Thanks for picking up our Year in Review! Inside you can learn how Harvest NY is positively impacting New York agriculture, food and beverage industries. Our track record from over the last 5 years includes:

- **Over $1,000,000** in new local food sales to school cafeterias, and reaching 34,000 students with nutritional and local foods educational materials.

- **$650,000** investment by the New York dairy processing industry for 1,800 members of the workforce to participate Harvest NY trainings.

- **$6,195,000** investment leveraged for on-farm modernization and efficiency based on Harvest NY Strategic Farm Planning efforts.

- **$3,000,000** federal and private dollars awarded to Harvest NY efforts to expand the production, distribution and consumption of NYS fruits and vegetables.

- **$690,000,000** facility investments by New York dairy plants actively working with Harvest NY.

We look forward to more success in the future and thank our partners in Western, Central and Northern New York; as well as the 5 boroughs of New York City. We have include contact info and social media handles for our specialists here. Please reach out with any questions!
Figure 1. Barb Williams and Anika Zuber

Figure 2. Members of the Sorrento Lactalis Team in Buffalo, NY discussing food safety focus areas

Figure 3. Dairy Science and Sanitation Class- Participants learning about environmental sampling to take back knowledge to commercial processing plants.

Building a Stronger NY Economy through Dairy
Companies, Communities, and Harvest NY

$690 million
From 2013 to 2018, NYS Dairy Plants invested roughly $690,000,000 in upgrade and new plant construction.

~725 JOBS
The investments made from 2013 to 2018 enabled the creation of approximately 725 new jobs in NYS.

>180,000 CONTACT HOURS
HNY Dairy Processing Specialists had over 180,000 contact hours during 2018.

>950 DIRECT CONTACTS
Through workshops and plant visits, HNY dairy processing specialists had direct contact with over 950 individuals in 2018.

$50,000 Grant Funding
HNY dairy processing specialists secured $50,000 in grant money that was utilized by NYS dairy plants for workforce development in 2018.
Workforce Training Funds Secured

New York State dairy processors manufactured over 128 million pounds of cheddar cheese in 2017, the highest amount ever produced. They also produced a record amount of cream cheese (291 million pounds), butter (27.5 million pounds) and nonfat dry milk (62.8 million pounds).

With dairy products such as these growing in number in New York State, skilled dairy processing employees are more critical than ever to support current and potential production. Harvest New York Specialists have been doing in-plant workshops at facilities in order to address this need, and to reduce the travel costs associated with sending employees on overnight trips for training. However, providing in-plant training for a large number of employees still presents an economic challenge as many plants are running 24/7. In-plant training often results in large payroll increases due to backfilling positions.

This issue has been addressed by Harvest New York dairy specialists, who took advantage of local and regional funding opportunities in 2018 in order to offset training costs for dairy processing plants in Western and Northern New York. The Workforce Development Institute (WDI) and the Genesee County Economic Development Center (GCEDC) have allocated up to $19,000 and $50,000 respectively to support the training of dairy processing personnel. The WDI funding supports dairy processing facilities in Jefferson, Lewis, Essex, and St. Lawrence Counties, while the GCEDC money was allocated to dairy plants in Genesee County.

The WDI funds are being utilized through two different pathways. The first pathway is through a rebate of $450 after participants attend Preventive Controls for Human Foods training that is required by the Food and Drug Administration. Therefore, they are saving money while also meeting a federal requirement. The second pathway of funding is for a 50% reimbursement of in-plant training fees. The in-plant training funding will be utilized by the plants throughout 2019 to meet the specific training needs of each facility. Currently, one plant in St. Lawrence County has requested Dairy Science and Sanitation. Additionally, Harvest NY Dairy Processing specialists are developing a custom allergen training program for one of the Jefferson County plants.

The GCEDC funding was allocated to three Genesee County plants based on their individual needs. Thus far, this grant money has resulted in the training of 120 Genesee County plant employees. These employees have been divided between three different courses: Hazard Analysis Critical Control Point (HACCP), Dairy Science and Sanitation, and Ultra High Temperature Processing. Each course was chosen by plant management, and each course is vital to dairy plant success. We look forward to continuing to work with partner organizations in Western and Northern New York to provide maximum impact.

Food Safety Plan Reviews

In New York, 4,295 dairy farms produce 14.9 billion pounds of milk. As approximately 95% of milk received at New York dairy plants come from NYS sources (2016), dairy products employ over 63,000 employees and provide a $42 billion impact on the NY State Economy. Therefore, it is crucial that Harvest NY provide as much technical support to these dairy processing facilities as possible. The Harvest NY Dairy Processing specialist team members provided this technical support by reviewing the Food Safety Plans of ten dairy processing facilities in New York during 2018.

