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**SPECIAL POINTS OF INTEREST:**

- ◆ Manure Management: Why should you CARE?
- ◆ A new twist on the Nutrient Management Farmer Education Program
- ◆ Discovery Farms addresses water quality issues within a diverse community
- ◆ The 2nd edition of Tile Talk

### Director's Column— Where do we go from here?

In April we had our annual meeting with our steering committee. We started the meeting with a brief introduction, an overview of what the Discovery Farms Program has accomplished and our vision for the future. I also brought up the question “What happens when Fred and Dennis decide to retire? Where does the program go?” The purpose of this question was to get our committee to think about this program and decide if it’s important enough to continue after we leave the program (whenever that happens). This question provides the basis for the development of our next five year plan of work.

Some of the issues the committee discussed include:

- We need to understand that unique farms are a key to our success and our focus must remain on working with real farms.
- It is necessary to be open and honest in order to maintain the trust producers have with our program. That’s one advantage of working with USGS, because the data coming from them is unbiased and will be used correctly.
- Work with farmers to identify and implement best management practices.
- We need to work with producers to study when manure cannot be spread on the land. Fields should be defined as to which are the most desirable to spread manure on when the conditions for spreading are not ideal. Since each farm and area of the state is unique, it is necessary for the public to see the whole story. It is important to understand manure regulations and what effect they have on the environment. Soil moisture monitoring and frozen ground are key study pieces.
- How can we get producers to change their farming style if necessary?
- How do we target the problem acres without dictating how farms will operate?
- How do we separate an accidental runoff event and a chronic offender?
- How do we develop an education and outreach program that works with producers to minimize their risk of environmental losses?



## Director's Column, Continued...

- Neighbors watch what other neighbors are doing. If they see things working on other farms, they might be willing to change. Once we decide which systems work the best, then we can try to work with producers who are causing problems with their farming practices. There are lots of different ways to farm. Education is a key component.
4. Develop a targeted watershed approach that identifies critical sites, critical time periods and a variety of practices to mitigate negative environmental impacts based on field conditions,
  5. Work with state agencies to develop a risk management assessment tool,
  6. Participate and provide information to the Standard Oversight Council,
  7. Continue to work on odor and air quality issues.

After a day of brainstorming and talking, the steering committee boiled down the discussion and gave us seven points to focus on for the next five years:

1. Continue our current monitoring and baseline data collection,
2. Continue and expand our tile studies,
3. Write and publish papers and develop an information and education program,

We are developing our plans now. If you want a copy, please contact Judy at 715-983-5668 or

[jgoplin@wisc.edu](mailto:jgoplin@wisc.edu).

*Rennid R. Frame*



## A New Spin on Nutrient Management Education

By Nancy Paul-Drummy

Outreach Specialist,

UW-Discovery Farms Program

In the March 2006 edition of "The Tree" you read about the Nutrient Management Farmer Training curriculum, which teaches producers to develop their own nutrient management plan using a mix of classroom training and on-farm assistance. This program is available to farmers throughout the state, but in the Upper Rock River Basin there is a slightly different approach in place. While the training is conducted by Extension and Discovery Farms staff, it is local fertilizer dealers and crop consultants who promote and deliver the program and work with producers

on the development of the actual nutrient management plan.

Fertilizer dealers and crop consultants recruit their farmer clients to participate in the program and see to it that each operation has current soil tests, conservation plans, and manure spreading maps before attending the classroom training. Staff from Discovery Farms and the Dodge County Extension office conduct the classroom portion of the program and do the on-farm visit to calibrate the manure spreading equipment. The local Land Conservation Departments (Fond du Lac and Dodge County) review and update the conservation plans and the manure spreading restriction maps. Once the farmers have



Discovery Farms and UWEX staff calibrated manure spreaders.

completed the classroom training, the fertilizer dealers and consultants work one-on-one with the farmer to prepare a nutrient management plan.

