mcpr
Minnesota
Crop Production Retailers

University of Minnesota
EXTENSION

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

December 12-14, 2017
Minneapolis Convention Center & Minneapolis Hilton Hotel

Up to the Challenge!

Program & Exhibitor Guide

WELCOME to the 67th Annual Crop Pest Management Short Course and MCPR Trade Show

MCPR Board Chair's Message

Welcome to the 67th running of the Crop Pest Management and Minnesota Crop Production Retailers Trade Show. We have enjoyed our collaboration with the University of Minnesota Extension. Having completed a productive and demanding fall season, it is time for all to engage in this great show and program. This is the great Minnesota and Upper Midwest Ag "Get Together" which will challenge, educate, and help you enjoy this great adventure we call agriculture.

Dale Johnson
MCPR Board of Directors

Dean's Message

Crop producers need sound research to make good decisions. University of Minnesota Extension's Crop Pest Management (CPM) Short Course and the Minnesota Crop Production Retailers (MCPR) Trade Show are an excellent way for crop decision-makers to learn more about the complex issues surrounding agriculture today and to meet with other professionals who share similar interests. The joint MCPR and U of M Extension event offers many educational opportunities and ample time for interaction with others. I hope you enjoy the presentations and networking and gain practical, useful information at the 2017 CPM Short Course and MCPR Trade Show.

Bev Durgan
Dean, University of Minnesota Extension

Back by Popular Demand for 2017!

MCPR Board Chairman's Reception

The MCPR Board invites you to the MCPR Board Chairman's Reception. Drop in before your planned evening festivities. Use your exhibitor drink tickets (available for purchase at the registration counter).
Join us on:

WEDNESDAY, DECEMBER 13th
from 5 - 8:00 PM
Hilton Hotel - Marquette Ballroom - 2nd Floor

Appetizers will be provided. Cash bar or use exhibitor drink tickets.
The Minnesota Viking Cheerleaders will be there at 5:00 pm to greet attendees, mingle and sign calendars (calendars available for purchase).

Trade Show Hours

- **Tuesday, December 12th**
  3:00 pm - 6:30 pm
- **Wednesday, December 13th**
  9:00 am - 5:00 pm
  (includes breaks and lunch
  (in the exhibit hall)
- **Thursday, December 14th**
  9:00 am - 11:00 am

Registration Hours

- **Tuesday** – 9:00 am - 6:30 pm
- **Wednesday** – 7:00 am - 5:00 pm
- **Thursday** – 7:00 am - 11:00 am

Educational Tracks

Dicamba Update

Tuesday, Dec. 12th 10 am - 12 pm Room 101 FGH

Getting answers to your questions about Dicamba in Minnesota is the focus of this recently added Special Session.

MCPR invited the MN Department of Agriculture, and representatives from Monsanto, BASF, and DowDuPont to provide an update on recent developments from their perspective. We also expect the U of MN Extension to be a resource for this session if called upon. This session is scheduled to provide a forum to answer questions and receive updates on the Dicamba developments. The new labels for Engenia, XtendiMax and FeXapan require that certified applicators (both private and commercial) and certified operators must receive dicamba use training before they apply the product, and are required to keep a record of that training with every application record. USEPA has given the States flexibility in how to accomplish this and each State may take a different approach.

Changes related to recent the U.S. EPA Dicamba Restricted Use Pesticide (R.U.P) designation and new label requirements and training requirements going forward are starting to impact the market place. There were many lessons learned in 2017, so training must be provided to explain the new label requirements, weed management, and other considerations. These labels expire in December 2018; therefore, it is vital that these products remain on target next year in order for them to be in the marketplace beyond 2018.

At the time of this writing reports indicated that 23 states of the 33 that had Dicamba issues have already approved the new label and training is underway! Learning how Minnesota is progressing in this regard will be an important discussion and learning opportunity in this session.

Educational grants from Monsanto, BASF, DowDuPont have made this session possible

Technical Service Provider (TSP) Training

Tuesday, Dec. 12th 10 am - 1 pm Room 200 AB

This training will present the latest information from the USDA-Natural Resources Conservation Service (USDA-NRCS) on nutrient management and integrated pest management(IPM) to Technical Service Providers (TSP) certified in these categories in Minnesota. This session will provide an overview of the updated NRCS Nutrient Management and IPM practice standards. There will be a technical review of the requirements for nutrient management and IPM practices and enhancements implemented through the Conservation Stewardship Program (CStP). This session will also cover the new TSP quality assurance review policy and TSP recertification requirements.

MCPR Plenary Session

Tuesday, Dec. 12th 1 pm - 3:00 pm Room 101 FGH

Engaging in Land Stewardship: Opportunities to Support Farmers

Water Quality has and will continue to be a major focus in Minnesota. Farmers are under tremendous pressure to produce more food, while also contributing to improved water quality. Minnesota watershed planning efforts have begun to adopt a stewardship concept for approaching water quality in agricultural areas. The stewardship concept promotes soil health as an avenue for delivering water quality improvements while maintaining productive agricultural systems. It also identifies the need for broader private sector engagement, such as crop retailors, in delivering conservation. This session Drew Kessler, PhD. From U of MN, lead scientist with Houston Engineering, Inc. will provide a background on Minnesota watershed planning and how the stewardship concept is being applied.

Up to the Challenge!

Matt Birk, MN Vikings Hometown NFL Star who wears a Super Bowl ring, is the Short Course Key Note Speaker. In addition to his work for the NFL, Matt Birk is inspiring, teaching and motivating audiences across America as a national speaker. He speaks on the topics of Leadership, Teamwork, and Achievement to motivate your team to get to the next level!

Precision Consulting: Building a Suite of Services

In this session, Matt Wiebers explains how building a service business focused on precision agriculture is becoming a profitable business model for both Minnesota crop consultants and retailers. Agronomic innovations such as crop growth models, scientific on-farm research trials, and robotic automation are empowering the next generation of agronomists to serve as specialists in offering local and regional services to the market.

Pesticide Applicator Recertification

Tuesday, Dec. 12th 2 pm - 3:30 pm Room 200 CDE
Wednesday, Dec. 13th 8 am - 5 pm Room 200 CDE

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).

- Category A + C: Attend all December 13th recertification sessions.
- Category A + H: Attend December 12th from 2 pm to 3:30 pm and December 13th recertification sessions from 8 am to 2:45 pm.
- Category A + C + H: Attend all December 12th and December 13th recertification sessions.

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Educational Tracks

General Session

Wednesday, Dec. 13th **Starting at 8 am**
Room 101 FGH

8:00 am — Consolidation and Competition in Midwest Agriculture: Are These Game-Changes?
Dr. Keri L. Jacobs, Iowa State University
Consolidation of agricultural firms prevails at all levels of the supply chain and has real effects at the local level. Locally, consolidation driven from the bottom up and top down are changing the landscape. This presentation highlights the drivers of consolidation in ag locally and offers insights for the potential impacts on producers and their ag partners.

8:55 am — The Dicamba Dilemma: Where do we go from here?
Dr. Kevin Bradley, University of Missouri
In 2017, more than 3 million acres of U.S. soybean were damaged and more than 2,600 investigations were conducted by various state departments of Agriculture as a result of off-target movement of dicamba. In this session, we will describe all of the methods by which dicamba can move off-site which will include a summary of our field research results related to the volatility of these new dicamba formulations. We will also present results from an ongoing analysis of the specific weather and environmental factors associated with off-target versus on-target applications of dicamba in 2017. All of this information will be presented in an effort to reduce the number of incidences of off-target dicamba movement in future production systems.

9:55 — Climate assessment of Minnesota: Where we have been and where we are going
Dr. Mark Seeley, University of Minnesota
After 40 years as Extension Climatologist, I will share some analysis and thoughts regarding the climate behavior of the past and the expected climate behavior of the future, especially regarding impacts on agriculture practices and production. Agriculture must continue to be diligent in its adaptation to a changing climate, and be willing to share stories of success and failure.

Concurrent Sessions I & II

Wednesday, Dec. 13th **Starting at 1:00 pm**
Rooms 200 AB & 200 CDE

1:00 & 1:55 pm — Understanding the application requirements on the revised dicamba labels
Dr. Robert E. Wolf, Wolf Consulting & Research, LLC
This presentation will help those in attendance understand the label specified application requirements for each of the dicamba products available for the 2018 spraying season. The discussion will focus on the details as outlined for mitigating spray drift and controlling the droplet size. Application parameters of concern will be nozzle type, spray pressure, spray volume, spray equipment ground speed, and spray boom height. This discussion will include a review of the latest on-line label information as it relates to the application process. There will also be time devoted to a discussion of the influence of drift reduction agents (DRA's) on the success of making dicamba applications.

Though the focus of this presentation is mainly devoted to the application of dicamba on dicamba tolerant cropping systems, there will also be a brief review of the application parameters essential for making applications of crop protection products other than dicamba. For some of these other types of applications, a completely different spray system setup is required. In other words, one nozzle type, one application volume, one droplet size will not meet all application needs.

1:00 & 4:10 pm — What buffers can do for farmers: a summary of ten years of prairie strip research
Dr. Matthew E. O'Neal, Iowa State University
Efforts to conserve pollinators, game birds, reduce soil erosion and nutrient loss from farmlands has led to recommendations to add areas of non-cropped area to farmland. At Iowa State University, a group of scientists, educators, farmers, and extension specialists have collaborated on the STRIPS project: Science-based Trials of Rowcrops Integrated with Prairie strips. Prairie strips are a new farmland conservation practice researched and promoted by the STRIPS team at ISU and partners (visit https://www.nrem.iastate.edu/research/STRIPS/) . Our research shows that prairie strips are an affordable option for farmers and farm landowners seeking to garner multiple benefits. By converting 10% of a crop field to diverse, native perennial plants found in prairies, farmers and farmland owners can reduce the amount of soil leaving their fields by 90% and the amount of nitrogen leaving their fields through surface runoff by up to 85%. Prairie strips also provide potential habitat for wildlife without increasing pest outbreaks. At this presentation, ten years of research results will be shared that has led to over 25 (and growing) farmers adopting this practice in Iowa. A summary of the benefits that can be expected will be reviewed, including the response of insects like pollinators and monarchs that have been in decline within agricultural landscapes.

