

Manure Treatment Technologies Expert Panel

Doug Hamilton (Chair)

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Expected Completion Timeline

9/01: Technology Chapters to Chair

10/01: Chapter Rewrites to Groups

10/15: Comments/Edits of Full Report to Chair

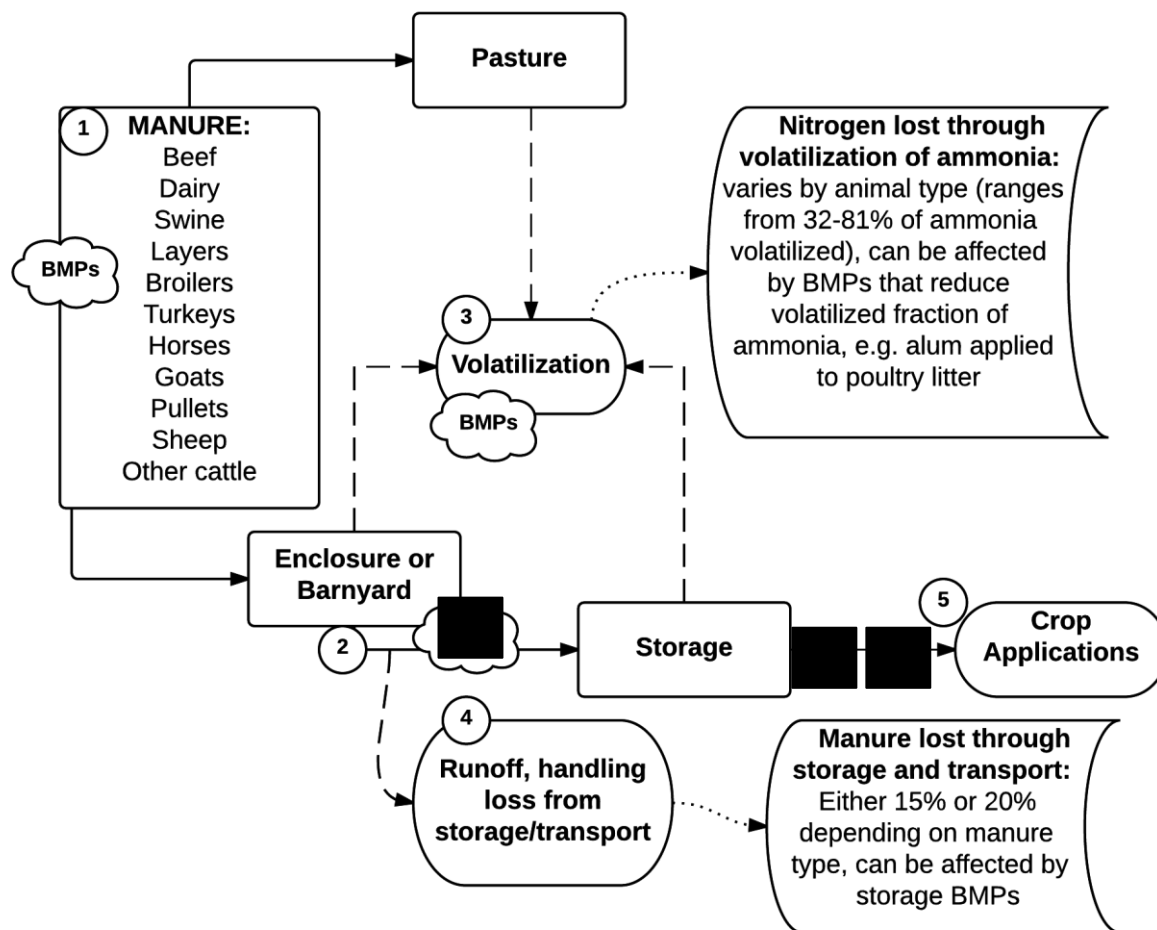
10/31: Final Draft of Full Report to AWG



