

## **Coordinated Educational Program for Nutrient Management in Minnesota**

### **2018 Final Report**

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The two conferences dedicated to fertilizers and agricultural nutrient management in Minnesota are supported by the Agricultural Fertilizer Research and Education Council (AFREC). During the two events 303 attendees learned about the most up to date findings from Minnesota research supported by AFREC and others organizations as well as Minnesota-relevant information presented by other cutting edger researchers from other states. These attendees are by in large multipliers of the information. In total they directly or indirectly influence nutrient management decisions impacting more and 5.5 million acres in Minnesota. Thus, these events likely represent one of the major vehicles for dissemination of the knowledge generated through AFREC supported research. In total 950 education credits (CEUs) were earned by consultants during the two events. The conferences were well received and there is a good indication that attendees saw value in the event and would like these conferences to continue in the future. Below is a summary of evaluations provided by attendees to each of the conferences.

## **Fifth Annual Nitrogen: Minnesota's Grand Challenge & Compelling Opportunity Conference**

**Mankato, Minnesota. February 5, 2019.**

### **Survey Results:**

**Table 1. Conference attendance.**

<b>Item</b>	<b>Figure</b>
Pre-registered	77
Walk ins	88
Pre-registered present	68
Total attendance	<b>156</b>
Percent of pre-registered attendance	88
Walk ins % of total	56
Pre-registered % of total	44
Surveys returned	73
Percent survey response	47

**Table 2. How did you hear about this conference? Based on 52 responses**

<b>Item</b>	<b>%</b>
<b>Postal Mail</b>	<b>33</b>
<b>Univ. of MN Listserv/Email</b>	<b>18</b>
<b>Univ of MN Newsletter</b>	<b>8</b>
<b>Univ of MN Website</b>	<b>10</b>
<b>Business/Consultant/Association</b>	<b>8</b>
<b>Newspaper</b>	<b>2</b>
<b>Magazine</b>	<b>2</b>
<b>Radio</b>	<b>1</b>
<b>Word of Mouth</b>	<b>11</b>
<b>Other</b>	<b>6</b>

**Table 3. Primary reason for attending. Based on 55 responses.**

<b>Item</b>	<b>%</b>
To find answers to particular questions/problems.	19
To satisfy organizational or employer requirements.	7
To learn more about the subject area in general.	75

**Table 4. Core use. Based on 36 responses.**

<b>Item</b>	<b>%</b>
To use for my personal interests.	30
To improve my employer's business.	14
To make recommendations to others.	24
To add to the knowledge of the organization(s) in which I have an ongoing role.	31

**Table 5. Number of acres potentially impacted by the conference. Based on 35 responses.**

<b>Item</b>	<b>Acres</b>
Attendee's direct influence	52,205
Attendee's indirect influence	885,230
Total	937,435
Average acres per attendee	26,784

**Table 6. # Name = The instructor was well prepared and presented a clear message. #.a Name = I will change some of my practices based on what I learned. 1 Strongly Disagree, 2 Disagree, 3 Somewhat disagree, 4 Somewhat agree, 5 Agree, 6 Strongly agree.**

<b>Presenter</b>	<b>n</b>	<b>Mean</b>
1 Year in Review Panel	69	4.8
2 Tai Maaz	72	4.8
2.a Tai Maaz	60	4.6
3 Carrie Laboski	71	5.2
3.a Carrie Laboski	58	4.2
4 Jeff Coulter	46	5.1
4.a Jeff Coulter	41	4.2
5 Dan Jaynes	34	5.1
5.a. Dan Jaynes	31	4.1
6 Fabian Fernandez	26	5.2
6.a Fabian Fernandez	22	4.5
7 Jason Clark	25	4.7
7.a Jason Clark	21	3.2
8 Anna Cates	28	5.1
8.a Anna Cates	23	4.1
9 Melissa Wilson	18	5.2
9.a Melissa Wilson	14	4.4

