August 25, 2010

Mr. Gregorio Cruz
National CIG Program Manager
Department of Agriculture, Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013-2890

Dear Mr. Cruz,

Please find a copy of the final report for NRCS CIG agreement number 68-3A75-6-124 (UGA Account Number 26-31-RE676-258), "Using Environmental Management Systems to Enhance Farmer Environmental Awareness and Implementation of Innovative Resource Conservation Practices". Due to changes in project leadership and lack of farmer interest in actual implementation of Environmental Management Systems, project collaborators had difficulty in fulfilling all objectives of the project. However, working with dairy producers during this project did allow for new objectives to be determined and many opportunities for farmer training and education resulted from our efforts.

Although this grant is completed, one of the successes of this project, training on record-keeping books for confined animal feeding operations, will continue across the state. This work will help ensure that dairy and other livestock producers are compliant with all pertinent regulations.

Sincerely,

L. Mark Risse, PhD
Extension Coordinator
Department of Biological and Agricultural Engineering
University of Georgia
Athens, Georgia
(Ph) 706-542-9067

CC: Debra Rucker, UGA
Dot Harris, NRCS

Final Report

Submitted to:

Gregorio Cruz – CIG
Department of Agriculture, Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013-2890

Submitted by:

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NRCS Agreement Number:
68-3A75-6-124

Grant Title:
"Using Environmental Management Systems to Enhance Farmer Environmental Awareness and Implementation of Innovative Resource Conservation Practices"

Date Submitted:

NRCS CIG Agreement Number 68-3A75-6-124
Final Report to USDA NRCS CIG Program on Behalf of The University of Georgia

Summary:

The use of Environmental Management Systems (EMS's) is a possible way to help improve farmers' efforts in ensuring environmental compliance. The objectives of this project included evaluating the use of the EMS process on farms in Georgia, identifying and prioritizing environmental concerns, and promoting farm environmental record keeping. Due to difficulty in recruiting row crop producers and fluctuations in project leadership, implementation of an actual EMS system on individual farms proved extremely difficult. While the row crop and dairy farmers we worked with were proactive in resource conservation and environmental protection, they saw little value in establishing true EMS's and were unwilling to invest the time and resources needed to establish farm EMS's. Ultimately however, the project was successful in addressing priority environmental concerns of several dairy producers, communicating the environmental efforts being made by dairy producers to the general public, and providing record-keeping materials to dairy producers to ensure regulatory compliance.

Introduction:

Environmental Management Systems are a process by which a business or industry can assess environmental and business performance in order to continually improve their operation efficiency through environmental assessment, identification of priority concerns, implementation of practice to address concerns, and evaluation of impact to ensure continual improvement. EMS in agriculture has been implemented in other areas to varying degrees of success. Although an EMS plan can vary in complexity depending on the size and type of farm, the basis of the system follows a: plan, do, check, act process. It is consistent with the NRCS conservation planning processes, however, it is farmer led rather than being done by a conservationist.

Reason for Project and Objectives:

Environmental regulatory compliance and the need to encourage farmers to personally identify and address environmental issues while implementing conservation practices were seen as reasons for this project. The specific objectives were:

- Understand farm and watershed-level environmental interactions and impacts
- Assess and prioritize farm environmental concerns
- Implement effective and innovative management practices to address priority concerns
- Keep clear and up-to-date environmental records on cooperating farms
- Enhance communication skills to better manage farm personnel, interact with farm neighbors, and provide environmental leadership for other farmers

Project Location and Size:

A majority of the work for this project took place in a three county area in northeast Georgia (Morgan, Putnam, and Greene). These three counties hold 15% of dairy production in the state and served as the ideal location to work with a large number of dairymen in a close area. Our initial proposal also indicated that we would work with row crop producers in South Georgia. We did conduct meetings with selected row crop farmers as well as with a local conservation tillage group. However, after several attempts at recruiting farmers to participate in the project from that area failed, most of our efforts were focused on the dairy producers.

