



INNOVATION GRANT FINAL REPORT

PROJECT TITLE: Year 3 of Eliminating Soil Erosion Using a 3 Crop Rotation and Cover Crops

REPORTING PERIOD: Final Report and Invoice due by January 31, 2021

FARMER INNOVATOR: Brock Olson

COLLABORATING ORGANIZATION/PERSON: Goodhue County SWCD

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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.)*
None.

2.) IDENTIFY ANY SIGNIFICANT FINDINGS AND RESULTS OF THE PROJECT. *(This could include photo documentation of the project at various stages if you haven't already provided these as well as final relevant images of the project at completion. Any data analysis (especially Level 3 Grants), graphics or record of observations throughout the growing season or during the field day event are also anticipated.)*

Final Results After Year 3

	Water Infiltration Rate June 1st	Organic Matter Year 1 Year 2 Year 3			Haney score Year 1 Year 2		Yield
Year 3 on 3 year rotation	2:00	1.9%	2.4%	2.1%	4.1	11.6	55
No Till Soybeans	2:00	3.5%	3.0%	2.6%	7.4	13.7	55
Full Tillage Soybeans	3:00	2.7%	2.4%	2.4%	7.9	14.6	55

Surface and subsurface nitrate levels were also tested, the 3 year rotation showed similar surface nitrate levels but slightly higher subsurface nitrate levels.

Final Profit 3 year no till/cover crop rotation vs 2 year full tillage rotation

No Till W/ CC					Tillage	
	Winter Rye	Conventional Corn	RR Soybeans		RR Corn	RR Soybeans
Yield	35	210	55		185	55
Acres	36	36	36		36	36
Sold price	6.5	3.75	10		3.75	10
Seed	10	90	60		120	60
Fertilizer	0	90	54.7		90	54.7
cc seed	32	12	0		0	0
Chemicals	5	20	25		25	25
Sprayer	5	5	10		10	10
Spring tillage	0	0	0		17	17
Planting	17	18.45	18.45		18.45	18.45
Harvest	33	33	33		33	33
Fall tillage	0	0	0		17	0
Fall cc planting	20	20	20		0	0
Crop Insurance	0	17.38	17.38		17.38	17.38
Drying	0	14.5	0		13.5	0
Electric	0	3	0		3	0
Trucking	0	24	8.40		23	8.40
Total costs	122	347	242		387	244
Cost/bushel	3.48	1.65	4.03		2.099	4.06
Gross/acre	228	788	540		694	540
Profit/acre	106	440	314		306	317

3 year average profit/acre per year(does not include land rent cost)

full tillage Corn/Soybean rotation \$313

no till Winter Rye/Corn/Soybean rotation \$286

A special note: I raised winter rye for the second time in 2020 on a different field, yield was 55 bushel, sold price was \$10/bushel, and overall profit was \$428(not including land rent). This

would alter the above 3 year rotation from \$286 per year, to \$394 per year. Knowledge gained from year one of winter rye such as increased seeding rate, earlier seeding date, and direct marketing significantly increased profit for this crop.

3.) CHALLENGES ENCOUNTERED. *(Describe any challenges that you encountered related to project progress specific to goals, objectives, and deliverables identified in the project proposal.)*
None.

4.) EDUCATION AND OUTREACH ACTIVITIES. *(Describe any opportunities to engage with farmers, influencers or the media about your project.)*

I interviewed with Tim Radatz and Amber Radatz from Wisconsin Discovery Farms regarding my grant to eliminate erosion using a 3 crop rotation and cover crops. They thought the project would be a great fit for a web conference on Edge of Field Water Quality Data and How it can Help Us in a Changing Climate. I presented during this web conference on December 10th, 2020.

5.) HOW CAN WE HELP? *(Please let us know how we can improve the experience for the next generation of projects.)*

2020 was a challenging year to have in person field days, but I really think an in person field day with all the grant recipients would be helpful.