**Table 7. How much did you / do you know about these subjects? 1 Very little, 2 Little, 3 Some, 4 Much.**

Presenter	n	Before (Mean)	n	After (Mean)	Change
1 Year in Review Panel	55	3.3	54	3.7	0.4
2 Tai Maaz	56	3.2	56	3.7	0.6
3 Carrie Laboski	52	3.2	54	3.9	0.8
4 Jeff Coulter	32	3.7	29	4.0	0.3
5 Dan Jaynes	20	3.6	16	3.9	0.3
6 Fabian Fernandez	19	3.6	18	4.1	0.5
7 Jason Clark	21	2.6	20	3.1	0.5
8 Anna Cates	19	2.9	19	3.5	0.6
9 Melissa Wilson	12	3.3	11	3.9	0.6
Mean	32	3.3	31	3.8	0.5

**Table 8. Satisfaction with program. 1 Strongly Disagree, 2 Disagree, 3 Somewhat disagree, 4 Somewhat agree, 5 Agree, 6 Strongly agree.**

Items	n	Mean
1 I would recommend this program to others.	57	4.9
2 I was satisfied with this program's physical environment.	57	5.1
3 This program was worth its cost to me.	54	4.9
4 Registration for this program was easy for me.	56	5.2
5 Location of this program was convenient for me.	56	5.2
6 Meeting date(s) for this program was convenient for me.	56	5.2
7 Length of the program meeting(s) worked well for me.	57	4.9
8 The program covered the content it stated it would.	57	5.2
9 If a nitrogen-focused conference is offered again I will likely attend.	57	4.9

**What could be done to improve the conference? (18 responses)**

- I don't like the stage, it inhibits speakers from moving around. Turn pointer on for presenters on ppt so speakers pointing shows up on all screens.
- Comfortability
- Have speaker on benefit of nitrogen to environment, producing protein etc. have some equipment people on what is on to apply N, i.e. Rowbot.
- I wanted to hear about UREA and it was too late in the day so I didn't get to hear it. That should be earlier than it was scheduled.
- Know your audience- some content/ data was even over my head as someone who went to school for this. You can lose your audience and intended message with too much technical information.
- Lots of academia presentations, would be nice to have real world, more farmer experiences, etc.

- Make more specific for our local area. Things that will help us with next year's crop.
- No suggestions for the most part. Some presentations should include, or relate metric units to imperial. This would help clarify some of the graphics in the presentations.
- Please have soil and water CCA credits at alternating times at breakout sessions.
- Review panel could be eliminated and add another speaker.
- Rotating breakouts so you don't have to choose between topics, missing out of one you may have wanted to attend.
- Shorter lunch break (45 minutes would be better).
- Shorter meetings, if figures are shown make sure they are statistically significant R2 values should be close to 1 not 0.
- This was an excellent, well put together conference.
- Today's conference was good. I would be interested in more conferences covering other essential nutrients as well.
- Would have liked to see some of the other sessions in breakouts but couldn't both at once. Had a little trouble hearing-might just be me.
- UPDATE YOUR DATA! It's all old. Fall Urea works when managed correctly!

**List one specific discussion or particular session that you valued as the most important learning event for you today (17 responses)**

- Do and don'ts for Urea
- Dos and Don'ts with Urea. I wanted to learn more with this to have more options for people I deal with. All the nitrogen things that were talked about will be very helpful to me as well.
- Fall urea talk was most useful to me.
- How important cover crops can be.
- 4R's / Panel discussion- good reminders that some farmers actually make conservation practices work well economically.
- The panel at the beginning was the best. What the students presented didn't really apply to what a farmer could use.
- Mineralization measuring. If we/you can find a good, predictive method of how much Nitrogen soils can produce we can greatly change our fertilization practices.
- N loss from Midwest cropping system-Dr. Dan Jaynes, more practical approach to nitrate control. Common sense, with use of technology. Other presentation seem to be looking for silver bullet through data some of which does not seem to be statistically significantly effect when seeking higher yield with enough nitrate application. Dr Carrie Laboski presentation was more on track in approaching problem with science study.
- Dr. Cates presentation was very informative and provided excellent points to the need for healthy soils. Including how that a healthy soil can influence nitrogen uses for improved nitrogen management.
- Panel was a nice recap of previous years and lessons we can take away and utilize in years to come.
- Ranking of N practices with urea to improve management

- Melissa Wilson Great graphics, excellent analogy. Jeff Coulter presentation excellent. .keep up the great job. Carrie L presentation- your slide with all locations ESN vs. N applied, split out data as you are presenting it will be easier to sort data, similar suggestion on other slides.
- Cates, because she had the most coherent and smooth speech.
- NUE and potential environmental outcomes (Laboski) split N rates and where it may and may not work.
- Tillage vs no tillage. How does soil compaction/traffic affect nitrogen use. Carrie Laboski was very good.
- UREA dos and Don'ts- the information in this session was the most "surprising" to me.
- Maaz's and Laboski's sessions were informative and reinforced some of my current practice. Thank you.

