On Farm Mortality Management Options
Or
“She’s Dead, ... Now What Do I Do?”

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Use Available Resources
Basic Concepts
User/Neighbor Perceptions
May Be Important

Basic Concepts
Poor Practices/Management Fail
Basic Concepts

Even The “knowledgeable” Make Mistakes, Details Matter

Management Plans

• Maximize benefits - minimize risks
• Addresses:
  – Handling, storage, and application of litter
  – Disposal of dead livestock and poultry
• Tailored to needs of each farm
Regulatory Authorities

• Primary
  – The Arkansas Livestock and Poultry Commission
    • Control and Spread of Disease

• Secondary
  – The Arkansas Department of Environmental Quality
    • Environmental Pollution
  – The Arkansas Department of Health
    • Public Water Supply Issues

Direct Questions To:

Livestock and Poultry Commission
#1 Natural Resources Drive
Little Rock, AR 72205
phone: (501) 907-2400
email: info@alpc.ar.gov
web: http://alpc.arkansas.gov
Approved Poultry Disposal Methods

**Possible**
- Incineration
- Composting
- Extrusion
- Rendering
- Cooking for Swine Feed
- On-Farm Freezing

**Typical**
- Incineration
- Composting

**Incineration**
- New technology incinerators give cleaner burn with less odors
- Computer controls to cycle gas on and off
- Incinerators have higher initial costs
- Fuel cost commonly cited as a concern
- Ash usually blended with litter and land applied
- Maintenance required
Incinerator Attention Items*

*Photos provided by EPA Region Six

Composting Poultry Carcasses

- Natural way to convert mortality into soil amendment
- Many producers have composters
- U of A Verification Unit has operated one since 1990
- Conceptually composting is a simple, practical way to dispose of carcasses
- Not a “Silver Bullet” Management and Labor Required!!!
The Composting Process

• Aerobic
• Produces Humus Like Material
• Thermophilic (105 - 160 F)
• Self Inoculating (Special “Bugs” Not Needed)
• Optimum Conditions
  – C:N Ratio 25:1 to 30:1
  – Moisture 50 to 60%
  – pH 6.5 to 8.0
  – Temperature 130 to 140+ F

General Observations

• Works year round
• Can fit everyday management chores
• With proper management
  – No offensive odors with proper management
  – No documented danger of diseases
• Normally compost is turned at least once to achieve acceptable decomposition
• End product is valuable and safe soil amendment.
Essential Construction Features

- **Roof** - must be covered to exclude excess moisture
- **Floor** - must have a concrete floor to prevent contamination of the surrounding area
- **Bins** - needs rot-resistant construction that is sturdy enough to support the compost and can withstand the stresses applied by a tractor loader

Available at [www.uaex.edu](http://www.uaex.edu) and your county Extension office.
Recipe Compost Mixture

<table>
<thead>
<tr>
<th>Materials</th>
<th>Parts by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dead chickens</td>
<td>1.0 lbs.</td>
</tr>
<tr>
<td>Litter or Cake</td>
<td>2 to 4 lbs.</td>
</tr>
<tr>
<td>Additional Carbon</td>
<td>0 to 0.4 lb.</td>
</tr>
<tr>
<td>Water (only as needed)</td>
<td>0.0 to 1 lb.</td>
</tr>
</tbody>
</table>

(litter should be “damp” about 50% MC)

Loading Primary Bin

1. 1 ft litter base
2. ½ ft carbon
3. Layer birds
4. Water as needed
5. ½ ft carbon
6. Repeat 3, 4, 5
7. ½ to 1 ft carbon cap

Concrete
Temperature Is Your Best Gauge

Primary Bin
Target: 130 °F for at least 5 days.

More Days Better!

Loading Secondary Bin

• Turn Primary into Secondary
  – After 5+ days 130 °F
• Cap with ½ ft Carbon
• 30+ days ready for land application
Management Check Points

• Land applied compost should have small bone fragments at most
• Bins should never leak moisture
• Should be minimal odors, and flies
• Should not attract animals
• Routine inspection and records needed

Potential Problem

<table>
<thead>
<tr>
<th>Black liquid seeping from side and bottom</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Poor carcass placement</td>
</tr>
<tr>
<td>• Need to be at least 6 inches from the side</td>
</tr>
<tr>
<td>• Need to place them in a layer not a pile</td>
</tr>
<tr>
<td>• Need litter base before adding first layer of birds</td>
</tr>
</tbody>
</table>
Potential Problem

Bin overheats

- Temperatures greater than 170°F should be turned immediately into other primary bins and stack depth lowered

Potential Problem

Bin heats but does not attain at least 130°F

- Stack too dry
- Mix should feel damp and spongy (about 50% moisture)
- Turn and add water or leave in bin longer
<table>
<thead>
<tr>
<th>Potential Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compost pile is obviously wet, fly larvae are present, the pile does not heat properly and has a rotten odor</td>
</tr>
<tr>
<td>• Too much water added</td>
</tr>
<tr>
<td>• Blowing rain may be a problem</td>
</tr>
<tr>
<td>• Bin may be overloaded</td>
</tr>
<tr>
<td>• Turn and add more litter</td>
</tr>
</tbody>
</table>

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<tbody>
<tr>
<td>Bones, feathers, and bird parts are left exposed</td>
</tr>
<tr>
<td>• Inadequate litter cover provided</td>
</tr>
<tr>
<td>• Turning bin too soon after last layer added</td>
</tr>
</tbody>
</table>
New/Alternative Composting Options

• Alley Composting
  – Long parallel bins/alleys used
• In-vessel Composting
  – Typically Rotating Drum Concept
  – Serves as primary bin
  – Secondary bin/storage still needed

For Individualized Assistance Contact Your Local

County Extension Office
or
NRCS Office
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