



**Crop Pest Management Short Course  
&  
Minnesota Crop Production Retailers Trade Show**

**December 12-14, 2023  
Minneapolis Hilton Hotel**

**There is No Back  
to the Future**

**Program & Exhibitor Guide**

# WELCOME to the 72<sup>nd</sup> Annual Crop Pest Management Short Course and MCPR Trade Show

## There is No Back to the Future

While Marty McFly was able to correct his past mishaps by traveling back in time in the iconic DeLorean, the reality of undoing the past is fraught with challenges. New discoveries and technologies often take much longer to reach the field than we think, plan, or hope for. Meanwhile, changes in societal attitudes and, as a consequence, regulatory frameworks compound the technical challenges.

The broader/underlying goal over the next three days, let's explore two ideas. First, there are no new 'silver bullet' technologies on the horizon to solve the 'sins' of the past. Second, crop pest management, especially regarding resistance, with the current tools, is complex and fraught with challenges.



### MCPR Board Chair's Message

I am excited to welcome you to one of the most anticipated events in the agricultural industry. The CPM Short Course and MCPR Trade Show brings together producers, suppliers, and industry experts from all over to share knowledge, showcase innovative products and services and discuss the future of agriculture. Over the next few days, you will have the opportunity to explore a wide range of exhibits featuring the latest technologies, products, and equipment that are revolutionizing our industry. Engage with industry-leading companies and suppliers who are at the forefront of technological advancements and discover how their innovative solutions can streamline your operations, increase productivity, and optimize yields.

I hope you take full advantage of the networking opportunities available at this event; connect with fellow professionals, exchange ideas, and forge valuable partnerships that can drive your business forward. In addition to the extensive exhibition space, our conference program offers a comprehensive lineup of speakers which delve into the most pressing issues facing the agricultural sector. Gain valuable insights from industry experts, learn about the latest trends and best practices that will shape the future of agriculture. Thank you for joining us at the 2023 CPM Short Course and MCPR Trade Show. Let's come together to celebrate the achievements of the industry, inspire innovation, and shape the future of production agriculture. Enjoy your time at the event!

Rick Walker  
*Chair, MCPR Board of Directors*



### Dean's Message

University of Minnesota research-based information drives good decisions about crop production. University of Minnesota Extension's Crop Pest Management (CPM) Short Course and the Minnesota Crop Production Retailers (MCPR) Trade Show are an excellent opportunity to learn the latest research into the complex issues surrounding agriculture today. Through educational presentations and informal networking, crop decision-makers have the opportunity to learn and make connections with their colleagues. I hope you enjoy the 2023 event and trade show and gain practical, useful information for the 2024 growing season.

Bev Durgan  
*Dean, University of Minnesota Extension*

## Trade Show Hours

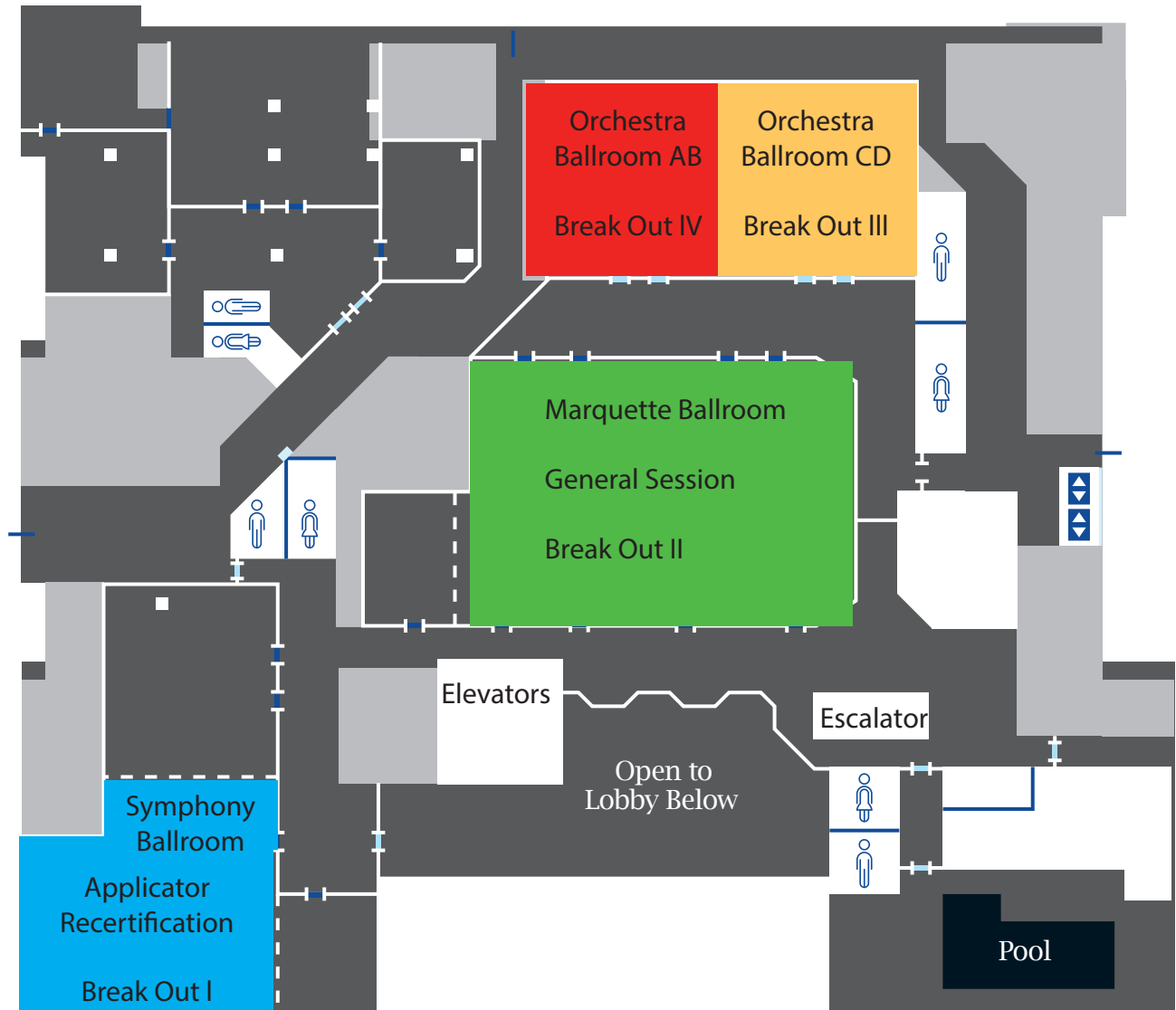
- Tuesday, December 12<sup>th</sup> – 3:00 pm - 6:30 pm
- Wednesday, December 13<sup>th</sup> – 9:00 am - 5:00 pm (includes breaks and lunch)
- Thursday, December 14<sup>th</sup> – 9:00 am - 11:00 am (includes am break)

## Registration Hours

Tuesday – 8:00 am - 6:30 pm      Wednesday – 6:30 am - 5:00 pm      Thursday – 7:00 am - 11:00 am

# Hotel Floor Map

## Second Level



### FLOOR MAP KEY

- Applicator Recertification/Break Out I
- General Session/Break Out II
- Break Out III
- Break Out IV

