

Volume 6
April 26, 2006

This Month's Topics

- * University of Minnesota Receives NCR—SARE Grant to Study Compost Dairy Barns
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Ideas? Suggestions?

Welcome to the Compost Dairy Barn Newsletter. This newsletter is intended to facilitate networking among dairy producers using compost dairy barns and people interested in these facilities. We encourage your input. If you would like to share some of your experiences or have ideas for topics in future newsletters, contact Mindy Spiehs, Wayne Schoper, or Vince Crary.



Minnesota Compost Dairy Barn

University of Minnesota Receives NCR—SARE Grant to Study Compost Dairy Barns

We have been patiently waiting since October to hear if the research grant proposal *Alternative Bedding and Management of Composting Bedded Pack Dairy Barns* submitted to the North Central Region Sustainable Agriculture Research and Education (NCR—SARE) program would be funded. Last week we finally received the good news that our grant proposal was selected for funding. Of the 35 proposal submitted for review, the administrative council of the NCR—SARE program selected 11 proposal totaling about 1.3 million for funding.

Now the work begins. Fourteen University of Minnesota faculty members from various departments, two researchers from the Agricultural Utilization Research Institute (AURI), one representative from the composting industry, and ten participating dairy farms using compost barns will begin the five-phase research project.

Phase 1 is an on-farm survey. Farms currently using compost bedded pack barns will be surveyed to document the farmers' experiences, to quantify resources invested in composting, and to generate creative new ideas for composting. Information will be collected on the nutrient composition, temperature, and microbial activity of the composting bedded pack, typical space allowance per cow on the pack, and environmental factors such as barn temperature and relative humidity. The behavior of the cows in the barn will be studied, including lying behavior, and the

frequency of chasing away, pushing away, butting, and social grooming. Using a questionnaire, we will collect as much information as possible on feeding management and feed intake, bedding management, transition cow management, footbath and hoof trimming protocols, and other aspects of the dairy system that could potentially affect cows' health and productivity. Finally, we will determine cow body condition scores, cow hygiene scores, and locomotion scores.

Phase 2 of the study is a lab-scale evaluation of alternative bedding materials. Soybean straw, wheat straw, barley straw, ground corn cobs, and other potential crop residue bedding materials will be evaluated in the Compost Lab on the St. Paul Campus. The initial laboratory evaluation received matching support from the Minnesota AURI, Minnesota Corn Growers Association, Minnesota Soybean Growers Association, and Minnesota Nursery and Landscape Association.

Phase 3 of the project will be a pilot-scale evaluation of alternative bedding materials. The results of Phase 2 will be used to identify bedding material or combinations of materials for a further large scale evaluation study that will be conducted at the West Central Research and Outreach Center (WCROC) in Morris, MN. Alternative bedding material or combinations of materials, will be used from October 2006 to April 2007 in a pilot-scale compost barn at the WCROC. Tempera-

ture, moisture, and pH of the compost will be measured to determine the effectiveness of the bedding material as a composting agent. Additionally, samples of the compost will be evaluated for nutrient composition, stability, and maturity on a regular basis. Samples of compost bedded material will also be evaluated at the University of Minnesota Udder Health Lab for bacterial pathogen load. Milk quantity and quality will be measured from data currently being collected by the WCROC dairy. Cow comfort and cleanliness will be recorded. An economic evaluation of the alternative bedding will also be conducted.

The fourth phase of the project will be on-farm evaluation of alternative bedding materials using five to ten compost dairy barns in Otter Tail, Stearns and Brown County.

The fifth and final phase of the project will be development of educational events and materials. This will include field days at participating farms, informational materials, and various other forms of distributing the information learned from this research project.

The Compost Dairy Barn Research Team is excited to get started on this and other research projects that have been proposed in order to better educate producers about this new dairy housing facility. Watch for results of this research project in upcoming newsletters.

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Frequently Asked Questions From Compost Dairy Barn Tours

Following up on last-month's newsletter, here are more frequently asked questions from the recent compost dairy barn tours.

Question: What is the best material to use as a base under the compost area?

Answer: Many producers ask about the floor base of the barn. Should it be concrete or packed clay? Our experience shows that packed clay works very well. In fact, one of the great properties of sawdust (the bedding material used) is its ability to absorb and hold liquid. Producers have told me that at clean out they will find

a clean layer of sawdust at the bottom of the compost pack that appears as fresh as the day they laid it down. That tells us that there is no liquid making it all the way through the pack.

Question: What is it going to cost me to put up one of these barns?

Answer: We have been getting mixed reports on building costs. There are a lot of variables involved. Plus, there was a lot of concern after Hurricane Katrina last fall that building costs would be going through the roof. Barns built in 2005 cost around \$1350

to \$1500 per cow space. Current projections are coming in around \$1500 to \$1800 per cow space depending on what is included in the price. My understanding is that the lower price includes electrical work, concrete, site prep and construction. Our best advice is to get several bids for experienced buildings in your area.

Answers provided by: Wayne Schoper, Extension Educator, Brown/Nicollet Counties for the April 22, 2006 edition of Dairy Star

Producer Spotlight—Eric and Mindy Haberer, Henning, MN

At the March Compost Dairy Barn Meeting in Parkers Prairie, I had the opportunity to meet Eric and Mindy Haberer. They are a young couple from Henning, MN who recently built a compost dairy barn.

The Haberers are one of the few compost dairy barn producers that I have met who are NOT raising Holstein cows. Their herd consists primarily of Jerseys. They also have three Ayrshire, and one Brown Swiss.

Eric and Mindy put cows in their barn in October 2005 and currently have 21 cows on the pack. The barn has room for 35 cows and the Haberers are planning to grow their herd with in-house replacements. When asked at the meeting what space allowance they are using for Jerseys Eric estimated they use 65 sq ft/cow.

Because they have a smaller facility, Eric uses a four-wheeler to stir the pack instead of a skid-steer or tractor like many other producers. He pulls a cultivator-type implement behind his ATV. During the winter when there are

frozen areas around the edges of the pack, Eric pulls a rototiller behind his ATV. In order to stir the pack to adequate depth, Eric put weights on the ATV.

The Haberers are using a mixture of sawdust and wood shavings for bedding. Mindy said they receive 1/2 of a semi-load of bedding at a time. Fresh bedding was added once monthly this past winter. They do not stockpile the bedding so the entire 1/2 load was added at once. They are planning to remove the top 2 feet of bedding within the next couple weeks. The compost will be land applied on neighbors' fields.

When I asked Mindy what they liked most about their compost dairy barn she said, "The cows are content at all times of the day. There is no stress for them." She also mentioned that their somatic cell count was 200,000 when the cows were first moved into the compost dairy barn. Within a few weeks, their counts had dropped below 100,000. They currently are averaging a SCC of 60,000 to 80,000. No cows had troubles adjusting to

the compost bedded pack. In fact, Eric told a story at the compost dairy barn meeting about a cow that had fallen and splayed her front legs. The Haberers took her from her owner and put her on the compost bedded pack. At the time of the meeting, Eric said she was doing just fine.

The biggest challenge the Haberers have found with their new barn is that there is no where to put the manure that is scraped from the feed alley. They stockpiled it this past winter and are planning to apply it to neighboring land within the next few weeks. Mindy also said that they need to watch the cows when the pack gets high to make sure that no one falls over the pack and into the waterer.

The Haberers are yet another example of quality dairy producers in Minnesota who have had success using compost dairy barns.

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