Cornell Food Science Extension Programs integrate research and outreach education in areas related to food safety, food production and the principles of food science. Understanding the participants and elements of food systems, we provide farmers, business owners, and industry partners with support and knowledge essential for growth and success in food production, from farm to fork.
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CORNELL FOOD SCIENCE
Extension Overview

Our mission is to help farmers, business owners, and consumers in New York State and beyond to produce safe, healthy, and wholesome food and beverages. Outreach educational programs take many forms but are focused on a common goal, which is to educate and inform individuals, communities and businesses on food and beverage production and food safety. These programs utilize Cornell University’s breadth of academic resources, connections to industry, and relationships with federal and state food and agriculture agencies.

Our food safety education and research efforts support product development from concept to commercialization to address technical challenges. We provide educational programs across a broad range of food science disciplines that address stakeholder needs through short courses, online training and outreach. Our department also offers one-on-one consultations and customized on-site workshops to those in the food and beverage industry.

- Cornell Craft Beverage Institute (CCBI)
- Cornell Food Venture Center (CFVC)
- Cornell Institute for Food Systems Industry Partnership Program (CIFS-IPP)
- Dairy Foods Extension
- Food Microbiology & High Pressure Processing
- HACCP Training for Food Processors
- Institute for Food Safety at Cornell University (IFS@CU)
- New York Sea Grant (NYSG)
- Produce Safety Alliance (PSA)
Hours of Training Delivered, 2018

<table>
<thead>
<tr>
<th>Hours</th>
<th>Program</th>
</tr>
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<tbody>
<tr>
<td>6,232</td>
<td>Cornell Craft Beverage Institute</td>
</tr>
<tr>
<td>8,624</td>
<td>Cornell Food Venture Center</td>
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<tr>
<td>14,640</td>
<td>Dairy Foods Extension</td>
</tr>
<tr>
<td>3,536</td>
<td>HACCP Training</td>
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<tr>
<td>1,600</td>
<td>Institute for Food Safety at Cornell University</td>
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<tr>
<td>480</td>
<td>New York Sea Grant</td>
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<tr>
<td>25,457</td>
<td>Produce Safety Alliance</td>
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<tr>
<td>60,569</td>
<td>Total Hours</td>
</tr>
</tbody>
</table>

Events & Trainings, 2018

- CCBI: 9
- CFVC: 46
- Dairy Foods Extension: 28
- HACCP Training: 12
- IFS@CU: 3
- NYSG: 15
- PSA: 149

262

Cornell Food Science Extension Programs enhance the quality and safety of food and beverage production by offering a range of workshops and trainings from on-farm food safety practices to proper food and beverage processing. Examples of these workshops and trainings include Good Agricultural Practices (GAPs), Better Process Control School (BPCS), Good Manufacturing Practices (GMPs), Hazard Analysis Critical Control Points (HACCP) and Safe Quality Food (SQF) Certification.

Food Science Extension hosted or participated in 262 meetings, workshops, demonstrations and programs last year. These meetings provided over 60,000 hours of training to more than 11,000 participants. In addition, Food Science Extension provides services including laboratory analysis, food processing equipment for pilot testing, process authority evaluation and validation, regulatory guidance and troubleshooting.
The Institute for Food Safety at Cornell University (IFS@CU) supports the production of safe foods that increase the economic viability and sustainability of the food industry in New York and beyond. With expertise in fresh produce, dairy, juice and food processing, the IFS@CU aids the food industry in complying with federal regulatory requirements in the Food Safety Modernization Act (FSMA) and addresses food safety challenges that stretch from farms to consumers’ tables.

- **GMPs Part 117 Online Course**
  - 732 Participants
- **FD152 Pilot Course**
  - 39 Participants
The Produce Safety Alliance (PSA), established in 2010, is a collaboration between Cornell University, FDA, and USDA to prepare produce growers to meet the regulatory requirements included in the FDA’s FSMA Produce Safety Rule (PSR). Through the development of novel educational materials and training approaches, the PSA also provides technical assistance to growers and trainers.

This data represents training activities conducted by the PSA team, along with their national and international cadre of trainers, as a cumulative total since September 2016.

1,359 Grower Training Courses Offered
31,174 Participants

77 Train-The-Trainer Courses Offered
2,479 Participants
Cornell Dairy staff, in collaboration with Dairy Foods Extension, instruct participants in Unit Operations in the new Cornell Dairy Plant.

**Dairy Foods Extension**’s mission is to provide comprehensive training and consulting to the dairy industry to assist in the sustainable manufacture of safe, quality dairy products. Courses provide training to dairy processors in vital topics including milk and dairy product quality and safety, basic dairy microbiology, GMPs, unit operations, sanitation, food safety plans, audits, and state and federal regulations.

