
Iowa Farm*A*Syst

Assessing Your Dead Animal Management Practices



Dead Animal Disposal and Management

What is Farm•A•Syst?

Farm•A•Syst (FAS) is a national program which originated at the University of Wisconsin. Forty-six states and U.S. territories have taken the basic FAS material, modified it to fit their locale and are currently distributing it. In Iowa, Farm Bureau has taken the lead in adapting the national model to meet the needs of Iowans.

The goal of FAS in Iowa is to reduce the risk of water pollution, particularly drinking water pollution. Iowa Farm•A•Syst is designed to educate farmers and acreage owners on safeguarding their water supply. Farm•A•Syst also alerts rural residents if their current practices are endangering the safety of their water supply or are against Iowa law.

How is this accomplished?

The material is simple and easy to understand. The evaluation can be completed by the acreage owner in private, or with the help of local technical specialists. If the acreage owner has questions or needs additional assistance, the FAS material directs them to professionals. Farm•A•Syst may be a first step for farmers and acreage owners before costly and comprehensive environmental audits are needed. Farm•A•Syst encourages voluntary environmental protection.

The chapters are designed to give the reader some background on the subject matter so they can complete a short assessment of their current practices. The materials are written so that farmers and acreage owners who value confidentiality can use the materials without having to seek outside advice.

What topics are covered?

This topic is just one of the many topics covered by Farm•A•Syst. Iowa Farm•A•Syst publications include:

- Pesticide Storage & Management
- Fertilizer Storage & Management
- Site Assessment
- Milking Center Wastewater Practices
- Open Feedlot Manure Management Practices
- Confinement Livestock Manure Storage Practices
- Dead Animal Disposal and Management
- Water Well Condition and Maintenance
- Household Wastewater Management
- Hazardous Materials Storage & Management
- Petroleum Storage & Management

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Dead Animal Disposal

There's an old adage that says, "The only things in life that are certain are birth, death and taxes." Farmers are quite accustomed to dealing with all three. However, most people do not think about the possibility of contaminating their drinking water with mishandled dead animals. Your drinking water may be endangered by disease-causing bacteria and excess nutrients from dead animals improperly disposed of on your farm. This section focuses on how to manage on-farm livestock deaths while maintaining the quality of your drinking water.

In the past, the most popular method for disposing of dead livestock was through a rendering service. However, in recent years the number of rendering plants has greatly decreased. The cost of

rendering service has also increased which has led producers to explore new methods of dealing with dead animal disposal. Burial, rendering, composting and incineration are covered in this chapter.

NOTE: This chapter does not summarize all the laws related to livestock operations in Iowa. Due to the complexity of Iowa Code, the Iowa Department of Natural Resources (DNR) rules and the Iowa Department of Agriculture and Land Stewardship (IDALS) rules, you are advised to contact your regional DNR office or IDALS office if you have questions that are not addressed in this chapter. Contact information for the DNR and IDALS offices is located in the "For More Information" section in the back of this publication.

According to Iowa Code, all dead animals must be disposed of within 24-hours of death.



"Can I use a rendering service to dispose of dead livestock on my farm?"

Rendering

Rendering is a practice that converts dead animals to a value-added product, such as protein feed. If rendering services are readily available or a farm is producing few dead animals, it may be convenient to dispose of animals by using a rendering service. On the downside, the rendering truck can be a source of disease

as it travels from farm to farm, and weekend pick ups are not offered. Because the cost of rendering has risen some farms are exploring the use of alternative disposal methods.

Dead animals to be picked up by a rendering service should be placed in a secure structure to prevent access by pets, wild animals and rodents.



“Are there laws that impact how I bury dead animals on my farm?”

Burial

Burial is a very common practice and is often the disposal method of choice for catastrophic livestock losses. However, frequent burial of dead animals can be time consuming and nearly impossible in the winter.

Excessive nitrogen and pathogenic (disease-causing) organisms from improperly buried dead animals can pollute ground and surface water and may contaminate your drinking water.

DNR rules outline the requirements for legal burial of dead animals. To ensure the quality of your water is not harmed by bacteria from improper livestock burial, follow these rules as defined by Iowa Code:

- The dead animals must result from the operation located on the premises where burial occurs.

- Dead animals must be buried within 24 hours of death.
- Dead animals must be buried in soils that are classified as moderately well drained, well drained, somewhat excessively drained or excessively drained. Other soils can be used if artificial drainage is used to maintain a water level depth more than two feet below the burial depth.
- The burial pit must be no deeper than six feet.
- The dead animals must be immediately covered with a minimum of six inches of soil and finally covered with at least 30 inches of soil.
- Dead animals cannot be buried in flood plains, wetlands or on a shoreline. The following separation distances must be maintained between burial sites and water sources:

If you need to dispose of a catastrophic loss, contact the state veterinarian and your DNR field office for assistance.