According to the Center for Food Integrity, food safety is the third most common food topic searched online. Being that food safety is a major area of scrutiny for consumers, it is more important than ever for food companies to create food safety plans for their products to ensure their product is not featured on the evening news due to a recall. Large and small food companies (including dairy processors) have gone out of business as a direct result of having a major food safety recall.

While this is not only damaging for that company and the local community, it also damages consumer’s confidence in the food industry, particularly within similar commodities. The FDA’s Food Safety Modernization Act requires food processing facilities to write and implement a comprehensive food safety plan in order to prevent recalls and protect public health.

Figure 4. HTST (High Temperature Short Time)/UHT (Ultra-high temperature) combo pasteurizer

Photo Credit: R.J. Anderson
Food safety plans are not "one size fits all." These facilities range in size from small farmstead creameries to large scale operations, and cover many different types of dairy products. Plants of all sizes have required assistance in meeting the requirements of this new regulation, as failure to comply could be catastrophic.

If the FDA were to inspect a facility that did not have an accurate or comprehensive food safety plan, the FDA could suspend the operating license of the facility or mandate a product recall for the foods produced. Ultimately, failure to comply with these standards could hinder the economic impact of the dairy industry in New York State. Issues with these food safety plans could lead to a loss of jobs, and of milk produced by New York State farmers in a jeopardized position. Thus, the Harvest NY specialists work with plants’ individual food safety plans is critical.

Harvest NY Dairy Processing specialists reviewed a total of ten Food Safety Plans in their entirety in 2018. During the review process, all components of the existing food safety plans are dissected by the Harvest NY Dairy Processing specialists and the facility’s employees. Typically, this process is done in person at the facility, where specialists can identify any operational concerns in addition to reviewing documentation. The documentation is reviewed to ensure no requirements are being missed or incomplete, and that the employees fully understand the documentation requirements of their facility-specific plans. This process typically takes multiple days and many adjustments before food safety plans are deemed sound.

Harvest NY will continue to work with individual dairy plants to ensure they have a well-written food safety plan. By helping the facilities successfully write and implement their food safety plans, New York dairy plants have stronger food safety systems and are less likely to have detrimental food safety issues.

Well-written food safety plans include:

- Descriptions of each product produced
- Flow diagrams of all ingredients, packaging, and finished products that come and go out of the facility
- Hazard analysis describing the potential hazards at each step identified in the flow diagrams
- Programs to control any identified hazards
- Description of monitoring procedures for all controls
- Recall plan

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2018 By the Numbers

Strategic Farm Planning is critical for New York to remain competitive as a supply of milk for its top ranked processing industry. Harvest NY works with farms to modernize and achieve increased cow numbers and/or increased production per cow, with economic and environmentally sustainable growth strategies. In developing solutions Tim draws from undergraduate and graduate degrees in dairy management and nutrition, as well as a degree in engineering. Bringing 30 years of practical experience successfully managing dairies, providing nutritional services, and designing and inspecting agricultural structures; Tim helps farms achieve their goals with strategic planning and sound engineering expertise.

57
Farms and agricultural enterprises assisted. (See map below) This includes a direct market maple producer, a farmer’s market, and a Native American-owned and operated sweet corn processing facility

$3,133,000
Sum of estimated or actual values of projects designed in 2018. The majority of the project designs are being used to secure cost-share funding for implementation

12-8,000
Monthly newsletter articles that have also been shared with other Regional Specialists and local CCE educators to a constituency of over 8,000 subscribers.

32
Times assistance has been provided to other Regional Specialists or local CCE educators. The requests were often for facility design, ventilation, or cow comfort issues.

Pictured: Locations of farms and agricultural enterprises assisted

Pictured: Roof trusses being installed on the new dairy barn.
2018 was a busy year for the local foods program! We dedicated our time to advancing existing programs and cultivating new programs, always being mindful to be true to our team’s goal of growing the New York food and agricultural economy. Below is a summary of our core projects.

Farm to Institution in Western NY
Farm to Institution (F2I) has always been a signature program area for our local foods team, recognizing early, the incredible potential to leverage public dollars to stimulate economic development and improve the health of New Yorkers. The opportunity cannot be understated, as a recent report published the New York Academy of Medicine so clearly articulated. “Through its agencies and public facilities, New York State spends more than $957 million to feed approximately 6.6 million people annually. Increasing local food purchasing from its estimated baseline of 10% to 25% of public plate dollars has the potential to improve the diets and health of 6.6 million New Yorkers and generate almost $208 million in new economic output in NYS.”