1:55 & 3:15 pm — Insecticide-resistant soybean aphid: A new challenge in soybean production
Dr. Robert Koch, University of Minnesota
The rapid spread of soybean aphid resistance to pyrethroid insecticides has created a new challenge for soybean production. This presentation will provide updates on the status of soybean aphid resistance to insecticides in Minnesota and neighboring states. To improve management of resistance, an overview will be provided on insecticide modes of action

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Educational Tracks

and management of resistant aphids from other crops. This information will be used to discuss management practices that contributed to development of resistance and what changes to practices should be considered to confront this challenge.

3:15 & 4:10 pm — What's eating these soybeans?
Dr. Kelley Tilmon, Ohio State University
This talk will cover some of the lesser-known pests of soybean such as Japanese beetle and stink bugs – identification, damage, and management. These pests are becoming more common in soybean production in the North Central region.

Concurrent Sessions III & IV

Wednesday, Dec. 13th **Starting at 1:00 pm**
Rooms 102 DEF & 208 CD

1:00 & 1:55 pm — Disease in soybean and corn: Good, bad, and ugly in 2017
Dr. Dean Malvick, University of Minnesota
From white mold and brown stem rot in soybean to stalk rot in corn, Minnesota crops had problems with disease in some areas in 2017. This presentation will review key diseases that developed in soybean and corn, factors contributed to their development, and options to reduce their development in the future.

1:00 & 4:10 pm — Bigg(er) Data Approaches to Understanding Soybean Yield Gaps Across the Corn Belt
Dr. Seth Naeve, University of Minnesota
There is more than one way to skin a cat. Naeve is cooperating with Soybean Agronomists in ten north central states to identify production practices that allow farmers to produce greater yields than their neighbors. This session will highlight the results from the first two years of this multistate study whereby research is conducted through analysis of farmer-derived yield and production data. Advanced statistics and data management may finally allow us a new view of how production practices affect soybean yield on real farms across the northern US.

1:55 & 3:15 pm — Using CRISPRs for soybean genetic improvement: moving from promise to application
Dr. Robert Stupar, University of Minnesota
Gene editing describes a suite of technologies that enables "rewriting" (i.e. editing) of specific regions of the genetic code. There is considerable interest in using these technologies to introduce new traits into crop species and accelerate plant breeding applications. CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) is the most recent and most powerful tool for such applications. In this talk, I will describe the CRISPR technology and how it is different from other breeding tools (e.g., transgenes and GMOs). I will also discuss the ways CRISPR technology is currently being used to study plant genes and improve traits in crop species. Furthermore, I will discuss the opportunities and obstacles to using this technology in the short, middle and long-terms.

3:15 & 4:10 pm — New (and old) tools for delaying and coping with herbicide resistance
Dr. Adam Davis, USDA-ARS
After decades of over-reliance on herbicides for weed management, the evolution and spread of single- and multiple-herbicide resistant weed genotypes is accelerating across the north central region of the U.S. With no new herbicide modes of action on the horizon, and rapidly dwindling economic returns to herbicide management, the time for herbicide stewardship is now. In this presentation, I make the case that weed management is mostly about managing selection; share some lessons learned from the evolution and management of herbicide resistant weeds in Illinois, and introduce the basic principles and tools of integrated weed management.

Concurrent Session I

Thursday, Dec. 14th **Starting at 8:00 am**
Room 101 FGH

8:00 am & 1:25 pm — Be a winner, send grain not nitrogen down the Mississippi
Dr. Fabian Fernandez, University of Minnesota
Nitrogen is essential for sustainable crop production, but it is also an expensive input to farmers. One unintended negative consequence of nitrogen applications for crop production is the potential for water quality contamination. Because of these reasons, what we do to manage nitrogen can have long-term implications on sustainability, both in terms of environmental quality and profitability. Using best management practices (BMPs) can help us towards our production and environmental quality goals. University of Minnesota's BMPs have been developed and continue to be modified based on sound and unbiased research. While it is important to recognize that nitrogen loss to the environment can occurs despite our best management efforts, often when we optimize profitable crop production we minimize the potential for negative environmental impacts. Our goal should be to improve N use by converting as much as possible of the nitrogen applied into grain produced, or in other words export grain instead of nitrogen down to the Gulf of Mexico. In this presentation we will discuss current and recent research dealing with water quality, agricultural drainage, and nitrogen management. We will discuss issues surrounding soil drainage characteristics and nitrate leaching losses.

8:55 am & 12:30 pm — The potassium challenge: how do we manage this nutrient in current production systems?
Dr. Daniel Kaiser, University of Minnesota
Management of potassium in cropping systems can be challenging due to the chemistry of this nutrient in the soil. Potassium is considered as a macronutrient due to a high demand for this nutrient by corn and soybean. While research

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has demonstrated a need for potassium if availability in soil is low, current research has only shown sporadic evidence of large returns on investment when potassium fertilizer is applied. One current challenge is determining what is the best way to assess potassium availability in soils. Current research will be discussed related to work correlating soil test values to crop response across Minnesota. One area of emphasis will be on sample handling before analysis where research has shown clear effects of soil drying on the amount of potassium extracted from soil. The overarching goal of this presentation will be to discuss where we are with our current knowledge regarding the potassium guidelines in Minnesota and where the research tells us we may need to go for an updated set of Minnesota potassium fertilizer guidelines.

10:15 & 11:10 am — Nitrogen fertilizer on soybean – Yes, no, or maybe?

Dr. Emerson Nafzier, University of Illinois

Building on the idea that soybeans may not have enough energy to both make high yields and to fix their own N from the air, a great deal of attention has been directed to research trying to figure out if, and when, soybean yields might be increased by adding N fertilizer. We have conducted research in Illinois for a number of years, looking at timing, form, and rate of N fertilizer. Yield responses have ranged from zero to more than 20 bushels per acre, and while we do not yet have confidence to know when soybeans will or won't respond to N, or how often and when N fertilizer might produce a positive return, we'll discuss these results and see if we can move towards making better-informed decisions regarding this input.

Concurrent Session II

Thursday, Dec. 14th **Starting at 8:00 am**
Room 101 IJ

8:00 & 10:15 am — A critical review of cover crop interseeding and potential new tools for improved cover crop adoption

Dr. M. Scott Wells, University of Minnesota

Adopting cover crops into the upper Midwestern corn-soybean cropping systems is challenging. Several factors can greatly influence potential successes and failures of cover crop integration into the corn-soybean rotation, most notably weather. Recent advancements in planter technologies have afforded early adopters with the necessary tools to interseeded cover crops into their corn-soybean cash crops. Research across the upper Midwest has assessed the impact of interseeded cover crops on corn-soybean performance while evaluating a suite of ecosystem services provided by the cover crops. While much of this research is ongoing, a predominate question remains unanswered; "Given the best cover crop planting technologies, will farmers be able to afford to implementation of cover crops?" This presentation will explore current research on interseeding cover crops, while offering a potential solution to the aforementioned question.

8:55 am & 12:30 pm — Bacterial leaf streak disease of corn - The Nebraska perspective

Dr. Tamra Jackson-Ziems, Terra Hartman, Brad Tharnish and Jim Harbour, University of Nebraska

Bacterial leaf streak (BLS), caused by Xanthomonas vasicola pv. vasculorum, was reported for the first time in the United States in Nebraska in 2016. Since then, the disease has been confirmed in 60 Nebraska counties and 8 additional states, including Colorado, Kansas, Illinois, Iowa, Minnesota, Oklahoma, South Dakota, and Texas. Previously, the pathogen had only been confirmed on corn in South Africa and on sugarcane in numerous other countries around the world. Numerous other grass and palm hosts were identified in other countries, as well, including sorghum species. Results from additional host range testing conducted in Nebraska also confirmed several additional crop, weed, and native perennial grass species as hosts. Symptoms on corn can be difficult to differentiate from other diseases, especially the gray leaf spot fungal disease. Typical symptoms of the disease on corn and other hosts are narrow interveinal streaks that can appear bright yellow when backlit. The pathogen overwinters in infested crop debris thus, disease develops in the same areas repeatedly when susceptible hybrids are grown and favorable weather conditions persist. Severity of the disease varies considerably on corn hybrids, particularly on some popcorn hybrids that can be quite susceptible. High relative humidity and leaf wetness favor disease development. Results from additional research trials will be shared, including yield trials and mitigation experiments evaluating the effects of corn-soybean rotation sequences and tillage regimes.

11:10 am & 1:25 pm — Managing corn for high yield and environmental stewardship while controlling costs

Dr. Jeffrey Coulter, University of Minnesota

Low grain prices and comparatively expensive agronomic inputs make profitable corn production a challenge. In this presentation, agronomic factors including hybrid selection, planting rate, nitrogen fertilizer management, starter fertilizer management, and other agronomic input and management decisions will be discussed with regard to the frequency and magnitude of responses in corn yield and economic return. This will help crop advisors and growers recognize key opportunities and limitations for increasing corn yield, profitability, and environmental stewardship.

Educational Tracks

Concurrent Session III

Thursday, Dec. 14th — **Starting at 8:00 am**
Room 200 CDE

8:00 & 11:10 am — Get the weeds before they get you! Are you up to the challenge?
Lisa Behnken and Ryan Miller, University of Minnesota
What can be done differently in 2018 to prevent weed escapes in fields and limit the spread of herbicide resistant weeds? What have we learned in the past that can help us be more proactive in the future? As weeds become tougher to control, and herbicide resistant weeds become more of the norm in fields rather than the exception, what else can or must be done to stay ahead of the game? This session will review and reflect on weed management systems, those that incorporate chemical and non-chemical strategies to manage weeds. What you do on your farm matters, so take control and take action.

8:55 am & 1:25 pm — Update on biological control of soybean aphid
Dr. George Heimpel, University of Minnesota
The soybean aphid invaded North America from Asia in the year 2000 and remains one of the most important pests of row-crop agriculture in Minnesota. It is important to note, however, that soybean aphid pressure would be far worse were it not for resident predatory insects such as ladybeetles. Studies done over the last 15 years suggest that these natural enemies keep soybean aphid densities below the economic spray threshold in approximately 80% of fields region-wide. In addition, a recent newcomer – the parasitoid Aphelinus certus – is adding to this level of protection. I will present new data from 2015 and 2017 collected in St. Paul and western Minnesota showing that this parasitoid alone is capable of controlling soybean aphid but also that this is does not happen consistently. We have developed a mathematical model describing the level of parasitism that is needed to control soybean aphid and this can be used to better understand variable results in the field. Aphelinus certus is relative newcomer in Minnesota – it was first discovered here in 2011 – and so it may be that more consistent control will develop once it is better established in the state

10:15 am & 12:30 pm — Corn seeding rates in variable environments
Dr. Mark Licht, Iowa State University
New technologies have enabled the ability to implement variable rate more reliably and easily than ever before. This session will explore how variable rate seeding plays out in fields with soil variability and year-to year weather variability. It identifies insights into factors that should be considered and how to field test weather variable rate seeding is the right option for you and your farm.

