



FINAL REPORT

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CLINTON COUNTY INTERSEEDED COVER CROP PROJECT

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EXECUTIVE SUMMARY

The Clinton County Soil & Water Conservation District has a long history of working with farmers to reduce erosion and soil loss on farm fields. The District routinely works with farmers to implement cover crops, no-till forage planting and other pollution reducing agricultural best management practices.

This project purchased a 6-row cover crop Interseeder to help corn growers to establish multi-species cover crops earlier in the season.

The project reached out to farms on the Northern New York side of Lake Champlain, offering farmers in Clinton County the use of equipment and cost sharing of a multispecies cover crop seed mix.

In the first full year of implementation, the equipment was shared with 4 farmers and the Soil & Water District provided coordination, technical assistance, and a per-acre cost share for 120 acres of cover crops.

The project was also highlighted at a summer soil health/cover crop field meeting. Over 30 attendees learned about the interseeder project as well as other LCBP funded projects that the District is working on. The equipment was on display and information was distributed to attendees to generate interest for next year.

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1. PROJECT SYNOPSIS

The Clinton County Soil & Water Conservation District has a long history of working with farmers to reduce erosion and soil loss on farm fields. The District routinely works with farmers to implement cover crops, no-till forage planting and other pollution reducing agricultural best management practices (BMPs). Using our AEM (Agricultural Environmental Management) program process, we work with farms to identify and prioritize the implementation of Best Management Practices to reduce environmental impacts from farm operations.

Cover crops are a proven practice to reduce erosion, scavenge nutrients and improve water quality. On farms that harvest corn for silage, cover crop seeding is done after harvest, but farms that grow corn for grain often do not harvest until later in the fall. Research at the Pennsylvania State University has shown that interseeding cover crops in corn can improve the adoption of cover crops where they weren't practical before. The practice of interseeding cover crops has been used in the Midwest for many years and farmers have been successful in establishing cover crops in between the corn rows early in the summer. With a wealth of information available about species selection, herbicide considerations, and the benefits of multispecies cover crops, farmers are starting to consider how they can include this practice in their soil management toolbox.

Since new agricultural machinery is very expensive and this equipment is of limited used, most farms cannot afford to try a new practice such as cover crop interseeding. The District has been very successful with encouraging the use of our no-till drills and we felt that farms would be willing to try or adopt interseeding if the equipment was available to them.

Farms were invited to participate and applications were solicited. As this was a new and innovative project, we were able to include all interested farms in our first full year of interseeding. We attained our goal of 4 participants who used the equipment and interseeded 120 acres of cover crop. Farmers were offered use of the interseeder plus an \$82/acre cost share incentive to use the interseeder and plant a multispecies cover crop.

In early 2023, the District also recognized that the lack of an appropriately sized tractor set up for the purpose might be a barrier to adoption of this practice. The District decided to lease a tractor onto which to attach the interseeder and include use of the tractor with the Interseeder at no charge. Participating farms were only responsible for purchasing their seed and fuel for the tractor.

The project also provided guidance and technical assistance to farms in choosing the most appropriate seed mix and timing of planting. Using research and guidance from the University of Vermont Extension Northwest Crop and Soils Team^{1,2}, several different seed mixes were proposed as appropriate covers. An Annual Ryegrass and Radish mix was the most popular and seemed to establish and survive until fall the best. We also worked with Agronomist Allen Wilder from the Miner Institute in Chazy, NY who tried several other interseeding mixes and strategies.

2. TASKS COMPLETED

¹ https://www.uvm.edu/sites/default/files/Northwest-Crops-and-Soils-Program/2019_SARE_Interseeding_Report.pdf

² https://www.uvm.edu/sites/default/files/media/Tips_Interseeding_Cover_Crops_FINAL.pdf

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Task 1. Recruitment:

Outreach and recruitment began in early 2022, with a list of interested farms completed by May 2022. Outreach was done by social media, newsletters, farm visits, and phone calls. The cover crop interseeding program was focused on farms that have cropland in the Basin adjacent to water bodies, that have an interest in soil health practices, and were willing to work with the County Soil & Water District to document the process and try something new.

Task 2. Implementation Phase 1:

We developed specifications for and sought bids for a 6-row Interseeder. Due to the limited number of manufacturers of this type of equipment, we had to consider custom built options. After a search of potential suppliers, the equipment was purchased from a custom builder who provided the lowest bid. Implementation included purchasing the equipment, delivery, and providing technical assistance during the setup and initial use.

Due to supply chain issues, delivery of the equipment was delayed until midsummer 2022. Because of this late arrival of the equipment, a grant extension was requested so that Phase 2 of the implementation, planting of the cover crops, could be done at the appropriate time in Spring/Summer 2023.



Task 3. Implementation Phase 2:

As part of the grant, we provided a cost share incentive for the implementation of the cover crop on 100 acres of cropland post-harvest. District technicians planned and documented the planting and termination of the cover crops. We incentivized the farm using the current NYS State Rate for Cover Crop of \$82.00 per acre for a multispecies cover crop. 50% of this cost share incentive is being paid to the farm via funds from the District's cover crop program. The 4 farms have successfully planted cover crops in excess of our goal.

