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# Iowa Farm\*A\*Syst

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*A Farmstead Assessment System*

## Assessing Your Dead Animal Management Practices



***Simple***

***Confidential***

***Accurate***

## What is Iowa Farm\*A\*Syst?

Iowa Farm\*A\*Syst is a farmstead assessment system developed to assist rural residents in protecting their water resources, particularly their drinking water. Individuals can tailor the Iowa Farm\*A\*Syst program to meet their needs by choosing specific topics that fit their farmstead or acreage. The Iowa Farm\*A\*Syst program is based on a series of 12 publications, including the following:

- Assessing Your Farmstead Characteristics (EDC 264)
- Assessing Your Water Well Condition & Maintenance (EDC 265)
- Assessing Your Household Wastewater Management (EDC 266)
- Assessing Your Open Feedlot Manure Management (EDC 267)
- Assessing Your Confinement Livestock Manure Management (EDC 268)
- Assessing Your Milking Center Wastewater Management (EDC 269)
- Assessing Your Dead Animal Management (EDC 270)
- Assessing Your Pesticide Storage & Management (EDC 271)
- Assessing Your Fertilizer Storage & Management (EDC 272)
- Assessing Your Petroleum Storage & Management (EDC 273)
- Assessing Your Hazardous Materials Storage & Management (EDC 274)
- Assessing Your Emergency Response Planning for Manure Spills (EDC 328)

Each publication gives you a brief background on the subject and an assessment worksheet to evaluate on-farm practices affecting water quality. Also included are references to Iowa environmental laws and contact information for technical advice.

## Why should I use the Iowa Farm\*A\*Syst materials?

Seventy-five percent of Iowans get their drinking water from groundwater sources. These sources include private wells, in addition to municipal wells and rural water sources. If your drinking water comes from a private well, you have good reason to be concerned about the quality of your drinking water. A 1990 statewide survey of rural well water found that 45 percent of private wells are contaminated with coliform bacteria, 18 percent contain unsafe levels of nitrate, and 14 percent contain pesticides. The Iowa Farm\*A\*Syst publications help you to determine what environmental risks could threaten your family's health and financial security and suggest the resources to help make necessary changes.

## How do I start assessing my farmstead?

The 12 Iowa Farm\*A\*Syst publications are each designed to be stand-alone publications. However, the first step to assessing your farmstead should be to draw a map of the area, labeling any potential sources of contamination. *Iowa Farm\*A\*Syst Assessing Your Farmstead Characteristics* can help you get started. Every farmstead is unique. You need to evaluate your farmstead's site characteristics to determine the potential for groundwater and surface water contamination. You cannot change the features of your farmstead, but once you are aware of them you can modify your activities to minimize the potential for groundwater contamination. After you have mapped your farmstead, consider what management decisions may be affecting the quality of your water resources. This process will help you to prioritize which of the other Iowa Farm\*A\*Syst assessments you may want to complete.

**For more information or to download additional Iowa Farm\*A\*Syst publications, visit [www.iowafarmasyst.com](http://www.iowafarmasyst.com)**

**or**

**Contact Rick Robinson, Iowa Farm Bureau  
(515) 225-5432**

**Publications are also available through the Iowa State University Extension Distribution Center at [www.extension.iastate.edu/store/](http://www.extension.iastate.edu/store/) or 515-294-5247.**

## 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, rendering fees have greatly increased, and on-farm biosecurity is

becoming more of a concern. These factors are leading animal producers to explore alternatives to rendering. Rendering, burial, composting and incineration will each be discussed in this publication.

**NOTE: This chapter does not summarize all the laws related to dead animal management in Iowa. Due to the complexity of Iowa law, 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 publication. Contact information for the DNR and IDALS offices is located in the "For More Information" section on page 7.**



### "What are the benefits and special considerations for using a rendering service 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. Because the cost of rendering has risen, some farms are exploring the use of alternative disposal methods. Additionally,

weekend pickup is not offered, and it is often difficult to get a pick up in a timely manner. Iowa law requires that all dead animals be disposed of within 24 hours of death. Finally, the expense of rendering has increased significantly over the last several years. These factors have led many producers to explore 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.

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

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# “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 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 law:

- The dead animals must result from the animal operation located on the premises where burial occurs. Refer to the blue box below for guidelines on the maximum number of animals that can be buried on one site each year.
- 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. Refer to Iowa Farm\*A\*Syst *Assessing Your Farmstead Characteristics* for more information on determining soil types and depth to water table.
- 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 table below details separation distances required by Iowa law between burial sites and water sources.

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If you need to dispose of a **catastrophic loss**, contact the state veterinarian or your DNR field office for assistance. Contact information can be found on page 7.

