

# CONSERVATION CHRONICLES

Summer 2011

### The Fillmore SWCD offers:

- Low interest loan dollars
- State Cost Share dollars for waterways, terraces, farmstead windbreaks and feedlot fixes
- Nutrient Management Plans
- Manure Spreader Calibration
- Grazing Management Plans
- Tree Program
- Bacteria Testing
- Tax Relief for Wetlands



**Have a safe and happy summer!**



## FILLMORE SOIL & WATER CONSERVATION DISTRICT

900 Washington Street NW  
Preston, Minnesota 55965

Phone: 507-765-3878  
Fax: 507-765-4415  
[www.fillmoreswcd.org](http://www.fillmoreswcd.org)

### Scholarship Available for Returning College Students

The Fillmore SWCD is offering a \$500 scholarship to Fillmore County college students who are returning to school this fall. To be eligible students must be a returning college sophomore, junior or senior; must be pursuing a degree in Natural Resources, Agriculture, or a related field; be enrolled in classes for next fall; and not be a prior recipient of a Fillmore SWCD scholarship.

Students wishing to apply must submit a completed application along with the required essay on "What Natural Resources Conservation Means To Me". The completed application and essay must be received at the Fillmore SWCD office by **4:00 p.m. on Friday, July 29, 2011** to be considered for the scholarship.

The successful applicant will be selected by the Fillmore SWCD Board of Supervisors at the August Board meeting.

Applications may be picked up at the Fillmore SWCD office located at 900 Washington Street NW, Preston or online at [www.fillmoreswcd.org](http://www.fillmoreswcd.org). If you have questions about the scholarship or would like more information, please call Donna Rasmussen at 507-765-3878 ext. 3.

### High School Scholarship Awarded

The Fillmore Soil and Water Conservation District is pleased to announce our 2011 high school scholarship winner is **Tyler Spande** of **Lanesboro High School**. Each year the SWCD awards a \$500 scholarship to a graduating high school student pursuing a degree in natural resources or an agriculture related field.

Spande will be attending Vermillion Community College in the fall studying Natural Resource Technology, Forestry/Wildlife option. Congratulations Tyler!



### District Board

Pamela Mensink.....	Chair
Leonard Leutink.....	Vice Chair
Travis Willford.....	Treasurer
Brian Hazel.....	Secretary
Tim Gossman.....	Supervisor

### The SWCD's role

*The function of the Soil and Water Conservation District is to take available technical, financial and educational resources, whatever their source, and focus or coordinate them so that they meet the needs of the local land user.*

### District Staff.....

Donna Rasmussen	Rick Grooters
Doug Keene	Jeanette Serfling
Dean Thomas	Joe Magee
Anne Koliha	Dawn Bernau
Jennifer Ronnenberg	

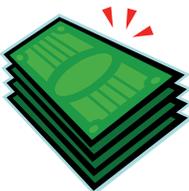
### AgBMP Low Interest Loans

Loan dollars are available to help correct existing water quality problems. At an interest rate of 3% and for a term of 5 to 10 years, many local lenders participate in this program to assist landowners in protecting our water quality.

Such eligible practices include:

- Feedlot fixes
- Manure handling equipment
- Terraces, Grassed Waterways, Structural erosion control structures
- No-till equipment (planters & drills)
- Replacement of failing septic systems
- Sealing of unused wells
- Well Replacement (specific criteria to meet)
- Variable Rate Technology (tied to other conservation practices)

To start the loan application, bring in a written estimate of the project to be completed and fill out an application at the Fillmore SWCD office. You have to begin the loan application process at the Fillmore SWCD office **before** any work begins to secure funds. Once the loan application is complete at the SWCD office, you will then go to a lender that participates in this program to finish up the details and terms of the loan with them.



These funds are limited each year, and are on a first come, first serve basis. For further information or to apply for the loan, please contact Anne Koliha or Donna Rasmussen at the Fillmore SWCD Office at 507-765-3878 ext 3.

