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Dairy farmers to learn about profit potential from manure

By John Hartzell

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MILWAUKEE - When dairy farmer Gary Boyke looks out at the manure from his herd, he sees the prospect of profits rather than waste, odors and water pollution.

Boyke is one of a growing number of farmers turning animal waste into energy, and he's spreading the word to others. He will be among those giving presentations at a conference Jan. 31 in Madison on ways farmers can turn manure into a cash cow of sorts.

A major topic will be anaerobic digesters, which use bacteria on manure to produce a gas primarily containing methane to power generators and produce electricity.

Boyke, who has 1,300 cows on his Vir-Clar Farm near Fond du Lac, said he gets two to three times the energy he needs with a digester, selling it all to Madison-based utility Alliant Energy and then buying back what he needs. He said the device produces enough power to serve 330 homes.

"I think we're just on the verge of something that is going to be big in the future," he said.

A dozen such digesters are in operation in Wisconsin, three or four others have been started up and are nearly at full capacity, five are under construction and 15 others are planned, said Larry Krom, business sector manager of the state Focus on Energy's renewable energy program.

About 110 digesters are in operation around the country, and another 70 are planned, said Kurt Roos, manager of the U.S. Environmental Protection Agency's AgSTAR program. Most of them are at dairy farms in the Midwest, California, New York and Pennsylvania.

The average cost of a digester is nearly \$1.5 million, and it takes about six years to earn back that original investment without any grants, said Krom, whose organization is one of the sponsors of the Madison conference.

"But once it pays for itself, it becomes sort of a cash cow," Krom said, especially as energy costs continue upward.

Timm Johnson, executive director of the Wisconsin Agricultural Stewardship Initiative, which is holding the conference, said the gathering was prompted in large part by an increasing number of bigger dairy farms. He said their owners find it more expensive to

dispose of the smelly waste in the traditional way - as fertilizer to help grow crops used to feed the animals.

The manure from larger operations must be spread over a wider area, and the cost of transporting the moisture-laden material goes up the farther it has to be moved, he said.

There were 200 Wisconsin dairy herds with more than 500 cows in 2004, the latest year for which figures are available, compared with 140 in 2000, said Laura Mason of the Wisconsin Agricultural Statistics Service.

That was while the number of dairy farms in the state with under 100 cows dropped from 18,200 to 13,100, she said.

A group of smaller dairy farms could bring manure to one central community digester to make it financially feasible for them, Krom said, or they could use a less expensive process in which methane is burned to produce heat rather than electricity.

"Technology now enables us to view manure as a raw material to be used to make other products, including alternative fuel," said Rod Nilsestuen, secretary of the Wisconsin Department of Agriculture, Trade and Consumer Protection, which is among the sponsors of the conference.

"Ingenuity will enable us to solve pollution problems, promote economic growth and reduce our dependence on fossil fuels."

Krom said that the digesters still also produce fertilizer, as well as bedding for the animals.

Kenn Buelow, who operates Holsum Dairy at Hilbert and uses two of the digesters in his 3,100-cow operation, said the devices reduce odors from manure by 95 percent or more.

And Tom Bauman, coordinator of the state Department of Natural Resources' agricultural runoff pollution program, said his agency is excited by any technologies that enable farmers to dispose of manure in an environmentally responsible manner.

Other uses for manure that will be discussed at the conference include drying it to produce steam to power generators and create electricity; putting it in a pressurized chamber at high temperature to produce oil and a charcoal-like material, and - for smaller dairy operations - composting it and selling it to landscapers, gardeners and others, Johnson said.

Organizers also hope community leaders will attend, said Robin Engel, a spokeswoman for the agriculture department.

"A lot of local communities have concerns about dairy producers expanding. But energy generation (using anaerobic digesters) could put the matter in a whole different light for them," she said.