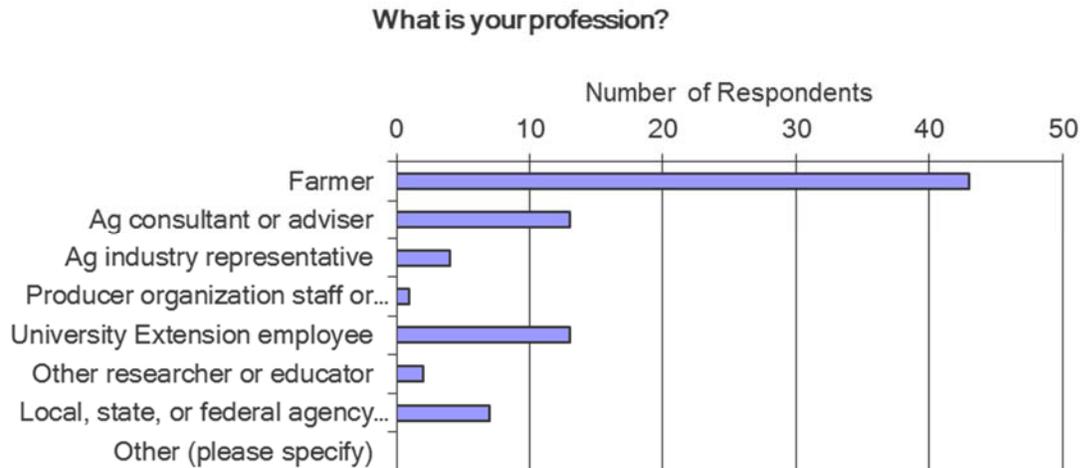


Minnesota survey regarding an on-farm research program, preliminary data (April 16, 2014)

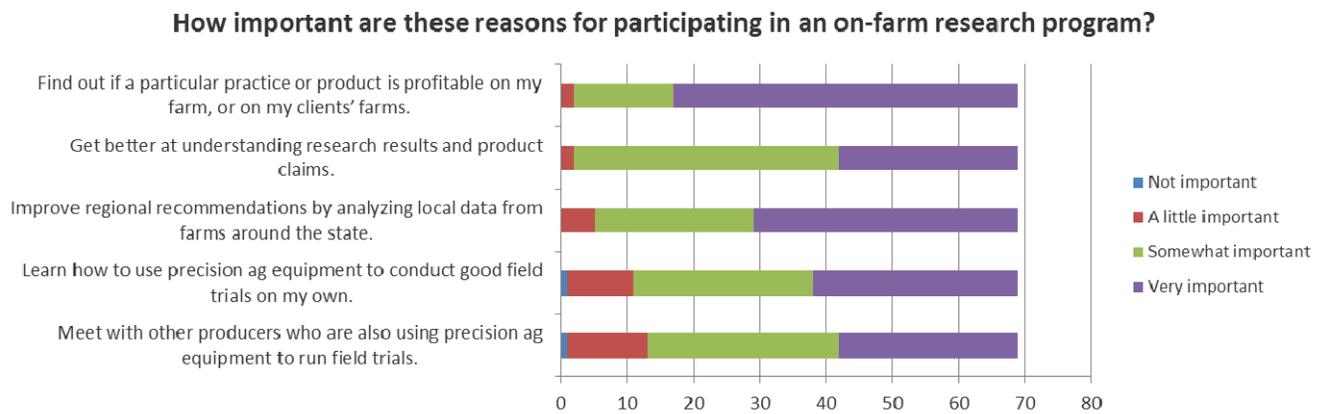
Ann Lewandowski, alewand@umn.edu, 612-624-6765

Of the 69 respondents, 43 (63%) are farmers. 15 (22%) are from Extension or other research or outreach entities. 13 (19%) are ag consultants.