### Feedlot State Cost-share Sign Up

With many feedlot projects on the books that will be implementing runoff control practices this year we are always planning ahead for projects for the following year. If you still need to fix up your feedlot site, please be in contact with the feedlot staff to get you on your way to planning and signing up for cost share dollars. To sign up for state cost-share dollars we need to have a plan developed with cost estimates to put on the cost-share application.



The State Cost-share Dollars can provide up to 75% cost-share assistance on the eligible components of the project and also provide cost-share assistance for engineering services. Making feedlot improvements are an effective way to increase the efficiency of your farm.

Please contact the Fillmore County Feedlot Officer, Mike Frauenkron, 507-765-2539, with questions on permitting, registration and compliance status or the Fillmore SWCD Technician, Anne Koliha, 507-765-3878 ext 3, with questions on developing plans and cost share assistance.



#### Contact the Fillmore SWCD for...

- Gopher Machine Rental
- Tree Planter Rental
- Tree Bar Rental or Purchase
- Rain Barrels and Rain Barrel Kits
- Bacteria Testing
- Fillmore County Plat Book

### Summer Intern Hired



Sarah Gossman will be working in the SWCD office as an intern this summer. She will be working on storm water management (e.g. rain gardens, rain barrels), water sampling, and forestry education for the Lost Creek Trail project.

Sarah graduated from the College of St. Benedict in

May with a major in Environmental Studies and a minor in Biology. During the summer of 2009, she interned on a vegetable farm which got her excited about agriculture. She grew up near Chatfield and is glad to be back in Fillmore County this summer.

### Rain Barrels

Do you have a rain barrel set up to collect the runoff from your roof? It is a fantastic way to reduce the amount of stormwater running into storm drains during wet weather and reduce the amount of fresh water being used during dry weather.



- Rain barrels conserve water and help lower costs.
- Rain barrels reduce water pollution.
- Rain barrels are inexpensive and easy to install.

If you are interested in purchasing a rain barrel kit or a fully assembled rain barrel, call the Fillmore SWCD office at 507-765-3878 ext. 3.

### Bacteria Testing Available

- Pick up a sample bottle at the Fillmore SWCD office or Fillmore County Zoning Office
- Cost is \$20.00 per sample
- Reduced cost for homes with a child under the age of one or where a pregnant female resides
- Testing parameters include E. coli and Total Coliform bacteria
- It is recommended to have your well water tested annually



Call the SWCD office at 507-765-3878 ext. 3 for more information.

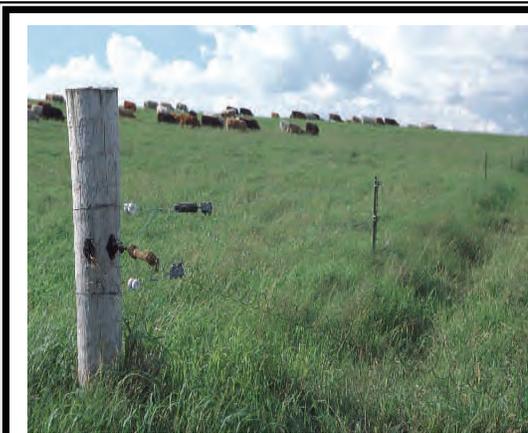
### Tree Sales—2011

Another year of tree sales has come to a close. **A big thank you goes out to the Fillmore County and surrounding area landowners who purchased trees!** Because of your support, almost 12,000 trees were sold.

The tree order form for 2012 will be available on the SWCD website in December and can be found in one of the local papers in January. Please call the SWCD office if you would like a tree order form mailed to you.



We can also special order trees. Call the SWCD office at 507-765-3878 ext. 3 to check availability.



