

Cornell Food Science Extension Programs



COURSE CATALOG

Assisting farms and food businesses in NYS
and beyond to improve product quality, safety,
nutrition, and marketability.

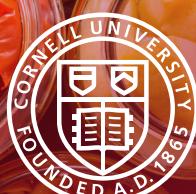
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Cornell **CALS**

College of Agriculture and Life Sciences



Department of Food Science

The Department of Food Science at Cornell University is one of the premier programs worldwide for collaborative research and extension programming. Our faculty, staff, and students support cutting-edge research in chemistry, microbiology, engineering, biotechnology, nutrition, and physiology, which has improved the nutritional value, safety, quality, affordability, and profitability of foods and beverages. These research initiatives are integrated with translational extension efforts that together help improve public health and stimulate business development.

The mission of food science extension programs at Cornell is to assist farms and food businesses in New York State and beyond with the implementation of new technologies and production strategies that will improve product quality, safety, nutrition, and marketability. Extension personnel, located at the Cornell University (Ithaca, NY) and Cornell AgriTech (Geneva, NY), campuses facilitate these activities through technology transfers, process validations, project incubation, piloting, crisis management support, workshops, web-based training, and consultation.

Through our work in research and extension, food science extension programs have helped tens of thousands of food industry stakeholders. Measurable outcomes for these interactions have included bringing products to market, achieving regulatory compliance, reducing food safety risks, and adding value or extending product lines.



For More Information

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Regulatory Programs & Industry Standards

Produce Safety Alliance Grower Training (Basic Level)

Offered by the [PSA](#)

In-Person, Remote, or Online (Self-Paced) – This course, available in English and Spanish, satisfies the FSMA Produce Safety Rule requirement outlined in § 112.22(c). The course provides a foundation of Good Agricultural Practices (GAPs) and co-management of natural resources and food safety, FSMA Produce Safety Rule requirements, and details on how to develop a farm food safety plan. After attending the course, participants will receive a certificate from the Association of Food and Drug Officials (AFDO) verifying completion of the course. [See page 15 or visit the PSA website for more information.](#)

Produce Safety Alliance Train-the-Trainer (Advanced Level)

In-Person or Remote – This course will provide detailed information about Good Agricultural Practices (GAPs), co-management of natural resources and food safety, and FSMA Produce Safety Rule requirements. The course will also cover principles of adult education, how to incorporate the PSA curriculum into extension trainings, how to develop working partnerships, expectations for trainers, how to become a PSA Lead Trainer, and how to register a PSA Grower Training Course with the Association of Food and Drug Officials (AFDO). [See page 16 or visit the PSA website for more information.](#)

Good Manufacturing Practices (GMPs) Part 117 for Human Food

Offered by the [IFS@CU](#)

Online (Self-Paced) – The GMPs Online Course is designed to review the requirements of Part 117, Subpart B – Current Good Manufacturing Practice in Title 21 of the U.S. Code of Federal Regulations. The regulation outlines the basic sanitary controls that are required for all food processing plants, wholesale or distribution firms, and warehouses or food storage facilities that handle, store or process FDA-regulated food. The course provides the text of each section of this regulation along with an explanation of its intent, examples and strategies for compliance with these requirements, as well as additional resources. [See page 6 or visit the IFS@CU website for more information.](#)

Good Manufacturing Practices (GMPs) Part 111 for Dietary Supplements

Offered by the [IFS@CU](#)

Online (Self-Paced) – The GMPs Online Course is designed to review the requirements of Part 111 – Current Good Manufacturing Practice in Manufacturing, Packaging, Labeling, or Holding Operations for Dietary Supplements in Title 21 of the U.S. Code of Federal Regulations. The regulation outlines the basic sanitary, production, process and quality controls that are required for all dietary supplement processing facilities, wholesale or distribution firms, and warehouses or storage facilities that manufacture, package, label, or hold FDA-regulated dietary supplements. The course also reviews sections of the Part 117,

Regulatory Programs & Industry Standards

Subpart B – Current Good Manufacturing Practice under the FDA's Food Safety Modernization Act (FSMA) Preventive Controls for Human Food rule that are relevant to the production of dietary supplements.

See [page 7](#) or visit the [IFS@CU website](#) for more information.

FSMA Preventive Controls Qualified Individual Training*

Offered by [Dairy Foods Extension](#)

3 Day Course – The Current Good Manufacturing Practice, Hazard Analysis, and Risk-Based Preventive Controls for Human Food regulation is intended to ensure safe manufacturing/processing, packing and holding of food products for human consumption in the United States. The regulation requires that certain activities must be completed by a preventive controls qualified individual who has successfully completed training in the development and application of risk-based preventive controls. This course developed by the FSPCA is the standardized curriculum recognized by FDA; successfully completing this course is one way to meet the requirements for a preventive controls qualified individual.

Visit the [Dairy Foods Extension website](#) for more information.

*Course description provided by the Food Safety Preventive Controls Alliance.

Food Safety and FSMA Regulations for Small Food Processors

Offered by the [IFS@CU](#)

Online (Self-Paced) – Developed by the Cornell Food Venture Center and administered by the Institute for Food Safety at Cornell University, this course gives an overview of the state and federal regulatory framework in the US for small food processors. The course reviews requirements of the FDA's Food Safety Modernization Act (FSMA) Preventive Controls for Human Foods Rule (21 CFR Part 117) as it applies to small-scale food manufacturers. It also outlines the modified requirements for qualified facilities, including the steps necessary to file attestations with the FDA (21 CFR Part 117, Subpart D).

See [page 28](#) or visit the [IFS@CU website](#) for more information.

Better Process Control School

Offered by the [CFVC](#)

2 or 4 Day Course – A training program for the processed food industry to prepare industry practitioners and to help companies meet federal regulations. The course is beneficial to personnel in plants who pack and thermally process low-acid and acidified foods in hermetically sealed containers for shelf stable conditions. This includes canned foods, aseptically processed and packaged foods, and pickled products. Cornell University is part of the network of universities that deliver the Better Process Control School in partnership with the Consumer Brands Association (CBA) utilizing U.S. Food and Drug Administration (FDA) approved curriculum. See [page 27](#) or visit the [CFVC website](#) for more information.

Regulatory Programs & Industry Standards

Juice HACCP Certification Course

Offered by the [Cornell Microbial Food Safety and Quality and Outreach Program](#)

1.5 Day Course – Juice HACCP commonly refers to the use of HACCP plans to minimize food safety risks in the juice processing, packaging, and transportation industries. Under the federal Juice HACCP rule published in 2001, juice processors must comply with two requirements. [See page 40 for more information.](#)

Seafood HACCP (Basic or Segmented Course)

Offered by the [New York Sea Grant](#) and [Cornell University](#)

2.5 Day In-Person Course (Basic) or Hybrid Course (2-Segment) – This course was developed through the Seafood HACCP Alliance and is recognized by the U.S. Food and Drug Administration (FDA) to meet the training requirements established under the FDA's mandatory seafood HACCP regulation (21 CFR Part 123). The course provides training for the seafood industry and regulatory agencies on the fundamentals of HACCP, the current Seafood HACCP regulation, introduction to guidance and training materials and the development of a HACCP plan for seafood products. [See page 42 or visit \[bit.ly/3Lcjc92\]\(https://bit.ly/3Lcjc92\) for more information.](#)

Implementing SQF Systems Course

Offered by [Dairy Foods Extension](#)

3 Day Course – This workshop is designed to give participants an understanding of the SQF Code, how to implement requirements in food production, manufacturing, storage, distribution, and packaging to achieve or maintain SQF Certification. Students must have completed a HACCP course of at least 16 hours prior to taking this course. [Visit the \[Dairy Foods Extension website\]\(#\) for more information.](#)

Understanding Required Competencies for the 2022 Food Code

Offered by the [IFS@CU](#)

Online (Self-Paced) – This course is designed to provide the foundational knowledge from the newest edition (2022) of the Food Code to satisfy regulatory requirements while helping to ensure the safety of food sold in retail and food service operations. Food establishment employees must demonstrate understanding of 18 knowledge-based competencies identified in the Food Code for regulatory compliance, that ultimately contribute to the protection of public health. The course provides explanation and context for each knowledge-based competency as well as additional resources to enhance understanding of the material. [See page 9 or visit \[cals.cornell.edu/2022-food-code\]\(https://cals.cornell.edu/2022-food-code\) for more information.](#)

Institute for Food Safety at Cornell University

The Institute for Food Safety at Cornell University (IFS@CU) is unique in its comprehensive approach for addressing current and emerging food safety issues. Harnessing Cornell's strengths across food production systems, the IFS@CU integrates extension, training, and research to prevent foodborne illnesses in innovative and pioneering ways, optimizing product quality and safety from farm-to-table.

The IFS@CU provides training and support to help growers and processors overcome food safety challenges such as complying with regulatory requirements in the U.S. FDA's Food Safety Modernization Act (FSMA). Located at the College of Agriculture and Life Sciences' Cornell AgriTech in Geneva, New York, the IFS@CU collaborates with a diversified network that supports the food production industry to stimulate economic growth and create new market opportunities for the Empire State's farmers, food processors, retailers, and food entrepreneurs. Visit the [IFS@CU website](#) to learn more about the programming it offers. Please direct any questions to Nancy Long (foodsafety@cornell.edu).

Meet the Team



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Good Manufacturing Practices (GMPs) Part 117 for Human Food

Tuition: \$200 | 12 Weeks to Complete

Online (Self-Paced) – This course reviews the requirements of Part 117 Subpart B – Current Good Manufacturing Practice in Title 21 of the U.S. Code of Federal Regulations. Course modules examine basic sanitary controls that are required for all food processing plants, wholesale or distribution firms, and warehouses or food storage facilities that handle, store or process FDA-regulated food.