Concurrent Session IV

Thursday, Dec. 14th — **Starting at 8:00 am**
Room 200 AB

8:00 & 11:10 am — Cover crops, nutrients, and water quality – What we know and what needs work
Dr. Melissa Wilson, University of Minnesota
Cover crops are gaining popularity as a way to conserve nutrients over the winter. What exactly do we know about managing nutrients with cover crops? What needs more work? Current and pending research will be discussed.

8:55 am & 1:25 pm — Perennial living mulches – An option for maintaining production in buffers and other sensitive areas
Dr. John Baker, USDA-ARS & University of Minnesota
Perennial living mulches are companion crop systems in which a long-lived perennial species is maintained for multiple years and row crops such as corn and soybeans are planted annually into the perennial cover. We have conducted research on these systems since 2006, focusing on corn and soybean planted into kura clover. Kura is a cold and drought tolerant legume that spreads by rhizomes. Though it can be challenging to establish initially, once in place it can persist for many years. In the system we have developed, zone tillage is used to establish rows each spring, into which corn or soybeans are planted. We have developed management practices to minimize competition between the clover and the cash row crop, and have shown that this system can produce yields nearly equivalent to conventional corn/soybean systems, with large improvements in key environmental variables, including greatly reduced erosion, much higher infiltration rates and greater trafficability. These systmes allow the maintenance of both continuous vegetative cover and crop production in sensitive areas like stream and ditch buffers and steeply sloped portions of fields.

10:15 am & 12:30 pm — Phosphorus management: past, present and beyond - what we know, what we need to know
Dr. Paulo Pagliari, University of Minnesota
In this talk you will revise the basic principles of soil phosphorus, including soil availability, plant uptake, and fertilizer needs based on soil test levels. We will also explain the different philosophies related to P management and whether to build up and maintain or to apply removal. Economics and environmental implications related to P management will also be discussed.

Biographical Sketch

John Baker
Dr. Baker is a native of Ohio who got his BS degree in Agronomy from the Ohio State University, followed by MS and Ph.D. degrees in Soil & Crop Sciences from Texas A&M University, where his research focused on soil and plant water relations. While in graduate school, he developed a gauge for measuring transpiration in plants. He joined the USDA-ARS Soil & Water Management Unit and the University of Minnesota in 1987, and became Research Leader of the USDA group in 2001. His research in Minnesota has covered a variety of topics, including soil moisture measurement, soil carbon storage, measurement and simulation of greenhouse gas exchange, winter cover crops, and perennial living mulch systems. He is a Fellow of the Soil Science Society of America and the American Society of Agronomy.

Lisa Behnken
Lisa M. Behnken, University of Minnesota Extension Educator and Professor, Crops has been with the Extension for 37 years. She earned her M.S. from North Dakota State University in Crop and Weed Sciences, B.S. from University of Minnesota, in Agronomy, and A.A. from Rochester Community College in Conservation. She has been an Extension Educator in Crop Production in Rochester, Minnesota since 2004 and worked in Olmsted and Becker Counties as an Extension Educator since 1980. Behnken is responsible for program development related to cropand weed issues and brings expertise, research, and educational programs to producers and agricultural professionals via seminars, workshops and field schools. Lisa grew up on a dairy farm near Rochester and currently farms with her husband, Bill, on his family farm. They raise corn, soybeans, alfalfa and finish Holstein steers. They have two children, Isaac (10) and Jenny (5).

Matt Birk
Matt Birk attended Harvard University and earned a degree in Economics. While playing for the Harvard Crimson, he received several football honors, including All-Ivy League and Division I-AA All-American. Matt was selected by the Minnesota Vikings in the sixth round of the 1998 draft. Appearing in 228 career games, including 18 playoff contests, Matt spent 11 seasons with Minnesota and 4 more with the Baltimore Ravens. He was named the 2011 Walter Payton NFL Man of the Year for his off-the-field service, as well as his playing excellence. In February 2013, after a 15-year career in the NFL and a Super Bowl XLVII win with the Baltimore Ravens, the six-time Pro Bowl Center announced his retirement from playing football. He currently is a special advisor, he sits on the Board of Directors of USA Football, the sport's governing body.

Kevin Bradley
Kevin Bradley is a Professor and State Extension Weed Scientist in the Division of Plant Sciences at the University of Missouri. Kevin's faculty appointment includes extension and research responsibilities in the area of applied weed management in corn, soybean, wheat, pastures, and forages. He also teaches a graduate level class in herbicide mechanism of action, and has served as major advisor to 18 graduate or post-graduate students since his arrival at the University of Missouri in 2003. Kevin is a member of the Weed Science Society of America, the North Central Weed Science Society, and the American Society of Agronomy. He has served on numerous committees and in leadership positions in both societies, including serving as the president of the Weed Science Society of America in 2016. In addition to evaluating new herbicides and weed management techniques, Dr. Bradley's applied research program focuses on the development of programs for the prevention and management of herbicide-resistant weeds, on the interaction of herbicides and weeds with other agrochemicals and pests in the agroecosystem, and on the effects of common pasture weeds on forage yield, quality, and grazing preference. By far the largest percentage of Dr. Bradley's research and extension efforts are directed towards the development of strategies for the management of glyphosate- and multiple herbicide-resistant weed biotypes.

Jeff Coulter
Jeff Coulter is an extension specialist of corn-based cropping systems at the University of Minnesota. He has a Ph.D. in crop sciences from the University of Illinois. His responsibilities include agronomic extension and research to increase the productivity and efficiency of corn-based cropping systems. His research focuses on addressing current and future challenges through field trials with growers on farms and at university research and outreach centers. Current research is focused on high-yield corn systems and nitrogen management. This serves as the foundation for educational programs for agricultural professionals and growers.

Adam Davis
Dr. Adam Davis is a Research Ecologist and Lead Scientist with the USDA-ARS Global Change and Photosynthesis Research Unit in Urbana, IL, where he also serves as a Professor in the University of Illinois Crop Sciences Department. He received an M.S. in Ecology and Environmental Sciences from University of Maine, and a Ph.D. in Crop Production and Physiology (Weed Science) from Iowa State University, followed by a postdoctoral fellowship at Michigan State University. Adam's research makes use of both experimental and modeling approaches to solve applied weed ecology problems in field crop production systems. Recent research areas include modeling the evolution and spread of herbicide resistant weeds, developing multi-tactic integrated weed management systems for organic and low-external-input farms, predicting changing distributions of weedy and invasive plant species under global change and conducting risk analysis of bioenergy crop invasion potential.

Biographical Sketch

Fabián Fernández
Dr. Fabián G. Fernández is an Associate Professor in the Department of Soil, Water, and Climate at the University of Minnesota, Twin Cities. He earned his Ph.D. degree from Purdue University and M.S. and B.S. degrees from Brigham Young University. Before joining the University of Minnesota, he was an Assistant Professor at the University of Illinois. The research and extension education programs of Dr. Fernández are focused primarily on crop production and environmental issues related to nutrient management in corn cropping systems. He seeks to identify and implement nitrogen management practices that are sustainable both in terms of minimizing environmental impacts, specifically water quality, and in terms of improving crop yields.

George Heimpel
George E. Heimpel was born in Germany and grew up mainly in California. He received his B.S. at the University of California, Berkeley, M.S. at the University of Delaware, and Ph.D. at the University California, Davis in 1995, where Jay Rosenheim advised him. He then spent two years as a USDA post-doctoral fellow at the University of Wisconsin in Mike Strand's lab. He is currently a professor of Entomology at the University of Minnesota. His research emphases lie in the fields of biological control and parasitoid ecology. Most of this work has been done in agricultural settings, and has included investigations of sugar feeding by parasitoids in the field and implications for conservation biological control, biological control of soybean aphid, and the genetics of sex determination in parasitic hymenoptera. Projects that are more recent have incorporated a conservation focus however, including investigations of an invasive fly species in the Galapagos Islands. Dr. Heimpel teaches Biological Control and Insect Behavior and is the author, with Dr. N.J. Mills, of the book, 'Biological Control: Ecology and Applications', published by Cambridge University Press.

Tamra Jackson-Ziems
Tamra Jackson-Ziems, Extension Specialist and Professor, joined the faculty of the Department of Plant Pathology at the University of Nebraska-Lincoln (UNL) in April 2005 after completing her graduate degrees at the University of Arkansas and University of Illinois-Urbana. Her appointment is split between extension, research, and teaching 80/10/10%, respectively, with statewide responsibility for diseases of corn and grain sorghum. Her extension programming activities encompass educating clientele about disease identification, prevention, and management. Moreover, her research projects focus on a broad range of topics, including bacterial leaf streak, Goss's bacterial wilt and blight, use of fungicides for disease control, and plant parasitic nematodes of corn. During her time at UNL, she has delivered more than 180 invited presentations in 16 states and is the 2016 recipient of both the Nebraska Cooperative Extension Association's Award for Outstanding Creative Programming (for an individual) and the Nebraska Ag Business Association's Education and Research Person of 2016 Award.

Keri Jacobs
Dr. Keri L. Jacobs is an assistant professor and extension economist in the Department of Economics at Iowa State University and holds the Iowa Institute for Cooperatives Endowed Economics Professorship. She earned a B.A. in economics and business administration from Coe College in 1996 and a Ph.D. in economics from North Carolina State University in 2010. In her role at ISU, she is an undergraduate educator, researcher, and extension specialist with a focus on cooperatives. Her current research efforts are in the areas of financial and equity conditions of agricultural cooperatives, agribusiness consolidation, biomass production for biofuels, and farm level production decisions under uncertainty. In her extension capacity, Dr. Jacobs provides education and content to cooperative boards, management and other co-op stakeholders. Her extension programming is designed to enhance the effectiveness of cooperative organizations and support their efforts in managing sustainable organizations by building capacity in human capital and providing sector financial analysis.