*Plan to Attend a Grazing Field Day!*

*Saturday, July 16th at Schafer Farms  
in Goodhue County*

*Saturday, August 13th at the Tom Scarponcini Farm  
in Winona County*

*Check the SWCD website at [www.fillmoreswcd.org](http://www.fillmoreswcd.org)  
or the local papers for more information!*

## ***TAP INTO THE ROOT RIVER: A CLEAN WATER INITIATIVE***

How important is clean water to you? Here are a few of the responses from local people who were recently asked this question:

- Drinking
- Laundry
- Canoeing
- Growing food
- Personal hygiene
- Wildlife
- Livestock
- Fishing
- Boating



We all have a need for clean water, and we all have a stake in keeping it clean. The Root River Clean Water Initiative is aimed at gathering local input and knowledge from residents in the Root River watershed about ways to “engage” citizens in making decisions personally and as a community that protect our water resources. Staff from the Fillmore SWCD and the University of Minnesota Extension are meeting with local community groups, such as Lions, Rotary and Kiwanis, in the Root River watershed to gather input and ask for volunteers to guide this process. A broad spectrum of people is being sought for this effort so that a variety of knowledge, wisdom and experiences related to the Root River can be brought into the discussion. This includes addressing the physical, recreational and environmental needs for water.

In exchange for participating in about nine meetings over the course of a year, the volunteers will also receive free training in skills such as facilitating effective meetings, building leadership, and civic engagement—a \$950 value at no cost to the participants. These skills are transferable to other areas of a participant’s life both at work and community/volunteer activities. The meeting times and locations will be determined by the volunteers as a group.

## ***TAP INTO THE ROOT RIVER: Continued..***

Water is one of our most important natural resources and something that all living things depend upon. Is it important enough for you to be involved? To arrange a presentation about this process for your organization, or if you are interested in becoming a volunteer, please contact Donna Rasmussen at the Fillmore SWCD office in Preston (507-765-3878 ext. 3 or [donna.rasmussen@fillmoreswcd.org](mailto:donna.rasmussen@fillmoreswcd.org)).

## ***MISSISSIPPI RIVER BASIN INITIATIVE FOR 2012***

The sign up for the Mississippi River Basin Initiative (MRBI) is over for 2011, but it’s not too soon to be thinking about projects for 2012. Although the funding levels have not been set for 2012 for the three watersheds in the Root River watershed (Watson Creek, the Upper South Fork of the Root/Wisel Creek, and Rush-Pine Creek), it is anticipated to be similar to the first two years, or about \$1.2 million. In addition, The Nature Conservancy and Trout Unlimited have dedicated funds to these watersheds that can help pay for some of the practices.

Projects are being funded through the U.S. Dept. of Agriculture Natural Resources Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentives Program (WHIP). Many of the eligible practices are focused on supporting the livestock sector through improved feedlot management, grazing management and nutrient (manure) management. Also eligible are soil conservation practices, such as grassed waterways, terraces, no till, cover crops, stream bank protection and water and sediment basins. Because this is a special allocation for these watersheds, the competition for the funds is much less than through the regular annual EQIP allocation so applications are more likely to be funded.

