

Pesticide Storage & Handling

The storage and application of pesticides on farms has the potential to contaminate ground and surface water.

A properly designed and constructed pesticide storage facility will:

- reduce the risk of surface and groundwater contamination,
- protect nearby feed/food storages from contamination,
- increase user safety and
- restrict access to authorized persons.

The following information is intended to assist in developing an on-farm pesticide storage. For those constructing storage for the resale of pesticides, the *Nova Scotia Environment Act* should be consulted for additional regulations.

Storage Structures

When a farm stores small quantities of pesticides (less than 25 L in liquid form or 25 kg in solid form), an old household freezer will provide adequate storage (Figure 1).



Figure 1: Freezer Storage

The freezer should have a plastic liner capable of containing a spill. The freezer door should be locked and a pesticide storage sign should be posted.

When large quantities of pesticides are stored, a separate storage facility should be constructed (Figure 2).



Figure 2: Pesticide Storage Building

Site Selection

The pesticide storage facility should be located on a site that meets the following criteria:

- away from other buildings,
- downwind and downhill from homes, animal housing, play areas and wells,
- in an area not prone to flooding,
- 30 m from wells and watercourses,
- in accordance with local municipality's separation distances from property lines, homes, livestock facilities and fuel tanks,
- with access to electrical service,
- in an area that is easily accessible but not susceptible to vandalism and
- With access to a piped water supply

Facility Design and Construction

Pesticide storage facilities should be designed by an engineer. A few points concerning design and construction are:

- The **FLOOR** must be impermeable and preferably sloped 12 mm to the center. The floor should be sealed with a penetrating epoxy sealer. Floor drains are not permitted. A continuously poured, reinforced concrete slab with at least a 10 cm high curb around the perimeter is recommended to contain any spillage (Figure 3).
- **INTERIOR WALL** and **CEILING** construction should be non-absorbent, non-combustible and washable.
- **VENTILATION** must be provided to eliminate vapours and toxic fumes from building up in the storage area. Each storage area must be ventilated to the outside. Ventilating fans should be wired so that the fan can be turned on prior to entering the storage facility.
- **LIGHTING** must be of sufficient intensity to provide safe working conditions and to allow labels to be easily read. Lighting, electrical installations and grounding of steel shelving must conform to applicable electrical codes.
- Different pesticides have different **TEMPERATURE** requirements. These requirements should be taken into consideration when designing and constructing a pesticide storage.