Daniel Kaiser
Daniel Kaiser in an associate professor in the department of Soil, Water, and Climate is the current state extension specialist in soil and plant nutrient management at the University of Minnesota. He received his M.S. and Ph.D. degree from Iowa State University. His current research in Minnesota focuses on developing research and extension programming related to soil testing and fertilizer management for the development of fertilizer guidelines for major field crops in Minnesota. Current research focuses on soil test correlation/calibration research for phosphorus, potassium, and sulfur, nutrient cycling in corn, soybean, and wheat cropping systems, starter fertilizer utilization and placement options for corn and soybean production, and utilization of remote sensing technology for detection of nutrient stress.

Drew Kessler
Drew Kessler is lead scientist with Houston Engineering, Inc. and served at the University of Minnesota, Department of Soil, Water, and Climate from 2009-2014. He received a PhD in Water Resources Science, Geospatial Technologies from the University of Minnesota, and an MS in Natural Resource Science, Geospatial Information from the University of Nebraska-Lincoln.

Biographical Sketch

Robert Koch
Dr. Robert (Bob) Koch is an Assistant Professor and Extension Entomologist at the University of Minnesota. His research and extension responsibilities focus on applied ecology and integrated pest management of insects associated with soybean. Currently, his research program focuses on IPM for the soybean aphid and brown marmorated stinkbug. Dr. Koch received a Ph.D. in entomology from the University of Minnesota and Bachelor's degree in biology from St. John's University. Prior to this position at the University of Minnesota, he worked for six years with the Minnesota Department of Agriculture.

Mark Licht
Dr. Mark Licht is an Assistant Professor and Extension Cropping Systems Specialist in the Department of Agronomy at Iowa State University. He holds a Ph.D. in crop production and physiology and a M.S. in soil management and conservation. His extension, research and teaching program is focused on how to holistically manage Iowa cropping systems to achieve productivity, profitability and environmental goals. Research is centered on varied aspects of soybean, corn and cover crop management as well as agronomic implications of precision technologies.

Dean Malvick
Dr. Dean Malvick is an Extension Specialist and Professor of Plant Pathology at the University of Minnesota in St. Paul. His responsibilities are divided between developing and delivering extension education programs, and conducting problem-solving and discovery research focused on the biology and management of soybean and corn diseases. Previously, he was a faculty member with similar responsibilities at the University of Illinois in Urbana, and he worked for several years as a research pathologist for a seed company. Dr. Malvick received an MS degree in Botany and Plant Pathology from Oregon State University, and a PhD in Plant Pathology from the University of Minnesota.

Ryan Miller
Ryan Miller received a M.S. in Agronomy from the University of Minnesota and is a Certified Professional Agronomist in Minnesota. He has been a crops educator with the University of Minnesota Extension since 2004. His program focuses on the row crop agriculture of Southern Minnesota. He has over seventeen years of agronomic experience planning and implementing applied research, summarizing results, and conducting educational outreach activities for farmers and agricultural professionals. His agronomic research and outreach experiences encompass tillage and crop systems, pest management, variety selection, crop development, precision agriculture, and soil fertility. His outreach activities include newsletters, electronic communications, individual consultations, group presentations, in-field demonstration, and professional meetings.

Seth Naeve
Dr. Seth Naeve is a Soybean Agronomist with the University of Minnesota and is an Associate Professor in the Department of Agronomy and Plant Genetics. Dr. Naeve's research program focuses on development of novel strategies for the efficient production of high quality soybean. His research efforts are 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 Iowa, and received his Bachelor's degree in Biology and PhD in Agronomy (Crop Production and Physiology) from Iowa State University.

Emerson Nafziger
Dr. Emerson Nafziger grew up on a farm in northwestern Ohio, and earned degrees in agronomy from The Ohio State University, Purdue University, and the University of Illinois. He has been Professor of Crop Sciences and Extension Agronomist at the University of Illinois since 1928, conducting research and Extension programs on management of corn, soybeans, and wheat, including crop rotations, tillage, and N management.

Matt O'Neal
Dr. Matt O'Neal is an associate professor of entomology at Iowa State University, where he oversees research related to the management of insect pests of annual crops, with a focus on soybeans. His overall goal is the development of pest management programs that are economically and environmentally sustainable. To achieve this goal, he explores the ecology of pests with their host-plant and natural enemies, often within a landscape context. This research has contributed to the management of soybean aphids in Iowa and throughout the Midwest US. More recently, his lab is exploring how conservation methods may improve the abundance and diversity of beneficial insects that contribute to aphid mortality and crop pollination. This later topic includes study of the pollinator community that resides within corn and soybean fields. O'Neal has published 47 scientific papers, reviews and book chapters on insect pest management and ecology. He teaches two classes within the department of Entomology and a course as a member of the Graduate Program in Sustainable Agriculture.

Paulo Pagliari
In his role as Extension Nutrient Management Specialist, research focus is on understanding the relationship between soil fertility and microbial activity, and how their interaction affects nutrient availability. He has particular interest in phosphorus fertility and behavior in soils. Throughout the past

Biographical Sketch

six years, he has studied the effects of P addition at different times during the growing season on plant growth and yield. In addition, he has studied P behavior in many soils collected throughout MN with the goal to developed improved P management strategies.

Mark Seeley
In his role as Extension Climatologist and Meteorologist Dr. Seeley has managed the Weather and Climate Education Program, as well as conducted research and teaching since 1978. He will retire after 40 years on January 3, 2018. He has served as a weekly commentator on Minnesota Public Radio's "Morning Edition" news program and written the weekly newsletter (blog) "Minnesota WeatherTalk" since 1992. Dr. Seeley has helped Twin Cities Public Television (TPT) produce documentaries on Minnesota's most memorable historical weather events, and on how climate change is affecting the state's infrastructure and natural resources. He is author of Minnesota Weather Almanac (1st edition published by the Minnesota Historical Society Press in 2006 and second edition published in 2015), and co-author (with Don Breneman) of Voyageur Skies: Weather and the Wilderness in Minnesota's National Park (Afton Press, 2011), an award-winning book about the state's only national park.

Robert Stupar
Robert Stupar is an associate professor in the Department of Agronomy and Plant Genetics at the University of Minnesota. He received his PhD in Plant Breeding and Plant Genetics from the University of Wisconsin in 2005 and joined the University of Minnesota faculty in 2008. He holds a 25% teaching appointment and a 75% research appointment in the area of legume functional and biochemical genomics. His primary research interests are in soybean genomics, with an emphasis on genome variation and translating genome engineering technologies into crop plants.

Kelley Tilmon
Dr. Kelley Tilmon is a field crop entomologist and State Extension Specialist at Ohio State University. Prior to joining the faculty of the Department of Entomology at Ohio State in 2016, she was on the faculty at South Dakota State University as the soybean entomologist, from 2005 to 2015. Dr. Tilmon provides research and extension on pest and beneficial insects in various field crops.

M. Scott Wells
Dr. Wells directs applied and field ordinated research that provides research-based technologies addressing the sustainable intensification of agriculture in MN. Such technologies includes the integration of cover crops into corn, soybean, sugar beet cropping systems, developing agronomic management of new winter oilseed cash cover crop systems, evaluating optimal management strategies for alfalfa production systems, and assessing the fate of nitrogen in annual and perennial cropping systems. He supports the University of Minnesota alfalfa and corn silage variety-testing programs. In conjunction with his research program efforts, he provides graduate student mentorship and statewide educational leadership for both the University of Minnesota Forage Extension and Cover Crop Teams.

Matt Wiebers
Matt Wiebers is an independent agronomy consultant and the owner of CropCentric LLC. He has 20 years of agricultural experience working with growers and fertilizer retailers around the world with a focus on precision Ag support. His current business services focused on improved nitrogen management, design of replicated on-farm research trials, providing soil testing services, and sensor-based irrigation scheduling.

Melissa Wilson
Melissa is the new manure management specialist at the University of Minnesota with appointments in both research and extension. She came to Minnesota from the University of Maryland where she worked in the Agricultural Nutrient Management program. She is a graduate of the University of Minnesota with her M.S. and Ph.D. degrees in Water Resources Science and her graduate research covered a range of nutrient management topics from enhanced efficiency fertilizers to cover crops. Currently, she plans to work on developing best management practices for side dressing manure in corn and establishing cover crops with fall manure management.

Bob Wolf
Robert E. Wolf retired as Professor Emeritus from Kansas State University where he was a Professor and Extension Specialist in Application Technology in the Biological and Agricultural Engineering Department. Prior to that, Bob was in a similar position at the University of Illinois, which also included Pesticide Applicator Training responsibilities. Bob began his career as a Vocational Ag Teacher at Paris, IL over forty-seven years ago. Bob's main responsibility at Kansas State was to conduct an extension and research program in all areas of chemical/pesticide application with a particular emphasis on nozzle technology. His research focus has been to evaluate nozzle types for improved efficacy while minimizing spray drift. He is considered renowned for his work in training pesticide applicators worldwide.

Bob formed a consulting company to continue his work with the application industry. Bob conducts training workshops for grower and commercial applicators and on occasion, helps conduct aerial application workshops. In addition, Bob currently contracts with BASF to conduct the On Target Application Academy.