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According to the Iowa law, 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 on the premises, not all at one site.

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



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

### Composting

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 either, as it is being rapidly adopted by swine farms in Iowa.

The composting process speeds up the normal decay process. Successful composting is similar to following a recipe that provides optimum conditions for bacteria and fungi. Poor conditions for these organisms slows the composting process and often results in bad odors or release of contaminated liquids. The following factors all contribute to the success and speed of the composting process.

- **Moisture** content is crucial to the composting process and should be maintained between 40 and 60 percent. Compost should be moist, but not soggy.
- **Co-composting** materials surround the

dead animal protecting it from rodents, insects and scavengers and provide carbon, which acts as food for microbes. Good options for co-composting material include wood chips, ground corn cobs, sawdust, poultry litter or other used bedding.

- **Carbon and nitrogen** are key ingredients. An optimum 25:1 (C:N) ratio is needed for favorable microbial activity.
- **Oxygen** is required by the microbes. Without oxygen, unpleasant odors may form and the process will take longer. To increase oxygen availability and avoid odor problems, periodically turn compost, use a relatively coarse co-composting material and avoid overly wet compost.
- **Heat** is a by-product of microbial activity and is needed to sustain the degradation process. Internal temperatures of a compost pile should reach 120° to 150° F. Heat also kills disease-causing microorganisms and improves the safety of the compost.

For more information on composting and other methods of dead animal disposal, contact the Waste Management Assistance Division of the DNR. Contact information can be found on page 7 of this publication.



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

### Composting Regulations

The Iowa DNR has defined the following rules to ensure the quality of your water is not harmed by bacteria or excess nutrients from improper composting:

- Dead animals must be placed into the composting pile within 24 hours of death.
- Dead animals in the compost must be sufficiently covered with animal manure, livestock bedding, crop residue, clean wood

waste or other suitable co-compost materials to prevent access by domestic and wild animals.

- 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.

- 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 at an agronomic rate and in such a manner to prevent runoff. Application to land other than cropland requires prior approval by the DNR.

- Compost facilities must be located greater than 100 feet from private water wells, 200 feet from public water wells, and 100 feet from streams, lakes or ponds.

- Compost facilities must be 500 feet from any existing inhabited residence, not including the residence of the person owning or operating the facility.

- Compost facilities that compost materials from more than one premises must obtain a solid waste composting permit from the DNR. Contact your regional DNR Field Office (see page 7 of this publication) for permit requirements and more information.



## “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 your incinerator is not sized or managed properly.

Incinerators are costly to purchase and operate and require a certain level of maintenance and management. It is against Iowa law to use homemade incinerators or open burning to dispose of dead animals.

The DNR has determined that on-farm incinerators used for disposing of dead animals are exempt from the requirement to obtain a construction permit from the DNR Air Quality Bureau. However, on-farm incinerators must comply with the minimum operating requirements of Iowa’s air quality rules. Contact the DNR Air Quality Bureau (see page 7 of this publication for contact information) for more information on minimum operating requirements.



## For More Information

### Iowa Department of Natural Resources

Information

[www.iowadnr.com](http://www.iowadnr.com) 515-281-5918

#### 24 Hour Emergency Spill Reporting

515-281-8694

### DNR Environmental Services Division

#### Field Offices

Atlantic 712-243-1934

Des Moines 515-725-0268

Manchester 563-927-2640

Mason City 641-424-4073

Spencer 712-262-4177

Washington 319-653-2135

- Provide assistance with understanding Iowa laws for compost facilities.
- Assist with burial location for catastrophic losses.

### DNR Air Quality Bureau

[www.iowadnr.com/air/](http://www.iowadnr.com/air/) 515-242-5100

- Provides assistance with rules and permitting for on-farm incineration.

### Iowa Department of Agriculture and Land Stewardship

#### Animal Industry Bureau/State Veterinarian

515-281-8601

[www.agriculture.state.ia.us/animal/industry.htm](http://www.agriculture.state.ia.us/animal/industry.htm)

- Assists with catastrophic burial.
- Provides assistance with understanding and interpreting Iowa's laws for on-farm burial.

### Natural Resources Conservation Service

[www.ia.nrcs.usda.gov](http://www.ia.nrcs.usda.gov) 515-284-4769

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

- Provides information on construction design for composting facilities.
- Provides access to information on soil type and depth to water table through the county soil survey book.

### Iowa State University Extension

[www.extension.iastate.edu](http://www.extension.iastate.edu) 515-294-5247

Contact your county extension office. The county director, ag engineer or area livestock field specialist may be able to answer your questions or direct you to other extension specialists.

