



Lesson 6: Pesticides Storage

Although your supervisor will be responsible for mixing pesticides and calibrating your spray equipment, you may be required to transport and store pesticides. You will need to know what is required by legislation for the transportation and safe storage of pesticides.

Key Learning Points

- Describe how to safely store pesticides during transport.
- Describe the general storage requirements for commercial and restricted pesticides.

Storage Facilities

A well-designed, well-maintained storage facility protects people, animals and the environment. Correct storage can also extend the shelf life of pesticides and prevent cross-contamination. In addition, proper storage reduces the chances of theft and vandalism.

Applicators must follow the legal requirements for pesticide storage. These regulations may include guidelines for choosing a location, construction specifications for a building or areas in a building, and the actual storage of the pesticide within the storage area.

On the next page, you'll find a checklist for storage facilities. This list covers what to look for in a good facility—not just what's required by law, but additional considerations for creating a good pesticides storage facility. As an assistant applicator, you may be responsible for ensuring pesticides are stored securely in the proper place. This lesson describes best practices for storage.

Safe Storage Activity

Download or watch the following video online. As you watch, use the checklist on the next page, and check off each feature you see in Brian's storage facility.



[*Safe Pesticide Storage*](#)

If you're working offline, remember you can come back to the Module 6 web page and download or stream the video from there.



Features of Proper Pesticide Storage

Structural integrity and safety
The facility protects pesticides from weather conditions (freezing, heat, rain, humidity) that can cause damage to the pesticides, their containers or their labels.
It is well-ventilated under all weather conditions so that pesticide vapours are removed to outdoor areas.
The facility or area is well-lighted.
Contamination prevention
The facility is used only for storing pesticides, pesticide measuring equipment and pesticide application equipment.
Floors are able to contain spills (be sealed and with a curb).
Floors do NOT have a floor drain, unless the drain leads only to a self-contained spill collection system.
Shelves and flooring are made of materials that do not absorb pesticides.
If the facility is a building, it has a vegetation-free zone around the edge of the building.
Protective clothing, clean up and decontamination equipment is stored close to, but not with, the pesticides.
Emergency equipment can easily access the facility.
Fire safety and security
The building or area is constructed of fire resistant materials.
Appropriate types of fire extinguishers are installed outside the storage area.
Electrical wiring is safe and up to electrical code standards so that it does not pose hazard.
A warning sign is on all doors indicating that pesticides are stored inside. For some pesticides, compressed gas, flammable or corrosive material warning signs may also be required. No smoking signs should be posted.
The facility is lockable and kept locked when unattended.
A security system is in place to ensure only authorized persons have access to the facility. Examples include having keys that only open the pesticide storage facility, sign in and sign out procedures and a mechanism to ensure employees who leave the employment return the keys or the locks are re-keyed.



Legal Requirements for Storing Commercial and Restricted Pesticides

Any permanent storage facility for commercial and restricted pesticides must meet the requirements of the law:

- The pesticide is stored separately from food intended for human or animal consumption.

The storage facility must be:

- Ventilated so that the pesticide vapours are vented to the outside,
- Not used for the storage of food intended for human or animal consumption,
- Locked when unattended, and,
- Accessible only to persons authorized by the person storing the pesticide.
- Each door that provides access to a storage facility must bear a sign
- The sign includes the words, “warning: chemical storage – authorized persons only” written in block letters. ([*These signs are available from the Ministry of Environment*](#)).
- The sign is clearly visible to a person approaching the door
- Fumigants and other pesticides that release vapours and bear a “poison” symbol on the label must be stored in a storage facility that is not attached to, or within a building used for living accommodation.

If you have any concerns about a storage facility, talk to your supervisor.

As an assistant applicator, you may need to store pesticides at a temporary location. Use this checklist to make sure any temporary storage facility for commercial pesticides meets the regulations:

- The location should be on flat ground that is not highly permeable and is not within 30 m of any wells or waterbodies.
- The floor of the facility should be constructed to contain spills.
- Pickup trucks with lockable canopies or transport trailers may be used for temporary storage if the natural ventilation adequately removes pesticide vapours from them. Truck boxes and trailers will not be able to contain any spills so pesticide containers may need to be kept inside other containers in the vehicle.

Note: Temporary storage facilities (including storage in vehicle and trailers) must also meet the same requirements as permanent facilities. This means they must also be locked, accessible only to those authorized, and signed. You must always store tools, equipment, and safety and protective gear separately from pesticides.



Cleaning and Storing Equipment



The video from Module 5, [Protective Clothing and Equipment for Pesticide Use](#) also addresses storage. If you haven't watched it yet, watch it now to see a detailed depiction of cleaning and storage of equipment.

If you're working offline, remember you can go back to the Module 6 web page and download or stream the video from there.

Transporting Pesticides

Where the pesticide is regulated under the Transportation of Dangerous Goods Act, the driver must be trained in the transportation of dangerous goods and the vehicle must carry the necessary Transportation of Dangerous Goods documentation and placards like the ones shown below. Your supervisor should be able to tell you if you need placards. You can also consult the MSDS for the pesticide you are transporting to check for TDG information if it applies.