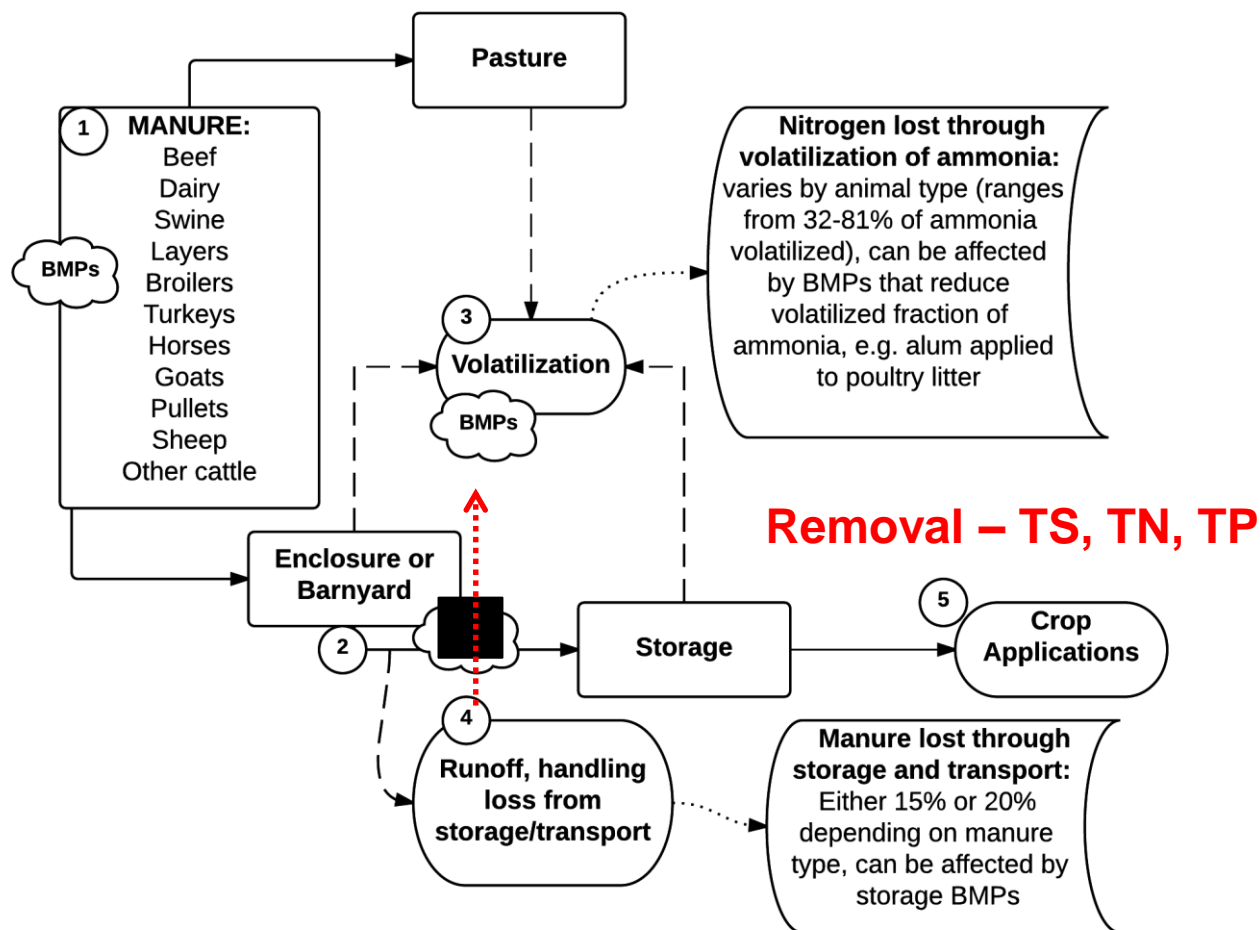
Recommendations on ...

- **Thermochemical Processes**
- **Anaerobic Digestion**
- **Settling**
- **Chemical Precipitation**
- **Mechanical Solid-Liquid Separation**
- **Composting**
- **Aerobic Liquid Treatment**

