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“Seeking to advance the dairy industry in Pennsylvania through improved productivity and profitability.”



(Above from left) Luke Brubaker and his wife Barb and their sons Mike and his wife Lisa and Tony and his wife Rebecca. Photo provided.

(Below from left) The biogas accumulates and is captured beneath the cover of the digester. The collected biogas, or methane, fuels the production of electricity in the generator room. The heat from the generator, in turn, is collected and used to heat the manure and food waste mix for optimum biogas production in the digester. In fact, excess heat from the system is also used to preheat water for the milking parlor, pasteurizer for waste milk to feed calves, break room, and laundry machine. After the manure has gone through the digester, it enters the solids separator. From there, the liquid portion flows to a holding pit, which includes an overflow lagoon, and the dry solids are collected and re-used as ultra-hygienic stall bedding for the 950-cow dairy operation. On average, it takes the annual manure production from about four cows to generate enough methane to power the average annual electricity needs of one home. Photos by Sherry Bunting



## U.S. Dairy Sustainability award celebrates innovation and responsibility Brubaker Farms ‘best of best’ in energy achievement

By SHERRY BUNTING  
Special for Farmshine

MOUNT JOY, Pa.—Over the past four years, the excitement of ‘cow power’ has energized the Brubaker family at Brubaker Farms near here. Their anaerobic digester and use of separated bedding solids were implemented in December 2007 at a time when energy and bedding costs were both increasing rapidly. More recently, the installation of solar panels have added to the farm’s energy grid.

From crops and cattle to milk and electricity, the Brubakers continually look for revenue streams for their 950-cow dairy operation with an eye toward capitalizing on being responsible to the environment and their local community.

Others have taken notice, and in 2011, the Professional Dairy Managers of Pennsylvania nominated the Brubakers, who are active members of PDMP, for a special “Outstanding Achievement in Energy” award sponsored by the Center for Advanced Energy Studies and the Idaho National Laboratory.

“The Brubakers have defined by example the entrepreneurial spirit of Pennsylvania’s dairy producer and have outreached to a public that is often critical of animal agriculture with a message of social, financial and environmental responsibility,” said PDMP president Glenn Gorrell in nominating Brubaker Farms.

After a lengthy review process, the Brubakers were recognized earlier this year as one of

two “Energy” award recipients — the ‘best of the best’ from a field of 40 nominations.

In a special award ceremony in Washington, D.C., the Innovation Center for U.S. Dairy announced the award as part of the first collection of recognitions called the U.S. Dairy Sustainability Awards.

The awards are part of the U.S. Dairy Sustainability Commitment, an industry wide effort to measure and improve economic, environmental and social sustainability. The awards recognize efforts that advance the sustainability of the dairy industry.

An independent panel of judges representing the full spectrum of the dairy supply chain — as well as academia, government, media, business and nongovernmental organizations — selected the 2012 winners based on results as measured by economic, environmental and social responsibility aspects.

Brubaker Farms, owned and operated by Luke Brubaker and his sons Mike and Tony, is home to 950 cows producing 25 million pounds of milk annually. The farm was founded in 1929. Today, it includes 1000 acres of corn, 300 acres of rye, 125 acres of hay, 200 acres of wheat and 400 acres of soybeans, with 90% of the acres under no-till cropping practices.

In addition to 950 milk cows, the Brubakers house and care for 750 dairy replacement heifers and grow 250,000 broilers annually.

The Brubakers report they have met with and learned from other farmers who have been

working with biogas, and they have collaborated with government agencies and universities for guidance, grants, and exchange of ideas.

State and federal grants, along with low-interest loans, paid for the digester, which cost more than \$1 million to install in 2007.

Since then, local utilities have been buying the farm’s renewable energy and the local Elizabethtown College adds food waste to the digester to avoid adding this waste to landfills.

Today, the digester produces enough energy to power all of the activities of the farm and to power approximately 200 homes, by selling the electricity to the grid. The Brubakers are also able to sell nutrient credits and carbon credits to provide additional revenue streams for the farm.

The result, says Luke Brubaker, is that in a recent year, when the price paid to farmers for milk was especially low, Brubaker Farms made more money selling electricity than they did from selling milk.

By separating the digested solids, the Brubakers also save money on bedding costs. They produce enough bedding solids to cover all of their needs at the farm, plus sell to other farms for additional income.

The Brubaker family is committed to sharing its lessons learned by frequently hosting busloads of visitors to tour the property, which includes three solar panels totaling 10,000 square feet producing an additional 130 to 150 kWh on sunny days. In the past, they’ve hosted

former U.S. Secretary of Agriculture Ann Veneman and the Governor of Pennsylvania.

Last week, for example, real estate appraisers from other states toured the property as part of their education process on environmental sustainability projects and credits on farms. And last month, Brubaker Farms was a stop for the Professional Dairy Producers of Wisconsin touring dairy farms in the Keystone State.

Whether hosting fellow dairymen, Senators, or school children, the Brubakers enjoy seeing the enthusiasm for how the farm works.

Brubaker Farms is located at the edge of Mount Joy boro, and being a good neighbor has always been important. Anaerobic digestion not only produces renewable energy by capturing the biogas from the manure, “it reduces the manure odor by about 90%,” says Luke. “It also allows us to move the waste nutrient around to where it is needed.”

The Brubakers have noted that being an active member of PDMP has helped the farm to succeed. “It keeps you on the cutting edge,” says Luke. “With a larger herd you can’t really afford to make mistakes. It helps to get together for that exchange of good ideas.”

“People in the community are excited about this,” said Luke in 2008 not long after the digester was up and running and they had begun generating electricity for the local grid. “We’re essentially making something out of nothing —making electricity out of something that would otherwise just go into the air.”