

FARM PRACTICE

STORAGE OF HAZARDOUS MATERIAL

Description

Because the pesticides, herbicides and insecticides used to protect agricultural crops are potentially dangerous, they must be handled carefully. Directions on agri-chemical container labels must be followed as prescribed. Special attention must also be given to the handling of associated equipment, calibration procedures, the mixing and dilution of chemicals, and timing of application. Agricultural chemicals must also be stored properly in accordance with labels and building codes.

Other materials typically considered to be hazardous can include fuel, drugs, medications, solvents and paints.

Activities and Operations

Storage of Hazardous Material

Commercial fertilizers, petroleum products, pesticides and other hazardous products may be stored on farms. Potentially poisonous, corrosive, volatile, flammable or dangerous materials or liquids must be stored in structurally sound facilities to prevent leaks and spills. Agri-chemicals should be stored above flood plain levels wherever possible. Minimally, provisions should be in place to move such materials above flood plain levels if required.

Chemical Storage

All agricultural chemicals should be stored in a dedicated facility. As outlined in the *National Farm Building Code of Canada*, a pesticide storage structure must:

- be ventilated naturally or mechanically to the outdoors to prevent the accumulation of toxic or flammable vapors
- be of sufficient size to accommodate the agri-chemicals required for one crop year
- be accessible from outdoors and secured from unauthorized entry
- have an impervious floor, typically of concrete, without a floor drain and curbed around the full perimeter to provide containment for the largest container within the storage; the curb should be at least 50 millimetres (two inches) in height
- be separated from all food, feed and water supplies
- be separated from all other occupancies either by an open space or by a fire separation wall having a fire rating resistance of at least one hour
- be clearly identified with a sign saying “Danger”, “Chemical Storage” or “Authorized Persons Only” permanently attached to the outside of each entrance

- contain shelving that separates oxidizing chemicals from combustible chemicals
- have an insulated and heated cabinet for chemicals requiring protection from freezing

If a storage structure is incorporated with a sprayer filling station, it should be located well away from and sloped away from any surface water courses or groundwater supply sources. It should be situated on land that is naturally impermeable or has been covered with an artificial impermeable base.

Storage and Disposal of Used Containers

A storage facility should be dedicated to the storage of full and partially-full containers only. Empty containers should be triple-rinsed or cleaned to the point where they pose no threat to people, animals or the environment. If temporary storage is required, the site selected should be one that is used infrequently, does not attract public attention and is ideally fenced.

Landfill disposal of clean empty containers is permitted. Containers must be triple-rinsed or cleaned with a pressure washer. Some sprayers incorporate attachments to allow containers to be conveniently rinsed with adequate water pressure. Care must be taken to ensure that rinse water does not run into storm drains, creeks or other water supplies.

To reduce the volume of waste going to landfill sites, agri-chemical manufacturers and dealers in B.C. have initiated a recycling program. They will accept and recycle triple rinsed or pressure-rinsed plastic and metal containers. For a list of participating dealers, contact the BC Ministry of Agriculture or the organization Clean Farms.

Disposal of Diluted Chemicals

To minimize the number of containers that must be disposed of, farmers are encouraged to calculate their chemical needs carefully. If chemicals are already mixed and contained in a sprayer, they may be further diluted and sprayed on an already-sprayed crop appropriately. This eliminates the need to drain the sprayer and store used or diluted chemicals.

Recycling of Unused or Expired Chemicals

Chemicals that are not likely to be needed in future or whose efficacy is likely to decline before they will be used again should be disposed of in an environmentally responsible manner. Unopened pesticides can be returned to the vendor. Partially-full containers can be given to a neighbouring farmer for use. Excess pesticide, whether diluted or not, should never be disposed of in an inconspicuous farm location or drained into the sewer system. Under no circumstances should expired chemicals or incompletely-washed containers be stored in an area not dedicated to pesticide storage.

See also Farm Practice: [Pesticides](#)

Safe Use of Pesticides

Although only contractors and those using restricted-use pesticides are required to take the Pesticide Applicator Course for Agricultural Producers, it is recommended that all agri-chemicals users take this training.

See also Farm Practice: [Pesticides](#)

Emergency Plan

An emergency plan outlining steps to be taken in the event of a spill or leak should be posted near the entrance of every facility in which agri-chemicals are stored. Each emergency plan should include information on the location of emergency and first aid equipment, emergency phone numbers, and cleanup instructions.

Spills

The *Spill Reporting Regulation* of the *Environmental Management Act* describes the levels of substances that must be reported when a spill occurs and who to report it to. The Regulation requires a person to report to the Provincial Emergency Program at 1.800.663.3456 any spill of pesticide weighing more than five kilograms, fertilizer and manure amounts of greater than 50 kilograms, and petroleum product volumes greater than 100 litres. Further information on other substances and associated reportable quantities is contained within the Regulation.

Storage of Medication

All drugs for livestock use must be stored in accordance with labeling instructions to maximize and maintain its efficacy. Specific instructions on temperature and exposure to light will be noted on all labels. Well-organized storage will help to prevent inadvertent uses of wrong products.

Storage of Petroleum Products

Appropriate guidelines must be followed when setting up fuel storage facilities to ensure that environmental and fire safety concerns are met. Siting and labeling regulations vary and are dependent on sizes of fuel tanks and whether storage is above ground or underground. Disposal and recycling of used petroleum products are subject to regulation. All fuel tanks must be adequately secured.

Fertilizer Storage

Liquid fertilizer storage tanks should be located within a properly-sized walled or bermed leak-proof secondary containment structure. Large dry bulk fertilizer storages should be sited on elevated ground with provisions to divert rain, snowmelt, floodwater or runoff. Fertilizers must be kept dry in well-constructed facilities to prevent caking and consolidation. Extra care must be practiced when impregnating fertilizers with pesticides.

Legislation

Information on federal and provincial legislation can be found in Appendices B and C. Acts, regulations and bylaws that regulate or may affect hazardous materials storage include, but are not limited to, the following.

Federal Legislation

The *National Farm Building Code of Canada* prescribes general requirements for pesticide storage.

Provincial Legislation

The *BC Fire Code* outlines storage and precautions necessary for hazardous materials storage.

The *Environmental Management Act* outlines procedures and practices necessary in reporting and storing hazardous materials. Pertinent regulations under this Act include the *Storage of Recyclable Material Regulation*, the *Hazardous Waste Regulation*, and the *Spill Reporting Regulation*.

The *Workers Compensation Act* outlines practices necessary to ensure worker safety in the use of hazardous materials. Further details are specified in the *Occupational Health and Safety Regulation* under this Act.

Publications

Publications that provide further information on hazardous material storage include, but are not limited to, the following. Refer to Appendix D for details.

British Columbia Environmental Farm Plan Reference Guide

British Columbia Good Agricultural Practices (GAP) Guide

Designing Facilities for Pesticide and Fertilizer Containment

Farm Storage and Handling of Petroleum Products

Handbook for Pesticide Applicators and Dispensers

National Farm Building Code of Canada

On-Farm Food Safety

On-Farm Pesticide Storage and Handling Facility

Pesticide Applicator Course for Agricultural Producers

Standard Practices for Pesticide Applicators: A Manual of Health Information and Safe Practices for Workers Who Apply Pesticides

Ministry of Agriculture crop management and production guides for various commodities can also provide useful information on hazardous material use, storage and disposal.