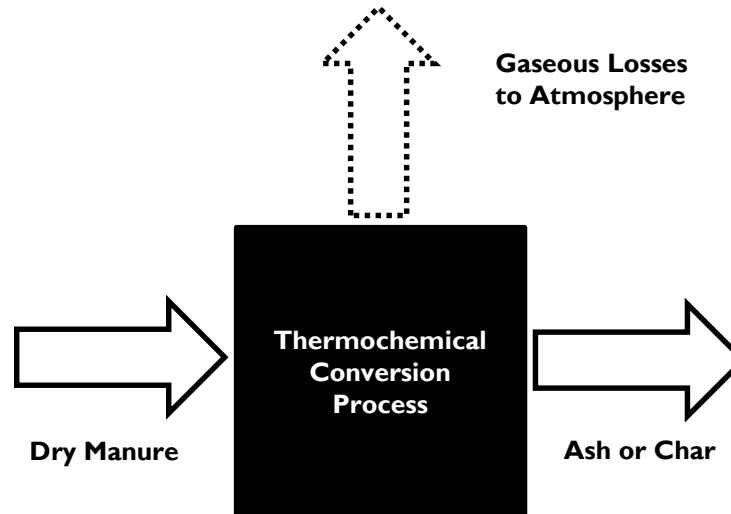
Recommendations on ...



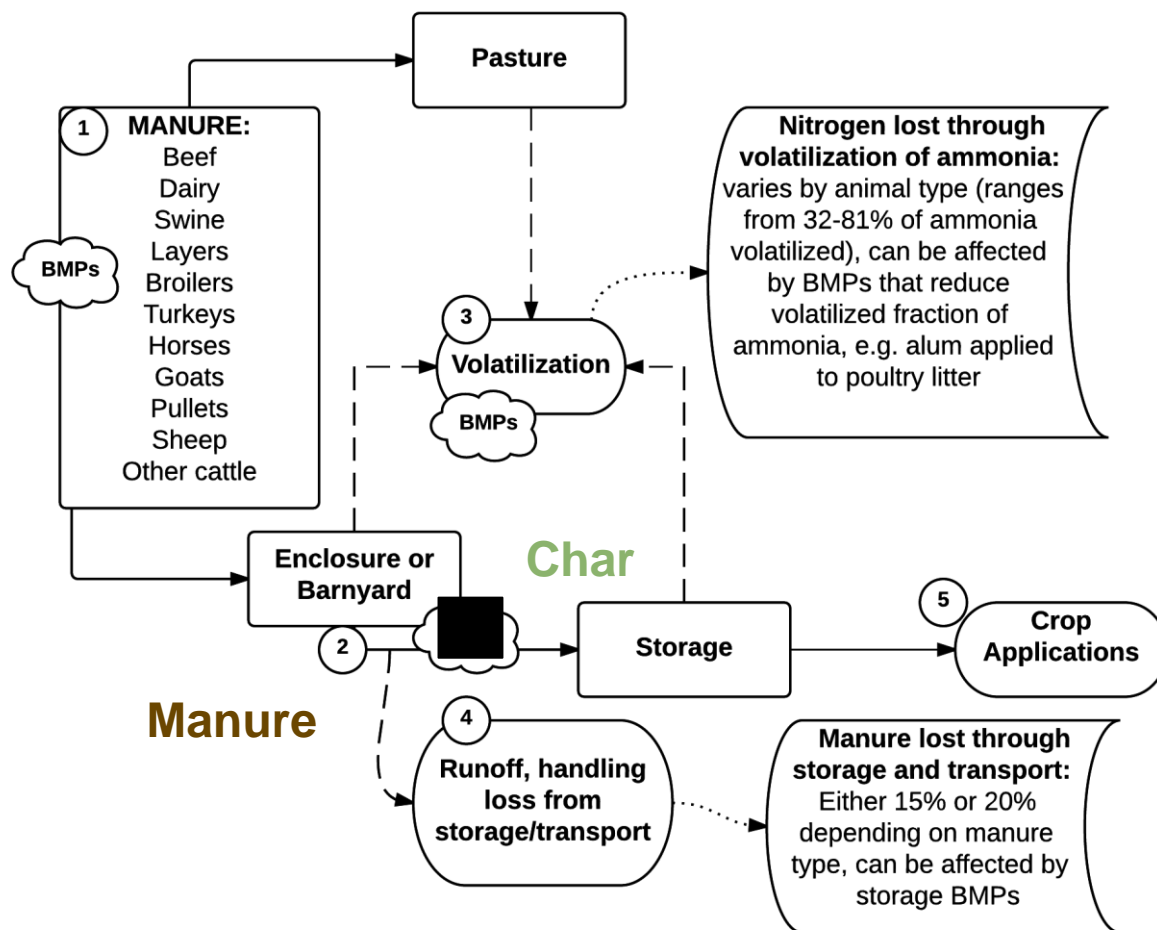
Recommendations on ...



