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# Dead Animal Disposal Laws in Missouri

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Original legislation for the management of dead animals in Missouri was developed in the 1940s. As livestock operations grew larger and more sophisticated means of animal production, transport, slaughtering and processing were developed, the legislation became outdated.

New legislation was developed and the Missouri Dead Animal Disposal Statute was passed by the 86th General Assembly and became law on Aug. 28, 1992. This law does not apply to wildlife. Regulations of disposal of dead animals can be found in the Missouri Revised Statutes, Chapter 269 Disposal of Dead Animals.

## Governing agencies

The disposal of dead animals is regulated as a solid waste by the Missouri Department of Natural Resources' (DNR) Solid Waste Management program and by the Missouri Department of Agriculture's Division of Animal Health.

Current law requires that the body of an animal that has died be properly disposed of within 24 hours after knowledge of the death. Disposal methods acceptable to DNR are rendering, composting, sanitary landfill, incineration and on-site burial. Class I operations shall not use burial as a permanent mortality management method to dispose of routine mortalities.

The DNR Water Pollution Control program protects the quality of the groundwater and surface water supplies of the state by regulating the disposal of wastewater pollutants.

Improper disposal of dead animals can result in surface water or groundwater contamination. Therefore, proper dead animal disposal is important. DNR requires all submitted letter of approval applications for

Class I facilities contain a brief description outlining one or more acceptable methods for dead animal disposal. DNR recommends that letter of approval applications for Class II facilities also include this information.

## Disposal options

The following acceptable methods of dead animal disposal are listed in order of preference by DNR.

### Disposal of dead animals at a state licensed and approved rendering facility

A DNR goal is to promote resource reuse and recycling in the state. However, the lack of rendering plants in the state prevents many producers from using this option. Efforts among several producers using stations for dead animal collection may make rendering a workable option.

### Composting of dead animals in a properly designed and sized dead animal composter

Dead animal composting allows the end product to be recycled back to the land as a fertilizer. It has proven to be a very effective means of carcass management in the poultry and swine industries. Refer to other MU Water Quality Initiative publications for information on dead animal composting; WQ351 is a relevant publication.

### Dead animal disposal in an approved sanitary landfill

Landfills are permitted to accept dead animals under Chapter 260, RSMo. Modern sanitary landfills are designed and operated to prevent leaching into groundwater or surface waters. The drawback of landfills is that they are only for disposing, not for recycling, and landfill space is becoming scarce. Even though a landfill is permitted to accept dead animals, it may not be the policy of the landfill operator to accept animal mortalities.

### Incinerating dead animals

Incineration of dead animals is feasible, but it may not be economical. It is relatively energy intensive and has the potential for polluting the environment if the incinerator is not operated and maintained properly. Open burning of dead animals or burning in a trash barrel or similar type of container is not allowed.

Any commercial incineration of dead animals must be done in an incinerator designed, constructed and operated according to Chapter 643 RSMo., Missouri Air Conservation Law. A permit from the Air Pollution Control program is required for constructing a new incinerator. Please be noted that on March 29, 1993,

the Circuit Court of Cole County found that 10 CSR 10-6.160 was void since it exceeds the statutory cost analysis requirements of sections 536.200 and 536.205, RSMo.

Non-commercial agricultural incinerators do not need a permit in Missouri, but need to follow the recommendations in this document. An agricultural incinerator is located on a farm or ranch, and only incinerating animal carcasses and remains. The wastes allowed to be incinerated include only animal remains, carcasses, organ and solid tissue wastes from farms, laboratories and animal pounds. Incineration of plastics or other wastes containing chlorine is not permitted.

This definition limits agricultural incinerators without permits, to only incinerate routine animal carcasses and remains. Routine carcasses are those expected from average on-farm mortality rate and not from major disease outbreak event. Animal carcasses during major disease outbreak, especially from foreign animal disease, will overwhelm the routine mortalities incinerating capacity. In any case, an incinerator should be operated in a manner that does not cause a nuisance condition or air pollution. More importantly, the complete incineration combustion will help prevent disease spreading, which can be a top biosecurity issue that can cost any size of animal production significant financial losses.

The University of Missouri Extension recommendations for non-commercial agricultural incinerators are:

1. An incineration device that is designed specifically for animal carcasses and remains that uses propane, natural gas or fuel oil as fuel. The incineration device operates on the “batch” process, no additional carcass can be added until incineration is completed.
2. Incinerator models that are equipped with secondary combustion chamber, and has had an emission test conducted by a certified engineer. The emission criteria are:
  - Operating emission opacity not to exceed ten percent (10%).
  - The particulate matter (PM) emission should be smaller than 0.09 grains per DSCF (dry standard cubic foot) of total PM, corrected to 7% oxygen.