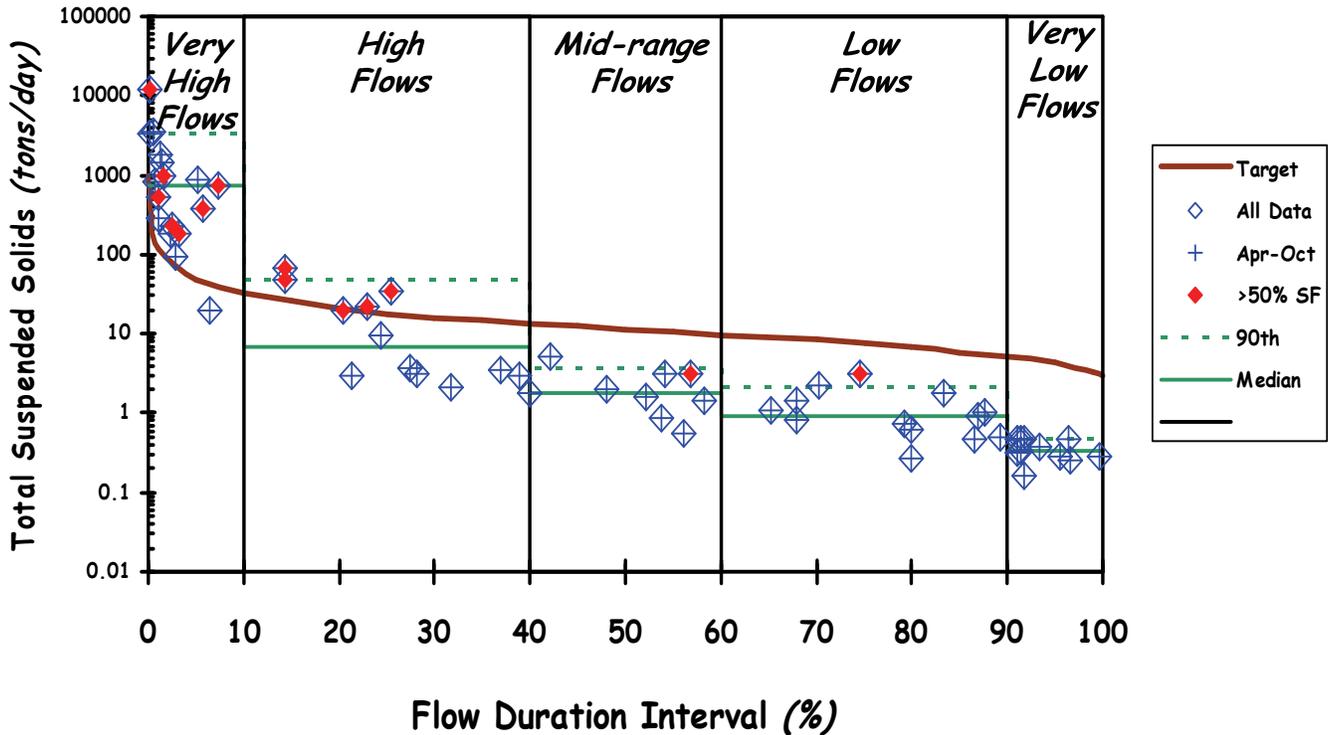
If you own or operate land in any of the three watersheds named above and are interested in implementing practices that reduce sediment and nutrient runoff, please contact the Fillmore SWCD and NRCS office at 507-765-3878, ext. 3.

### What's New in TMDL Land?

Joe Magee – Water Plan/TMDL Coordinator

The Root River Turbidity Total Maximum Daily Load (TMDL) study, a three year project monitoring sediment in the Root River, is currently in the data analysis and reporting phase. The monitoring portion came to an end in 2010, and the data is currently being analyzed for incorporation into the final report. The data analysis portion is a time consuming, but exciting and rewarding process as we get to see and share results from all the hard work that went into this project. Some of the current analysis work includes Load Duration Curves (LDCs), Sediment Fingerprinting, and sediment loading calculations (using a modeling program called FLUX). The LDC work uses all of the sample and flow data from the project (along with any available historical flow data) to develop a graph like the one below:

## EXAMPLE LOAD DURATION CURVE



*Gauge: 133.0 square miles; AUID: 211.2 square miles*

A LDC will be created for each of the 11 turbidity impaired reaches. This work indicates what the “target load” is for each reach at each flow zone (very high flows, high flows, mid-range flows, low flows, and very low flows). The “target load” equates to the maximum amount of sediment that can enter a specific reach (at a specific flow zone) while still meeting the water quality standard. From these LDCs we will be able to determine where the exceedances are taking place, as well as quantify the exceedance.

## ***WHAT'S NEW IN TMDL LAND?*** (Continued from page 5)

The Sediment Fingerprinting results, which will help identify where the sediment is coming from (e.g. agricultural fields, stream banks, ravines, floodplains, bluffs) should be completed shortly and provide great insight for implementation planning. The amount of sediment that passed by each of the TMDL monitoring sites (12) over the past 3 years is also being estimated using some stream modeling software called FLUX. The FLUX results will provide us with sediment "loads" for each site, and help identify any areas where a disproportionate or excessive amount of sediment is entering the river.