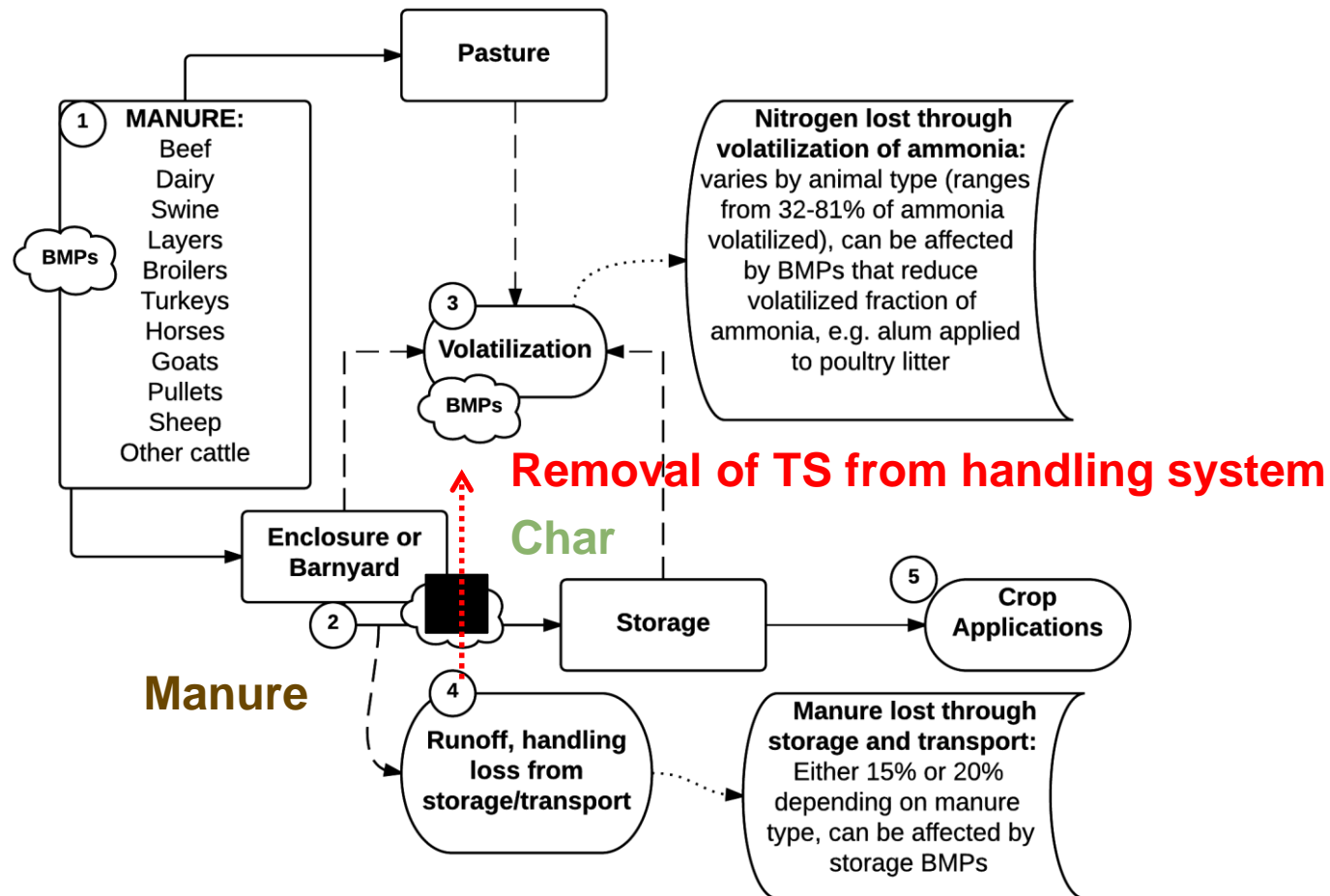
Removal from Manure Handling Chain



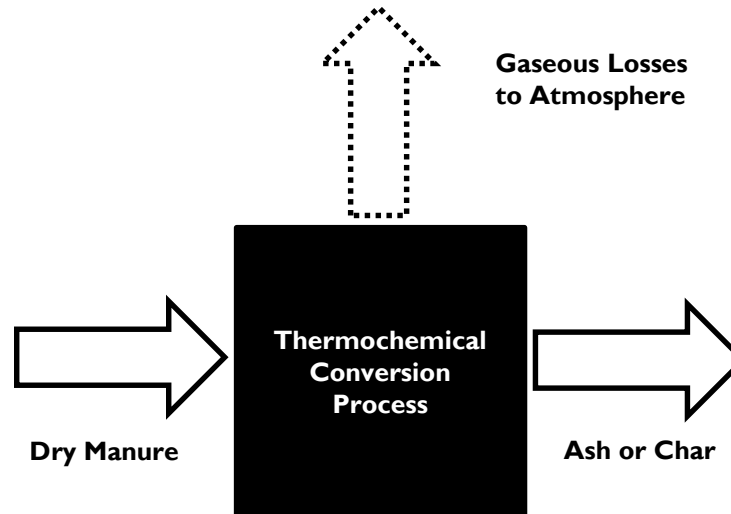
Recommendations on ...



Recommendations on ...

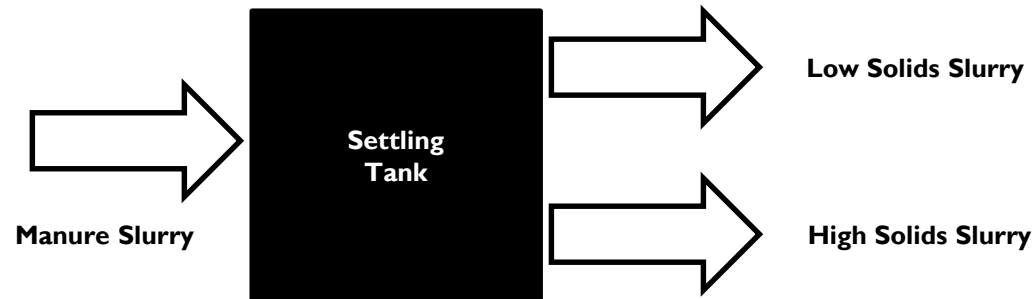


Total Solids (TS) Removal Efficiency

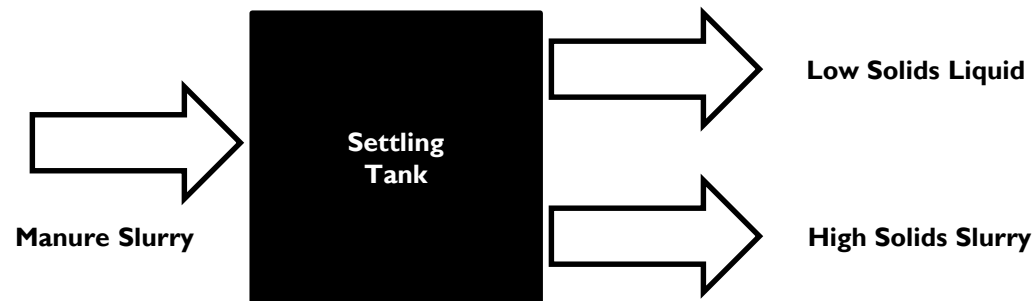


$$\frac{(\text{Mass of TS in Dry Manure} - \text{Mass of TS in Ash or Char}) \times 100}{(\text{Mass of TS in Dry Manure})}$$

Removal from Manure Handling Chain



Total Solids (TS) Separation Efficiency



$$\frac{(\text{Mass of TS in Manure Slurry} - \text{Mass of TS High Solids Slurry}) \times 100}{(\text{Mass of TS in Manure Slurry})}$$



Three Types of Efficiencies

- 1. Removal Efficiency**
- 2. Separation Efficiency**
- 3. Transformation Efficiency**



Three levels of Recommendations

1. Fallback Recommendation



Three levels of Recommendations

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Efficiencies based on manure and technology type.



Three levels of Recommendations

1. Fallback Recommendation
2. Process Based Recommendation



Three levels of Recommendations

1. Fallback Recommendation
2. Process Based Recommendation

Efficiencies based on technology
design and operating parameters



Three levels of Recommendations

1. Fallback Recommendation
2. Process Based Recommendation
3. Monitoring Based Recommendation



Three levels of Recommendations

1. Fallback Recommendation
2. Process Based Recommendation
3. Monitoring Based Recommendation

Protocol for determining individual
system reductions based on
monitoring data

Any Questions ?