- Distributes publications on a variety of topics, including dead animal composting. Publications are available at Iowa State University Extension county offices or from the Extension Distribution Center, Ames, IA, 515-294-5247. Many of the publications are available online at [www.extension.iastate.edu/store/](http://www.extension.iastate.edu/store/)

### Midwest Plan Services

[www.mwps.org](http://www.mwps.org) 800-562-3618

- Develop and distribute agricultural publications covering topics including: agricultural engineering; farm business management; animal production; construction; grain and postharvest; soil, air, and water management; manure management; and ventilation for livestock housing.

# Assessment: Dead Animal Management Practices

Evaluate your potential risk for having unsafe drinking water as a result of the condition and maintenance of your dead animal management. The evaluation areas are in the shaded "Risk" column. Choose the risk category that best fits your situation. 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 law are indicated by '!' and printed in bold text.

| RISK                                 | LOW RISK   | MODERATE RISK | HIGH RISK  |
|--------------------------------------|--|---------------|--|
| <b>Rendering service</b>             |  |               |  |
| <b>Temporary dead animal storage</b> | <input type="checkbox"/> Dead animals are nearly always picked up within 24 hours of death AND<br><input type="checkbox"/> Dead animals are stored in a secured structure until pick up.   |               | <input type="checkbox"/> <b>Dead animals not disposed of within 24 hours of death OR</b><br><input type="checkbox"/> <b>Dead animals left in the open OR</b><br><input type="checkbox"/> <b>Dead animals stored near wells or surface water.</b>   |
| <b>Burial</b>                        |  |               |  |
| <b>Site location</b>                 | <input type="checkbox"/> Dead animals buried outside of flood plains and wetlands AND<br><input type="checkbox"/> Dead animals are 100 feet or more from a private water well AND<br><input type="checkbox"/> Dead animals are 100 feet or more from a surface water body.   |               | <input type="checkbox"/> <b>Dead animals buried in flood plains or wetlands OR</b><br><input type="checkbox"/> <b>Dead animals buried within 100 feet of a private water well or surface water body.</b>   |
| <b>Burial process</b>                | <input type="checkbox"/> Dead animals immediately covered with six inches of soil AND<br><input type="checkbox"/> Dead animals eventually covered with 30 inches of soil AND<br><input type="checkbox"/> Burial pit less than six feet deep AND<br><input type="checkbox"/> Groundwater table does not enter the burial pit. |               | <input type="checkbox"/> <b>Dead animals not immediately covered with six inches of soil OR</b><br><input type="checkbox"/> <b>Permanent coverage of dead animals with soil is less than 30 inches deep OR</b><br><input type="checkbox"/> <b>Burial pit more than six feet deep OR</b><br><input type="checkbox"/> <b>Water from groundwater table enters burial pit.</b> |
| <b>Composting practices</b>          |  |               |  |
| <b>Composting site</b>               | <input type="checkbox"/> Composting site located outside of 100 year flood plain AND<br><input type="checkbox"/> Composting site is 100 feet or more from private water wells AND<br><input type="checkbox"/> Composting site is 100 feet or more from the nearest surface water body.                                       |               | <input type="checkbox"/> <b>Site located in a 100-year flood plain OR</b><br><input type="checkbox"/> <b>Site is less than 100 feet from private water wells OR</b><br><input type="checkbox"/> <b>Site is less than 100 feet from the nearest surface water body.</b>   |



| RISK                          | LOW RISK   | MODERATE RISK | HIGH RISK  |
|-------------------------------|--|---------------|--|
| Composting process            | <ul style="list-style-type: none"> <li><input type="checkbox"/> Dead animals are completely covered with organic material AND</li> <li><input type="checkbox"/> Composting done in a manner that prevents runoff of leachate.</li> </ul> |               | <ul style="list-style-type: none"> <li><input type="checkbox"/> Dead animals are not sufficiently covered with organic material AND</li> <li><input type="checkbox"/> Composting not conducted in a manner that prevents runoff of leachate.</li> </ul>  |
| <b>Incineration practices</b> |  |               |  |
| Incineration practices        | <ul style="list-style-type: none"> <li><input type="checkbox"/> Dead animals are incinerated on-farm within 24 hours of death AND</li> <li><input type="checkbox"/> Incineration meets minimum air quality standards.</li> </ul>         |               | <ul style="list-style-type: none"> <li><input type="checkbox"/> Dead animals are not incinerated within 24 hours of death OR</li> <li><input type="checkbox"/> Incineration does not meet Iowa's minimum air quality standards OR</li> <li><input type="checkbox"/> Dead animals disposed without use of incinerator, such as open burning.</li> </ul> |

-  Critical
-  Violates Iowa law



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