Separation Distance for Burial Sites	Separation Distance
Private water wells	100 feet
Public water wells	200 feet
Surface water body, such as streams, lakes, ponds or intermittent streams	100 feet

According to the Iowa Code, the maximum number of dead animals that can be buried on one acre in one year are:

- 7 cattle, slaughter or feeder OR
- 44 swine, butcher or breeding OR
- 73 sheep or lambs OR
- 400 poultry.
- All other species are limited to two dead animals per acre.
- Animals that die within two months of birth may be buried with no regard to number.

The animals should be buried at a number of sites, not all at one site.



“I’ve heard a lot about composting. Is it a viable alternative for my farm?”

Composting

Composting is similar to following a recipe:

- **Moisture** content is crucial, as it needs to be between 40 and 60 percent.
- **Co-composting materials** surround the dead animal, provide carbon and protect the dead animals from rodents, insects and scavengers.
- **Carbon and nitrogen** are key ingredients, required in an optimum 25:1 ratio for favorable microbial activity.
- **Oxygen** is required by the microbes. Without oxygen, unpleasant odors may form and the process will take longer.
- **Heat** is a by-product of microbial activity, and is needed to sustain the degradation process.

Composting creates a humus-like product containing nutrients and organic matter which is beneficial to cropland. Composting of dead animals first caught on in the mid 1980s for disposal of daily mortalities at poultry farms in the South. The Midwest has been slow to adopt composting practices because it was thought that the cold winter climate would hinder the process. However, research has shown that composting in Iowa can work just as well as it does in the South.

Composting isn’t just for poultry, as it is being rapidly adopted by swine farms in Iowa.

For more information on composting and other methods of dead animal disposal, contact the Waste Management Assistance Division of the DNR. Contact information is in the “For More Information” section at the end of this publication.

To ensure the quality of your water is not harmed by bacteria or excess nutrients from improper composting, follow these rules, as defined by the DNR:

- Dead animals must be placed in the composting process within 24 hours of death.
- Dead animals in the compost must be sufficiently covered to prevent access by domestic and wild animals. The dead animals should be covered with animal manure, livestock bedding, crop residue, clean wood waste or other suitable compost materials.
- Composting must be done in a manner which prevents the formation and release of runoff and leachate and controls odors, insects and other vermin.
- Composting must be conducted on an all-weather surface of compacted soil, compacted granular aggregates, asphalt, concrete or similar impermeable material. The surface must permit access during inclement weather.
- A roof over the facility is not mandatory, but recommended. However, the DNR may consider requiring a roof in certain specific instances.
- Dead animals are not to be removed from the composting process until all flesh, internal organs and soft tissue have been fully decomposed.
- The finished compost material cannot be stored longer than 18 months.
- The compost must be applied to cropland. The application rate should not exceed the rate at which sufficient nitrogen is provided to obtain optimum crop yields. The compost must be applied in such a manner to prevent runoff. Application to land other than cropland requires prior approval by the DNR.

- If large animals are composted, it may be necessary to grind large bones before land application.
- Compost facilities cannot be located in a 100-year flood plain. The following composting facility separation distances must be maintained:

Separation Distance for Composting Sites	Separation Distance
Private water wells	100 feet
Public water wells	200 feet
Flowing or intermittent streams, lakes or ponds	100 feet

"Can I incinerate dead animals on my farm?"

On-Farm Incineration

Incineration provides little concern for water quality and disease transmission because the dead animals are reduced to ashes at very high temperatures. However, there may be some concern for air quality if the incinerators are not sized or managed

properly. Incinerators are costly to purchase and operate and require a certain level of maintenance and management.

The construction and operation of an incinerator capable of cremating more than 25 pounds per hour requires a permit from the DNR Air Quality Bureau.

For More Information

**Iowa Department of Natural Resources,
Waste Management Assistance and
Land Quality Bureaus**

Composting information

(515) 281-8308

Permitting information

(515) 281-8912

Wallace State Office Building, Des Moines, IA 50319-0034

<http://www.state.ia.us/dnr/organize/cpd/solwaste/solwaste.htm>

**DNR Environmental Protection
Division Field Offices**

Atlantic (712) 243-1934

Des Moines (515) 281-9069

Washington (319) 653-2135

Manchester (319) 927-2640

Mason City (641) 424-4073

Spencer (712) 262-4177

- Provides assistance with state regulations of compost facilities.

