environmental farm plan
sustainably farmed

INFOSHEET #3

PESTICIDE HANDLING AND STORAGE

How to address concerns identified in Environmental Farm Plan Worksheet #3

Based on Environmental Farm Plan Workbook, 5th ed. 2025

This infosheet outlines options to address concerns identified in your Environmental Farm Plan (EFP) as they relate to on-farm pesticide handling and storage.

For pesticide storages and handling facilities in a Source Water Protection Zone, you may need to take measures to reduce risk. The **Farm Source Water Protection Plan framework** and workbook can help you work through the Source Water Protection Framework and its application on your farm.

For help with technical terms, please see the full glossary in your EFP Workbook.

All options in this infosheet are classed as **Actions, Compensating Factors,** or **Monitoring**.

- **Actions** address the identified concern, and will change the EFP rating to (3) or (4) Best.
- **Compensating Factors** are alternatives that will adequately address the concern, but will not change the rating in the EFP worksheet.
- **Monitoring** is an alternative in special circumstances only. When and how monitoring can be used is explained in the infosheet.

In most cases, you'll need more information before choosing and implementing options. Sources for more information are noted at the end of this infosheet.

Sustainable Canadian Agricultural Partnership
OSCIA
Ontario
Canada

MIXING AND LOADING PESTICIDES

3-1. Mixing/loading area

BACKGROUND

Containment is a key safety measure when handling pesticides. Pesticide leaks or spills, when contained, will not percolate down through soil into groundwater, or run off the surface to contaminate streams, ditches, ponds, etc.

If a water source is contaminated as a result of a pesticide spill from a mixing/loading area, the landowner will be held responsible.

A dedicated mixing/loading area will reduce the risk of surface or groundwater contamination.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Construct a mixing/loading area with an impermeable floor, curb, spill collection sump, and permanent roof to exclude rainfall:

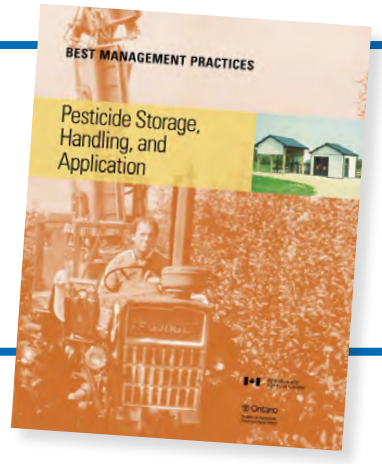
- collect rinsate, store in separate labelled containers, and apply to crops noted on pesticide label
- compare costs of construction options

OPTION 2 – ACTION

Mix and load pesticide products at site of spray application – away from surface water, wells, etc. in a new location each time:

- more easily done with a portable water supply
- will require added labour for transporting water and pesticide
- a closed transfer system will reduce the potential for point source contamination or operator exposure

To learn more about mixing/loading sites, see the BMP publication Pesticide Storage, Handling, and Application.



3-2. Distance from permanent mixing/loading area to nearest surface water

BACKGROUND

The risk of contaminating surface water increases when pesticide mixing/loading occurs close to surface water.

Sloping topography and heavy soils increase the chance of contaminated runoff reaching surface water.

Slope and soil type are major factors in determining the risk of surface water contamination.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Relocate the permanent mixing/loading area to a distance greater than 60 m (200 ft) from surface water.

OPTION 2 – ACTION

Increase the flow path distance between surface water and the permanent pesticide mixing/loading area:

- reshape land or build diversions to direct runoff away from surface water to a location in the field or along a flow path where it will not likely reach the surface water
- ensure any land-forming changes will not cause or increase erosion on either your property or neighbouring lands

Professional assistance to site and design berms is recommended when such work is being considered, particularly along larger watercourses.

