



FPPC

Farm Pilot Project Coordination, Inc.
"Technologies for Nutrient Management"

TO: Mr. William Boyd - Leader, Manure Management Team, ENTSC - NRCS

FROM: Bob Monley, General Manager, FPPC
Aimee Walker Thomas, FPPC Administrative Program Manager

DATE: October 3, 2011

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RE: 3rd Quarter Report for July 1, 2011 to September 30, 2011

This report is intended to update the NRCS and the FPPC Board of Directors on the status of the innovative technology pilot projects.

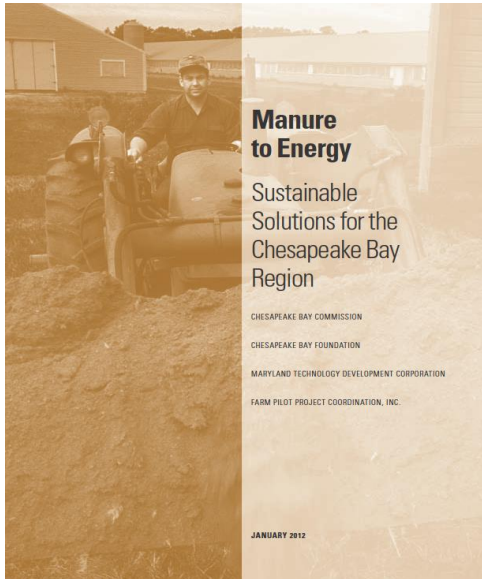
Executive Summary

Outreach activity in the past quarter intensified with regional initiatives in the Midwest and in the Chesapeake Bay watershed. A Midwest Technology Summit, held in Des Moines, Iowa on July 13, 2011 through July 15, 2011, provided an opportunity to introduce thermo-chemical processes and to discuss their distinguishing attributes including energy output and marketable byproducts. In Maryland, more than 200 policymakers examined new manure-to-energy technologies and were challenged to consider how to craft incentives and legislation in their states that would provide more effective policy and early adoption of beneficial technology. The FPPC Annual Technology Summit was held September 18, 2011 through September 20, 2011, in Saint Petersburg, Florida to highlight technologies for farm renewables including energy, nutrients and water quality.

Farm Pilot has just been notified that previous proposals to NFWF and NRCS for multiple site manure-to-energy projects in the Phosphorous hot spots of the Chesapeake Bay watershed have been favorably reviewed and funded.

OPERATIONS -----

1. **Outreach Activity** – Feedback from each of the technology summits was very positive. In the Manure-to-Energy summit conducted in Cockeysville, Maryland the proceedings were summarized and published in a summary document. By double clicking on the figure below one can access and link directly to the full document.



- Farm Pilot also conducted a regional Technology Summit in Des Moines, Iowa. The entire program can be accessed on line and through the following link <http://fppcinc.org/events-summit-2011-july-presentations.html>.
- Preston Burnette supported Poultry Litter to Energy seminar held on July 27, 2011 in New Market, VA. The goal for this event was to educate participants about poultry litter and energy conversion technologies.
- Finally, details of the Saint Petersburg, Technology Summit can also be accessed on line by using the following link <http://fppcinc.org/events-summit-2011-july-presentations.html>.

Progress at active pilot demonstration sites is summarized below.

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Dairy, Florida (#4.12 and project 6.03)-----

AWS, LLC and FPPC

Dual purpose pellets derived from dairy solids

Process description:

- FPPC will work with AWS, LLC to develop a mobile pellet plant leveraging the knowledge gained during the previous belt press demonstrations.
- Dual use pellet is for either fuel or fertilizer
- The system will consist of a belt press, pelletizer and fluidized bed dryer.

Project Status:

Developing the final report.

Poultry, Virginia (#6.4.06)-----

Virginia Polytechnic Institute and State University

Heatwole Poultry Farm

Process Description:

- Pyrolysis conversion of poultry litter to bio-fuel oil and bio-char
- Unit employs a fluidized bed and modern controls for managing the system operation

Project Status:

This project is ending and a final report will be written. Char formation and the instability of oil are problems that are difficult to manage.

Emissions and Nitrogen Capture (#6.08)-----

Project purpose:

The objectives of this project include:

- Identify the benefits of land application of Bio-char and its effect on crops and soil health (carbon sequestration, water retention, etc.);
- The application of Nitrapyrin to help stabilize nitrogen when poultry litter is applied and its ability to slow migration; and
- The characterization of ammonia adsorption using Bio-char as an activated or non-activated sorption media and evaluation of its utility in swine and poultry house

Project Status:

Biochar testing and characterization continue. Dr. Reddy of North Carolina – A&T, and expected lab results in November.