Results from the above mentioned data, along with past and future data will be used in the implementation phase of this project. Using all the data, we should be able to identify "critical areas" to focus our time and money on for implementation of various Best Management Practices (BMPs). This should ensure that we get the most "bang for our buck." The timeline for the implementation phase has not been determined yet.



The contract for this project expires at the end of June (2011), and we are hoping to have a draft of the Final TMDL Report completed at that time as well. Once that report is completed there will be a 30 day Public Notice period. If you have any comments/questions/concerns about the report they can be submitted at that time. The Public Notice period will likely be towards the end of summer or early fall. If you have any questions, please feel free to contact the Fillmore SWCD at 507-765-3878 ext. 3.

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## ***GET COST-SHARE AND A RENTAL PAYMENT FOR GRASS WATERWAYS WITH CRP***

By Angela White, NRCS Soil Technician



Do you need grass waterways and would like a rental payment for those acres? Landowners who have grass waterway needs should consider utilizing the Conservation Reserve Program (CRP) Grass waterway program. Applicants will receive engineering assistance through the local Natural Resources Conservation Service (NRCS) office and financial assistance from the Farm Service Agency (FSA).

Through CRP, producers can receive cost share to construct grass waterways and a CRP rental payment to maintain the waterway on eligible cropland. Offers for continuous sign-up are not subject to competitive bidding, and waterway contracts are 10 years in duration. To be eligible, land must be cropland that has been planted or considered planted to an agricultural commodity four of the previous six years from 2002 to 2007. Rotations that include hay can look at the previous 12 years of crop history for eligibility.

FSA provides participants with annual rental payments, including incentives and cost-share assistance. Participants can receive up to 90% cost-share for the construction and maintenance of the grass waterway. For construction, participants will receive up to 50% cost share, plus a practice incentive payment (PIP) which is equal to 40% of the eligible installation costs. An upfront signing incentive payment (SIP) of up to \$100 per acre can be received after the contract is approved and all payment eligibility criteria are met.

For more information or if you are interested in applying, please contact the FSA at 507-765-3878, ext 2, or NRCS at 507-765-3878, ext 3.

## ***RAINS SHOW WHERE CONSERVATION IS NEEDED***

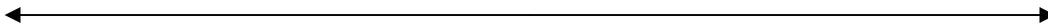
Recent rains are highlighting where soil conservation practices are needed, especially grassed waterways. This picture shows what NOT to do when planting where there is a natural drainage way. These rows were planted in the same direction that the water flows creating ideal conditions for soil to be washed away. Crop rows should go perpendicular to the slope so the water is held between the rows and can be directed into a grassed waterway. If any water does flow into the waterway, it will be transported off the field without eroding more soil.

The SWCD and NRCS office has received several soil erosion complaints this spring. When a complaint is received, it is the obligation of the staff to investigate it to determine if the erosion exceeds soil loss tolerance (T). T is the maximum amount of soil loss measured in tons per acre per year that can be tolerated and still sustain a high level of crop productivity economically and indefinitely. If the erosion exceeds T, the technician works with the landowner to determine what practices will control the erosion. Cost share is available from state and federal funding sources to install practices. Landowners can also install the practices at their own expense with guidance provided by the SWCD and NRCS staff.



In Fillmore County, the economic value of soil conservation practices is estimated to be \$5 to \$9 per ton according to a 2008 report completed by Hansen and Ribaudo for the USDA Economic Research Service. Included in that is the value of reduced losses in soil productivity of \$1.21 per ton. Take for example a Fayette soil, which is the most widely distributed soil type in the county. T for this soil type is 5 tons per acre per year, or about the thickness of a dime which is barely visible to the eye. If soil loss is at T, or 5 tons, the soil productivity value that is still being lost is over \$6 per acre. Add to that the value of another 12 offsite damages, such as water-based recreation, road damage and flood damage, which could amount to another \$30-40 per acre. When soil erosion is visible and creating rills and gullies, it is far exceeding T, and the damage costs multiply accordingly.

