INNOVATION GRANT FINAL REPORT

PROJECT TITLE: Integrating Swine Manure Application with strip tillage into a single pass system
REPORTING PERIOD: January 1-December, 31 2018
FARMER INNOVATOR: Lee Thompson
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1.) PROJECT ACTIVITIES COMPLETED DURING THE REPORTING PERIOD. (Describe project progress specific to goals, objectives, and deliverables identified in your project proposal.)

The biggest activity this year was putting the finishing touches on and refining the project from last year. Adding a Krohne flow meter after the manure pump was the major shop project with cutting, welding and fabrication taking place to accommodate the flow meter. During that procedure the distributor manifold was moved to a different location than last year, it was placed higher to ensure manure would flow better to the outlet at each row and that the manure would have less chance of settling in the lines. Also routing about 200’ of hydraulic hose from the tractor back to the manure tank to operate the distributor manifold and the pump on the manure tank.
After all the major shop projects were completed, the second activity was to work on the technology side of things, to get the krohne flow meter to “talk” to the JD 2630 monitor in the cab to allow for mapping and application records while applying manure. I ended up working with Ben from Midwest Machinery in St. Cloud, we figured out the proper wiring needed to cable from the JD rate controller to the krohne flow meter to allow the 2630 monitor to read and record flow with GPS reference.
The last big activity was operating the machine in the field! I was anticipating having a trial run this spring, but due to Mother Nature and her April 17 blizzard, that did not happen. I am thankful that we had just enough of a window this fall to get a really good test of the machine.

2.) IDENTIFY ANY SIGNIFICANT FINDINGS AND RESULTS OF THE PROJECT TO DATE. (There may be none to report at some stages of the project)

The best finding and result was that the equipment combination actually worked very well once we got it to the field. I was skeptical about manure coverage when in the strip, but upon examination when applying manure just after an inch of snow, coverage was 100%. Another significant finding while putting together all of the equipment pieces is that there is probably an easier way to strip till manure – that would be to mount a strip till toolbar on the back of a manure tank. I think that would simplify the equipment set up quite a bit. I have saw pictures of these setups on the internet and they look pretty sweet, but they are expensive. I just figured that since I already had a strip till machine and an old manure tank sitting in the grove that it would be fun to try and see if it works.

3.) CHALLENGES ENCOUNTERED. (Describe any challenges that you encountered related to project progress specific to goals, objectives, and deliverables identified in the project proposal.)

The biggest challenge was getting the “system” put together and by that I mean not only getting the manure tank to pull behind the soil warrior but also to get all the manure handling equipment lined up to handle manure since that’s something that’s relatively new to us.
4.) EDUCATION AND OUTREACH ACTIVITIES. (Describe any opportunities to engage with farmers, influencers or the media about your project.)

The biggest education and outreach activity was the field day we hosted on September 13. There was a great group of people there from farmers, bankers, NRCS personal, MCGA representatives, three local newspapers, county feedlot officer and members from other environmental organizations. There were probably around 25 people that attended the field day to see and hear about the project firsthand. After the field day there were articles in the local newspaper as well as a video that was posted on YouTube and twitter with an interview of Dan talking about the project.

Radio ads with interviews from Mark Dorenkamp, talking with friends and neighbors.

Probably the coolest one was Dan getting a call from his Mom; she got a call from her cousin who lives in Rochester saying they saw that video on TV!!

Last but not least, through exposure of this project on social media, I have come in contact with Dr. Melissa Wilson from the U of M Extension. We have plans to work together next fall on some strip till manure trials involving application timing with cover crops to measure how the cover crops can benefit manure applications.

5.) HOW CAN WE HELP? (Please let us know how we can improve the experience or assist in your project if possible.)

I would like to thank the MN Corn Growers Innovation Grant program for funding my various projects over the past few years. I have definitely learned a lot about some newer topics that the universities/other organizations are not doing much research on. I also hope that others who have heard about the project have learned something too.

![Loading manure from pit into semi tanker for transfer to the field](image1)

![Strips before the snow on left and after the snow on right. The nice thing about having the snow was being able to see how much manure was covered. Field observations indicated coverage to be 100%](image2)