NC Farm Center reports progress has been made with screening crop studies. These trials introduce two forms of biochar and other nutrient rate variables.

Thermal Energy from Poultry Litter (#6.12) -----
Marc Marsh Farms, South Carolina

Project purpose:

To harness the energy value of poultry litter utilizing gasification and poultry litter as a fuel. Electricity will be produced to offset ventilation/cooling costs for the farm.

Project status:

Gasification/heat exchanger system continues to operate intermittently with many hurdles encountered. On site - attempting to operate as a complete system and to do so continuously. Feeding the required amount of litter and controlling the gasifier has been problematic. Augers appear to be deteriorating.

Thermal Energy and Ash By-Product (#6.09) -----
Old Mills Farm, Virginia

Project purpose: Phase I -To derive energy and nutrient benefits by gasifying poultry litter and converting the sterile Phosphorous rich ash into a manageable by-product that can be utilized as a pathogen free fertilizer for the nearby tomato and vegetable crop. The intent is to reduce the typical poultry litter land application in Delmarva by converting the gasified phosphorous rich ash to a viable pathogen free fertilizer for the nearby vegetable crop. Phase II – Harness the usable energy for on-farm electric generation.

Project status:

Project has received partial funding but to continue the project , the scope must be revalidated.

Effluent Treatment Methods (#6.07A) -----
Multiple dairy sites, Florida

Project purpose:

Develop a graded approach for treating liquid waste utilizing a cost effective system composed of incremental solid separation steps. Multiple pieces of equipment will be linked and connected into an optimum system and will rely primarily on low cost mechanical solids separation methods. The contribution from each piece of equipment will be determined based on the amount of solids and nutrients removed from the liquid waste stream.

Project Status:

The mobile effluent system has been configured and inspected by FPPC engineers to check functionality and electrical operability. Next steps are to deploy and power at the dairy site.

Attachment A

Final report status of thirty-six (36) completed pilot demonstration projects is listed below:

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- A. Swine, North Carolina -----**
Super Soil Systems, USA (#3.09)
Goshen Ridge Farms, LLC - in Clinton, NC
"Solids Removal System to Reduce Environmental Impact of Swine Production"
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- B. Swine, North Carolina -----**
Air Diffusion Systems (#3.02)
Cavanaugh Farm No. 1 - swine farm in Wallace, NC
"Advanced Microbial Treatment System (AMTS) at Cavanaugh Farm No. 1"
Report Status: The final report has been reviewed, issued and posted on the FPPC website
- C. Swine, Iowa -----**
Global Resource Recovery Organization (GRRO) (#3.05)
Burt Farm & Livestock Co. - swine farm in Marshalltown, IA
"Pork Nutrient Management Demonstration"
Report Status: The final report has been reviewed, issued and is posted on the FPPC website.
- D. Dairy, Florida -----**
Royal Consulting Services, Inc. (#3.08)
Posey Dairy in Lake Placid, FL
"Florida Dairy Nutrient Management Demonstration"
Report Status: The final report has been reviewed, issued and is posted on the FPPC website.
- E. Poultry, North Carolina -----**
McGill Environmental Systems (#3.06)
Farms in Sampson County, NC
"Nutrient Management Technology for Animal Feeding Operations"
Report Status: The final report has been reviewed, issued and is posted on the FPPC website.
- F. Poultry, North Carolina -----**
Cape Fear Resource Conservation (#3.03)
Central Processing Facility in Duplin County
"Demonstration Optimum Fertilizer of Ash from the BEST Solution for Swine and Poultry Manure Management"
Report Status: The final report has been reviewed, issued and posted on the FPPC website.

- G. Poultry, North Carolina -----**
Mountain Organic Materials (MOM) (#3.10)
Randy Johnson and David Parsons Farms, Wilkesboro, NC
“Demonstration of Poultry Manure and Mortality Forced Aeration Composting Bin Systems”
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- H. Poultry, Alabama-----**
Renewable Oil, Inc. (ROI) (#3.07)
Mills Poultry Farm in Russellville, AL
“Demonstrating BioOil Technology for Poultry Litter Nutrient Management”
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- I. Poultry, Texas -----**
RMG Strategies, Ltd and Microorganics (#3.11)
Jacobs Ranch in Carmine, TX
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- J. Dairy, Florida -----**
AJT/Agrimond (#3.01)
Watson Dairy in Trenton, FL
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- K. Dairy, Wisconsin -----**
Skill Associates – Phase I & II(#5.08)
Weise Farms in Greenleaf, WI
Report Status: The final report has been reviewed, issued and posted on the FPPC website
- L. Dairy, Florida-----**
Royal Consulting, Inc. (#4.01)
Butler Oaks in Lorida, Florida
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- M. Dairy, Florida -----**
QED Occtech (#4.02)
Branford–DPS Dairy in High Springs, Florida
Report Status: The final report is currently under review to be re-posted on the FPPC website.
- N. Dairy, Florida-----**
Chemical Lime Co. (#3.04)
Aprile Dairy in Riverview, Florida
Report Status: The final report has been reviewed, issued and posted on the FPPC website.