What was Done:

During initial stages of the project, Dr.'s Bellows and Hawkins met with selected/interested row crop farmers and county agents. The main objective of this meeting was to inform these leaders about the EMS process and to get their cooperation. The result of this meeting left the participants with more questions about the implementation of EMS on row crop farms. Other small discussions occurred after this initial meeting. As a result, a staff member from the National Soybeans Growers Association was invited to be a speaker at the Upper Suwannee Conservation Tillage Association meeting. At this meeting the EMS process was explained by the NSGA staff member. He provided methods, timelines, actions, and expected outcomes he has seen with and from farmers implementing the program in Iowa. Even with this presentation, it was difficult to get any farmer investment in developing and implementing an EMS on their farm.

Shortly after this work had been done, the project's principal investigator, Dr. Barbara Bellows, left the university. Project leadership transferred to Dr.'s Gary Hawkins and Mark Risse for over a year, which hindered initial project development and achievement of project goals.

Work with the dairy industry was initiated during the first year of the project (2007), two meetings were held for dairy producers which allowed for presentation on the concept and purpose of EMS, how to develop an EMS including writing an environmental policy statement, conducting an environmental assessment, and indentifying critical needs. During the first meeting, participants were asked to rank a list of priority environmental concerns and draft an environmental policy statement. The second meeting provided an overview of environmental assessment tools that could be used by dairymen to determine priority concerns. Examples included University of Georgia Farm*a*Syst publications, record keeping, and regulatory assessment tools that allowed participants to evaluate their compliance with environmental policies.

Adam Speir, hired in August of 2008, took control of operation of the grant under direction of Dr. Mark Risse. Upon his hiring, Mr. Speir began to reevaluate the concerns first brought up by dairy farmers back in October of 2007. The primary concerns that were brought up at this time were public perception of the dairy industry and clarification and assistance in regulatory record-keeping compliance. Also, due to a lack of volunteers for involvement in the EMS project, project leaders decided to follow a slightly different approach. A letter was sent out to all the dairy farmers that had previously taken part in meetings explaining that money would be

available to producers if they followed an EMS strategy of creating an environmental policy statement, conduct an environmental assessment, prioritize the results of that assessment, and submit a plan and budget to address the environmental concern. Of the twenty letters sent out to farmers, only one was mailed back to project leaders. This submission proposed the conversion of a diesel irrigation pump to an electric pump which would save money and reduce use of diesel fuel and air emissions and also suggested a no-till grain drill which would be used to decrease erosion risks on pastures.

Rather than using funds for both of these recommendations, a compromise was reached in which assistance would be provided to the farmer for conversion of the diesel pump and efforts would be made through partnership with the Oconee River Resource Conservation and Development Council to provide a no-till drill to be available to all the farmers in the area. Over a one year period, this partnership resulted in two field days, five hundred acres of land planted in clover, fescue, orchard grass, and sorghum, and a low-cost option for farmers across a fourteen county area to provide an environmental benefit to their pastures, fields, and waterways.

Two of the original concerns voiced by the dairy farmers we worked with were public perception of the dairy industry and record keeping requirements. Project collaborators attempted to address these concerns through the development of a video product describing the environmental practices of these farmers and development of a news article describing the dairy farmers' current issues. We also developed dairy-specific record books and distributed these to farmers at several trainings.

The video project was achieved through working with a local production company who was interested in capturing the human dynamic involved with farming and attempting to capture the difficult economic pressures these farmers have been faced with as well as pressures from individuals unfamiliar with farming practices and the importance of such practices as land application of manure. The company conducted interviews of individual farmers and shot footage of daily practices involved in dairy farming, interviewed county Extension agents, shot footage of lagoon pumpouts, and also shot footage of several UGA Extension meetings with farmers and field days that were hosted through this project. The video will initially be shown to the farmers and then will be shown in various venues to the general public.