In order to make moving and setting up the Interseeder more efficient and user friendly, the District leased a John Deere 6135 (135hp 4wd) tractor to pair up with the interseeder. The use of the tractor was provided at no charge to the participating farms. The cover crops planted using the Interseeder were documented using the National Resources Conservation Service (NRCS) Practice 340 "Cover Crop" practice guidelines and the NYS AEM Cover Crop planning and implementation tool.

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Figure 1 At the time of interseeding



Figure 2 Shortly after germination



Figure 3 Mid-Summer Establishment



Figure 4 Post Corn harvest - Established cover crop

Task 4. Reporting:

We documented the process and the success of the project implementation and cover crop plantings with photographs of the equipment as well as photos of a subset of selected sites at the time of seeding, after germination, and once established. The number of acres planted with the equipment has exceeded our goal of 100 acres by the end of the contract period.

Interim reports were made in a timely manner during the course of the contract period and this draft final report was submitted as required.

3. METHODOLOGY

Identification of the project and planning for the project was done using the framework of the New York State Agricultural Environmental Management program. Agricultural Environmental Management (AEM) is a voluntary, incentive-based program available to all farmers through their local Soil and Water Conservation District.

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AEM supports common-sense, cost-effective, and science-based decisions to meet farm goals while protecting and conserving New York's natural resources. By participating in AEM, farmers can document their environmental stewardship and further advance their positive contributions to their communities, our food and bio-systems, the economy, and the environment.

4. DELIVERABLES COMPLETED

- Task 1: Outreach and Recruitment
 - Outreach began in early 2022 with 4 interested farms committed by May 2022. The cover crop interseeding program was focused on farms that have cropland in the Basin adjacent to water bodies, that have an interest in soil health practices, and were willing to work with the County Soil & Water District to document the process and try something new. Due to the late arrival of the equipment, implementation did not begin until 2023. Outreach was continued by social media, newsletters, and farm visits throughout the remainder of the year. A cover crop/soil health field meeting was also held in August of 2023 at which the interseeder was displayed and the project promoted.
 - Farms signed up in 2022/2023 were:
 - Dyer Farms, Beekmantown
 - Dimock Farms, Peru
 - Miner Institute Hearts Delight Farm, Chazy
 - Happy Haven Farm, Mooers
- Task 2: Implementation Phase 1; Procurement
 - Specifications were developed and a request for bids was prepared and advertised by contacting equipment manufacturers and soliciting bids. Due to the small number of equipment manufacturers that build this type of equipment, we were only able to obtain 2 price quotes from Hershey Farms/BZ Manufacturing and Fennig Equipment. The Hershey Farms bid was accepted and the equipment was ordered in March 2022. Due to supply chain issues, the interseeder was not delivered until August 14th, 2022.
- Task 3: Implementation Phase 2; Planting
 - Interseeding of cover crops was planned using the NYS AEM Cover Crop Planning and Implementation tool using the NRCS Practice 340 "Cover Crop" practice guidelines. District Technician Jillian Zajac and Lake Champlain Basin Program Agronomist Myra Lawyer did field checks and certification following establishment. Some interseeding was accomplished late in 2022 but most was done in early summer 2023.
 - The District provided the use of the Interseeder and a leased tractor at no charge to the participating farms.
 - The farms were provided with cost share assistance for the establishment of interseeded cover crops. Multiple species cover crop mixes included ryegrass/clover and ryegrass/radishes. Single species plantings included red clover, kale, and forage sorghum. The project grant funding helped the District to cost share 100 acres of interseeded cover crops. Additional acres

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were funded using District funds and/or funding from a NY State cover crop program.

- Task 4. Reporting
 - Quarterly progress reports were made on time.
 - Draft final report has been submitted on time.

5. CONCLUSIONS

The project was successful in helping four farms to accomplish the goal of interseeding cover crops in a very time-limited season. The Interseeder was found to be well made and properly sized for the farms that used it. Having a dedicated tractor leased to operate the interseeder was invaluable for ease of setup and operation.

The participating farms were very happy with the results and are all looking to use the equipment again in the future to increase their cover crop acres earlier in the season. Pictures and testimonials of the results of the interseeding will be used to generate more interest and increase the number of acres implemented in the future.

Our summer cover crop/soil health field meeting also was able to show the equipment to several other local farms who showed interest adopting similar practices. The District will continue to promote the use of cover crops to improve soil health while limiting soil erosion from crop fields.

Clinton County still has many thousands of acres of corn grown for grain that would benefit from the used of interseeded cover crops. The District is committed to providing the Interseeder and a cost-share incentive to more farms in the coming years.

6. REFERENCES

- a. https://www.uvm.edu/sites/default/files/Northwest-Crops-and-Soils-Program/Articles_and_Factsheets/Guide_to_interseeding_cover_crops_in_north_ern_New_England.pdf
- b. https://www.uvm.edu/sites/default/files/media/Tips_Interseeding_Cover_Crops_FINAL.pdf

7. APPENDICES

Photos:

All photos submitted were taken by Peter Hagar, District Manager, Clinton County Soil and Water Conservation District.