- O. Swine, Iowa-----**
Global Resource Recovery Organization, Inc. (#3.13)
Mobile Deployment System, Eldora, Iowa
Report Status: The final report has been reviewed, issued and posted on the FPPC website.
- P. Dairy, Colorado -----**
Applied Chemical Magnesias Corp. (ACM) (#3.12)
Bella Holsteins, Inc. in Platteville, Colorado
Report Status: The final report has been issued, reviewed, and posted on the FPPC website.
- Q. Dairy, Utah-----**
Utah State University (#5.4.04)
Blaine Wade Dairy near Ogden, Utah
Report Status: A final report has been issued, reviewed, and will be posted on the FPPC website.
- R. Dairy, Vermont-----**
AWS, LLC (#6.02)
North Williston Cattle Company (Whitcomb Farm)
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.
- S. Dairy, New York-----**
AWS, LLC (#5.05)
Noblehurst Farms
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.
- T. Dairy, Vermont -----**
BioProcess Technologies (#5.02)
North Williston Cattle Co.
Report Status: A final report has been issued, reviewed, and is posted on the FPPC website
- U. Swine, Illinois-----**
Enviowaste Technology, Inc. (#4.09)
Rensing Family Farms, Inc.
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.
- V. Swine and Dairy, Michigan-----**
Phase 3 Developments & Investments, LLC (#6.06)
Geerlings Hillside Farm
Report Status: A final report has been issued, reviewed and posted on the FPPC website.

- W. Dairy/Mixed Waste, California-----**
Agricultural Waste Solutions, Inc. (#5.06)
Inland Empire Municipal Site, Chino
Report Status: A final report has been issued, reviewed and posted on the FPPC website.
- X. Swine, North Carolina-----**
Super Soil Systems USA (#4.05)
Goshen Ridge Farms in North Carolina
Report Status: A final report has been issued and is currently under review.
- Y. Dairy, Ohio-----**
Crossroads RC&D / Wastewater Services, Inc. (#4.07)
Andreas Farm, Royer Farm
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.
- Z. Dairy, Virginia-----**
Virginia Dairymen's Association (#4.15)
D&D Dairy, Dayton, Virginia
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.
- AA. Dairy, Pennsylvania-----**
Nutrient Control Systems, Integrity (#5.07)
Mercer Vu Farms in Mercersburg, Pennsylvania
Report Status: The final report has been reviewed, issued and is posted on the FPPC website.
- AB. Dairy, Texas -----**
Reaction Energy Corp. (#4.16)
Fisher Dairy, Yantis, Texas
Report Status: A final report has been issued, reviewed, and posted on the FPPC website.
- AC. Dairy, Florida -----**
Pretreatment Methods and Evaluation (#5.12)
Report Status: A final report has been drafted and is being reviewed.
- AD. Swine, Hawaii -----**
Limited Resource Farm – University of Hawaii (#6.13)
Janong Natural Farms, Kurtistown, Hawaii
Report Status: Final report is being reviewed for posting on FPPC website.
- AE. Poultry, Wisconsin -----**
R&J Partnershi[(#5.04)
Creekwood Farms, Lake Mills, WI
Report Status: Project report is being drafted.
- AF. Dairy, Florida -----**
White Technologies Inc – US Environmental Products Inc. (#5.09)

North Florida Holstein, Bell, FL
Report Status: Project report being drafted

AG. Dairy, Florida -----
FPPC Polymer Study (#5.09a)
North Florida Holstein, Bell, FL
Project Status: Project report is being written.

AH. Swine, Iowa -----
Puck Custom Enterprises (6.4.03)
Project Status: Awaiting report and review

AI. Swine, North Carolina (#6.4.14)
North Carolina A&T
University Farm, Greensboro, North Carolina
Report Status: A final report has been issued, reviewed, and to be posted on the FPPC website.

AJ. Dairy, Florida -----
FPPC Effluent Treatment Methods (#6.07)
M&B Dairy, Lecanto, FL
Project Status: Final report is being written