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Compost Dairy Barn Newsletter

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This Month's Topics

* Upcoming Compost Dairy Barn Tours and Meetings
* Frequently Asked Question
* Producer Spotlight—Scott Radtke
* What's Going on at the University of Minnesota?

Ideas? Suggestions?

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.

Small-scale Compost Dairy Barn at the University of Minnesota West Central Research and Outreach Center in Morris, MN

Upcoming Compost Dairy Barn Tours and Meetings in Minnesota

Due to popular demand, more Compost Dairy Barn tours and meetings have been scheduled!

Tours of Compost Dairy Barns in southern Minnesota are scheduled for Tuesday, February 28, Tuesday, March 7, 2006, and Wednesday, March 15, 2006. All three tours start at 11:00 a.m. at the Holiday Inn in New Ulm, MN. Interested participants need to contact Wayne Schoper, Brown/Nicollet County Extension Educator at 507-276-5662 to join the tour.

Informational meetings about Compost Dairy Barns (NO TOUR) have also been scheduled. Meetings will be held on Tuesday, February 28, 11:00 a.m. to 3:00 p.m. at the Parkers Prairie City Hall in Parkers Prairie, MN; Wednesday, March 1, 11:00 a.m. to 3:00 p.m. at the Wolf Lake Lions Hall in Wolf Lake, MN; and Friday, March 3, 11:00 a.m. to 3:00 p.m. at the Pelican Rapids Library in Pelican Rapids, MN.

At each location, dairy producers who currently operate a compost dairy barn will show photos, discuss their facilities and describe how the system is working for them. There will be plenty of time for questions and answers with the dairy producers. Pizza will be provided for lunch.

For more information about the meetings, contact Vince Crary, Otter Tail County Extension Educator at (218) 385-3000.

Check the Extension Dairy Team website for other upcoming tours, meetings, and events. www.extension.umn.edu/dairy.

Frequently Asked Question: Can I Use Ground-Up Drywall for Bedding?

Question: There is a company near my dairy that manufactures homes. Should I purchase their waste product (ground up wood products and drywall) to use in my compost dairy barn?

Answer: Without excellent chemical, physical, and biological characterization we would be very conservative about using it in our dairy! Metals, fire retardants, pressure treated wood, plastics, slivers, and glass could be present in the waste material. We would want at least 30 random samples over the past year before we would begin to consider this option.

The "dry wall" is NOT just "dry wall." There are many different types. Some have high salts, some have fiberglass reenforcement. The following compounds can be found in drywall: quartz, mica, talc (non-abestiform), perlite, attapulgite clay, plaster of Paris, calcium carbonate, bentonite clay, polyvinyl alcohol, and gypsum. We have serious concerns about what materials would be present in the ground-up "dry wall."

Even the most uniform and least toxic "dry wall" trimmed at the factory does not add to the air space of the composting pile. It mostly adds dust and does a poor job of holding moisture. It is not a good bulking materials for composting.

Unfortunately, the bottom line is that we don't know if waste material from manufactured homes will work in a compost dairy barn because we can't be sure of the composition of the waste material. At this time, we wouldn't recommend using this material in your dairy barn.

Your number one goal as a dairy producer is to provide a clean, comfortable environment for the cows. Your farm is not a solid waste landfill.

Answer provided by: Dr. Tom Halbach, Extension Compost Expert, University of Minnesota, Dept. of Soil, Water, and Climate

Dr. Jeff Reneau, Dairy Production, University of Minnesota, Dept of Animal Science

If you would like to receive this newsletter or want to remove your name from our mailing list, contact Mindy Spiehs at (320) 589-1711 or toll free at (888) 241-4532. If you prefer to receive this newsletter in an electronic format e-mail spie0073@umn.edu.

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What's Going On at the University of Minnesota?

