

# Winnebago County

**N**itrogen

**O**ptimization

**P**ilot

**P**rogram

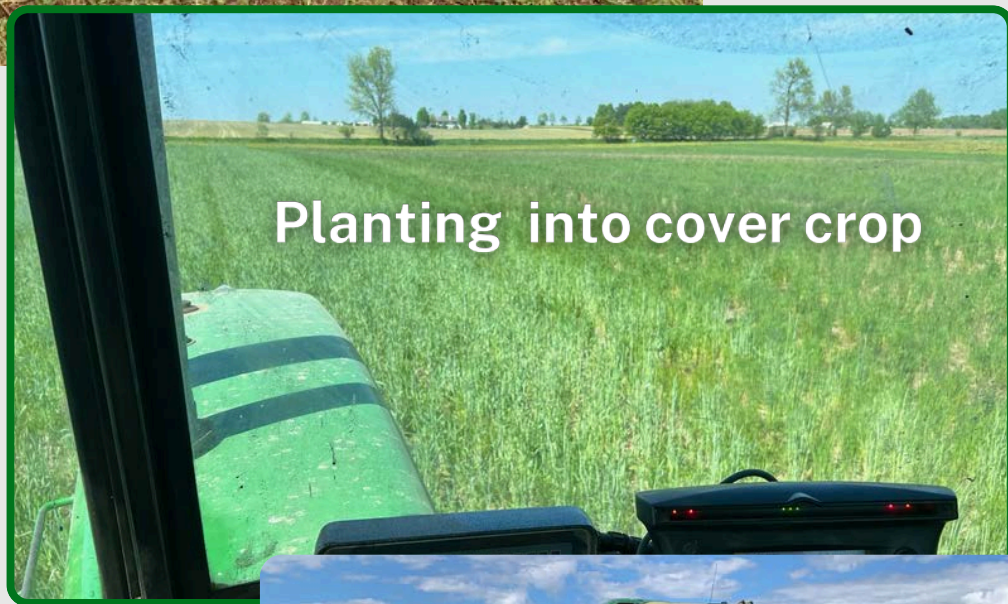




# Jim Luedtke's Field



Very thick cover crop



Planting into cover crop



Nitrogen application



# Dan Rieckmann's Field



Flagged Plot



**MBF Weigh Wagon put to use**



October Harvest



# Brian Krenke's Field



July Corn



October Harvest



# Jamie & Casey Albright's Field



July Corn



Manure Application



January Harvest



# Backsaver Probe In Action



**Jim Luedtke**



# Events



**LAKE WINNEBAGO LAND AND WATER CONSERVATION ASSOCIATION**

**ADAMS  
GREEN LAKE  
WAUPACA**

Greg Baneck, President

**CALUMET  
MARQUETTE  
WAUSHARA**

Chad Casper, Vice-President

**FOND DU LAC  
OUTAGAMIE  
WINNEBAGO**

Brian Haase, Treasurer

**LAKE WINNEBAGO LAND AND WATER CONSERVATION ASSOCIATION  
2025 PLANNING MEETING  
Friday, January 17, 2025**

**Thank You Monica**



**"Nitrogen Optimization Pilot Program: Statewide Overview and Regional Successes"**

Monica Schauer, Research Director, University of Wisconsin- Madison - Nitrogen Optimization Pilot Program



# NOPP Soil Health Field Day





# NOPP Soil Health Field Day (con't)







## Muddy Bottom Farmer's Farmer Social

August 7th was the Farmer Social Field Day. The day started with Jim Luedtke introducing the MBF group and explaining what they hope to accomplish. Monica Schauer (UW Researcher) and Lindsey Rushford (UW-Ext Coordinator) talked about the DATCP Nitrogen Optimization Pilot Program (NOPP), which 3 of the MBF are a part of. The Soil Pit Demonstration came next and was past knee deep with mud and water by the time Jamie Patton (NRCS) got to present. They placed several pallets in the water for Jamie to stand on, however she was still soaked. The Soil Pit explained why this group named themselves the "Muddy Bottom Farmers". Derrick Raspor and Levi Schultz demonstrated the NRCS Rainfall Simulator using local soil types to show the amount of runoff in different tillage systems. About 38 people attended the event and conservation discussion.



# Farmer Social (con't)





## December 17 Program Overview

All talks are in the Kilimanjaro Room unless otherwise noted.