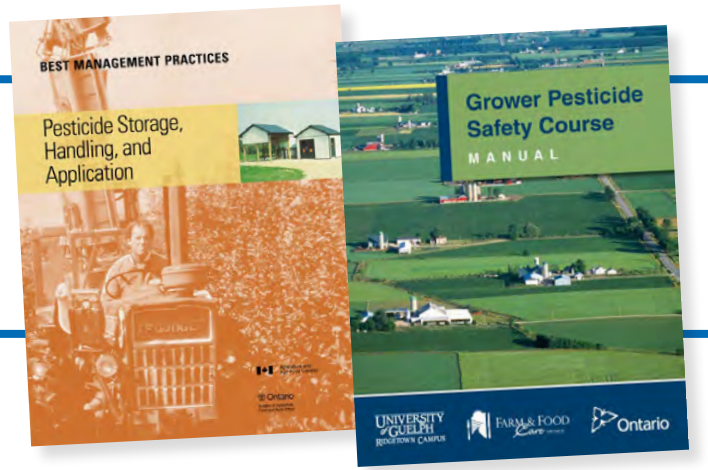
A permit may be required to do work adjacent to surface water. Contact your local Conservation Authority for additional information.

OPTION 3 – MONITORING

For the permanent mixing/loading area with a roof and impermeable floor with curb for containment:

Monitor the mixing/loading area regularly during use – visually checking for leaks, cracks or seepage of liquids from the structure.

For more information on siting permanent mixing/loading areas, see BMP Pesticide Storage, Handling, and Application.



The Grower Pesticide Safety Course teaches you how to keep you, your family and the environment safe when handling pesticides.

See www.opep.ca for more information.

3–3. Distance from permanent mixing/loading area to well

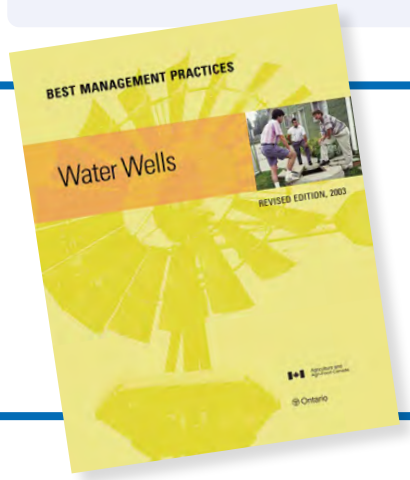
BACKGROUND

Increasing the distance between the permanent mixing/loading area and the well reduces the risk of contamination. A longer distance lowers the chance of a spill collecting in the vicinity of the well and causing direct contamination, which can have human health impacts.

Soil type, depth to water table and bedrock will also influence the contamination potential.

Separation distances to water wells help protect drinking water quality. Soil type and depth to water table also affect risk of contamination.

For more information about risks to groundwater and wells, see the BMP Pesticide Storage, Handling, and Application.



To better understand site considerations to safeguard well water quality, see this BMP.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Locate the permanent mixing/loading area the required distance away from the well:

- verify that the new location will change the final EFP distance rating to a (3) or (4) Best
- locate the mixing/loading area downslope of well
- monitor well water for pesticides used at least once a year until the new mixing/loading area is built

OPTION 2 – ACTION

Drill a new well the required distance from the permanent pesticide mixing/loading area:

- verify that the new location will change the final EFP distance rating to a (3) or (4) Best
- where the minimum legal separation distances cannot be attained due to site restrictions, seek guidance from the Ministry of the Environment, Conservation and Parks (MECP)
- monitor well water for pesticides at least once a year until the new well is constructed
- make sure the old well is properly abandoned according to Regulation 903, section 21, under the Ontario Water Resources Act

OPTION 3 – MONITORING WELL WATER

For existing permanent pesticide mixing/loading areas that have an impermeable floor with no cracks and a curb installed to collect spills:

- test the well water for pesticides at least once a year
- if a test reveals contamination, stop drinking the water or providing it to livestock, and have an action plan in place to identify and address the problem immediately

3–4. Backflow prevention on water supply when filling sprayer

BACKGROUND

The backflow of a pesticide from a sprayer tank during filling can quickly contaminate surface water and groundwater – and possibly reach well water.