Thank you to all  
of our Supporters!



Minnesota Soybean  
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## Eleventh Annual Nutrient Management Conference

**St Cloud, Minnesota. February 19, 2019.**

### Survey Results:

**Table 9. Conference attendance.**

<b>Item</b>	<b>Figure</b>
Pre-registered	105
Walk ins	56
Pre-registered present	91
<b>Total attendance</b>	<b>147</b>
Percent of pre-registered attendance	87
Walk ins % of total	38
Pre-registered % of total	62
Surveys returned	34
Percent survey response	23

**Table 10. How did you hear about this conference? Based on 39 responses**

<b>Item</b>	<b>%</b>
<b>Postal Mail</b>	<b>21</b>
<b>Univ. of MN Listserv/Email</b>	<b>29</b>
<b>Univ of MN Newsletter</b>	<b>5</b>
<b>Univ of MN Website</b>	<b>15</b>
<b>Business/Consultant/Association</b>	<b>7</b>
<b>Newspaper</b>	<b>1</b>
<b>Magazine</b>	<b>1</b>
<b>Radio</b>	<b>0</b>
<b>Word of Mouth</b>	<b>11</b>
<b>Other</b>	<b>10</b>

**Table 11. Primary reason for attending. Based on 48 responses.**

<b>Item</b>	<b>%</b>
To find answers to particular questions/problems.	7
To satisfy organizational or employer requirements.	17
To learn more about the subject area in general.	76

**Table 12. Core use. Based on 32 responses.**

<b>Item</b>	<b>%</b>
To use for my personal interests.	22
To improve my employer's business.	17
To make recommendations to others.	33
To add to the knowledge of the organization(s) in which I have an ongoing role.	28

**Table 13. Number of acres potentially impacted by the conference. Based on 30 responses.**

<b>Item</b>	<b>Acres</b>
Attendee's direct influence	16,060
Attendee's indirect influence	4,562,363
Total	4,578,423
Average acres per attendee	152,614

**Table 14. # Name = The instructor was well prepared and presented a clear message. #.a Name = I will change some of my practices based on what I learned. 1 Strongly Disagree, 2 Disagree, 3 Somewhat disagree, 4 Somewhat agree, 5 Agree, 6 Strongly agree.**

<b>Presenter</b>	<b>n</b>	<b>Mean</b>
1. Year in Review Panel	55	4.8
2. Heidi Peterson	56	4.8
2.a Heidi Peterson	47	4.0
3. Dan Kaiser	55	5.3
3.a Dan Kaiser	46	4.7
4. Paulo Pagliari	24	4.8
4.a Paulo Pagliari	22	3.8
5. Lindsay Pease	27	5.0
5.a. Lindsay Pease	22	4.5
6 Tim Radatz	22	5.4
6.a Tim Radatz	16	4.7
7 Matt Yost	30	5.0
7.a Matt Yost	23	4.4
8 Vasu Sharma	23	4.7
8.a Vasu Sharma	20	3.9
9 Dorivar Ruiz-Diaz	20	5.1
9.a Dorivar Ruiz-Diaz	19	4.5

**Table 15. How much did you / do you know about these subjects? 1 Very little, 2 Little, 3 Some, 4 Much.**

Presenter	n	Before (Mean)	n	After (Mean)	Change
1 Year in Review Panel	47	3.6	47	3.9	0.3
2 Heidi Peterson	49	4.0	49	4.0	0.0
3 Dan Kaiser	48	3.2	49	4.1	1.0
4 Paulo Pagliari	24	3.3	24	3.6	0.3
5 Lindsay Pease	25	3.3	24	4.0	0.7
6 Tim Radatz	17	3.2	17	4.4	1.1
7 Matt Yost	25	2.8	25	3.6	0.8
8 Vasu Sharma	16	3.4	16	3.8	0.4
9 Dorivar Ruiz-Diaz	18	3.2	18	3.9	0.7
Mean	30	3.3	30	3.9	0.6

