

# Of Minnesota Since 1975 1010 West St. Germain, Suite 600 St. Cloud, MN 56301 T1183101 T118310



### Comments by the IAM President

Jake Wildman

Greetings IAM Members,

Thank you for checking out IAM's summer newsletter. I hope everybody is having a great summer and been have fortunate to catch a few these passing rains. It's been a nice change compared to last year. I think it's fair to say that all of us hope we do not have to experience a year like 2021 again for a while.

Just this past week IAM hosted our annual summer legislative tour. For this year's tour, IAM partnered with Dr. Vasu Sharma, U of M extension, and R.D. Offutt Farms. The tour took place at R.D. Offutt's Becker location and overall the event went very well. There were several legislators that attended, along with representatives from the DNR and MDA. All of the details from the day can be found here in the newsletter. I just want to thank everybody that attended and also thank the R.D. Offutt Farms for partnering with IAM and hosting our annual summer irrigation tour.

Staying on the legislative topic but switching directions some, I

PRESIDENT continued on page 2

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### IAM Awards Alan Peterson Agricultural Scholarship to Two College Students - Fall 2022

The Irrigators Association of Minnesota board of directors has recently selected two students to receive the second annual Alan Peterson Agricultural Scholarships. Congratulations to Kaitlyn Lorang of Morton, MN and Lafe Aarsvold of Altura, MN for being selected this year.



Kaitlyn is a 2020 graduate of Cedar Mountain High School in Morgan and is attending South Dakota State University studying Agricultural Communications, Agronomy and Crop Protection. Her goal is to work in soil conservation with an organization like NRCS and bring her knowledge to improving productivity on farms while supporting good environmental practices. Kaitlyn is dedicated to the future of agriculture and wants to be part of the solution to feed a growing world.

Lafe is a 2019 graduate of Plainview-Elgin-Millville High School in Plainview and is attending Southwest Minnesota State University with a major in Agronomy. After graduation, he hopes to get a job working in breeding and genetics of corn hybrids to bring new genetics to the corn industry. He looks forward to working on hybrids that could reduce the need for nutrient supplements. Lafe is dedicated to agriculture and helping farmers overcome their challenges on the farm and in life.



The Alan Peterson Agricultural Scholarship serves to RESPECT natural resources, EMBRACE innovation, ADVOCATE for agriculture at local, regional and national levels, PROTECT irrigated production agriculture and PROMOTE research.

A committee of IAM members chose students who are either currently attending an accredited post-secondary college program pursuing a career in an Agricultural related field or are High School seniors planning to enroll in an Agricultural related field of study.

### FIELD DAY **OPPORTUNITIES**

ROSHOLT RESEARCH FARM FIELD DAY

**Thursday August 18th** 10 am to 1 pm Westport, MN More Info - Pg: 7

AG AND ENERGY

CENTER FIELD DAY Friday August 26th 9:00 am - 2:30 pm **Central Lakes College** Staples, Mn More Info - Pg: 5

UNIVERSITY of MN **SAND PLAIN** RESEARCH CENTER Wednesday, August 31th 4:00 pm to 7:30 pm Near Becker, MN More Info. - Pg: 5

### R.D. Offutt Farms and IAM Co-Hosted the Annual Legislators Farm Tour

On Friday July 29th R.D. Offutt Farm staff co-hosted IAM's annual Legislators Farm Tour in Sherburne County. Over 50 attendees including legislators and aids, and several irrigating farmers observed and learned about the latest variable rate center pivot and control systems that R.D Offutt Farms is evaluating to be more precise in applying water, nutrients, and other crop protections.

RDO staff explained and demonstrated how these new tools provide more readily available in field assessments to keep track of the daily crop ET, soil moisture status, plant health, etc. in different sectors of the field to assist the field manager in deciding the next treatment in application of water, nitrogen, or other plant health protection needs.



