

Nebraska Soybean Board
Year-End Research Findings Report

*Please use this form to summarize the practical benefits of your research project and what has been accomplished.
Your answers need to convey why the project is important and how the results impact soybean production.*

Project Title: Next Generation On-Farm Research Initiative

Contractor & Principal Investigator: Laura Thompson

Please check/fill in appropriate box: Continuation research project
 Year 1 of 1 research project (for example: Year 1 of 2)

1. What was the focus of the research project or educational activity?

The focus of the Nebraska On-Farm Research Network is to implement a statewide on-farm research program addressing critical farmer production, profitability, and sustainability questions. This project builds upon the previous success of the Nebraska On-Farm Research Network and is ambitiously pursuing new and innovative ways to collaborate, conduct, and disseminate research.

Specifically this is accomplished by:

- Farmers, extension educators and specialists, industry, and consultants working together to generate high quality research that will be directly applicable to Nebraska farmers in accordance with objectives set forward by the Nebraska Soybean Board (and Nebraska Corn Board).
- Exploring opportunities to more fully utilize ag and site-specific technologies to increase impact and learning of farmer-directed research.
- Expanding the geographical area of this project to more fully represent soybean (and corn) growing areas of Nebraska by working with new cooperators across the state.
- Engaging and sharing information in a wide range of ways (radio, tv, newspaper, in-person, social media, website, YouTube, etc.) to connect with all producers, including the “next generation” which is currently transitioning into farm operations.

2. What are the major findings of the research or impacts of the educational activity?

Over the Oct. 2015 to Sept. 2016 time period:

80 on-farm research studies were completed in 2015. Approximately 80 on-farm research studies are in progress for 2016. Topics include cover crops, seeding rate, SDS treatments, starter fertilizer, growth promoters, fungicide application, row spacing, and more.

In order to establish partnerships for “big data” management and analysis opportunities with campus faculty in Nebraska and other states, On-Farm Research Network has:

- Increased interaction with the Nebraska Agriculture Technology Association, attending board meetings and conference planning meetings in an advisory role, and presenting on-farm research opportunities to attendees of the winter conference. The Nebraska Agriculture Technology Association will promote the upcoming Nebraska On-Farm Research Network Results Update Meetings at their annual meeting.
- Teaching Precision Ag Data Management Workshops (10 locations across state in winter) helping growers realize the opportunity for use of precision ag utilization in conducting on-farm

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research. Tutorials are currently being developed to focus on using data management software for on-farm research and will be implemented in Jan./Feb. 2017.

- Collaborated with a multi-state on-farm research effort lead by the USB, contributing two fields in the second year of this partnership.
- Contribute to the On-Farm Research Data Sharing group which is looking at ways to expand the impact of on-farm research data by combining datasets across states.
- Participate in interdisciplinary and agriculture related “big data” meetings to find ways to better analyze and present previously collected research data so that it is valuable for decision making.
- Acquired UAV and multispectral sensor systems to expand on-farm data collection in 2017.

To ensure that the project remains relevant and impactful, two impact and directional assessments are being conducted. This will help direct the future of the on-farm research efforts in Nebraska.

3. Briefly summarize, in lay terms, the impact your findings have had, or will have, on improving the productivity of soybeans in Nebraska and the U.S.

Currently, studies on soybean populations, planting date, row spacing, SDS seed treatment, and cover crops are ongoing and have great potential to impact productivity long term. Those attending the annual results update meetings in Feb. 2016 represented over 3.4 million row crop acres (producers and crop advisors), with the value of knowledge gained in anticipated practice changes averaging \$8.24/acre. When factoring in the acres represented by producers alone (excluding consultants), the impact is \$1,512,000.

Attendees noted:

- “interactive discussion was great”
- “appreciate unbiased research”
- “a lot of data in a relatively short amount of time”
- “intentionally sound and quality programming”
- “‘Real Farm’ results, not small block studies”

The increased time, effort, and resources being devoted to this project are building momentum and potential for incredible impact as we move forward.

4. Describe how your findings have been (or soon will be) distributed to (a) farmers and (b) public researchers. List specific publications, websites, press releases. etc.

-Results of 2015 Studies were shared at the 2016 Results Update. In addition to the 3 locations in 2015, a new location, North Platte, was added for the 2016 meetings. Attendance at all locations was 251, of which 49% were first time attendees.

-The 2015 Growing Season Results book was published as an official UNL Extension publication:

Thompson, L., Glewen, K., Ingram, T., Krienke, B., Krull, D., Lesoing, G., Mueller, N., Nygren, A., Ohnesorg, W., Rees, J., Rethwisch, M., Seymour, R., Stepanovic, S., Thomas, J., Timmerman, A., VanDeWalle, B., Whitney, T., Zoubek, G., Elmore, R., Ferguson, R., Giesler, L. J., Luck, J., Mieno, T., Shapiro, C., Wortmann, C., Wright, R., Eskridge, K. (2016). Nebraska On-Farm Research Network: 2015 Growing Season Results., Laura Thompson (Ed.), (pp. 134 pages). Lincoln: Nebraska On-Farm Research Network: 2014 Growing Season Results. Nebraska Extension.