Curriculum Overview

The course consists of 12 modules (listed below). Students have 12 weeks to review the modules at their own pace. Each module concludes with a quiz, which students must complete to test their knowledge. After submitting all 12 quizzes, students will receive a Certificate of Course Completion issued by the IFS@CU.

- **Module 1:** GMP Regulation & Training
- **Module 2:** Food Safety – Microbes & Allergens
- **Module 3:** Personnel – Health & Hygiene
- **Module 4:** Plant Grounds & Pest Control
- **Module 5:** Plant Construction & Design
- **Module 6:** Sanitary Facilities – Water, Plumbing & Toilets
- **Module 7:** Sanitary Operations – Cleaning & Sanitizing
- **Module 8:** Equipment & Utensils
- **Module 9:** Plant Operations & Raw Materials
- **Module 10:** Manufacturing Operations – Process Controls
- **Module 11:** Warehousing, Food Disposition & Defects
- **Module 12:** Building Sanitation Procedures

Who Should Take This Course?

This course is intended for supervisors, mid-level managers, quality control personnel, and those responsible for ensuring that food processing, wholesale and warehouse operations, or other facilities, meet current GMP requirements.



IFS@CU | Course Information

Course Registration

The course fee is \$200 (subject to change), which is payable by credit card or check. Group discounts are available for groups with 20 or more participants. Please direct any inquiries about IFS@CU courses to Nancy Long (ifstraining@cornell.edu). Register for the course at: cals.cornell.edu/gmps-part-117

Good Manufacturing Practices Part 111 for Dietary Supplements

Tuition: \$400 | 16 Weeks to Complete

Online (Self-Paced) – This online course reviews the requirements of Part 111 – Current Good Manufacturing Practice in Manufacturing, Packaging, Labeling, or Holding Operations for Dietary Supplements in Title 21 of the U.S. Code of Federal Regulations. Course modules examine basic sanitary, production, process, and quality controls that are required for all facilities that manufacture, package, label, or hold FDA-regulated dietary supplements. The course also reviews sections of the Part 117, Subpart B – Current Good Manufacturing Practice under the FDA's Food Safety Modernization Act (FSMA) Preventive Controls for Human Food rule that are relevant to the production of dietary supplements.

Curriculum Overview

The course consists of 16 modules (listed below). Students have 16 weeks to review the modules at their own pace and complete quizzes that appear in each module. Students must complete all of the course quizzes to test their knowledge and earn a Certificate of Course Completion issued by the IFS@CU.

- **Module 1:** Course Logistics & Introduction to the CGMP Part 111 Regulation
- **Module 2:** Food Safety – Microbes & Allergens
- **Module 3:** Personnel – Health, Hygiene & Qualifications
- **Module 4:** Pests, Plant Grounds & Pest Control
- **Module 5:** Sanitary Facilities – Water, Plumbing & Waste Disposal
- **Module 6:** Plant Design & Construction
- **Module 7:** Equipment & Utensils
- **Module 8:** Sanitary Operations – Cleaning & Sanitizing
- **Module 9:** Establishing a Production and Process Control System & Quality Control Operations
- **Module 10:** Laboratory Operations, Meeting Specifications, Material Reviews & Disposition Decisions
- **Module 11:** Receiving
- **Module 12:** Manufacturing Operations - Part 1
- **Module 13:** Manufacturing Operations - Part 2
- **Module 14:** Packaging, Labeling, Holding & Distributing
- **Module 15:** Returned Dietary Supplements, Product Complaints, Records & Recordkeeping
- **Module 16:** Building Written Procedures

IFS@CU | Course Information

Who Should Take This Course?

This course is intended for supervisors, mid-level managers, quality control personnel, and those responsible for ensuring that manufacturing, packaging, labeling, or holding dietary supplements meet the federal requirements for current GMPS.

Course Registration

The course fee is \$400 (subject to change), which is payable by credit card or check. Please direct inquiries about the course to Nancy Long (ifstraining@cornell.edu). Register for the course at: cals.cornell.edu/gmps-part-111

New York State Regulations for Cannabinoid Hemp (*Cannabis sativa*) Processors

Tuition \$150 | 6 Weeks to Complete

Online (Self-Paced) – This online course reviews the requirements of Part 114 – Cannabinoid Hemp in Title 9 of the Official Compilation of Codes, Rules and Regulations of the State of New York that are relevant to cannabinoid hemp processors. The course provides an overview of cannabinoid hemp as well as federal and New York State (NYS)-specific regulatory requirements for cannabinoid hemp processors.

Curriculum Overview

The course consists of 6 modules (listed below). Students have 6 weeks to review the modules at their own pace. Each module concludes with a quiz, which students must complete to test their knowledge. After submitting all 6 quizzes, students will receive a *Certificate of Course Completion* issued by the IFS@CU.

- **Module 1:** Introduction to Cannabinoid Hemp Products
- **Module 2:** Regulatory Oversight for Growing and Processing Hemp
- **Module 3:** Licensing and License Renewal for Cannabinoid Hemp Processors
- **Module 4:** General Requirements and Prohibitions for Cannabinoid Hemp Processors
- **Module 5:** Requirements for Cannabinoid Hemp Products
- **Module 6:** Cannabinoid Product Testing, Contaminant Limits and Course Summary

Who Should Take This Course?

This course is intended for NYS cannabinoid hemp processors, University education or extension personnel, regulatory personnel, consultants who work directly with cannabinoid hemp processors, and anyone else who is interested in learning about the regulatory requirements in NYS for this emerging industry.

Course Registration

The course fee is \$150, which is payable by credit card or check. Please direct inquiries about the course to Nancy Long (ifstraining@cornell.edu). Register for the course at: cals.cornell.edu/cannabinoid-hemp

Understanding Required Competencies for the 2022 Food Code

Tuition \$200 | 7 Weeks to Complete

Online (Self-Paced) – The U.S. Food and Drug Administration (FDA) publishes the Food Code every four years as a model of best practices for the safe handling of food in a retail setting. Local, state, tribal and federal regulators use the FDA Food Code as a model to develop or update their own food safety rules and to be consistent with national food regulatory policy.

This course is designed to provide the foundational knowledge from the newest edition (2022) of the Food Code to satisfy regulatory requirements while helping to ensure the safety of food sold in retail and food service operations. Food establishment employees must demonstrate understanding of 18 knowledge-based competencies identified in the Food Code for regulatory compliance, that ultimately contribute to the protection of public health. The course provides explanation and context for each knowledge-based competency as well as additional resources to enhance understanding of the material.

Curriculum Overview

This course has 7 modules, each discussing several related competencies reflecting common Food Code themes. They come together into cohesive lessons discussing best practices in food handling, food safety management in facilities, and preventive control practices to mitigate risks of foodborne illness. After submitting all module quizzes, students will receive a *Certificate of Course Completion* issued by the IFS@CU.

- **Module 1:** Introduction – 2022 Food Code
- **Module 2:** Preventing Foodborne Illnesses by Employee Transmission
- **Module 3:** Time & Temperature Controls
- **Module 4:** Avoiding Cross-Contamination & Unintended Food Allergen Exposure
- **Module 5:** Equipment & Utensils
- **Module 6:** Physical Facilities – Design & Controls
- **Module 7:** Critical Controls, HACCP Plans & Food Defense

Who Should Take This Course?

This course was designed for employees of retail and food service establishments. This includes persons-in-charge, management, staff, food handlers, and conditional employees.

Course Registration

The course fee is \$200 (subject to change), which is payable by credit card or check. Please direct inquiries about the course to Nancy Long (ifstraining@cornell.edu).

Register for the course at: cals.cornell.edu/2022-food-code

IFS@CU | Course Information

Food Microbiology Fundamentals

Tuition \$200 | 5 Weeks to Complete

Online (Self-Paced) – Understanding the role of microorganisms related to our food system is essential for ensuring safe, high-quality foods. This is an approachable course designed to provide a solid foundation in basic microorganism classifications, their growth conditions and life cycles, and how they contribute to foodborne illness. Students will also learn applicable information for monitoring and preventing the spread of microbial pathogens when working with food, from farm to plate.

Curriculum Overview

This course has 5 modules designed to review the techniques and knowledge of microbial genetics, physiology, and identification methods to foodborne illnesses and outbreaks, food spoilage, food preservation and fermentation, and food quality and processing. After submitting all 5 quizzes, students will receive a *Certificate of Course Completion* issued by the IFS@CU.

- **Module 1:** Intro to Food Microbiology
- **Module 2:** Factors Affecting Microbial Growth
- **Module 3:** Foodborne Illness and Public Health
- **Module 4:** Pathogens of Importance in Foods
- **Module 5:** Microbial Testing and Monitoring

Who Should Take This Course?

This course is intended for people who work with and handle food including farmers/growers, packing house personnel, warehouse personnel, wholesale distributors, food processors, food safety consultants, educators or extension personnel, and anyone who is interested in better understanding microorganisms related to food safety/food systems.

Course Registration

The course fee is \$200 (subject to change), which is payable by credit card or check. Please direct inquiries about the course to Nancy Long (ifstraining@cornell.edu).

