CT NO-TILL & COVER CROP PILOT PROGRAM

GEECH

FINAL REPORT

CTRCD.ORG/AGRICULTURE/CIG-NO-

02 | Final CIG Report 2020

ABOUT THE PROJECT

Connecticut Resource Conservation and Development (CT RC&D), through a USDA NRCS CIG Grant (Conservation Innovation Grant), as well as a Patagonia Action Works Grant, created a no-till and cover crop equipment exchange pilot program. The purpose of the project was to fulfill a need by providing an opportunity to introduce no-till equipment to improve soil health on farms in CT. This included no-till cover crop planting at a variety of organic and conventional farms along with cover crop termination through roller crimping on participating farms. The program's goal was to also foster collaborative education and cooperative use of the no-till equipment among producers in two geographically diverse areas of the state.

STRATEGY

CT RC&D began by creating an application process that was offered to all farms in the state who were interested in participating in the pilot program as a farm hub host or as a farm user. After the application period closed CT RC&D worked with some of the initial partners and supporters of the project which included: USDA NRCS, CT NOFA, Connecticut River Coastal Conservation District, Inc., Eastern Connecticut Conservation District, Inc., Granby Agricultural Commission, Salmon River Watershed Partnership and The Last Green Valley to develop a scoring criteria to select two hub locations where the no-till equipment would be housed along with a balanced number of participating farm users within in each of the two hubs that were located in the surrounding area.

Initially CT RC&D planned to purchase a small no-till seed drill, a no-till plug transplanter, and a roller crimper for each of the equipment hubs. After the selection process and surveying the participating farms it was decided they would be better served by purchasing a larger no-till seed drill and roller crimper for each hub. The Eastern CT hub consisted of several dairy farms and received the larger sized equipment, whereas the Western CT hub consisted of organic crop growers and received the smaller set of equipment.



PROJECT RESULTS

The primary goal of this pilot project was to make no-till equipment available by reducing cost barriers and risk of experimenting with and the adoption of no-till crop production in Connecticut. Reported benefits of no-till production suggests reduced farm inputs (herbicides, fertilizers, irrigation) and improved soil health and crop productivity. The concept of using equipment attachments rather than use of herbicides is nothing new, however it has been historically underutilized in CT due to lack of access, education, and funding.

The most used piece of equipment within both hubs was the no-till seed drill. The no-till seeder allows for planting with precision and with enough weight to get good seed to soil contact. The variety of farmers along with the types and timing of crop planting allowed for a cooperative use to work well. These pieces of equipment are used throughout the season but are not needed on a regular basis which allowed the farms to work well together in the process of sharing it.

By implementing this project more agriculture producers have had the opportunity to cooperatively use the no-till equipment, develop a network for information sharing, implement no-till practices and cover crops on their farms, increasing soil health knowledge through farm field days, an educational video about the project, social media posts, and outreach and education beyond project participants.



TIMELINE

The project began in June of 2017 and concluded in December of 2020. The pilot program spanned over three growing seasons.



PROJECT DETAILS

CT RC&D selected two farm equipment hub hosts, the Eastern Hub Host being Mountain Dairy in Storrs, CT and the Western Hub Host selected was Sub-Edge Farm in Farmington, CT.

Each selected hub host and selected participating area farms cooperatively used the equipment that CT RC&D provided. Each farm equipment hub contained (1) Esch no-till seed drill and (1) I&J roller crimper.

The Eastern CT Hub housed (1) 15.5' no-till roller crimper and (1) 7' no-till seed drill that was cooperatively used by: Mountain Dairy (host) Still River Farm Hillside Farm Heckler Brothers Farm Halfinger Farms

The Western CT Hub housed (1) 10.5' no-till roller crimper and (1) 5.5' no-till seed drill that was used by: Sub Edge Farm (host) Bristol's Farm Market Fort Hill Farm

RESOURCES & LINKS

CT RC&D hosts a dedicated webpage for the CIG project on the CT RC&D website at <u>www.ctrcd.org/agriculture/cig-no-till-cover-</u> <u>crop-pilot/</u> and made regular uploads of photos throughout the progress of the project as available on the CT RC&D Facebook page <u>www.facebook.com/CTRCD/</u> as well as a CIG project photo album and regular posts made to the CT RC&D Instagram, and LinkedIn pages. The educational CIG Pilot Project Video is available on the CT RC&D webpage and on the CT RC&D YouTube Channel <u>www.youtube.com/watch?v=mwIkJPk5J2U</u>

CT RC&D supplied usage log sheets each growing season at both of the equipment hubs that were placed in the installed tubes on each piece of equipment in order to track each piece of equipment's usage for each of the growing seasons with that information being provided to USDA NRCS. CT RC&D also contracted with an electrician to install battery operated safety lights for on road travel and additional farm equipment safety signage.

