

Farm Group Turns Big Bales Into Fuel Pellets

This past winter, six farmers in New York state didn't have to worry about the big increases in the cost of heating fuel. They grew their own fuel, without taking any of their land out of crop production. They heated with pellet stoves and boilers, using pellets made from poor quality hay they baled on their farms. The farmers were part of a pilot project with the Hudson Valley Grass Energy (HVGE), which is developing a mobile pelleting.

It uses the same technology that's used to make pellets at feed mills, says HVGE project coordinator Bob Thomas, a grass energy consultant. But mobilizing it offers great opportunity for farmers anywhere in the country.

The pelleting includes a hammer mill, buffer bin, steam generator, pellet mill, pellet cooling tower-shaker, and diesel-powered electricity generator. It all mounts on a trailer.

The farmers baled hay and grass at about 10 to 15 percent moisture. Each farmer provided a tractor (90 hp or more) to run a tub grinder and another tractor with an operator to load bales in the grinder and remove "supersacks" (averaging 1,500 lbs.) of finished pellets. The bales are ground in the grinder before going into the pelleting, which makes an average of about 1 ton of pellets/hour, but can make as much as 2 tons/hour. Nothing is added to bind the

pellets but steam, which is used when needed. Because grass has less lignin, more die time is needed then with woody materials.

According to a Cornell University study, an average household burns 3 to 5 tons of pellets per heating season, Thomas says. Farmers can easily get that amount off 3 acres.

As part of the pilot with grant funding, farmers paid \$75/ton for processing, plus \$3 per bag. To be sustainable the price will go up slightly, Thomas says. But the farmers, who had to invest in multi-fuel heating systems (spending from \$1,800 to \$6,000), were very pleased with the project and have been spreading the word to other farmers.

Thomas notes that wood pellet stoves won't work. The hay/grass pellets require the active burn pot used in multi-fuel stoves. One disadvantage with the hay pellets is that they leave more ash behind, 3 to 5 percent, compared to 1 percent or less with wood pellets.

But the farmers in the project aren't complaining about having to clean out more ash. Pellet fuel saves 50 to 70 percent off the cost of using fuel oil or propane for heating. And, hay/grass pellets produce the same btu's as wood pellets (8,000 to 8,500 btu's/lb.). Besides growing their own heating fuel, the farmers recognize an opportunity to market the pellets, which currently sell for \$225/ton.

As a grass energy consultant, Thomas says the mobile pelleting technology could be



Several farmers in New York heat their homes with pellets made from poor quality hay they baled on their farms. They're part of a pilot project that's developing a mobile pelleting.

used anywhere. The unit used in New York continues to be improved, including the plan to run it off 3-phase power when available rather than Genset diesel.

He will consult and travel anywhere in the U.S. to meet with farmers or cooperatives interested in starting a similar operation in other regions of the country.

"I want to see farmers become our fuel distributors," he says. "There are millions of potential acres that are fallow or produce poor hay that will not take land out of crop production for food."

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Pelleting uses the same technology that's used to make pellets at feed mills.

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They Market Ice Cream Through CSA

A Minnesota CSA is doing a booming business selling a sweet product – ice cream. It has given a great boost to word-of-mouth advertising, and the customers who pay for Community Supported Agriculture shares helped buy the equipment to make the ice cream.

Because they are near town and didn't have room to expand their dairy operation, in 2003 Bob and Jeanette Kappers of Chatfield, Minn., decided to keep their herd small and direct market their own milk. They reduced their 50-cow herd to 30 and started bottling milk in returnable bottles. They make door-to-door deliveries, and sell at farmers markets, local stores and at their on-farm store.

Their biggest seller is non-homogenized skim milk, which means they have lots of leftover cream. Though they have restaurant owners who buy cream for soups and other dishes during the summer, they had excess cream in the winter. Making ice cream was a natural solution.

"We needed to finance purchasing of the machine, and so we came up with the CSA idea. We had seen how CSA worked for growers at the farmer's market," Bob Kappers explains.