Register for the course at: cals.cornell.edu/food-microbiology-fundamentals

IFS@CU | Course Information

Food Safety and FSMA Regulations for Small Food Processors

Tuition \$150 | 6 Weeks to Complete

Online (Self-Paced) – Developed by the Cornell Food Venture Center and administered by the IFS@CU, this course gives an overview of the state and federal regulatory framework in the US for small food processors. The course reviews requirements of the FDA's Food Safety Modernization Act (FSMA) Preventive Controls for Human Foods Rule (21 CFR Part 117) as it applies to small-scale food manufacturers. It outlines the modified requirements for qualified facilities, including the steps necessary to file attestations with the FDA (21 CFR Part 117, Subpart D). This course also includes foundational information about identifying sources of biological and chemical food safety hazards, the conditions under which they may be present as well as recommended, and required preventive controls to avoid product contamination from these hazards. See [page 28](#) or visit the [IFS@CU website](#) for more information.

Course Registration

The course fee is \$150, which is payable by credit card or check. Please direct inquiries about the course to Nancy Long (ifstraining@cornell.edu). Register for the course at: cals.cornell.edu/small-food-processors

Course Calendar

[VIEW FULL KEY ON PAGE 39](#)

Topic	Date Offered	Location	Category	Training Delivery
GMPs Part 117 for Human Food	Rolling Admission, On-Demand	Online	Regulatory, Food Safety, Food Processing	
GMPs Part 111 for Dietary Supplements	Rolling Admission, On-Demand	Online	Regulatory, Food Safety, Food Defense	
Cannabinoid Hemp Processing in NYS	Rolling Admission, On-Demand	Online	Regulatory, Food Safety, Food Defense	
Required Competencies for the 2022 Food Code	Rolling Admission, On-Demand	Online	Regulatory, Food Safety, Food Defense	
Food Microbiology Fundamentals	Rolling Admission, On-Demand	Online	Food Safety, Food Defense	
Food Safety/FSMA for Small Food Processors	Rolling Admission, On-Demand	Online	Regulatory, Food Safety, Food Defense	



Produce Safety Alliance

The Produce Safety Alliance (PSA) was created to help fresh produce growers meet the regulatory requirements included in the Food Safety Modernization Act (FSMA) Produce Safety Rule. It was established through a cooperative agreement between Cornell University, the United States Food and Drug Administration (FDA), and the United States Department of Agriculture (USDA). The PSA has developed two types of training courses to ensure growers have access to training that meets FSMA PSR § 112.22(c), the PSA Grower Training Course and the PSA Train-the-Trainer Course. The PSA began offering both courses in September 2016 and has trained over 105,000 individuals (including produce growers, extension educators, and regulatory personnel) and over 3,900 trainers in the United States and internationally.

Meet the Team



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PSA | Meet the Team



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PSA | Course Information

The PSA Grower Training Course was created through a five-year nationwide curriculum development process. In 2011, after hosting an international gathering to review current Good Agricultural Practices (GAPs) educational resources, the PSA launched ten open Working Committees (WCs), composed of one hundred seventy-eight members from academia, the grower community, the produce industry, and regulatory agencies. The WCs identified key priority areas and learning objectives to be addressed in the grower curriculum. Additionally, grower preferences regarding produce safety training programs were collected through eight farmer focus groups nationwide, collecting feedback from eighty-nine fruit and vegetable growers. Beginning in the fall of 2015, the PSA engaged with the FDA Division of Produce Safety staff to align the seven module PSA Grower Training Course with the final FSMA Produce Safety Rule requirements, incorporating the regulatory language throughout the curriculum modules and teaching notes.

The PSA Train-the-Trainer Course has been designed to prepare educators to deliver the PSA Grower Training Course to produce growers and become PSA Trainers or PSA Lead Trainers. During the PSA Train-the-Trainer Course, attendees will have the opportunity to experience all seven PSA Grower Training Course modules, and learn more about conducting effective trainings for growers.

More detailed information about both PSA Train-the-Trainer and PSA Grower Training Courses, including dates and locations of courses scheduled, can be found on the Produce Safety Alliance Website at: cals.cornell.edu/produce-safety-alliance



PSA | Course Information

Produce Safety Alliance Grower Training (Basic Level)

Available in English and Spanish

In-Person, Remote, or Online (Self-Paced) – This course satisfies the FSMA Produce Safety Rule requirement outlined in § 112.22(c): ‘At least one supervisor or responsible party for your farm must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate by the Food and Drug Administration.’ The course provides a foundation of Good Agricultural Practices (GAPs) and co-management of natural resources and food safety, FSMA Produce Safety Rule requirements, and details on how to develop a farm food safety plan. After attending the course, participants will receive a certificate from the Association of Food and Drug Officials (AFDO) verifying completion of the course.

Learning Outcomes

- Understand microorganisms relevant to produce safety and where they may be found in the farm environment
- Identify microbial risks and potential routes of contamination, practices that reduce risks, and how to begin implementing produce safety practices on the farm
- Understand FSMA Produce Safety Rule requirements
- Understand how to begin writing a Farm Food Safety Plan

Time Commitment

- **In-Person** – This traditional classroom style course with instructors is typically presented in a single 7-8 hour training day. There are no required writing assignments.
- **Remote** – This course is led in real time by instructors delivered with video conferencing software, such as Zoom or Webex. There are no required writing assignments, but participants must understand the technology requirements. This is typically delivered in 2 half-days.
- **Online (Self-Paced)** – This course can be completed at your own pace, but requires extensive reading. Participants must complete six required discussions (writing assignments) with at least one of the 6 assignments completed within the first 14 days of the course to avoid being dropped from the course. The online course is expected to take 15-30 hours total for successful completion. Benefits of this intense, extended course include a deeper understanding of content as well as additional time to consider course topics.

For additional information about the PSA Grower Training Course and scheduled courses, please visit the PSA website and look for [Upcoming Grower Trainings](#) under the Grower Training Course (side navigation) under the Training tab.

PSA | Course Information

Produce Safety Alliance Train-the-Trainer (Advanced Level)

In-Person or Remote – This course will provide detailed information about Good Agricultural Practices (GAPs), co-management of natural resources and food safety, and FSMA Produce Safety Rule requirements. The course will also cover principles of adult education, how to incorporate the PSA curriculum into extension trainings, how to develop working partnerships, expectations for trainers, how to become a PSA Lead Trainer, and how to register a PSA Grower Training Course with the Association of Food and Drug Officials (AFDO). In-person is typically delivered over 2 days and Remote is typically delivered over 4 half-days.

Trainer Prerequisite Knowledge

Participants must take the PSA Grower Training Course as a prerequisite. In addition, individuals who want to become PSA Trainers or PSA Lead Trainers are expected to have basic knowledge in four competency areas including:

- Produce safety scientific knowledge and experience
- Fruit and vegetable production knowledge
- Effective training delivery
- Knowledge of the FSMA Produce Safety Rule

After attending the course, participants will receive a certificate from the Association of Food and Drug Officials (AFDO) that verifies they have completed the PSA Train-the-Trainer course. Completing this training allows participants to deliver the PSA Grower Training curriculum under the direction of a PSA Lead Trainer. Any participant who has completed this training may also apply to become a PSA Lead Trainer. More detailed information about becoming a [PSA Trainer or PSA Lead Trainer](#) is available on the PSA website.

Learning Outcomes

- Understand microorganisms relevant to produce safety and where they may be found on the farm environment
- Identify microbial risks and potential routes of contamination, practices that reduce risks, and how to begin implementing produce safety practices on the farm
- Become familiar with the PSA Grower Training curriculum and resources
- Understand FSMA Produce Safety Rule requirements and their impact to fruit and vegetable growers
- Develop the skills necessary to deliver an effective PSA Grower Training to produce growers, packers, shippers, regulatory personnel, and others

For additional information about the PSA Train-the-Trainer Course and scheduled courses, please visit the PSA website and look for [Upcoming Train-the-Trainer Courses](#) under the Train-the-Trainer Course (side navigation) under the Training tab.

PSA | Course Information

Produce Safety Alliance Advanced Trainer Workshop

Vist the [PSA Website](#) for 2026 Dates

3 Day Course – The Produce Safety Alliance Advanced Trainer Workshop has been developed to provide attendees with an in-depth scientific understanding of the FSMA Produce Safety Rule and help trainers enrich their PSA training skills. This workshop is a blend of lecture, hands-on activities, and breakout groups separated into six half-day modules:

- **Module 1:** Micro 101
- **Module 2:** Soil Amendments and Animals
- **Module 3:** Production Water
- **Module 4:** Sanitation
- **Module 5:** Postharvest Water
- **Module 6:** Instructor Tips for Participant Engagement

The curriculum development team, comprised of the Produce Safety Alliance and members of the Southern Center for FSMA training, developed this training to give participants an opportunity to perform hands-on activities. These experiential learning opportunities give participants first-hand experience with many of the practices that the FSMA Produce Safety Rule requires of growers.

Trainer Prerequisite Knowledge

Individuals must have attended the PSA Train-the-Trainer Course prior to attending this workshop.

Course Registration

Registration is limited to 30 participants. Registration cost includes a printed manual, all hands-on activities, lunch, and snacks for all three days. For questions about registration, please contact Michele Humiston (mmc15@cornell.edu).

Advanced Trainer Training Calendar

[VIEW FULL KEY ON PAGE 39](#)

Topic	Date Offered	Location	Category	Training Delivery
PSA Advanced Trainer Workshop	For 2026 dates, visit PSA website	For 2026 locations, visit PSA website	Food Safety	



National Good Agricultural Practices Program

The National GAPs Program was established in 1999 with the goal to reduce microbial risks in fruits and vegetables by developing a comprehensive extension and education program for growers, packers, and farm workers. Since its inception, the National GAPs Program has had collaborative programs with collaborators in 34 states. Program personnel have created many award-winning educational materials and training programs to support the effective implementation of food safety practices on the farm.