RDO/IAM TOUR continued on page 12

### **PRESIDENT** continued from pg 1

want to update everybody on IAM's bill and where it ended up during this past legislative session. As you may know, it was a very interesting environment in St. Paul throughout this entire session. Similar to the last couple of years, we had full support in the Senate and our language was included in their environment bill. As this bill progressed through conference committee, our language was eventually removed. At the same time thou, it was also becoming clearer that the House and the Senate would not be able to agree upon any language. Ultimately, both sides could not come up with an agreement, meaning that there would not be an environment bill from this



past session. This was actually a good thing since there was some language included in the House version that could possibly have had a negative impact on irrigators. With that being said, it was disappointing that our language was removed, but we viewed the final outcome as a positive thing.

One final thing I would like to mention about IAM's legislative activities.

Over the last couple of years, this is the time of year where IAM would work with our lobbyist to develop a game plan for next year's legislative session. We are going continue to do that, but it is going to be a little more of challenge then in the past. I say this because there is an election coming up in November and between the House and the Senate, about 1/3 of the current members are leaving or retiring. In other words, there will be a lot of new faces in St. Paul and that's what makes it challenging. I know our goal is to be the most prepared as possible prior to the election, so come November, we can hit the ground running tackling the issues that affect you as irrigators.

Thank you for all of your support and being a part of IAM. We would not be able to do all of the things I discussed above without the support of you as members, so thank you. As always, if you are not a member, I encourage you to think about. I mentioned in the last newsletter that we were getting close to that 500 membership number and as of today we are oh so close. I hope everybody has a great rest of your summer and if there happens to be any issues that arise, please don't hesitate to reach out.

> Jake Wildman 320-424-0713 jakewildman@outlook.com

If you are not interested in receiving future newsletters from Irrigators Association of Minnesota (IAM), please send a note to wrightsj@charter.net or IAM, 24 S. Edquist St., Appleton, MN 56208

If you have a topic that you would like to see discussed in a future issue, drop a note to IAM president, Jake Wildman at jakewildman@outlook.com. Articles for the newsletter are solicited and gathered by the IAM officers and Membership Secretary, Jerry Wright whom can be contacted at jerrywright1970@gmail.com.

Crow River Media in Hutchinson manages the advertiser space and edits, prints and mails the newsletter.

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### THE COST TO PUMP WATER KEEPS INCREASING

By Tom Scherer, Extension Agricultural Engineer 701-231-7239, Thomas.Scherer@ndsu.edu

Electricity and diesel fuel are the most common energy sources for pumping irrigation water in North Dakota. Currently, the price of farm-delivered diesel fuel is around \$5 per gallon, and it is not certain the price will drop by the end of the irrigation season. If you currently use a diesel-powered pump for irrigation, it could pay to consider converting to an electric powered pump.

Figures 1 and 2 show the costs of pumping one acre-inch of water with a high-, medium- and low-pressure pumping plant for a wide range of fuel costs. An acre-inch is 27,500 gallons of water, which is the amount of water required to cover one acre to a depth of one inch. To apply an inch of water to the land under a standard quarter section center pivot requires about 128 acre-inches of water. These graphs were developed for center pivot sprinkler systems that obtain water from wells. The energy to power the center pivot (whether electric or hydraulic) has been included in the pumping costs.

The high-pressure system assumes a 50-foot lift in the well and 100 pounds per square inch (psi) of pressure at the pump. The medium-pressure system assumes a 50-foot lift in the well and 70 psi of pressure at the pump. The low-pressure system assumes a 50-foot lift in the well and 40 psi at the pump. The statewide average irrigation cost for off-peak electric power is about 7 cents per kilowatt-hour (KWH) and regular power rates are about 10 cents in North Dakota when adjusted to include the energy charge, the demand charge and/or annual charges. The current price for farm-delivered diesel fuel is about \$5 per gallon. A comparison of pumping costs are shown in Table 1.

Pressure		Diesel	
at Pump	Off-Peak (\$0.07/KWH)	Regular Rates (\$0.10/KWH)	@ \$5.00 per gallon
Low	\$1.40	\$2.00	\$7.00
Medium	\$2.04	\$2.91	\$9.96
High	\$2.67	\$3.82	\$12.93

Table 1. Cost to pump an acre-inch of water (27,500 gallons) at 800 gallons per minute for low-, medium- and high-pressure center pivot pumping plants.