Through coordination with the Office of Communications in UGA's College of Agricultural and Environmental Sciences, a magazine/newspaper article was developed for publication in various media outlets. The article contained interviews of county Extension agents, Extension specialists, and

Record keeping is an important regulatory compliance component on dairy farms and having complete and current records that are easy to keep updated was a concern by the dairymen involved in the project. In coordinating with collaborator Melony Wilson, UGA animal waste specialist, record-keeping workbooks were created in order to help dairy farmers keep more organized and updated records on nutrient management, lagoon inspections, rainfall, soil tests, and crop rotations. Several trainings were held for dairy producers in the three county area and elsewhere in the state. Producer feedback was used to make changes to the record books in order to better facilitate ease of use for the farmers. At the three trainings held, over 40 farmers were trained on the record books. As a result of compiling materials for the record books, it was

determined that training for Hispanic workers might also be necessary. Hispanics comprise a large percentage of the workforce on dairy farms in the area and these workers also often handle many of the tasks associated with required record keeping. With assistance from Jonael Bosques, Greene County Extension agent, our record books were translated into Spanish along with a presentation on the importance of proper nutrient management. A joint meeting for both English speaking dairy operators and Spanish speaking workers was planned to accomplish the goals of training the operators on record keeping and regulatory compliance and training the workers on why record keeping and proper nutrient management are important. These materials will continue to be used by Extension agents and specialists for training in the future.

With the success of record keeping training for dairy producers in this project, investigators attempted training and outreach for row crop farmers on record keeping. Record keeping for row crop farmers typically consists of fertilizer and chemical use, irrigation use, fuel and energy costs, and costs of crop planting and yields. Row crop farmers often have to keep tax, ownership, and rental records for USDA Farm Service Agency office and insurance records. To provide a means to keep all of this information updated, several copies of a software program known as Easi Suite produced by Map Shots Inc., was purchased to provide to farmers and allow for training. To provide this training, a local crop consultant with experience in using the software was asked to train several farmers on the software.

Education and Outreach:

Meetings and Field Days:

As part of CIG's purpose in disseminating information to farmers, several events were held to educate farmers and demonstrate technology that would benefit their operations. Many of these events were accomplished through partnerships with NRCS personnel and RC&D Council staff. Two formal field days were held to demonstrate the no-till grain drill provided through a partnership with the Oconee River RC&D Council. (Appendix A). The meeting held August 19 demonstrated the grain drill on a pasture overseeding and had approximately 25 people in attendance. This meeting was also filmed for inclusion in the dairy video project previously mentioned. A total of 6 meetings were held during this project to train farmers on EMS and record keeping with 2 meetings demonstrating the no-till grain drill equipment.

March 1, 2007 – Initial meeting with row crop producers held in conjunction with Upper Suwanne Conservation Tillage Alliance to discuss CIG project and EMS principles, 30 attendees

August 28, 2007 – Meeting discussing EMS concepts and purpose with dairy producers, 17 attendees

October 1, 2007 – Follow up meeting with dairy producers discussing EMS principles, prioritization tables for environmental issues, 12 attendees

December 7, 2007 – Meeting with row crop producers and leaders of Iowa soybean growers association to discuss their success with EMS application on farm in Iowa, 19 attendees

September 4, 2008 – Meeting with past participants in the CIG project to reevaluate needs associated with prioritization tables and plan for future goals associated with the project, 10 attendees

July 30, 2009 – Meeting with producers on dairy record keeping and NRCS Conservation Stewardship Program, 8 attendees

August 19, 2009 – No-till grain drill field day, 25 attendees

December 15, 2009 – Meeting with dairy farmers on EMS principles and record keeping workshop, 15 attendees

June 1, 2010 – Irrigation energy conservation workshop with demonstration of no-till grain drill, 20 attendees

August 24, 2010 – Joint English/Spanish workshop on nutrient management and record keeping, 20 attendees

Presentations:

One poster was created as a result of this project and was displayed at the 2009 annual meeting of the Georgia Association of County Agricultural Agents (GACAA). (Appendix B). This poster won an award for its description of work done on this project. Presentations on nutrient management were created and also have been translated into Spanish for use with Hispanic dairy workers. Copies of the first slide of each presentation can be seen in Appendix

Benefits and Drawbacks:

As a result of this project, project coordinators have determined using an EMS approach in agriculture has both benefits and drawbacks to implementation:

Benefits:

- Environmental Management Systems allow a farmer to take personal stock in the overall management of the farm and how their actions may have environmental impact
- EMS allows for continual evaluation and improvement in system operation
- EMS can help facilitate farmer participation in programs such as CSP
- Farmers like the policy statement portion and value the positive PR an EMS provides

Drawbacks:

- The complexity of an EMS will depend on the type and size of farm and number of employees
- Farms often do not have an individual whose sole responsibility would be management of EMS as in a business setup
- Promoting the benefits of an EMS to promote adoption can be difficult before any work has been done

- EMS may be more suitable in farming systems with more regulatory compliance issues and risk (poultry operations over row crop systems for instance)
- Farmers/owners have a hard time grasping the overall concept of an EMS, especially if they try to apply it to operations with multiple parts

Lessons Learned:

As a result of this project using EMS on agricultural operations, we have learned a few things:

- Farmers were interested in the development of environmental policy statements that described their operation and dedication to regulatory compliance
- Likelihood of implementing and EMS on a row crop farm is less likely than a poultry operation or dairy operation
- Having NRCS promote the implementation of EMS in order to receive higher ranking on CSP program would help further promotion of system
- An EMS for agriculture would likely be much less in depth than a third-party audited system used in business or industry
- Farmers are very concerned with public perception of their operations, especially if they are already being good environmental stewards

Conclusions:

Overall, we achieved some successes in addressing aspects of an environmental management system. Farmers were enthusiastic about developing environmental policy statements but we had difficulty in finding farmers willing to go through an entire EMS development process. It is likely that any future use of EMS on farm operations would require financial assistance in going through the work involved in developing the system. It may be possible to require the development of an EMS for inclusion in the CSP program or have a higher ranking for farmers who are using an EMS as they are already following many of the aspects involved in the CSP program.

Appendix A

Materials for Meetings, Field Days, and Articles

Dairy Production Record-Keeping Workshop

Tuesday, December 15

Madison Farm Bureau Building

10:00-12:00

Agenda

10:00-10:05	Introduction	Bobby Smith, UGA
10:05-10:15	Background on EMS Project	Adam Speir, UGA
10:15-10:45	Conservation Security Program	Amos Jones, NRCS
10:45-11:30	Overview of Record Books	Melony Wilson, UGA
11:30-12:00	Q & A	Melony Wilson, UGA

Mrs. Melony Wilson, UGA Animal Waste Specialist, training dairy farmers on record keeping books on December 15, 2009.

NO-TILL GRAIN DRILL DEMONSTRATION FIELD DAY PLANNED

LOCATION: Tim Duvall's Farm
1440 Copelan Road
Madison, Georgia

Wednesday, August 19, 2009

Registration: 9:00 a. m.
Activities: 9:30 — 10:30 a.m.

LIGHT BREAKFAST WILL BE PROVIDED

COME AND LEARN ABOUT THIS NEW EQUIPMENT AVAILABLE FOR PROUCERS TO OVERSEED PASTURE AND CROP LAND.

Please RSVP to Georgia Soil & Water Conservation Commission Office at 478-445-5766 to sign up by August 18th!

Partnering Organizations:

Piedmont Soil & Water Conservation District
USDA Natural Resources Conservation Service
Georgia Milk Producers
Georgia Soil & Water Conservation Commission
Oconee River Resource Conservation & Development Council
University of Georgia

Mr. Adam Speir, Ag Pollution Prevention Specialist, discussing the CIG Project and partnership with Oconee River RC&D council to provide no-till grain drill to dairy producers.

Demonstration of no-till grain drill for dairy producers. Drill was provided through partnership with Oconee River RC&D Council.

Conservation Tillage

is Beneficial Because it....

- Saves Soil
- Saves Fuel
- Saves Time
- Saves Labor
- Saves Machinery
- Permits timely planting
- Is cost-effective
- Increases soil organic matter
- Improves soil quality
- Improves water quality
- Reduces runoff
- Increases soil moisture
- Improves wildlife habitat

Equipment furnished by:

Oconee River Resource Conservation and Development Council, Inc.