Meet the Team



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National GAPs | Course Information

The [National GAPs Program website](#) offers a user-friendly portal bringing GAPs-related information together for growers, packers, farm workers, extension educators, scientists, state and federal government personnel, and other interested stakeholders.

Multi-Day PSA Grower Training, Group GAP, Farm Food Safety Plan Writing, and Mock Audit

2-3 Day Course – The course is intended to improve growers' understanding of GAPs and the FSMA Produce Safety Rule to guide the assessment of microbial risks and implementation of practices to reduce risks on fresh produce farms. In addition, this workshop will include information about Group GAP and how certain growers may benefit from the Group GAP option. Completing the PSA Grower Training Course satisfies the Food Safety Modernization Act (FSMA) Produce Safety Rule requirement outlined in § 112.22(c): *'At least one supervisor or responsible party for your farm must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate by the Food and Drug Administration.'*

On the second day of training, the knowledge growers gained on day 1 is utilized to write their own Farm Food Safety Plan using templates and sample record-keeping logs. A mock audit will be offered following the two-day workshop. The mock third-party audit is conducted during the growing season so that participants can learn about the audit protocol and see produce safety practices in action.

After attending the course, participants will be eligible to receive a certificate from the Association of Food and Drug Officials (AFDO) that verifies they have completed the PSA Grower Training Course.

Learning Outcomes

- Understand microorganisms relevant to produce safety and where they may be found on the farm environment
- Identify microbial risks and potential routes of contamination, practices that reduce risks, and how to begin implementing produce safety practices on the farm
- Understand FSMA Produce Safety Rule requirements
- Understand Group GAP options
- Begin writing a Farm Food Safety Plan and develop written SOPs, record-keeping logs, and produce safety policies for your farm
- Understand third-party audits for produce safety

For additional information about Multi-Day Group GAP Trainings in New York, visit the [GroupGAP page on the National GAPs Program website](#) under the Courses & Trainings tab.

National GAPs | Course Information

Good Agricultural Practices (GAPs) Online Produce Safety Course

3-Week Online (Self-Paced) Course – The GAPs Online Produce Safety Course is a 3-week web-based course offered through the National GAPs Program. This course is intended to improve understanding of GAPs to guide assessment of risks and implementation of practices to reduce risks on fresh produce farms. Taking this course will not result in your farm being “GAPs Certified.” GAPs certification is performed by a third-party (e.g., USDA, Primus, Global GAP) and involves the successful completion of an on-farm audit. This course does not include information about the Food Safety Modernization Acts (FSMA) Produce Safety Rule.

Time Commitment

Most students spend 15 to 20 hours on this course, but depending on your knowledge, more or less time may be required. Once the course opens, it is open 7 days a week, 24 hours a day for 3 weeks so you will be able to complete the course as time permits. There are no required hours of participation. You will be able to e-mail your instructor at all times during the course and they will respond in a timely manner. All course requirements must be completed within a three week window. Within the three weeks you are expected to:

- Complete a pre- and post-test
- Read all course materials
- Turn in 4 assignments for evaluation
- Complete 2 self-tests
- Contribute to the discussion boards
- Complete a course evaluation

Course Scheduling and Class Size

Courses are offered several times throughout the year. Please check the website for a current list of course offerings. Class size is limited to 25 people on a first-come, first-served basis. A minimum of 10 participants must be registered for us to offer the course. Special arrangements can be made for large groups to ensure everyone is in the same class together.

Special Note

As you consider taking the GAPs Online Produce Safety Training Course, be aware that this course is not currently equivalent to the required supervisor training described in the FSMA Produce Safety Rule 21 CFR Subpart C § 112.22(c). This GAPs Online Produce Safety Training Course may, however, satisfy training requirements as described in the FSMA Produce Safety Rule in §§ 112.21(a) and (b).

For additional information about the GAPs Online Produce Safety Course, visit the [GAPs Online Course page on the National GAPs Program website](#) under the Courses & Trainings tab.

National GAPs | Course Information

Postharvest Water Management, Sanitation, and Traceability Workshop

Improving Understanding of Postharvest Water Management, Sanitation, and Traceability to Improve On-Farm Food Safety

1 Day Course – Complying with the FSMA Produce Safety Rule and the FSMA Traceability Rule by implementing required practices remains a challenge for many growers and packers. These workshops offered throughout New York State for fruit and vegetable growers will focus on postharvest water management, sanitation practices, and traceability. Each workshop will include hands-on activities to enhance learning and help participants visualize how to implement practices within their operations.

Learning Outcomes

- Understand and implement expectations outlined in the FSMA Traceability Rule
- Understand the basics of selecting an EPA-labeled sanitizer including the differences between EPA labels and product labels
- Learn how to assess the sanitary design of equipment
- Learn how to properly clean and sanitize equipment

Time Commitment

Workshops will be in-person, one-day courses.

For More Information

For additional information about this workshop, visit the [Postharvest Water Management, Sanitation, and Traceability Workshop page on the National GAPs Program website](#) under the Courses & Trainings tab.



National GAPs | Course Information

Food Safety Modernization Act (FSMA) Overview

Online (Self-Paced) Course – An introduction to the Food Safety Modernization Act (FSMA) and its origin. This course includes a review of the collection of rules that are part of FSMA, including the seven foundational rules plus recent updates. The course consists of 10 modules, and each concludes with a quiz or interactive activities to test your knowledge.

Learning Outcomes

- Identify individual FSMA rules
- Understand definitions of farm, facility, and mixed-type facility and how they impact the FSMA rule(s) with which a business must comply
- Understand how being subject to a FSMA rule may be impacted by inflation adjusted cut offs
- Be able to determine if an operation is covered by any of the FSMA rules

Time Commitment

Most students spend 2 to 4 hours on this course, but depending on your knowledge, more or less time may be required.

For More Information

For additional information about the FSMA Overview Course, visit the [Produce Safety Certificate Program page on the National GAPs Program website](#) under the Courses & Trainings tab.



National GAPs | Course Information

Produce Safety Integration into the Food Safety Continuum

Online (Self-Paced) Course – This course provides insights for how to integrate produce safety practices into farms and packinghouses. It begins by providing an overview of the food safety continuum from Good Agricultural Practices to Good Manufacturing Practices to Hazard Analysis Critical Control Points. The course reviews how to effectively reduce microbial risks based on the level of control on the farm, in the packinghouse, or when engaged in value-added processing. It also outlines the value of establishing a positive food safety culture and how implementing produce safety practices can positively impact other farm goals. The course consists of 3 modules, and each concludes with a quiz or interactive activities to test your knowledge.

Learning Outcomes

- Define GAPs, GMPs, and HACCP
- Describe how the implementation of food safety practices are impacted by location, infrastructure, and level of control
- Name at least 3 ways a FSMA Produce Safety Rule inspection is different from a third-party audit
- Describe why a farm would have a third-party audit
- Understand the benefits of establishing a positive food safety culture

Time Commitment

Most students spend about 2 hours on this course, but depending on your knowledge, more or less time may be required.

For More Information

For additional information about the Food Safety Continuum course, visit the [Produce Safety Certificate Program page on the National GAPs Program website](#) under the Courses & Trainings tab.

National GAPs Course Calendar

[VIEW FULL KEY ON PAGE 39](#)

Topic	Date Offered	Location	Category	Training Delivery
Multi-Day PSA Grower Training & Group GAP	For 2026 dates, visit GAPs website	For 2026 locations, visit GAPs website	Food Safety	
Postharvest Water Management Workshop	For 2026 dates, visit GAPs website	For 2026 locations, visit GAPs website	Food Safety	



National GAPs | Certificate Program

Produce Safety Certificate Program (PSCP)

Multi-Course Program – Fruit and vegetable growers need confidence that individuals they hire are qualified to work on produce microbial safety issues on farms and in packing houses. This program provides a foundation of produce safety knowledge for consultants and produce safety managers. In addition, farm and packinghouse personnel interested in produce safety may be interested in the professional development opportunity this program provides.

The Produce Safety Certificate Program (PSCP) aims to ensure that produce safety managers, consultants, and others working with the fresh produce industry possess the necessary knowledge to effectively guide and implement produce safety programs on farms and in packinghouses. This certificate program will require individuals to complete a series of courses that build content knowledge in microbial produce safety.

Required Courses

There are 6 required courses that will need to be completed, and a 7th course required annually to maintain an active certificate:

- **Food Microbiology Fundamentals** | IFS@CU Course | [Page 10](#)
- **Food Safety Modernization Act (FSMA) Overview** | GAPs Course | [Page 22](#)
- **Produce Safety Alliance Grower Training Course** | PSA Course | [Page 15](#)
- **Good Manufacturing Practices (GMPs) Part 117** | IFS@CU Course | [Page 6](#)
- **Produce Safety Integration into the Food Safety Continuum** | GAPs Course | [Page 23](#)
- **Postharvest Water Management, Sanitation, and Traceability Workshop** | GAPs Course | [Page 21](#)
- PSCP Yearly Update

Time Commitment

The program will include in-person, remote, and online course options. Completing all courses will take approximately 50 hours of time.

For More Information

For additional information about the PSCP, visit the [Produce Safety Certificate Program page on the National GAPs Program website](#) under the Courses & Trainings tab.

