

# Livestock & Poultry Mortality Management

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**Purpose (Learning Objective):** This presentation explores the options and appropriate management of animal carcasses. It will emphasize composting mortalities as a preferred option.

## Why is this Important?

Livestock mortality is an issue faced by every livestock and poultry farming operation. Proper management of on-farm animal mortalities is vital for proper nutrient management and controlling disease. Improper disposal of dead animal carcasses, such as abandonment, may cause odor nuisance and the resulting leachate (carcass fluids) can negatively impact surface water and groundwater quality. If the animal died of an infectious disease, pathogenic bacteria and viruses may be present within the carcass. These pathogens can be spread by insects, rodents, predators, and subsurface or above ground water movement, as well as through direct contact with other livestock or poultry, leading to increased disease transmission risks. For these reasons, best management practices should be followed when reacting to animal mortalities. Furthermore, most states have regulations requiring proper disposal of livestock and poultry mortalities making unacceptable practices such as abandonment illegal.

## Prior to the activity/program:

**High School/Jr. College Teachers:** Students should be investigate the method(s) of carcass disposal used on the farm on which they grew up (or that of a family member or friend). If your school has a farm, invite the farm manager to talk about the methods of carcass disposal used on the school farm.

**Extension Faculty/Staff:** Program participants should consider how they manage animal mortalities and how that has changed over time.

## Suggested Presentation Outline: (50-100 minutes)

1. Introduction, goals of proper carcass management (slides 1-6) 5 minutes
2. Handout-Review the handout simultaneous to slides 7-13 (below) and encourage class discussion/participation as you cover the important points (20 minutes)
3. Methods of carcass disposal (slides 7-13) (10 minutes)
4. Carcass composting (slides 14-37) (15 minutes)
5. [Optional] Watch one or more videos from the “multimedia” section below (50 minutes)

## Instructional Materials:

**Presentation Slides:** (37 slides; .ppt format). Livestock and Poultry Mortality Management (preview online) <http://www.slideshare.net/LPELC/livestock-and-poultry-mortality-management> or (download)

<http://www.extension.org/sites/default/files/Livestock%20and%20Poultry%20Mortality%20Mgmt.pptx>

**Handout:** <http://www.extension.org/sites/default/files/mortality%20handout.pdf> (PDF format; 2 pages)

### Alternate Handouts:

- On Farm Mortality Composting of Livestock Carcasses [http://www.poultrywaste.okstate.edu/files/BAE1749 On-Farm Mortality.pdf](http://www.poultrywaste.okstate.edu/files/BAE1749%20On-Farm%20Mortality.pdf)
- LPES Curriculum Mortality Management Review [http://www.extension.org/mediawiki/files/a/a8/LES\\_51.pdf](http://www.extension.org/mediawiki/files/a/a8/LES_51.pdf)
- Composting Livestock Mortality and Butcher Waste <http://cwmi.css.cornell.edu/naturalrendering.htm>

### Multimedia (videos):

- Webcast <http://www.extension.org/pages/28022/livestock-and-poultry-mortality-composting>
- Webinars from the Cornell Waste Management Institute <http://cwmi.css.cornell.edu/webinars.htm>

## Evaluation/Assessment:

Example Quiz Questions:

<http://www.extension.org/sites/default/files/Livestock%20and%20Poultry%20Mortality%20Mgmt%20Module%20Quiz%20Questions.rtf>

## Enrichment Activities/Independent Practice:

Homework or Class Activities: <http://www.extension.org/sites/default/files/Animal%20Mortality%20Module%20Homework.rtf>

## Connections to SAE Projects

### Entrepreneurship/Production:

- Students should examine how their farm manages dead animals and note in their records any changes or affirmation of their current system in terms of the environmental benefits of their choice. They should also note impacts on neighbor relations or appearance to visitors and passers-by.
- Students can explore opportunities to obtain cost-share or low-interest loans to upgrade mortality management facilities.

### Placement

- If applicable, students can encourage their employer to review mortality management procedures and examine opportunities for cost-share or low-interest loans for upgrades.

## Connections to FFA Awards/Contests

This module may be helpful for students preparing for Career Development Events such as agricultural issues, environmental and natural resources and others. A plan for managing animal mortalities can be mentioned in a student's application for proficiency awards in almost every area.

