

Fillmore SWCD eLINK Report

July 1, 2011 – December 31, 2011

6 month expenses \$41,490.34 charged to this grant, which leaves \$18,204.00 remaining, which are all from the 2011 CWF Restoration Technical Assistance Fund, which expires December 31 2012.

Funds used were:

\$2,300 from fees charged to landowner for plan writing

\$39,190.34 from FY2011 CWF Grant from BWSR.

The FY2011 CWF fund has an additional 10% (\$8,000) that will be awarded at the completion of this grant upon BWSR's approval of our final report. This grant also requires a 25% local cash match of \$20,000 (80,000 x 25%) from fees, of which \$2475 has been collected so far. According to Fillmore SWCD staff, there are a lot of NMP plans are near completion and when complete the landowner will be billed and pay fees to meet the local match requirements. A FY2012 CWF Grant has been awarded that will allow this program to continue.

Dawn's Report:

A total of 155 NMP contacts, of which 16 2012 plans are complete, 33 2011 plans are complete, 25 2010 plans are complete, 8 2009 plans are complete, 10 2008 plans are complete, 2 2007 plans are complete, 1 2006 plan is complete, 21 plans are in the beginning (or have been ongoing) planning stages for 2012 plans, 32 prospect plans. 7 plans being done now by other TSPs or being done by the producer. Total acres for the NMP plan contacts equals approximately 60,965 acres.

CTIC grant project update:

2011 Replicated Nitrogen Rate Strip Trial Results: Do my manure management plan recommendations work?

The objective of this project is to validate U of M Extension nitrogen rate recommendations for corn following corn with recently applied solid-pack dairy steer finishing manure.

1. Compare the UM recommended rate of **156 lbs.N/acre** to 186 lbs N/acre and 216 lbs N/acre rates.
2. Validate manure nitrogen availability correction factors as affected by broadcast manure incorporation timing. (within 12 hours and greater than 4 days)
 - Project will also *demonstrate* the effect of side dressing after fall applied manure using the pre-sidedress soil nitrate test.
 - Cooperative project with Fillmore SWCD and Minnesota Department of Agriculture, and UM Extension.

Key Findings

Corn yield and profit were optimized when manure credits were taken, and total N rates were consistent with U of M Extension guidelines.

Summary

Corn grain yield differences across all replicated N rate treatments were found to be small with yields ranging between 191-196 bu/ac. Generally, it did not pay to apply at rates above 156 lb N/ac and net profits were optimized when dairy steer bedding manure was uniformly applied and incorporated within 12 hours. When manure N credits were not taken and rates of commercial N were applied above the guideline rate of 156 lb N/ac,

profits decreased by up to \$32/ac. Results from the one-year study indicate that U of M recommendations were appropriate and when combined with good manure management practices can help optimize profit potential and nutrient-use efficiencies. Future studies are planned to further evaluate water quality, second year manure N credits and split N applications.

For additional information

- U of M extension Manure Management <http://www.manure.umn.edu/>
- Corn N Rate Calculator <http://extension.agron.iastate.edu/soilfertility/nrate.aspx>
- Kevin Kuehner-Minnesota Department of Agriculture-507-765-4530
- Dawn Bernau-Fillmore SWCD-507-765-3878

Nutrient Management Articles

1. 2011 fall SWCD online news article "Nutrient Management Research Updates"
2. CTIC manure plot results article by Kevin Kuehner and Dawn Bernau "Nutrient Management Focus, Are my manure management plan recommendations working?" This article was also published in the SWCD newspaper insert for Jan 2012.

Workshops and Field days attended:

1. U of M Institute of Ag Professionals Field School, Waseca MN
2. NMP Software Meeting, St. Peter, MN (discussed the future of the NMP software)
3. Rick & Dick Johns field day, Strip till and Vertical till demonstration along with different fertilizer rates.
4. IA State Integrated Crop Management Conference, Ames, IA
5. Attended 4 Nitrogen Fertilizer Management Planning advisory committee meetings. These meetings will go into 2012.

Presentations:

1. Manure Application Demonstration Day, Winona Co. (this was put on by Jerry Hildibrandt and I was the main speaker on Nutrient Management)
2. BSNT White Water Watershed group meeting (helped Kevin Kuehner discuss preliminary results from our manure plot)

Watson Creek Watershed BSNT farmer group:

This is a group of farmers that we selected in the Watson Creek Watershed to do Basil Stalk Nitrogen Testing with. We took BSNT tests this fall and have received the results. Currently I am in the process of sitting down one-on-one with these farmers and collecting their field records and practices. I am also going over their BSNT results with them. Late winter 2012 we hope to get these farmers together as a group to discuss the BSNT results and spark some conversation between the farmers on what worked for them or didn't work for them this year concerning nutrients. We hope this will open up the door for the SWCD to help with any conservation needs the farmers may have.

