2015 HPAI Response—3D Issues

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Virginia’s Experience with AI

- 1983 – 69 flocks, H5N2
- 1999 – 1 flock, H5N2
- 2002 – 197 flocks, H7N2
- 2007 – 1 flock, H5N2
- 2007 – 1 flock, H5N1
Avian Influenza Outbreaks in 1984

- On-site burial main disposal method
  - 88% or 5700 tons of carcass
  - 12% or 665 tons disposed of in local landfill
Concerns with On–site Burial

- Potential for surface and groundwater contaminated groundwater
- Impact on property values

A 1984 on-farm burial site at present

...and where intact carcasses were discovered during excavation in 1998
### Methods of Disposal Used in 2002*

<table>
<thead>
<tr>
<th>Method of Disposal</th>
<th>Number of Birds</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-site Burial</td>
<td>15,000</td>
<td>0.3</td>
</tr>
<tr>
<td>Controlled slaughter</td>
<td>943,000</td>
<td>19.9</td>
</tr>
<tr>
<td>Incineration</td>
<td>641,000</td>
<td>13.4</td>
</tr>
<tr>
<td>Landfilling</td>
<td>3,103,000</td>
<td>65.5</td>
</tr>
<tr>
<td>Composting (Ag-Bag &amp; In-house)</td>
<td>43,000</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,732,000</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Note: The table and graph illustrate the number of birds disposed of via various methods in 2002.*
Incineration

Incineration
Landfilling

Composting

In-House Composting turns to Ag-Bag Composting
### The Delmarva Experience

- 2004 avian influenza outbreak
- In–house composting
- 5–pound broilers
- Confined to 3 poultry farms

### Research in Virginia

- Successful in–house composting of large turkeys
Shenandoah County Virginia
2007 LPAI Outbreak
Depopulation: Foam Generator

Depopulation: Foam Nozzle
Depopulation: Foam Nozzle

Compressed Air Foam System (CAFS)
Handheld Foam Systems

Depopulation: Inhalation Agent ($\text{CO}_2$)
Depopulation: Cervical Dislocation and Captive Bolt

Depopulation: Ventilation Shutdown

- USDA’s Ventilation Shutdown Evidence & Policy
- Depopulation within 24-hours critical
- CO2 and water-based foam primary methods
- VSD recognized as alternative method
Disposal HPAI 2015

Disposal Methods Used

- 211 commercial premises
  - MN–109 – 108 composting, 1 burial
  - IA–71 – compost/burial/landfill/incineration
  - SD–10 – burial
  - WI–9 – composting
  - NE–5 – composting
  - CA–2 – composting
  - MO–2 – composting
  - ND–2 – composting
  - AR–1 – burial