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Schedule at a Glance
Tuesday, December 12, 2017

REGISTRATION OPENS AT 9:00 AM IN EXHIBIT HALL B

	PESTICIDE APPLICATOR RECERTIFICATION ROOM 200 CDE	TECHNICAL SERVICE PROVIDER TRAINING ROOM 200 AB	MCPR PLENARY SESSION ROOM 101 FGH	TRADE SHOW EXHIBIT HALL B
10:00		**New NRCS Nutrient Management, IPM Guidance, and CSP Enhancements** *Carissa Spencer* , USDA-NRCS *Jeff King* , USDA-NRCS *Lance Smith* , USDA-NRCS *Shannon Carpenter* - USDA-NRCS	**Dicamba Update** Monsanto, BASF, DuPont & MDA	
12:00		**LUNCH**		
		New NRCS Nutrient Management, IPM Guidance, and CSP Enhancements Continued CEU=NM, SW, PM		
1:00			**Engaging in Land Stewardship: Opportunities to Support Farmers** *Drew Kessler* Houston Engineering, Inc CEU=SW	
2:00	**MDA - C&T,** MDA Staff		**Up to the Challenge!** *Matt Birk* Former MN Viking CEU=PD	
2:05	**Seed Treatment and Farmer Safety** *Liz Stahl* University of Minnesota			
2:30	**Treating Seed** *Alan Gaul* Iowa State University			
2:45			**Precision Consulting: Building a Suite of Services** *Matt Wiebers* CropCentric LLC CEU=CM	
3:00				**Exhibit Hall Opens**
3:30				
4:30				**MCPR Annual Meeting**
5:00				**Ice Breaker Reception**
6:30				**Exhibit Hall Closes**

Schedule at a Glance
Wednesday, December 13, 2017

REGISTRATION OPENS AT 7:00 AM IN EXHIBIT HALL B

	PESTICIDE APPLICATOR RECERTIFICATION ROOM 200 CDE	GENERAL SESSION CROP PEST MANAGEMENT SHORT COURSE ROOM 101 FGH	TRADE SHOW EXHIBIT HALL B
8:00	**Licensing and Certification** MDA Staff	8:00 **Consolidation and Competition in Midwest Agriculture: Are these game-changes?** Keri Jacobs, Iowa State University CEU=PD	
8:30	**MDA Topics** MDA ACI Staff		**Exhibit Hall Opens**
9:00	**Laundering pesticide-contaminated clothing** Natalie Hoidal, UMN	8:55 **The Dicamba Dilemma: Where do we go from here?** Kevin Bradley, University of Missouri CEU=PM	
9:25	BREAK		
9:40	**Wearing respirators** Natalie Hoidal, UMN	BREAK	
10:25	**MN pesticide water monitoring** Mike MacDonald, MDA	9:55 **Climate Assessment of Minnesota: Where we have been and where we are going** Mark Seeley, University of Minnesota CEU=CM	
11:00	**BREAK AND OPPORTUNITY TO VISIT EXHIBIT FLOOR**		
12:00	**LUNCH IN EXHIBIT HALL B**		

	CONCURRENT SESSION I ROOM 200 CDE	CONCURRENT SESSION II ROOM 200 AB	CONCURRENT SESSION III ROOM 101 FGH	CONCURRENT SESSION IV ROOM 101 IJ	
1:00	**Understanding the application requirements on the revised dicamba labels.** Robert Wolf Wolf Consulting & Research CEU=PM	**What buffers can do for farmers: A summary of ten years of prairie strip research** Matt O'Neal Iowa State University CEU=PM	**Disease in soybean and corn: Good, bad, and ugly in 2017** Dean Malvick University of Minnesota CEU=PM	**Bigg(er) data approaches to understanding soybean yield gaps across the corn belt** Seth Naeve University of Minnesota CEU=CM	
1:55	**Insecticide-resistant soybean aphid: A new challenge in soybean production** Robert Koch University of Minnesota CEU=PM	**Understanding the application requirements on the revised dicamba labels.** Robert Wolf Wolf Consulting & Research CEU=PM	**Using CRISPRs for soybean genetic improvement: Moving from promise to application** Robert Stupar University of Minnesota CEU=CM	**Disease in soybean and corn: Good, bad, and ugly in 2017** Dean Malvick University of Minnesota CEU=PM	
2:45	**BREAK**				
3:15	**What's eating these soybeans?** Kelley Tilmon Ohio State University CEU=PM	**Insecticide-resistant soybean aphid: A new challenge in soybean production** Robert Koch University of Minnesota CEU=PM	**New (and old) tools for delaying and coping with herbicide resistance** Adam Davis USDA-ARS CEU=PM	**Using CRISPRs for soybean genetic improvement: moving from promise to application** Robert Stupar University of Minnesota CEU=CM	
4:10	**What buffers can do for farmers: A summary of ten years of prairie strip research** Matt O'Neal Iowa State University CEU=PM	**What's eating these soybeans?** Kelley Tilmon Ohio State University CEU=PM	**Bigg(er) data approaches to understanding soybean yield gaps across the corn belt** Seth Naeve University of Minnesota CEU=CM	**New (and old) tools for delaying and coping with herbicide resistance** Adam Davis USDA-ARS CEU=PM	
5:00	**END**				**Exhibit Hall Closes**

Schedule at a Glance
Thursday, December 14, 2017

REGISTRATION OPENS AT 7:00 A.M. IN EXHIBIT HALL B					
	CONCURRENT SESSION I ROOM 101 FGH	**CONCURRENT SESSION II ROOM 101 IJ**	**CONCURRENT SESSION III ROOM 200 CDE**	**CONCURRENT SESSION IV ROOM 200 AB**	**TRADE SHOW EXHIBIT HALL B**
8:00	**Be a winner, send grain not nitrogen down the Mississippi** Fabian Fernandez University of Minnesota CEU=NM	**A critical review of cover crop interseeding and potential new tools for improved cover crop adoption** M. Scott Wells University of Minnesota CEU=CM	**Get the weeds before they get you! Are you up to the challenge?** Lisa Behnken/Ryan Miller University of Minnesota CEU=PM	**Cover crops, nutrients, and water quality – What we know and what needs work** Melissa Wilson University of Minnesota CEU=SW	**EXHIBIT HALL OPENS**
8:55	**The potassium challenge: how do we manage this nutrient in current production systems?** Daniel Kaiser University of Minnesota CEU=NM	**Bacterial leaf streak disease of corn - The Nebraska perspective** Tamra Jackson-Ziems University of Nebraska CEU=PM	**Update on biological control of soybean aphid** George Heimpel University of Minnesota CEU=PM	**Perennial living mulches – An option for maintaining production in buffers and other sensitive areas** John Baker USDA-ARS & University of MN CEU=SW	
9:45	**BREAK**				
10:15	**Nitrogen fertilizer on soybean – Yes, no, or maybe?** Emerson Nafziger University of Illinois CEU=NM	**A critical review of cover crop interseeding and potential new tools for improved cover crop adoption** M. Scott Wells University of Minnesota CEU=CM	**Corn seeding rates in variable environments** Mark Licht Iowa State University CEU=CM	**Phosphorus management: past, present and beyond - what we know, what we need to know** Paulo Pagliari University of Minnesota CEU=SW	**EXHIBIT HALL CLOSES**
11:10	**Nitrogen fertilizer on soybean – Yes, no, or maybe?** Emerson Nafziger University of Illinois CEU=NM	**Managing corn for high yield and environmental stewardship while controlling costs** Jeffrey Coulter University of Minnesota CEU=CM	**Get the weeds before they get you! Are you up to the challenge?** Lisa Behnken/Ryan Miller University of Minnesota CEU=PM	**Cover crops, nutrients, and water quality – What we know and what needs work** Melissa Wilson University of Minnesota CEU=SW	
12:00	**LUNCH - SECOND FLOOR LOBBY**				
	CONCURRENT SESSION I ROOM 101 FGH	**CONCURRENT SESSION II ROOM 101 IJ**	**CONCURRENT SESSION III ROOM 200 CDE**	**CONCURRENT SESSION IV ROOM 200 AB**	
12:30	**The potassium challenge: how do we manage this nutrient in current production systems?** Daniel Kaiser University of Minnesota CEU=NM	**Bacterial leaf streak disease of corn - The Nebraska perspective** Tamra Jackson-Ziems University of Nebraska CEU=PM	**Corn seeding rates in variable environments** Mark Licht Iowa State University CEU=CM	**Phosphorus management: past, present and beyond - what we know, what we need to know** Paulo Pagliari University of Minnesota CEU=SW	
1:25	**Be a winner, send grain not nitrogen down the Mississippi** Fabian Fernandez University of Minnesota CEU=NM	**Managing corn for high yield and environmental stewardship while controlling costs** Jeffrey Coulter University of Minnesota CEU=CM	**Update on biological control of soybean aphid** George Heimpel University of Minnesota CEU=PM	**Perennial living mulches – An option for maintaining production in buffers and other sensitive areas** John Baker USDA-ARS & University of MN CEU=SW	
2:20	**END**				

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Web: www.continentalnh3.com
Since 1954 we have been delivering high-quality anhydrous ammonia valves, meters, fittings, adapters, couplings and distribution devices.

CPS Wholesale
Booth: 323-325
P: 507.931.6660
Email: dan.wallerich@cpsagu.com
Web:
We are your full line distributor of all your crop production needs. Featuring Loveland products.

DASCO, Inc.
Booth: 220
P: 303.350.5050
Email: dlenz@dascoinc.com
Web: www.dascoinc.com
DASCO is a global commodities trader targeting crop nutrients, feed ingredients, industrial chemical and diesel exhaust fluid markets with our business partners.

Davis Equipment Corporation
Booth: N
P: 651.484.8411
Email: jfunkhouser@davisequip.com
Web: www.DavisEquip.com
Davis Equipment is a distributor of dry, liquid and NH3 fertilizer application blending and handling equipment. We represent AGCO/Willmar, Dalton Ag Products, Case/DMI, B & B Wagons, Doyle Equipment Mfg., InterSystems Fertilizer Equipment, and related parts and accessories.

Deer Creek Seed, Inc.
Booth: 424
P: 507.254.6563
Email: tpedretti@deercreekseed.com
Web: www.deercreekseed.com
Deer Creek Seed, Inc. is the only Midwestern company that grows, conditions and packages turf, forage, and wildlife seed, continually perfecting our "seed stewardship." We take great care and pride in upholding these credentials for our customers. Contact Joel Hagen, Ruth Burke, Tim Bauer, 48200 State Highway 112, Ashland, WI 54806. 515-686-9232 or rburke@deercreekseed.com

DowDupont
Booth: 311/410
P: 507.381.1550
Email: nntrygestad@dow.com
Web: www.dowagro.com
Dow AgroSciences. We are committed to increasing crop productivity through higher yields, better varieties, and more targeted pest management control. Our products and services are designed to solve pressing crop production problems for our customers, boosting agriculture productivity to maximum sustainable levels to keep pace with the growing needs of our world's rapidly expanding population.

EFC Systems
Booth: 204
P: 615.864.8503
Email: mmoore@efcsystems.com
Web: www.efcsystems.com
EFC Systems has delivered comprehensive Enterprise Resource Planning as well as Precision/Field Data Management solutions to agricultural retailers for more than 25 years. Our solutions support advanced farming practices that enables seamless data connectivity among growers and their agricultural service providers. Visit www.efcsystems.com for more information.