Southeastern Minnesota Soil Water Monitoring Network:

The network is a set of sites in SE MN where soil water nutrient concentration are measured throughout the spring, summer, and fall. How will the soil water be sampled? A soil water sampler, also known as a lysimeter, will be buried in the soil. A vacuum created inside the sampler draws water into an internal chamber through a porous ceramic tip. The water is retrieved through a small sampling line at the surface of the soil. The network will

evaluate the amount of N leaching below their root zone of our soils. Myself and Dean Thomas were the main contact people to find producers willing to install the lysimeters. I was part of the equipment installation and sampling. Currently we are gathering field specific information that will help sort out the results.

Root River MPCA project:

I am working with Kahlil Ahmad (Hydrologist – Watershed Modeler) from MPCA to put together some useful numbers to help them determine some numbers for their watershed model for the Root River. We are looking at animal units, manure type, analysis, application method and application timing.

I am currently still holding the secretary job for the MASWCD director meetings.

I started this position March of 2007 and have made 155 contacts with producers. I have 101 plan contacts in Fillmore County, 1 in Mower County, 14 in Houston County, 5 in Olmsted County, 26 in Winona County, and 1 plan that I oversaw in Rice County. There are 7 plans that are now with private TSPs or the farmer is doing them. I view this as progress when the farmer wants to do his own plan. These plans consist of Dairy, Hogs and Beef. Some plans include purchased Turkey or Chicken manure. A few of the plans in Fillmore and Winona county are organic. Their main source of nutrients comes from legume credits, green manure plow down, manure and organic fertilizers.

January 1, 2011 – June 30, 2011

6 month expenses \$35,745.90 charged to this grant, which leaves \$57,394.34 remaining, which are all from the 2011 CWF Restoration Technical Assistance Fund, which expires December 31 2012.

Funds used were:

\$20,965.24 from FY2009 CWF Funds that needed to be spent by 9/1/2011), \$175

\$175.00 from fees charged to landowner for plan writing

\$ 14,605.66 from FY2011 CWF Grant from BWSR.

The FY2011 CWF fund has an additional 10% (\$8,000) that will be awarded at the completion of this grant upon BWSR's approval of our final report.

Dawn's Report:

A total of 155 NMP contacts, of which 33 2011 plans are complete, 34 2010 plans are complete, 10 2009 plans are complete, 35 plans are being updated, 29 prospect plans, 12 New plans for 2012. Total acres for the NMP plan contacts equals approximately 53,839 acres.

CTIC grant project update. Preliminary observations and results: 1) 83% of the pre-manure end-of-season stalk nitrate tests fell into the excessive category. This indicates that N management could possibly be adjusted to improve nitrogen efficiency. 2) Pre-manure application soil tests indicated deficiencies in phosphorous. 3) Post manure application/pre commercial soil tests show an increase of phosphorous and potassium by 111% and 33% respectively. 4) After fall applied manure, pre-side dress N test results indicated a need of 30lbs of additional N on the incorporated test plot and 60lbs of additional N on the non-incorporated test plot. 5) Soil water nitrate concentrations below the corn root zone have been averaging around 21 mg/l within the treatment strips. We will

be having a mini plot tour day with the producer and his crop advisors July 14, 2011 to go over our observations and plan. We will also be demonstrating to them how we take the Lysimeter samples.

Wrote two news articles on nutrient management. They were titled 1) Nutrient Management, the 4R Approach and a Manure Application Study, and 2) Nitrogen Cycle and Nitrogen Movement.

Spoke at 6 White Water Watershed meetings on nutrient management.

Put on one "What is Manure Worth" workshop with U of M Extension. It was held in Rushford, MN. We had 9 participants. One was from Arcadia, WI and has his own company that deals with palliated chicken manure. There were 2 agency people that attended from NRCS and SWCD. Six producers were in attendance ranging from hog, beef and dairy operations.

Spoke at Mower Co. MRBI meeting, JPB meeting, MASWCD meeting and a BALM meeting on Nutrient Management and the Nitrogen Fertilizer Management Plan advisory committee that I am on.

Attended four Nitrogen Fertilizer Management Planning advisory committee meetings. These meetings will go into 2012.

Attended my first MASWCD director meeting, I am the new secretary for 2011-2012.

Workshops and Field days attended:

- 1) Grant Writing 101 Workshop
- 2) U of M Extension Winter Crops Days
- 3) Nutrient Efficiency Conference
- 4) Current Issues in Manure Management MPCA
- 5) Attended the TMDL/TAG meeting
- 6) U of M Agronomy Field Tour day at Waseca

I started this position March of 2007 and have made 155 contacts with producers. I have 107 plan contacts in Fillmore County, 1 in Mower County, 14 in Houston County, 5 in Olmsted County, 27 in Winona County, and 1 plan that I oversaw in Rice County. These plans consist of Dairy, Hogs and Beef. Some plans include purchased Turkey or Chicken manure. A few of the plans in Fillmore and Winona county are organic. Their main source of nutrients comes from legume credits, green manure plow down, manure and organic fertilizers.