

Annual Report for Smith-Lever Funded Projects

Project Title: Urban conservation biocontrol
Principal Investigator: Elizabeth M. Lamb
Project Start: 10/1/2020 **Project Term:** 9/30/2023
Report Fiscal Year: 2021

Plan of Work Area(s): General Production Practices

Executive Summary: We will educate urban growers in New York City about the pest management benefits of attracting natural enemies of pests to their farms by planting flowering habitat. We will establish demonstration plantings on four farms, and host hands-on workshops to reach additional growers. Results from an ongoing natural enemy habitat project at Cornell AgriTech will enhance extension to urban growers.

Progress Summary: Milestones

Objective 1 - Three NYC growers were identified for this project – Pink Houses Community Farm, John Bowne High School Farm and Oko Farms. Because it does require a time commitment on the part of the growers, and the demand for NYC farms for projects is high, we were only able to work with 3 instead of the intended 4 farms.

Pink Houses Community Farm in the NYCHA Pink Houses development in Brooklyn, NY, was built in 2015 and produces fresh food that is distributed to the Pink Houses residents. Tomatoes, kale, collard greens, spinach and more are planted on the farm (ucceny.org/urban-farm/)

John Bowne High School Farm in Queens, NY public school is a 3.8 acre farm that is part of the school's comprehensive four-year Agriculture program. John Bowne is the only NYC school with a working farm and one of only two of the city's schools with an agriculture program (nyctecenter.org/)

Oko Farms in Brooklyn, NY is an Aquaponics Farm and Education Company that cultivates a variety of freshwater fish and vegetables in a closed-loop recirculating ecosystem, known as aquaponics. Their mission is to practice and promote aquaponics as a sustainable farming method that increases food security for NYC and mitigates the impact of climate change (okofarms.org)

At each farm, insect trapping sites were chosen, and

monthly insect samples were collected and identified.

Identification training was done with samples and photos from the Geneva site and some in-person training done by Jody Gangloff-Kaufman, NYS IPM.

Ileana Katzman, a CCE intern, worked on this project during the summer of 2021. She was instrumental in doing most of the insect trapping and identification at the three farms, and in developing working relationships with the growers at the farms and working with the project technician, Kelly Guevara.

Objective 2 - Because of travel restrictions, the two 2021 NYC presentations were virtual. As we have learned there are benefits and disadvantages to not presenting in person. However, using active learning techniques, we have been able to increase the interaction between speakers and attendees over solely a presentation. There was also an in-person open house at the Beneficial Habitat site in Geneva at Cornell AgriTech.

Objective 3 - Insects were sampled monthly at the Cornell AgriTech beneficial habitat site in 2021 with pitfall traps, pan traps and sweep netting. A photographic file of species has been compiled and will be added to as new species are found. Identification of all samples is nearly complete for 2021.

Activities

Objective 1 - Monthly insect trapping data was collected from June – September by Ileana Katzman and Kelly Guevara (Oko Farms was under construction and so sampling started in July). Identification was often by group to save time (for example, ‘tiny wasps’ as opposed to identifying each species) based on sampling in Geneva and which groups beneficials tend to fall into. While some pest species were collected, many stay on the leaves or in the plants and so are less likely to be found in pan or pitfall traps. The most common types of insects were tiny wasps, ground beetles, spiders, hover flies, rove beetles and robber flies.

Objective 2 - Two webinars were held for NYC audiences: “Recognizing and Attracting Natural enemies to urban farms and gardens” on May 4, 2021

Conservation biocontrol: Know your friends and keep them close – Amara Dunn

Project background – Sam Anderson

Breakout rooms with attendees

44 attendees (handlenses mailed to those who provided addresses)

“Conservation Biocontrol on urban farms in NYC” on November 1, 2021

Presentation on the summer’s results – Ileana Katzman

Moderated Q&A for growers from Oko Farms and Pink Houses with questions on their farms

and the insect pests and on participating in the project – Sam Anderson

Open discussion session for attendees on beneficial insects

Supporting beneficial insects – Amara Dunn

15 attendees

Links to view the recorded programs were provided through Harvest NY’s Urban Ag contact lists after the programs.