For the last 10 years, the annual statewide average of pumped water per acre of irrigated land has been about 10 acre-inches. For a medium-pressure system, the additional pumping cost using diesel on a per acre basis is about \$70 and \$79 compared to regular and off-peak electricity, respectively. For a typical center pivot irrigating about 128 acres, the annual difference in pumping cost between diesel and electric would be about \$8,960 at regular power rates and \$10,110 with off-peak electric rates. These huge differences in pumping costs make it economical to change from diesel engines to electric motors.

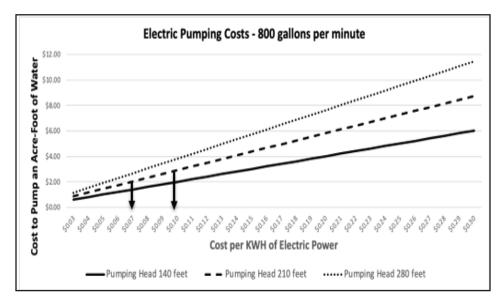


Figure 1. Electric pumping costs for a high-, medium- and low-pressure irrigation pumping plant. The two arrows show the pumping costs for 7 and 10 cent per KWH electricity on a low- and medium-pressure pumping plant are \$2 and \$3 per acre-inch, respectively.

COST TO PUMP continued on page 9





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# **Extension Irrigation and Nutrient Management Field Day August 31st**

Sand Plains Research Farm near Becker, MN from 4 - 7:30 pm. **Registration online required.** 

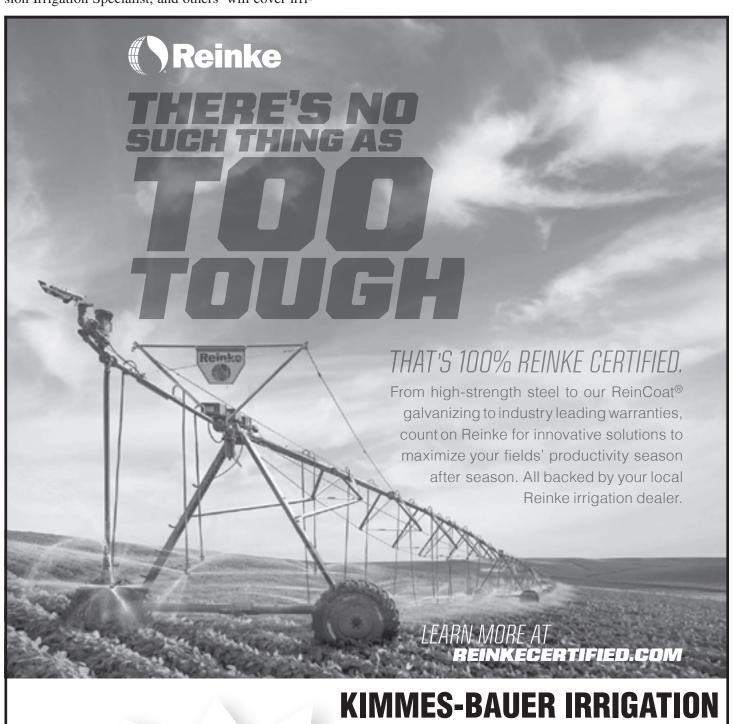
University of Minnesota Extension invites irrigating farmers and consultants to their Wednesday August 31st Irrigation Field Day presentations starting at 4 p.m. through 7:30 p.m. at the Sand Plains Research Farm near Becker, MN. Located between Becker - Big Lake, south of the intersection of US HWY 10 and MN County Road 11, turn west 157th Street SE, watch for signage. Boxed dinner will be provided. For more information and to register, https://blog-crop-news.extension.umn.edu/.

University researcher Dr. Vasu Sharma, UM Extension Irrigation Specialist, and others will cover irri-

gation and nitrogen management in corn, soil health in potato cropping systems, improving nitrogen use efficiency for corn and potato, irrigation scheduling applications, and nitrogen requirements of hybrid rye for grain and forage. Presentations of University research will cover irrigation and nitrogen management in corn, soil health in potato cropping systems, improving nitrogen use efficiency for corn and potato, irrigation scheduling applications, and nitrogen requirements of hybrid rye for grain and forage.

