Overview of Manure Additives for Odor and Emission Control

Air Management Practices
Assessment Tool (AMPAT)

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Manure Additives

Manure additives are substances added to the manure to reduce emission of odors and gases from the manure storage by altering chemical or microbial properties. These substances may include enzymes, microbes, and other chemical amendments.

Why Manure Additives

Manure additives can be used with little to no change in your current manure management system, but often there is little scientific information on their performance.

Microbial additives

Based on slide from Pepple, University of Illinois

Sorptive Additives

Other Chemicals

Oxidizers
Precipitants
Electron Acceptors
Microbial Inhibitors

Photo by Keith Weller
### Oxidizers

**Effectiveness**

<table>
<thead>
<tr>
<th>Component</th>
<th>Reduction</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH₃</td>
<td>0 to 60%</td>
<td></td>
</tr>
<tr>
<td>H₂S</td>
<td>0 to 80%</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>0 to 20%</td>
<td></td>
</tr>
<tr>
<td>Volatile Organic Compounds</td>
<td>10 to 40%</td>
<td></td>
</tr>
<tr>
<td>Greenhouse gases</td>
<td>0 to 10%</td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>$</td>
<td>Varies with the additive used and dosing frequency required</td>
</tr>
</tbody>
</table>

### Precipitants & Electron Acceptors

**For Further Information:**

- If you are an educator and wish to have copies of PowerPoint files, contact Dan Andersen (dsa@iastate.edu).

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