The idea behind this program is that crop consultants and fertilizer dealers have more frequent contact with the producers and will assist



## Nutrient Management Education, continued...

with the implementation of the nutrient management plan if they are involved in developing the plan. Fertilizer dealers and crop consultants receive \$6/acre for the initial plans they help prepare. This program also goes beyond the initial development of the nutrient management plan and provides a \$2/acre incentive payment to update the plan in years two and three of the program. In order to receive payment, all plans must be completed and turned in by March 31<sup>st</sup> of the current year.

Farmers are recruited for the program 6 months to a year in advance of the classroom training. This allows time for soil sampling, manure spreader calibration, as



Farmers who attend the winter workshops arrive with everything they need to begin preparing their plans.

well as preparation of conservation plans and manure spreading maps. When farmers come to the classroom training (which is held in December and January), they have everything they need to begin preparing their nutrient management

plans. The classroom training covers crop nutrient needs, legume and manure credits, manure spreading strategies, and the rules and regulations outlined in the Nutrient Management 590 Standard. Emphasis is on preparing a plan that is simple to follow, because when farmers write their own plans; they are more likely to follow them.

Over the last two years, 55 farmers in Dodge and Fond du Lac counties, representing approximately 25,000 acres, have prepared nutrient management plans through this program. In year two, fifteen of the farmers updated their plans, representing 5,400 acres. Seven fertilizer dealers/consultants participated in this program. Several of the fertilizer dealers wrote nutrient management plans for the first time.

Seven fertilizer dealers from Dodge and Fond du Lac counties were surveyed prior to this program regarding the preparation of nutrient management plans. All of them stated that nutrient management planning was a service they wanted to offer. Three of them thought it was a profitable service, two thought it was not profitable, and two of them did not know if it was profitable. Fertilizer dealers cited the greatest challenges in developing nutrient management plans were:

1. Not having enough time to soil sample

2. Getting conservation plans completed in a timely manner
3. Not having enough staff to devote to preparing plans

Recruiting farmers 6-12 months in advance of the classroom training helped dealers as well as agency staff manage the added workload. Having farmers, fertilizer dealers, crop consultants, and agency staff all in the training together allowed for a lively, free flow of information, and helped to build better communications between all who have a stake in nutrient management at the local level.

Another unique part of this program is that funding is made available through a partnership between the Sand County Foundation, the Discovery Farms Program and the Natural Resources and Conservation Service. Sand County Foundation is a private conservation organization based in Madison, Wisconsin. It operates and organizes projects focused on improving the condition of privately owned land and the welfare of the people living on it. With its guiding spirit, the naturalist Aldo Leopold, Sand County Foundation believes that conservation is sustainable only if it benefits the landowner, and that landowners prosper best when they practice conservation.



## Pursuing Water Quality Together: The Manitowoc County Discovery Farms Project Area

By Kevan Klingberg

Outreach Specialist,

UW—Discovery Farms Program

In mid April UW-Discovery Farms had an opportunity to present information about our Manitowoc County Project at the 28<sup>th</sup> Annual Wisconsin Lakes Convention in Green Bay.

The main audience attending the WI Lakes Convention is less focused on agriculture, and more interested in water quality, lake property, lake community, invasive species, pier rules, boating, fishing, and habitat preservation. The UW-Discovery Farms Program ties into this conversation as we continue learning how farming operations sit on top of functioning landscapes, interacting with the water cycle, and impacting water quality after it leaves the farm property.

The University of Wisconsin – Discovery Farms Program works with commercial farms, conducting on-farm research to better understand environmental challenges associated with production agriculture. The program takes a real-world approach to find effective and economical solutions to minimize non-point source sediment and nutrient delivery attributed to agriculture.