Over the last few months this past year the Extension Irrigation team has hosted several other events and field days highlighting irrigation management and technology in the state. In March the new Minnesota Irrigator Program (MIP) was successfully launched where 20 farmers and agronomists and 5

state agency staff met over two days to learn about soil water management, irrigation scheduling, sprinkler packages, and more. The pilot year of this program was successful and resulted in several farms receiving the Irrigation Endorsement to the Minnesota Agricultural Water Quality Certification Program (MAWQCP). Look for more information soon about the Winter 2023 MIP course. UMN Extension also recently hosted a field day on July 28th at Grant Anderson's variable rate irrigation (VRI) field in Belgrade, MN. Attendants learned about the water savings available in VRI systems as well as the effect on yields and nitrogen dynamics in soil compared to uniform irrigation in variable soil type fields. Soil sensors and their use in irrigation scheduling was also demonstrated.



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# AG AND ENERGY CENTER FIELD DAY Friday August 26th, 2022 9:00 am – 2:30 pm Central Lakes College Staples, MN

Ag and Energy Center 2022 annual field day will be held on Friday Aug 26th at Central Lakes College at Staples as a part of the Staples Railroad Days weekend in August. Everyone is welcome to attend this event. Events and topics include water quality research, agronomic and irrigation research, drone flight demonstrations, local foods integration, a kid's program and equipment rides sponsored by Midwest Machinery

There is something for all ages. A complimentary lunch is provided with sweet corn produced at the Ag Center. There is also an ice cream social in the afternoons located in the Living Legacy Gardens.

The event is located at the Staples Ag and Energy Center. If you would like to exhibit as part of our open house, please contact Tiffany at tiffany.klaphake@clcmn.edu

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# ROSHOLT RESEARCH FARM FIELD DAY

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Registrations can also be done online at Event Bright: https:// www.eventbrite.com/e/rosholt-research-farm-field-day-2022-tickets-381067211287. Registration is free, but required. Lunch will be provided.

### **FUNDING:**

Funding for work at the Rosholt Research Farm has been provided by the Minnesota Environmental and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR), Minnesota Department of Agricultural Fertilizer Research and Education Council (AFREC), and the Clean Water Fund as a part of the Clean Water, Land, and Legacy Amendment.



Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR). For more information visit



Funding provided by the Clean Water Fund as a part of the Clean Water, Land. and Legacy Amendment. For more information visit www.legacy.mn.gov/ clean-water-fund.

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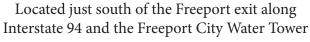
# - Mark your Calendars -

2023 Annual IAM Convention



# **Community Center** Freeport, MN

### Thursday, February 16th

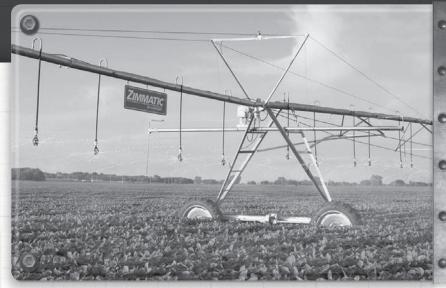




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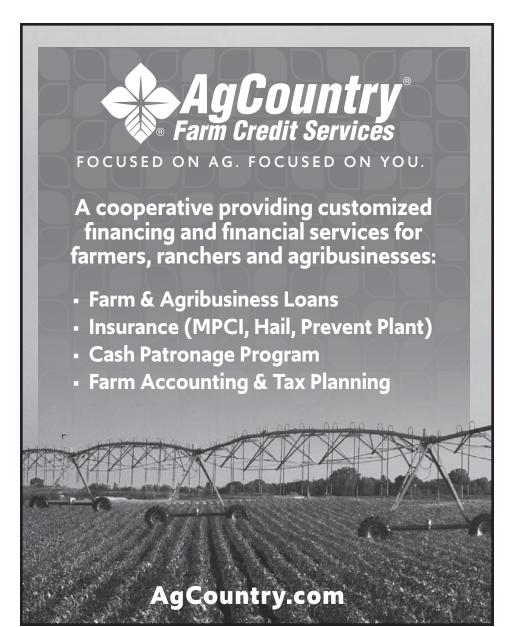
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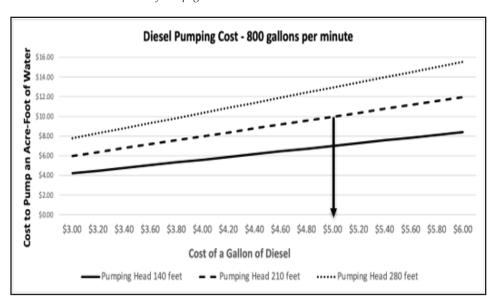