Eliminating potential pesticide backflow from a sprayer tank protects the water source.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Use a separate water tank to supply water to the sprayer:

- pump water from a source (well, watercourse, etc.) into a water-holding tank at the permanent mixing/loading area with a permanent anti-backflow device in the pipe supplying the sprayer
- pump water from a source (well, watercourse, etc.) into a mobile water-holding tank and haul to a mixing/loading area in the field located at the required distance from wells and surface water

OPTION 2 – ACTION

For direct filling the sprayer, install a permanent anti-backflow device on the water supply line:

- place a check valve in the supply line near the tap or install an anti-backflow siphoning device on the tap

OPTION 3 – ACTION

For direct filling the sprayer, maintain a permanently fixed 15 cm (6 in.) air gap between the water supply line and the sprayer tank.

Anti-backflow devices should be attached to any faucet that supplies water for pesticide application.

3–5. Sprayer tank water filling supervision

BACKGROUND

Vigilance is required to avoid handling-related spills and possible surface and groundwater contamination.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Ensure constant supervision during filling of the sprayer tank.

Never leave a sprayer unattended during filling.

3–6. Disposal of sprayer and container rinsate

BACKGROUND

Rinsate is a mixture of water and a low concentration of a pesticide, left over from spraying that remains in spray lines, pumps and filters.

Every effort should be made to minimize excess spray mix by matching spray volume to field area to be sprayed.

Sprayer and container rinsate must be treated in the same manner as the spray: applied to crops listed on the pesticide label, and at the required distance from surface water and wells.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Apply rinsate to crops listed on label at the required separation distances from surface water and wells.

Collect each type of rinsate separately so that it is applied only to the crop(s) listed on the label:

- don't mix rinsate from different spray materials unless the labelled crops are similar and the materials are compatible
- verify that the location of rinsate application will change the final EFP distance rating to a (3) or (4) Best

Minimize excess spray mix/rinsate to be stored:

- mix tank as precisely as possible
- during cleaning, spray immediately on a labeled crop (rather than collect) – in a different location each time, never exceeding the per hectare amount

For more information, see BMP Pesticide Storage, Handling, and Application.

DISPOSAL OF EMPTY PESTICIDE CONTAINERS

3–7. Return, rinsing and disposal of empty containers

BACKGROUND

Proper rinsing and disposal of empty pesticide containers and/or the use of returnable or refillable containers will lessen the threat of contamination of surface and groundwater.

Improper disposal of unrinsed containers could result in pesticides escaping to surface and groundwater.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Use returnable or refillable containers, and return empty containers to the supplier as soon as possible:

- consider the convenience and availability of this option

For more information regarding disposal of pesticide containers, see BMP Pesticide Storage, Handling, and Application.

OPTION 2 – ACTION

Triple-rinse or pressure-rinse empty pesticide containers, then take them to a pesticide container recycling depot:

- note that the maximum limit on the size of container accepted is 23 L
- for pesticide containers that are greater than 23 L in size, contact your local dealer for details on disposal of these containers or contact Cleanfarms at **www.cleanfarms.ca**
- check your community for recycling options – many farm supply outlets are pesticide container recycling depots as well

OPTION 3 – ACTION

Triple-rinse or pressure-rinse containers. Take clean containers and paper or cardboard containers to an approved waste management facility.

Use returnable or refillable containers. Return emptied containers to the supplier as soon as possible.

3–8. Unwanted/obsolete commercial pesticides

BACKGROUND

Proper disposal of unwanted/obsolete pesticides will lessen the threat of contamination of surface or groundwater supplies.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Store products properly in a secure dry location and return them to a pesticide collection depot as soon as possible. Obsolete and unwanted pesticides can be returned to Cleanfarms obsolete pesticide collection depot when this program is taking place in your area.

- to find a location near you, go to **www.cleanfarms.ca**

OPTION 2 – ACTION

Store products properly in a secure, dry location, and arrange for pickup by a hazardous waste hauler who is licensed by the Ministry of the Environment, Conservation and Parks (MECP).

Unwanted pesticides must be securely stored until disposed of in a safe manner. Keep in original labelled containers and check for leaks.