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<http://extensionpubs.unl.edu/publication/9000018246494/nebraska-on-farm-research-network-2015-growing-season-results-ec3004/>

-The 2015 Growing Season Results book also received state and regional recognition by the National Association of County Agricultural Agents.

-Results are also shared digitally through a variety of mediums. The on-farm research website has received over 8,000 views in FY16 and numerous downloads of the results update book: www.cropwatch.unl.edu/farmresearch/resultshome.

-Research results are also being shared on twitter. After viewing a tweet about Nebraska On-Farm Research results of soybean row spacing, one person replied “keep us up to date...this could be a game changer for me in soybeans next year” and many followed the conversation.

-Results and information were shared at numerous winter meetings, including:

- Presentation and booth at the Fremont Corn Expo (280 attendees), York Ag Expo, and Power Farming Show in Lincoln
- Presentation at Lancaster County Successful Farmer Series
- Booth at Omaha Power Farming Show and Saunders County Soybean Expo.

-Results were also presented at crop production clinics across the state.

-3 on-farm research presentations were made by Nebraska Extension at the Agronomy society annual meetings. Following one of these, approximately 15 individuals visited about how to set up or further their on-farm research efforts. It is clear that the Nebraska On-Farm Research program is being seen as a leader and others are looking to the program for guidance in starting their own programs. Other talks on soybean seed treatment research and using a multi-hybrid planter to vary application of soybeans with seed treatment spatially were well attended.

-A number of articles were written and shared through UNL CropWatch:

Thompson, L., Glewen, K., Rees, J., Elmore, R., Burr, C. (2016). 10 Steps for On-Farm Research Success. Lincoln, NE: 10 Steps for On-Farm Research Success. CropWatch. <http://cropwatch.unl.edu/2016/10-steps-farm-research-success>

Thompson, L., Tenorio, F. A., Grassini, P., Rees, J., Glewen, K., Mueller, N., Thompson, L., Specht, J. (2016). SDS Seed Treatment among On-Farm Research Options Early Bird Gets the Worm: Benefits of Early Soybean Planting. Lincoln, NE: Early Bird Gets the Worm: Benefits of Early Soybean Planting. CropWatch. <http://cropwatch.unl.edu/2016/early-bird-gets-worm-benefits-early-soybean-planting>

Specht, J., Thompson, L., Rees, J., Grassini, P., Glewen, K., Tenorio, F. A. (2016). Soybean Seeding Rate Tips. Lincoln, NE: Soybean Seeding Rate Tips. CropWatch. <http://cropwatch.unl.edu/2016/soybean-seeding-rate-tips>

Thompson, L., Giesler, L., Mueller, N., Arneson, N., Rethwisch, M. (2016). ILeVO Seed Treatment Shows Promise for Sudden Death Syndrome. Lincoln, NE: ILeVO Seed Treatment Shows Promise for Sudden Death Syndrome. CropWatch. <http://cropwatch.unl.edu/2016/ilevo%C2%AE-seed-treatment-shows-promise-sudden-death-syndrome>

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Thompson, L. (2016). SDS Seed Treatment among On-Farm Research Options. Lincoln, NE: SDS Seed Treatment among On-Farm Research Options. CropWatch. <http://cropwatch.unl.edu/2016/sds-seed-treatment-among-farm-research-options>

-Additional articles were shared in state and national ag media:

Tips for optimal soybean seeding rates., Tyler Harris (Ed.), Nebraska Farmer. Farm Progress. <http://farmprogress.com/story-tips-optimal-soybean-seeding-rates-9-140444>

Research helps growers generate results. Greenwich, NY: Research helps growers generate results. Morning Ag Clips. https://www.morningagclips.com/research-helps-growers-generate-results-2/?utm_content=articles&utm_campaign=NLCampaign&utm_source=Newsletter&utm_term=newletter&utm_medium=email

Apply nitrogen through Project SENSE., Tyler Harris (Ed.), Nebraska Farmer. Farm Progress.

Thompson receives fellowship to make big data more accessible. Nebraska Farmer. Farm Progress. <http://www.nebraskafarmer.com/story-nebraska-agribusiness-recognizes-3-honorees-9-149762>

-A new promotional video sharing about the on-farm research network was developed: <https://www.youtube.com/watch?v=Njr1zUySWhE>

-On farm research opportunities were shared on Market Journal, Ag Almanac, and Press Releases.

5. Did the NE soybean checkoff funding support for your project leverage any additional state or Federal funding support? (Please list sources and dollars approved.)

Nebraska Extension – Approximate \$40,000 investment in salary and program development.

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