FarmChem
Booth: 303
P: 800.247.1854
Email: chad.simonson@farmchem.com
Web: www.farmchem.com
FarmChem offers liquid handling equipment for liquid fertilizers and chemicals, fiberflass tanks, stainless steel tanks, poly tanks, mini bulk equipment, plant design & automation, seed handling equipment, seed treaters, seed conveyers, seed bins, seed tenders, DEF equipment and petroleum equipment.

FieldReveal
Booth: 330-332
P: 320.760.6881
Email: eddy.roesch@fieldreveal.com
Web: www.fieldreveal.com
MZB is the proven, zone-based precision farming system that delivers, patented multi-layered field management allowing growers to maximize yield and minimize waste. Agronomists, consultants, dispatchers, and growers are seamlessly connected to current field data through the MZB Network

FMC Corp
Booth: 327
P: 507.460.2108
Email: beth.stoll@fmc.com
Web: www.fmccrop.com
FMC Corporation is a diversified chemical company serving agricultural, industrial and consumer markets globally with innovative solutions, applications and quality products.

Greystone Construction
Booth: 210
P: 952.496.2227
Email: cobrien@greystoneconstruction.com
Web: www.greystoneconstruction.com
General contractor and design builder of dry/liquid fertilizer storage and blending facilities, flat grain storage facilities, seed and chemical warehousing, workshops, offices, pre-engineered metal buildings, fabric buildings and concrete.

Gypsoil Brand Gypsum
Booth: 300
P: 312.784.0300
Email: events@gypsoil.com
Web: www.gypsoil.com
Supplier of high quality gypsum for use in agricultural production.

Hanson Silo
Booth: 414
P: 320.664.4171
Email: mikehanson@hansonsilo.com
Web: www.easyrakefacer.com and www.hansonsilo.com
Hanson Silo manufactures precast concrete silage and fertilizer containment walls and Easy Rake to eliminate bridged fertilizer on flat storage and keep a smooth face on silage piles.

2017 Exhibitors

Heartland Tank Companies
Booth: 440
P: 303.773.3230
Email: gbruce@heartlandtankservices.com
Web: www.heartlandtankcompanies.com
Providers of high quality fabrication and erection of API 650 storage tanks; internal, flexible PVC containment liners for large storage tanks; and API 653 certified tank inspections.

Helena Chemical
Booth: 221-223
P: 507.537.0317
Email: wiesend@helenachemical.com
Web: www.helenachemical.com
Please stop by our booth to talk about value-added products and service, to add revenue to your bottom line.

J&D Constructions Inc.
Booth: 217
P: 320.368.0960
Email: glen@jdconstinc.com
Web: www.jdconstinc.com
Desgin Builders. Commercial and Farm Grain Storage: Steel, Jumpform Concrete and Slipform Concrete. Fertilizer Plants: Wood Structures, Concrete Structures and Blending Towers. Complete Millwright Service: Emergency Breakdown Service, Remodeling and Renovation and a Full Repair Service

J.C. Ramsdell Enviro Services, Inc.
Booth: 315
P: 605.997.3706
Email: kelley.ramsdell@jcramsdell.net
Web: www.jcramsdell.com
Design and installation of secondary containment. Assistance with Department of Ag permitting.

John Deere - MN Commercial Application Dealers
Booth: E
P: 507.451.4054
Email: dave.baack@kibbleeq.com
Web: www.kibbleeq.com
The most complete line of commercial application equipment on the market. From self propelled sprayers, to nutrient application tools, and VRT/GPS capable products and services.

Kahler Automation
Booth: 420
P: 507.235.6648
Email: ejbeek@kaco.net
Web:
Plant automation for liquid and dry plants. Automation for bulk seed systems and automation for unstaffed plants.

Koch Fertilizer, LLC
Booth: 228
P: 316.828.6089
Email: jacque.scheck@kochind.com
Web: www.kochfertilizer.com
Koch Fertilizer is one of the world's largest producer and marketer of fertilizers.

Marcus Construction
Booth: 446
P: 320.222.6616
Email: randy@marcusconstruction.com
Web: www.marcusconstruction.com
Marcus Construction creates efficient agronomy centers for the agribusiness industry through the design and construction of bulk dry fertilizer storage and fertilizer blending facilities, inland and river fertilizer terminals, liquid fertilizer storage, chemical and seed warehouses and flat grain storage buildings.

Mathiowetz Construction
Booth: 117
P: 507.794.6953
Email: bradommodt@mathiowetzconst.com
Web: www.mathiowetzconst.com
Site work, excavation, drainage, aggregates.

microSource
Booth: 227
P: 308.325.2442
Email: larry.grote@microsourcellc.com
Web:
Manufacturer and seller of nitrogen stabilizers, low salt starters, liquid and dry micronutrients.

Midwest Laboratories, Inc.
Booth: 412
P: 402.334.7770
Email: stefanie@midwestlabs.com
Web: www.midwestlabs.com
Midwest Laboratories provides the agricultural industry with a comprehensive testing and analytical services team, industry specialized account managers and over 40 years of experience to deliver fast, personalized and reliable results through advanced technology and industry-leading customer service. Stop and see Jim Fasching - jfasching@midwestlabs.com

Midwestern BioAg
Booth: 335
P: 608.841.1659
Email: caitlin.roberts@midwesternbioag.com
Web: www.midwesternbioag.com
Manufacturer, blender and distributor of secondary and micronutrients. Five blending plants and terminal storage, with the largest, most diverse supply of secondary and micronutrient fertilizers. MicroPack 5-5-5, L-CBF liquid fertilizers, Protassium+, Rock Phosphate, K-Mag and much more.

MN Ag Water Resources Center
Booth: 106
P: 952.237.9822
Email: warren@mawrc.org
Web: www.mawrc.org
The Minnesota Agricultural Water Resource Center is a research and education organization comprised of twenty three agricultural organizations, all of which share a commitment to help Minnesota farmers address water quality issues through research and education.

MN Dept of Agriculture - Pesticide & Fertilizer Mgmt. Division
Booth: 100-102
P: 651.201.6322
Email: Jen.Schaust@state.mn.us
Web: www.mda.state.mn.us
The Pesticide & Fertilizer Management Division (PFMD) of the Minnesota Department of Agriculture (MDA) is responsible for most aspects of pesticide and fertilizer use in Minnesota to ensure the integrity of our food supply. PFMD oversees licensure and certification related to agricultural chemical use and performs inspections to ensure public safety. In support of the MDA mission, the division administers water resource protection programs to improve the health of our environment, and provides services to instill regulatory consistency in support of a strong agricultural economy.

MN Dept. of Ag - Plant Protection Division
Booth: 104
P: 651.201.6531
Email: denise.thiede@state.mn.us
Web: www.mda.state.mn.us
The Plant Protection Division of the MDA provides regulation of seed, nursery stock, and invasive species plus export/marketing services for potatoes, commodities, produce, and grain bonding.

MN/DOT Office of Freight & Commercial Vehicles Operations
Booth: 108
P: 651-366-4348
Email: jim.fox@state.mn.us
Web:
The mission of the office of Freight and Commercial Vehicle Operations is to advance highway safety by working with providers of commercial transportation to improve and enhance the safety of their operations.

Monsanto
Booth: 310-312-314
P: 507.456.1241
Email: reed.e.froseth@monsanto.com
Web: www.monsanto.com
Monsanto Company, is a leading provider of agricultural solutions to growers worldwide. Monsanto's employees provide top-quality, cost-effective and integrated approaches to help farmers improve their productivity and produce better quality foods.

Mosaic Company
Booth: D
P: 952.322.2242
Email: kevin.bachmeier@mosaicco.com
Web: www.mosaicco.com
Manufacturers of phosphate and potash fertilizers including the microEssentials, Aspire and K-Mag product lines. Kevin Bachmeier: 612.965.1252, Kyle Kraska: 763.592.9923. Savage, MN warehouse: 952-895-1260.

Murray Equipment Inc.
Booth: 212
P: 260.484.0382
Name: Kurt McClung
Email: kmcclung@murrayequipment.com
Web: www.murrayequipment.com
Murray Equipment is a supplier and manufacture of liquid handling equipment. Specializing in fertilizer and chemical system design.

2017 Exhibitors

MVTL Laboratories, Inc.
Booth: 302
P: 507.766.3319
Email: bwilliams@mvtl.com
Web: www.mvtl.com
MVTL, Inc. is a full-service laboratory specializing in agriculture, environmental, feed, food science, and energy. Our agricultural services offer approved methods for complete analysis methods and guidelines for soil, plant, manure, compost, SCN, lime, and fertilizer. Special chemistry packages for most environmental and engineering parameters on request.

NACHURS
Booth: 305-307
P: 320-424-1358
Email: Kevin Crandall
crandallk@nachurs.com
Web: www.nachurs.com
NACHURS proudly celebrating over 70 years in the industry, is the nation's leading manufacturer/marketer of high quality, true solution liquid fertilizer serving the needs of North American farmers since 1946. Contact Kevin Crandall at 320-424-1358 or crandallk@nachurs.com.

North Star Scale, Inc.
Booth: 313
P: 507.639.6647
Email: northstarscale@live.com
Web:
North Star Scale offers our customers a complete line of weighing systems, calibration and construction services. Serving Southern Minnesota and the surrounding states. Locations in Mapleton, MN and Ormsby, MN.

Novid Inc.
Booth: 406
P: 204.746.6843
Email: jenn@novid.ca
Web: www.novid.ca
Novid Inc. manufactures stainless steel liquid storage tanks and dry hopper bins specifically designed for the safe storage of fertilizers and chemicals. Novid's products are a long-term storage solution with the lowest long-term costs on the market.

Potash Corp
Booth: 105-107
P: 712.947.4155
Email: kyle.ortegren@potashcorp.com
Web: www.potashcorp.com
A primary producer of quality potash, phosphate and nitrogen fertilizer. "One company to know — one person to call." N, P, K Manufacturer.

Precision Laboratories LLC
Booth: 301
P: 701.659.1267 or 800.323.6280
Name: Tom Nissen
Email: info@precisionlab.com
Web: www.precisionlab.com
Precision Laboratories, LLC, is a leading provider of specialized chemistries applied to plants, seeds, soil and water to maximize resource and biological performance potential while stewarding the environment.