Figure 2. Diesel pumping costs for a high-, medium- and low-pressure irrigation pumping plants. The arrow shows that with farm-delivered diesel fuel at \$5 per gallon, it will cost \$6.50 to pump an acre-inch of water through a low-pressure irrigation system. For the medium-pressure system, the cost of pumping is \$10 per acre-inch of water.

### **Diesel or Electric Power?**

Due to the large motor sizes (25 to 100 horsepower), three-phase electricity is the preferred power source for pumping irrigation water. The reason many irrigators originally installed diesel engines instead of electric motors was the cost of access to three-phase power. The cost of access to three-phase power may still be too high even with the large energy cost differential between electric and diesel. Many electric suppliers have programs to help reduce the cost of installing three-phase line including cost-share and multi-year power use contracts.

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Single-phase electricity can be used for pumping irrigation water, but it must be converted to three-phase power. To do this requires the purchase of phase converters or a variable frequency drive (VFD). In addition, there will still be line extension charges for the single-phase power. Some electric suppliers are very leery of using single-phase power lines for irrigation pumping loads at certain locations on the distribution system, so it is very important to visit with them and discuss your plans.

In addition to the line extension charges, you have to factor in the cost of an electric motor, electric shutoff and control panels along with labor. Additional costs could involve phase conversion equipment, transformers and underground line installation. Of course, there is some salvage value for the diesel engine, fuel tank and other parts.

Other factors to consider are the reliability of electricity, not having to maintain the diesel engine (changing oil and filter every 150 hours) and whether or not you can live with controlled (off-peak) electric service. If you are considering changing from diesel to electric, plan to visit both your electric supplier and irrigation dealer.

If connecting to electricity is too expensive, here are some options to reduce pumping energy requirements. First, reduce pressure requirements. Check with your irrigation dealer to see if you can install a lower-pressure sprinkler package. For example, at a pumping rate of 800 gallons per minute (gpm), a 10-pound psi reduction at the pump will reduce pumping power by 6.5 horse-power. This would save about one third of a gallon of diesel per hour. Second, improve the efficiency of the diesel engine. If your diesel is more than 15 years old, upgrading to a newer model can improve fuel use by 10% to 25%. Third, maintain your well. Partially plugged well screens increase drawdown, which increases pumping energy requirements. Fourth, plug all leaks in the pipeline and on the pivot. Leaks put water where you don't want it.

