
Livestock mortality management (disposal)



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Livestock Mortality Management (Disposal)

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Livestock Mortality Management (disposal)

Mortality Disposal

Livestock producers are in the business of producing marketable meat products. However, every livestock producer must face the reality of carcass disposal, regulated by the [Disposal of Dead Animals Regulation](#) of the *Animal Health Act*. Dead animals must be disposed of in an acceptable manner within seven days of death. Mortalities can be composted, burned, buried, rendered or naturally disposed.

Proper disposal of carcasses is important for both the prevention of livestock disease transmission and the protection of air and water quality. Access to carcasses by scavengers is only permitted under the guidelines for natural disposal.


The environmental considerations for improper disposal include:

- Odour – decomposition of organic matter, particularly the anaerobic (lacking oxygen) breakdown of proteins by bacteria, will produce a foul odour.
- Scavengers – ravens, magpies, coyotes, etc. and insects can transmit disease and are a nuisance. Euthanized livestock may have an effect on scavengers.
- Pathogens – disease-causing agents may still be viable.
- Excess Nutrients – concentrated source of nitrogen.
- Nuisance – visible carcasses and bones fuel social issues and can puncture tires.

Disposal of Dead Animals Regulation

This regulation can be found on the open government portal at www.open.alberta.ca/publications by using the search publications box.

Potential Environmental and Biosecurity Risk



POTENTIAL RISK	Lowest Risk
	<ul style="list-style-type: none">• Compost in a properly managed system or burn in an approved incinerator on the farm.• Bury in appropriate soils or store frozen for spring burial or rendering plant pick-up (refer to Livestock Mortality Burial Techniques).• Partially buried or carcass left outside for scavengers or to decay.
	Highest Risk

Disposal Options

Burning

Dead stock may be burned in an open fire or in an incinerator. Burning of a dead animal may only occur if done in accordance with the [Substance Release Regulation](#) (AR124/93) or the [Code of Practice for Small Incinerators](#). Contact Alberta Environment and Parks for additional information about requirements associated with burning. Contact your municipal district regarding burning permit requirements, unless authorized by the Office of the Chief Provincial Veterinarian. Refer to the [Disposal of Dead Animals Regulation](#) for site selection criteria.

Advantages:

- Complete reduction of volume
- Rapid oxidation to carbon and water
- Environmentally safe (may require an air permit)
- Can dispose of mortalities as they are generated, therefore no temporary storage required
- Residue from properly incinerated carcasses will not attract insects or rodents

- System can be mobile or a co-op could be formed to purchase an incinerator to be shared between farms

Disadvantages:

- Major capital investment along with expensive fuel costs
- Must be maintained (burners wear out and soot must be scrubbed out to prevent stack fires)
- Ash has no fertilizer potential and there may be a trace of heavy metals from micronutrients fed to the animals
- Safety hazards associated with high temperature incinerators

Livestock Burial

Burial is a suitable practice for summer yet difficult during winter due to frozen ground conditions. Dead animals can be placed in a pit which is then backfilled each time a carcass is added. Carcasses must be covered with either:

- A minimum of 1 m (3.3 ft) of compacted soil, or
- 0.15 m (6 in) of soil, 0.5 kg (1 lb) of quicklime for every 10 kg (22 lbs) of mortality, and a lid.

For more information, see [Livestock Mortality Burial Techniques](#).

Burial requires great care in site selection because as carcasses decompose they release materials that potentially enter groundwater. Burial sites should be located in low permeable soils. Areas with a high groundwater level or shallow aquifer must be avoided. The weight of dead animals in the pit may not exceed 2,500 kg (5,500 lbs) unless authorized by the Office of the Chief Provincial Veterinarian. Refer to the [Disposal of Dead Animals Regulation](#) for site selection criteria.

Advantages:

- Inexpensive (if using your own equipment)
- Biosecure (no trucks coming from other farms to pick up carcasses)
- Convenient

Disadvantages:

- Difficult to impossible in winter
- Can cause groundwater pollution
- No burial sites where the bottom of the pit is less than 1 m (3.3 ft) above the seasonal high water table



Rendering

Another option is transporting carcasses to an approved disposal plant. Rendering is a clean and waste-free solution that ultimately recycles the remains into other products. A rendering company may only take some species and serve specific geographical regions.

Rendering processes dead animals into feed ingredients such as bone meal, meat meal, feather meal, and liquid animal fat. Animals that die during the winter can be frozen and delivered to the renderer at convenient intervals. Rendering companies will generally not accept carcasses that do not remain intact when handled. Depending upon the end product of the rendering process, there may be other restrictions on carcass quality and condition.

Collection vehicles enter many farms; therefore dead animals should be placed in an area to minimize biosecurity risks. Collection vehicles must employ proper biosecurity measures to prevent disease transmission between farms. Costs for rendering continue to increase and the expense and logistics of collecting small volumes of carcasses on a frequent basis prevents this disposal method from being widely accepted.

Advantages:

- The carcass is completely removed from the farm
- The rendering process destroys most diseases



Disadvantages:

- Pathogenic transmission during pick up and transportation is possible (care must be taken to prevent the pathogens from moving through the system)
- Increasing cost due to reduced marketability of rendered products

Composting

Composting is a controlled process. During the process, bacteria, fungi and other organisms break down organic materials to a stable mixture called compost, while consuming oxygen and releasing heat, water and carbon dioxide. The finished compost resembles humus and can be used as a soil amendment. Composting reduces the volume of the parent materials and most pathogens are destroyed if the process is controlled.