Percent of respondents selecting very or somewhat important:

- 67% Find out if a particular practice or product is profitable on my farm, or on my clients' farms.
- 64% Improve regional recommendations by analyzing local data from farms around the state.
- 58% Learn how to use precision ag equipment to conduct good field trials on my own.
- 67% Get better at understanding research results and product claims.
- 56% Meet with other producers who are also using precision ag equipment to run field trials.



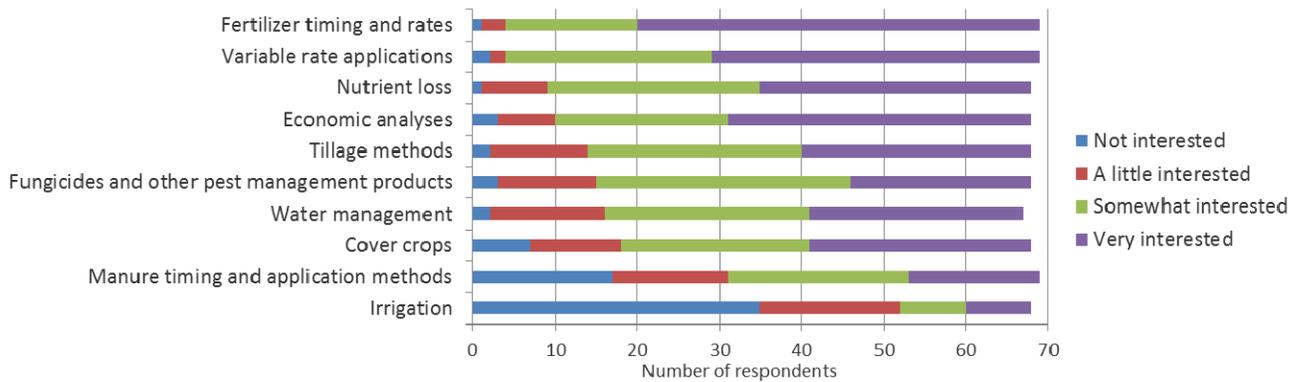
When offered the following options of ways to participate in on-farm research, survey participants said they were likely to participate in the following (percent of all/farmers who selected “likely” or “very likely”):

- Conduct trials on my farm following standardized protocols for a topic I am interested in. (69%/88%)
- Conduct my own trials on my farm. (62%/84%)
- Attend (or present) training on how to use precision ag equipment to conduct field trials. (75%/78%)
- Meet with other farmers to talk about our on-farm trials (75%/77%)

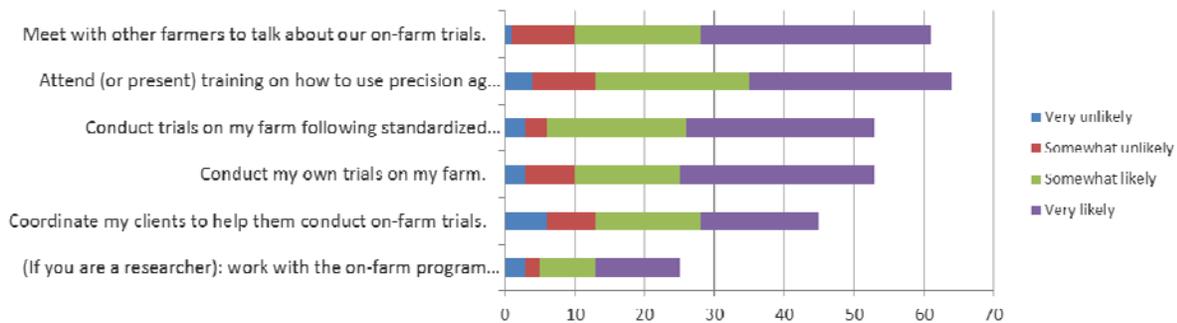
Responses to other ways of participating:

- (If you are a researcher): work with the on-farm program to conduct my research on commercial farms. (36%/50%)
- Coordinate my clients to help them conduct on-farm trials. (52%/43%)

Which topics are you interested in for on-farm research?

