

Three-State Research Project Covers Clean Energy From Hog Manure

LITTLE ROCK, ARK.

Researchers and educators from Arkansas, Indiana and Virginia are working on a far-reaching project to create a model that tracks feed, ventilation, manure and energy use in pork production, as well as exploring the use of pig manure in making biofuels.

Hogs are big business in the U.S. In December 2010, there were more than 64.3 million head of hogs, with production value pegged at \$12.7 billion. Even though Iowa, ranked No. 1 in the U.S., is probably best known for pork production, the states involved in the project have a solid stake too. Indiana was ranked fifth in pork production in 2010, while Virginia was No. 18 and Arkansas 22.

"We're building on an earlier National Pork Board funded project that created a hog production life cycle analysis model. This carbon footprint calculator covers everything – from the grain that goes into feeding through the time the pig leaves the farm," said Karl VanDevender, professor and extension engineer for the University of Arkansas Division of Agriculture for the University of Arkansas. "This new project builds on the previous model to include additional management strategies and economic tools and enables us to educate people on its use."

"Since a carbon footprint and greenhouse gas emissions correlate to energy expenditures, the carbon footprint calculator provides a way for swine producers to make informed decisions when designing and managing their farms," he said. "Ideally, the result will be improved management of pork production leading to increased profits and environmental protection."

Researchers will examine the effects of feed additives and animal health on the carbon footprint in hog production. They are also investigating the potential to reduce the carbon footprint by using manure to grow algae as a feedstock for biofuel production.

The project will also create educational opportunities, so that what is learned in the research reaches the people it can help the most. VanDevender is taking the lead in coordinating extension education efforts with hog producers and other audiences.

"Each state will have its own extension component," he said. "Our job will be to help transfer what we've learned in creating the model and help our producers apply the research knowledge so that they can be more efficient and sustainable."

In addition to state-level extension education, there will national Web-based events and materials distributed through www.eXtension.org. The team will also present material at regional and national producer events, such as the World Pork Expo and professional society meetings. VanDevender will be working with the Arkansas Farm Bureau and high school science teachers to include the research in the Farm Bureau's Ag in the Classroom program.

At the college level, Marty Matlock, U of A associate professor-biological and agricultural engineering, will be managing a research experience for undergraduates to engage them in research projects over each summer on investigate how livestock production fits into the larger perspective of agricultural sustainability.

One venue for this education effort will be the World Pork Expo.

"At every opportunity, we will display the latest version of the model and related issues live and in real-time," VanDevender said. "This is an opportunity for producers and the industry around the world to see this technology first-hand."

It includes researchers at the University of Arkansas at Fayetteville, educators with the Cooperative Extension Service of the U of A Division of Agriculture, Virginia Tech and Purdue, plus a private sector consultant from New Hampshire. △



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