“Hands Across The Waters” was the theme for this year’s Lakes Convention, focusing on the idea that civic engagement is based on interested people contributing ideas, energy and action, as well as listening to and respecting each other, for effective community improvement. Our UW-Discovery Farms Program has a unique process of working with people – stakeholders interested in profitable agriculture, as well as environmental stewardship. It is within this realm that Julie Maurer, Russ Tooley, Karl Klessig and Kevan Klingberg told the Manitowoc County story.

In 2003, Manitowoc County officials indicated interest in developing a special UW-Discovery Farms project. The Manitowoc County project was initiated as

a proactive and unique collaboration of citizens with agricultural, conservation, and environmental interests. The project features a diverse local advisory committee and seeks input from environmental, production agriculture and rural non-ag resident groups.

Two Manitowoc County dairies (Soaring Eagle Dairy, and Saxon Homestead Farm) volunteered to site a 5-7 year UW research project, monitoring effects of different agricultural best management practices on water quality. Utilizing the expertise of the US Geological Survey, surface water runoff and tile line water is continuously sampled and analyzed for nutrients and sediment on both farms. Both farms are representative of the dairy industry in Manitowoc County. They are family farms, located within a couple miles of Lake Michigan, and have systematically grown in cow numbers and acreage through the generations.

Agricultural producers are part of the local community. As a community, we all share common goals: clean water and air, high quality affordable food, and a strong & thriving economy. Everyone benefits when conscientious efforts are made to maintain clean water. Through the UW-Discovery Farms Program, agriculture has proactively partnered with industry peers, the university, state agencies, environmental groups and local communities to measure the real impact of agriculture upon water quality through on-farm research and implement necessary environmental management practices.

Through this cooperative effort, the Manitowoc County Discovery Farms Project has helped build community trust through personal relationships. Working together, the community now knows that their interest in lakes, water quality and environmental management on agricultural land is actively shared by local dairy farmers and citizen groups. More information about the 2006 WI Lakes Convention presentation can be found at:

<http://www.discoveryfarms.org/special/manitowoc>



## Manure Management—A 4-Letter Word

By Dennis Frame

Co-Director,

UW—Discovery Farms Program

While I'm sure that many readers have their own four letter words for manure (there are a lot of them), the word I choose to use is CARE. It stands for critical, appropriate, regulations and everyone. This column will point out why producers should think about their manure applications and implement their spreading strategies with CARE in mind.

The UW – Discovery Farms Program works on an assortment of commercial livestock operations collecting runoff data at 21 monitoring stations located around Wisconsin. We work on a variety of farms ranging from a 100 cow organic rotational grazing dairy to a 1450 cow confined animal feeding operation. Our program has been working with farms and farmers for the past five years and we are finding that every farming system has strengths and weaknesses. Identification of these environmental challenges will enable us to identify management strategies that enhance farm profitability while protecting the environment.

Data from our monitoring stations indicate that inappropriate manure applications can contribute the vast majority of nutrient (nitrogen and phosphorus) losses for the entire season. When, where, and how producers place manure is important not only in terms of protecting the environment, but also in terms of capturing the income potential from that manure. Therefore, the C in the word CARE stands for critical. There are three critical factors to consider:

- Critical sites – select sites with little potential for manure to runoff into surface water (waterways, streams, wetlands and lakes), groundwater (through fractured bedrock, shallow soils, sink holes, etc.), or into tile drainage systems;
- Critical times – apply manure when the potential for runoff is low (avoid periods when soils are frozen and snow is melting or when soils are at or near saturation); and

- Critical involvement – we are in a period where producers need to be involved in policy decisions and discussions at all levels of government.

The A stands for appropriate and that means that producers need to apply nutrients at the appropriate rates, times and methods to reduce potential losses of nutrients, pathogens, odors and sediment. Each of these four environmental issues needs to be considered in your farming system because adopting a practice that controls one issue at the expense of another is a short term (and unacceptable) solution. For example, adopting practices that control odors while increasing soil erosion and/or phosphorus losses should not be an acceptable farming system.