Cornell Food Venture Center

The 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. The center provides access to educational materials, workshops and direct assistance with process validation for safety and stability. The CFVC also provides guidance in local, state and federal regulatory compliance, including:

- Analytical laboratory services for product safety and stability including pH, water activity, soluble solids and headspace composition
- Process Authority services and approval: Scheduled Process and Process Review validation and documentation for processed plant-based foods and meat products
- Reduced Oxygen Environment/Vacuum Packing safety evaluation
- Hazard Analysis and Validation
- Heat Penetration Studies
- Food Classification Letters
- Access to the Seneca Foods Foundation Pilot Plant
- Better Process Control School

The renovated Seneca Foods Foundation Pilot Plant, focused on plant-based foods, has the valuable combination of established food processing and preservation technologies with new innovative equipment to promote the development of safe, healthy, high quality foods.

With a variety of equipment available, the pilot plant enables clientele to make their food product in a single location—from starting ingredients through to the final packaged product. It also provides a uniquely supportive setting that allows manufacturers to compare different equipment and technologies to best address the final quality and stability (shelf life) of the food product. Clients can determine the best manufacturing process to meet their needs prior to large-scale commercialization.

For additional information about services offered or to register for a course, visit the [CFVC website](#).



CFVC | Meet the Team



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CFVC | Course Information

Better Process Control School

Industry Trainings are Available Upon Request | Schedule with Our Team: CFVC@cornell.edu

Acidified Only: 2 Day Course, Teleconference (Zoom) | \$360 (does not include cost of the book)

Aseptic and Acidified: 3 Day Course | \$500-\$900 (varies based on delivery method & book cost)

Acidified and Low Acid Foods: 2-4 Day Course | \$500-\$900 (varies based on delivery method & book cost)

Course Description – A training program for the processed food industry to prepare industry practitioners and to help companies meet federal regulations. The course is beneficial to personnel in plants who pack and thermally process low-acid and acidified foods in hermetically sealed containers for shelf stable conditions. This includes canned foods, aseptically processed and packaged foods, and pickled products. Cornell University is part of the network of universities that deliver the Better Process Control School in partnership with the Consumer Brands Association (CBA) utilizing U.S. Food and Drug Administration (FDA) approved curriculum. The FDA regulations in 21 CFR 108, 113, and 114 became effective May 15, 1979, requiring that each processor of low-acid or acidified foods operate with a certified supervisor on-hand at all times during processing. These regulations are designed to prevent public health problems in low-acid and acidified canned foods. The BPCS course also meets U.S. Department of Agriculture's (USDA) Food Safety and Inspection Service (FSIS) regulations 9 CFR 318.300 and 381.300 for thermally processed meat and poultry products. The BPCS subject areas include thermal processing system operations, microbiological food safety, sanitation, container handling, record keeping, equipment operations, acidification, and container closure evaluation programs for low acid and acidified canned foods.

The BPCS program is an important and valuable educational opportunity for mid-level managers and employees of food processing plants that utilize thermal processing. The course is an excellent platform to improve food safety training for food safety and quality assurance personnel, individuals who work with canned, aseptic and flexible packaged food products, academia, and government auditors and inspectors.

Better Process Control School Calendar

[VIEW FULL KEY ON PAGE 39](#)

Topic	Date Offered	Location	Category	Training Delivery
BPCS (Acidified Only)	Jan. 26-27, Mar. 30-31, Jun. 1-2, Aug. 24-25, Oct. 26-27, Dec. 7-8	Live via Teleconference (Zoom)	Food Processing, Regulatory	
BPCS (Aseptic for the Dairy Industry)	Aug. 4-5	Live via Teleconference (Zoom)	Food Processing, Regulatory	
BPCS (Acidified, Aseptic and Low Acid Foods)	For 2026 dates, visit CFVC website	Cornell AgriTech (Geneva, NY)	Food Processing, Regulatory	  



CFVC | Course Information

Food Safety and FSMA Regulations for Small Food Processors

Tuition \$150 | 6 Weeks to Complete

Online (Self-Paced) – Developed by the CFVC and administered by the Institute for Food Safety at Cornell University, this course gives an overview of the state and federal regulatory framework in the US for small food processors. The course reviews requirements of the FDA's Food Safety Modernization Act (FSMA) Preventive Controls for Human Foods Rule (21 CFR Part 117) as it applies to small-scale food manufacturers. It outlines the modified requirements for qualified facilities, including the steps necessary to file attestations with the FDA (21 CFR Part 117, Subpart D). This course also includes foundational information about identifying sources of biological and chemical food safety hazards, the conditions under which they may be present as well as recommended, and required preventive controls to avoid product contamination from these hazards.

Curriculum Overview

The course consists of 6 modules (listed below). Students have 6 weeks to review the modules at their own pace. Each module concludes with a quiz, which students must complete to test their knowledge. After submitting all 6 quizzes, students will receive a *Certificate of Course Completion* issued by the IFS@CU.

- **Module 1:** Recognizing the Regulatory Framework for Your Business
- **Module 2:** Microorganisms and Their Role in Food Safety
- **Module 3:** Current Good Manufacturing Practices (cGMPs)
- **Module 4:** Allergen Control and Food Labeling
- **Module 5:** Food Safety Documentation
- **Module 6:** What Happens Next?

Who Should Take This Course?

This course is intended for small and very small food processors, University education or extension personnel, state inspectors and consultants who work directly with small food processors.

Course Registration

The course fee is \$150, which is payable by credit card or check. Please direct inquiries about the course to Nancy Long (ifstraining@cornell.edu). Register for the course at: cals.cornell.edu/small-food-processors

CFVC | Certificate Program

eCornell Food Product Development Certificate Program

Online | For More Information Visit [eCornell](#)

5 Course Program – In this certificate program, you will be guided through the iterative process of bringing a new food product or innovation to market. You will proceed through the process of creating protocepts, conducting and incorporating consumer research, refining your initial concept, and determining how the product will meet safety requirements and quality expectations. Throughout the courses, you will also address the regulatory requirements associated with food products, investigate different manufacturing and production options, and create a framework for bringing your product to market. Each course includes a project in which you will apply what you have studied to your own food idea. By the end of this certificate program, you will be able to navigate the science and business processes to successfully develop safe, high-quality food or beverage products.

The five course program is facilitated by an expert and is comprised of videos, read pages, activities, quizzes, and a comprehensive project for each course. You will interact with other members of your cohort and your teacher through discussion boards, live sessions, and project feedback.

The certificate is made up of the following five courses:

Market Research and Product Development

Many new food product and innovation ideas that make it to the market are ultimately unsuccessful, typically because their creators did not take the proper steps to ensure there was a sustainable market opportunity. In this course, you will assess the feasibility of new food product or innovation ideas. This will enable you to invest your time, money, and other resources in ventures with a possibility for success. You will also incorporate consumer research in order to create a food product or venture protocept. Finally, you will use this research to ensure that your protocept is appropriate to take to the next level of product development.

Learning Outcomes

- Define an initial food product or venture concept and determine initial feasibility
- Determine the information needed to create a well-defined protocept, including the innovation driver that differentiates the product
- Conduct research and develop a well-defined food product or venture protocept
- Complete consumer research and refine a food product or venture protocept ready for the phase of the product development process

CFVC | Certificate Program

Food Safety and Quality

Food innovators often introduce new and exciting quality products to the food industry. While ensuring quality is consistent, food innovators must also ensure their products are safe and meet all federal and state safety standards. In this course, you will explore the different types of safety hazards that exist in food products that can lead to human injury or illness. Using a hazard assessment tool, you will consider the full food production process and identify the potential physical, biological, and chemical hazards of a food product and how these potential hazards can best be prevented or controlled. Once you have determined the key quality attributes that should be defined for a food product, you will create an initial indication of the metrics for each. By the end of this course, you will be prepared to integrate both food safety and quality consideration into the decisions surrounding product formulation, processing method, packaging material, and product shelf life.

Learning Outcomes

- Assess potential food safety hazards associated with a food product
- Identify which quality attributes are important for a given product and how to measure them
- Recognize the difference between safety and quality issues that are pertinent to a product
- Determine proper controls for the identified food safety hazards and quality standards of a food product through its shelf life

Food Processing and Packaging

When envisioning the look and feel of your new food product packaging, it is important to consider not just the design but also the safety and quality needs associated with the food processing and packaging process. In this course, you will explore the different methods and techniques of food processing and packaging to determine which are appropriate for different food products. You will consider the numerous factors that contribute to a processing and packaging decision such as access, capital, feasibility, shelf life, and market preferences. Leveraging these factors and more, you will be able to determine the appropriate methods for your food product or innovation and map out the specifications needed for your product prototype.

Learning Outcomes

- Identify the key issues for processing and packaging systems to preserve the food quality and safety over the shelf life of diverse food product categories
- Assess the technical feasibility and limitations of processing and packaging options for a defined food product prototype
- Select the best processing and packaging option for the defined prototype, considering product, intended market, and business plan

CFVC | Certificate Program

Regulatory Agencies and Food Regulations

The U.S. food industry is highly regulated at the federal and state levels. During this course, you will explore regulations associated with food industry innovations, identify applicable regulations to specific food ventures, and pursue regulatory compliance. This course will provide you with the opportunity to work through the process of identifying the overseeing agencies and regulations that are applicable to a specific food project of your choice or for one provided by the faculty. You will create a plan for accessing resources for assistance and learn how to obtain non-regulatory certifications such as organic, fair trade, kosher, and halal. Upon conclusion of this course, you will be prepared to find and comply with the regulations applicable to your food business.

