

Conservation Innovation Grant Project Abstract FY 2020

Applicant: University of Vermont and State Agricultural College

Project duration: 2 years

Amount requested: \$68,438

Match funds committed: \$68,457

Project title: Integrating Solar Corridors in Corn Silage Production Systems to Meet Agronomic and Conservation Goals

Geographic location: Franklin and Grand Isle counties, Vermont

Priority: Soil health

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In northern climates, finding suitable opportunities throughout the limited growing season to establish cover crops is exceptionally challenging. Despite significant increases in cover cropped acreage over the last few years, farmers continue to struggle to establish effective cover crops in corn silage systems. In these systems, cover crop establishment after crop harvest is highly variable depending on the weather and timing of harvest. During the growing season, interseeding can be used, however, limited success has been observed due to significant reductions in light infiltration through the corn canopy. Therefore, alternative strategies are needed to further increase cover crop establishment success and soil health benefits. A solar corridor cropping system is one in which the plants are spatially rearranged in an alternative design to increase the availability of light to all crop rows thereby maximizing photosynthetic capacity. The alternative arrangement also opens the canopy allowing for more light infiltration that could increase cover crop establishment success and productivity. Furthermore, cover crops that enhance nutrient cycling or forage quality in addition to soil health benefits could help reduce farm costs and off-farm inputs. Much of the research on the use of solar corridors has been focused in grain corn systems. Research is needed to understand the advantages and disadvantages to various row arrangements, which cover crops are most successful in these systems, and which cover crops can provide the most benefit to the crop and soil health. This proposal seeks to address these research needs through conducting on-farm and plot research to better understand how to adapt the practice of solar corridor cropping to corn silage production systems.