In 2012, the couple posted sign-up sheets, and it didn't take long for nearly 200 customers to commit and prepay for half and full shares. To make sure they would have enough ice cream, the couple sold coupons to be used over a 2 or 3 year period. Customers can pick up a pint at a time or 10 pints if they choose; they just need to use coupons before they expire that year.

Kappers and his wife spent a lot of time developing a recipe using natural ingredients: milk, cream, sugar, eggs and vanilla. Guar gum is added to hold it together.

"It has a real homemade ice cream taste because we use real eggs and sugar,"



Bob and Jeanette Kappers are happy they decided to direct market their own milk and ice cream.

Kappers says. They make vanilla and chocolate ice cream and are experimenting with other flavors.

The couple and a helper usually make ice cream in the evening after Jeanette gets home from her job. They make 30 to 35 gal. at a time and can produce 12 to 15 pints every 7 min. They average about 500 pints a week.

"The nice thing about ice cream is that it has a shelf life," Kappers says. "We date it out nine months, but I tried some I made in December 2012, and it's still good."

The Kapperses make most of their ice cream during the winter and have been surprised how strong the sales are during cold weather. Besides their CSA customers (who pay less per pint), they sell the ice cream for \$3/pint at their on-farm store. It sells for slightly higher at the year-round Rochester Downtown Farmers Market, where they regularly sell all their dairy products, including milk and cheese curds.

Take time to plan out the details, meet all the FDA requirements and figure out a good recipe, Kappers advises others considering selling ice cream. Being located within about 20 min. of the city of Rochester provides a good market base, but many regular customers are local and like to know where their food comes from.

"Setting up a CSA has worked really well for us," Kappers says.

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Kelly and Evan Hahn raise chickens, turkeys and pigs on pasture and sell both wholesale and retail.

Stay-At-Home Mom Runs Pasture Poultry Business

Thirteen years ago Kelly and Evan Hahn started raising chickens for their own use. Five years ago they decided to start raising birds on pasture to sell wholesale as a way for Kelly to make money while staying home with their children. After a year or so they started also selling birds retail.

Besides filling contracts for wholesale birds, they now raise chickens, turkeys and pigs for individual customers. The Perrysville, Ohio, couple built pens and grew the business based on demand, and have raised as many as 3,200 chickens in a year. Since Evan has a fulltime job, Kelly handles most of the day-to-day chores.

"I tell my husband the challenges I have, and he fixes them," says Kelly, such as when he adjusted the feed pans so she doesn't have to go inside the pens. The change reduced Hahn's chore time by about 25 percent.

While some of her chores are automated, she pulls each pen by hand with a rope so she can watch and make sure the birds are moving with the pens. During hot weather, she checks pens frequently to make sure the watering setup is working.

"I also spray down the pigs and the chickens with water on extremely hot days to cool them down a little. I use a little handheld sprayer full of cold water," Hahn says.

"I think it's easier on pasture," she adds. "We only have to clean out the brooder. I feel like the amount of disease is cut way down."

Kelly has advice for others thinking about getting into pastured poultry production:

- Visit a farm where someone is doing it. Check out resources at your nearest ag school.
- Start small. Build what you can afford and grow slowly.
- Take pre-orders. Kelly sends out flyers in March to past customers to take orders for the year. Most birds are sold wholesale, but private orders continue to grow.
- Create a website. It's a comfortable way for customers to check out your business.
- Offer incentives. Last year, people who ordered a specific amount of products received a soft-sided cooler with the Hahns' business name and logo.

Finally, Kelly says, be willing to change. While chickens are their main product, the Hahns added turkeys and pigs recently to diversify and meet customer demands. The ratio of wholesale and retail sales also varies and is currently about 50/50.

"We haven't eaten grocery store meat for 13 years," Hahn says, noting that even if they didn't sell meat, she and her husband would always grow their own food.

Despite challenges such as predators and inclement weather, Hahn says she is looking forward to another season. She feels fortunate and blessed to be able to stay home in the summer with her kids.

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