

# On-Farm Mortalities

Using up-to-date standards of care and production practices, livestock farmers work hard to avoid or decrease on-farm mortalities of their animals. Unfortunately, on-farm mortalities are an unavoidable part of livestock farming. Effective and responsible management of on-farm mortalities (also referred to as deadstock) is critical, to minimize the risk to food safety, animal health, environmental impact and disease threats posed by the disposal of deadstock.

Disposal requires planning, tools and technology. A well-developed disposal plan is especially important when dealing with catastrophic mortality, in the event of a natural disaster or epidemic which can cause a mass die-off of animals or require culling of a large number of animals in a short timeframe.

## Regulatory Requirements

Ontario Regulation 106/09 under the *Nutrient Management Act, 2002 (NMA)* addresses the on-farm disposal of deadstock. The regulation includes the following animals in the definition of farm animals:

- Cattle
- Goats
- Sheep
- Horses
- Swine
- Deer
- Elk
- Alpacas
- Llama
- Bison
- Yaks
- Donkeys
- Ponies
- Rabbits
- Poultry and fowl
- Ratites
- Fur-bearing animals

As a farm operator, you are responsible for disposing of deadstock within **48 hours** of the animals' death, with two exceptions:

1. If a delay occurs in order to perform a post-mortem activity on the animal, or
2. If the animal is put into temporary cold or frozen storage conditions, as outlined in the regulations.

Ontario Regulation 105/09 under the *Food Safety and Quality Act, 2001 (FSQA)* addresses disposal when an animal dies at a place other than a farm. The regulation applies to the management of farm animal deaths that could enter the human food chain.



Deadstock **must** be disposed of **within 48 hours** of death.

## Options for Disposal in Ontario



Natural disposal of deadstock is **illegal** in Ontario.

Many options exist for the disposal of deadstock in Ontario:

- Collection
- Burial
- Composting
- Incineration
- Disposal Vessels
- Delivery to approved sites/peoples

It is important to note that natural disposal of deadstock is illegal in Ontario; It attracts scavengers, predators, flies, creates odours, and is a potential disease vector.

Each disposal option has specific requirements and obligation under the regulation. Knowing the options for disposal, their requirements, and their associated concerns, will help narrow down the options available to you and your operation. Regardless of option, ensure that the legal requirements, both provincial and federal, are met.

## Know the Concerns

Each method of disposal comes with its own advantages and potential concerns to consider when determining the best method of disposal for your operation:

### Pathogen Contamination

Pathogens are any virus, bacterium, or protozoa capable of causing infection or disease in animals or humans. Few pathogens, with the exception of prions, survive outside a livestock host in the natural environment. However, prions such as the causes of Bovine Spongiform Encephalopathy (BSE), Scrapie, and Chronic Wasting Disease (CWD) are highly stable and remain infectious for extended periods of time outside the body.

### Water Contamination

Improper disposal methods and management can be a potential source of groundwater and surface water contamination. As mortalities break down, nutrients (such as nitrates and chlorides), organic material, and pathogens have the potential to leach into surface water and/or groundwater. Surface water contamination can affect the quality of water draining into watercourses, catch basins, and ponds.

### Greenhouse Gas (GHG) Release

Two main GHGs of concern are released during the decomposing deadstock: methane and nitrous oxides.

### Odour

The decomposition of organic matter will produce a foul odour, due to the breakdown of organic materials.

## Disposal Options

### Collection

Deadstock may be picked up on farm, and delivered to an approved site, such as a common container, rendering plant or waste disposal site. Removal/pickup of deadstock is one of the simplest methods of disposal, with minimal risks to the operation and environment. While a deadstock collection is a straightforward solution, collection services are not readily available in all parts of Ontario, including some rural areas and Northern Ontario.

Ontario Regulation 105/09 outlines the requirements for those allowed to collect or receive deadstock for disposal, licensing requirements, and the methods of disposal.

While awaiting pick-up, store deadstock away from public view, and in a manner that does not attract scavengers and does not allow any liquids from the animal to drain onto the ground.

**Potential Concerns:**

- Minimal; Biosecurity risk if deadstock improperly stored while awaiting pick-up

### Burial

Burial of deadstock on-farm is a simple, relatively inexpensive solution that minimizes predator and odour issues. Not all areas are suitable for on-farm burial; Ontario Regulation 106/09 under the *NMA* outlines requirements for on-farm burial such as site requirements, mass of deadstock, separation distance between sites, and monitoring. Additional requirements prevent nuisances to neighbours, protect against scavengers, maintain biosecurity, and protect local ground- and surface water from contamination through leaching. Consideration must be given for when ground is frozen.

**Potential Concerns:**

- Water contamination
- Greenhouse Gas (GHG) release
- Biosecurity risks

## Composting

Composting of deadstock is a managed biological decomposition process which utilizes microorganisms to break down organic material into a stable, soil-like material which can be applied to land. On-farm compost when applied to cropland can provide an excellent source of organic matter and nutrients useful for plant growth.

This method of deadstock disposal is management intensive but proper composting destroys pathogens and provides valuable soil amendments. The *NMA* outlines several requirements for on-farm composting of deadstock, including:

- Materials allowed to be used as substrates for composting deadstock,
- Composition of final mixture in the compost pile,
- Coverings of compost piles which minimize odours and prevents scavenging,
- Specifications as to amount of soft animal tissue, bone fragments, animal matter, and odour remaining in the compost,
- Placement of compost systems,
- Regulatory setback distances to wells, water, drainage tiles, neighbouring livestock facilities, other compost disposal sites, homes, parkland or industrial areas, road allowances, and commercial, community, institutional or residential areas,
- Where generated compost material may be applied, and
- Record keeping requirements.