In cooperation with:

Piedmont
Soil and Water Conservation District

Oconee River RC&D
P.O. Box 247
Watkinsville, GA
30677
706-769-7922

The Oconee River Resource Conservation & Development Council, Inc. is a non-profit organization that administers programs in 14 counties in the northeast Georgia area. Designated by the Secretary of Agriculture in 1979, the Oconee River RC&D Council has sponsored numerous projects that protect and promote the natural resources of the area.

No-Till Drill Available

In the Piedmont Soil and Water Conservation District

Contact Custodian:

Tim Duvall

706-453-6079

706-453-2521

To schedule use of equipment, please contact the custodian.

Piedmont District Area

Tim Duvall
706-453-6079
706-453-2521
(Drill rental or Planting service)

Rates:

Drill Only: $8 per acre with minimum of 23 acres.

Flat rate of $180 per day for 23 acres or less.

Drill Planting Service: Contact the custodian

In addition, a delivery fee may apply, please contact the custodian.

No-till Grain Drill:

Plant small grain into pasture for winter grazing

Eliminates land preparation and reduces soil erosion

Equipment Operating Procedures and Guidelines

The Oconee River RC&D Council, Inc., and the Piedmont Soil and Water Conservation District (S&WCD) adopted the following operation procedures for the rental of No-Till equipment.

1. No fertilizer will be applied with No-Till equipment.
2. No-Till drill is available at a minimum charge to be operated by the landowner.
3. Acreage planted is determined by a meter on the equipment and charges will be made accordingly.
4. The landowner is responsible for having seed available at the planting site.
5. A rental agreement which includes a charge for operating and maintenance of equipment must be signed before work can begin.
6. Seeds will be planted at a rate desired by the landowner. The Oconee River RC&D, S&WCD and custodian are not responsible for germination of seed planted or stand loss.
7. The lessee is responsible for damage to equipment that is not deemed by the Council as regular wear and tear.
8. Contact your custodian for equipment availability in your county.

Date: June 1,2010

Time: 9:00 am

Bob Patrick Farm
214 Greensboro RD NE
Eatonton, Georgia

Registration: 8:30 am

Agenda

Welcome..... Pat Hardy
Chairman, Piedmont SWCD

Irrigation Mobile Lab..... Jack Rattray
GSWCC

No–Till Equipment..... Larry Eley
Oconee River RC&D

Closing Remarks..... Pat Hardy

Irrigation Energy Conservation Workshop

Sponsored by:

Piedmont SWCD

GSWCC

NRCS
Natural Resources Conservation Service

OCONEE RIVER RC&D

Mobile Irrigation Lab is a no-cost service to farmers to improve uniformity of water applications in center pivot irrigation systems. The audit is completed utilizing the catch can method, which consist of placing catch cans throughout the system and operating the system over the catch containers and entering that information into a Excel spreadsheet to calculate Christensen's coefficient of uniformity. Along with a uniformity scoring, this program also calculates a new application chart for the pivot panel box, a graph of the system output, and potential water savings by re-nozzling. Also included in the program is an estimation of off-site application by the end gun in acres and an estimation of water savings by installing end gun shut off technology. This program not only assists landowners in conserving water and applying water uniformly but also assists in conserving energy and reducing operating cost.

PARTNERSHIP FOR A SUSTAINABLE GEORGIA
AgTrack

July 23, 2009

Writers:
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Sources:
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Tommie Shepherd (tlshep@uga.edu) 706-542-2434

Helping Georgia's dairies through ups and downs

By Stephanie Schupska
College of Agricultural and Environmental Sciences

For two years, milk sold for record prices, and then the bottom dropped out along with the economy. But feed and energy prices haven't dropped as fast. To survive, Georgia dairymen like Everett Williams of Madison, Ga., have had to cut costs, and have ended up helping the environment, too.

Recycling manure and bedding sand, using good feed and paying "a lot of attention to detail," Williams said, has kept his dairy afloat.

"We just got big enough to pay bills," said Williams' son Justin, who quit his job as a loan officer in Atlanta a few years ago to work on the farm.

