control or plant damage may indicate the pesticide has deteriorated
- Avoid storing large quantities for long periods inventory control – use older product first – buy only what you need

Safety Tips

- Have duplicate copies of labels and MSDS
- Wear the appropriate PPE
- Label all items used in handling pesticides



Safety Tips

- Have a plan
- Have absorbent materials ready for spills and leaks
 - Clay, pet litter, vermiculite
- Have a shovel, broom, heavy-duty plastic bags available





Safety Tips

- Seed colorant may be attractive to children
- Handle/store treated seed as if it were a pesticide
- Never use treated seed for feed!
- Never mix treated seed with untreated seed!



Emergency Equipment







Don't Generate Hazardous Waste!

- Leftovers = hazardous waste
- Dirty, empty containers
- Outdated products may lose effectiveness
- Cancelled products may not be legal
- Use it up before the expiration date!



Follow the Label!

Storage and Disposal

Pesticide Storage and Disposal

Store in a dry place. Do not contaminate water, food or feed by storage, disposal, or cleaning of equipment. Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.

Container Disposal

empletely empty bag into application equipment. Dispose of empty bag in a sanitary landfill or by neration, or by open burning, if allowed by state and local authorities. If burned, keep out of

minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. special care to avoid contamination of equipment and facilities during cleanup procedures and of wastes. In the event of a major spill, fire or other emergency, call (919) 292-7100 day or

Precautionary Statements

azards to Humans and Domestic

CAUTION

allowed, inhaled, or absorbed skin. Do not breathe dust or spray old contact with eyes, skin or clothing dote for atrazine. If this product is ingested, induce emesis or lavage stomach. The use of an aqueous slurry of activated charcoal may be considered.

Environmental Hazards

Atrazine can travel (seep or leach) through

Disposal & Recycling





- Triple-rinse or pressure-rinse all containers
- Add container rinsewater to spray batch!
- Store clean containers in a special section
- Take clean containers for recycling

Disposal & Recycling

- Recycle containers through your state program or one supported by the Ag. Container Recycling Council (ACRC)
- Tank rinsates may be stored and added to tank mixes for labeled sites







SOA DEC Regulations Disposal

Register 224, January 2018 ENVIRONMENTAL CONSERVATION

18 AAC 90.615. Storage and disposal of pesticides and pesticide containers. (a) A person who applies a pesticide shall properly dispose of each empty container. A person may burn an empty pesticide container only if

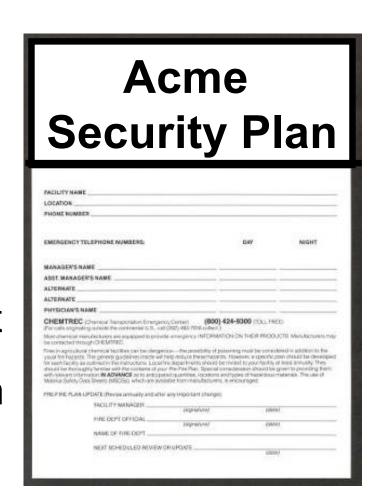
- (1) the container's labeling allows the container to be burned; and
- (2) burning is done in compliance with 18 AAC 50.
- (b) Custom, commercial, or contract applicators, and school administrators shall store all pesticides, including general-use and restricted-use pesticides, as required by (d) (h) of this section.

Pesticide Site Security



Develop a Security Plan

- Reduces adverse effects
- Safeguards employees, community, environment
- Reduces legal risks, insurance costs
- Reduces risk of vandalism, theft
- Protects confidential information
- Improves relationships with the community



Risk Assessment: What are your assets?

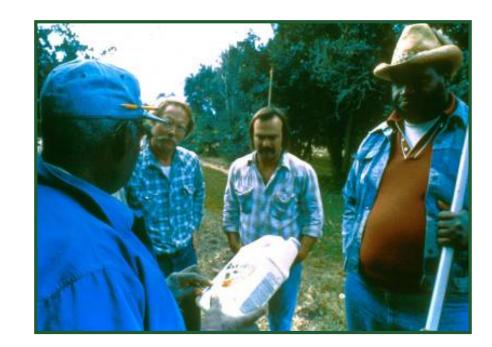
- People: employees, visitors, customers, contractors, transporters
- Information
- Property: pesticide storage facilities, vehicles, application equipment, storage tanks, mixing and loading sites, waste collection facilities, utilities

Employees are the Eyes and Ears of the Company

Can provide early warning if something suspicious occurs

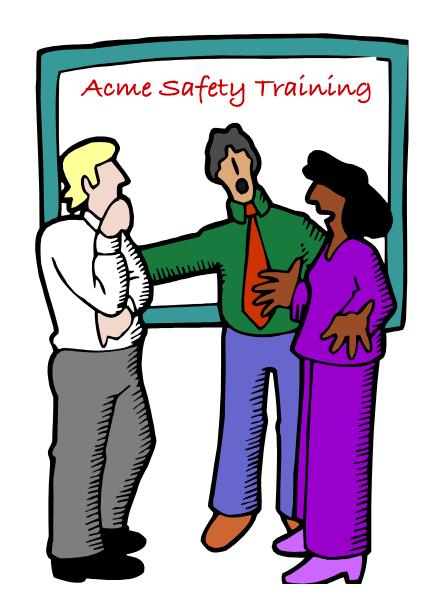
Proper training enables them to become

"watchdogs"



Minimum training for employees should cover:

- pesticide inventory control
- security of facilities and equipment
- emergency preparedness and response



Evaluating the Security Plan

- Are there effective barriers to block intruders?
- Is there adequate protection against power losses or unauthorized access?
- Are hiring and labor policies, background checks, and inventories effective?
- Do employees understand how to respond in an emergency, including a bomb or terrorist threat?

Prevention

- Keep storage areas locked
- Keep an updated and accurate inventory
- Communicate with local police& fire units
- Routinely review, update, and practice emergency response procedures
- Keep an updated emergency telephone number list





Prevention

- Require photo ID from purchasers
- Be vigilant of unknown individuals who want to buy bulk pesticides with cash
- Ask employees to report incidents of unusual behavior from strangers





Restrict access of non-employees

Summary

- Maintain vehicles, train drivers, and carry labels to prevent and respond to pesticide accidents
- Keep pesticides in a cool, dry, well-ventilated room with adequate lighting
- Lock the area and post warning signs
- Keep pesticides in original containers with legible labels



Summary

- Keep an inventory of all chemicals in storage
- Follow label instructions for proper disposal
- Develop security and emergency management plans
- Train employees and work with local authorities



- Q1. Which of the following statements are true regarding pesticide storage?
 - 1. The floor of a storage facility should be made of wood for easy clean-up
 - 2. Treated seed should be stored in a pesticide storage facility
 - 3. Keeping pesticide storage facilities well ventilated helps to reduce potential pesticide exposures
 - 4. Pesticides never go bad

A. 2 and 4

C. 1 and 4

B. 1 and 3

D. 2 and 3



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B. 1 and 3

D. 2 and 3



Q2. When transporting pesticides:

- A. Always drive with the window open to let the fumes escape from the backseat
- B. Drive a beat-up truck in case the pesticides spill. You don't want to get your new truck dirty
- C. Secure pesticides and protect against extreme weather conditions
- D. Carry your commercial driver's license, which is required for anyone transporting professionally-applied pesticides



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Q3. Which of the following should be stored separately from the pesticide storage facility?

- A. MSDS sheets
- B. PPE
- C. Spill kit
- D. Fire extinguisher



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