## Alignment with AFNR

### National Agriculture, Food, & Natural Resources Career Cluster Content Standards

#### Life Knowledge and Cluster Skills (CS)

- **CS.06** Performance element: Examine the importance of health, safety and environmental management systems in organizations and their importance to performance and regulatory compliance
- **CS.07** Performance Element: Safety, Health, and Environmental: Demonstrate appropriate health and safety procedures for AFNR occupations

#### ABS Agribusiness Systems

- **ABS.03** Performance Element: Utilize record keeping to accomplish AFNR business objectives while complying with laws and regulations.

#### Animal Science (AS)

- **AS.08.** Performance element. Analyze environmental factors associated with animal production.

#### Environmental Service Systems (ESS)

- **ESS.01.** Performance Element: Use analytical procedures to plan and evaluate environmental service systems.
- **ESS.02.** Performance element: Assess the impact of policies and regulations on environmental service systems.
- **ESS.03.** Performance Element: Apply scientific principles to environmental service systems.
- **ESS.04.01.** Performance indicator: Use pollution control measures to maintain a safe facility environment.

- **ESS.06.** Performance Element: Use tools, equipment, machinery and technology to accomplish tasks in environmental service systems.

To find other modules and their alignment with the standard, download the BELAA\_AFNR alignment matrix at: <http://www.extension.org/32944>

## For More Information

Recommended Internet search terms: Livestock mortality, carcass disposal, carcass composting, mortality management, poultry mortality management

### Recommended Viewing

- Frequently asked questions about managing animal mortalities. Includes several short videos on principles of mortality composting <http://www.extension.org/66143>
- Managing Livestock and Poultry Mortalities <http://www.extension.org/19942>

### University Extension Publications On Animal Mortality Management

- Composting Poultry Mortality <http://cwmi.css.cornell.edu/aifs.pdf>
- Horse Mortality: Carcass Disposal Alternatives <http://cwmi.css.cornell.edu/horsefs.pdf>
- Animal Carcass Disposal Options <http://www.ag.ndsu.edu/extension-aben/documents/nm1422.pdf>
- Composting Roadkill <http://cwmi.css.cornell.edu/roadkillfs.pdf>
- Livestock Composting <http://www.cvmbs.colostate.edu/ilm/proinfo/composting.htm>
- Methods of Large Animal Carcass Disposal in Florida <http://edis.ifas.ufl.edu/vm133>
- Poultry Mortality Composting Management Guide [http://www.caes.uga.edu/publications/pubDetail.cfm?pk\\_id=7368](http://www.caes.uga.edu/publications/pubDetail.cfm?pk_id=7368)
- Solving Swine Mortality Problems <http://www3.abe.iastate.edu/PigsGone/index.htm>
- On-Farm Composting of Large Animal Mortalities <http://cru.cahe.wsu.edu/CEPublications/eb2031e/eb2031e.pdf>
- Emergency Livestock Mortality Composting <http://www3.abe.iastate.edu/cattlecomposting/>
- Composting Swine Mortalities <http://www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2008-11-composting-swine-mortalities-iowa.pdf>
- Composting Cattle Carcasses <http://www.livestocktrail.illinois.edu/dairy/paperDisplay.cfm?ContentID=7651>
- Carcass Composting Basics [http://m.extension.illinois.edu/clmt/Workbook/WK\\_FILES/CAR\\_COMP.PDF](http://m.extension.illinois.edu/clmt/Workbook/WK_FILES/CAR_COMP.PDF)
- Composting Poultry Carcasses <http://www.extension.purdue.edu/extmedia/NCR/NCR-530.html>
- On-Farm Composting of Animal Mortalities <http://www.ca.uky.edu/agc/pubs/id/id166/id166.pdf>
- On-Farm Composting <http://pubs.ext.vt.edu/452/452-232/452-232.html>
- Composting Dead Birds <http://www.enst.umd.edu/extension/composting/files/fs537.pdf>
- Composting Animal Mortalities on the Farm <http://www.enst.umd.edu/extension/composting/files/FS717.pdf>
- Guidelines for In-House Composting of Catastrophic Poultry Mortality <http://www.enst.umd.edu/extension/composting/files/FS801.pdf>
- Composting Catastrophic Event Poultry Mortalities <http://www.enst.umd.edu/extension/composting/files/FS723.pdf>
- Composting Layer Mortalities <http://extension.missouri.edu/publications/DisplayPub.aspx?P=WQ211>
- On-Farm Turkey Carcass Composting <http://www.ag.ndsu.edu/pubs/ansci/waste/nm1487.pdf>
- Organic Burial Composting of Cattle Mortality [http://www.uaex.edu/Other\\_Areas/publications/PDF/FSA-1044.pdf](http://www.uaex.edu/Other_Areas/publications/PDF/FSA-1044.pdf)
- Whole Animal Composting of Dairy Cattle [http://aces.nmsu.edu/pubs/\\_d/D-108.pdf](http://aces.nmsu.edu/pubs/_d/D-108.pdf)
- Proper Disposal of Routine and Catastrophic Livestock and Poultry Mortality [http://www.poultrywaste.okstate.edu/files/BAE1748\\_Proper\\_Carcass\\_Disposal.pdf](http://www.poultrywaste.okstate.edu/files/BAE1748_Proper_Carcass_Disposal.pdf)
- Composting Swine Mortality Principles and Operation <http://ohioline.osu.edu/aex-fact/0711.html>
- Small Stock Mortality Composting [http://www.luresext.edu/goats/extension/AIGR\\_ExtBull\\_Mort\\_Compost.pdf](http://www.luresext.edu/goats/extension/AIGR_ExtBull_Mort_Compost.pdf)
- Dead Animal Disposal [http://www.clemson.edu/extension/livestock/livestock/camm/camm\\_files/swine/sch8\\_03.pdf](http://www.clemson.edu/extension/livestock/livestock/camm/camm_files/swine/sch8_03.pdf)
- Composting Large Animal Carcasses <http://tammi.tamu.edu/largecarcassE-422.pdf>
- Composting for Mortality Disposal on Hog Farms <http://pubs.ext.vt.edu/414/414-020/414-020.html>
- Composting Dead Poultry <http://www.pubs.ext.vt.edu/442/442-037/442-037.html>

