

6-1998

Iowa Odor Control Demonstration Project: Composting

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Recommended Citation

Burns, Robert T., "Iowa Odor Control Demonstration Project: Composting" (1998). *Agriculture and Environment Extension Publications*. 145.

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IOWA odor CONTROL

DEMONSTRATION PROJECT

Composting

TECHNOLOGY DESCRIPTION

Composting began growing in popularity about 10 years ago as a method of managing solid waste, especially yard waste. As an aerobic process, it's been used for years to control odors, including those from livestock operations.

Seven cooperators are demonstrating composting with swine, beef, dairy and poultry operations as part of the Odor Control Demonstration Project.

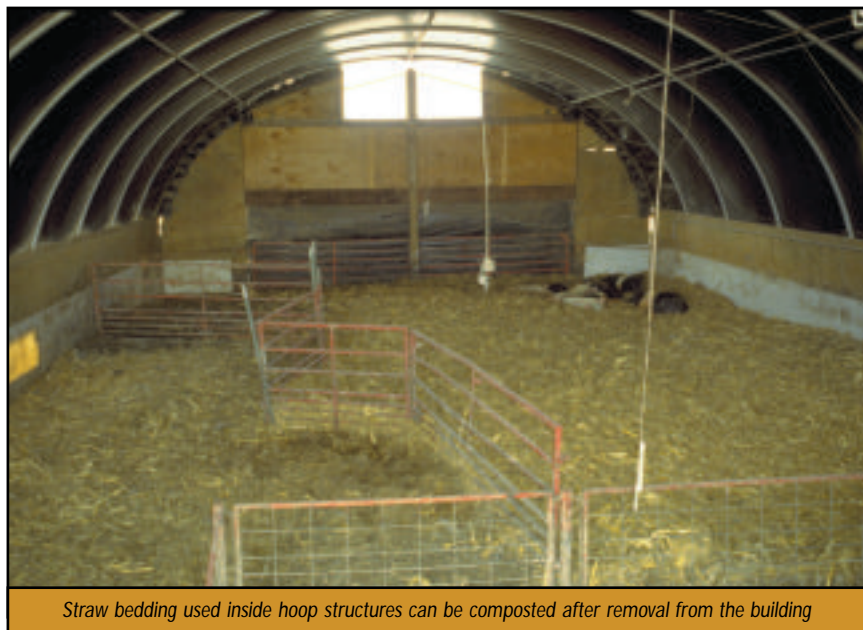
Composting systems typically use mechanical devices to provide oxygen to a compost pile, keeping it aerobic. Fans can provide forced air or the piles can be mixed and turned periodically by specially made turners or by tractors and loaders.

EFFECTIVENESS

Evaluations at Odor Control Demonstration Project sites show well managed composting to be essentially odor-free. Windrows with forced aeration and turned piles each yielded favorable results. The key to effective composting is providing adequate oxygen through good management.

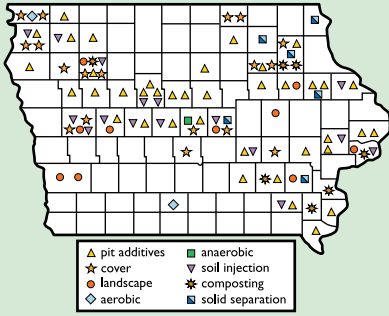


Hoop structure used for swine production



Straw bedding used inside hoop structures can be composted after removal from the building

ODOR CONTROL
DEMONSTRATION PROJECT



In 1997, 80 Iowa livestock producers began demonstrating technologies to control odor from animal production. The Odor Control Demonstration Project is administered by Iowa State University and funded by the Iowa Legislature. Participants received up to half of their expenses for the odor-control technologies used on their operations.

Producers with all sizes of operations and all species of livestock were eligible to participate. They could demonstrate one or a combination of the following technologies: aeration, biocovers, composting, landscaping, pit additives, anaerobic digestion, synthetic covers, soil injection, and solids separation.

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FOR MORE INFORMATION

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OTHER FACT SHEETS IN THIS

SERIES AVAILABLE:

- Synthetic Covers Pm-1754a
- Aeration Pm-1754b
- Biocovers Pm-1754c
- Pit Additives Pm-1754d
- Soil Injection Pm-1754e
- Anaerobic Digestion Pm-1754f
- Landscaping Pm-1754h
- Solids Separation Pm-1754i

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Issued in furtherance of Cooperative extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Stanley R. Johnson, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

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COST

Composting costs can vary considerably, depending on the system and how the surface below the pile is prepared. For example, mechanical turners can cost more than \$100,000.

In addition, a concrete surface below the compost pile can be expensive. While concrete is not mandatory, it is a good option because it provides a firm surface with adequate drainage, allowing the piles to be turned in any weather. Mixing fly ash with the soil where the compost pile will be is another option. In large systems, a leachate/runoff control system may be needed.

Costs will rise further if composting is done in dedicated buildings. Based on costs approved for the Odor Control Demonstration Project composting costs using tractors and loaders range from 20 cents to 40 cents per head of swine marketed.



Compost turner in action.

For additional information on composting see:

"On-Farm Composting Handbook", NRAES-54, available from Midwest Plan Service, Davidson Hall, ISU, Ames IA 50011

Composting Dead Livestock: A New Solution for an Old Problem. ISU Extension publication, SA-8, ISU Extension Distribution, Printing and Publications, Ames IA 50011.