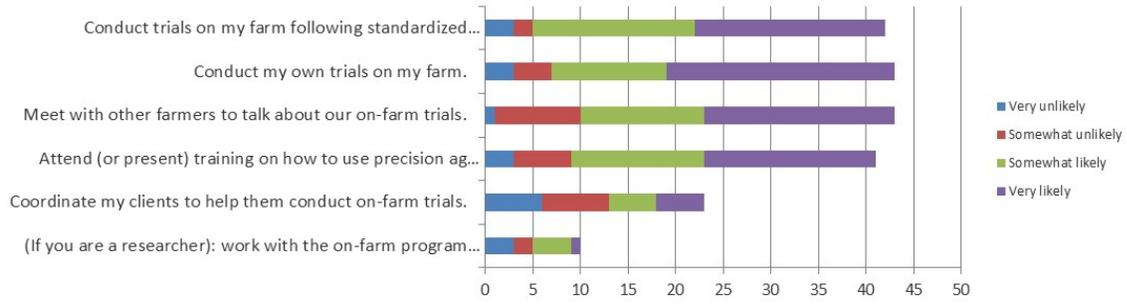


How likely are you to participate in the following on-farm research activities?

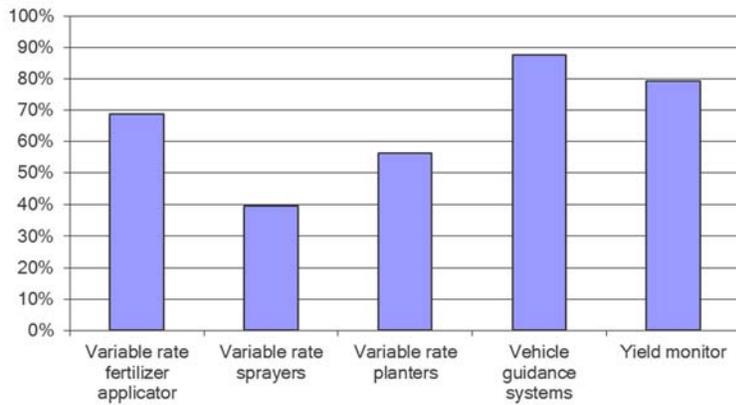


FARMERS ONLY:

How likely are you to participate in the following on-farm research activities?



I have access to the following GPS-enabled equipment:



What is a problem with this plan that you are concerned about?

Quality control; getting valid results

- getting people to have time to do these trials and not losing the trial in the shuffle of rush of harvest
- Finding good cooperators who are willing to do a GOOD, quality trial can be a challenge. I have conducted numerous on-farm research trials in the past, and things can go wrong (I believe more so than on an ROC site for example, especially if there are several people working with the cooperator). The farmer needs to make a profit and are running a business not focused on research, so when push comes to shove, treatments may not get made when they should (or not at all), protocols not followed, etc.. Plus if you have a treatment that may hurt yield, that's a tough sell when conducting research on a field scale. Treatments can be difficult to replicate when using field scale equipment too. I am concerned about there being enough replication & plots set up correctly to ensure validity of results.
- I do have concerns about the validity of the information collected. Will there be enough buy-in to information gathered to justify the efforts being put into the trials.
- Project oversight. Making sure treatments are applied consistently and on time. Farmers' schedules/priorities change depending on demands; research activity may slide to a lower priority.
- U of M should develop On-Farm research protocols (experimental designs). Proper statistical analyses should not be ignored.

Will enough farmers participate?

- Getting enough participation
- Finding cooperators willing to take the time with plots.
- time it takes to do the plots
- Carrying this out with enough growers to get meaningful results

Will there be adequate commitment of resources and coordination?

- following through, its a big commitment
- Communication is the key to make this effective
- Coordination
- You need 1 key person to over see all part and make sure stuff is done right.

Can the U work with farmers?