Flammable Liquid
(White on red)



Toxic
(Black on white)



Environmental Hazard
(Black on white)



Mixed Load
(Black on white stripe
with red background)

If you are studying online, you can download the following [safe transportation of pesticides poster](#) and save it as a single page. You can post this at your place of work for a handy visual reminder.



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How to Transport Pesticides Safely



Secure containers upright within the cargo area so they do not move—**never** store them in the passenger compartment.



Never leave pesticides unattended in a vehicle unless they are locked up in the cargo compartment.



Always carry personal protective equipment and spill clean-up equipment in case of an accident or spill.



Never allow personnel to travel in the cargo area with pesticides.



Protect paper and cardboard containers from rain and snow.



Transport only pesticide containers that have approved, intact labels.



If pesticides are transported on a wooden truck bed, place the containers on a waterproof tarp or in a metal or plastic storage box.



Where the pesticide is regulated under the Transportation of Dangerous Goods Act, the driver must be trained in the transportation of dangerous goods and the vehicle must carry the necessary documentation and placards.



Transport containers that are in good condition. **Do not** transport broken bags or cartons or leaky containers. When bags or containers are damaged, repackage the pesticides.



At the end of Work

When you are finished working with pesticides, you will need to clean up and store the pesticide properly. You will learn about equipment cleanup in Lesson 8: Application Technology. You should also check with your supervisor about the correct way to clean and the equipment that you will use. Note: You will need to clean your equipment before removing your PPE. And always remove gloves last, after you've stored the pesticide!

Disposal

Disposal of empty pesticide containers and pesticide waste is regulated under federal and provincial legislation. Improper disposal or dumping of pesticide waste can harm the environment and contaminate drinking water. It is also illegal.

More detailed information on proper disposal can be found on the [Ministry of Environment web site](#), as well as in an Appendix at the end of this lesson pdf. Your supervisor might direct you to dispose of empty containers at a facility.

There are facilities that accept empty, rinsed commercial pesticide containers for recycling. If you have empty containers with the words "Commercial" or "Restricted" on the label that need disposing after washing, you can drop them off at one of these facilities. Please see the appendix.

Cleanup Matchup Optional Captivate

If you have access to the Internet, try out the [Cleanup Matchup](#) activity.

Summary

In this lesson, you learned the legal requirements for storing pesticides, as well as the best method for cleaning up and storing equipment. You also learned about the rules for transporting pesticides, and the procedures for proper disposal.



Lesson 6 Practice Activity

1. Which of the following are factors to consider when transporting pesticides? Select all that apply.
 - a. Security of the pesticides in the vehicle
 - b. Condition of the packaging
 - c. Notification of local fire department
 - d. Location of pesticides relative to passengers
2. If a pesticide is being stored in a vehicle, it needs to be locked when you are away from the vehicle.
 - a. True
 - b. False
3. Which of the following could be acceptable storage facilities or areas for pesticides? Select all that apply.
 - a. A locked kitchen cabinet
 - b. A locked chest on the back of a spray truck
 - c. A barn
 - d. A shed
4. Which of the following are important security features for a pesticide storage facility?
 - a. Lock, warning sign
 - b. Ventilation, inventory record
 - c. Good lighting, rain-proof
 - d. No floor drain, chemical-resistant shelving
5. You are storing pesticides in a temporary location. Which of the following water-related factors will affect your choice of location? Select all that apply.
 - a. Distance from surface water
 - b. Backflow protection
 - c. Non-permeable soil or base
 - d. Avoidance of flood zone
6. Which of the following are reasons for keeping a storage area locked? Select all that apply.
 - a. Children might enter the area
 - b. Thieves may get into the storage area
 - c. General public may accidentally enter the area
 - d. Locked storage areas will contain spills



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7. Which of the following risks associated with disposal of pesticide containers are TRUE? Select all that apply.
 - a. Children might play around or with un-rinsed containers and could be poisoned
 - b. Rain could wash pesticide residues into a stream and kill fish
 - c. Poor disposal practices create a bad safety image for your company
 - d. Improperly discarded containers take up too much room in landfills

8. A temporary facility must be lockable, and ventilated to the outside.
 - a. true
 - b. false

9. When washing containers by hand, what is the minimum number of times each container should be rinsed?
 - a. One time
 - b. Twice
 - c. Three times
 - d. Four or more times until clean

10. How should a pesticide container with the words “Commercial” or “Restricted” be disposed of after washing?
 - a. Take it to the municipal recycling program
 - b. Reuse it so that it doesn't have to be disposed of
 - c. Shred the containers and burn them
 - d. Take it to a designated pesticide container collection facility



Practice Activity Answer Key

1. a, b and d
2. a. true
3. b and d
4. a, b, c and d
5. a, c and d
6. a, b and c
7. a, b and c
8. a. true
9. c
10. d

Glossary

temporary storage facility: Any location where pesticides are stored that is not a permanent storage facility. This includes a vehicle or trailer. Temporary storage facilities must also be locked, signed, and away from wells and water bodies. The ventilation must adequately remove pesticide vapours. If the temporary storage is in a vehicle, containing spills will not be possible, so pesticides must be stored inside other containers.