The emission test result provided by the manufacturer should include these test results. The incinerator shall be properly maintained and operated according to the manufacturer’s instructions and design capacity. Typically, a dual-chamber design incinerator (those equipped with a secondary combustion chamber) with an appropriate combustion efficiency (99.9% or higher) will meet the emission standards above. The combustion efficiency, based on hourly average, is calculated as:

$$\text{Combustion efficiency} = \text{CO}_2 / (\text{CO}_2 + \text{CO})$$

where  $\text{CO}_2$  = concentration of carbon dioxide corrected to 7% oxygen, in parts per million by volume (ppmv), and  $\text{CO}$  = concentration of carbon monoxide corrected to 7% oxygen, in ppmv.

## On-site burial of dead animals

This option is the least desirable, due to the potential for water pollution. Burial is acceptable if certain practices are followed to limit pollution. As defined in the revised 10 CSR 20-8.300, Class I operations shall not use burial as a permanent mortality management method to dispose of routine mortalities. For all operations, prior approval from the DNR is required for burying significant numbers of unexpected mortalities.

## On-site burial guidelines

Although on-site burial is the least-preferred method of disposal, it may be a practical option for some producers.

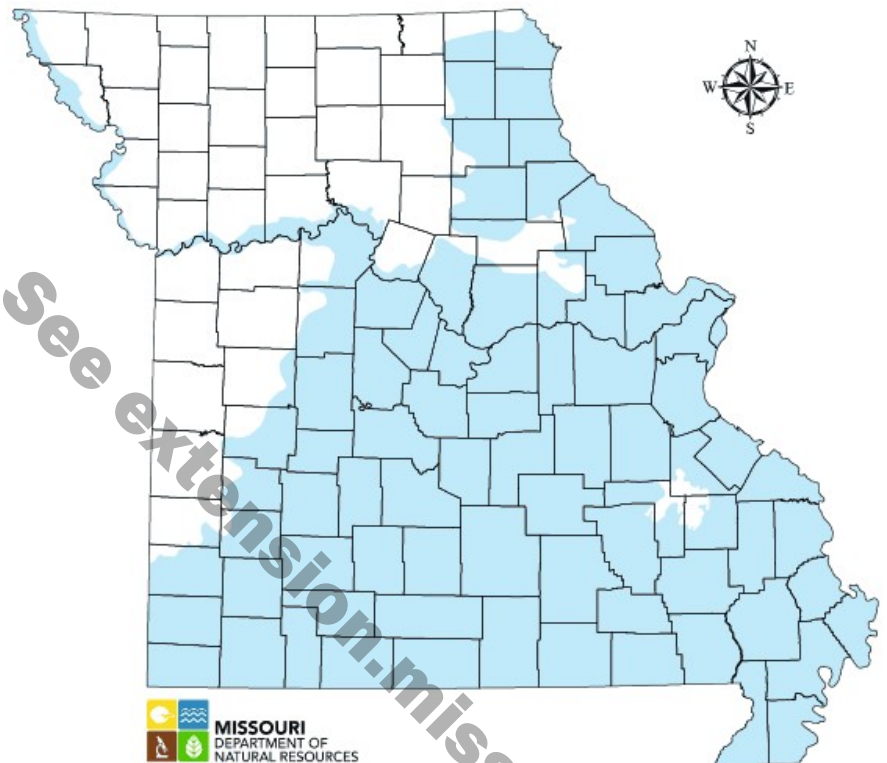
In order to comply with the law, the burial method must follow certain guidelines. These restrictions may be very different from traditional dead animal disposal practices. The following outlines on-site dead animal burial:

1. The maximum loading rate for areas, defined by the DNR, Division of Geology and Land Survey, as having major groundwater contamination potential is limited to:
  - One bovine; six swine; seven sheep, 70 turkey or 300 poultry carcasses on any given acre per year; or
  - All other animals and immature cattle, swine, sheep and turkeys or poultry is limited to 1,000 pounds of animal on any given acre per year.
2. The maximum loading rate for areas excluded from major groundwater pollution potential is limited to:
  - Seven cattle, 44 swine, 47 sheep, and 400 turkey or 2,000 poultry carcasses on any given acre per year; or
  - All other animals and immature cattle, swine, sheep, and turkeys or poultry is limited to 7,000 pounds of animal on any given acre per year.
3. The maximum amount of land that is used for on-site burial of animals on any person's property during a given year is limited to 10 percent of the total land owned by that person or 1 acre, whichever is greater.
4. Burial sites will not be located in low-lying areas subject to flooding.
5. The lowest elevation of the burial pit will be 6 feet or less below the surface of the ground.
6. The dead animals shall be immediately covered with a minimum of 6 inches of soil and a final cover of a minimum of 30 inches of soil.
7. Carcasses will not be placed on the ground, in a ditch, at the base of a hill or in a cavern and

covered with soil.

8. Puncture the abdominal cavity of carcasses over 150 pounds to allow escape of gasses.
9. The location of a burial site must be:
  - At least 300 feet from any wells, surface water intake structures, public drinking water supply lakes, springs or sinkholes.
  - At least 50 feet from property lines.
  - At least 300 feet from any existing neighboring residence.
  - More than 100 feet from surface water body, such as a stream, lake, pond or intermittent stream.

The map outlines the areas of Missouri considered to have major groundwater contamination potential (Figure 1). You should contact DNR, Division of Geology and Land Survey at Rolla, Missouri, for a site-specific evaluation of the groundwater pollution potential at your specific location.



**Figure 1. The shaded areas on this map are considered to have major groundwater contamination potential.**

## Other provisions of the dead animal law

There are other regulation guidelines that may change the way dead animals are managed. In particular, the transportation and holding of dead animals in a collection station. These items may be important to producers developing a plan to collect and haul dead animals to a rendering plant or similar facility.

## Transporting carcasses

A permit from the state veterinarian is required for commercial vehicles used in transporting dead animals. The permit must be attached to each vehicle that is used in hauling the carcasses.

Vehicles used for transporting carcasses need a metal tank or tank with a watertight metal lining to carry the carcasses. It should not drip or seep. Hide the carcasses from view when transporting. The driver of a

vehicle hauling carcasses is responsible for the cleanup of any spills or leaks that may occur as a result of the hauling.

Thoroughly clean and disinfect the vehicles after each hauling. In cleaning the vehicles, thoroughly wash with hot water or steam and disinfect with a solution prescribed by the Missouri Department of Agriculture's state veterinarian. Do not use vehicles that have hauled carcasses to transport live animals, feeds or similar commodities.

Vehicles hauling carcasses must go directly to their destination, stopping only to load more carcasses. The vehicle's operator must get permission before entering a facility to pick up additional carcasses.

## Exceptions to transporting requirements

The following are exceptions to the transportation requirements and primarily affect producers on a non-commercial basis.

- Hauling carcasses to a slaughter house for personal consumption.
- Hauling a finished meat product or hauling hides and skins.
- A producer hauling owned carcasses to a renderer, collection station, on-farm burial site or to a diagnostic facility.

## Collection stations

The following requirements apply to operating a collection station that may receive carcasses from several producers for transport to a renderer or other disposal facility.

- A permit from the state veterinarian is required for operating a dead animal collection station. Storage methods and management of dead animals must be detailed in the permit application.
- Hold carcasses in a vessel with a watertight lining that does not allow leaking or dripping.
- Carcasses may be held unrefrigerated for a maximum of 48 hours.
- Locate collection stations more than 2 miles from city limits and 1 mile from public parks, schools and hospitals.

## Other provisions

Dead animal carcasses should not be buried, burned, cooked or otherwise disposed, except as provided for in the dead animal disposal regulations.

If the animal did not die of a contagious disease, the owner may remove the hide before disposing of the carcass properly.

If the owner or person responsible for a dead animal is absent, unwilling or unable to dispose of the animal properly, and the state veterinarian determines that the dead animal is a health risk or nuisance, the veterinarian may enter the premises, take possession and dispose of the dead animal. The owner or person responsible for the dead animal must reimburse the state veterinarian for reasonable expenses.

Large-scale animal deaths may occur, such as natural disasters, disease outbreaks or a disease eradication and control programs. Management of such large-scale loss may be beyond the scope of methods outlined in the regulation. In such cases, the state veterinarian, with the assistance of DNR, will develop an emergency plan for proper management of the large-scale death loss.

If a death loss is anticipated or experienced, contact the state veterinarian's office at [573-751-3377](tel:573-751-3377).

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**The assistance from Missouri Geological Survey, Department of Natural Resources is acknowledged.**

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