Bulleted below are our F2I contributions in 2018:

- Our Farm to School (F2S) partnership with Buffalo Public Schools wrapped up its fourth year, with significant program growth realized. In the 2018-19 school year, the F2S program expanded to serve the 30K students who participate in the National School Lunch program, resulting in over $1M of NYS purchases to date. Looking ahead to the 2019-20 school year, we are building networks and supply chains, with the goal of purchasing a considerable amount of New York proteins and expanding the F2S program to serve students in other meal programs, to include summer meals, Saturday academies through the Community Schools, and after school snacks and suppers.

- We partnered with Hamburg Central School District to participate in the New England Farm to School Institute, a unique year-long professional learning opportunity for K-12 schools. The action plan that we developed during our retreat has already begun to catalyze considerable F2S development within the district.

- We remain active and engaged partners on the:
  - American Farmland Trust (AFT) Farm to Institute NYS (FINYS) Leadership Team and serve on the Advisory Board of two of their key projects: The Buyer Learner Center and the NY Farm to School Institute. In addition, we were thrilled to partner with AFT in the production of a video highlighting the complex nature involved in developing localized supply chains to serve institutional markets. Check it out here!
  - Healthy Food in Healthcare Work Council, an effort spearheaded by the Buffalo Niagara Medical Campus (BNMC), with a core focus on increasing the procurement of New York farm products by their member hospitals and health care institutions. The Council was established as a result of a Local Food Promotion Program (LFPP) planning grant, which Harvest NY was a key partner on. Additionally, the results of the planning grant led to BNMC being awarded a 2018 implementation grant from LFPP in the amount of $351K, to further advance Farm to Hospital efforts on the medical campus.

(from L-R) Bridget O’Brien Wood, Buffalo Public Schools Food Service Director, Cheryl Thayer, Harvest NY Specialist, and Paul Fenton, Fenton Farms, talk supply chain logistics in getting their product to the doorsteps of Buffalo’s schools. It takes a village to make it happen, in this case, a great partnership with Eden Valley Growers & Boulevard Produce.

Photo Credit: Photo by Josh Baldo, courtesy of American Farmland Trust.

Pictured: Corn is Buffalo Public School’s September Harvest of the Month feature, a favorite amongst the 30K students that are able to enjoy it weekly. It takes a great partner like Eden Valley Growers, pictured above, to be able to provide the district with enough ears to feed that many little mouths.

Photo Credit: Photo by Josh Baldo, courtesy of American Farmland Trust.
Agricultural Impacts in 2018

**Ag Economic Development and Food Access Align**
Cultivating the intersection between agricultural economic development and improved food access has always been a priority of our local foods program area. Previously, success has been realized through our involvement in the Double Up Food Bucks Program and the Buffalo Farm to School initiative. With a desire to expand our work in this program area, Harvest NY received a $65K planning grant from the United Way of Buffalo & Erie County & the General Mills Foundation. The primary goal of the project is to develop an interdependent relationship between three key groups: (1) low-income consumers in Buffalo, (2) local Community Supported Agriculture (CSA) farmers, and (3) cost-offset providers, which could be health insurance companies, employers, and/or Medicaid providers. The concept of a cost-offset, in this case, can be likened to the type of wellness perk often offered by insurance companies, for example, a discount on the cost of a fitness membership. What this project is proposing to do is offset the cost of healthy, whole food from Western NY farmers. If successful in garnering participation from the three key groups, the project can offer the following impacts: (1) increasing healthy food access and consumption for low-income residents in Buffalo, and (2) supporting local farmers by increasing CSA shares sold and/or providing them with new customers, which can contribute to a stronger local economy.

**Food Policy Efforts Catalyze in Buffalo & Erie County**
The Food Policy Council of Buffalo & Erie County (FPC), which was Chaired by Cheryl Thayer, was awarded a $42K capacity building grant from the United Way of Buffalo & Erie County and the General Mills Foundation. The outcomes of this project will include the development of a Strategic Plan, designed to optimize the internal interworking of the Council, and a Food Action Plan, which will serve as an external guide to inform future local food system planning and policy initiatives that align with our mission, which is to build and strengthen a sustainable and just regional food system through policy recommendations, awareness, education, and advocacy.