Composting of carcasses is gaining popularity. For more details on composting, see [Poultry Mortality Composting](#), [Swine Mortality Composting](#) and [Large Animal Mortality Composting](#).

Proper management of the composting facility is required to ensure composting of the carcasses occurs. The basic requirements for successful composting are:

- Aerobic conditions (in the presence of oxygen)
- Proper temperature, moisture, pH and carbon to nitrogen ratio
- Maintaining a temperature of 55 °C (131 °F) for at least three days

Other factors that must be considered when composting are:

- Properly constructed facilities and the use of primary and secondary areas
- Facility design must limit access of scavengers
- Equipment needs including the use of a front-end loader
- Management, monitoring and turning requirements of compost
- Ensuring compost is applied to crop land without direct contact with livestock
- Availability of necessary inputs of litter, straw and manure
- The location of compost
- Contaminated run-off must be collected and surface water directed away from the composting facility

Advantages:

- Biosecure
- Year-round use

- Relatively inexpensive
- Environmentally sound
- Value-added product to sell or use (sales regulated by the *Fertilizer Act*)
- Best and recommended method to handle catastrophic losses
- Heat of composting process kills most pathogens, weed seeds and insect larvae.
- Scavengers do not bother actively heating compost

Disadvantages:

- May be labour-intensive
- Requires an impervious pad
- Bin composting requires rot resistant walls and a cover to repel rain
- Takes practice to develop the technique
- Requires a carbon source

Natural Disposal

Disposal of carcasses by scavengers is a permitted method in Alberta but because of the very high probability of disease spread and of creating a public nuisance, this method is not recommended. Animals euthanized with drugs or chemicals may not be disposed of by natural disposal. All regulations concerning natural disposal are outlined in the [Disposal of Dead Animals Regulation](#).

Caution

If an animal is known or suspected to have died from an infectious or reportable disease, the owner must report this to authorities and dispose of the animal in the manner they recommend. For an animal that has been euthanized, owners need to prevent scavengers from gaining access to the dead animal. These animals cannot be disposed of by natural disposal.

Reportable Diseases

Reportable Diseases are those which require action to control or eradicate because they are a threat to animal or human health, food safety or the economy.

Notifiable Diseases are those which simply require monitoring for trade purposes or to understand their presence in Alberta. No action will be taken.

Anyone who knows or ought to know that any of these diseases are or may be present in an animal **MUST** report that fact to the **Office of the Chief Provincial Veterinarian** within 24 hours by calling 1-800-524-0051.

SRM Alert – Cattle Carcass Disposal (Canadian Food Inspection Agency 2009)

In 2007, the Canadian Food Inspection Agency's (CFIA) enhanced feed ban was enacted to control the handling, transporting and disposal of specified risk material (SRM). SRM includes the skull, brain, trigeminal ganglia (nerves attached to the brain), eyes, tonsils, spinal cord and dorsal root ganglia (nerves attached to the spinal cord) of cattle aged 30 months or older and the distal ileum (portion of the small intestine) of all cattle.

A permit is required to transport and dispose of the SRM, capable of transmitting bovine spongiform encephalopathy (BSE). This allows CFIA to track SRM and ensure it does not enter livestock feed, pet food or fertilizer. Under the regulations, a permit is also required to receive, remove from premises, use, transport from a premises, treat, store, export, sell, distribute, confine or destroy SRM in any form, including bovine dead stock containing SRM. The location receiving the SRM must have a separate permit.

The [Health of Animals Regulations](#) allows cattle producers to dispose of SRM on the premises where the animal was found dead without the need for a CFIA permit. Disposal of the dead stock is still subject to all other applicable acts and regulations. The CFIA has defined “premises” as being contiguous properties whether or not there is a public access or right of way which traverses the properties. Therefore, a permit is needed to move SRM from one property to another if travelling on public land (roads) even if the sites are both owned by the same person.

Canadian Food Inspection Agency (CFIA) Offices

Grande Prairie	780-831-0335
Edmonton	780-395-6700
Red Deer	403-340-4204
Calgary	587-230-2468
Lethbridge	403-382-3121

A farmer may obtain an annual CFIA permit to transport SRM to this non-contiguous site. However, the receiving site requires an annual permit to receive the SRM and needs to meet defined minimal requirements as outlined on the permit.

The SRM [permit application form](#) is available online at www.inspection.canada.ca, search for "SRM Permit Application". It should be completed and submitted to the nearest CFIA district office.

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For More Information

Alberta Agriculture and Forestry

Reportable Diseases

Office of the Chief Provincial Veterinarian

Phone: 780-427-3448 or toll-free by first dialing 310-0000 (in Alberta)

alberta.ca/office-of-the-chief-provincial-veterinarian

Alberta's Notifiable and Reportable Diseases Website

alberta.ca/reportable-and-notifiable-diseases

Livestock Mortality Management

Inspection and Investigation Section

Phone: 403-755-1474 or toll free by first dialing 310-0000 (in Alberta)

Livestock Mortality Management Website

alberta.ca/livestock-mortality-management

Other Inquiries

Ag-Info Centre

Toll free: 310-FARM (3276)

Phone: 403-742-7901 (outside Alberta)

Email: aginfocentre@gov.ab.ca

Natural Resources Conservation Board

nrcb.ca

Dial 310-0000 for toll free

Email: info@nrcb.ca