# Schedule at a Glance

## Tuesday, December 12, 2023

REGISTRATION OPENS AT 8:00 AM - THIRD LEVEL OF MINNEAPOLIS HILTON HOTEL

	PESTICIDE APPLICATOR RECERTIFICATION SYMPHONY BALLROOM	MCPR PLENARY SESSION MARQUETTE BALLROOM	TSP SESSION GALLERY (1st Floor)	TRADE SHOW MINNEAPOLIS GRAND BALLROOM 3rd Floor
10:00 AM			TSP Session	
1:00 PM		<b>Welcome</b> <i>Rick Walker, MCPR Board Chair and Commissioner Thom Petersen</i>		
1:15 PM		<b>Fertilizer Market Overview</b>  <i>Josh Linville</i>  <i>Vice President- Fertilizer, StoneX Financial Inc.- FCM Division</i>		
1:30 PM	<b>Check in for Pesticide Applicator Recertification Category H</b>  <i>*Must be registered for Pesticide Applicator Recertification Category H to attend this session.*</i>			
2:00 PM		CEU= 1 PD		
2:15 PM	<b>Pesticide Applicator Recertification</b>	<b>High Impact Meteorology in Production Agriculture</b>  <i>Eric Snodgrass</i> <i>Nutrien Ag Solutions Sr. Science Fellow and Principal Atmospheric Scientist</i>		
3:00 PM		CEU= 1 CM		
3:15 PM		<i>Break</i>		
3:30 PM		<b>MCPR Annual Meeting</b>		
4:00 PM				
4:45 PM				Exhibit Hall Opens - Ice Breaker Reception
6:30 PM				<b>Exhibit Hall Closes</b>



# Schedule at a Glance

## Wednesday, December 13, 2023

REGISTRATION OPENS AT 6:30 AM - THIRD LEVEL OF MINNEAPOLIS HILTON HOTEL					
	PESTICIDE APPLICATOR RECERTIFICATION  SYMPHONY BALLROOM	GENERAL SESSION CROP PEST MANAGEMENT SHORT COURSE  MARQUETTE BALLROOM			TRADE SHOW MINNEAPOLIS GRAND BALLROOM 3rd Floor
7:00	Check in for Pesticide Applicator Recertification				
7:30	*Must be registered for Pesticide Applicator Recertification to attend these sessions.*				
8:00		There's No Easy Button  Janet Hou, Regulatory Affairs Lead, BASF  CEU= 1 PM			
9:00		The Conservation Agronomy Nexus  Peter Mead/ Amy Robak, Agriculture Project Manager, The Nature Conservancy/ Lead Environmental Specialist, Centra Sota Cooperative  CEU=1 CM			
		BREAK			
10:00		How to Not Lose a War Against Pests: a Strategy in 3 Parts  Joshua Stamper, Minnesota Department of Agriculture  CEU= 1 CM			
11:00		Certified Crop Advisers 25 Year Recognition			EXHIBIT HALL OPENS
11:15	BREAK AND OPPORTUNITY TO VISIT EXHIBIT FLOOR				
12:00	LUNCH IN BALLROOM				
	PESTICIDE APPLICATOR RECERTIFICATION SYMPHONY BALLROOM	CONCURRENT SESSION II MARQUETTE BALLROOM	CONCURRENT SESSION III ORCHESTR BALLROOM CD	CONCURRENT SESSION IV ORCHESTRA BALLROOM AB	
12:45	Check in for Pesticide Applicator Recertification				
1:00	*Must be registered for Pesticide Applicator Recertification to attend these sessions.*	Beat Weeds. Stop Weeds.  Dr. Tom Peters NDSU  CEU= 1 PM	Is There a Need to Modernize Fertilizer Guidelines?  Dr. Dan Kaiser U of M  CEU= 1 NM	Tar Spot and Other Leaf Diseases of Corn in Minnesota: Risks and management  Dr. Dean Malvick U of M  CEU= 1 PM	
1:55		Kernza: Challenges and Opportunities for Agriculture in the Upper Midwest  Dr. Jacob Junger/U of M Jade Estling/Estling Farms Inc. CEU= 1 CM	Ten-year Revision to Minnesota's Nutrient Reduction Strategy  David Wall MPCA CEU= 1 SW	Tar Spot and Other Leaf Diseases of Corn in Minnesota: Risks and management  Dr. Dean Malvick U of M CEU= 1 PM	
2:45		BREAK			
3:15		Fungicide Resistance Management  Dr. Ashok Chanda U of M CEU= 1 PM	Is There a Need to Modernize Fertilizer Guidelines?  Dr. Dan Kaiser U of M CEU= 1 CM	Soybean Stress and Yield Accrual  Dr. Seth Naeve U of M CEU= 1 CM	
		CONCURRENT SESSION I SYMPHONY BALLROOM			
4:10	Kernza: Challenges and Opportunities for Agriculture in the Upper Midwest  Dr. Jacob Junger/U of M Jade Estling/Estling Farms Inc. CEU= 1 CM	Current IRM for Lepidopteran and Coleopteran Insect Pests in Corn  Dr. Fei Yang U of M CEU= 1 PM	Ten-year Revision to Minnesota's Nutrient Reduction Strategy  David Wall MPCA CEU= 1 SW	Soybean Stress and Yield Accrual  Dr. Seth Naeve U of M CEU= 1 CM	
5:00	END				EXHIBIT HALL CLOSES

# Schedule at a Glance

## Thursday, December 14, 2023

REGISTRATION OPENS AT 7:00 A.M. - THIRD LEVEL OF MINNEAPOLIS HILTON HOTEL					
	CONCURRENT SESSION I SYMPHONY BALLROOM	CONCURRENT SESSION II MARQUETTE BALLROOM	CONCURRENT SESSION III ORCHESTRA BALLROOM CD	CONCURRENT SESSION IV ORCHESTRA BALLROOM AB	TRADE SHOW
8:00	<p>Climate and Agriculture in Minnesota – Issues, Impacts, and a Look Ahead.</p> <p><i>Dr. Dennis Today</i> USDA-ARS</p> <p>CEU= 1 SW</p>	<p>Gene/Genome Editing - what is it, how does it differ from GMOs, and what are its implications for agriculture?</p> <p><i>Dr. Keith Merill</i> Bayer</p> <p>CEU= 1 PD</p>	<p>Manure Matters – Avoid these common mistakes to get the best bang for your buck</p> <p><i>Dr. Melissa Wilson</i> U of M</p> <p>CEU = 1 NM</p>	<p>Five Years of Minnesota Specific Dicamba Restrictions: Lessons Learned</p> <p><i>Dr. Rajinder Mann/MDA</i> CEU = 0.5 PM</p> <p>Multiple-Resistant Waterhemp in Minnesota: Now What?</p> <p><i>Dr. Debalin Sarangi/ U of M</i> CEU = 0.5 PM</p>	MINNEAPOLIS GRAND BALLROOM 3rd Floor
8:55	<p>Understanding &amp; Using Minnesota Future Climate Projections</p> <p><i>Katie Black</i> U of M</p> <p>CEU= 1 SW</p>	<p>Sensible Soil Health</p> <p><i>Dr. Andrew McGuire</i> Washington State University</p> <p>CEU= 1 SW</p>	<p>Can Cover Crops Help Get Us Out of the Weeds?</p> <p><i>Liz Stahl</i> U of M</p> <p>CEU = 1 NM</p>	<p>Managing Insecticide Resistant Soybean Aphids</p> <p><i>Dr. Bob Koch</i> U of M</p> <p>CEU = 1 PM</p>	EXHIBIT HALL OPENS
9:45	BREAK				
10:15	<p>Understanding &amp; Using Minnesota Future Climate Projections</p> <p><i>Katie Black</i> U of M</p> <p>CEU= 1 SW</p>	<p>Sensible Soil Health</p> <p><i>Dr. Andrew McGuire</i> Washington State University</p> <p>CEU= 1 SW</p>	<p>Can Cover Crops Help Get Us Out of the Weeds?</p> <p><i>Liz Stahl</i> U of M</p> <p>CEU = 1 PM</p>	<p>Five Years of Minnesota Specific Dicamba Restrictions: Lessons Learned</p> <p><i>Dr. Rajinder Mann/MDA</i> CEU = 0.5 PM</p> <p>Multiple-Resistant Waterhemp in Minnesota: Now What?</p> <p><i>Dr. Debalin Sarangi/ U of M</i> CEU = 0.5 PM</p>	EXHIBIT HALL CLOSING
11:10	<p>Climate and Agriculture in Minnesota – Issues, Impacts, and a Look Ahead.</p> <p><i>Dr. Dennis Today</i> USDA-ARS</p> <p>CEU= 1 SW</p>	<p>Gene/Genome Editing - what is it, how does it differ from GMOs, and what are its implications for agriculture?</p> <p><i>Dr. Keith Merill</i> Bayer</p> <p>CEU= 1 PD</p>	<p>Manure Matters – Avoid these common mistakes to get the best bang for your buck</p> <p><i>Dr. Melissa Wilson</i> U of M</p> <p>CEU = 1 NM</p>	<p>Managing Insecticide Resistant Soybean Aphids</p> <p><i>Dr. Bob Koch</i> U of M</p> <p>CEU = 1 PM</p>	
12:00	END				