Project development included maintaining contact with all participating farms within the equipment hubs, which included reminders about log sheet usage and assisting with online calendar equipment reservations. CT RC&D organized and managed an online equipment calendar through <u>www.teamup.com</u> for each hub location. This included providing support to participating farmers with their questions and assisting them with reserving the equipment as well as timing coordination between farms.

Provided on each piece of equipment was a tool kit with a copy of the CIG manual for the project developed by CT RC&D which can be found here: www.ctrcd.org/wp-

<u>content/uploads/2019/05/CTRCD_CIG_Equipment_Manual_2019</u> <u>2020.pdf</u> along with a grease gun, and safety chain. The farm hosts performed winter maintenance, allowed access to equipment to other farm users, and provided covered storage areas for the equipment year round.



Sample view of the TeamUp.com calendar used to reserve equipment by the farms within the pilot project



05 | Final CIG Report 2020

OUTREACH & EDUCATION

This project hosted several on farm trainings with each piece of equipment and a representatives from each of the companies they were purchased from in order to familiarize participating farms with the equipment.

In the fall of 2019 a Farm Field Day was hosted in partnership with CT NOFA at Sub Edge Farm with over 60+ attendees. The day included Soil health presentations, equipment demos, info about the pilot project, witness the value of soil health measures through the NRCS rainfall simulator demonstrations, and network with others.

A 2020 Fall Farm Field Day was planned to be hosted at Mountain Dairy, but due to Covid-19 CT RC&D decided instead to plan and coordinate while contracting with a professional videographer to film a 7.5 min educational video featuring 4 of the pilot's participating farms. This video is a very useful tool capturing the essence of the project in an informative way for other farmers in CT and beyond to learn about this CIG pilot by hearing directly from some of the participating farmers and support staff.





DRY MATTER TESTING

CT RC&D in partnership with USDA NRCS staff conducted field testing prior to each roller crimper usage. This data was recorded and reported to USDA NRCS. The information was also shared with the farms so they could adjust their seed planting rates. By increasing these rates, a higher biomass yield could help achieve the desired weed suppression in a notill/cover crop system.



It was found that ideal seeding rates for cover crops such as rye should be applied at 150-200 lbs./per acre. The average dry matter increased from just under 2 tons DM/Acre early in the pilot project to almost 4 tons DM/Acre in the final growing season.

500+

People have been reached and educated about this pilot project through CT RC&D's outreach efforts.

LESSONS LEARNED

CT RC&D has seen great interest in the pilot equipment sharing project. From the farms who participated to the numerous inquiries from those who wanted to from within CT to as far as MA. The interest level for no-till and cover crop equipment is very high in the state as farmers understand the value of Soil Health and how to best implement practices.

The project goals were met and exceeded by CT RC&D. Due to new steel tariffs, equipment cost were almost doubled resulting in cost overruns, creating a shortage in CT RC&D staff funding in order to administer the pilot program. Additionally, insurance was needed to cover the value of the four pieces of equipment which increased project costs. As a result, CT RC&D secured an additional grant from Patagonia Action Works in order to ensure the pilot project could be properly implemented.

The struggle for many farmers and the reason behind CT RC&D implementing this pilot program was the costs to purchase these pieces of equipment on their own. In reality a cooperative approach to use is the most efficient. Through CT RC&D's Soil Health Initiative Program run in cooperation with USDA NRCS it became clear through educational workshops, trainings, and interactions with the farmers that they were seeking alternative methods to terminating cover crops. While not every farm needs to have their own piece of no-till equipment because of the frequency of use, CT RC&D feels every farm who wants to have access to this type of equipment should.

Since there is no stand alone state funded Soil Health Program currently, it was important for CT RC&D to offer this pilot program as a way to gauge interest and success of no-till equipment. By providing farmers with access to such equipment that is too expensive for them to purchase on their own it enabled for experimentation and learning that would not otherwise have been possible for the farms who participated in the program.

In conclusion, equipment sharing was a success. More funding to enable more of these hubs to be stood up with various pieces of no-till/cover crop equipment in other regions of the state allowing for even more farmers access to these types of equipment is key. Soil health plays an important role in climate adaptation and equipping farms at a local level will allow them to adapt and remain successful in the future.





Connecticut Resource Conservation & Development



United States Department of Agriculture

Natural Resources Conservation Service

Patagonia Action Works

THIS PROJECT WAS MADE POSSIBLE WITH FUNDING FROM USDA NRCS CIG AND PATAGONIA ACTION WORKS

PROJECT WAS IMPLEMENTED BY: CONNECTICUT RESOURCE CONSERVATION & DEVELOPMENT <u>WWW.CTRCD.ORG</u>

<u>AN EQUAL OPPORTUNITY EMPLOYER & PROVIDER</u>