Before the economic bust, farmers across the country expanded, said Tommie Shepherd, an agribusiness economist with the University of Georgia Center for Agribusiness and Economic Development. Unfortunately, "a cow's not like a water faucet. You don't just turn the spigot off," he said.

Numbers game

In April 2008, milk in Georgia averaged $3.99 a gallon. This year, it's $3.19 a gallon. Good news for consumers, but not for milk producers. They are losing between $2 and $3 per 100 pounds of milk they sell. The average cow produces between 50 pounds and 80 pounds, or six to nine gallons, per day.

Georgia dairies have been disappearing. In 2000, the state had 400. It now has 270.

Shepherd says the decline is caused in part by urban sprawl and the climate.

"The South is at a production disadvantage... It's much more difficult to produce milk in 95 degrees with 95 percent humidity than it is to produce in Western states like California and Wisconsin," he said.

Georgia's milk production remains at its 2000 level because surviving farms have gotten bigger. Milk is often shipped in from other parts of the country, just as Georgia milk is shipped to dairy-poor Florida.
For Dave Clark of Godfrey Dairy in Morgan County, it's important that Georgia dairies stay open. "If we can make milk in Georgia, we don't have to burn fuel to bring it from Wisconsin," he said. "Plus, the local supply is a lot better, fresher."
Saving energy

To help them stay open, UGA Cooperative Extension specialist Bobby Smith works with dairies in Morgan, Putnam and Greene counties, the hub of Georgia's milk industry, where 70 dairies operate. He helps solve their problems. Recently, that meant helping Clark conduct an energy audit.

"His irrigation was all on diesel," Smith said. "He converted it all to electric, and now he operates at 20 percent what it cost to operate off diesel."

Clark says that saving money and staying open as a dairy helps the local economy. Because of the dairies, Madison has been able to maintain infrastructure.

"At one time, we had over 100 dairies in Morgan County," Clark said. "Now we have 28."

Manure as fertilizer

To cut costs at Williams Dairy, they use dry cow manure to fertilize their land. Soil nutrients like nitrogen, phosphorus and potassium are found in cow manure, which they make sure doesn't runoff into nearby water.

"Recycling nutrients just helps you grow crops," Everett Williams said. "You can put (manure) in a hole and let it run off or use it."

They irrigate the farm with wastewater that has been filtered and cleaned.

"He applies wastewater through those pivots," said Smith, pointing to the irrigation system. "For him, the drought wasn't as bad, but he did feel the effects to some extent."

"We're extremely efficient as far as using waste water and reusing nutrients," Justin Williams hollered over the sound of his tractor's engine. He was chopping forage, which is stored and later fed to the cows, along with corn, rye grass and wheat.

Helping Georgia's dairymen

To help Georgia dairy farmers, Cooperative Extension specialists have used a U.S. Department of Agriculture conservation innovation grant. It helps them lead farmers through a process that includes on-farm environmental assessments and potential environmental risk management plans.

The hope is dairymen will save money while being good environmental stewards, said Adam Speir, a UGA Extension agriculture pollution prevention specialist.

"Being environmentally sound and financially sound go hand-in-hand," he said. "By going through the environmental management system process, we hope dairy farmers can save money by also implementing best management practices on their farm."

(Stephanie Schupska is a news editor for the University of Georgia College of Agricultural and Environmental Sciences.)

THE UNIVERSITY OF GEORGIA
COLLEGE OF AGRICULTURAL & ENVIRONMENTAL SCIENCES

Dairy Nutrient Management Record Keeping Workshop

Greene County Extension Office

SOUTHEAST MILK INC.

August 24, 2010

Agenda

This training will simultaneously be offered both in English and Spanish for dairy producers and labor. The program will be offered by:

Melony Wilson, UGA Animal Waste Specialist

Adam Speir, UGA Agricultural Pollution Prevention Specialist

Jonael H. Bosques-Méndez, Greene County Extension Coordinator

9:45-10:00…….Sign-in (Refreshments provided by GA Milk Producers)

10:00-10:45 ……..Purpose, Nutrient Management Presentation

10:45-11:00..……Break (Refreshments provided by GA Milk Producers)

11:00-11:50 ……..Overview of Record-Book and Discussion (Operators)

11:00-11:50 ……..Record-Keeping forms for Dairy Workers (Workers)

12:00-1:00 …….. Lunch (Provided by SE Milk)

1:00……...Adjourn

For registration please call the Greene County Extension Office at

706-453-2083 by August 20th at 5:00pm.