## CRAIG SALLSTROM MEMORIAL SCHOLARSHIP RAFFLE

Purchase a \$20 raffle ticket for a chance  
to win a

\$1500

**SCHEELS®**

Gift Card

*\*Please see a Board member or the registration desk to purchase. Drawing will be held on Thursday, December 14<sup>th</sup> at 10:30 am on the Trade Show floor. You do not need to be present to win.\**

## MCPR PAC SILENT AUCTION



Visit the MCPR booth #609 to view  
silent auction items.



The bidding on auction items will be  
available during trade show hours  
on Tuesday, December 12<sup>th</sup> and  
Wednesday, December 13<sup>th</sup> until 4:45  
(trade show closes at 5:00).



Each auction item will have a  
starting bid. The highest bid made  
during the allotted time wins. Bids  
will be submitted on bid sheets,  
visible to all future bidders.



In order to bid on an item, you  
must bid at least \$5.00 more than  
previous bids. Items will be won  
by a single bidder paying a single  
price for the entire item.



The winning bidders will be posted at  
the registration desk, and items will  
be available for pickup on Thursday,  
December 14<sup>th</sup> until 11 AM.

Any prizes not claimed will be mailed to  
the winning bidders upon payment for  
the amount bid, plus postage.



Payment can be made via the  
online MCPR Crop PAC Donation  
Portal **OR** personal check.



# Abstracts

## 2023 Crop Pest Management Short Course

December 12<sup>th</sup> Starting at 10:00 am

TSP Session – Gallery (1st floor)

### **8:00 am Technical Service Provider Training**

This training will present the latest information from the USDA-Natural Resources Conservation Service (USDA-NRCS) on nutrient and pest management to TSPs certified in these categories in Minnesota. This session will focus on the latest tips for documentation that is needed for Nutrient Management (590) and Pest Management Conservation System (595) in the EQIP and CSP programs. The session will also include a segment on various Conservation Plan Activities (CPAs), Design and Implementation Activities (DIAs), and Conservation Evaluation and Monitoring Activities (CEMAs) associated with nutrient and pest management. Hear the latest information along with other updates on the TSP website, certification and recertification.

### **Pesticide Applicator Re-Certification**

**December 12th, 2 PM – 4:45 PM and December 13th, 7:30 AM - 4 PM**

These MDA-approved sessions are for applicators that need recertification credit in Categories A (Core), C (Field Crop Pest Management), and/or H (Seed Treatment). Workshop topics will include insect, disease, and weed updates, new pesticide safety topics, prevention of off-target movement of pesticides, and more.

- Category A + H: Attend December 12th from 2 pm to 4:45 pm and December 13th recertification sessions from 7:30 am to 11:15 am.
- Category A + C: Attend all December 13th recertification sessions (7:30 am to 4 pm).
- Category A + C + H: Attend all December 12th and December 13th recertification sessions.

## Plenary Session

December 12<sup>th</sup> Rooms: Marquette Ballroom

### **1:15 pm Fertilizer Market Overview**

*Josh Linville, StoneX Financial Inc.*

While the worst of the Black Swan/record high fertilizer price period appears to be behind us, there remains PLENTY of reasons to believe that volatility will remain the only constant in an ever changing fertilizer world. Josh Linville, Vice President – Fertilizer for StoneX, will give an updated look at how the market came to be as well as what is being watched going forward.

### **2:15 pm High Impact Meteorology in Production Agriculture**

*Eric Snodgrass, Nutrien Ag Solutions*

Weather risk in production agriculture is ubiquitous and the successful execution of a crop plan requires accurate weather forecasting and analysis. We plan our operations based on weather averages and our experiences over recent growing seasons, but each year presents a new set of weather challenges. In this talk we will focus on how to use the abundance of weather data to stay ahead to disruptive weather events. We will talk about the limits of predictability for weather events and learn about the resources available to monitor changes in the longer-range forecasts. We will review the major lessons from the 2023 growing season and talk about the high impact events like widespread hail damage, Midwest and Southern US Drought, and the hurricane season. We will talk about the big seasonal drivers like El Niño and La Niña discuss the outlook for the next 3-9 months. We will finish with a discussion about the 2023-24 growing season in South America, which competes directly with major US commodity crops.

## **General Session**

December 13<sup>th</sup>

Rooms: Marquette Ballroom

### **8:00 am**

### **There's No Easy Button**

*Janet Hou, BASF*

There's no doubt about it – farming is an incredibly rewarding but hard job. It'd be great if some aspects of farming were just easier. Unfortunately, bringing effective crop protection solutions isn't one of them. This talk will go over just why aren't manufacturers bringing more new active ingredients and modes of action to the market at the pace we've experienced decades ago. We'll also talk about what challenges the current regulatory environment in the states and at the national level bring to new innovations and how chemical manufacturers are responding and adapting.

### **9:00 am The Conservation Agronomy Nexus**

*Peter Mead (The Nature Conservancy) / Amy Robak (Centra Sota Cooperative)*

There is a growing movement in agribusiness, government, and non-profit organizations recognizing the value of private-public partnerships when it come to maintaining farm profitability and achieving environmental outcomes. At the same time, Minnesota is awash with unprecedented state and federal funding for conservation practices such as cover crops, reduced till, strip-till, no-till, nutrient management, conservation crop

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rotations, and more.

Amy and Peter will discuss one example of a private-public service-based model delivering technical and financial assistance to grower customers and the value to each partner, provide an overview of the services and resources available, and discuss opportunities for building similar programs and partnerships across Minnesota.

