

Could Manure Heat And Power Farms?

LITTLE ROCK, ARK.

Manure from confined livestock could someday be used as a value-added bioenergy fuel for on-farm heating and power, according to a news release from the USDA's Agricultural Research Service (ARS).

Scientists studying this approach say this could benefit U.S. livestock producers, who need environmentally friendly ways to manage the manure from about 96.7 million cattle and 67.7 million hogs and pigs.

ARS engineers at the ARS Coastal Plains Soil, Water and Plant Research Center in South Carolina are studying how to use a technique called wet gasification to turn wet manure slurry into energy-rich gases and produce water.

Tom Riley, director for the University of Arkansas Division of Agriculture's Public Policy Center, is excited about the potential that farm-based energy generation provides farmers.

He said technology such as ARS and the U of A Division of Agriculture are developing will go a long way in helping farmers become more sustainable, self-reliant and profitable.

"On-farm energy generation can help protect the nation's energy security and decrease U.S. dependence on foreign energy sources," he said. "Our country needs alternative sources of energy to balance against the world's growing demand for petroleum based energy."

The ARS team developed a patented cost-benefit model of a wet gasification technology to calculate estimated returns, and it concluded that liquid swine wastes can generate a net energy potential comparable to brown coal, the news release said.

The team is also investigating methods for

producing a type of charcoal called "green coal" from manure. Green coal can be burned on the farm for energy or transported offsite to coal plants for fuel. It can also be added to the soil, a practice that would reduce greenhouse gases by permanently sequestering carbon in the soil in the form of the green coal.

In addition, the scientists are collaborating with the Advanced Fuels Group at the Brookhaven National Laboratory in New York. They're evaluating different catalysts needed to facilitate the conversion of "syngas," the gas produced when animal wastes, and other biomass, are gasified and turned into liquid fuels.

The South Carolina scientists want to develop new waste treatment methods and strategies that could be used by almost any farm – from a small family business to a large-scale concentrated animal production facility – to meet all their energy needs.

Riley said researchers across the country are looking at a number of methods to convert low-value products and by-products such as livestock manure, poultry litter, wheat and rice straw and wood chips into energy sources. Instead of being a disposal problem for farmers, he said, "these can be a new valuable resource for them."

He said the technology offers farmers new economic alternatives. On-farm power generation offers new market options and "allows farmers to be entrepreneurs in ways they've not had in the past."

The Division of Agriculture is investing significant resources into developing farm based fuel production from crops and crop by-products, according to Riley. Δ