

Affects of Tillage Radish Cover Crops on Soybean Cropland

Final Report for YNC10-055

Project Type: Youth

Funds awarded in 2010: \$398.00

Projected End Date: 12/31/2013

Region: North Central

State: Nebraska

Project Coordinator:

[William Cutler](#)

Project Information

Summary:

PROJECT DESCRIPTION AND RESULTS

BACKGROUND

Sustainable agriculture was a new term before this project. My agriculture teacher had discussed erosion and soil management in the Introduction to Agriculture course, but I had no real experience.

GOALS

The primary goal of this project was to record the benefits of cover crops after soybeans. Cover crops have many benefits. The crops can suppress weeds, control irrigation and, with our grant, increase nutrient values. Nitrogen was the primary nutrient we were concerned with. We planned to collect and test soil samples from non-tillage radish plots and tillage radish plots in soybeans.

PROCESS

There were a few basic steps to the project.

1. Select a soybean plot
 1. Ideally, it would be eight acres with two control sites and two experimental sites.
 2. We only have a 2 acre plot and planted two ¼ acre plots of tillage radishes.
2. Spread tillage radish seeds in soybeans before they begin to drop leaves
 1. Broadcast tillage radish seeds at 9 pounds per acre
 2. We planted on September 9, 2011
 3. We planted on August 1, 2012

3. Hope for rain

1. The tillage radishes sprouted in 2011, but did not get enough time to grow
2. The tillage radishes did not sprout in 2012 until the spring of 2013

4. Take and record results of fall soil samples from the control and experimental areas

5. Take and record results of spring soil samples from the control and experimental areas

PEOPLE

There were a few people that helped with the project. Primarily, my agriculture teacher helped write, find the plot, collect and record data, and secure funding. Next, Keith Berns of Green Cover Seed provided tillage radish seed and seeding rates.

RESULTS

The results of the project were disheartening but educational. In 2011, the tillage radishes were planted too late and we had too early of a killing frost for the radish to become large. In 2012, we planted the seeds in early August, but it didn't rain. The radishes didn't germinate until spring of 2013 as weeds in a sweet corn planting. Therefore, we were planning on continuing the experiment this year, but I am moving to a different school and my agriculture teacher's wife received a different job.

Because of all of the trouble with the radish, I would focus on trying to irrigate the radish to ensure germination and continue early planting in August. Irrigation is very feasible in pivot soybean production and, therefore, not an unrealistic experiment for irrigated cropland.

DISCUSSION

Sustainable agriculture must be good for the environment, but also economical. In my experiment, the grant paid for supplies and the agriculture department at school helped with consumables. Therefore, losing the radishes both years to weather did not hurt me financially. However, this would be one of the major decisions for sustainable farmers. Because no matter how sustainable their practices are, they need to provide for themselves and/or families. So, my major take home from this project is that it is extremely important to save soil and nutrients but figuring out how is hard because of Mother Nature.

OUTREACH

At our monthly FFA meeting in October 2011, we presented a cover crop presentation. We gave 31 FFA members and 12 community members an overview of the tillage radish project. Since we planted some of the tillage radishes in a sweet corn plot in early August 2011, we had visuals of the large radish. However, because of the lack of moisture and early frosts, were unable to have a good showing for the guests in the field in 2011 or 2012.

PROGRAM EVALUATION

The program is great and relies on my organization. I am responsible for making

sure it is ran smoothly. In the future, it would be interesting to connect me with the other students or with other SARE grant recipients either through a Skype call or through a face to face meeting.

Research

Participation Summary

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture or SARE.



[US Department of Agriculture](#)



This site is maintained by SARE Outreach for the SARE program and is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award No. 2019-38640-29881. SARE Outreach operates under cooperative agreements with the University of Maryland to develop and disseminate information about sustainable agriculture. [USDA is an equal opportunity provider and employer.](#)