EMERGENCY PLAN

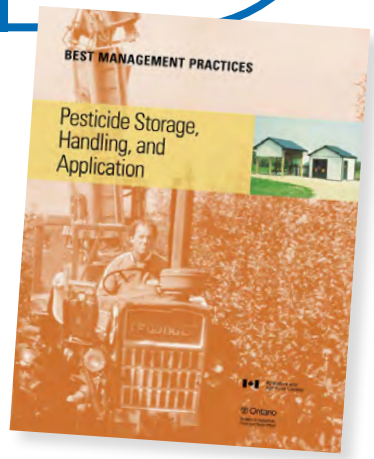
3–9. Emergency plan and cleanup equipment for major and minor spills

BACKGROUND

Having a written emergency plan in place and spill cleanup equipment available will be important to minimize any possible damage that may happen as the result of a spill.

Completing and displaying the emergency plan will make everyone aware of who to notify and what procedures to follow to stop a spill and then clean it up.

For more details on how to properly clean up after a pesticide spill, see BMP Pesticide Storage, Handling, and Application.



Please review and complete the attached sheets as they apply to your farm operation.

EMERGENCY TELEPHONE LIST	EMERGENCY TELEPHONE LIST
Farm Name: Address: Town/City: Postal Code: Telephone: Owner/Operator Contact:	Farm Name: Address: Town/City: Postal Code: Telephone: Owner/Operator Contact:
Civic Address # (911 Number): Road: Township prior to amalgamation: Lot: Concession:	Civic Address # (911 Number): Road: Township prior to amalgamation: Lot: Concession:
County/Region:	County/Region:
DIRECTIONS TO FARMSTEAD:	DIRECTIONS TO FARMSTEAD:
FARM MANAGER:	FARM MANAGER:
ALTERNATE CONTACT:	ALTERNATE CONTACT:
FAMILY DOCTOR:	FAMILY DOCTOR:
AMBULANCE:	AMBULANCE:
FIRE DEPARTMENT:	FIRE DEPARTMENT:
POLICE DEPARTMENT:	POLICE DEPARTMENT:
HOSPITAL:	HOSPITAL:
ONTARIO HYDRO:	ONTARIO HYDRO:
LOCAL MUNICIPALITY:	LOCAL MUNICIPALITY:
MOE:	MOE:
POISON INFORMATION CENTRE (24 HRS.) TORONTO 1-800-268-9018 OTTAWA (BILINGUAL) 1-800-267-1373	POISON INFORMATION CENTRE (24 HRS.) TORONTO 1-800-268-9018 OTTAWA (BILINGUAL) 1-800-267-1373
SPILLS ACTION CENTRE 24-HOUR SERVICE CALL 1-800-268-6060	SPILLS ACTION CENTRE 24-HOUR SERVICE CALL 1-800-268-6060

WHAT CAN YOU DO?

OPTION 1 – ACTION

Prepare a written emergency plan such as the one included in the EFP Contingency Plan booklet:

- keep the plan where it is readily accessible and post one copy in a visible location at or near the pesticide storage
- inform others on the farm of the plan and its location
- have spill cleanup equipment/materials readily available
- re-evaluate the plan periodically

If a pesticide spill occurs, take these actions:

1. Identify the product and contain the source of the spill if possible. Always protect yourself from pesticide contamination
2. Immediately contact the local Ministry of the Environment, Conservation and Parks (MECP) or the 24 hour Spills Action Centre. If an explosion/fire occurs or there is a risk of one, contact the fire department
3. Clean up the spill – act according to the advice supplied by MECP

For liquid spills:

a) Cover the spill with a thick layer of absorptive material (soil, vermiculite, kitty litter, etc.). Allow pesticide to be soaked up by the absorptive material

b) Sweep or shovel absorptive material into the waste drum

c) Contact MECP for the appropriate method of disposal and decontamination

For dust, granular, or powder spills:

a) Sweep or shovel into the waste drum

b) Contact MECP for the appropriate method of disposal and decontamination

If a spill occurs, eliminate the source and then call the Spills Action Centre at 1-800-268-6060.