Soil erosion has a cost both to the landowner and to the community at large. Well maintained soil conservation practices, such as grassed waterways, terraces, contour strips, and management practices such as cover crops and no till, reduce those costs. In many cases, practices can be incorporated into most operations without risking income while the productivity and tilth of the soil are improved for long term profitability.



### ***From the Feedlot Corner***

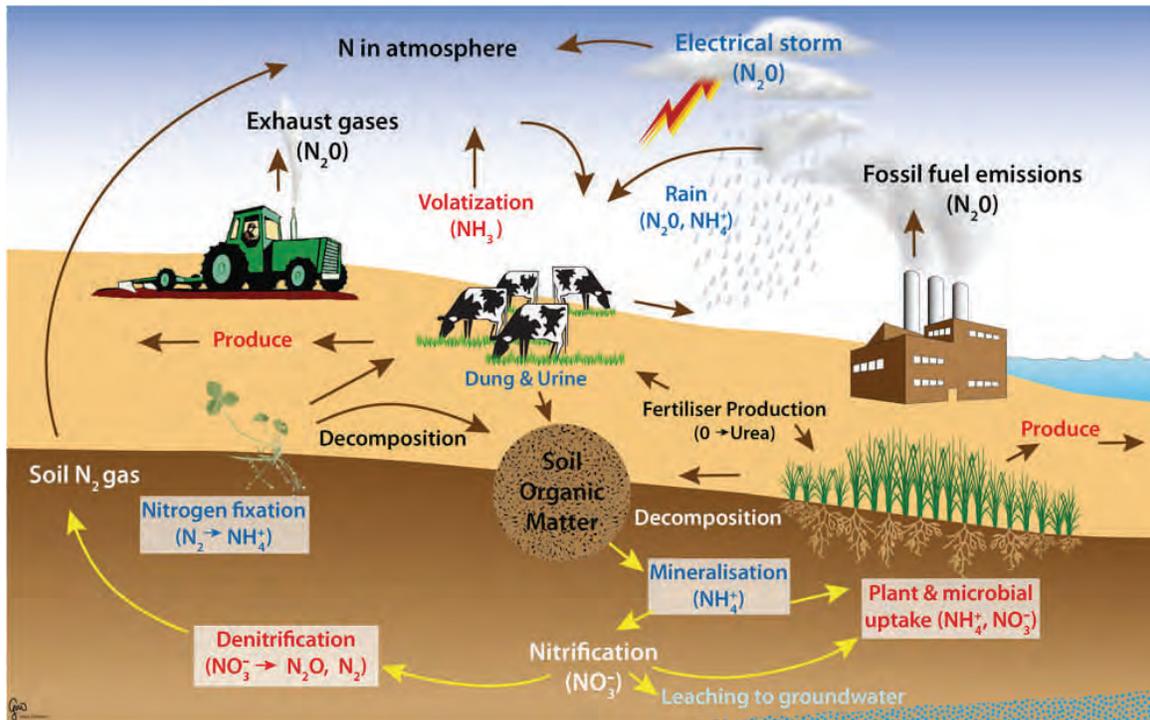
By Mike Frauenkron, Fillmore County Feedlot Officer

**Due to the recent damage on area farms there is a question that has come up for discussion. "What can or can't I bury on my farm?"** As of July 1st, 2011 the Minnesota Statute Sec. 6 Minnesota Statutes 2010, section 17.135 has been amended. It will now allow you to bury concrete or reinforcing bar from a building or structure located on the land used for farming. One of the requirements of this is that within 90 days after completion of the burial, an owner used for farming who buries material under the authority of paragraph (a), clause (2) shall record, with the county recorder or registrar of titles of the county in which the land is located, an affidavit containing a legal description of the property and a map drawn from available information showing the boundary of the property and the location of concrete or reinforcing bar buried on the property. The county recorder or registrar of titles must record an affidavit presented under this paragraph in a manner that ensures its disclosure in the ordinary course of a title search of the subject property.