Learning Outcomes

- Determine which food-related regulatory agencies and regulations affect your industry and product
- Leverage resources available to assist in identifying and complying with pertinent regulations
- Prepare to interact with regulatory agencies to address regulatory compliance as well as pertinent approvals and licenses
- Determine potential appropriate product attribute certifications to pursue (e.g., organic, fair trade, kosher, halal) and identify initial application steps as appropriate

Commercialization

The ultimate goal for a food product innovator or entrepreneur is to get their product to consumers. In this course, you will explore the food product commercialization process of bringing a prototype to market. This process has multiple steps, including development, production, and distribution. You will explore the components of an effective go-to-market strategy and how to determine pricing and product positioning. You will also discuss how suppliers can affect all elements of market strategy. You will then consider how to scale up a process from test kitchen to commercial-level production. Through the course project, you will develop an initial go-to-market strategy for a product of your choice or for one of the provided sample products.

Learning Outcomes

- Describe the components of a go-to-market strategy for a food product or innovation
- Identify the best method of production and distribution given specific business goals
- Determine the major costs of initial commercialization efforts
- Assess potential funding options available for your venture

Cornell Craft Beverage Institute

The Cornell Craft Beverage Institute (CCBI) was created in 2018 to join together Cornell's many fermented beverage outreach functions under one umbrella. A synergistic collaboration of extension programs in wine, beer, cider, distillates and fermented whey, CCBI offers training for industry members and consumers interested in all types of fermented and distilled beverage production. Areas of emphasis include grain and fruit fermentations, distillation techniques, analytical techniques, sensory science and evaluation methods, sanitation, and tasting room strategies. The programs that make up CCBI offer technology transfer and expertise for specific beverage industries.

The Cornell Enology Extension Lab (CEEL) works with the wine industry to create educational programs that support the growth and improved quality of premium wines throughout the state. CEEL facilities include the Vinification & Brewing Technology Lab, where fermentations are conducted in collaboration with research projects and applied trials; and the Cornell Craft Beverage Analysis Lab, where products may be submitted for troubleshooting, routine analysis or sensory appraisal.

The Cider Institute of North America (CINA) is a non-profit organization made up of passionate cider industry professionals and educators with a mission to create a quality-driven and sustainable cider industry through education and research. CINA teams with academic partners, including Cornell University (lead academic institution), Oregon State, Washington State and Brock University to offer a Foundation Course designed to develop concrete relationships with education partners to help producers better understand the opportunities and risks facing the industry as a whole. Cider Institute Certification is offered as an option to all students completing these programs, prompting the development of new talent within the industry.

Cornell has partnered with CARL Artisan Distilleries and Brewing Systems to present distilling workshops for more than ten years. CARL owner Alexander Plank, Technical Sales Manager Nicolas Haase and Cornell staff instruct attendees in lectures and practical demonstrations. With distillery installations at the teaching winery in Ithaca and in the Vinification & Brewing Laboratory at Cornell AgriTech in Geneva, the CCBI can hold workshops on either campus. This workshop traditionally features a visit to one of the commercial distilleries in the area on the first night of the workshop.

For additional information about services offered or to register for a course, visit the CCBI website:
cals.cornell.edu/cornell-craft-beverage-institute

CCBI | Meet the Team



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Beth Chang, PhD

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Expertise: Wine production, beverage analysis



CCBI | Course Information – Beer

Craft Brewing – Certificate Program

Live via Zoom | For More Information Visit [eCornell](#)

Online (Zoom), 5 CEUs – The craft brewing industry provides more than 150,000 jobs in the United States alone and has been rapidly expanding for the past several years. Whether you're looking to enter this growing field or are a home brewer, this certificate program will give you the skills you need to create and refine your own beer recipe. Throughout this program, you will have the opportunity to walk through a hands-on exploration of the four main ingredients used in beer production and their impact on the final product. Familiarity with high school-level chemistry, advanced high school-level algebra, and basic calculations will help you be successful in this program. After completing this program, you will be well equipped with the expertise and tools to develop, brew, and refine craft beer.



Learning Outcomes

- Investigate the characteristics of different malts to determine which is best for your recipe and beer style
- Explore the properties of hops and determine their impact on beer aroma and flavor
- Analyze the yeasts and microorganisms used in beer fermentation to achieve the desired flavor profile
- Evaluate water and its chemical makeup to create the appropriate water profile for your recipe
- Examine the nuances of ingredient interplay during the brewing process to refine the production of your recipe

Creating Craft Beverages

Live via Zoom | For More Information Visit [eCornell](#)

Online (Zoom), 1 CEU – In recent years, craft beverages have become a multibillion-dollar industry, yet there's both an art and a science to the fermentation process that produces these beverages. Fermentation is about more than ingredients. The processes that the brewer, vintner, cider maker, and mead maker follow have an equally large impact on the final product – and small variations can make a big difference in the flavor profile.

CCBI | Course Information – Beer & Cider

Using a scientific approach, you will design a craft beverage of your choosing. As you create a plan to produce the beverage, you will gain an understanding of the interactions between raw ingredients and processing steps which together influence the taste. You will then apply a systematic approach to tasting, using your senses to allow you to better articulate what you enjoy in a particular beverage as well as make specific recommendations to others.

Learning Outcomes

- Examine the fermentation process through hands-on experimentation
- Predict how yeast will behave based on available food and environmental conditions
- Design a craft beverage
- Taste and evaluate fermented beverages such as wine, beer, and cider using sight, smell, and taste in order to make informed recommendations

Cider Production – A Foundation

For More Information Visit Ciderinstitute.com

Hybrid Course – This course is designed to improve participants' understanding of all aspects of cider. The focus of this course is to provide a basic understanding and appreciation of the main practices involved with cider and perry production. The course consists of recorded lectures, cider tastings, videos, and live Zoom sessions.

The lectures will focus on historical development of the cider industry, orcharding, legal requirements, business marketing, fermentation management, and detailed step-by-step production processes. Practical training will cover yeast handling and establishment of fermentation. Online workshops will guide participants through product development; from raw materials to finished product. Tasting sessions will offer training in cider sensory analysis and development of organoleptic assessment notes for personal product portfolios, as well as an overview of cider flaws.



CCBI | Course Information – Cider

This course is also designed for individuals who wish to gain a recognized industry qualification, the Foundation Certificate in Cider and Perry Production. Passing an exam at the end of the course as well as completing a sensory analysis portfolio of six cider or perry products during the class will complete this certificate.

Learning Outcomes

- Cider and perry production methods
- Cider quality/sanitation
- Laboratory analysis
- Sensory analysis

Good Manufacturing Practice, Safety & Sanitation in Cider & Perry Production

For More Information Visit Ciderinstitute.com

Online (Self-Paced) – How can you ensure that your product is safe for consumers? How can you ensure that your workplace is safe for employees? How can you ensure that your sanitation program is adequate to prevent spoilage? How can you prove any of the above to customers or government inspectors?

The modern marketplace and regulatory environment demands that cider and perry producers adopt documented, repeatable procedures to ensure that products and production environments are safe and sanitary. Fortunately, there are a number of programs that have been developed with these specific issues in mind. This course offers an introduction to key quality, safety and sanitation terms and techniques, as well as the formal approaches that underpin modern food production. The online content will cover current Good Manufacturing Practices (cGMPs), preventive controls, occupational safety, sanitation and record-keeping.

This course is part of the Cider Institute of North America (CINA) Advanced Certificate in Cider & Perry Production: Core Module 1.2.

Learning Outcomes

- Understand the importance of Good Manufacturing Practice (GMP), Quality Assurance (QA) and Quality Control (QC) in all aspects of the cider and perry production process to ensure product and process safety and quality
- Have a fundamental knowledge and understanding about the principles, range and application of GMP, QA and QC systems and methods
- Recognize and review the development and implementation of GMP operations throughout the whole cider and perry manufacturing process
- Understand the importance and application of HACCP
- Operate safe and effective working practices throughout the production of cider and perry

CCBI | Course Information – Cider

- Understand the importance and effective application of sanitization and plant & equipment maintenance
- Recognize the importance of good record-keeping

Science, Practice & Quality Assured Cider & Perry Production

For More Information Visit Ciderinstitute.com

5 Day Course, On-Campus – Developed and taught by Peter Mitchell for CINA, this class builds on the Cider Production Foundation course and aims to cover, in-depth, advanced theoretical aspects of cider and perry production. A key part of the class program involves undertaking a new product development project with an emphasis on developing marketing and production plans.

Prerequisite: Foundation Certificate in Cider & Perry Production and/or extensive experience in cider production.

Learning Outcomes

- Principles and practices of quality-assured production
- The microbiology and biochemistry of cider and perry production
- Principles of marketing and product development
- Selection, application and management of production processes and technologies
- Sensory evaluation
- Quality Assurance and Quality Control



CCBI | Course Information – Cider & Spirits

Essential Sensory Analysis of Cider & Perry

For More Information Visit Ciderinstitute.com

2 Day Course, On-Campus – This course designed for cider producers will teach the theory of sensory analysis and hands-on sensory evaluation of cider and perry. Day 1 is a scientific overview of sensory analysis generally and applied to cider specifically, including faults common in cider. Day 2 runs through a series of sensory evaluation tests for ciders provided by the participants in areas they want to get feedback on (e.g. difference-testing between different apple sources or production practices; descriptive testing for trained-panel feedback; and acceptance testing for consumer likeability).

Prerequisite: Foundation Certificate in Cider & Perry Production and/or extensive experience in cider production. Must be 21 years of age or older.