## **10:00 am How to Not Lose a War Against Pests: a Strategy in 3 Parts**

*Joshua Stamper, Minnesota Department of Agriculture*

Step 1: Don't run out of ammunition

Step 2: Don't fight a ground war against an insurgency

Step 3: Public opinion Matters

## **Concurrent Sessions I & II** **Symphony and Marquette Ballroom**

### **1:00 pm Beat weeds. Stop weeds**

*Dr. Tom Peters, NDSU*

You have heard the saying, 'Back to the Future.' What does that phrase really mean? It means returning to a previous time period or revisiting time proven solutions. Returning to time proven methods to control weeds may not be an option since many of our most troublesome weeds are herbicide resistant weeds. The solution is to get ahead of weeds by creating an everchanging blueprint for weed control.

Weed management during the Roundup Ready era was simply seeing and spraying to control weeds or conducting purposeful activity. Environment didn't matter because Roundup was effective when it was hot, cold, dry, or wet. Roundup doesn't carryover so rotational interval wasn't an important consideration. Today a strategic plan for weed management is ever critical. And the best strategic plan has to be ever-changing. The presentation will consider components of a strategic plan for controlling weeds TODAY. The presentation will focus on developing a winning game plan for 2024 including: a) Diversity is Best; b) Record Keeping; c) Zero Tolerance for Weeds escaping and making Seed; and d) Effective Weed Control Results Signals it's Time for Change.

### **1:55 and 4:10 pm Kernza: Challenges and Opportunities for Agriculture in the Upper Midwest / A Decade of Kernza**

*Dr. Jacob Junger (U of M) / Jade Estling (Estling Farms, Inc)*

Kernza(R) is a new perennial grain crop that has potential to increase grower profitability while providing essential environmental benefits such as improved soil health and reduced nitrate leaching. Although food companies and

breweries are using Kernza in their products, the market has been very unreliable. Increasing yields could improve the market situation. This presentation will provide the audience with updates on the progress on Kernza variety development, agronomic advancements, and upcoming state and federal cost-share programs and other financial incentives to make Kernza economically viable for Minnesota producers.

### **3:15 pm Fungicide Resistance Management**

*Dr. Ashok Chanda, U of M*

Fungal diseases are a major threat to crop yields and global food security, but fungicides, which have long been the primary line of defense, are becoming less effective due to the increasing prevalence of resistant fungal strains. To address this challenge, the agricultural community must adopt new and more proactive management strategies. This talk will provide a comprehensive overview of fungicide resistance, including the mechanisms behind its development, the real-world consequences for crop health, and practical measures for mitigation. It will also cover the importance of integrated pest management (IPM) techniques, fungicide rotation and diversification, and responsible application practices. The goal of this talk is to equip farmers, agronomists, and researchers with the knowledge and tools they need to manage fungicide resistance effectively and sustainably, ensuring the long-term health and productivity of our crops and food supply.

### **4:10 pm Current IRM for Lepidopteran and Coleopteran Insect Pests in Corn**

*Dr. Fei Yang, U of M*

Transgenic *Bacillus thuringiensis* (Bt) crops producing Cry and Vip3Aa proteins are the most important contribution of biotechnology to date for control of some major lepidopteran and coleopteran pests in agriculture. Like chemical insecticides, widespread adoption of Bt crops has placed a strong selection pressure on the insect populations, resulting in the evolution of insect resistance to Bt proteins. There are many factors that affect the rate of evolution of insect resistance to Bt crops, including resistance allele frequency, the concentration of Bt protein in the plants, cross-resistance, complete/incomplete resistance, and fitness costs associated with resistance. Implementation of effective insect resistance management (IRM) strategies is critically important to delay insect resistance. Currently, the high dose/refuge and gene-pyramiding approaches are the two main IRM strategies used to combat evolution of insect resistance. In this presentation, we will talk about recent studies of European corn borer, corn earworm, and corn rootworms to different insecticides, Bt proteins and RNAi technologies.

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## Concurrent Sessions III & IV

**December 13<sup>th</sup>**      **Rooms: Orchestra Ballroom CD and AB**

**1:00 & 3:15 pm**      **Is there a need to modernize fertilizer guidelines?**

*Dr. Dan Kaiser, U of M*

It is easy to see how advancements in technology in the areas of equipment, seed and chemicals, and information gathering have quickly changed how fields and crops are managed over the past two decades. Soil testing, however, is still based on principles used to develop procedures more than a half century ago. One major advancement was the ability to collect grid soil samples but the analysis side of the equation as well as the data provided to decision makers has remained unchanged for years. Does the information provided through soil testing meet with needs for current farming operations and if not, what information needs to be provided for the future to ensure nutrients are being managed economically and with minimal risk to the environment. Recent research from Minnesota will be discussed to identify where steps are being made to provide more information to growers related to crop response to P and K and where research may help to tailor guidelines on a more site-specific manner to better address differences from one field to another.

**1:00 & 1:55 pm**      **Tar Spot and other leaf diseases of corn in Minnesota: Risks and management**

*Dr. Dean Malvick, U of M*

This session will include discussion of the major corn leaf diseases in Minnesota, with a focus on risks and management of tar spot using resistance and fungicides.

**1:55 & 4:10 pm**      **Ten-year revision to Minnesota's Nutrient Reduction Strategy?**

*David Wall, MPCA*

Minnesota has hundreds of nitrogen and phosphorus related impairments to lakes, rivers and drinking water. Additionally, Minnesota has committed to work with other states and provinces to do its part to help reduce nutrient loads downstream of Minnesota, such as nutrients causing the hypoxic zone in the Gulf of Mexico and eutrophication problems in Lake Winnipeg. To achieve the in-state and downstream goals, Minnesota's Nutrient Reduction Strategy was published in 2014. It identifies the levels of nutrients in our state waters, the major sources, goals, and specific strategies to achieve the goals. The strategy has spurred action on several fronts since 2014. To ensure the most relevant and effective strategy moving forward, the strategy

will be revised, with a target date of 2025. The most up-to-date science on Best Management Practices for rural and urban areas will be included, along with updated water monitoring results. Updated scenarios and approaches to achieve the goals will also be outlined in the new strategy. The strategy is a team effort led by a combination of state and federal agencies and the University of Minnesota.

**3:15 & 4:10 pm**      **Soybean stress and yield accrual**

*Dr. Seth Naeve, U of M*

A commonly repeated fallacy is that soybeans 'like a little stress.' While it certainly is true that soybean is highly tolerant to many types of stresses early in development, there are few cases where stress help a soybean in any way. In addition, stresses are not created equal. The type, timing, and duration of stress has a huge impact on soybean growth development and yield. Here we will examine a current study on timing of stress during seed fill and will take a deep dive into interactions between water stress and tillage.

## Concurrent Session I

**December 14<sup>th</sup>**      **Room: Symphony Ballroom**

**8:00 & 11:10 am**      **Climate and agriculture in Minnesota – Issues, impacts and a look ahead**

*Dennis Todey, USDA- ARS*

Minnesota's agriculture is being impacted by a wide variety of more variable and changing issues. In this presentation we will review some of the major climate issues and their impacts on agriculture in the state and regionally. We will show some places to find more information about these issues and some tools to use and talk about what is upcoming for the season. The goal is to provide more information to support agriculture's decision-making around climate issues in the near and longer term. Questions will be expected!