Welcome Esther! In late 2018 Harvest NY partnered with the New York State Berry Growers Association to add berry production expertise to our team. Esther Kibbe will be serving the western portion of the state with support on pest management, variety selection, fertility and cultural management for strawberries, blueberries and raspberries. Esther brings a wealth of berry background having worked for Driscoll Strawberry Associates as a plant breeder and global trainer for scientific staff, and a consultant for a number of farms in Western NY. Esther earned her B.S. from Cornell University in Plant Science and is working on her M.S. at The Ohio State University in Plant Health Management. We thank the Berry Growers Association for their dedication to this position!
Harvest NY continued to support the development of the craft beverage industry, specifically as it relates to one of the primary agricultural inputs of craft beer, malting barley. Following our successful work plan of years past, we supported the industry by collecting and reporting timely supply chain driven data, as well as co-hosted the following educational and networking events:

- A Twilight Field to Pint tour, which we partnered with New York Craft Malt on. Over 50 people attended this fun and educational event on a sunny July evening. The tour started in the fields behind New York Craft Malt, that were home Cornell malting barley variety trials, and carried on through to tour New York Craft Malt and Eli Fish, Batavia’s first brewery since prohibition. Attendees learned from experts in all aspect of the supply chain and had ample networking opportunities.

- The second Empire State Barley & Malt Summit, which featured 12 educational presentations, 32 industry speakers, and over 100 network opportunities. Hosted by Harvest NY and Cornell CALS, on December 12-13, the Summit succeeded in: (1) providing research-based technical updates (2) sharing successes and best practices and (3) providing networking opportunities throughout the supply chain. All told, the Summit was a tremendous success in which ideas were planted, relationships were cultivated and next steps for the industry were germinated.

From Farm to Pint: supply chain stakeholders guide our discussion on the importance of communication and relationship building. Pictured from L-R: Dennis Nesel, Hudson Valley Malt; Corey Mosher, Mosher Farms; Rachel McDermott, WestWind Ag; Anthony Caggiano, Jamesport Farm Brewery; Noel McCarthy, 1886 Malt; David Katleski, Empire Brewing Company; and Christian Malsatzki, CCE Ulster County.

Photo Credit: RJ Anderson

Relationships cultivated throughout the supply chain. From L-R: Jon Paul Partee, Fleur De Lis Brew Works; Judd Hallet, Mumuration Malts; Jeff Trout, Poormon Farms, all of whom work together to create a pint of New York grown, malted and brewed beer.

Photo Credit: RJ Anderson

Craft Beverage Industry 2018 Update

From Farm to Pint tour attendees walk the Cornell malting barley variety trial field, located behind New York Craft Malt, in Batavia, NY.

Photo Credit: Jeremy Veverka
In its first full year of existence, Harvest NY’s Urban Agriculture Program established itself as a primary source of technical assistance for commercial urban farmers in New York City (NYC). Our two Urban Agriculture Specialists provided one-on-one technical support to more than 75 producers and farm staff in 2018, visited 38 urban agriculture operations across the city, launched several new projects, and developed new relationships with stakeholders in NYC and beyond.

During 2018, the Urban Agriculture Program led four on-farm food safety workshops, two lean farming workshops, three group discussions on soil fertility principles, one tomato pruning training, and an agricultural careers panel for urban farm crew and apprentices. We also facilitated peer-to-peer learning by co-organizing a series of farmer-led workshops and networking events, and by creating a regular meetup of urban hydroponic growers. Over 120 participants attended these events in total.

Mushroom production was one new program focus in 2018. The Urban Agriculture Program received funding for a multi-year specialty mushroom research and education project through USDA-AFRI, along with the Cornell Small Farms Program and community partners in NYC. The project will focus on developing a low cost, replicable model of indoor mushroom production for both urban and rural communities across the Northeast region. An August workshop held in the Bronx, "Growing Mushrooms on Gardens and Farms," attracted over 44 participants, ranging from school-age children to senior citizens. Upcoming mushroom work, in collaboration with Farm School NYC and the Small Farms Program, includes piloting an online group learning mushroom course that explores the ethnography and social justice aspects of growing mushrooms and trains new and experienced farmers in the background, techniques, and economics of farm scale indoor commercial production.

Harvest NY specialists also conceived of and carried out an initial NYC Agricultural Soil Survey, gathering soil and plant tissue samples from 10 urban farms and market gardens in order to facilitate a better understanding of the city’s unique productive soils. Participating sites received results and ongoing technical assistance throughout the season, gaining a better understanding of their soils and of soil fertility principles. "The soil survey project guided me in many ways to manage the soil in an educated way," one participant said, adding that guidance on plant issue analysis was "extremely helpful to think with intention about how nutrient availability changes throughout the growing season." An Urban Agriculture specialist presented preliminary soil survey results at three events, including to an audience of over 70 at the NYC Urban Soil Symposium. As part of a Federal Capacity Funds project, the NYC Agricultural Soil Survey project will continue in 2019 with additional soil analysis and educational events.
St. Lawrence Valley Produce Auction

Harvest NY continues to support the development of the St. Lawrence Valley Produce Auction in northern New York. A produce auction is an aggregation and marketing service that allows family farms to participate in a wholesale fruit and vegetable economy. It enables the farmer to concentrate more time on growing a good product and less time on marketing. On May 1, 2018, the St. Lawrence Valley Produce Auction opened its doors for its first year of sales.