- too top down U research; need more farmers involved from the start; there are all kinds of applied research that farmers need to prove/see for themselves, plus create better recommendations from
- How to get the University to work with on Farm Research

It is biased towards large farms

- If a farmer needs GPS equipment to participate in this program I think you would eliminate almost all smaller farms because of the cost of equipment. I do not know one farmer able to use Gps equipment out of about 100 members of our livestock association in Northern Mn.
- Geared towards large farms only. This equipment and projects are to expensive for smaller farms to use.

Other concerns

- Most people don't care
- Not enough emphasis on irrigation practices.
- concerned that my area is too unique for the testing to be applicable to our farms
- Cost and time utilized.
- not have open mind
- location of
- Get a balance between research priorities
- Small plots -- large plots
- competition between local farmers.
- How to best manage nitrogen to feed the corn plant when it needs it most without losing N
- Need one organization not two.

What part of this plan are you most excited about?

More data from more sites

- getting the repetitive data and improving the yield
- It would be good to do the research on multiple fields with different soils in a close area to get real results rather than just do small test strips on one field.
- The opportunity to have research results from many more sites around the state
- Additional information over a greater area
- The potential to get many sites across many environments could result in much strength in the data generated. A network like this could also potentially look at questions that are difficult to do at the University due to things like resource limitations. I think done right, there is potential for some good work to be done! It will be so important to have good guidance from researchers and buy in from producers so quality work is done - there is potential to do so with this.
- It will be a great way to gather data and carry out applied research.

It will generate practical, applied production information

- answer the growers' question in their field
- applied research drive. Not research done for purely academic reasons.
- Finding results of different practices.
- gaining information
- Get research backed information to provide answers to my producers as well as my own operation

Improve yields and profits

- improve production and practices
- Calculating results
- new ways to improve return on investment
- True economic value of precision farming.
- results

It is farmer driven and has high farmer involvement

- more on farm research; more farmers and others involved
- Farmer driven
- Farmer initiated research --> in some ways benefit the farmers immediately!
- Getting research that is feasible to do on farm and readily available.

Better use of precision ag technologies

- I am most excited about the precision ag technology components.
- the use of programs and equipment designed to eliminate variables.
- Getting accurate plots out that can be done with Precision Equipment

Stronger University – agriculture connections

- It allows us to engage farmers in a meaningful way to provide education and produce real impact.
- Working closely with farmers and learning with them. I believe this type of work will help to validate University Research and strengthen the University of Minnesota brand.

Specific topics of interest:

- That your getting a clue about soil health and generating soil organic Mater sequestering Carbon
- Fertilizer timing.
- ESN use and economics
- Variable Rate, cover crops, water quality
- Cover Crops, Variable Rate - both commercial and manure and Nitrogen BMPs
- Better water holding capacity (via improved soil structure via tillage and cover crops)

Other thoughts or suggestions

Regarding commercial bias

- Appealing to individual farmers might help with the misconceptions introduced by private or coop fertilizer companies.

Cooperation with the U

- County based educators can help coordinate activities of interest to individual farmers that are not tied to larger research projects.

Regarding regulations

- some of these practices that are developed may become mandatory down the road!

Promote these ideas

- Prepare video/presentation on the importance of on-farm research to strengthen demand.

Logistics

- Treatments can't be too complicated or they typically aren't going to happen! If a person does many strip trials (so 1 rep per site) instead of a replicated trial at one site, you will need many sites to get the power needed to find statistical differences - I've ran stats to validate this in my own work. If doing replicated trials, I ALWAYS target 4 reps, as invariably, a plot will get lost. Then at least you still have 3 reps and hopes to find a statistical difference vs starting out with only 3 (and then going to 2 if a plot is lost!). Good communication with the grower is so important too.

Value of networking

- Some of the best outcomes can come from a group of people sharing ideas.

Other comments

- spraying machines?
- Cover crop proponents say the crops reduce leaching of nutrients, transport nutrients from deep in the soil to the top soil, and make nutrients more available to subsequent crops. I would like to see research done to verify these benefits and followup on how it affects fertilizer rate recommendations.
- More on flying drones