**8:55 & 10:15 am**      **Understanding & using Minnesota future climate projections**

*Katie Black, U of M*

How can agriculture professionals best prepare the producers they work with for growing crops under a changing climate? This session will focus on the relationship between climate adaptation and pest management. This session will cover the observed and projected impacts of climate change in Minnesota and what it means for professionals focused on crop pests. We will also introduce a new tool that allows users to make climate informed decisions under deep uncertainty through the appropriate use of Minnesota-focused climate projections. We will specifically focus on an introductory

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understanding of why, when, and how to access the tool. Participants are encouraged to bring their own laptops or tablets to follow along with a brief demonstration.

## Concurrent Session II

**December 14<sup>th</sup>**      **Room: Marquette Ballroom**

**8:00 & 11:10 am**      **Gene/Genome Editing - what is it, how does it differ from GMOs, and what are its implications for agriculture?**

*Dr. Keith Merrill, Bayer*

At Bayer, we believe that solving farmers' ever increasing and complex problems, ensuring food security and preserving our planet's natural resources will not be achievable without innovation in agriculture, including the use of new techniques such as genome-editing. This technology can be used to improve a beneficial trait or to deactivate an undesirable trait within a plant to increase yield, improve resilience to increasingly extreme weather conditions or reduce the need for inputs such as pesticides or fungicides, for example.

For years, "genome editing" was done through traditional breeding methods which selected plants based on their desirable characteristics and how they react in the environment. Scientists worked at the speed of the crop's growth cycle to produce new varieties over a decade or more. But with an ever-increasing understanding of genetics and the discovery of genome editing tools like CRISPR, we can now "fine-tune" a plant's own genetic make-up to create, more quickly, precisely and predictably desired traits and therefore a better crop.

In this session, we will focus on gene/genome editing - what it is, what it's not, and how the products created using this technology are different from traditional GMOs. Further, we will discuss how genome editing can be leveraged to unlock new solutions for growers.

**8:55 & 10:15 am**      **Sensible soil health**

*Dr. Andrew McGuire, Washington State University*

Why can fields with poor soil health produce high yields? Reflecting on this question has led Andrew to question popular ideas of soil health and arrive at some thought provoking conclusions. He will cover why solving problems is more important than soil health and how to be sensible in looking for soil health benefits.

## Concurrent Session III

**December 14<sup>th</sup>**

**Room: Orchestra Ballroom CD**

**8:00 & 11:10 am**      **Manure matters – Avoid these common mistakes to get the best bang for your buck**

*Dr. Melissa Wilson, U of M*

Livestock manure is a great, all-around source of nutrients for crop production, but it's more complicated than using fertilizers. This presentation will cover some of the basics when it comes to nutrient management and what mistakes to avoid when working with manure and crop fertility.

**8:55 & 10:15 am**      **Can cover crops help us get out of the weeds?**

*Liz Stahl, U of M*

Herbicide-resistant weed populations are on the rise, complicating weed management programs, and more tools beyond just herbicides are needed to meet this challenge. Adding a cover crop to a rotation has the potential to add diversity to a weed management program and aid in the management of herbicide-resistant weeds. Hear about some of the latest cover crop research in Minnesota from a weed management perspective. Trade-offs, challenges, opportunities, and recommended practices will be discussed.

## Concurrent Session IV

**December 14<sup>th</sup>**

**Room: ORCHESTRA BALLROOM AB**

**8:00 & 10:15 am**      **Five years of Minnesota Specific Dicamba Restrictions: Lessons Learned / Multiple-resistant Waterhemp in Minnesota: Now What?**

*Dr. Rajinder Mann (MDA) / Dr. Debalin Sarangi (U of M)*

In 2016, the U.S. Environmental Protection Agency (EPA) approved a new use of certain formulations of dicamba as a postemergence application for weed control in dicamba-tolerant (DT) soybeans. Dicamba is a highly volatile herbicide and can damage non-target plant species through the drift of spray droplets and/or vapor. To curb off-site movement of dicamba used on DT soybeans, the Minnesota Department of Agriculture (MDA) imposed state-specific use restrictions for three dicamba products from 2018 to 2023. This presentation will discuss the outcomes of the regulatory actions on the number of drift complaints received.

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## Educational Tracks

8:55 & 11:15 am      **Managing insect resistant  
soybean aphids**

*Dr. Bob Koch, U of M*

Soybean aphid remains an important pest in Minnesota soybean production. Insecticide resistance continues to pose challenges for effective management of this pest. This presentation will provide updates on research examining the decrease in efficacy of field applications against this pest, the variability in biological underpinnings of this resistance and farmer management practices, and review and discuss the efficacy of alternative management tools. The research results will be discussed in the context of improving integrated pest management for soybean aphid.

### **Ice Breaker Reception** **Starting at 3:00 PM**

Grand Ballroom Show Floor (3<sup>rd</sup> level)  
Tuesday, December 12<sup>th</sup>  
Starting at 3:00 PM until 6:30 PM

Drink tickets can be purchased at the registration counter (otherwise cash bar). Complimentary appetizers.

**Come and Celebrate!**

**WI-FI PASSWORD:**  
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# Biographical Sketch

## **Katie Black**

Katie is an Extension Educator specializing in Climate Adaptation and Resilience for agricultural and natural resources professionals. In this role, she works with a wide variety of farmers and professionals and provides resources for adapting food production systems to a changing climate. She received her master's degree in Applied Plant Sciences from the University of Minnesota in 2022. Her research projects have focused on agronomic and policy solutions for advancing the adoption of perennial and cover crops in the Midwest.

## **Ashok Chanda**

Dr. Ashok Chanda has 11 years of experience as a professional plant pathologist. He is currently serving as Associate Professor & Extension Sugarbeet Pathologist in the Dept. of Plant Pathology at the University of Minnesota and Northwest Research and Outreach Center. He has extensive research experience in developing DNA based detection technologies for fungal pathogens of soybeans, rice, and sugarbeet and also developing integrated disease management approaches for the soilborne root diseases and foliar diseases of sugarbeet. He has broad experience in disease diagnoses, designing and conducting translational research to combat plant diseases.

## **Jade Estling**

Jade is an Agronomy Consultant and farmer. He farms 3,700 acres, harvests 6-10 species of crops most years. His family is involved with grass seed production and cleaning facility. He has worked for many years with the University of Minnesota and industry with research trials. He makes more mistakes than the average farmer.

## **Janet Hou**

Janet Hou is a State Regulatory Affairs Manager with BASF, working in the Midwest and West to register crop protection products and address pesticide-related regulatory and stewardship issues. She has been with BASF since 2010, and living in Minnesota since 2013. Prior to joining BASF, Janet worked as a consultant for the US EPA in the energy and air quality sectors. Janet holds a B.A. in Environmental Sciences and Policy (Duke University), a M.S. in Applied Economics and M.P.S. in Natural Resources (Cornell University). When not working, Janet enjoys being outdoors as much as possible with her family and two dogs.

## **Jacob Jungers**

Dr. Jake Jungers is an Assistant Professor in the Dept. of Agronomy and Plant Genetics at the University of Minnesota. Jake leads a research program focused on developing new cropping systems that enhance agricultural productivity,

economic viability, and environmental sustainability. Jake also teaches undergraduate and graduate courses in CFANS.