In 2018, the auction made an estimated total sales of $240,000 in their first year of operation with approximately 117 growers and buyers participating in the auction. This auction was originally established through the creation of an S-corporation and the total sales of $200,000 in investment shares.

CCE Harvest provided the following support:

- Weekly support at the auction and/or helped with the creation of market reports that were sent by the auction to buyers and potential buyers.
- Market reports can be found on the St. Lawrence Valley Produce Auction Facebook page.
- Arranged site visits to farmers to provide educational support throughout the growing season. A total of 14 farm visits were requested by produce auction participants.
- Established a yearly twilight meeting that offered educational support on vegetable production, which had 39 participants in the first year.
- Secured $19,768 from Northern New York Agriculture Development Program for 2019 for the New Wholesale Marketing Northern New York project. The research proposal will be looking at wholesale pricing at the produce auction. This will help farmers make informed decisions on approaches to receive a higher average sales price than they are currently receiving for their products. This funding also is to help bring in outside CCE regional specialists to provide educational training on vegetable and fruit growing practices.

Quotes from St. Lawrence Valley Produce Auction Participants 2018

- We love the auction and plan to grow more to sell. – Anonymous
- Previously we weren’t farmers. Since the auction is open, we decided to try our hand at farming. We plan to use low tunnels over some strawberries in 2019. – Anonymous
- It was a great channel to move large quantity and have everything sell. – Anonymous
- You can spend more time picking and don’t have to be at the stand selling all the time. – Anonymous

Industrial Hemp

Hemp, a multi-use crop that has been cultivated for centuries, is increasingly cultivated in New York. ‘Industrial hemp’ is a non-intoxicant version of Cannabis sativa with potential use as fiber, grain or processed consumer products. Hemp is a controlled substance, regulated by the US Drug Enforcement Agency. The previous Farm Bill allowed states to develop pilot programs to research industrial hemp. New York is one of the states with a sanctioned program to study growth, cultivation, and marketing of the crop. In NYS permits to grow hemp are regulated by the Dept. of Ag and Markets under close supervision. Any person interested in growing hemp must become familiar with the pertinent regulations before considering growing, and a permit is required. The NYSDAM website is a good place to begin this process: [www.agriculture.ny.gov/PI/PIHome.html](http://www.agriculture.ny.gov/PI/PIHome.html)

Harvest NY has continued its work in industrial hemp throughout 2018. The work included collecting foliar hemp microgreen samples at two locations in Central and Northern NY. This project was to understand the beginning of nutrient dynamics of growing hemp as a microgreen in a controlled environment (high tunnels and greenhouses). A full report of the project can be found on the Harvest NY website.
Northern New York Marketing Programming

Harvest NY has helped to support and provided training on marketing education in Northern New York. This support included teaching and facilitating a variety of marketing programs across the region. The educational program provided included market assessment, wholesale channel communication, collaborative marketing, digital marketing, general marketing, and agritourism. These programs reached around 120 farmers across Northern New York and has led to farmers finding additional markets inside and outside of Northern New York.

This variety of educational programs included the Strategic Marketing Conference: Developing Your Brand and Marketing Strategies to Increase Sales in Lake Placid, NY. Twelve presenters from NY and Vermont were brought in to discuss the following topic areas:

- Developing a Brand for a Competitive Market
- NYS Grown and Certified Program
- Exporting
- Marketing and Finding Additional Markets
- Legality Issues to Consider
- Multi-Channel Selling Strategies
- Technology Adaption with your Brand
- Collaborative Approaches to Marketing

The Conference was sponsored by CoBank, Adirondack Harvest, Farm Credit East, and Agricultural Marketing Community Economic Development Program Work Team at Cornell University with over $7,000 in sponsored funds.

The Strategic Marketing Conference brought in farmers and partner agencies from Northern New York, Vermont, and Connecticut with a total of 35 attendees. "Cornell events are always packed with great information for producers. As a state agency that trains our producers/farmers. I appreciate learning from Cornell educators! Thank you!!" –Anonymous