Ms. Melony Wilson, UGA Animal Waste Specialist, explains to dairy producers the importance of record keeping at August 24, 2010 meeting.

Jonael Bosques-Mendez, Greene County Extension Coordinator, gives a presentation simultaneously in Spanish for Hispanic dairy workers.

Appendix B

Materials for Record Books and Presentations

Promoting Environmental Management Systems to Dairy Farmers in Morgan, Putnam and Greene Counties

Risse, L. M.[1], Smith, R. C.[2], Speir,* R. A.[1]

1. Extension Specialist, University of Georgia Cooperative Extension, Department of Biological and Agricultural Engineering, Athens, Georgia 30602
2. Extension Agent, University of Georgia Cooperative Extension, Morgan County, Madison, Georgia 30650

Abstract

An environmental management system (EMS) is a business model approach used to evaluate operations for environmental impacts and improve business and environmental efficiency. Through a USDA Conservation Innovation Grant (CIG), faculty with University of Georgia Cooperative Extension have worked for the past three years with dairy producers in Morgan, Putnam, and Greene Counties to promote the adoption of EMS and use of an EMS strategy in their operation. In difficult financial times, an EMS approach could help streamline operation and determine environmental risks that need addressing. Implementation of EMS on these dairies has been difficult. However, as a result of working with these farmers, several other related needs have been determined and efforts have been made to address them. Conservation practices have been implemented on dairies, use of a no-till drill has been provided and public-relations materials have been developed to promote dairy producers in the state. Later work will focus on record-keeping strategies and production of a documentary video explaining the work of dairy farmers in these three counties.

Introduction

With over 60 dairies within a three county area, Morgan, Putnam, and Greene counties are home to nearly one-third of the state's dairies. Investigators have worked with these producers over the last 3 years to promote the use of EMS Systems and conservation practices. These efforts have included farmer meetings, field days and surveys of farmer needs in the area to incorporate conservation practices into daily operation.

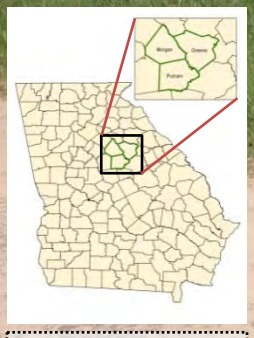


Figure 1. Focus area of the USDA Conservation Innovation Grant working with dairy farmers.

Methods

- The initial objective was to work with four dairy producers in the focus area to adopt an EMS program
- This proved difficult for several reasons:
  - Changes in investigators and difficult economic situations made it difficult for farmers to commit to the program
- Work shifted to determine the greatest needs from dairy producers (prioritization tables) on environmental issues
  - Nutrient contamination of surface water
  - Odor and dust
  - Mortality disposal
  - Water use
- Other areas of concern to farmers were record-keeping, positive public relations, and the need for a no-till grain drill for pasture maintenance (provided by Oconee River RC&D Council).

Results

The following work has been conducted over the last three years:

- 5 meetings with producers (Fig. 2)
- 2 field days demonstrating no-till grain drill
- Worked with producer to replace diesel irrigation pump (Fig. 3)
- Over 200 hours of producer participation
- Partnering with several organizations to meet objectives
- ≈50 acres planted with no-till grain drill since July
- 1 widely published article describing current state of GA dairy production (Fig. 4)

Figure 2. Farmer meeting discussing environmental issues.

Figure 3. Heck Davis with new electric irrigation pump.

Figure 4. Article published in SE Farm Press discussing dairy farmers and env. issues.