## **Daniel Kaiser**

Daniel Kaiser grew up on a grain and livestock farm in Northeast Iowa. He attended Iowa State University where he received his Masters and Ph.D. degree in soil fertility researching phosphorus and potassium placement for corn and soybean and phosphorus management using poultry litter. Currently he is an associate professor and extension specialist in the Department of Soil, Water, and Climate at the University of Minnesota where he has a broad research program related to nutrient management for commodity crops in the state of Minnesota. His current research focuses on the use of soil testing and plant analysis for corn, soybean, and spring wheat, sulfur management in crop rotations, starter fertilizer use in corn, and the use and development of GIS based technologies for managing crop nutrients.

## **Robert Koch**

Dr. Robert (Bob) Koch is a Professor & Extension Entomologist in the Department of Entomology, UMN. His research focuses on the ecology and management of insect pests in soybean, including chemical and biological controls, host-plant resistance, and remote sensing. He received his PhD from the University of Minnesota.

## **Josh Linville**

Josh Linville is the Director of Fertilizer for StoneX Financial Inc. – FCM Division. Having grown up in Northwest Missouri on a family farm that raised row crops, tobacco and livestock, Josh brings a unique point of view to the fertilizer markets. With 20 years of experience in the fertilizer industry, Josh has operated in roles that have given him perspective on the market as a North American logistics specialist, a U.S.-based nitrogen producer, and General Manager of Trade in Melbourne Australia. Josh and his team, which spans around the world, have been hard at work educating the market on how to use fertilizer futures markets to not only offset price risk but also be able to sell products to farmers well before fertilizer producers release their physical sales programs.

## **Dean Malvick**

Dean Malvick is a Professor of Plant Pathology at the University of Minnesota, where he conducts a research and extension program on diseases of soybean and corn. Previously he was a faculty member with similar

*(continued on next page)*

# Biographical Sketch

responsibilities at the University of Illinois. He also worked as a research pathologist for an alfalfa seed company in Wisconsin for several years. He received an MS degree in Botany and Plant Pathology from Oregon State University, and a PhD in Plant Pathology from the University of Minnesota.

## **Rajinder Mann**

Raj Mann is a pesticide program manager for the Pesticide and Fertilizer Management Division of the Minnesota Department of Agriculture. Raj oversees pesticide and fertilizer-related programs that include registering pesticides and fertilizers, conducting special registration reviews of pesticides, developing, and promoting agricultural chemicals best management practices (BMPs), and analyzing water quality monitoring data for pesticides. Raj has a PhD in entomology with specialized training in pesticides. He has been with the department for more than 10 years.

## **Andrew McGuire**

Andrew works with farmers to implement solutions to irrigated farming challenges in the Columbia Basin of Washington state. His current efforts focus on developing systems that build soils through high residue farming and cover cropping. He thinks, then writes about agriculture at WSU and on Twitter @agronomistag.

## **Peter Mead**

Peter Mead joined The Nature Conservancy in 2020 in a new role as the tri-state chapter's agriculture project manager, where he works to steward, facilitate, and leverage new and existing relationships with landowners, farmers, farmer advisors, conservationists, and supply chain partners to develop strategies and implement programs to accelerate adoption of sustainable practices, with a focus soil health, nutrient management, and emerging ecosystem service markets.

Peter has over two decades of experience in federal, state, local and private conservation delivery, a keen interest in regenerative agriculture, and has long been an advocate for private-public partnerships that offer farmer-friendly, practical, and profitable land management solutions that foster healthy soils, improve water quality, and build resiliency across Minnesota's agricultural sector.

## **Keith Merrill**

Keith Merrill is an innovative scientist, an influential leader, and a passionate advocate for diversity, equity, and inclusion. He loves helping to make science make sense, taking complex subjects and making them both relatable and understandable to technical and non-technical audiences alike.

Keith holds a PhD in Plant Breeding and Genetics from North

Carolina State University, and Masters and Bachelor's degrees in Genetics and Biotechnology from Brigham Young University. Keith currently works for Bayer Crop Science as the Genome Editing, Yield, Disease, and Quality Traits Varietal Project Lead within Plant Biotechnology, where he works to integrate breeding, transgenic, and gene editing approaches to deliver novel solutions to growers and consumers. Keith has also held roles as a discovery scientist and germplasm breeder, where he led efforts to accelerate genetic gain through improvements in breeding methodology.

## **Seth Naeve**

Dr. Seth Naeve is a Soybean Agronomist with the University of Minnesota and is a Professor in the Department of Agronomy and Plant Genetics. His effort is split between a soybean production/physiology research project and his soybean extension activities.

Dr. Naeve's research program focuses on development of novel strategies for the efficient production of high quality soybean. His research effort is split between analyzing genetic, environmental, and cultural effects on soybean seed quality (oil, protein, fatty acid, amino acid, and carbohydrate composition) and researching management strategies to maximize production efficiencies.

Seth was raised on a corn and soybean farm in Northern Iowa, and received his Bachelor's degree in Biology and PhD in Agronomy (Crop Production and Physiology) from Iowa State University.

## **Thomas Peters**

Thomas Peters (Tom) is the extension sugarbeet agronomist and weed control specialist at North Dakota State University and the University of Minnesota, supporting farmers growing sugarbeet in Minnesota and North Dakota. His interests are integrated weed management including nurse and cover crops and inter-row cultivation complimenting PRE and POST herbicides in sugarbeet and weed control in crops in sequence with sugarbeet. Peters joined NDSU and UMN in 2014 following a 25-year career at Monsanto Co., St. Louis, MO where Tom contributed to the development of genetically engineered crops. Tom is a Minnesota native, receiving his B.S. degree in Agronomy and Soil Science at the University of Minnesota, his M.S. degree from University of Nebraska and his Ph.D. from North Dakota State University.

*(continued on next page)*

# Biographical Sketch

## **Amy Robak**

Born and raised on a dairy operation in central Minnesota, Amy grew up around animal agriculture. After interning for the local NRCS/SWCD conservation office, she pursued a degree in Conservation Planning from the University of Wisconsin-River Falls. While working with Centra Sota Cooperative, Amy founded the Environmental Service Department, which focuses on helping producers across Minnesota implement conservation practices in their operations. Her technical skills include navigating the waters of government assistance, nutrient & pest management, and implementing soil health practices on a variety of farm types. Her work centers around developing private and public relationships to drive conservation efforts in Minnesota. Amy was recently recognized by Successful Farming magazine as one of four women across the agriculture landscape whose work is making a difference by serving farmers.

## **Debalin Sarangi**

Dr. Debalin Sarangi is an Assistant Professor and Extension Weed Specialist at U of M working on weed biology, ecology, and management. His research and Extension program focuses on developing integrated weed management strategies that can protect water quality, and enhance crop productivity and economic returns. His program is committed to delivering timely, science-based education materials to Minnesota growers, consultants, and ag industry partners. Dr. Sarangi has served as a major advisor for five graduate students and supervised two staff members at the university. He published 21 peer-reviewed journal articles and four book chapters and was the author of five peer-reviewed Extension circulars and 38 online Extension articles.