**WWASH**  
Wisconsin Water  
and Soil Health  
CONFERENCE

**2024**

Kalahari Resort,  
Wisconsin Dells

**9:00 – 9:30 REGISTRATION FOR CONFERENCE ATTENDEES**

**9:30 – 9:45 Wisconsin Water and Soil Health Conference Welcome**  
Conference Chair: Daniel H. Smith

**9:45 – 10:45 KEYNOTE 1: Striving Towards a Regenerative Agriculture**  
Keynote speaker: Dr. Lisa Schulte Moore

**10:45 – 11:00 BREAK**

**11:00 – 12:00 Breakout room 3**  
**Insect Pests, Pollinators, and Predators: The Multifaceted Impact of Cover Crops**  
Speakers: Dane Elmquist (Extension)  
John Tooker (Penn State)  
Jess Gambel (USDA-ARS)  
Moderator: Dane Elmquist

**Breakout room 6**  
**Minimizing Nutrient Losses From Manure Applications**  
Speakers: Laura Paletta (Extension)  
Aaron Augustian (Farmer)  
Becky Larson (UW-Madison)  
Moderator: Laura Paletta

**Breakout room 4**  
**Highs and Lows on the Road to Success in Conservation**  
Speakers: David Roche (Farmer)  
Jenny Seifert (Extension)  
Anne Marie Nardi (Extension)  
Moderator: Guolong Liang

**12:00 – 1:00 LUNCH**

**1:00 – 2:00 KEYNOTE 2: On-Farm Soil and Water Quality Management in Northeast Wisconsin**  
Keynote speaker: Nick Guilette

**2:00 – 2:30 BREAK WITH REFRESHMENTS**

**2:30 – 3:30 FARMER PANEL: Insights into On-Farm Nitrogen Research**  
Panelists: Tryston Beynes, Jim Luedtke, Isaac Isherwood, Tom Novak  
Moderator: Lindsey Rushford

**3:30 – 3:45 BREAK AND NETWORKING**

**3:45 – 4:45 Breakout room 3**  
**Steps for Success When Starting Your Cover Crop Journey**  
Speakers: Matt Brugger (Till Agronomy)  
Barry Bubolz (USDA-NRCS)  
Jamie Patton (USDA-NRCS)  
Moderator: Jamie Patton

**Breakout room 6**  
**Leveraging Farmer-Led, Peer-to-Peer Learning Through the WI Demo Farms Network**  
Speakers: Marlin Skidmore (University of Illinois at Urbana-Champaign)  
Jacob Brey (Farmer)  
Whitney Prestby (Extension NRCS)  
Moderator: Emily Zimmerman

**Breakout room 4**  
**Using Your Voice for Conservation**  
Speakers: Derek Orth (WFBF)  
Tina Hinchley (WI Farmers Union)  
Christine Johnson (IL Stewardship Alliance)  
Joseph Childs (Geosil Works)  
Moderator: Chuck Andersen

**4:45 – 5:00 BREAK AND NETWORKING**

**5:00 – 5:30 ROUNDTABLE DISCUSSION 1**

**5:30 – 5:45 BREAK AND NETWORKING**

**5:45 – 6:30 ROUNDTABLE DISCUSSION 2**

**6:30 DINNER** (See page 6 for details and map)

# Wisconsin Water and Soil Health Conference

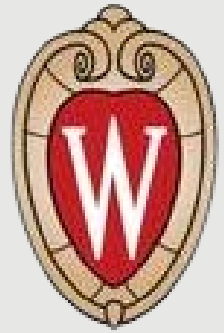
Jim Luedtke was on the Farmer Panel for Insights into On-Farm Nitrogen Research





# NOPP

## In the News





# NOPP Project Spotlight



## May 7, 2024 - Albright Brothers

The Albright Brothers LLC, in collaboration with Winnebago County LWCD's Sheila Smith and Emily Dufek and Extension's Kevin Jarek, is a 2024 Nitrogen Optimization Pilot Program (NOPP) grant recipient! The team is investigating nitrogen rates with solid manure. Read on to see how the idea transpired!

A long-time family "discussion" brought the Albright Brothers to the Nitrogen Optimization Pilot Program. "How much nitrogen do we need to use with different rates of manure?" They started using different conservative rates of nitrogen with mixed results. Then came the next wrench in the question. A 32% applicator was used which was accidentally set at a much higher rate than usual, and there was a very noticeable yield increase. But what about the rate of return? Jamie Albright hopes the Nitrogen Optimization Pilot Program will answer the family "discussion" and assist other farmers with the same question.



