COVER CROP STUDY

PURPOSE

To evaluate the long-term effects of conventional tillage methods and no-till cover crop practices, side-by-side, on a 40-acre farm. In this study yield, soil health benefits, nutrient scavenging, and cost of each operation were evaluated.

2017 RESULTS

TREATMENT	FALL 2016	SPRING 2017	BU./A.	BU./A. DIFFERENCE	RETURN ON INVESTMENT
Control: Conventional Tillage	Disk Ripper	Field Cultivator/ Rolling Basket	63.7	--	--
20 lb. Beck's Cereal Rye + 8 lb. Beck's Crimson Clover + 2 lb. Beck's GroundBuilder Radish + 2 lb. Dwarf Essex Rapeseed	Plant Cover Crop	Spray Burndown	63.6	-0.1	-$7.08
Soybeans $9.79/Bu. Cover crop program $36.50/A. Tillage program $30.40/A. Individual results may vary.					

OBSERVATION

Even with the wetter than normal growing conditions we experienced this past spring, we didn't experience issues with the planting conditions of either practice and the stands were consistent across both methods. In our first year of this study, there was virtually no difference in yield between the two practices. Looking at the ROI, planting cover crops is an added expense and the benefits can be hard to quantify. However, there is a cost associated with tillage that needs to be factored into the equation as well. The long-term benefits are what need to be considered in this study when demonstrating that the yields can be the same.

STUDY INFORMATION | **Planted** 4/22/2017 | **Harvested** 10/2/2017 | **Population** 150,000 Seeds/A. | **Row Width** 15 in. | **Previous Crop** Corn | **Tillage** Various | **Herbicides** Burndown: 22 oz. Roundup PowerMAX®, 3.4 pt. 2,4-D Pre: 5 oz. Verdict®, 0.26 lb. TriCor® DF Post: 22 oz. Roundup PowerMAX® | **Insecticides** Escalate™ | **Fungicides** 4 oz. Priaxor® @ V2 | **Brand** 345R4 | **Soil Type** Del Rey and Patton (sandy silt loam and silty clay loam) | **Soil Test Values** pH 6.5, O.M. % 2.8, CEC 12.1

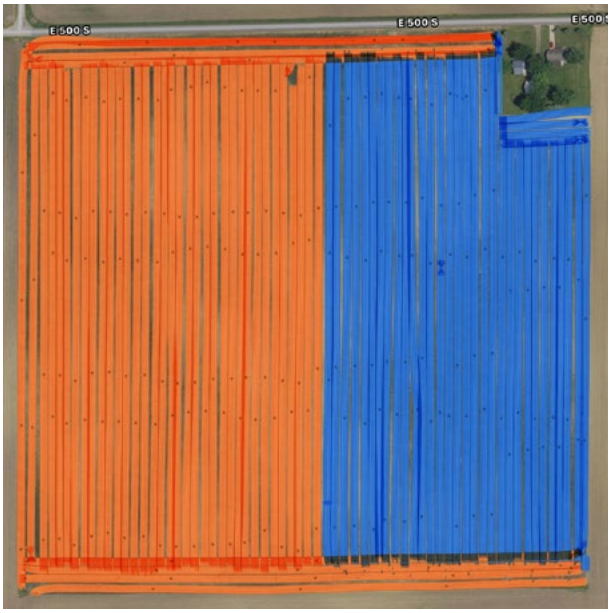
COVER CROP STUDY
TILLAGE

PURPOSE

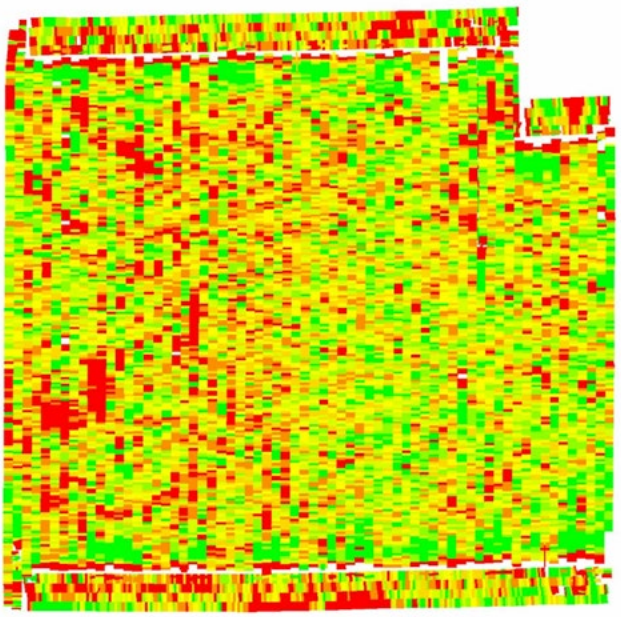
To evaluate the long-term effects of conventional tillage methods and no-till cover crop practices.

2018 RESULTS

TREATMENT	FALL 2017	SPRING 2018	BU./A.	BU./A. DIFFERENCE	RETURN ON INVESTMENT
Control: Conventional Tillage	Disk Ripper $20.60/A.	Field Cultivator/Rolling Basket $9.50/A	219.0	--	--
25 lb. Oat + 5 lb. Beck's Crimson Clover + 2 lb. Turnip + 2 lb. Kale	Plant Cover Crop $21.00/A.	Spray Burndown $15.00/A. Chemical and Application	227.0	+8.0	+$25.46
Corn $3.92/Bu. Cover Crop Cost $36.00/A. Tillage program $30.10/A. These results are based on the disclosed study parameters and participating sites.					



We felt it was important to show exactly how the farm was planted. The orange in the above image is the conventionally tilled side of the farm, and the blue is the cover crop no-till.



The above image is the actual harvest yield monitor map. In this study, we took the end rows out of the final yield data.

OBSERVATION

This year we did not see a yield penalty when planting corn after a cover crop. Planting conditions this year were optimal as the weather warmed up quickly in the spring. This provided an excellent opportunity for a perfect stand of corn in both trials, and great in season growing conditions enabled maximum yields. We theorize the yield bump on the cover crop no-till side is a function of better nutrient uptake due to improving overall soil health and the covers cycling nutrients.

STUDY INFORMATION | **Planted** 4/28/2018 | **Harvested** 11/8/2018 | **Population** 34,000 Seeds/A. | **Row Width** 30 in. | **Previous Crop** Soybeans | **Tillage** Various | **Herbicides** Burndown: 22 oz. Roundup PowerMAX®, 3.4 pt. 2,4-D Pre: 2 lb. Atrazine, 2 oz. Armezon Pro Post: 22 oz. Roundup PowerMAX® | **Insecticides** Escalate® | **Total Nitrogen** 165 lb. at V4 | **Brand** 6127A3 | **Soil Type** Del Rey and Patton (sandy silt loam and silty clay loam | **Soil Test Values** pH 6.5, O.M. % 2.8, CEC 12.1