Precision Tank
Booth: 215
P: 217.452.7228
Email: Mike Greenwood
mgreenwood@precisiontank.com
P: 641.584.2900
Name: Jerry Price of Liquid Solutions
Web: www.precisiontank.com
Precision Tank has been a leader in ag tanks since 1965. PT Purchase A&B Welding – now Precision Liquid Construction in 2015 – PLC designs & builds liquid fertilizer terminals, offering turnkey solutions to include API 650 tanks.

Ranco Fertiservice, Inc.
Booth: 316
P: 712.283.2525
Email: sales@ranco.org
Web: www.ranco.org
Ranco Fertiservice manufacturers dry fertilizer blending and handling equipment. High quality and time-proven construction sets us apart from our competitors. Contact Todd Kraft in sales.

Raven Industries Inc.
Booth: 434-436
P: 605.575.0655
Email: michelle.grimmius@ravenind.com
Web: www.ravenprecision.com
Slingshot, Guidance and Steering, Boom Controls, Planter Controls, Application Controls and Field Computers. Hawkeye® Nozzle Control System Planter-Seeder/Harvest Controls.

RBR
Booth: F-H
P: 320.587.4030
Email: plenz@agsystemsonline.com
Web:
Stop at our booth and see the all new RBR floater. See the video what this machine can do either post or pre. Comes with a New Leader spinner box or CASE IH Flex Air.

RD Mechanical LLC
Booth: 321
P: 507.383.9043
Email: rondevries66@hotmail.com
Web: www.rd-mechanical.com
Chemical/Fertilizer Piping installer. Custom Built Catwalks, Custom Welding and Piping Modifications Repair.

Ridgewater College
Booth: 110
P: 320.222.5274
Email: curt.yoose@ridgewater.edu
Web: www.ridgewater.edu
Quality students from a quality custom application program. Ridgewater College, Willmar, MN 1-800-722-1151.

Rogers Wagley Inc.
Booth: 111
P: 507.360.4641
Email: mr.wagley@yahoo.com
Web: www.rogerswagleyinc.com
Secondary Containment Systems, Plumbing & Automation, State Permitting, Fiberglass - Stainless Steel and Poly Tank Distributor, Load Pads, and Ag Buildings.

Rosen's Inc.
Booth: 322-324-326
P: 507.238.4201
Email: ksundblad@riw2000.com
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: 206
P: 952.442.4450
Email: triciar@sackettwaconia.com
Web: www.sackettwaconia.com
Manufacturers of high quality dry fertilizer blending and handling equipment. Contact Troy Williams at troyw@sackettwaconia.com

Simonsen Mfg. Co.
Booth: L
P: 712.445.2211
Email: bricklin.sii@evertek.net
Web: www.simonsen-industries.com
Simonsen's manufactures pull spreaders, tender bodies, spreader bodies for trucks and floatation vehicles, bulk feed bodies.

Skinner Tank Company
Booth: 230
P: 918.387.2481
Email: kent@skinnertank.com
Web: www.skinnertank.com

Software Solutions Integrated, LLC
Booth: 317
P: 800.752.7912
Email: sales@agvance.net
Web: www.agvance.net
SSI provides integrated software solutions for ag retailers. Agvance is a windows-based system used throughout the U.S. and Canada. Applications for mapping, field planning, blending, invoicing, inventory, regulatory compliance, propane, motor fuel, grain, patronage and full accounting are included within the Agvance suite of products.

SOILMAP
Booth: 320
P: 515.835.0550
Email: polmstead@soilmap.com
Web: www.soilmap.com
SOILMAP is a web application designed to process the data and information for your agronomy operations. The software can connect with your accounting program to streamline the biling workflow from in-field applications to book keeping. Additionally you can created seed and fertilizer recommendations, scout crops, connect with an automated blending equipment and much much more!

Squibb-Taylor
Booth: 224
P: 214.357.4591
Email: path@squibbtaylor.com
Web: www.squibbtaylor.com
NH3 valves, NH3 hoses, and NH3 safety equipment.

2017 Exhibitors

SST Software
Booth: 402
P: 405.377.5334
Email: kendracox@sstsoftware.com
Web: www.sstsoftware.com
SST Software develops and markets farm management mapping and record keeping software and provides farm data and information services

Stueve Construction LLC
Booth: 404
P: 515.295.3110
Email: sanderson@stueve.com
Web: www.stueve.com
Since 1958... A "Premier" Industry Leader with 58 + years of experience in dry fertilizer storage construction. Our business focus is specialized in the construction of new plants, additions and remodeling existing plants. We feature "exclusive" In-House Stueve Construction Structural Engineering, experienced "on-site" job foremen, detail orientated project managers and knowledgeable staff in finding the right building solutions that fit your budget and scope. Contact us at (515) 295-3110!

Syngenta
Booth: 205-207
P: 507.227.8037
Email: nick.heronimus@syngenta.com
Web: www.syngenta.com
Syngenta is a world leading agriculture company with more than 25,000 employees in 90 countries. Through worldwide class science, global reach and commitment to our customers, our goal is to increase crop productivity, protect the environment and improve health and quality of life. For more information about Syngenta, go to www.syngenta.com or contact: Jacob Perkins at 507.441.1612 or jacob.perkins@syngenta.com

The Andersons Plant Nutrients
Booth: 231-233
P: 605.217.2011
Email: chelsea_limoges@andersonsinc.com
Web: www.andersonsplantnutrient.com
Nutra-Flo PureGrade Low-Salt Liquid Starter & Foliar Plant Fertilizer along with a full line of chelated micronutrients.

U of M Extension
Booth: 112-114
P: 612.625.4743
Email: trothman@umn.edu
Web: www.extension.umn.edu
An opportunity to become acquainted with some of the 2017 University of Minnesota Extension programs for crop production and pick-up results of various applied research projects.

Valent USA LLC
Booth: 331
P: 763.205.6895
Email: trevor.dale@valent.com
Web: www.valent.com
Valent USA Corp. develops and markets products that protect crops, enhance yields, improve food quality, beautify the environment and safeguard public health. Our products contribute greatly to the quality of life Americans enjoy.

Van Diest Supply Company
Booth: 129
P: 515.832.8641
Email: joel.abbott@vdsc.com
Web: www.vdsc.com
Distributor and manufacturer of agricultural chemicals. Cornbelt ® Product Line.

Verdesian Life Sciences
Booth: 337
P: 612.296.0236
Email: steve.vistad@vlsci.com
Web: www.vlsci.com
Verdesian Life Science is a nutrient effiency technology company. Our technologies raise yields and increase nutrient effiency in crops while improving soil health and water quality.

Vive Crop Protection
Booth: 333
P: 416.260.8889 ext 222
Email: danderson@vivecrop.com
Web: www.vivecrop.com
Using simple, small polymer particles as part of the Allosperse delivery system, Vive Crop Protection puts pesticides on target. Farmers see improved performance, greater sustainability, and save time and money. It's all about the delivery.

West Central Distribution, LLC
Booth: P
P: 320.235.8518
Email: tphillips@wcdst.com
Web: www.wcdst.com
West Central is a distributor of crop protection products, adjuvants and micronutrients, as well as a reseller of crop nutrients.

Wilger Inc.
Booth: 430
P: 731.968.7695
Email: wilgeresc@wilgeresc.com
Web: www.wilger.net
Manufacture of spray nozzles, bodies, boom tube systems, flow indicators, boomless nozzles, boom flush valves.

Willmar Fabrication, LLC
Booth: 141-143/240-242
P: 320.843.1700
Web: www.willmarfab.com
Willmar Fabrication, LLC manufactures spray-hoods to help control spray drift and resistant weeds. We also off the Redball® Spray Monitor and the Reservoir Tillage 850 to help farmers optimize use of water in their fields.

WinField United
Booth: 235-237/334-336
P: 507.829.5859
Email: cebuysse@landolakes.com
Web: www.winfieldsolutionsllc.com
Supplier and marketer of crop protection products, seed, agronomy services and equipment.

Yargus Manufacturing, Inc.
Booth: 400
P: 217.826.6352
Email: andrea.tarble@yargus.com
Web: www.yargus.com
Yargus Manufacturing offers a wide range of fertilizer and material handling equipment. Examples include: Tapered Vertical Blender, Volumetric/Declining Weight Blenders, Towers, Bucket Elevator Legs. Chain Paddles, Portable Conveyors and Receiving Equipment. We also offer in- house engineering, automation and have installation and service teams available as needed.

Ziegler Cat
Booth: A
P: 952.885.8174
Email: Jenny.Covers@zieglercat.com
Web: www.zieglercat.com/ag
Caterpillar Compact Construction equipment.

Ice Breaker Reception

Exhibit Hall B Show Floor
Tuesday, December 12th
5:00 PM to 6:30 PM

Come and Celebrate!
Drink tickets can be purchased at the registration counter.

2017 Buyers Guide

Application Equipment (Accessories)
360 Yield Center
Ag Spray Equipment
Arnold's
C & R Supply, Inc.
Wilger, Inc
Willmar Fabrications, LLC

Application Equipment (Dry)
Ag Spray Equipment
Arnold's
Davis Equipment Corporation
John Deere - MN Commercial Application Dealers
RBR
Simonsen Mfg. Co.

Application Equipment (Liquid)
Abner Sales
Ag Spray Equipment
Arnold's
Brokaw Supply Company
Davis Equipment Corporation
John Deere - MN Commercial Application Dealers
Raven Industries Inc.
Willmar Fabrications, LLC

Application Equipment (NH3)
Brokaw Supply Company
Continental NH3 Products
Davis Equipment Corporation
Raven Industries Inc.
Squibb-Taylor
Verdesian Life Sciences

Augers
Simonsen Mfg. Co.

Blending Equipment
Davis Equipment Corporation
Murray Equipment Inc.
Ranco Fertiservice, Inc.
Sackett Waconia
SOILMAP
Yargus Manufacturing, Inc.

Computer Equipment
EFC Systems Inc.
FieldReveal
SST Software

Construction - Diking
Greystone Construction
J&D Construction Inc.
J.C. Ramsdell Enviro Services, Inc.
Mathiowetz Construction
Precision Tank
Rogers Wagley Inc.
Stueve Construction LLC

Conveyors
FarmChem
Ranco Fertiservice, Inc.
Sackett Waconia
Yargus Manufacturing, Inc.