PESTICIDE TRANSPORTATION

3-10. Transportation

BACKGROUND

Pesticides must be secured during transportation to prevent a spill that could potentially contaminate water.

During transport, pesticides cannot be placed with food or other specified household items that may become contaminated.

A pesticide warning sign must be displayed on your vehicle when transporting pesticide.

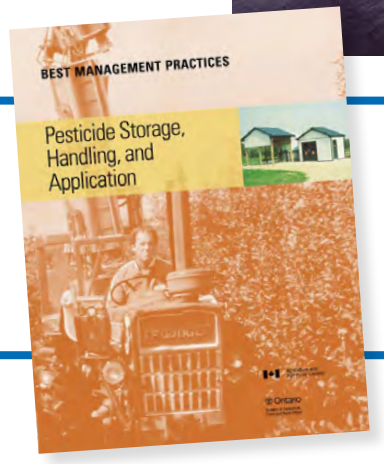
WHAT CAN YOU DO?

OPTION 1 – ACTION

During transportation, secure pesticides from physical damage and ensure that other people do not have access to these pesticides. Unless pesticides are secure and out of sight, there must be continuous supervision.

Do not transport pesticides with food or other specified household items.

Have a spills kit onboard the vehicle.



For more information about transportation requirements, see BMP Pesticide Storage, Handling, and Application.

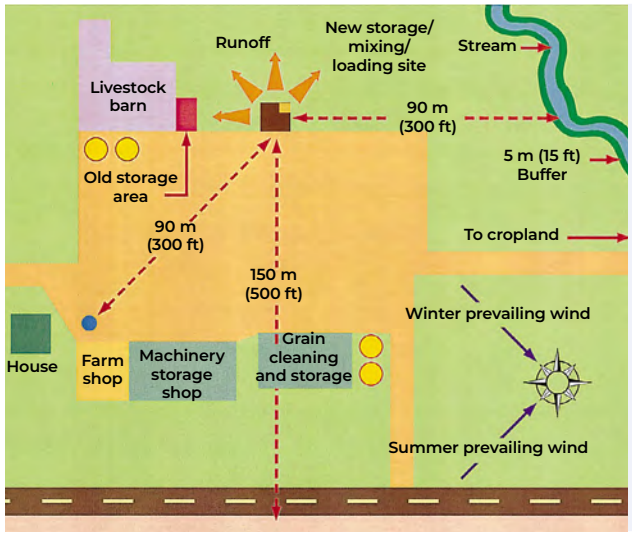
PESTICIDE STORAGE

3-11. Distance from pesticide storage to nearest surface water

BACKGROUND

Increasing the distance between the pesticide storage area and the surface water reduces the risk of contamination.

Sloping topography and heavier soils will further increase the chance of contaminated runoff reaching surface water if a pesticide spill occurs.



The distance from a pesticide storage to the nearest surface water should be at least 61 m (200 ft).

WHAT CAN YOU DO?

OPTION 1 – ACTION

Situate the pesticide storage the required distance from surface water:

- note that the new storage location should change the final EFP distance rating to a (3) or (4) Best

OPTION 2 – ACTION

Increase the flow path distance between surface water and the pesticide storage:

- ensure any land-forming changes will not cause or increase erosion on either your property or neighbouring lands
- seek professional assistance to site and design berms if you are considering such work, particularly along larger watercourses
- contact your local Conservation Authority to see if a permit is required to do work adjacent to surface water, and for additional information
- note that the flow path length must meet or exceed the minimum distance specified in the (3) category

OPTION 3 – MONITORING

For fixed permanent storages that have an impermeable floor with no cracks and a curb installed to collect spills:

- monitor the storage on a scheduled routine, visually checking for leaks, cracks or seepage of liquids from the storage

For more information about siting pesticide storage facilities, see BMP Pesticide Storage, Handling, and Application.

The Water Management BMP book shows how surface and groundwater moves through a farm setting, and what can be done around the farm to protect water quality.

