6-1998

Iowa Odor Control Demonstration Project: Synthetic Covers

Robert T. Burns
Iowa State University

Follow this and additional works at: http://lib.dr.iastate.edu/extension_ag_pubs

Part of the Agricultural Education Commons, and the Bioresource and Agricultural Engineering Commons

Recommended Citation
http://lib.dr.iastate.edu/extension_ag_pubs/140

Iowa State University Extension and Outreach publications in the Iowa State University Digital Repository are made available for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current publications and information from Iowa State University Extension and Outreach, please visit http://www.extension.iastate.edu.
TECHNOLOGY DESCRIPTION

Synthetic covers on top of liquid storage units provide a physical barrier between liquid manure and the air. They work well when properly installed. To be effective at reducing odors, the covers must be attached to prevent the wind from catching and whipping them, and they must cover as much of the storage structure as possible. Floating covers are most popular, although one of the demonstration sites used a cover supported by cables above the stored liquid. Three cooperators are demonstrating synthetic covers in the Odor Control Demonstration Project.

EFFECTIVENESS

Before-and-after scentometer evaluations were performed on one pit with a synthetic cover. In that evaluation, the cover greatly reduced the odor from the pit.

Synthetic Pit Covers Affect Odor

Scentometer ratings of a manure pit with, and without, a synthetic cover installed. Numbers indicate dilution threshold values at which odor can just be detected (higher = more odor).
Floating synthetic cover in Slurrystore during the winter.

COST

The cost of synthetic covers includes the covers and the expense of installing them. Unlike biocovers, synthetic covers should last for several years and therefore do not include recurring replacement costs. Based on requests for reimbursement for the odor control demonstration project, synthetic covers cost about $1 per square foot (40 cents for materials and 60 cents for installation) of pit surface. Based on a 10- to 12-foot deep pit for finishing hogs, the cost should be about $4.00 per head capacity.

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.

PREPARED BY

FOR MORE INFORMATION
Agriculture and Biosystems Engineering
Iowa State University
www.ae.iastate.edu

OTHER FACT SHEETS IN THIS SERIES AVAILABLE:
Aeration . . . . . . . . . . . . . . . . . . . Pm-1754b
Biocovers . . . . . . . . . . . . . . . . . . Pm-1754c
Pit Additives . . . . . . . . . . . . . . . . . Pm-1754d
Soil Injection . . . . . . . . . . . . . . . . . Pm-1754e
Anaerobic Digestion . . . . . . . . . . . . Pm-1754f
Composting . . . . . . . . . . . . . . . . . . Pm-1754g
Landscaping . . . . . . . . . . . . . . . . . . Pm-1754h
Solids Separation . . . . . . . . . . . . . . Pm-1754i

... and justice for all

The Iowa Cooperative Extension Service's programs and policies are consistent with pertinent federal and state laws and regulations on nondiscrimination. Many materials can be made available in alternative formats for ADA clients.


© 1998, Iowa State University

No endorsement of products or firms is intended, nor is criticism implied of those not mentioned.