Within the past month, saw dust finally arrived at the West Central Research and Outreach Center in Morris, MN. We started our small-scale compost dairy barn using one bay of the open-front barn that formerly housed beef cattle. We are currently developing a protocol to accurately monitor the pack temperature at various depths. Some producer in Otter Tail Co. have also agreed to monitor the temperature of the pack in their compost dairy barns for comparison

Producer Spotlight—Scott Radtke, Buffalo Lake, MN by Mindy Spiehs

From time to time I get calls from dairy producers who are interested in comparing a compost dairy barn (CDB) to another dairy housing system. I thought it might be interesting to spotlight a Minnesota dairyman who uses multiple dairy housing facilities.

Scott Radtke is a young dairy farmer from Buffalo Lake who milks 215-220 dairy cows. He uses a sand bedded freestall barn and recently built a CDB. He agreed to let me interview him and compare his sand-bedded facility with his new compost dairy barn.

The sand bedded barn is a 96' x 180' freestall barn. The barn was built in 2000 and has four rows of stalls with the typical head to head configuration and a center feed alley. During the winter months, sand is added every 21-25 days. In the summer, new sand is added every 10-13 days. The barn has manure storage capacity for three months in a concrete pit. Alleys are scraped daily and manure is hauled every 6-8 weeks.

The CDB was built in 2005 and filled on Sept 1st. It is 96' x 160' with an estimated 95-100 ft^2/cow. In order to keep the animal flow consistent with his freestall barn, Scott chose to split his bedded pack into two halves and have a feed alley in the center of the barn. This is somewhat different than most CDB which have the feed alley located on one side of the barn. Cultivation shovels mounted on a skid steer are used to turn the pack.

Currently, Scott is using a 50% sawdust 50% chopped straw mixture for bedding in his CDB. Every other week he receives a load of sawdust. He chops big round bales with his TMR (which has a hay kit) to approximately 4-5 inches in length. He then adds the 50/50 mixture to the barn. Scott said he thinks it would work better if the straw was chopped a little finer. As with Bennett Osmonson who was featured in last month's newsletter, Scott has found that the dry chopped straw will bind up his cultivating equipment. The straw needs to be "a little mucked up" to turn well.

I asked Scott to describe the advantages and disadvantages of each system. The primary disadvantage of the sand bedded freestall barn is the sand in the manure. The liquid is pumped with a vacuum pump but the sand must be hauled out. It takes approximately 3 days to haul manure from the sand bedded barn.

The main advantage of the sand bedded freestall barn is that it is much cheaper to bed with sand than sawdust and straw. Scott estimates that it costs $0.05—0.06/cow/day to bed with sand vs. $1.20—1.25/cow/day in the CDB. He is also able to house about 20 more cows in the freestall barn due to lower square footage requirements than the CDB.

The main advantage of the CDB is the health of the cows. Scott affectionately refers to the compost dairy barn as "the nursing home" because he is able to put older cows who have some feet and leg problems in the CDB. He believes that the primary reason for the improved health is the extra room and the ability to lie down naturally in the compost dairy barns.

The cost of bedding and the extra square footage/cow that are necessary for the CDB are the primary disadvantages of the new barn. Scott also says that his cows are not as clean on their flanks when they are housed in the compost dairy barn.

There are no significant differences in labor between the two systems. It takes about the same amount of time to scrape the freestall alley as it does to turn the bedded pack twice daily. However, Scott admits that you must take the necessary time to thoroughly turn the bedded pack if you want it to work correctly. Not cutting corners!

When I asked Scott which system he would build if he had to do it again, he said it was too early to tell. This winter has been a challenging one to keep the cows dry. He has used more bedding than anticipated in his compost dairy barn. But, he really likes the opportunity the new barn has provided for him to separate his cows into two more groups to keep his 2 yr. olds away from his mature cows.

Maybe we'll check back with Scott next year.

Mindy Spiehs is a Regional Extension Educator in Livestock Manure Systems with the University of Minnesota Extension Service