

Poultry, Heat Thyself

Energy From Litter May Really Have Come Of Age

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The Chesapeake Bay Agriculture Networking Forum on Tuesday gave attendees a chance to check out a new poultry litter burner, which will create heat for Rockingham County farmer Glenn Rodes' turkey houses. The event, held at Riverhill Farm, was demonstrating a breakthrough technique for yielding energy from litter affordably and on-site. (Photo by Nikki Fox / DN-R)

PORT REPUBLIC -- A tall yellow-and-black machine delivered to Riverhill Farms last week could be the first commercial unit in the Shenandoah Valley to convert poultry litter to energy affordably and on-site.

"That's the magic thing everybody's been trying to do," said Glenn Rodes, a turkey grower at his family farm in Port Republic, during an event Tuesday showing off the new technology.

A group of more than 20 people attending the Chesapeake Bay Agriculture Networking Forum checked out the Wayne Combustion Global Re-Fuel furnace and the 30,500-square-foot poultry house it should help to heat.

While Rodes built the wood-and-cement structure enclosing the unit, a collaboration of various nonprofits and businesses helped pay for the machine itself and make the project possible.

The project is funded by a \$420,000 grant from the U.S. Department of Agriculture that's going toward the local project as well as one in South Carolina, according to Jane Corson-Lassiter with Farm Pilot Project Coordination Inc., a nonprofit that works with

the USDA on such projects.

The South Carolina project is the first in the nation generating electricity with poultry litter, which is a possibility down the road for the local project, according to Corson-Lassiter.

The grant comes through the Eastern Shore of Virginia Resource Conservation and Development Council with help from a number of other sources. The National Fish and Wildlife Foundation is working on a similar project with a goal of transporting phosphorus out of areas where the nutrient is rich to where the soil is phosphorus-deficient.

The Valley, much like the Eastern Shore, is one of several so-called "phosphorus hot spots," Corson-Lassiter said.

"Our Eastern Shore farmers could learn from what's happening here," she added.

The idea is to divert phosphorus-rich poultry litter from use as land-applied fertilizer to become a fuel source, while transporting the phosphorus-rich ash that the heating process creates to areas where phosphorus is needed.

The ash can be transported much farther than poultry litter typically can.

In addition, potential financial benefits abound, according to proponents of the new system. The ash could be sold for about \$150 to \$250 per ton, Corson-Lassiter said.

Rodes now uses propane and a woodchip burner to heat his poultry house, but he's hoping the new machine will help to eliminate the need for propane altogether.

The new furnace should convert about 180 pounds of poultry litter per hour, providing continuous heat for about eight flocks of poults each year.

Rodes plans to burn about half the litter being produced in the poultry house. He can sell that litter for \$13 per ton, but believes its heat value -- or what he'll save by not needing another fuel source -- will come to roughly \$160 a ton.

But the data needed to create a clearer picture of the financial benefits of using poultry litter as an energy source is still up in the air. The reason for this project is to understand those numbers and find out whether more farmers could benefit from the system.

In addition to any potential financial reward, the drier heat produced by the unit should benefit the birds in the house. The moisture-rich heat produced by propane brings out the ammonia in the litter, which is unhealthy for both poultry and farm workers.

"It'll be a huge benefit to have dry, nearly unlimited heat," Rodes said.

The unit will run for the first time next week, although it'll still be in the test phase.

The cost of installing the machine, including the structure that contains it, would be anywhere from \$100,000 to \$150,000, according to Titus Rodes with Global Re-Fuel Bio-fuel Systems, the company that manufactured the machine. He estimates that farmers could see a return on investment after three to five years if the unit is heating two houses.

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