

Will composting pay on your dairy?

■ The Co-Composter computer model can help answer that question for dairy producers who want to adopt this nutrient management method

By Edward Staehr and Jean Bonhotal

Composting can be an effective way to meet many nutrient management goals. It can:

- Create better neighbor relations by reducing odors.
- Generate an electricity supply if a digester is used to separate manure.
- Add income through compost sales and tipping fees from bringing in waste.
- Cut bedding costs by recycling compost.
- Address environmental regulations.
- Improve the ability to irrigate by using separated liquids.
- Reduce odors, weed seeds and pathogens.

For all its advantages, deciding whether composting fits into your dairy operation isn't easy. There are costs attached to equipment, site preparation and handling.

The Co-Composter computer model, developed by Cornell's Department of Biological and Environmental Engineering and Cornell Waste Management Institute, helps producers project the costs and returns of composting based. It answers technical questions about implementing composting and evaluates it based on equipment options and site management methods.

To test the model's assumptions, Cornell researchers studied five dairies that currently compost their manure.

Real-world composting

The economics of composting look good for many dairies. Based on the information from the dairies in the study, producers can expect composting costs to range from 20 to 30 cents per hundredweight of milk sold. Compost production costs ranged from \$20 to \$30 per cubic yard.

The economic analysis factored in all costs but didn't account for any grant funds the dairies received. Factoring these in lowers costs.

The dairies ranged in size from 100 cows to 570. The 100-cow dairy, however, imports manure from a 1,000-head heifer facility.

The most profitable composting operations used existing equipment such as skid steers and payloaders for compost management. One larger dairy uses a compost turner. Minimal site preparation and using existing equipment to construct a compost pad cuts start-up costs.

Two large dairies in the study made composting more economical by separating manure and using solids for bedding and/or generating electricity from methane. A couple of the dairies generated tipping fees by taking in outside material to mix with manure.

One dairy eliminated all bedding costs by recycling compost as bedding. Another dairy saved \$5,500 annually in machinery operating costs by reducing manure to spread.

All the dairies generated income and bal-

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FYI

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■ The Co-Composter computer model will be available soon at the Waste Management Institute's website: www.cfe.cornell.edu/WMI

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anced the cost of composting by selling all or some of the compost in either bags or bulk.

Compost decision-making

Evaluating whether composting is feasible begins by determining your business goals. Are they:

- To build better neighbor relations by cutting manure odors?
- To move nutrients off-farm?
- To sell compost to offset costs and bring in income?
- To create an electricity supply?
- To address environmental regulations?

To decide whether composting is a manure management option on your dairy, start small and do a test pile with equipment on hand. Then determine how much composting you want to do to fit your nutrient management plan. Crops have different compost maturity requirements. Cornell, for example, spreads compost on corn and hay, which don't require mature, finished compost. By composting to about 60% of maturity, less compost pad space and turning are required. ■

Funding sources for composting

Grants are available for producers who plan to implement composting. Funding is variable and depends on geographic location, since some areas and priority watersheds are targeted to receive more funding than others. Check with your local Soil and Water Conservation District to determine what grants are available.

In New York, contact the following for information on grants:

- The New York State Energy Research and Development Authority (NYSERDA). Tom Fiesinger, (518) 862-1090. Ext. 3218. E-mail: twf@nyserda.org
- Empire State Development, Environmental Management Investment Group (EMIG). Linda Hoskings, (518) 292-5349. E-mail: lhosking@Empire.State.NY.US
- Sustainable Agriculture Research and Education (SARE). Barbara Caron, (802) 656-0471. E-mail: NESARE@zoo.uvm.edu



Composting can reduce manure volume by up to 50% and create more flexibility in nutrient management plans. Photo supplied by the Cornell Waste Management Institute.

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