- **46 Courses Offered**
- **14,640 Training Hours**
- **838 Participants**
FOOD MICROBIOLOGY & High Pressure Processing

The Food Microbiology Laboratory and the HPP Validation Center not only conduct cutting-edge research, but also provide technical services for the food and beverage industries.

Cornell's Food Microbiology Laboratory specializes in evaluating the microbial safety of fruit and vegetable processed foods and beverages. In addition to analytical services, the team provides training and assistance to the food and beverage industries as well as state and federal inspectors. The High Pressure Processing (HPP) Validation Center conducts cutting-edge research and tests HPP processed food products requiring a validation to establish processing conditions that meet regulatory requirements.

128 Product Evaluations
96 Safety Validations Issued
New York Sea Grant: SEAFOOD SAFETY TRAINING

New York Sea Grant (NYSG), a cooperative program of Cornell University and the State University of New York (SUNY), is one of 33 university-based programs under the National Oceanic and Atmospheric Administration’s National Sea Grant College Program. Since 1971, NYSG has represented a statewide network of integrated research, education and extension services promoting coastal community economic vitality, environmental sustainability, citizen awareness and understanding about the State’s marine and Great Lakes resources.

Online Seafood HACCP Course
1,501 Participants

3 In-Person Seafood HACCP Courses
60 Participants
Principles of Hazard Analysis and Critical Control Points (HACCP) is a systematic approach to identify, assess and control the risk of hazards from a food production process. HACCP is a preventive strategy to ensure safe processing of food, especially meats, seafood, dairy and juice. FDA and USDA have issued regulations specific to juice, seafood and meat processing in response to concerns about foodborne illness outbreaks and securing the U.S. food supply. Trainings are designed to provide industry and inspectors with the knowledge they need to develop or evaluate HACCP plans and practices.

9 Courses Offered

281 Participants
The Cornell Food Venture Center celebrated its 30th anniversary and the reopening of the newly renovated Fruit and Vegetable Pilot Plant on Cornell AgriTech’s campus in 2018.

Cornell Food Venture Center (CFVC) provides comprehensive assistance to new and established food entrepreneurs to enhance food safety, satisfy regulatory compliance and promote economic development. Services include scheduled process and process review validation for processed foods and meat products, laboratory services for product safety and stability, reduced oxygen environment/vacuum packing hazard analysis and validation, heat penetration studies, food classification letters, and access to the fruit and vegetable processing pilot plant.

- 5 Better Process Control Schools
- 81 Participants
- 2,143 Validations for Value-Added Food Products
CORNELL INSTITUTE FOR FOOD SYSTEMS

Industry Partnership Program

The Cornell Institute for Food Systems Industry Partnership Program (CIFS-IPP) is a public-private partnership that expands and enhances engagement of Cornell University faculty and staff with industry scientists, engineers, and business leaders throughout the food system. With expertise in business and industry, CIFS-IPP finds solutions to today’s food system challenges while shaping tomorrow’s discoveries. CIFS-IPP works to inform and advance industry practice with cutting-edge science that pushes their food industry partners to the forefront of research, development, and technology.
The Brewing & Distilled Spirits extension program, part of Cornell Craft Beverage Institute (CCBI), supports craft producers through quality control programs and also helps to promote New York breweries. The lab and pilot facilities provide for product evaluation and pilot testing on industrial-scale equipment to improve processing, product composition and quality.

The Cornell Vinification & Brewing Technology Laboratory is a pilot plant dedicated to research and teaching in wine and brewing sciences. Craft beverage services include laboratory analyses, regulatory guidance and troubleshooting specific to brewing and distillation, hop and malt production, and alternative beverage industries.

In 2018, Extension Associate Kaylyn Kirkpatrick joined Cornell as the brewing expert. The Brewing Extension Lab supports the local hop industry by offering hops quality analysis testing, which ensures acceptable brewing values.
Research Aide Pam Raes prepares a plate to look for remaining yeast and bacteria in a recently bottled wine. This helps a winery or cidery know that a product is safe to sell without fear of popping corks or shattered glass from re-fermentation.

The Wine & Cider extension program (part of CCBI) provides resources to help winemakers and cider makers with important decisions from fruit sourcing and fermentation techniques to quality assurance and regulatory compliance. Cornell staff provide research, tools, and extension support to transfer research-based innovations and technologies that benefit growers, producers and consumers.

In addition to training and workshops, extension services also include the NYS Wine Analytical Laboratory, which offers chemical, microbiological and sensory analyses of juice, wine, and distillates for quality assurance, troubleshooting and regulatory compliance.

- **1,762 Samples Analyzed from Craft Beverage Businesses**
- **2,500 Samples Analyzed from Cornell Research & Extension Groups**