

**PROJECT NAME:** Livestock Waste Education, Information and Assistance Program

**PRINCIPLE INVESTIGATORS:** Teresa Dvorak, Livestock Nutrient Management Specialist, DREC;  
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**REPORTING PERIOD:** Annual report - October 1, 2007 to September 1, 2008

**PROJECT PERIOD:** March 1997 through June 2010

### **Annual Progress Update**

*Task 1 Provide one-on-one consultations to producers to evaluate specific options available to the individual for waste storage, handling, and utilization.*

- Met with a swine producer in Edmore, ND. He was having issues composting dead hogs. On-site education took place as he was consulted on proper composting practices of dead animals.
- Assisted a Carrington area small hog farmer, and helped him to determine the value of his hog manure that a neighbor agreed to utilize on his crops.
- Assisted a Turtle Lake, ND producer with assessing the value of a neighbor's manure that he planned to utilize.
- Made a follow up visit to an Arthur, ND producer's operation and discussed manure sampling/testing procedures, composting manure, and soil management.
- Held one on one discussions with 14 different Extension agents and one County SCD Coordinator. These discussions were designed to determine issues in the respective counties that need to be addressed. This has helped with programming for the upcoming year; as well improve networking between county agents and area specialist personnel.
- Met with a producer to determine his impact on the creek that runs through his property. He has less than 30 horses, but was planning to rent out his feedlot for a gentleman to background 200 head of steers.
- Made a presentation to the Grant County zoning board on mortality composting in regards to a swine operation that wanted to build there.
- Held a mini-tour in Adams County for a Bowman County producer. The Bowman County producer needed to build an ag waste system and wanted to gather ideas and options.
- Updated NMP for producers already permitted with the Health Department. The producers were undergoing an expansion and needed to revise their NMP.
- Held a day long training session with the Morton County NRCS office. Emphasis was placed on manure and soil test results and calculating the amount of manure needed.
- Worked with a producer to lay out a first draft of a pen system for his new ag waste system.

*Task 2 Develop and deliver educational materials and programs that focus on the utilization of livestock waste nutrients for crop production.*

- A website dedicated to nutrient management has been developed. NDSU Extension Service has recently developed a new website server and is still in preliminary formats. As a result, the website is not yet available to producers until the server is "online".

- An Extension bulletin publication that covers solid manure spreader calibration has been written and is nearly complete.
- An Extension bulletin that covers the composting of manure and dead animals is in the process of being written, but is still in the drafting stage.
- A press release that covered manure spreader calibration was issued through NDSU Ag Communications.
- A press release that covered manure fertilizers was issued through NDSU Ag Communications.
- The North Dakota County SCD boards were sent a press release that covered the cost and benefits of utilizing manure fertilizers versus conventional fertilizers.
- An interview by Al Gustin of KFYZ radio was conducted. The topic discussed was the cost and benefits of utilizing manure fertilizers versus conventional fertilizers.
- A presentation was made to the Taylor Farm Institute titled “Fertilizer Value of Manure.”
- A presentation was made at two sessions of the Dairy Cow College titled “A New Look at Manure Management.”
- A presentation was made to a group of women in a program called Annie’s Project. The women were educated on nutrient cycling through their farm including nutrition, manure analysis and crop needs and application.
- A presentation was made to the Dairy Production Class at NDSU title “Nutrient Management.” Hands-on examples of calculating nutrient needs and manure produced were used.

*Task 3 Hold meetings, workshops, and tours to educate producers and those who advise and work with producers about livestock waste management to prevent impacts on water quality.*

- A presentation was given to the 3<sup>rd</sup> Graders of Carrington Elementary School. The presentation dealt with compost and the scientific method was covered by students planting flowers and fertilizing the flowers with compost, conventional fertilizer, and no fertilizer.
- Presented the basics of nutrient management to students of Northwest College of Powell, WY at the Carrington Research Extension Center.
- Assistant coach for the Carrington High School FFA soils judging team. The Carrington team won the state competition and every individual category at the competition.
- Gave a presentation on composting manure and animal mortalities at the Carrington Research Extension Center for the North Dakota Stockman’s Association Feedlot Tour. There was also a compost turner demonstration.
- Gave a presentation regarding the cost and benefits of using manure fertilizers versus conventional fertilizers and determining the value of manure fertilizers at the Carrington Research Extension Center Field Days.
- A presentation was given to the North Dakota State College of Science agriculture class regarding cost and benefits of manure fertilizer over conventional fertilizers. A soil pit talk that covered soil forming factors and soil management was also given. This event occurred at the Carrington Research Extension Center.
- At the invite of the Sargent County SCD a composting manure presentation was given at a manure composting demonstration.
- Gave a presentation at the Bowman County Farm and Ranch Resource Night. The title of the presentation was “Finding Value in Ag Waste & The Importance of Manure Spreader Calibration”.
- Held one-on-one discussions with 14 different Extension agents and one County SCD Coordinator. These discussions were designed to determine issues in the respective counties that need to be addressed. This has helped with programming for the upcoming year; as well improve networking between county agents and area specialist personnel.

- Held a tour for the Morton County Marketing Club to discuss the benefits of manure composting and the components of ag waste systems.
- A presentation was made at the Bowman Beef Day and the Killdeer Beef Day on manure as a fertilizer.
- A presentation was made at the Mandan Horse Day meeting titled “Composting Horse Manure.” The meeting was focused to the small horse owners. This was an excellent opportunity to speak on proper manure handling procedures and environmental concerns with a group of non-ag people.
- Sat on a panel at the Farm Bureau Young Farmers and Ranchers conference to discuss ag waste issues and rules.
- A CAFO training was held at the Carrington Research Extension Center for large AFO in the state. Topics included finding value in manure and animal mortality procedures.
- A presentation was given at the annual Watershed Conference on the results of the Ag waste survey. This was to give those people that work with producers an idea of how well the nutrient management team in ND is doing.
- Participated in a drought training conference for county ag agents to discuss feeding options during a time of short pasture and hay without impacting the environment.

*Task 4 New educational materials will be developed and/or assembled which focus on the location, design and management of innovative livestock facilities, focusing on manure management to prevent impacts on water quality.*

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- “A Survey of Recently Installed Ag Waste Systems” was developed to determine future training needs in the nutrient management arena in ND. Producers that have implemented an ag waste system in the previous 3 years were surveyed. This survey will be given annually to producers with new systems.

*Task 5 Identify cooperating farmers or ranchers who are willing to volunteer their operation as a site for intensive water quality monitoring. Two farms will be identified for monitoring small and medium AFO runoff and one farm will be identified to monitor tile drainage water quality impacts. Install equipment at the sites to determine edge of feedlot runoff impacts as well as tile drainage impacts.*

- Three farms have been identified and agreements signed to participate in the program.
- Full scale automated water sampling equipment has been installed at 2 farms to monitor edge of feedlot and down landscape drainage. There are three gaging stations at each of these two farms.
- Equipment is being installed at a 3<sup>rd</sup> farm to monitor tile and surface drainage. There will be two gaging stations monitoring tile outlet drainage and one station monitoring surface drainage.

*Task 6 Collect runoff data from Discovery Farms to determine water quality impacts. Work with producers to identify BMP's to address any impacts. Continue to monitor water quality to determine success of adopted BMP.*

- Raw data from the edge of feedlot runoff has been collected at only one site due to lack of rainfall at the other site.
- The runoff samples are being analyzed for common water quality constituents