Learning Outcomes

- Understand the role, importance, and underlying principles of sensory analysis
- Investigate the main sensory analysis techniques used in the cider industry
- Investigate the range and source of flavor-active chemical compounds found in cider
- Undertake sensory analysis of cider and perry

Distilling Workshop

2 Day Course, On-Campus – This workshop is tailored to those currently active in, or contemplating entry into the distilled spirits industry. It addresses the basic principles of distilling production, marketing, and sensory analysis. The course consists of lectures, demonstrations, and spirit-tasting sessions. Lectures will provide information about distillery design evolution, traditions, and concepts, as well as different technologies for brandies, eau-de-vie, grappa, whiskey, and rum. Participants will also learn about fermentation principles, properties of barrel aging, and business start-up considerations. Practical demonstrations of commercial stills will display informative processes for producing quality spirits, high-proof distillation-rectification, treatment of distillate, and continuous distillation technology. Through sensory analysis participants will evaluate examples of head, heart, and tail cuts as well as discover spirit flavor chemistry.

Learning Outcomes

- Basic distilling procedure
- Quality spirit production
- Spirit flavor chemistry

CCBI | Course Calendar – Cider & Spirits

Topic	Date Offered	Location	Category	Training Delivery
Cider Production — A Foundation	For 2026 dates, visit ciderinstitute.com	Live via Teleconference (Zoom)	Food Processing	 
Cider Production — A Foundation	For 2026 dates, visit ciderinstitute.com	Live via Teleconference (Zoom)	Food Processing	 
Good Manufacturing Practice, Safety & Sanitation in Cider & Perry Production	Rolling Admission, On-Demand	Online	Food Processing, Food Safety, Regulatory	
Science, Practice & Quality Assured Cider & Perry Production	For 2026 dates, visit ciderinstitute.com	Cornell AgriTech (Geneva, NY)	Food Processing	
Essential Sensory Analysis of Cider & Perry	For 2026 dates, visit ciderinstitute.com	Cornell AgriTech (Geneva, NY)	Food Processing	
Distilling Workshop	For 2026 dates, visit CCBI website	Cornell University (Ithaca, NY)	Food Processing	

 **On-Campus Trainings** take place at the Cornell University Stocking Hall Conference Center, unless otherwise noted. All courses listed are open to the public.*

 **On-Site Plant Trainings** can be offered off campus at industry sites or virtually; courses at company sites can be limited to attendees from the hosting company.*

 **Online (Self-Paced) Trainings** are completed online using eCornell or the Canvas Learning Management System.

 **Zoom Courses** are hosted via live teleconference (Zoom).

 **Hybrid Courses** include online as well as hands-on sessions.*

 **Partnership Courses** are conducted in partnership with other universities or organizations such as the New York State Department of Agriculture & Markets.*

*Course delivery subject to change due to public health guidance from Cornell University.

Juice HACCP | Course Information

Juice HACCP commonly refers to the use of HACCP plans to minimize food safety risks in the juice processing, packaging, and transportation industries. HACCP stands for Hazard Analysis Critical Control Point. Significant hazards for a particular juice, puree, or concentrate are identified based upon scientific information. The steps at which these hazards can be controlled within the process are identified, and the critical limits at each of the key process steps are set. Monitoring procedures are implemented to evaluate conformance with these critical limits. The HACCP plan relies on extensive verification and documentation to assure that food safety has not been compromised. Thus, HACCP provides a structure for assessing risks, and for putting the controls in place to minimize such risks.

Meet the Team



Randy Worobo, PhD

Professor, Cornell Microbial Food Safety and Quality and Outreach Program

rww8@cornell.edu

Expertise: Food safety, food microbiology, fruit & vegetable safety



Ann Charles Vegdahl, PhD

Extension Associate, Cornell Microbial Food Safety and Quality and Outreach Program

acv45@cornell.edu

Expertise: Food safety, food microbiology, fruit & vegetable safety



Juice HACCP Certification Course

Tuition: \$525

1 Day Course – Under the federal Juice HACCP rule published in 2001, juice processors must comply with two requirements: (1) Subpart A of the rule requires use of HACCP principles and systems in their operations; (2) Subpart B of the rule requires

Juice HACCP | Course Information

that processors implement treatment(s) to reduce a theoretical population of “pertinent” microorganisms in the juice by 99.999% or 5-log cycles. The “pertinent” microorganism is defined as the most resistant microorganism of public health significance that is likely to occur in the juice.

Juice processors that meet the definition of “retail” establishments are not covered by the federal juice HACCP regulation but must comply with other federal and state rules that regulate juice production. Retail establishments are manufacturers that prepare and provide all of their juice production directly to consumers and do not sell or distribute (wholesale) juice to other businesses.

Visit the [Juice HACCP Registration and Payment page](#) to register. A minimum of 12 participants is required to hold the courses. For more information please contact Sarah Lincoln (sjl38@cornell.edu).

Juice HACCP Certification Course Includes:

- Introduction to food safety and the HACCP system
- The regulation
- Hazards
- Prerequisites to HACCP
- Commercial processing example
- Hazard Analysis & Preventative Measures (Principle 1)
- Identification of Critical Control Points (Principle 2)
- Establishment of Critical Limits (Principle 3)
- Critical Control Point Monitoring (Principle 4)
- Corrective Actions (Principle 5)
- Verification (Principle 6)
- Record Keeping Procedures (Principle 7)
- Sources of info

Juice HACCP Calendar

[VIEW FULL KEY ON PAGE 39](#)

Topic	Date Offered	Location	Category	Training Delivery
Juice HACCP Certification Course	March 10, August 4, November 5	Cornell AgriTech (Geneva, NY)	Food Processing, Food Safety, Regulatory	

 **ON-CAMPUS**

 **ON-SITE**

 **ONLINE**

 **ZOOM**

 **HYBRID**

 **PARTNERSHIP**

Seafood HACCP | Course Information

Seafood HACCP is offered through NY Sea Grant and Cornell University. This course was developed through the Seafood HACCP Alliance and is recognized by the U.S. Food and Drug Administration (FDA) to meet the training requirements established under the FDA's mandatory seafood HACCP regulation (21 CFR Part 123). This regulation requires that the following HACCP activities be conducted by a "trained individual."

- Developing a HACCP plan
- Annual reassessment of the HACCP plan
- Modifying the HACCP plan
- Performing a review of HACCP records

The course provides training for the seafood industry and regulatory agencies on the fundamentals of HACCP, the current Seafood HACCP regulation, introduction to guidance and training materials and the development of a HACCP plan for seafood products. There are two options for completing the Seafood HACCP Course: the Segmented Course, or the Basic Course (2.5 days).

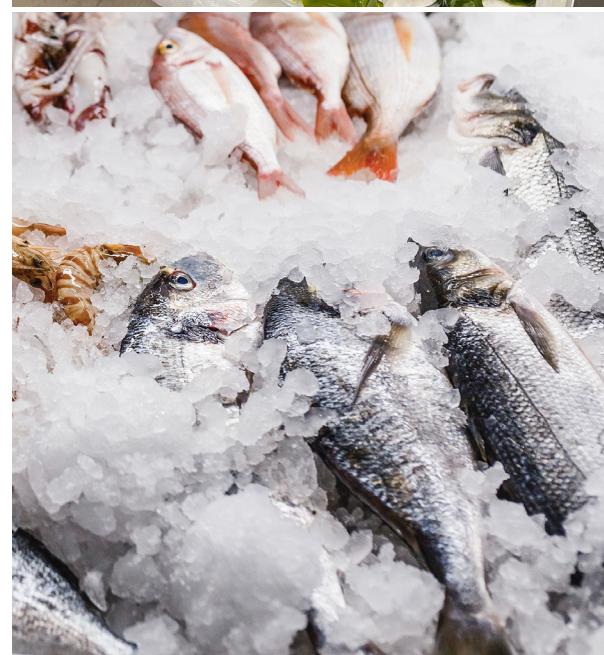
Meet the Team



Michael Ciaramella, PhD

Seafood Safety and Technology Specialist,
New York Sea Grant,
Cornell Cooperative Extension (CCE)
mc2544@cornell.edu | 631.824.4746

Expertise: Seafood safety (HACCP),
nutrition, quality & processing, sanitation,
GMPs, aquaculture & physiology



Seafood HACCP Segment 1 Training

Tuition: \$175*

Available in English and Spanish

Online (Self-Paced) – This course is taken at your own pace and on average takes 8–10 hours. You will have 6 months from time of enrollment to complete. The course is ongoing and one can register online at any time: seafoodhaccp.cornell.edu

Seafood HACCP | Course Information

*Participants who wish to receive a training certificate through the Association of Food and Drug Officials (AFDO) must also complete the Segment 2 live training within 9 months of completing Segment 1.

Seafood HACCP Segment 2 Training

Tuition: \$75+ (Dependent on Location and Size of Course)†

On-Site, or Online (Zoom) – Held multiple times a year, dates will vary depending on room availability and location. Participants must complete the Segment 1 online course prior to participating in the Segment 2 training. Note: Additional courses can be scheduled as needed. Contact the instructor to inquire about additional courses. The Segment 2 course runs from approximately 8:30 am – 4:30 pm (EST).

Learning Outcomes

- General understanding of HACCP Fundamentals and seafood safety concerns/hazards
- Understanding of FDA's current seafood HACCP regulation
- Utilize training and guidance materials available to develop a HACCP plan

Basic Seafood HACCP Training

Tuition: \$200+ (Dependent on Location and Size of Course)†

16.5 Contact Hours – Offered as needed. Scheduled basic courses will be listed on the NY Sea Grant website (bit.ly/3Lcjc92). If courses do not appear contact the instructor for more information.