## **Eric Snodgrass**

Eric Snodgrass is a Sr. Science Fellow and Principal Atmospheric Scientist for Nutrien Ag Solutions, where he develops predictive, analytical software solutions to manage weather risk for global production agriculture. He provides frequent weather updates that focus on how high-impact weather events influence global agriculture productivity. His current research uses machine learning to better understand field-level weather impacts on yields in the US and to increase confidence in long-range weather prediction. He presents his research as a featured speaker at over 120 conferences annually where he provides logistical guidance and solutions to weather sensitive financial institutions, farmers, commodity traders, and other stakeholders. He was recently awarded the Educator Award in 2023 for Distinguished Service to America's High Technology Agriculture by the Mid America Croplife Association. Snodgrass is a co-founder of Global Weather and Climate

Logistic, LLC and Agribile, Inc which were both acquired by Nutrien Ag Solutions in 2018. From 2006-2019, Eric was the Director of Undergraduate Studies for the Department of Atmospheric Sciences at the University of Illinois at Urbana-Champaign where he taught over 20,000 students across a wide range of course work in Atmospheric Science. He won many prestigious teaching awards at the University of Illinois including College of Liberal Arts and Sciences Teaching Excellence award, the Campus Teaching Excellence Award and the Campus Teaching Excellent Award in Online and Distance Education.

## **Lizbeth Stahl**

Liz Stahl is an Extension Educator in Crops and Extension Professor with University of Minnesota Extension out of the Worthington Regional Extension Office. She has a M.S. in Agronomy/Weed Science and a B.S. in Agricultural Education with a minor in Agricultural Economics from the University of Minnesota. She is also a Certified Professional Agronomist/Certified Crop Advisor. Liz's outreach and research activities focus on corn and soybean management, pesticide safety education, and weed management (including managing herbicide-resistant weeds), with a particular interest in sustainability and cover crops. Liz has been an Extension Educator with University of MN Extension since 2004. Prior to joining Extension, she worked in Industry for over 10 years, including the seed industry as a Research Agronomist, with a non-profit in third crop efforts, and as a Crop Production Specialist at a local coop.

## **Joshua Stamper**

Joshua Stamper is the Division Director for the Minnesota Department of Agriculture. He holds a BS in Agriculture from Berea College and a MS in Agronomy from Kansas State University. Joshua has held positions in agribusiness in production research. He has also served as the Irrigation Extension specialist for the University before joining the Minnesota Department of Agriculture as Division Director. His past research involves evaluating anhydrous ammonia placement in irrigated and dryland scenarios and creating variable rate irrigation prescription maps to minimize leaching losses from fertilizer.

## **Dennis Today**

Dr. Dennis Today has been the Director of the USDA Midwest Climate Hub in Ames, IA since 2016. The hub delivers actionable climate information for agriculture across the Corn Belt. He has spent his career working on climate and ag

*(continued on next page)*

# Biographical Sketch

issues throughout the Midwest and Northern Plains including climate change issues and agriculture and tool and data development for agricultural use working with numerous federal, regional and state partners. He is a co-author on the last 2 National Climate Assessments and is developing state level summaries in the Midwest states. He was previously the State Climatologist for South Dakota at South Dakota State University from 2003-2016. He has BS in Meteorology from Iowa State, an MS in Meteorology from the South Dakota School of Mines and PhD in Agricultural Meteorology from Iowa State.

record of scholarship with 51 peer-reviewed publications and > \$3.2 million in grants from federal, state and industry agencies. His research and Extension program at the UMN focus on biology, ecology, integrated pest management and insecticide resistance management of corn insect pests, to improve the environmental and economic sustainability of corn production through integrated pest management strategies.

## **David Wall**

Dave works as an Environmental Research Scientist in the Watershed Division of the Minnesota Pollution Control Agency. Dave has spent much of his 36-year career working on rural nutrient-related issues, including work in the feedlot, nonpoint source, and watershed programs. He leads Minnesota's multi-agency Nutrient Reduction Strategy efforts to reduce nutrients in waters within Minnesota and those waters leaving the state. Connected to this role, Dave serves on the Gulf of Mexico Hypoxia Task Force Coordinating Committee.

## **Melissa Wilson**

Melissa Wilson is an associate professor and the manure nutrient management specialist at the University of Minnesota with appointments in both research and extension. Her research focuses on filling knowledge gaps about manure nutrient cycling as farming practices, weather, and technologies change. She is also currently evaluating techniques for opening up the window of opportunity for manure application.

## **Fei Yang**

Dr. Fei Yang is the assistant professor and Corn Extension Entomologist in the Department of Entomology at the University of Minnesota since May 2023. Dr. Yang received his Ph.D. in Entomology in 2014 and worked as postdoctoral researcher from 2015-2017, both at the Louisiana State University. Since 2017, Dr. Yang worked as a Research Scientist at the Texas A & M University. Dr. Yang is a well-trained and competent field entomologist who has a special set of skills, knowledge, and abilities in row crop pest management, insect ecology, insect behavior, and insecticide resistance management. Dr. Yang has conducted both basic and applied research to generate scientific data to support the sustainable use of Bt crop technologies for pest management in the U.S. for >12 years. Dr. Yang has also been active in Extension services with growers, Extension Specialists and IPM Agents through field days and Extension meetings. Dr. Yang has an excellent



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**Email:** jessi@mcpr-cca.org

**P:** (763) 235-6466

**Web:** www.mcpr-cca.org

## MN Dept of Agriculture

**Booth: 100**

**Email:** jen.schaust@state.mn.us

**P:** (651) 201-6322

**Web:** www.mda.state.mn.us

The Minnesota Department of Agriculture (MDA) oversees the licensure and certification programs for agricultural chemical use and performs inspections to ensure public safety, the integrity of our food supply, and the health of our environment.

## Mosaic Company

**Booth: 506-508**

**Email:** kevin.bachmeier@mosaicco.com

**P:** (612) 965-1252

**Web:** mosaicco.com

Mosaic is a mining and producer of phosphates and potash products. We help the world grow the food it needs.

## Murray Equipment, Inc.

**Booth: 406**

**Email:** sales@murrayequipment.com

**Web:** www.murrayequipment.com

Murray equipment is a supplier and manufacture of liquid handling equipment specializing in fertilizer and chemical system design.

## MVTL Laboratories

**Booth: 409**

**Email:** bwilliams@mvtl.com

**P:** (800) 782-3557

**Web:** www.mvtl.com

MVTL, Inc. is a full-service agricultural testing laboratory. Our agricultural services use approved methods for complete analyses and guidelines for soils, plant, manure, compost, SCN, lime, pesticide screen, and fertilizer. With locations in New Ulm, MN, Nevada, IA and Bismarck, ND, we provide services to crop consultants, agricultural retailers, cooperatives, animal nutritionists, and veterinarians.

## NACHURS

**Booth: 310**

**Email:** info@nachurs.com

**P:** (320) 522-0230

**Web:** nachurs.com

Premium liquid fertilizers

## Northland CDL Training

**Booth: 209**

**Email:** info@nlandcdl.com

**P:** (641) 829-3214

**Web:** www.nlandcdl.com

Providing ELDT certified training, preparation and FINAL CDL Testing services.

## Novid Inc.

**Booth: 318**

**Email:** sales@novid.ca

**P:** (204) 746-6843

**Web:** novid.ca

Stainless steel liquid and dry fertilizer tanks and hoppers. Safe and economical long-term investment.