### Potential Concerns:

- Water contamination
- Greenhouse Gas (GHG) release
- Pathogen contamination

## Incineration

Incineration is a viable option for the disposal of smaller livestock species. This method of disposal utilizes fuel, temperature controls, and enclosed environments to assist in the cremation of deadstock, usually on-farm, reducing the carcass to inert ash. High temperatures and secondary combustion reduce the contaminants in the emissions.



### Potential Concerns:

- Emission of particulates generated during burning process

## Disposal Vessels

Disposal vessels are an inexpensive, non-labour-intensive method for the disposal of smaller livestock species. Disposal vessels are leakproof and impervious containers placed on the ground surface, or can be partially or fully buried, into which deadstock are placed to decompose naturally. An accessible hatch on the vessel allows for easy deposit of the deadstock. Ducts or

venting allows insects to enter the container and aid in decomposition while keeping predators and scavengers out.

This method of disposal is limited by the volume of deadstock and rate of filling; however, decomposition will allow for continued use over many years.



**Potential Concerns:**

- Water contamination
- Greenhouse Gas (GHG) release
- Pathogen contamination

Delivery

**Under the NMA, deadstock can be delivered to:**

- a licensed disposal facility under the FSQA
- an approved waste disposal site
- an approved anaerobic digester
- a veterinarian for post-mortem (and subsequent disposal)

During transport, deadstock must be concealed from public view, and the vehicle/container/trailer transporting the deadstock must be leakproof. The container must be able to be cleaned and sanitized after transport to reduce biosecurity risks.

Under NMA regulations, vehicles used to transport deadstock on a public highway must keep the deadstock from public view, be designed and equipped to prevent leakage, and allow for proper cleaning and sanitization after transport to reduce biosecurity risks. Anyone transporting deadstock must be aware of the federal requirements for transporting cattle; Specific treatments and movement of bovine carcasses require federal Specified Risk Material permitting.



**Potential Concerns:**

- Leakage

Considerations

Biosecurity

Biosecurity is an important consideration when dealing with deadstock. Carcasses affected with contagious pathogens can be a hazard to other animals, both on- and off-farm, and can lead to contamination of housing facilities, nearby water, and soil if not isolated and handled properly. It is critical that proper handling, removal, storage, cleaning, and disposal protocols are followed to minimize biosecurity risks.

## Costs

Costs must be considered when planning for deadstock management; Compliance with new regulatory requirements, technology investments, and the use of rendering services must be taken into account when deciding on how to manage on-farm mortalities.

## Disposal Service Availability

In Ontario, the livestock industry is highly dependent on collection and disposal services; however, increasing restrictions and challenges are making this option less readily available. Ensure that alternative methods are available if disposal services are not available in your area.

# Animal Health Emergencies

Animal health emergencies and losses can occur at any time. It is important for producers to have a plan and be prepared for how to deal with mass mortalities, should an animal health emergency arise.

Examples of animal health emergencies:

- Barn fires or collapse
- System failures
- Disease
- Extreme temperature changes
- Natural disasters
- Border closures

Emergency loss and mortality situations pose unique disposal problems. Volume of deadstock may be large, and exceed the capacity of easily available disposal methods, equipment, disposal sites and facilities. Deadstock may not be suitable for rendering or alternative methods of disposal due to degradation or chemical contamination. It may also be difficult or unsafe to remove deadstock from barn or housing facility, due to the aftermath of the emergency such as structural unsoundness.

Seek advice for appropriate disposal methods for emergency loss situations from agencies such as the Ministry of the Ontario Ministry of Agriculture, Food and Rural Affairs, the Environment, Conservation and Parks, local licensed deadstock collectors, and your insurance company.

## Planning

While on-farm mortalities are a sad reality of livestock farming, advance planning is critical to minimize stress, costs, and risks to your farming operation.

**There are eight (8) steps to effective planning:**

1. Estimate numbers and volume (size/weight) of deadstock, based on operation history and industry standards.
2. Examine the management options available to your operation. Consider species, site suitability, equipment requirements, and costs.
3. Select the most suitable disposal method for your operation.
4. Conduct a detailed site investigation – this includes examining soils, water, and separation distances.
5. Implement the method when needed.
6. Follow protocols for removal, cleaning and disinfection, and biosecurity.
7. Keep records.
8. Have a plan for mass mortalities.

### **Disclaimer**

The information provided in this resource is for informational purposes only. It should not be relied upon to determine legal obligations. To determine legal obligations, consult the relevant legislation.

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## Additional Links

- Animal Health Canada (AHC):
  - [ANC Animal Health Emergencies](#)
- Best Management Practices:
  - [Deadstock Disposal](#)
- Legislation
  - [Nutrient Management Act, 2002](#)
  - [Food Safety and Quality Act, 2001](#)
- Ontario Ministry of Agriculture, Food and Rural Affairs:
  - [Deadstock management of farm animals in Ontario](#)
  - [Licensed Deadstock Operators in Ontario](#)
- Ontario Federation of Agriculture – Viewpoints and Resources:
  - [OFA and partners searching for sustainable solutions for deadstock](#)
  - [Province announces funding to help improve deadstock management in Ontario](#)
  - [Research supports farm organization policy and advocacy work](#)

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