Safe Disposal of Unwanted Pesticides

Pesticides need to be handled, used, and disposed of appropriately, in order to minimize risk to human health and the environment. If you have unwanted pesticide products and/or containers and are considering disposal options, the first thing you should do is **read the label**. **The label may describe disposal procedures. These must be followed.**

How can I dispose of unwanted Domestic or household pesticides?

“Domestic” class pesticides have the word “Domestic” displayed on the main information panel of their labels. They include, for example, some brands of Roundup, Killex, and Sevin that can be purchased at local garden stores.

1. If your pesticide **container is not opened**:

- You may be able to return unopened Domestic pesticide containers to the manufacturer or the vendor from which it was purchased. Call them beforehand to inquire.

2. If you wish to **dispose of household pesticides**:

- First read the label. The label may describe disposal procedures. These must be followed.
- If the label does not provide details or you need more information, contact the Recycling Hotline of British Columbia.
- If you have unlabelled or poorly-labelled containers that you know or suspect may contain a pesticide, you should take a precautionary approach to handling and disposing of these products. To discuss the disposal of these products contact the Recycling Hotline of British Columbia.
- If the container is leaky or in poor condition, place the entire container into another larger container to prevent any leaks from escaping while you store or transport the pesticide.

Recycling Hotline of British Columbia (RCBC): www.rcbc.bc.ca/services/recycling-hotline

BC Toll-Free: 1-800-667-4321

Lower Mainland: 604-RECYCLE (604-732-9253)

Email: hotline@rcbc.ca

What about empty pesticide containers?

Domestic or **household** pesticide containers may be disposed of in the household garbage. Do not put them into “blue boxes” for recycling. It is always best to rinse empty containers before disposing of them. Use the rinse water when mixing a new batch of pesticide or pour it onto the ground in the area where you applied the pesticide; do not pour it down the drain.

How can I dispose of unwanted Commercial or Restricted pesticides?

“Commercial” class pesticides will have the word “Commercial” (or, “Agricultural”, “Horticultural”, or “Industrial”) displayed on the main information panel of their labels. “Restricted” class pesticides will have the word “Restricted” displayed on the main panel of their labels. In general, these are concentrated pesticides that require dilution before they are used. Examples include agricultural insecticides like diazinon and endosulfan, forestry herbicides like glyphosate and horticultural fungicides like Captan.

There currently are no permanent locations in B.C. where commercial pesticides can be taken for disposal. The following options are available:

1. You may be able to return your unused pesticides, in their original containers to the vendor or supplier from which they were purchased. Call them beforehand to inquire about this option.
2. You may use the pesticide according to label directions. For example, apply it to a crop specified on the label.
3. If you are a licensed pesticide user, you may give your unused pesticides to another licensed pesticide user. Please ensure that you are giving it to someone who will be using it for the purposes described on the product label.
4. Contact your municipality or regional district and ask them if they operate a hazardous waste roundup or a similar program, and ask what sort of pesticides they accept. Commercial class pesticides may or may not be acceptable, depending on the program, so be prepared to tell them the type and quantity of product you have.
5. You may obtain the services of a company that specializes in hazardous waste disposal. These companies will assist you to determine if you have a hazardous material and will arrange pick up and disposal of your unwanted pesticides for a fee. You will need to provide the company with the pesticide name, number and size of containers, and approximate volume of liquid pesticides or weight of solid pesticides. To obtain more information about registered hazardous waste disposal companies in your area please call the IPM program staff in your area (see phone numbers below).

Helpful hazardous waste information:

www.env.gov.bc.ca/epd/hazwaste/

www.hazwastebc.com/

6. Keep your pesticides properly stored, and wait for a B.C. Pesticide Return event.

CleanFarms collects and safely disposes of obsolete or otherwise unwanted agricultural pesticides through their obsolete pesticide collection program. For more information on this program and pesticide collection schedule in your area visit the CleanFarms or the “Pesticide Wise” sites.

CleanFarms: www.cleanfarms.ca

Pesticide Wise website, Ministry of Agriculture www.al.gov.bc.ca/pesticides

7. Under B.C. law, commercial pesticides must be stored in a structure that is locked, vented, and has a sign saying “WARNING – CHEMICAL STORAGE”. If your pesticides are in leaky containers, consider storing these containers inside larger, secure containers, such as 20 L plastic pails or 200 L plastic drums. Keep liquids and solids separate, and properly labelled.

What about empty pesticide containers?

Commercial pesticide containers must be appropriately rinsed, and may be taken to a container collection site for recycling. For instructions on how to properly rinse containers, and a list of empty container recycling sites in B.C follow the links to disposal at the “Pesticide Wise” website or visit the CleanFarms website (above).

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