Crop / Soil Amendments
Advanced Biological Marketing
AgXplore International, Inc.
Alltech Crop Sciences
FieldReveal
Gypsoil Brand Gypsum
Midwestern BioAg, Inc.
MN Dept of Agr - Pest. & Fert. Mgmt. Division
SOILMAP

Distributor / Wholesaler (Chemicals)
AgraSyst
CPS Wholesale
Helena Chemical
Rosen's Inc.
Syngenta
Van Diest Supply Company
West Central Distribution, LLC
WinField United

Distributor / Wholesaler (Fertilizer)
ADM Fertilizer
CHS Agronomy
DASCO, Inc.
Gypsoil Brand Gypsum
Helena Chemical
Koch Fertilizer, LLC
microSource
Midwestern BioAg, Inc.
Stueve Construction LLC
Van Diest Supply Company
West Central Distribution, LLC

Distributor / Wholesaler (Micronutrients)
CPS Wholesale
Helena Chemical
microSource
Midwestern BioAg, Inc.
Rosen's Inc.
Van Diest Supply Company
West Central Distribution, LLC
WinField United

Environmental (Consultants & Eng)
Mathiowetz Construction
MN Ag Water Resources Center

Environmental Assessments
MN Ag Water Resources Center
MN Dept of Agriculture - Pest. & Fert. Mgmt. Division

Government
MN Dept. of Ag - Plant Protection Division

Handling Equipment
Abner Sales
C & R Supply, Inc.
FarmChem
Hanson Silo
J&D Construction Inc.
Ranco Fertiservice, Inc.
RD Mechanical LLC
Sackett Waconia
Yargus Manufacturing, Inc.

Hoses
Squibb-Taylor

Laboratory / Testing Services
Agvise Laboratories
Midwest Laboratories, Inc.
MVTL Laboratories, Inc.

Manufacturer (Chemicals)
AgraSyst
Arysta Life Science
BASF Corp.
Bayer CropScience
DowDupont
FMC
Helena Chemical
Monsanto
Precision Laboratories, Inc.
Valent USA LLC
Van Diest Supply Company
Verdesian Life Sciences
Vive Crop Protections

Manufacturer (Equipment)
Ag Spray Equipment
Hanson Silo
John Deere - MN Commercial Application Dealers
Murray Equipment Inc.
Ranco Fertiservice, Inc.
Sackett Waconia
Simonsen Mfg. Co.
Wilger, Inc
Willmar Fabrications, LLC
Yargus Manufacturing, Inc.

Manufacturer (Fertilizer)
Agrium, U.S. Inc.
Calcium Products
Compass Minerals
Koch Fertilizer, LLC
microSource
Mosaic Company
NACHURS
Potash Corp
Stueve Construction LLC
The Andersons Plant Nutrients
Verdesian Life Sciences

2017 Buyers Guide

Manufacturer (Micronutrients)
Alltech Crop Sciences
microSource
Midwestern BioAg, Inc.
Mosaic Company
Verdesian Life Sciences

Meters
FarmChem
Kahler Automation
Murray Equipment Inc.
RD Mechanical LLC

Other - Nitrogen Additives
AgXplore International, Inc.

Other - Ag Storage Solutions
Hanson Silo

Other - Components for Sprayers
Wilger, Inc

Other - Construction - Buildings
Stueve Construction LLC

Other - Construction - Storage Facilities
Marcus Construction

Other - Design-Build General Contractor
Greystone Construction

Other - Education
Ridgewater College

Other - Fertilizer Storage
Greystone Construction

Other - Grain Storage
Greystone Construction

Other - Internal PVC Liners
Heartland Tank Companies

Other - Liquid Fertilizer Terminol Construction
Precision Tank

Other - Nitrogen Management Tools
360 Yield Center

Other - Secondary Containment
J.C. Ramsdell Enviro Services, Inc.

Other - Site Construction
Mathiowetz Construction

Other - Software Solutions
EFC Systems Inc.

Government Agency
MN Dept of Agriculture - Pest. & Fert. Mgmt. Division

Other - Tank Liners
Agra Liners, LLC

Other - University Outreach & Education of MN
U of M Extension

Precision Ag
Agvise Laboratories
Arnold's
Brokaw Supply Company
C & R Supply, Inc.
Capstan Ag Systems
EFC Systems Inc.
FieldReveal
John Deere - MN Commercial Application Dealers
Midwest Laboratories, Inc.
Monsanto
Raven Industries Inc.
SOILMAP
SST Software
WinField United

Pumps
Abner Sales
C & R Supply, Inc.
FarmChem
Kahler Automation
Murray Equipment Inc.
Rogers Wagley Inc.

Safety Equipment
Squibb-Taylor

Scales
Kahler Automation
North Star Scale, Inc.

Seed
Advanced Biological Marketing
Bayer CropScience
Brokaw Supply Company
CPS Wholesale
Deer Creek Seed
MN Dept. of Ag - Plant Protection Division
Monsanto
Syngenta
WinField United

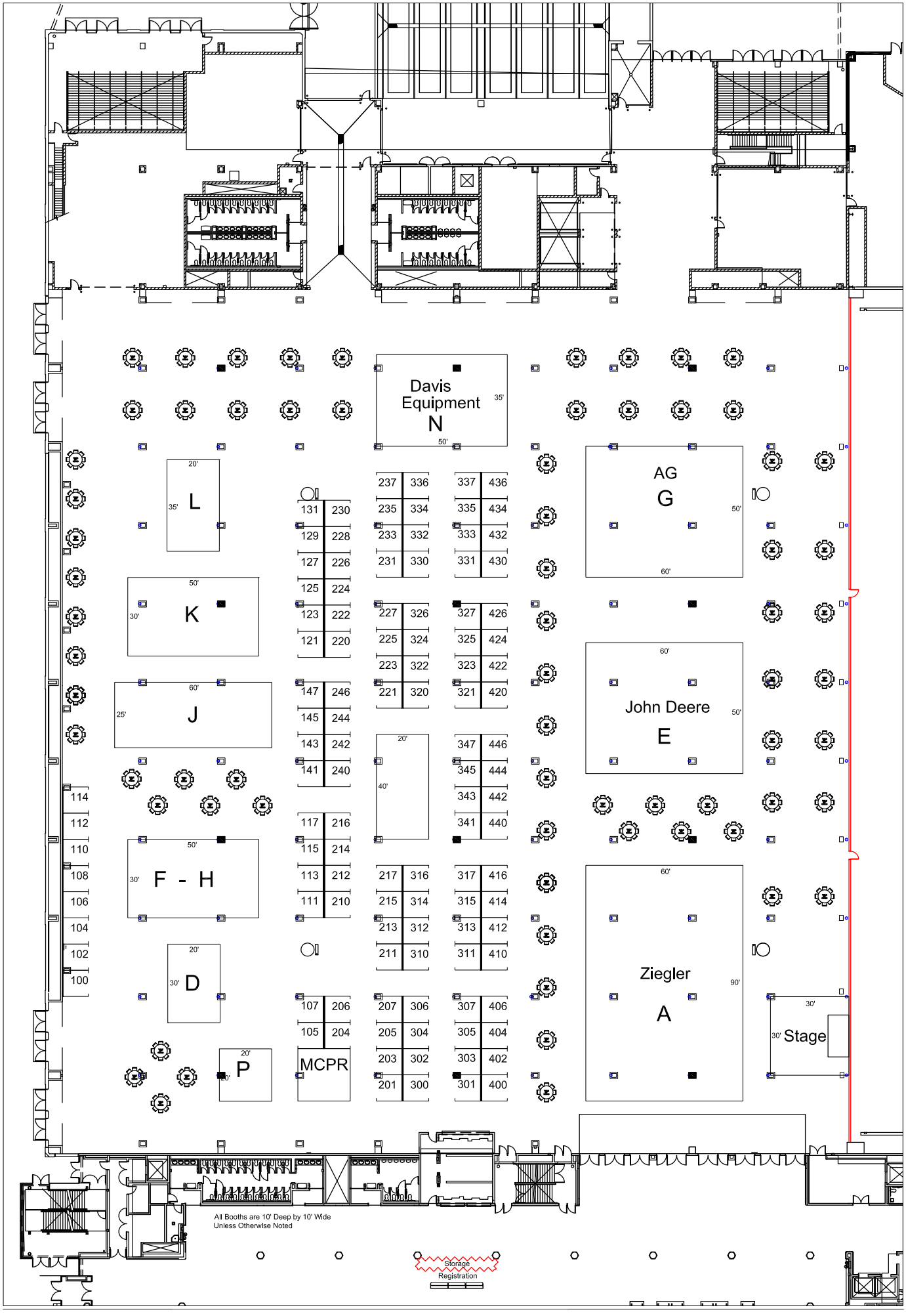
Skid Steers - MTL's
Ziegler Cat

Tanks
Abner Sales
Agra Liners, LLC
Heartland Tank Companies
J.C. Ramsdell Enviro Services, Inc.
Novid Inc.
Precision Tank
RD Mechanical LLC
Rogers Wagley Inc.

Tenders
Simonsen Mfg. Co.
SOILMAP
Willmar Fabrications, LLC

Training and Software
EFC Systems Inc.
FieldReveal
Midwest Laboratories, Inc.
Software Solutions Integrated, LLC
SST Software

Valves
Kahler Automation
Raven Industries Inc.
RD Mechanical LLC
Rogers Wagley Inc.
Squibb-Taylor


Davis Equipment N
35'
50'
AG G
50'
60'
L
20'
35'
K
50'
30'
J
60'
25'
F - H
50'
30'
D
20'
30'
P
20'
20'
MCPR
John Deere E
60'
50'
Ziegler A
60'
90'
Stage
30'
30'
40'
131 230
129 228
127 226
125 224
123 222
121 220
147 246
145 244
143 242
141 240
117 216
115 214
113 212
111 210
107 206
105 204
237 336
235 334
233 332
231 330
227 326
225 324
223 322
221 320
217 316
215 314
213 312
211 310
207 306
205 304
203 302
201 300
337 436
335 434
333 432
331 430
327 426
325 424
323 422
321 420
347 446
345 444
343 442
341 440
317 416
315 414
313 412
311 410
307 406
305 404
303 402
301 400
114
112
110
108
106
104
102
100
All Booths are 10' Deep by 10' Wide
Unless Otherwise Noted
Storage
Registration