

Project Profile: Freund's Farm, Inc.



Highlights

- Manure is converted into CowPots™, biodegradable planter pots
- Sales of the CowPots™ have helped offset capital costs of the digester
- Digester has run continuously since 1997

Benefits



Learn how this project advances sustainability in many ways.

Freund's Farm, Inc., established in 1949, is a 300-head dairy farm managed and owned by the Freund family. The cows are milked by five robots, which distinguishes Freund's Farm as the first robotic farm in Connecticut. Second- and third-generation family members manage the daily production of 2,500 gallons of milk, operate Freund's Farm Market and Bakery, oversee 10 acres of gardens and a 15,000 cubic feet greenhouse, and offer farm tours to the local community and visitors. A member of the Cabot Creamery/Agri-Mark Cooperative, Freund's Farm is one of more than 1,000

I give a lot of credit to my father Eugene for our commitment to sustainable dairy farming. He had a strong respect for our land and a great eye for identifying ways to repurpose byproducts that result from dairy farming.

—Matt Freund, Freund Farm, Inc.

family dairy farms in New York and the New England area that participate in the dairy cooperative.



Photo Credit: [Register Citizen](#)

The family's long-standing interest in pursuing sustainable farming practices, initiated by Eugene Freund, led them to build one of the first, and now longest-running, anaerobic digesters in the New England area, which then sparked the concept for CowPots™. The focus on sustainability is not limited to the digester; more than 1,200 solar panels installed on the roof of the dairy barn and CowPots™ facility ensure that the farm is completely energy independent.

Producing Innovative, Biodegradable Planting Pots from Manure

In 1997, Freund's Farm installed a plug flow digester during a complete rebuild of the existing waste management system. The purpose of installing the digester was to improve manure handling during the winter months, when the cows are kept in the barn, while also recovering energy. The farm needed the ability to separate fiber from manure during the winter and to store the liquid filtrate for irrigation.



After much research and trial-and-error over several years, the Freund brothers finalized a patented process for forming the digestate into biodegradable pots made out of solid manure. The CowPots™, which are 100 percent biodegradable, are naturally weed- and seed-free and dissolve into the ground after they are planted, leaving nutrients for young plants. Available as seed starters and transplant pots, CowPots™ are sold in 12 different shapes and sizes and can be purchased throughout the U.S. and internationally. Millions of CowPots™ have been produced at Freund's Farm for customers in the United States and around the world.



Benefits

Freund's Farm advances sustainability in the following ways:



- Digester helps to ensure that farm resources are well managed and that the farm will continue to provide for future generations of the Freund family
- Freund's Farm demonstrates innovative and entrepreneurial uses of digestate, inspiring others to find creative solutions
- Reduces pathogens in digested manure, protecting human health



- CowPots™ are 100 percent biodegradable, sustainable, recycled, and reduce the need for peat and plastic
- Protects local water resources and improves soil health by reducing nutrient run-off and destroying pathogens
- Reduces greenhouse gas emissions, which can mitigate some of the impacts of climate change on human health and the environment



- Separated solids provide material for production of CowPots™, a value-added product that helps financially support the farm
- Produces annual cost savings of \$12,000
- Reduces operating costs at the farm by producing energy and generating heat and hot water
- Manure treatment and nutrient application comply with manure management regulations, saving additional investment

About the Digester

The 64,000-gallon digester currently receives about 3,600 gallons of manure each day from 300 cows. After the original flexible cover failed, an uninsulated aluminum-framed greenhouse structure was built over the digester to collect and contain the biogas. When the biogas is collected, a slight vacuum is maintained to prevent the release of biogas outside the digester. A screw press separates the solids from the digester liquid effluent, which is then used as bedding material and for producing CowPots™.

Liquid effluent is stored in an 800,000-gallon storage pond and used as fertilizer on the farm's croplands. The gas captured by the digester fuels a 400,000 British thermal unit (Btu)/hour boiler that, in turn, heats the Freund's digester, milking parlor, farmhouse, and offices. Plans are under way to install a new digester to maximize the capture of biogas and effective nutrient management.



Photo Credit: Freund Farm

| SYSTEM DESIGN PROPERTIES | |
|--------------------------|----------------------|
| Feedstock processed | Manure |
| Digester type | Horizontal Plug Flow |
| Herd size | 300 Cows |
| Boiler | 400,000 Btu/hour |
| Through put | 3,600 gallons/day |
| Biogas generation | 14,000 scf/day |
| Biogas uses | Boiler, Furnace Fuel |
| Capital cost | \$249,500 |
| Annual cost savings | \$12,000 |

Recognition

Freund's Farm's innovative and sustainable reuse of digestate as CowPots™ has been featured on mainstream news outlets as well as the [Today Show](#) and Discovery Channel's [Dirty Jobs](#). The farm has also received awards and recognition for its focus on sustainable farming practices:

- “Sustainability Award in Resource Stewardship” in 2015 from the U.S. Innovation Center for Dairy for their focus on the environment and promotion of health and well-being of consumers, communities, cows, employees, the planet, and business. Read more about the award and other sustainable dairy farms.
- “Outstanding Dairy Farm of the Year” award in 2003 from the New England Green Pastures program, which recognizes farms for their production and farm management, environmental practices; contributions to agriculture and the local community; and overall excellence in farm management practices. <https://www.cabotcheese.coop/sustainability-award-winners>



Want to learn more?

For more information about Freund's Farm and their CowPots™, visit their website at <http://www.CowPots.com/>.

Learn more about the Cabot Creamery/Agri-Mark Dairy Farmer Co-operative at <https://www.cabotcheese.coop/our-farmer-co-op>.



Photo Credit: Freund Farm