Future Work

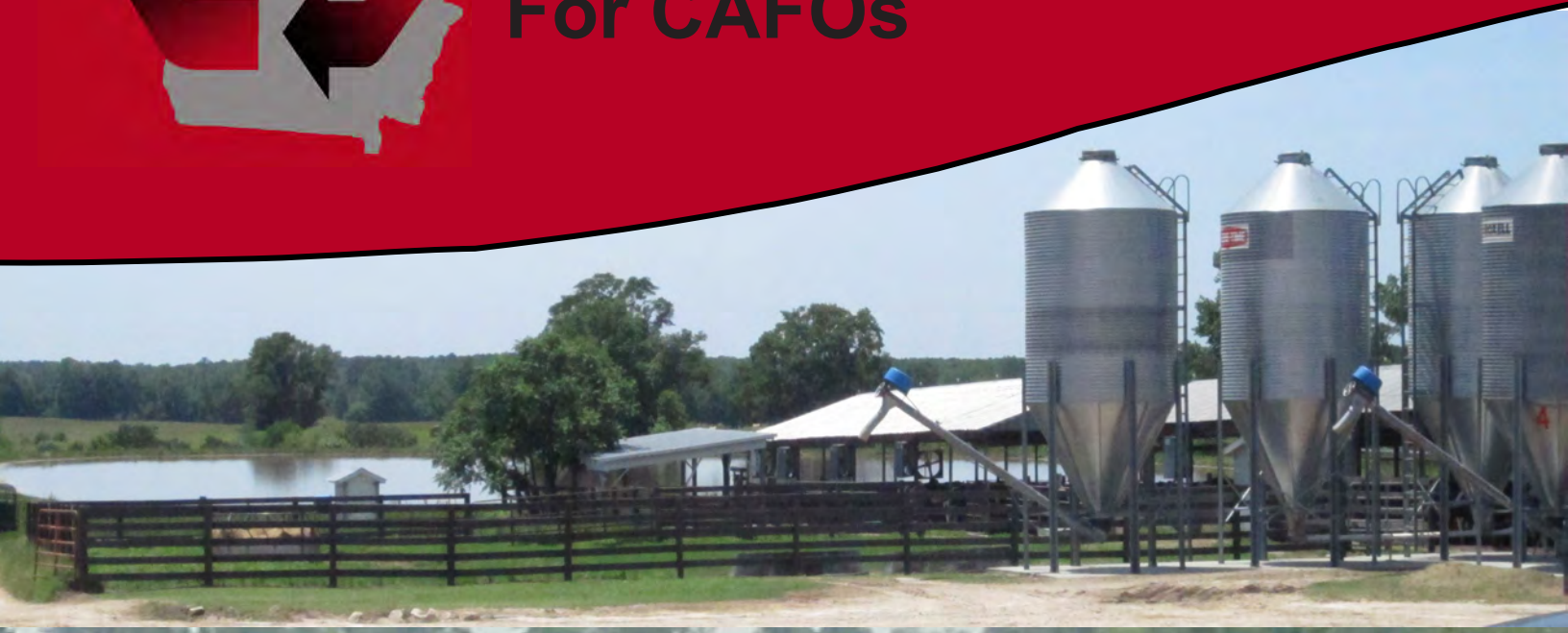
According to farmer request, we will continue working on the following projects until completion of the grant funding:

- Work with producers on record-keeping training, including print-ready forms to reduce barriers for record keeping
- Work with local production company to produce a short video describing environmental work by dairy producers in the area.

AWARE
Animal Waste Awareness in Research and Extension

Farm Records

For CAFOs



United States Department of Agriculture
NRCS Natural Resources Conservation Service

THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
ges of Agricultural and Environmental Sciences & Family and Consumer Sciences

Environmental Impacts, Regulations, and Records

Melony Wilson

Biological and Agricultural Engineering

The University of Georgia

AWARE
Animal Waste Awareness in Research and Extension

Manejo de Nutrientes y Registros de Granja

United States Department of Agriculture
NRCS Natural Resources Conservation Service

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Impactos Ambientales, Regulaciones, y Registros

Jonael H Bosques-Méndez

Coordinador de Extensión

Greene County

University of Georgia