The R stands for regulations. The fact is that many of the producers I work with or teach began working on their nutrient management plans because of regulations (or the threat of regulations). Once these producers find a farming system that fits their operation and management style, they tend to continue implementing these practices and continue applying nutrients based on sound agronomic and economic recommendations. If the critical sites and time periods are properly identified and the farm implements appropriate application rates and methods, then regulations tend to be less of a threat or challenge to the operation. However, weather plays a critical role in any farming system and, as producers know, you can have the best plan, implement it perfectly, and an unexpected weather event can make you look like a fool. The only thing producers can do to protect themselves from unforeseen weather events is to keep records that document that the practices were appropriate for the conditions and the site.

The final letter of my word is E and it stands for everyone. If we want to improve our streams and lakes, we all need to adopt sound manure management strategies. Big farms generate more manure and usually have manure storage, but in terms of land application everyone who applies manure needs to be aware of the potential for nutrients, pathogens, and sediment to runoff into surface and/or groundwater. Society



## Manure Management—A 4-Letter Word, continued...

will accomplish more in terms of improving water quality if 80% of the producers implement 75% of the recommended practices; than if 15% of the producers are forced to implement 95% of the practices.

Water quality rules and programs should be designed to encourage implementation and adoption. Practices need to be flexible and fit a variety of situations and

farming systems. Farmers are tremendous stewards of the land. They live off the soil and water and generally have the utmost respect and concern for our environment. There are times when the potential for runoff is high; it is during these periods that farmers should look for alternative spreading locations or storage.

## Tile Talk with Discovery Farms—2nd Edition

By Eric Cooley

Outreach Specialist, Eastern Wisconsin

UW—Discovery Farms Program

Welcome to another edition of “Tile Talk.” In the last issue, we talked about the monitoring that Discovery Farms is performing on tile lines at three different private farms, as well as some of the things that we are “discovering” at these sites. We are continuing to observe many of the interesting tile line phenomena that we discussed in the last issue. These phenomena are likely the result of macropore flow to the tiles.

The term macropore flow relates to preferential flow paths formed in the soil that allow for the rapid transfer of water. These preferential flow paths may be the result of soil cracks that form as moisture decreases in the soil, natural soil structure development, as well as root channels from previous growing seasons. These paths may also be caused by earthworms and other organisms that create holes in the soil matrix. Macropore flow reduces the soil’s natural ability to remove contaminants as they flow through the soil matrix.

In an attempt to get producers, crop advisors, manure haulers and governmental staff thinking about the effects of macropore flow to tile lines, Frank Gibbs, Ohio NRCS Resource Soil Scientist, will be performing four “tile smoking” demonstrations throughout Wisconsin. The demonstration consists of using a

blower from a semi engine attached to a small motor to force smoke into the tile lines. This smoke then finds the paths of least resistance to the surface – which often times are macropores. The tile smoking method can also be used to find broken tile, locate tile lines, and evaluate soil health.

Tile smoking demonstrations were performed in Fond du Lac and Manitowoc counties in the summer of 2005. Those in attendance were amazed at how rapidly the smoke billowed up through the cracks, wormholes, and other macropores in the soil.

The focus at the four tile line smoking field days scheduled this June is the use of best management practices that can be used on tile drained land. We highly encourage you to attend one of these field days so that you can see for yourself this amazing demon-



Smoke billows up through the tile line while observers look on at last summer’s tile line demonstration.



## Tile Talk with Discovery Farms—2nd Edition, continued...

stration. For those of you who cannot attend one of the four exhibitions, our next addition of “Tile Talk” will be focused on these applicable management practices and proper tile operation and maintenance.

The four field days are scheduled for:

### **Monday, June 26 in Dodge and Jefferson Counties**

Matt Hanson, Dodge County UW-Extension  
(920)386-3790

Tim Bender, Jefferson County UW-Extension  
(920)674-7295.

