

The meeting of the South Dakota Nutrient Research and Education Council (NREC) was called to order by Chairman Ryan Wolf at 9:00 AM, December 2, 2021 at the McCrory Gardens Education and Visitor Center in Brookings, SD.

The following Council members were in attendance: Kevin Bachmeier, Tom Gere, Bill Gibbons, Kyle Gustafson, Bruce Haines, Jim Loken, Colin Nachtigal, Jerry Runia, Ryan Schuchhardt, Robert Walsh, Paul Wegleitner, and Ryan Wolf. The Council member absent from the meeting was Bryan Jorgensen. Also, in attendance were Kathy Zander, Executive Director, South Dakota Agri-Business Association and Angela Loftesness, Assistant to the Dean, College of Agriculture, Food and Environmental Sciences.

Ryan Wolf welcomed everyone to the meeting and asked for everyone to introduce themselves. In addition, he added a recognition for Richard Jenny and a discussion about updating the NREC bylaws to the agenda.

Ryan Wolf asked for approval of the July 14, 2021 meeting minutes. Robert Walsh moved to approve the minutes from the July 14, 2021 meeting. The motion was seconded by Kevin Bachmeier and the motion carried.

Jim Loken reviewed the December 1, 2021 financial report with a discussion of the available balances. Angela Loftesness noted with a change in employees at SDSU, there will need to be additional follow-up with researchers on budgets before the end of the year. Kyle Gustafson moved to accept the December 1, 2021 financial report. The motion was seconded by Ryan Schuchhardt and the motion carried.

Ryan Wolff led a discussion about the approval of requests for no-cost extensions. Bruce Haines moved that all the projects be voted for at the same time in one motion. The motion was seconded by Robert Walsh and the motion carried. The council discussed that extensions of previously funded projects in the future should be for only six months and not for twelve months.

Bruce Haines then moved to approve the projects as listed for no-cost extensions and the motion was seconded by Jim Loken. The motion carried approving the following projects for no-cost extensions:

- Srinivas Janaswamy: Synthetic nodules for nitrogen nutrition in cereal crops (3SA436), year 1 of 5, \$49,932 for a twelve-month no cost extension.
- Dwayne Beck: The impact of soil test level differences on crop response, P leaching, and P runoff under long-term no-till management in South Dakota (3SD426), year 4 of 5, \$49,752 for a twelve-month no cost extension.
- Peter Kovacs: Sulfur source and application timing effect on soybean yield (3SC415), year 3 of 3, \$75,000 for a six-month no cost extension.
- Peter Kovacs: Investigating fertilizer response and requirement in high protein soybean varieties (3SA434), year 1 of 3, \$79,221 for a six-month no cost extension.
- Peter Kovacs: Investigating Impact of Starter Fertilizer Placement on Plant Development, Grain Yield, and Nutrient Uptake (3SA435), year 1 of 4, \$85,000 for a six-month no cost extension.

- Jason Clark: Nitrogen fertilizer recommendation Update for Corn (35D535), year 4 of 4, \$87,713 for a twelve-month no cost extension.
- Jason Clark: Influence of interseeding cover crops on nitrogen fertilizer rate requirement for optimal corn grain yield in a no-till system (3SC417), year 3 of 3, \$73,170 for a twelve-month no cost extension.
- Jason Clark: Combining soil fertility and soil health to improve corn potassium, phosphorus, and sulfur fertilizer recommendations (3SB430), \$68,641 for a twelve-month no cost extension.
- Jason Clark: Building potassium fertilizer guidelines that include soil classification information (3S3433), year 2 of 3, \$108,741 for a twelve-month no cost extension.

Ryan Wolff led a discussion about the approval of previously funded projects that were ranked for consent in an email vote. Robert Walsh moved for approval of the consent votes for previously funded projects and the motion was seconded by Bruce Haines. The motion carried approving the following previously funded projects:

- David Clay: Influence of nitrogen stabilizers and application dates in no-tillage corn production on nitrogen use efficiency and N losses to the atmosphere and groundwater (3SA437), year 2 of 3, \$90,801.
- Dwayne Beck: The impact of soil test level differences on crop response, P leaching, and P runoff under long-term no-till management in South Dakota (3SD426), year 5 of 5, \$78,628.
- Jason Clark: Nitrogen fertilizer recommendation Update for Corn (35D535), year 5 of 7, \$91,982.
- Jason Clark: Building potassium fertilizer guidelines that include soil classification information: Year 3 (3SB433), year 3 of 3, \$107,721.
- David Clay: Building a South Dakota Corn No-tillage N Recommendation Algorithm that Considers Improvements in Soil Health (3SC416), year 4 of 4, \$47,152.
- Peter Kovacs: Investigating Impact of Starter Fertilizer Placement on Plant Development, Grain Yield, and Nutrient Uptake (3SA435), year 2 of 4, \$89,954.
- Jason Clark: Combining soil fertility and soil health to improve corn potassium, phosphorus, and sulfur fertilizer recommendations (3SB430), year 3 of 3, \$69,993.
- John McMaine: Identifying Nutrient Loss Hot Spots in Tile Drainage: Year 3 (3SB431), year 3 of 3, \$68,972.
- David Karki: Calibration of Nitrogen requirement of oats grown for grain in South Dakota (3SD340), Year 5 of 5, \$35,382.
- Peter Kovacs (Sandeep Kumar): Influences of manure and fertilizer application in corn-soybean-spring wheat/cover crops rotation on Water availability and quality, soil fertility, and crop yield (3SA438), Year 2 of 2, \$81,770.
- Peter Kovacs: Investigating fertilizer response and requirement in high protein soybean varieties: Year 2 (3SA434), Year 2 of 4, \$80,326.
- Jason Clark: Influence of Interseeding Cover Crops on Nitrogen Fertilizer Rate Requirement for Optimal Corn Grain Yield in a No-till System: Years 4-6 (3SC417), Year 4 of 6, \$74,224.