## Nutrien

**Booth: 519**

**Email:** kyle.ortegren@nutrien.com

**P:** (712) 947-4155

**Web:** www.nutrien.com

## Oxbo International

**Booth: 517**

**Email:** info@oxbocorp.com

**P:** (920) 838-5158

**Web:** www.oxbo.com

Oxbo has supported front boom, high clearance sprayer customers for decades. Today, Oxbo offers several products for chemical application, including high clearance front boom sprayers and the line of AT equipment. Oxbo offers our customers robust and productive application products supported by factory-direct, local technical experts.

## Parallel Ag (Formerly Ag Solutions Group)

**Booth: 410**

**Email:** marketing@parallelag.com

**P:** (515) 576-7161

## Precision Tank, LLC

**Booth: 414**

**Email:** rbengtson@precisionbuild.com

**Web:** www.precisionbuild.com

Precision Tank has been a leader in ag tanks since 1965. PT purchased A&B Welding in 2015. Precision Liquid Construction (PLC) designs & builds liquid fertilizer terminals, offering turnkey solutions to include API 650 tanks.

## Ranco Fertiliservice Inc.

**Booth: 309**

**Email:** Sales@ranco.org

**P:** (712) 283-2525

**Web:** www.rancofertiliservice.com

Ranco Fertiliservice manufactures dry fertilizer blending and handling equipment. High quality and time-proven construction sets us apart from our competitors.

## Razor Tracking, Inc.

**Booth: 315**

**Email:** matt.erlandson@razortracking.com

**P:** (833) 467-2967

**Web:** https://razortracking.com/

Razor Tracking is a leader in real-time telematics, setting the industry standard for fleet and operations management.

## RBR Enterprise, LLC

**Booth: 415**

**Email:** jeaton@rbrenterprise.com

**P:** (662) 851-4200

**Web:** www.rbrenterprise.com

## Redball/Willmar Fabrication

**Booth: 212-214**

**Email:** denise.bakken@willmarfab.com

**P:** (320) 843-1700

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# 2023 Exhibitors

## Rosen's Inc.

**Booth:** 113-115

**Email:** ksundblad@riw2000.com

**P:** (507) 238-4201

**Web:** www.aginfotoday.com

Rosen's Inc. markets, sells and distributes basic agricultural chemicals and the Medallion quality adjuvants. Warehouses are staffed with knowledgeable sales people and strategically located throughout the Midwest.

## Sackett Waconia

**Booth:** 411

**Email:** troyw@sackettwaconia.com

**P:** (952) 442-4450

**Web:** www.sackettwaconia.com

Fertilizer and Blending Equipment.

## Software Solutions Integrated, LLC

**Booth:** 512

**Email:** marketing@agvance.net

**P:** (217) 774-2105

**Web:** https://agvance.net/

SSI combines industry knowledge, technological expertise, and customer feedback to provide innovative and practical solutions across our Agvance and Energy-Force products. We treat every customer as a partner and never waver in our commitment to provide leading software solutions for the industries we serve.

## SoilView, LLC

**Booth:** 515

**Email:** support@soilsampling.com

**P:** (320) 587-8030

**Web:** www.soilview.com

SoilView is an independent service provider of premium site-specific field collection services, gathering information from the field for agronomy professionals and their growers to make critical decisions for crop production. Our experience and technology helps us assure quality service, timely completion, and efficient data delivery.

## Squibb Taylor

**Booth:** 513

**Email:** treys@squibbtaylor.com

**P:** (214) 357-4591

**Web:** squibbtaylor.com

NHE Valves and Safety Equipment

## Stoller

**Booth:** 608

**Email:** jculver@stollerusa.com

**P:** (800) 539-5283

**Web:** stollerUSA.com

Stoller maximizes plant productivity by managing abiotic stress and hormone balance. Stoller has solutions to offset crop yield losses by helping maximize the plant's genetic potential and increasing yield and profit for growers.

## StoneX Financial Inc. - FCM Division

**Booth:** 407

**Email:** ross.wubben@StoneX.com

**P:** (800) 422-3087

**Web:** www.StoneX.com

StoneX Financial Inc. – FCM Division (a subsidiary of StoneX Group Inc.) helps clients protect their margins against commodity price volatility through a unique blend of global market access, digital platforms and high-touch expertise.

## Stueve Contruction

**Booth:** 205

**Email:** info@stueve.com

**P:** (515) 295-3110

**Web:** www.stueve.com

Stueve Construction is leading the industry today and tomorrow. Innovative agronomy storage solutions are our focus! Each facility is matched to your unique needs.

## Syngenta

**Booth:** 206

**Email:** jason.thomas@syngenta.com

**P:** (515) 222-4833

**Web:** www.syngenta.com

Syngenta Crop Protection keeps plants safe from planting to harvesting. From the moment a seed is planted through to harvest, crops need to be protected from weeds, insects and diseases as well as droughts and floods, heat and cold.

## TerraMax

**Booth:** 210

**Email:** jeffery.ramsley@terramaxag.com

**P:** (952) 657-5592

**Web:** www.terramaxag.com

TerraMax is celebrating 25 years this year and we focus on creating defined microbial products to address problems in the agricultural industry.

## Timac Agro USA

**Booth:** 207

**Email:** contact@timacusa.com

**P:** (610) 375-7272

**Web:** https://us.timacagro.com/

TIMAC AGRO USA provides innovative, high-quality solutions in crop nutrition. Our products are unique in that virtually all contain patented plant and seaweed extract formulas, developed through 60 years of global research and development.

## University of Minnesota Extension

**Booth:** 107-109

**Email:** trothman@umn.edu

**P:** (800) 232-9077

**Web:** www.extension.umn.edu

Take control of crop success with unbiased research from the University of Minnesota.

## UPL

**Booth:** 712-714

**Email:** tyler.palm@upl-ltd.com

**P:** (320) 221-9916

**Web:**

## Crop Protection

**USDA NRCS**

**Booth:** 708

**Email:** courtney.cheever@usda.gov

**P:** (651) 602-7900

**Web:** www.mn.nrcs.usda.gov

At Natural Resources Conservation Service, we have a proud history of supporting Minnesota farmers, ranchers and forest landowners by providing financial and technical assistance to help protect natural resources and meet their unique conservation needs.

## Valent USA LLC

**Booth:** 311

**Email:** trevor.dale@valent.com

**Web:** www.valent.com

Headquartered in San Ramon, California, Valent U.S.A. LLC develops and markets products in the United States, Canada and Mexico that advance sustainable agriculture, protect crops, enhance crop yields, improve food quality, beautify the environment and safeguard public health.

## Van Diest Supply Company

**Booth:** 104

**Email:** joel.abbott@vdsc.com

**P:** (515) 832-2366

**Web:** www.vdsc.com

Distributor and Manufacturer of Agricultural Chemicals. Cornbelt(R) Product Line.

## Vive Crop Protection

**Booth:** 111

**Email:** vdekkers@vivecrop.com

**Web:** vivecrop.com

At Vive, we create Precision Chemistry™ that simplifies crop production and delivers real results to growers. Powered by Vive's patented Allosperse® Delivery Technology, we optimize conventional and biological crop inputs for improved product performance from the jug to the field.

## WinField United

**Booth:** 317

**Email:** ksteberg@landolakes.com

**P:** (651) 375-6687

## Ziegler Ag Equipment

**Booth:** 103

**Email:** katie.lloyd@zieglercat.com

**P:** (952) 885-8266

**Web:** https://www.zieglerag.com/



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