

Final Report FarmAmerica Cover Crop Trial 2021

By Gene Kuntz, Edited by Clean River Partners Staff

This report will finalize the fourth year of the five year Cover Crop Trial conducted by FarmAmerica on a 15 acre plot that has been dedicated for the purpose of understanding and demonstrating the effectiveness of utilizing inter-seeded cover crops in a typical 50-50 corn and soybean rotation. The 15 acre field is sectioned into three plots of four acres each and the last plot is three acres. The two west four acre plots will have four acres of corn and 4 acres of soybeans. These will be rotated each year. The corn will always have a cover crop inter-seeded in June. The two east four and three acre plots will have corn and soybeans rotated each year and will never have a cover crop inter-seeded. A decision was made to also employ the use of minimum tillage in the entire field with strip tilling being the only method of tillage.

Soil tests this year used the Haney test method. This is the third test employed to determine the differences as measured by the Haney test. I didn't feel there was enough change in the two previous years to warrant the other tests. I will continue to utilize the Haney test as a comparative for each half of the field every other year. I hope that by year five we will see some differences in the half of the field that had a cover crop versus the other half that never had a cover crop.

Once again, chose to plant the corn in 30" rows. There was good growth in the cereal rye that was established the fall before on soybean ground. The application was made in early November of 2020 at a rate of 50 pounds per acre. In spring, the growth was 4-6" before it was terminated with a rate of 36 ounces of Roundup on April 30, 2021.

We planted the plot's corn May 1st, and soybeans on May 6th. It was a nominal planting date for 105 day corn, and 1.8 maturity soybeans. Overall, the soybeans on the half of the plot with history of cover crops did very well with an average of 73 bushels per acre. The other side of the plot didn't quite hit 70 bushels per acre. Corn on the other hand was the highest yielding corn in the past 4 years. The west side of the plot (with covers) averaged 197 and the east side (without covers) averaged 195. I learned my lesson from the previous year and put additional nitrogen on in early August. Overall I was very happy with the yields considering we only had 12.5" of rain during the growing season. We harvested the beans on October 17th and corn on October 25th. FarmAmerica's average soybean yield for 85 acres was 70 bushels/Acre and our corn yield was 205 bushels/acre on 93 acres of corn planted and harvested. "One reason for the comparatively lower corn yields within this study might be due to the fact that the other fields of FarmAmerica are used by seed companies to study hybrid varieties. These other trials are solely concerned with maximizing grain yield, and don't factor in

per-acre profitability or soil health. The cover crop trial also took place on ground that has some issues with drainage, which may negatively affect yield” explained staff at Clean River Partners.

I did get an opportunity to seed 50 pounds of spring wheat per acre on the west half where soybeans were on October 22nd. That was done with a rear mounted broadcast spreader that I received from the Rice County NRCS. Nearly half of the spring wheat sprouted and established a 2” shoot but did not tiller. The other half of the seed is dormant waiting to germinate early next spring.

One thing I did notice this year is that there was Waterhemp that became resistant to Liberty herbicide in the soybeans. I did manage to control the outbreak with an application of Enlist herbicide.

I look forward to continuing the effort over the next year here at FarmAmerica with cover crops. I’m also eager to host more field days to help area farmers see the practical application and methods of utilizing cover crops in a 50/50 corn and soybean rotation. Please refer to the following page that will identify all of the specific activities carried out during the growing season for this effort.

Another effort with our cover crops was getting some cover crop established following our peas. We applied 150 pounds per acre of spring wheat with 150 pounds of potash blown on with a fertilizer spreader. We lightly disced the field prior to spreading and a light field cultivation. The stand was excellent and got over 12” tall and froze out finally in early December. I also applied 50” per acre of spring wheat to our 30 acres of sweet corn. It was applied with the broadcast spreader in early September and I ran a disc lightly over the field at a 15 degree angle after broadcasting the spring wheat. That stand got to 6” tall and just started to tiller before it froze off. I’m actually pretty impressed with the use of spring wheat vs cereal rye. The key is getting it on early enough. One big additional benefit is not having to terminate it in the spring with herbicide like have been with cereal rye.

Activities Performed on Cover Crop Fields 2021

- 11/5 Established rows with Strip Till Machine for 2022 crop and applied 5# of N, 20# of P, and 25# of K per acre with the Strip Till Machine in the strips
- 04/22 Broadcast spread fertilizer on the west and east 64 rows where corn will be planted. 90# of N per acre
- 04/22 Broadcast spread potash fertilizer to the middle section of the field where beans will be planted
- 04/30 Sprayed burndown entire field 36 oz of Roundup, 2 quarts of 2-4D and AMS per acre and 3 ounces for Zidua for a pre-emergence herbicide
- 05/01 Planted corn 34,000 plants per acre population
- 05/06 Planted soybeans 150,000 plants per acre population
- 06/01 Sprayed Enlist and roundup on beans west half
- 06/06 Sprayed Beans with 32 oz of Liberty and AMS on east half
- 06/06 Sprayed Corn with 36oz of Liberty and AMS
- 07/20 Applied 10 gallons of 32% UAN on the corn.
- 10/17 Harvested soybeans on the plot
- 10/18 Broadcast applied 50# per acre of spring wheat on west half of soybeans and incorporated it with a field harrow
- 10/25 Harvested corn on the plot