- Assists with burial location for catastrophic losses.

**Iowa Department of Natural Resources,
Air Quality Bureau**

(515) 281-5100

79 Hickman Road

Urbandale, IA 50322

www.state.ia.us/dnr/organize/epd/airq/aqbur.htm

- Assist with incineration regulations & permitting.

- Provides permit applications on-line and in paper copy.

**Iowa Department of Agriculture and
Land Stewardship, Animal Industry
Bureau/State Veterinarian**

(515) 281-8615

Wallace Building

Des Moines, IA 50319

- Assists with catastrophic burial.

- Assists with Iowa Code burial requirements.

National Pork Producers Council

(515) 223-2600

1775 N.W. 114th Street

Clive, IA 50306

www.nppc.org

- Promotes the environmental assurance program Composting Module.

Natural Resources Conservation Service

Contact the local NRCS/SWCD (Soil and Water Conservation District) office located in your county.

- Information available on NRCS standards for composting facilities.

Iowa State University Extension

Contact your county extension office.

The county director, or area ag engineer may be able to answer your questions or direct you to other Extension specialists

- Publications on a variety of topics are available at Iowa State University county extension offices, or from the Publication Distribution Center, Ames, (515) 294-5247. Many of the publications are available online at www.extension.iastate.edu/Pages/pubs
- Publication SA-8 - Composting Dead Livestock: A New Solution to an Old Problem www.ag.iastate.edu/centers/leopold/SA8.pdf
- Midwest Plan Services has publications on facility design. www.mwpsdq.org (515) 294-4337



Evaluate your potential risk for having unsafe drinking water. The evaluation areas are in the shaded 'Risk' column. Choose the answer that best fits your situation, as listed in the boxes to the right. Note how likely you are to have drinking water problems, as indicated by "low risk," "moderate risk" and "high risk."



- Take special note of the critical evaluation points. If you fail to meet these standards, your drinking water supply is in immediate danger.



- Those situations that violate Iowa Code are indicated by '!' and printed in bold text.

Risk	Low Risk	Moderate Risk	High Risk
Rendering service			
Dead animal management	<ul style="list-style-type: none"> • Request for pick up is made within 24 hours of death AND • Dead animals are stored in secured structure until pick up. 		<ul style="list-style-type: none"> • Dead animals not disposed of within 24 hours of death OR • Dead animals left in open OR • Dead animals stored near wells or surface water.
Burial			
Burial site	<ul style="list-style-type: none"> • Dead animals buried outside of flood plains and wetlands AND • Dead animals are not buried within 100 feet of a private water well AND • Dead animals are not buried within 100 feet of surface water. 		<ul style="list-style-type: none"> • Dead animals buried in flood plains or wetlands OR • Dead animals buried within 100 feet of a private water well or surface water.
Burial process	<ul style="list-style-type: none"> • Dead animals immediately covered with six inches of soil AND • Dead animals eventually covered with 30 inches of soil AND • Burial pit less than six feet deep AND • Groundwater table does not enter the burial pit. 		<ul style="list-style-type: none"> • Dead animals not immediately covered with six inches of soil OR • Permanent coverage of dead animals with soil is not at least 30 inches deep OR • Burial pit more than six feet deep OR • Water from groundwater table enters burial pit.
Composting practices			
Composting site	<ul style="list-style-type: none"> • Composting site located outside of 100-year flood plain AND • Site is 100 feet from private water wells and surface water. 		<ul style="list-style-type: none"> • Site located in a 100-year flood plain OR • Site is less than 100 feet from private water wells OR • Site is less than 100 feet from surface water.

Risk	Low Risk	Moderate Risk	High Risk
Composting process	<ul style="list-style-type: none"> • Dead animals are completely covered with organic material AND • Composting done in a manner that prevents runoff of leachate. 		<ul style="list-style-type: none"> • Dead animals are not sufficiently covered with organic material AND • Composting not conducted in a manner that prevents runoff of leachate.
Incineration practices			
Incineration practices	<ul style="list-style-type: none"> • All dead animals are incinerated in DNR approved incinerator within 24 hours of death. 		<ul style="list-style-type: none"> • Dead animals not incinerated within 24 hours of death OR • Dead animals disposed of in unapproved incinerator, or without use of incinerator, such as open burning.

 Critical

 Violates Iowa Code



Publication of this document has been funded in part by the Iowa Farm Bureau Federation, and by the Iowa Department of Natural Resources through a grant from the U.S. Environmental Protection Agency under the Federal Nonpoint Source Management Program (Section 319 of the Clean Water Act).