**Table 16. Satisfaction with program. 1 Strongly Disagree, 2 Disagree, 3 Somewhat disagree, 4 Somewhat agree, 5 Agree, 6 Strongly agree.**

Items	n	Mean
1 I would recommend this program to others.	52	5.0
2 I was satisfied with this program's physical environment.	53	5.0
3 This program was worth its cost to me.	53	5.2
4 Registration for this program was easy for me.	53	5.4
5 Location of this program was convenient for me.	53	5.2
6 Meeting date(s) for this program was convenient for me.	53	5.3
7 Length of the program meeting(s) worked well for me.	53	5.2
8 The program covered the content it stated it would.	53	5.2
9 If a nutrient-focused conference is offered again I will likely attend.	53	5.3

**What could be done to improve the conference? (23 responses)**

- Combine into more of a crop conference to round out conference, shorten talks to fit more talks in.
- Cool in conference rooms, more movement, shorter time blocks. Review panel should be moved to the end of the day
- Heidi Peterson: confusing when flipping between surface vs. tile P losses
- Dan Kaiser needs to explain his graphs better (abbreviations). Vasudhu Sharma talks really fast. Easy to understand but went through slides quickly.
- Free beer is always popular.

- Good job!
- Great program! I could hear the other session, better sound proofing. More research on manure management needed.
- Have a session focused on manure application and effect on nutrients uptake and soil build.
- I would have rather gone to the conference which was held earlier in Mankato but it did not work in my schedule. The Mankato topics were more pertinent to me.
- Move soil health and cover crops research info, but all together this was and typically is a great conference.
- Ship the talks where they don't haven't completed the research or have nothing to show for the research yet.
- In some adjacent parts of the building loud music was playing. The bass was loud enough to be distracting while speakers were talking.
- More in depth on N: strip tillage and other hard data given saturated soil in 18'. Can presenters share their presentations?
- Soy micronutrients- would like more localized data for MN.
- Review panel, message about N management was really bouncing all over contradicting at times. Are we trying to be more efficient or better stewards of the land or our land and climate in MN is such that we can just spread N however we want
- Nothing to improve- just new topics each year.
- Pounding music in back room was distracting.
- Room Temperature.
- Survey has too many questions
- Shorter sessions for some that don't need to be as long.
- Shorter sessions, more topics/presentations, more interactive presentations.
- Temperature was way too cold in the main room. More caffeine
- The sessions are a little long. Most presentations were too full of graphs, were not explained well enough.
- The sound in the grand ballroom from 9-12 was too loud for me.
- Turn up the heat!

**List one specific discussion or particular session that you valued as the most important learning event for you today (20 responses)**

- Appreciate the breakout sessions. Lindsay Pease Phosphorus management, thank you for making us aware of the potential for a problem
- Brad Carlson was very good
- Irrigation-seems like a good thing to progress forward.
- Phosphorus coverage most valuable session.
- U of M's concerns about reliability of pre-sidedress N test.
- Phosphorus management- best Lindsay Pease she did an excellent job. Panel review very good.
- P talk in the morning was very interesting.
- I really like the irrigation discussion. It was very practical and will lead to further irrigation recommendation adjustments.
- Mr. Kaiser's presentation on Sulfur was most beneficial. As an agriculture producer, I appreciate the practical application I gained from what he presented. The other presenters' topics were not as practical to me and at times I lost

interest in their presentations. Mrs. Pease's presentation was also informative. Dr. Ruiz -Diaz was also informative.

- All the phosphorus info was very valuable.
- Panel was best.
- Panel minus Gary Prescher
- Phosphorus management and water quality, everything always wrapped around Nitrogen.
- Phosphorus management.
- Session that value the most: Heidi Peterson and Matt Yost and Tim- discovery farms.
- Lessons from Spring Creek- very interesting to see the results of what has been learned from their farm.
- Got the most out of sulfur apps by applying at the right time. Sulfur deficiency seems to be a growing concern and is garnering more attention.
- Phosphorus
- P management and water quality, the most interesting presentation (not just graphs and research) and discussion. Same with Tim Radatz.
- Review panel nice to hear how things are going with some different points of view.

Thank you to all  
of our Supporters!



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