3-12. Distance from pesticide storage to well

BACKGROUND

Increasing the distance between the pesticide storage and the well reduces the risk of contamination. A longer distance lowers the chance of a spill collecting in the vicinity of the well and causing direct contamination, which can have human health impacts.

Soil type, depth to water table and bedrock will also influence the contamination potential.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Situate the storage the recommended distance from the well:

- storage should be downslope of well if possible
- new storage location should change the final EFP distance rating to a (3) or (4) Best
- where the minimum legal separation distance cannot be attained due to site restrictions, seek guidance from MECP

OPTION 2 – ACTION

Construct a new well with the required minimum distance from the pesticide storage:

- the old well must be properly abandoned according to Regulation 903, section 21, under the Ontario Water Resources Act
- the new location should change the final EFP distance rating to a (3) or (4) Best

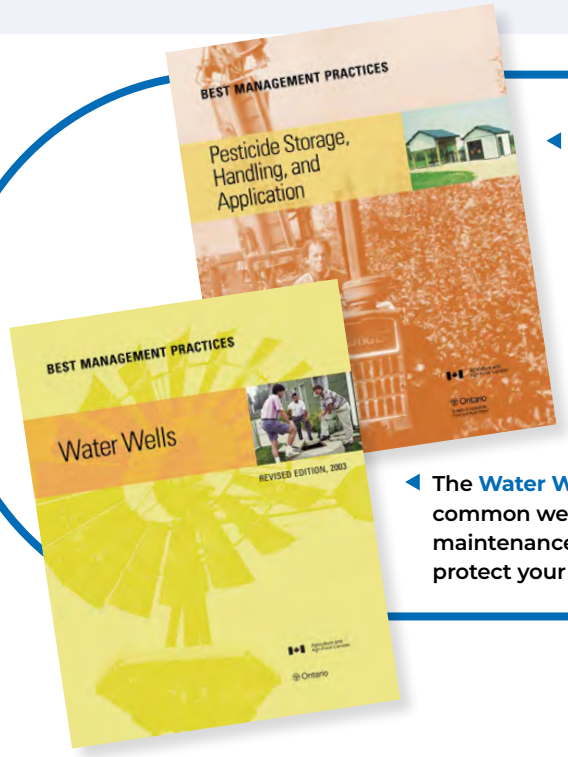
OPTION 3 – MONITORING WELL WATER

For existing pesticide storages that have an impermeable floor with no cracks and a curb installed to collect spills:

Test well water for pesticides at least once a year:

- if a test reveals contamination of the well water, stop drinking the water or providing it to livestock, and have a plan of action in place to immediately identify and address the problem

The distance from a pesticide storage to the nearest drilled well should be at least 24 m (76 ft).



You can also refer to BMP Pesticide Storage, Handling, and Application for more information about siting storages and risks to groundwater and wells.

The Water Wells BMP book describes common well types, risk factors, maintenance and troubleshooting to protect your family's drinking water.

3-13. Pesticide storage area

BACKGROUND

It is important to store pesticides in a location where they do not create a health hazard for humans and animals.

Store pesticides in a separate facility so that in the event of fire in the storage, fumes, explosions, water, etc., will not affect the health and safety of humans and livestock or contaminate other stored materials.

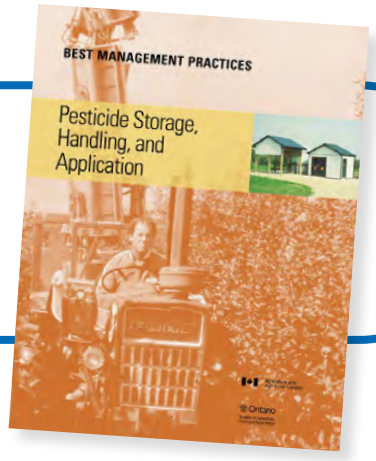
WHAT CAN YOU DO?