-Composting Animal Mortalities <http://www.mda.state.mn.us/news/publications/animals/compostguide.pdf>  
In-Vessel Composting of Wild Birds, Game Birds and Backyard Poultry  
[http://extension.umaine.edu/ByproductsSymposium09/compendium/IN-VESSEL\\_COMPOSTING\\_FACT\\_SHEET.pdf](http://extension.umaine.edu/ByproductsSymposium09/compendium/IN-VESSEL_COMPOSTING_FACT_SHEET.pdf)  
-On-Farm Composting of Livestock Mortalities <http://www.ecy.wa.gov/pubs/0507034.pdf>

### Agency Publications

-Composting Animal Mortalities <http://www.uvm.edu/~ascibios/Animal/MNmortalitycomposting.pdf> Covers:  
Is composting costly? Will composting mortalities take a lot of labor? Are there uses for the compost?  
-Should I add inoculants & activators? <http://www.dep.state.pa.us/dep/deputate/airwaste/wm/recycle/Compost/FAQ.htm>

### Frequently Asked Questions

By what factor does composting manure reduce pathogens present? <http://www.extension.org/faq/27172>  
What are necessary microbial components for composting mortalities? <http://www.extension.org/faq/27121>  
How critical are carbon:nitrogen ratios in large carcass mortality composting? <http://www.extension.org/faq/27787>  
Are special ingredients required for carcass composting? What is essential during the poultry carcass composting cycle? <http://www.aces.edu/waterquality/articles/0204002/0204002.pdf>

### Connect and Interact:

#### Suggested Contacts/References:

State Land Grant University Contacts for Animal Waste Management <http://www.extension.org/67424>  
State USDA NRCS office <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/home>  
State Department of Agriculture <http://www.rma.usda.gov/other/stateag.html>  
Your State Department of Environmental Quality

Facebook: <http://facebook.com/lpelc.cop>

Twitter: <http://twitter.com/lpelc>

National Young Farmers Educational Association (NYFEA) <http://nyfea.org>

Livestock and Poultry Environmental Learning Center [http://www.extension.org/animal\\_manure\\_management](http://www.extension.org/animal_manure_management)

YouTube: <http://youtube.com/user/lpelc>

### Teaching Notes:

What would you keep the same, change, add, or remove the next time you teach this lesson?

### Acknowledgements:

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