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**NORTH CENTRAL EXTENSION-INDUSTRY
SOIL FERTILITY CONFERENCE**

109 E. Main St., Monticello, IL 61856

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52nd Annual

**NORTH CENTRAL EXTENSION-INDUSTRY
SOIL FERTILITY CONFERENCE**

November 16-17, 2022

Planning Committee

Chair: David Franzen, North Dakota State University
Ed Lentz, The Ohio State University
Jason Clark, South Dakota State University
Daniel Kaiser, University of Minnesota
Matt Ruark, University of Wisconsin-Madison
Cristie Preston, Nutrien
Matt Clover, Corteva

Conference Organizer: PAQ Interactive, Inc.
ONLINE PROCEEDINGS: northcentralfertility.com



52nd Annual NORTH CENTRAL EXTENSION-INDUSTRY SOIL FERTILITY CONFERENCE

WEDNESDAY, NOVEMBER 16

- 1:00 pm Welcome
- 1:05 pm **Integrated and Impactful Research and Extension Through Digital On-farm Research** *Laura Thompson, University of Nebraska-Lincoln*
- 1:40 pm **Practical Farmers of Iowa On-farm Research Program**
Stefan Gailans, Practical Farmers of Iowa
- 2:15 pm Poster Break
- 3:30 pm **Design, Wrangling and Analysis of an On-farm Strip Trial – Iowa Soybean Association Methodologies** *Scott Nelson, Iowa Soybean Association Research Center for Farming Innovation*
- 4:05 pm **The Ammonia Rainbow** *Alan Blaylock, Nutrien Inc*
- 4:40 pm Poster Break and Cash Bar
- 5:45 pm Banquet and Awards

THURSDAY, NOVEMBER 17

- 8:00 am **Pelleted Lime Application Strategies for Iowa Corn and Soybean Production** *Antonio Mallarino, Iowa State University*
- 8:20 am **N, S and Micronutrient (B + Zn) Interactions in Soft Red Winter Wheat Nutrition** *John Grove, University of Kentucky*
- 8:40 am **Agronomic Management of Nitrogen to Reduce N₂O Emissions in Manitoba** *John Heard, Manitoba Agriculture*
- 9:00 am **Utilizing Fertilizer and Fungicide Strategies to Enhance Winter Wheat Grain and Straw Production**
Kurt Steinke, Michigan State University
- 9:20 am Poster Break
- 9:55 am **Carbon Credit and Sequestration in Agroecosystems; Lessons from Trials in Southern Illinois**
Amir Sadeghpour, Southern Illinois University Carbondale
- 10:30 am **Landscape Position Affects Management Decisions for Crop Production**
Gurbir Singh, University of Missouri
- 10:50 am **Advances in North Dakota Soil Fertility 2022**
David Franzen, North Dakota State University
- 11:10 am **Cover Crops, Manure, and Nitrogen**
Matt Ruark, University of Wisconsin-Madison
- 11:30 am Closing and Adjourn

POSTER PRESENTATIONS

GENERAL

A Minnesota-Wide Assessment of Critical Pre-Plant and in-Season Soil Nitrate for Adjusting Nitrogen Rate Guidelines
Emerson Souza, University of Minnesota

Biochemical Soil Health Indicators Related to Economic Optimum Nitrogen Rate in Corn
Daniela Orjuela Diaz, University of Wisconsin-Madison

Comparison of Wheat and Barley to Rye as a Cover Crop for Maize
Rob Nalley, University of Kentucky

Evaluation of Soybean Response to Surface and Sub-surface Phosphorus Fertilizer Placement
Jovani Demarco, Kansas State University

Lower Soil Test P Values Do Not Affect Crop Yield Values when Under Conservation Practices
Clarence Winter, South Dakota State University

Updating Soil-test Phosphorus and Potassium Calibrations for Wisconsin
John Jones, University of Wisconsin-Madison

GRADUATE AWARD STUDENT POSTER

Manure Total Nitrogen Variability Due to Analytical Method and Total Solids Content
Nancy Bohl Bormann, University of Minnesota

Assessing the Impact of the 4R Nutrient Management on Nitrogen Use Efficiency in Corn
Pedro Morinigo Ferreira, Kansas State University

Benchmarking Nitrogen Recommendation Tools for Nebraska Winter Wheat
Jose Cesario Pinto, University of Nebraska-Lincoln

Consideration of Clay Mineralogy for Enhanced Prediction of Optimal Corn Potassium Fertilizer Rates
Andrew Ahlertmeyer, South Dakota State University

Cover Crop Species and Planting Methods Influence on Corn N Requirement in Southern Illinois
Casey Kula, Southern Illinois University Carbondale

Does Interseeded Cover Crops Composition Affect Corn N Fertilizer Needs and Corn and Soybean Yields?
Srinadh Kodali, South Dakota State University

Drainage and Nitrogen Management Affects Soil Health and Soil Properties
Harpreet Kaur, University of Missouri Columbia

Effects of Silicon Supplementation on Growth and Silicon Accumulation in Tall Fescue (*Festuca arundinacea*) and Bentgrass (*Agrostis stolonifera*)
Sara Qian, University of Kentucky

Improving Digital Soil Maps for Site-specific Soil Fertility Management Using Feature Selection
Caner Ferhatoglu, Iowa State University

Managing Trade-offs of Winter Rye as a Cover Crop
Monica Schauer, University of Wisconsin Madison

Soybean Biological Nitrogen Fixation and Production As Affected by Starter Fertilizer, Nitrogen Application, and Planting Date
Storm Soat, Michigan State University

Individual Leaf Selection to Best Represent Whole-Plant Nutrient Status in Modern Corn Cropping Systems
Brendan Hanson, Purdue University

Versatility of Mycorrhizal Fungi Applications to Increase Maize Productivity
Logan Woodward, University of Illinois Urbana-Champaign

GRADUATE AWARD STUDENT/STATE POSTER

Elucidating How N Management Practices and Excess Water Conditions Affect Corn N Uptake and Grain Yield
Wanderson Novais, The Ohio State University

STATE POSTER

Corn Responses to Sulfur Fertilizer in Indiana
James Camberato, Purdue University

Evaluation of Plant Tissue Analysis to Assess Phosphorus Nutritional Status in Corn and Soybean
Gustavo Roa, Kansas State University

Evaluation of Soil Test Potassium Guidelines in Minnesota
Daniel Kaiser, University of Minnesota

Promoting Adoption of Precision Nitrogen Management Technologies Through On-farm Research
Laura Thompson, University of Nebraska - Lincoln

Updating Phosphorus Recommendations for Illinois
Andrew Margenot, University of Illinois Urbana-Champaign

What Soil Measurements Relate Best to Corn Economic Optimal N Rate?
Jason Clark, South Dakota State University