The council heard new project presentations from researchers and took the following actions:

- Robert Miller: Evaluation of Soil Test Potassium and Side Dress Application of Potassium and Biochar on Corn Nutrition and Grain Yield in Eastern South Dakota (New), \$34,000. Robert Miller moved to approve this project and the motion was seconded by Collin Nachtigal. The motion carried.
- Evaluation of Zinc and Boron Micro-nutrients on Corn Nutrition and Grain Yield in Eastern South Dakota (New), \$34,000. Bruce Haines moved to approve this project and the motion was seconded by Jim Loken. The motion carried.
- Sunish Sehgel: Breeding for improved nitrogen use efficiency (NUE) in South Dakota winter wheat under regenerative agriculture management (New), \$74,625. Ryan Schuchhardt moved to approve this project and the motion was seconded by Colin Nachtigal. The motion carried.
- Peter Kovacs: Investigating P and K Fertilizer Application Timing and Management Strategy on Crop Yield, and Nutrient Uptake (New), \$85,085. Bruce Haines moved to table this project and the motion was seconded by Jerry Runia. The motion carried.
- John McMaine: Engaging, Educating, and Empowering Agriculture through an NREC Focused Podcast Season (New), \$12,000. Bruce Haines moved to approve this project and the motion was seconded by Robert Walsh. The motion carried.
- John McMaine: Precision Controlled Drainage for Reducing Nutrient Loss through Tile Drainage and Improving Yield (New), \$54,285. Bruce Haines moved to approve this project and the motion was seconded by Kevin Bachmeier. The motion carried.
- Lin Wei: Application of biosolid-based nitrogen control release fertilizers to improve nitrogen use efficiency of corn production and soil health in South Dakota (New), \$95,405. Robert Walsh moved to approve this project and the motion was seconded by Bruce Haines. The motion carried.
- Thandiwe Nleye: Impacts of N fertilizer placement method and rate on sunflower growth and yield, fertilizer use efficiency, and weed growth (New), \$62,712. Robert Walsh moved to not approve this project and the motion was seconded by Colin Nachtigal. The motion carried.
- Christopher Graham: Evaluating Selected Soil Health Indices for Predicting Nitrogen Fertilizer Requirement for Winter Wheat in Western South Dakota (New), \$37,879. Bruce Haines moved to approve this project and the motion was seconded by Jim Loken. The motion carried.
- Christopher Graham: Evaluating Nitrogen and Carbon Cycling in Wheat Following Fire (New), \$17,986. Colin Nachtigal moved to not approve this project and the motion was seconded by Robert Walsh. The motion carried.
- Ali Nafchi: Development of an Inexpensive Y-drop System Combined with a Cover Crop Planter to Improve Nitrogen Use Efficiency While Inter-Seeding Cover Crops (New), \$103,907. Bruce Haines moved to approve this project and the motion was seconded by Kevin Bachmeier. The motion carried.

The total amount of previously funded projects to receive continued funding in 2022 was \$916,905. The total amount of new projects funded in 2022 were \$446,101. Water quality projects approved totaled \$573,768 or approximately 42%, exceeding the 10% required by law.



MINUTES
December 2, 2021

The Council moved into Executive Session to discuss additional business. The need for SDSU researchers to have a strip till machine was discussed and Ryan Wolf agreed to work with Jason Clark and Peter Kovacs and will report back to the Council at the July meeting.

Ryan Wolf asked the Council to consider recognizing members for their time served on the Council. Bruce Haines moved that the Council purchase a \$100 gift card for Richard Jenny and for future out-going members. The motion was seconded by Ryan Schuchhardt and the motion carried.

A discussion of changing the NREC bylaws to recognize the South Dakota Department of Agriculture and Natural Resources and suggested updates were noted. Kathy Zander will draft an updated version to send to the Council for approval at the July meeting.

The next meeting will be held in mid-July of 2022 and Angela Loftesness will send the Council dates to be considered.

Kevin Bachmeier moved for the meeting to adjourn at 4:07 PM. Jerry Runia seconded the motion and the motion carried.

Submitted by:



Ryan Wolf, Chairman