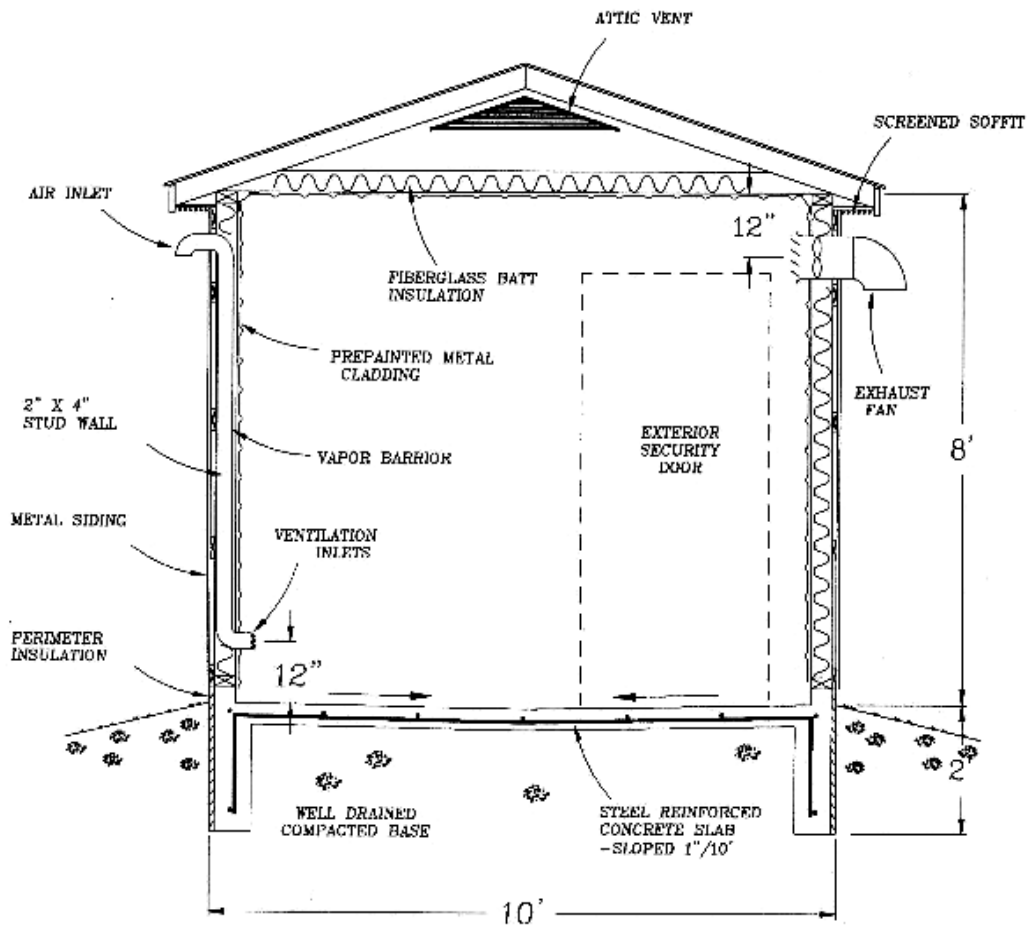


Figure 3: Pesticide Storage Cross-Section

Storage Organization

- Pesticides should be stored off the floor on sturdy, steel shelves (Figure 4). Shelves should be made of a non-combustible material that can be easily cleaned. All shelving should be attached to the wall for stability.
- Products should be organized in groups (i.e. herbicide, fungicide, insecticide).



Figure 4: Shelving and Organization

- Metal containers should be handled in a way that will prevent corrosion and leakage.
- Opened containers should be re-sealed and stored upright.
- Opened bags of dry pesticides should be stored inside a second clear bag to avoid moisture damage and spillage. Ensure the pesticide label is still visible.
- Rodent baits should be stored away from other pesticides.
- Purchase pesticides by season and store as little as possible.
- Mark the product purchase date on all containers to ensure the oldest containers are used first.
- Read and follow all label directions regarding storage conditions.

Safety and Protective Equipment

- First aid kit
- Eye wash station
- Fire extinguisher
- Containment and/or clean-up materials (i.e. peat moss, cat litter, absorbent materials, etc.) should be available at all times to minimize the risk of water contamination during a spill or unintentional release of pesticides

Signage

- Signs stating “WARNING CHEMICAL STORAGE – AUTHORIZED PERSONNEL ONLY” and “NO SMOKING” should be posted at the point of entry.
- Emergency numbers should be posted near the door of the building and the nearest telephone. The local fire brigade should also be made aware of the location, type and general quantity of pesticides stored on the farm.

Mixing

An outside area for mixing pesticides should be available adjacent to the storage facility. The mixing area should have a concrete or impermeable pad.

Water used for filling the pesticide sprayer should be supplied from a bulk water tank. If the sprayer is filled from a tap, ensure the tap is fitted with an anti-backflow device. It is important to ensure that someone is constantly watching the sprayer during filling to prevent overflows, as sometimes the sprayer is not completely empty when refilling or pesticides are added during filling. Pesticides should be added to the sprayer at a location that is at least 30 meters from the nearest well, watercourse or pond.

Handling

Different precautions are required when handling various pesticides because they differ in toxicity. Hazard ratings inform the user as to how each product should be handled.

Hazard Ratings:



Requires goggles, respirator, gloves and skin protection. Avoid fumes and spray mist.



Requires goggles, gloves and skin protection. Avoid fumes and spray mist.



Requires gloves and skin protection. Avoid fumes and spray mist.

If a hazard symbol does not exist on the product, it is likely of low toxicity to mammals. However, protective clothing should always be used, even if there is no hazard symbol.

If symptoms of illness occur during or shortly after pesticide use, the individual should immediately get to a hospital or physician. The container or product label of the pesticide that was in use should be brought with them.

Disposal of Pesticide Containers

Empty pesticide containers are not really empty. As much as two to four ounces of the chemical can remain inside an empty, un-rinsed container. Rinse the containers immediately after they are emptied. Empty the container into a spray tank and let it drain for 30 seconds. Fill the container at least one-fifth full with clean water. Shake or swirl vigorously to rinse all inside surfaces. Empty the rinsate into the spray tank and let the container drain for 30 seconds. Repeat the procedure two more times, then puncture the container. Containers must be disposed of at a collection facility and unused product must be disposed of in a manner specified on the label.

Disposal of Pesticide Sprayer Rinsate

When mixing pesticide or rinsing a sprayer maintain a minimum separation distance of at least 30 meters from wells, watercourses and agricultural ditches. Rinsate can be sprayed over the field again once the rinsing is complete. When a field has already been sprayed at the full rate avoid covering the same ground again because of the risk of crop damage. Instead the rinsate can be sprayed along field borders, as long as they are not adjacent to sensitive areas.

Summary

A properly constructed pesticide storage facility will reduce the risk of surface and groundwater contamination, increase user safety, protect nearby feed/food storages from contamination and limit access to authorized persons only.