

**“Evaluating Innovative Manure Treatment Technology
Through Farm Pilot Project Coordination”
August 21, 2009 2009**

The webcast is archived at:

http://www.extension.org/pages/Evaluating_Manure_Treatment_Through_Farm_Pilot_Project_Coordination

What is the projected future of FPPC? Is funding in place for future activities? If people believe FPPC efforts are worthwhile, what can they do to help assure future of the organization?

Presenters response: The future of FPPC is a function of finding continued funding and gaining financial support from public and private sources, regional environmental groups and programs, trade organizations and interested innovators and researchers who want to advance the cause of better nutrient management, clean water and waste-to-energy opportunities in agriculture.

Presently, FPPC is actively looking for entities who are interested in collaborating and leveraging limited funds. FPPC will continue to advance the most promising technology projects – and performing field testing with systems judged to be most economically viable. Many are slated to generate renewable energy benefits.

Have air emissions (e.g., NH₃ or H₂S) been considered or measured for any of the piloted technologies individually or in a comparative way?

Presenters response: While FPPC recognizes that nutrients can contaminate water resources and overburden soil, there is a growing concern about air quality and emissions. To better characterize this problem and its potential, air quality and air emissions is now the focus of a testing and monitoring program currently underway and supervised by the EPA. Results have not been released yet but measurements at representative AFOs are expected to be made available in 2010.

As a practical matter, ammonia at swine and poultry production facilities has been an ongoing concern by many producers. I believe that Dr. Robert Burns at ISU has done some pioneering work in measuring gases and developing a measurement method that would be helpful inside swine facilities when manure pits are being agitated and pumped.

In the future FPPC will be exploring ammonia and NO_x emissions and looking at what can be further done to capture Nitrogen for useful purpose and to avoid losses.

To assist in the evaluation of technology projects for air resource concerns, FPPC contracted with Dr. Kevin Janni of the Department of Bioproducts and Biosystems Engineering at the University of Minnesota to produce a white paper titled “Evaluation of Air Quality Implications of Proposed Manure Management Technologies.” A copy of the his review is accessible on the FPPC webpage at <http://www.fppcinc.org/airquality>

How are producers connected to the technology proposals?

Presenters response: FPPC has conducted its research using the technology provider at the farm. FPPC's view is that the farm owner is not only a partner in the demonstration project but is the ultimate beneficiary of the technology if successfully applied. Before a project is undertaken, FPPC conduct its own due diligence at the farm -to make sure that the producer's or farm owner's business interest is aligned and served with the proposed technology application.

Most treatment technologies do a very good job reducing nutrient content but they concentrate the salts, which could be detrimental for both crops and soils. Any available technology that drastically reduce salt content at economically feasible cost?

Presenters response: In many of the solid separation methods the addition of chemicals will tend to concentrate salts as solids are collected. If the solids are not needed for land applications you might consider a gasification process which will further reduce the weight and volume by 90-95%. The remaining ash will be nutrient rich (except for Nitrogen) may then be manageable enough to become more attractive to transport to another market or watershed that can make use of the nutrient.

Do you track FPPC funded and matured technology use and adoption by producers? Is there one technology that has found wide acceptance and use?

Presenters response: Obviously - there is no silver bullet and no single technology that will cure all ills however I think there are combinations that offer real potential. For instance, effective solid separation is a decisive step in all waste treatment methods because it allows solids to be cost effectively transported off site and the water to be kept resource on the farm - hopefully for re-use. For wet waste streams, effective solid separation methods is an important pre-treatment step for solids introduction into thermo-chemical conversion processes or alternately for composting applications.

The rotary drum composter that worked in Texas and not in Florida could they used the same recipe and gotten the same results.

Presenters response: In the rotary drum example discussed, if the waste recipe was identical, then I believe the composting process would have yielded equivalent results. However, in addition to moisture level, other process variables and ingredients in the waste stream would have to be considered and compared (ie. animal feed ration, Carbon/Nitrogen ratio, porosity etc.) before composting performance could be reliably predicted.