A public open house at the Cornell AgriTech site was held on August 19, 2021. Invitations were sent out to local Extension offices and Master Gardener programs, community gardens and garden clubs in Geneva, the Boys and Girls Club, and other local organizations interested in gardening. Considering the rain, we had about 10 attendees including Master Gardeners from NY and PA, and representatives from NYS Parks, Recreation and Historic Preservation.

Protocols for insect sampling, videos on how to install insect traps, and collections of preserved insect samples were developed for training on insect identification at the farms in NYC.

Objective 3 - There were 15 sample dates from 6.8.21 to 9.22.21 for insect collection at Cornell AgriTech. There were 32 plots for each date and 3 sampling types – pan, pitfall, and sweep net. Data has been entered but not analyzed. In general, although there is variation by type of collection and date, tiny wasps, ants, hover and other flies, bees, tarnished plant bugs, spiders, and ground beetles were common. At least 25 photos were added to

the photo file. One video for training on how to place insect traps was made in Ithaca and another was made in NYC.

Lessons learned

Variability from site to site in NYC and even from month to month is high. Year 1 is baseline data and the basis for measuring change once the habitat plants are installed. It would be nice to have more samples to compare but transport and distance in the city, and the hope of not interfering with the growers objectives more than necessary, make it difficult to collect as many samples as we can at the AgriTech site.

It is difficult to find a part time technician in NYC. Also in Geneva, but there we can combine projects to create a full-time position.

Expected and Observed Impact/Outcome:

In Year 1 of the project, 59 people (of the 100 predicted for the whole project span) increased their knowledge on attracting and identifying beneficial insects. The intended outcome of this increase in knowledge is reduced pesticide use, and improved yield and quality of crops.

We expect to see additional interest in the project results, and additional growers establishing habitat, once the habitats have been installed and, with luck, we can hold in-person workshops at the farms.

Evaluation Approaches/Methods and Results:

For the ‘Recognizing and attracting natural enemies to urban farms and gardens’ program, attendees were provided with a link to fill out an evaluation. Twenty-four did.

Did the workshop expand your knowledge of urban IPM?

Yes, a lot 87.5%

Yes, some 12.5% (there were 2 additional answers as options)

Please select the topics covered in this workshop that were most useful

How to recognize natural enemies vs. pests
42%

Where/how to look for natural enemies and pests
38%

Sampling methods

12%

IPM resources

4%

All of it

4%

From the comments, participants liked the active learning and the breakout sessions. For example, “using a polling/quiz format was helpful because I wasn't just passively listening the whole time”

For the 2021 Open House, attendees filled out an evaluation. While the audience was mostly gardeners rather than commercial growers, the information is still helpful.

I think that the most important reason why I should provide habitat for pollinators and other beneficial is:

I want to be a good environmental steward

63%

I think it will improve pest control around my garden

38%

For me, the biggest barrier to providing habitat for pollinators and other beneficial insects is:

It would take too much time

57%

It would cost too much money

43%

After attending this event, the amount of habitat I maintain for pollinators and other beneficial insects will...

Increase

86%

Stay the same

14%

Diverse Audiences Reached: Approximately half of the attendees (32/59) at the May 4 and November 1 webinar programs were BIPOC.

Multi-State Activities:

Publication(s):

Communication(s): While these were created, they are not currently posted on-line for easy access.

Insect trapping training videos

Photo collection from samples

Poster created by Ileana Katzman

Presentation(s): (more information under Activities and Evaluation)

“Conservation Biocontrol on urban farms in NYC” – 15 people - Nov 1, 2021

“Attracting and Recognizing Natural enemies to urban farms and gardens” – 44 people - May 4, 2021

Geneva – August 19 Open House

Project Conclusion:

**Other External
Funding to Continue:**