### **Tuesday, June 27 in Sauk and Columbia Counties**

Paul Dietmann, Sauk County UW-Extension  
(608)355-3257

Joe VanBerkel, Sauk County LCD  
(608)355-3245

### **Wednesday, June 28 in Clark and Taylor Counties**

Contact: Nick Schneider, Clark County  
(715)743-5121

Jane Reigel, Clark County NRCS  
(715)743-3164

Maria Bendixon, Taylor/Marathon County UW-Extension  
(715)748-3327

### **Thursday, June 29 Shawano and Outagamie Counties**

Tom Anderson, Shawano County UW-Extension  
(715)526-6136

Kevin Jarek, Outagamie County UW-Extension  
(920)832-5121

Tile smoking field days are co-sponsored by Wisconsin Natural Resources Conservation Service, UW-Extension Integrated Conservation Training Program, and UW-Discovery Farms. Exact location information for each event is available by calling the individual UW-Extension agriculture agents or by contacting Kevan Klingberg, UW-Discovery Farms Program at 715-983-2240.

## New Staff Introduction



**Mandy Speerstra** joined UW – Discovery Farms in May 2006 as a Marketing Intern. She grew up on a 150-cow dairy operation just south of Whitehall, Wisconsin. She attends UW – River Falls, majoring in Marketing Communications with an agricultural emphasis and a minor in Agricultural Business.

For the past month, Mandy has been working on a project to outline the CNMP Writing Process for Discovery Farms, and updating and organizing promotional material.

In the future, Mandy would like to work with producers and agricultural businesses to market agriculture. She hopes that her Discovery Farms experience will help her to realize more of the policy and producer issues facing agriculture today.

Mandy enjoys spending time with her friends and family, traveling, and helping out on her family’s farm. “I’ve been living there for over 19 years, and I still learn something new every day,” she says of her agricultural experience.



This newsletter is an information source about the Discovery Farms Program. Regarding the mailing list, call/e-mail 715-983-5668 or jgoplin@wisc.edu.

This newsletter can be found on the web at www.discoveryfarms.org.

Discovery Farms is a program from the University of Wisconsin, and is part of UW-Extension and the College of Agriculture and Life Sciences at UW-Madison. It has a relationship with WASI, as does UW-Platteville's Pioneer Farm.

Discovery Farms receives funding through UW-Extension, UW-Madison, UW-Stevens Point,

UW-River Falls; with help from DATCP, DNR, NRCS, USGS, county Land Conservation Departments and county Extension offices; as well as ag industry organizations, such as WMMB, PDPW, DBA and WPPA.

**Directors :**

..... **Dennis Frame**  
..... 715-983-2257  
..... drframe@wisc.edu  
..... **Fred Madison**  
..... 608-263-4004  
..... fredmad@wisc.edu

**Program Assistant:**

..... **Judy Goplin**  
..... 715-983-5668  
..... jgoplin@wisc.edu

**Outreach Specialists:**

..... **Kevan Klingberg**  
..... 715-983-2240  
..... kevan.klingberg@ces.uwex.edu  
..... **Eric Cooley**  
..... 608.235.5259  
..... eric.cooley@ces.uwex.edu

..... **Tim Popple**  
..... 715-983.5668 ext. 13  
..... timothy.popple@ces.uwex.edu  
..... **Nancy Paul Drummy**  
..... 920.324.9594  
..... ndrummy@powerweb.net

**Data/Information Specialist:**

..... **Susan Frame**  
..... 715.983.5668 ext. 15  
..... susan.frame@ces.uwex.edu

**Student Employees:**

..... **Amber Weisenberger**  
..... amweisenberg@wisc.edu  
..... **Mandy Speerstra**  
..... 715.983.5668 ext 14  
..... mandy.speerstra@uwrf.edu



University of Wisconsin  
Cooperative Extension Trempealeau  
County—Discovery Farms  
PO Box 429, 40195 Winsand Drive  
Pigeon Falls, WI 54760  
Dennis R. Frame

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