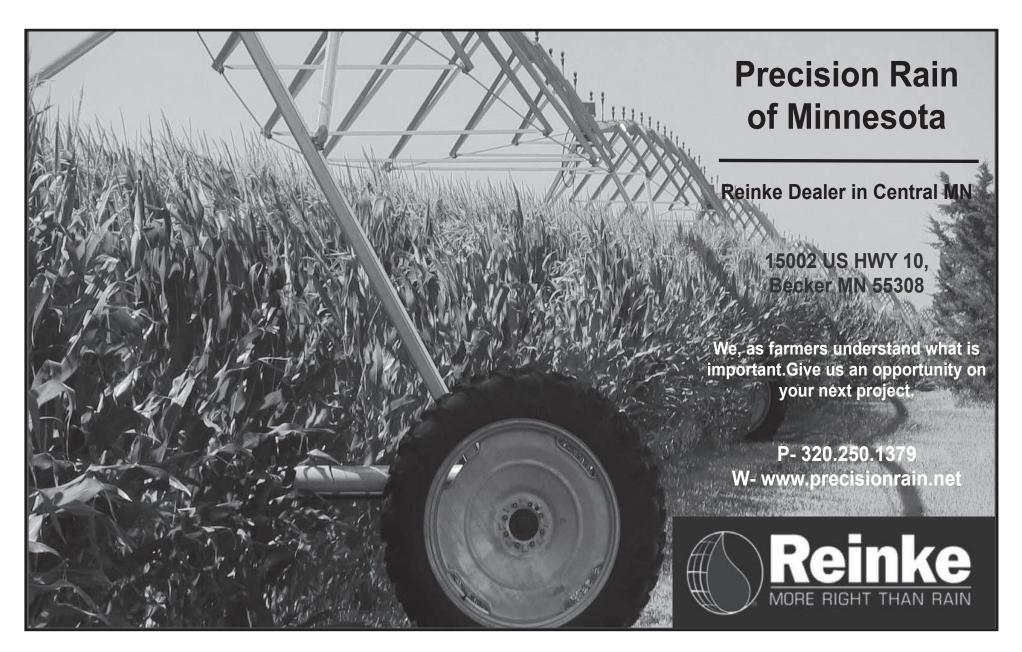
Tom Scherer, Extension Agricultural Engineer 701-231-7239, Thomas.Scherer@ndsu.edu



Fall 2022







### IMPLEMENTING INNOVATIVE IRRIGATION PRACTICES

Program Update – 16 Applicants Selected for Cost Share Totaling \$891,252

The Minnesota Department of Agriculture (MDA) has partnered with over 30 organizations, including USDA-Natural Resource Conservation Services (NRCS), soil and water conservation districts (SWCDs), institutes of education, Mille Lacs Band of Ojibwe, state agencies, irrigator's associations, and businesses, to provide financial and technical support for precision irrigation to irrigators. Funding is provided by the NRCS Regional Conservation Partnership Program (RCPP) and contributions by all project partners.

Cost share is available for irrigation practices including but not limited to soil moisture sensors, precision irrigation packages, variable rate irrigation systems, and irrigation water management practices.

First Sign-Up May 5 – June 17, 2022: A total of 56 applications from irrigators were received. Of those applications, 16 were selected for funding for a total of \$891,252, averaging just over \$55,700 per application. Geographically, the

16 applications are from Becker, Benton, Dakota, Kandiyohi, Morrison, Otter Tail, Sherburne, Stearns, and Wadena Counties.

The NRCS is currently contacting the selected applicants to start the contract process.

Next Sign-Up Late Fall or Early Winter 2022: We are reviewing our screening criteria and funding caps and may adjust them to allow additional flexibility. Irrigators located within the project area (blue areas on the map) are eligible to apply.



**Please visit** www.agcentric.org/rcpp-precision-irrigation/ or contact your local SWCD office listed below for more information.

### **Project Partners**

- Soil and Water Conservation Districts (20): Becker, Benton, Cass, Dakota, Douglas, East Otter Tail, Grant, Hubbard, Kandiyohi, Meeker, Morrison, Pope, Sherburne, Stearns, Stevens, Swift, Todd, Wadena, Washington, and West Otter Tail
- USDA Natural Resources and Conservation Service
- Central Lakes College Ag and Energy Center
- AgCentric and Northern Center of Agricultural Excellence
- Mille Lacs Band of Ojibwe
- Irrigators Association of Minnesota

- Central Minnesota Irrigators
- Todd-Wadena Electric Coop
- Reinke Manufacturing
- RD Offutt Farms
- RESPEC Consulting
- University of Minnesota
- Minnesota Board of Water and Soil Resources
- Minnesota Department of Health
- Minnesota Department of Agriculture

Funding provided through USDA NRCS RCPP

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The second tour stop was at the University of Minnesota Irrigated Field Station near

Becker, M<sub>N</sub> to observe and learn about the latest research projects on variable rate irrigation by Dr. Vasudha Sharma, UM Extension Irrigation Specialist.

The morning tour closed with remarks from Mn Ag Commissioner Thom Petersen and Rett Landers, Michael's Foods Strategic Sourcing Manager for Potatoes. And a special Thank You from the IAM President Jake Wildman for the interest of the attending legislators, aids and others.



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