**Contact the Feedlot Office at 507-765-2539 with questions or for further information.**

## Nitrogen Cycle and Nitrogen Movement

By: Dawn Bernau ~ Nutrient Management Specialist



Let's start with a basic understanding of nitrogen and the ways we can lose nitrogen. Plants utilize Nitrogen in two forms, ammonium and nitrate. Ammonium and nitrate lose nitrogen differently. These two forms are also not static in the soil and can change forms. An example would be ammonium changing to nitrate.

The most common loss of nitrogen is volatilization. This process occurs when ammonium ( $\text{NH}_4^+$ ) loses a hydrogen ion to form ammonia ( $\text{NH}_3$ ). When manure is broadcast on the surface and we smell an odor, the ammonia ion is what we smell. Ammonia is a gas and it is lost to the atmosphere. Volatilization only happens in the soils with products containing urea (UAN & Manures). The most practiced way to control volatilization in the past has been to incorporate the products in to the soil with injection or tillage.

The second form of nitrogen loss is called Leaching. Soils have a negative charge which allows it to hold positively charged ions (ammonium, potassium, calcium and others). On the other hand, nitrate is negatively charged, and we all know like charges repel, which means that nitrate molecules are not held to the soil and can be leached through the root zone during wet soil conditions.

Nitrogen applications that may be at risk from early wet spring soil conditions 1) early fall manure with high ammonium percentages (liquid swine manure) 2) early fall DAP/MAP applications 3) early fall anhydrous ammonia applications 4) and spring ammonium nitrate and urea-ammonium nitrate solutions (UAN 28 or 32 %). When the above four applications are applied early in the fall the nitrogen will convert to nitrate by spring. The early spring applications (UAN 28 or 32%) already contain nitrate and, therefore, will have a faster nitrification process.

What products can I use that may help reduce volatilization or leaching of nitrogen? First, how you are applying the nitrogen and what nitrogen containing product you are using is how you determine what product you will want to try to reduce nitrogen loss. With an ammonium product (UAN) your nitrogen loss will be through volatilization, so you want to use a urease inhibitor product. If you inject your nitrogen, you are already minimizing your nitrogen loss due to volatilization. Your next concern in this case would be nitrogen loss due to nitrate nitrogen. You would want to use a nitrification inhibitor in this situation. However nitrification inhibitor products do not stop the leaching of nitrate already in the soil. Nitrification inhibitors simply stop the ammonium ion from converting to nitrate. Nitrification inhibitors are usually applied when nitrogen is applied long before the expected crop uptake, or on excessively well drained or very poorly drained soils. There are also products that are a mixture that will help mitigate volatilization and nitrate leaching. But make sure that you only pay for what you need and not what you don't need. It all depends on how you apply your nitrogen.

### ***Nitrogen Cycle and Nitrogen Movement*** (continued from page 8)

How does manure application relate to nitrogen losses and economics? If manure is surface applied without being incorporated into the soil, your nitrogen value in the manure is about cut in half due to about half of the nitrogen being volatilized. If the manure was broadcast, non-incorporated, applied to meet the nitrogen rate, over time you would see a build up of phosphorus and potassium. Spring and fall incorporation of manure allows the nitrogen in the manure to be used more efficiently. This means less manure needs to be applied which will reduce phosphorus and potassium accumulation rates. This also will help reduce the risk of run-off losses. For example, a liquid dairy manure testing at 25(N)-15(P)-27(K2O) applied at 5,000 gallons per acre broadcast, no incorporation, would give you 25 lbs of total N, 60 lbs of P and 122 lbs of K2O. If this same manure were sweep injected, you would get 69 lbs of N (P and K2O would be the same). This is a difference of 44 lbs of nitrogen. If you were applying urea for nitrogen and it was \$475/ton (\$0.52/lb), you would save about \$23.00 per acre just by incorporating your manure.