OPTION 1 – ACTION

Store pesticides in a separate free-standing storage building:

- locate the storage the required distance (as found in the rating (3) or (4) Best) from the well and surface water
- consider the proximity to the mixing/loading area
- ensure the storage building meets requirements of the Pesticides Act, R.S.O. 1990
- consider building alternatives, i.e., prefab or built on-site
- check with municipality re: building permit requirements, setbacks, etc.

For more information about storage types and designs, see BMP Pesticide Storage, Handling, and Application.



OPTION 2 – ACTION

Store pesticides in a cabinet (insulated for winter storage):

- when storing a small volume of pesticides
- that meets the requirements of the Pesticides Act
- that meets the required distances to the well and surface water

OPTION 3 – ACTION

Store pesticides in designated area that is partitioned off within another storage area:

- must meet requirements of the Pesticides Act and Ontario Building Code (check with municipality)
- note the adjacent storage can only be used for non-food (human or animal) items, e.g., farm equipment

A separate pesticide storage area is required under the Pesticides Act, R.S.O. 1990, Ministry of the Environment, Conservation and Parks (MECP) The storage must meet the Act's requirements, including no floor drain.

3-14. Spill or leak containment in storage area

BACKGROUND

Contain spills or leaks in the storage area to prevent contamination of groundwater or surface water. Impermeable floors with a curb can contain small spills and allow them to be easily cleaned up.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Ensure the floor in the storage area:

- is impermeable, i.e., sealed concrete, with a full curb
- does not have a floor drain
- is reinforced concrete so that cracking will not occur
- has a well-drained, compacted gravel base under the concrete slab

An impermeable floor with curb will contain spills for ease of cleanup.

3-15. Storage requirements for human safety

BACKGROUND

When handling or storing pesticides, human health and safety issues are major concerns. Human safety in pesticide storages is covered by the Pesticides Act, R.S.O. 1990, MECP.

WHAT CAN YOU DO?

OPTION 1 – ACTION

Store pesticides in a free-standing storage building, a cabinet or a designated area partitioned off within another storage building that meets all the following requirements:

- area is clean and orderly
- locked door
- pesticide storage warning sign at entrance
- ventilated to outside
- respiratory equipment and protective clothing readily available
- emergency telephone numbers posted
- all pesticide containers properly labelled

FOR MORE INFORMATION

ONTARIO MINISTRY OF AGRICULTURE, FOOD AND AGRIBUSINESS (OMAFA)

- Agricultural Information Contact Centre (AICC)
  Toll free: 1-877-424-1300 | e-mail: ag.info.omafa@ontario.ca

  Find most of the resources listed below at www.ontario.ca

Publications

- Reducing the Risk of Fire on your Farm, Publication 837
- Grower Pesticide Safety Course Manual, Section 14, How to Store Pesticides Safely

Factsheets

- Pesticide contamination of farm water sources
- Handling pesticides safely to avoid spills
- Farm pesticide storage facility
- Building permit requirements to construct, expand or renovate farm buildings

Best Management Practices Series

- Pesticide Storage, Handling, and Application
- Water Management
- Water Wells

ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

- Public Information Centre, Toll-free: 1-800-565-4923
- Spills Action Centre, Toll-free: 1-800-268-6060

PUBLIC HEALTH ONTARIO

- Ontario Poison Centre: 1-844-764-7669

COURSES

- Grower Pesticide Safety Course, University of Guelph, Ridgetown Campus, Tel: 519 674-1500; Toll-free: 1-800-652-8573

INDUSTRY PROGRAMS

- Ontario Soil and Crop Improvement Association
  - Emergency Plan
- Empty Pesticide Container Recycling and Obsolete Pesticide Disposal (Cleanfarms.ca); Toll-free: 1-877-622-4460
- Resource Productivity and Recovery Authority
  - Where to Recycle

LEGISLATION/ACTS

- Pesticides Act, R.S.O., 1990
- Ontario Regulation 63/09
- Ontario Building Code, 2024
- Ontario Clean Water Act, 2006
- Ontario Water Resources Act, R.S.O. 1990
- Dangerous Goods Transportation Act, 1990
- Health Canada pesticide label search database