# NOPP Project Spotlight



**July 9, 2024 - Muddy Bottom Farmers**

**Muddy Bottom Farmers, a producer-led watershed group, is a 2024 Nitrogen Optimization Pilot Program grant recipient!**

**Three participating farms are investigating the economical rate of nitrogen and the impacts of cover crops. Pictured are producer Jim Luedtke and collaborators Sheila Smith and Emily Dufeck, both of the Winnebago County Land & Water Conservation Department. Not pictured are producers Brian Krenke and Dan Rieckmann.**

**Jim Luedtke shares how this project was born and where he's hoping it'll take the Muddy Bottom Farmers: "An attendee at a past event asked us if we were seeing any decrease in yields with planting cover crops and nobody could really answer that question. And there's been a lot of talk that the cover crop ties up nitrogen and can hamper your yield so we're doing this study to find out if cover crops have a detrimental effect on your cash crop. Because of this research, now we've had a few other farmers that would like to get involved in our group. So for next year, we're looking at doing a Return on Investment (ROI) study with less sampling just to get some of the members looking at the numbers because, we've got to make money at some point in time"**

**As for the three farms involved in the current NOPP project, Luedtke explains that they were each drawn in with slightly different goals.**

**"Like, for me, as you look across the trial in late-June, as the cover crop changes, the growing crop changes. But, what effect will that have later when it's six feet tall and all looks the same? It all depends on what our yields are at the end. Dan was interested in doing it to investigate more management practices so we started at this level to learn how to do the work and then we'll probably do more as we go on. Brian was interested in it more from a no-till standpoint because we've been doing it for so long and everybody talks about the carbon to nitrogen ratio, and we don't understand that at all. Some of this explains that, if we have trash on top, how do we get that nitrogen level to the right level so that the decomposing materials get broken down."**





# Fox Wolf Watershed Alliance

## 2024 Summer Basin Buzz Article

### Nitrogen Optimization Pilot Program

Emily Dufek and Sheila Smith,  
Winnebago County Land and Water



Winnebago County Land and Water Conservation Department (LWCD) was approached by four local farms for assistance writing grants for the Nitrogen Optimization Pilot Program (NOPP). The NOPP is a 2-year grant through the Department of Ag, Trade, and Consumer Protection (DATCP) that provides funding to farmers to encourage them to develop innovative approaches to optimizing the application of commercial nitrogen. Each field is a standalone research study that uses statistical approaches to address the questions the farm may have. The goal of this program is to reduce nitrates in surface and groundwater and improve the farmer's bottom line.

The farms received both of the grants they applied for! One grant was awarded to the Albright Brothers NRCS Demonstration Farm, and the other grant was awarded to Muddy Bottom Farmers Producer-Led Group which included Jim Luedtke, Brian Krenke, and Dan Rieckmann.

#### Combining Commercial Nitrogen and Steer Manure

The Albright Brothers, a third-generation farm, has had a long-time family "discussion" which brought them to the NOPP - "How much nitrogen do we need to use with different rates of our steer manure?" They started using different conservative rates of nitrogen with mixed results. Then a 32% applicator was accidentally set at a much higher rate than usual, which resulted in a noticeable yield increase. But what about the rate of return? The Albright Brothers are planning four rates of nitrogen and two rates of manure and hope the NOPP will answer the family "discussion" and assist other farmers with the same question.



The Albright family



Brian Krenke



Dan Rieckmann

#### Commercial Nitrogen Rates

Agricultural producer Brian Krenke, a third-generation farmer, and Dan Rieckmann, a fourth-generation farmer are also participating. Brian and Dan are interested in the results of the nitrate tests to find out how much nitrate is in the soil prior to planting and at the end of the season. Each has set up their plots to look at the optimum application rate of nitrogen of a corn crop. Brian will be comparing four rates of nitrogen 0, 25, 45, and 70 gal/ac. Dan will be applying nitrogen at rates of 0, 30, 60, and 90 gal/ac. At the conclusion of this grant, both producers are hoping to find the rate of application that maintains yield, while not losing nitrogen to the atmosphere or through leaching.

#### Cover Crops and Nitrogen Availability

Agricultural producer Jim Luedtke is a fourth-generation farmer and is the president of the Muddy Bottom Farmers Producer-Led Group. He is also a NRCS Demonstration Farm. Jim became interested in the NOPP grant when hearing about it through several ag meetings and talking about it with a friend who participated in the program last year. Jim has been no-tilling for several years and has been trying various cover crop mixes. Jim has some knowledge of the effects cover crops have on nitrogen but would like to test his understanding. As part of this grant, Jim has set up a plot where he will apply four nitrogen rates on strips with cover crops and strips without cover crops. The focus of his project is to learn the point at which the cost of nitrogen transcends its benefits and the effects of cover crops on nitrogen availability.