To help determine the way nitrogen moves through the soil profile and crop root zone, Fillmore County SWCD along with MDA and Winona State has installed lysimeters in several cropping scenarios throughout Fillmore county. These lysimeter sites are part of the Southeastern Minnesota monitoring network. The network is a set of sites in southeastern Minnesota where soil water nutrient concentrations are measured throughout the spring, summer and fall. What is a lysimeter? It is a two foot long tube with a ceramic tip. It creates a vacuum inside the sampler which 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 lysimeters are buried four feet below the surface. The goal is to understand how our land management plans can be optimized to benefit the economy of our region and the quality of our water resources. The monitoring network is NOT designed, or intended, to yield data that can be used for regulatory enforcement purposes. This information will not be used to draw specific conclusions about one site as compared to another; rather it will be used to get a general idea of how our landscape works.



At most sites, 2-3 lysimeters are installed to account for spatial variability and to serve as back-up in the event of equipment failure.

Lysimeters installed at 4' depth in row-crop settings.



Lysimeter access point



## ***Nitrogen Cycle and Nitrogen Movement*** (Continued from page 9)

With all the tools and technology available, Nutrient Management planning can be done. Having a Nutrient Management Plan for a livestock operation is essential for maximizing the economic value of manure and minimizing environmental risks associated with the storage, handling, and application of manure on the land. A Nutrient Management Plan helps producers budget and supply nutrients for plant production. It also helps properly utilize manure or organic byproducts as a plant nutrient source. A Nutrient Management Plan minimizes agricultural nonpoint source pollution of surface and ground water resources. Also a Nutrient Management Plan helps maintain or improve the physical, chemical and biological condition of the soil. Finally, manure should not be considered waste product requiring disposal. Instead, it should be collected, stored, handled and applied with the same care given to expensive commercial fertilizers. Manure applied properly can save a landowner in fertilizer costs. However if manure is over-applied, nutrients will be wasted and water resources can be negatively impacted. Having a sound Nutrient Management Plan will not only help the environment, but it will help the producer manage his operation to maximize the value of manure. If you are interested in starting or updating a nutrient management plan, contact Dawn Bernau at the Fillmore SWCD office at 507-765-3878 Ext. 3 or by email [dawn.bernau@fillmoreswcd.org](mailto:dawn.bernau@fillmoreswcd.org).

**Effective January 1, 2011, the Fillmore SWCD is charging \$300.00 for new Nutrient Management Plans and \$100.00 for yearly updated plans, \$50.00 for a Mini Manure Management Plan and \$25.00 for the mini plan updates. These fees are to help fulfill the match requirements for the grant that funds the Nutrient Management Specialist position.**

### **References:**

- Wet Soil Conditions and Nitrogen Loss, By John Sawyer, Dept. of Agronomy, IA State.
- Soil Fertility and Wet Weather Response, By Jonathan Rotz, Penn State Extension, Franklin County Agronomy and Livestock Educator.

## ***What Is The Clean Water Fund Doing To Protect Water In Fillmore County?***

On November 4, 2008, Minnesota voters approved the [Clean Water, Land & Legacy Amendment](#) to the State's constitution to:

- *protect drinking water sources;*
- *protect, enhance, and restore wetlands, prairies, forests, and fish, game, and wildlife habitat;*
- *preserve arts and cultural heritage;*
- *support parks and trails;*
- *and protect, enhance, and restore lakes, rivers, streams, and groundwater.*

The Amendment increases the sales and use tax rate by three-eighths of one percent on taxable sales, starting July 1, 2009, continuing through 2034. Those dollars are dedicated to four funds: Outdoor Heritage Fund, Clean Water Fund, Parks and Trails Fund, and Arts and Cultural Heritage Fund.



### **The Clean Water Funds are being used in Fillmore County for:**

- \$755,593 for feedlot water quality management practices (\$194,000 in 2010, \$561,593 in 2011)
- \$126,316 for a Grazing Management Specialist in the Root and Whitewater watersheds to the end of 2013
- \$80,000 for a Nutrient Management Specialist for five southeast MN counties to the end of 2012
- \$368,606 for the Root River Comprehensive Strategy for reducing sediment, bacteria and nitrates in the river and its tributaries (3 year project)
- \$25,000 for technicians to work with producers for two years to implement conservation practices in the Watson Creek and Upper South Fork/Wisel Creek watersheds (Mississippi River Basin Healthy Watersheds Initiative)