As part of the research, multiple tests will be run on each of the plots. Regular soil tests will be run on all fields. In order to track the nitrogen in the soil, pre-plant, pre-sidedress, and post-nitrate samples will be taken at one and two-foot depths. Tissue samples will be taken on the corn at tassel to confirm macro and micronutrients, and at harvest, stalk nitrate and grain nitrogen assessment samples will be taken. The Albrights will be manure sampling as they spread, and Jim Luedtke will do a biomass test of the cover crops in the spring before planting.

It has been a busy spring trying to get the plots planted and soil and nitrate samples taken in a timely fashion. We look forward to the results we get from the testing and hope this leads to a better understanding of the nitrogen being applied and where it is being utilized for these farms.





UPPER FOX-WOLF

Demonstration Farms Network

# Upper Fox-Wolf Demonstration Farms Network 2024 Year End Report

## SOIL HEALTH FIELD DAY

August 27, 2024

For this field day, participants gathered at Shane Kallas's field to learn about cover crops and no-till farming. Shane, a participant in the Winnebago County "Soil Health Challenge" Program, has been using these practices for six years to boost soil health and improve water quality. He shared his experiences, noting better water infiltration and smoother planting compared to conventional fields.

Jamie Patton used a soil pit to share insights on improved soil structure from Shane's practices. Levi Schultz demonstrated the effects of rainfall on different farming systems using the Rainfall Simulator. Monica Schauer updated

attendees on the Nitrogen Optimization Pilot Programs (NOPP), and UFW Demo Farmer, Jamie Albright is also part of the Nitrogen Optimization Pilot Program. Participants learned about research conducted in Jamie's NOPP plot and its impact on soil health. Jamie was on-site for questions and discussion. Matt Brugger represented the Upper Fox-Wolf Demonstration Farm Network, highlighting our conservation efforts.

This field day was co-hosted with the Muddy Bottom Farmers, Winnebago County Land & Water Conservation, Natural Resources Conservation Service, and University of Wisconsin-Madison Division of Extension. In all, 29 people attended.







# 2024 Year End Report (con't)

## MUDDY BOTTOM FARMERS GROUP EVENTS

### Farmer Cookout + No-Till Conversation June 10, 2024

This year, we partnered with the Muddy Bottom Farmers group, of which Jim Luedtke (one of our new demo farmers) is a part of. The Muddy Bottom Farmers is the first Producer-Led Watershed Group in Winnebago County. This group consists of 30 local producers who are dedicated to improving soil health and water quality while maintaining sustainable and profitable farming operations. They aim to foster a strong community connection between the public and producers.

Their first event this year was a farmer cookout. It focused on bringing area farmers together for fellowship, food, and conversations around no-till practices in the area. About 17 people attended.



### Farmer Social + Field Day August 7, 2024

At the second Muddy Bottom Farmer's field day, attendees enjoyed an engaging afternoon filled with soil insights, nitrogen optimization, and farmer fellowship. Jamie Patton provided an in-depth exploration of the fascinating world of soil at the Soil Pit. Experts Lindsay Rushford and Monica Schauer led a session on nitrogen optimization, sharing valuable knowledge and techniques. Derrick Raspor from the demo farm network demonstrated the rainfall simulator, offering participants a hands-on experience to view how soil management practices affect water infiltration and runoff. The event was designed to be both informative and interactive, allowing farmers to gain practical knowledge and network with peers.

This event was co-hosted by the producer-led Muddy Bottom Farmers group, Winnebago County, and Upper Fox-Wolf Demo farms. About 38 people attended this event.





# We Are Green Bay

## Life on the Farm with Jeremy Hansen



<https://www.wearegreenbay.com/midwest-farm/life-on-the-farm-nitrogen-optimization-pilot-program/>



# **CONTACT INFORMATION**

## **Farmers**



**Krenke Farms  
Luedtke's Dreamhaven Cattle  
Rieckmann Farms**  
**[www.facebook.com/MuddyBottomFarmers](https://www.facebook.com/MuddyBottomFarmers)**



**Albright Brothers Farm**  
**[www.facebook.com/FoxWolfDemo](https://www.facebook.com/FoxWolfDemo)**

## **Collaborators**



**Extension**

**Division of Extension  
Kevin Jarek, Crops and Soils Educator  
Outagamie and Winnebago Counties  
920-832-4763**  
**[https://outagamie.extension.wisc.edu/  
agriculture/crops-soils/](https://outagamie.extension.wisc.edu/agriculture/crops-soils/)**



**Winnebago County**  
*Land & Water Conservation Department*

**Winnebago County LWCD  
Sheila Smith, Agronomist  
Isaac Whiting, Watershed Specialist  
(920) 232-1950**  
**<https://www.co.winnebago.wi.us/lwcd>**  
**[www.facebook.com/WinnebagoLWCD](https://www.facebook.com/WinnebagoLWCD)**