†Training materials for the course will cost an additional \$50–\$100.

Seafood HACCP Calendar

VIEW FULL KEY ON PAGE 39

Topic	Date Offered	Location	Category	Training Delivery
Seafood HACCP Segment 1	Rolling Admission, On-Demand	Online	Food Processing, Food Safety, Regulatory	 
Seafood HACCP Segment 2	April 28, December 8	Live via Teleconference (Zoom)	Food Processing, Food Safety, Regulatory	 
Seafood HACCP Segment 2	February 10 August 11	Kings Park, NY Stony Brook, NY	Food Processing, Food Safety, Regulatory	  



Dairy Foods

The Cornell Dairy Foods Extension Certificate program offers comprehensive training for dairy processors of all sizes within New York State and beyond. In NYS alone, dairy manufacturing accounts for 23% of all agricultural manufacturing sales and 12% of employment, and relies heavily on in-state milk production from the farming sector. Dairy Foods Extension provides training and certificates in five areas including: (1) The Science of Yogurt and Cultured Dairy Products; (2) Fluid Milk Processing for Quality and Safety; (3) Membrane Processing; (4) The Science of Cheese Making; and (5) Ice Cream and Frozen Desserts. Courses aim to provide comprehensive basic training to dairy processors in vital topics such as milk quality and safety, dairy microbiology, Good Manufacturing Practices, unit operations, cleaning and sanitizing, food safety plans, audits, and state and federal regulations.

Meet the Team



Martin Wiedmann, PhD

Gellert Family Professor
in Food Safety

mw16@cornell.edu | 607.254.2838

Expertise: Listeria monocytogenes, pre-harvest food safety, molecular pathogenesis, microbial ecology & epidemiology



Nicole Martin, PhD

Associate Director, Milk Quality Improvement Program

nhw6@cornell.edu | 607.255.2894

Expertise: The transmission, control and detection of dairy associated spoilage microorganisms & pathogens



Kimberly Bukowski

Extension Professional

krb14@cornell.edu | 607.254.3313

Expertise: Dairy plant auditing, food safety systems, GFSI-Safe Quality Foods, GMPs, dairy manufacturing, FSMA preventive controls for human food



Ana Gabriela Ortiz Quezada, PhD

Extension Associate

ago4@cornell.edu | 607.255.7098

Expertise: Research/development, pilot plant equipment, membrane filtration, fresh cheese making, flavor chemistry



Heather Spraker

Extension Support Specialist

has248@cornell.edu

Expertise: Dairy food systems, dairy product manufacturing, food safety systems



Hannah Moyal

Workforce Support Specialist

hb366@cornell.edu

Expertise:
Workforce development

Dairy Foods | Meet the Team



Louise M. Felker

Extension Support Specialist

lmf226@cornell.edu | 607.255.7098

Expertise: Workshop/short course organization & planning, food safety systems, GMPs, social media/web development



Alex Solla, MFA

Extension Support Specialist

ahs24@cornell.edu | 607.255.3459

Expertise: Course coordination & data management



Dairy Foods | Course Information

Registration and Confirmation

Please visit the Cornell Dairy Foods Extension website to register for courses: cals.cornell.edu/dairy-extension

Please contact Louise Felker (lmf226@cornell.edu) with any special payment circumstances prior to registering.

Cancellation Policy

Registration must be canceled by the close of business on the Friday two weeks prior to the start of the course in order to receive a full refund. Substitute registrations from the same company will be accepted at any time prior to the start of the course. No refunds will be given to individuals that fail to attend to their scheduled course.

Required Materials

All required course materials will be provided by Cornell University Dairy Foods Extension. Participants will be notified if the course requires use of a personal laptop computer during the hands-on sessions. Courses that include an online, self-paced portion require that the online materials be completed prior to the start of the hands-on workshop.

Certificate of Achievement

Attendees must sign in at the beginning of the workshop and attend all days of the workshop to qualify to receive a certificate of achievement. Attendees must also score a 70 or higher on the course post-test to pass the course and receive their certificate. One retake of the post-test is allowed per attendee.

Dairy Foods Certificate Program | Steps to Earning a Certificate

Core Courses

These courses are required to complete any chosen track for the specialized certificate programs. Dairy Science and Sanitation, a food safety course, and a pasteurizer course are required for Basic Certification. Pathogen Environmental Monitoring, SOP and Technical Writing, and Leadership Skills for Success are required for Advanced Certification.

Specialized Courses

Choose one specialized course per certificate:

- Science of Cheese (Basic & Advanced Levels Available)
- Science of Yogurt and Cultured Dairy Products (Basic & Advanced Levels Available)
- Fluid Milk Processing for Quality and Safety
- Artisan Ice Cream and Frozen Desserts
- Membrane Processing by Concentration

Dairy Foods Certificate Program

Core Courses

(Dairy Science and Sanitation, a Food Safety Course, and a Pasteurizer Course Required)

Dairy Science and Sanitation

+

Food Safety Course (One Required)
Accredited HACCP or PCQI

+

Pasteurizer Course (One Required)
HTST or Vat Pasteurizer

Specialized Courses

(Choose One Specialized Course per Certificate)

Science of Cheese
(Basic Level)

Science of Yogurt
(Basic Level)

Fluid Milk
Processing for
Quality and Safety

Ice Cream and
Frozen Desserts

Membrane Processing
by Concentration

Advanced Core Courses

(All Courses Required)

Environmental Monitoring
Programs

+

SOP and Technical Writing

+

Leadership Skills for Success

Advanced Specialized Courses

(Choose One Advanced Specialized Course per Certificate)

Science of Cheese
(Advanced Level)

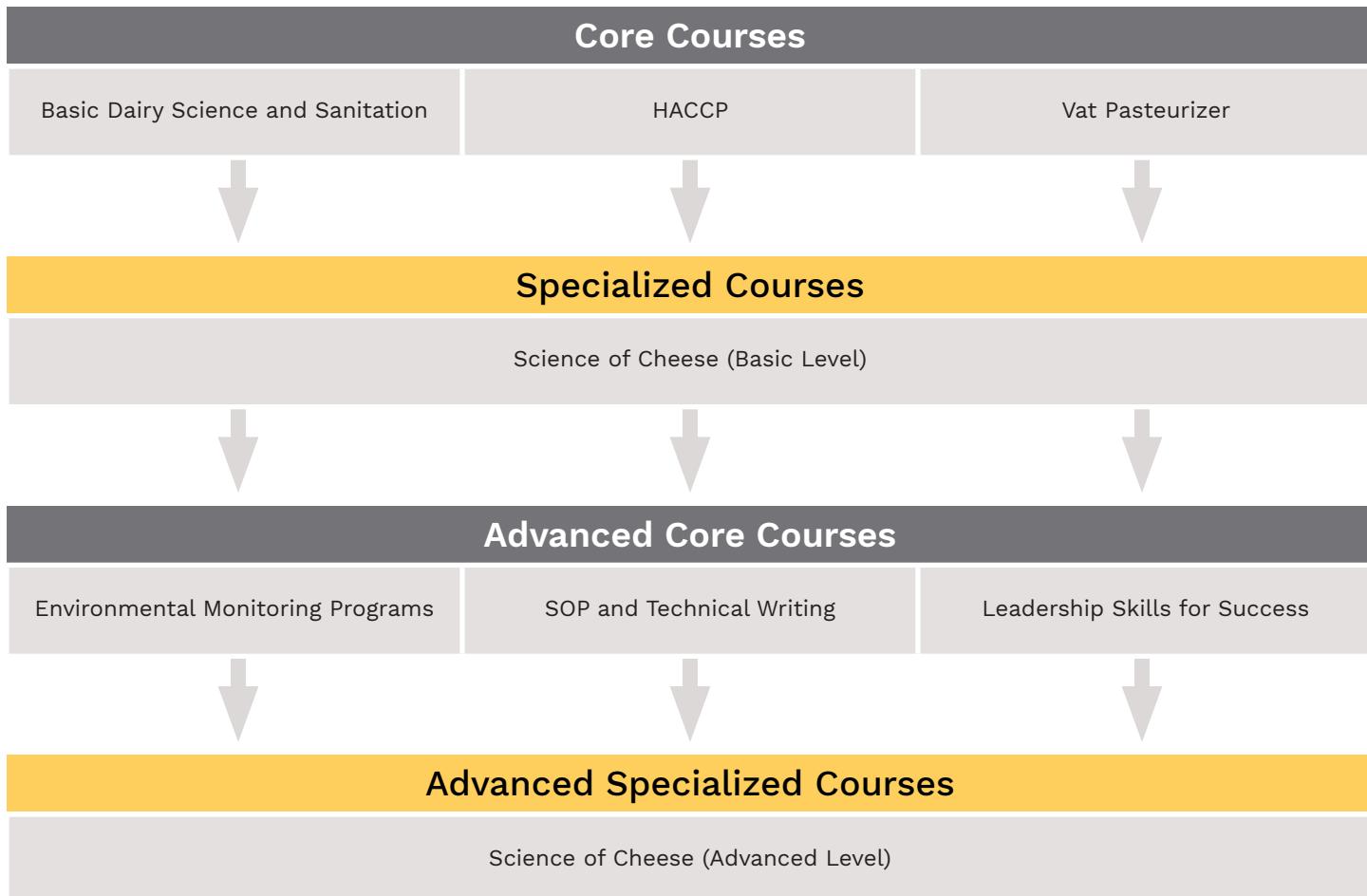
Science of Yogurt
(Advanced Level)

Successful completion of Core Courses and appropriate Specialized Course required for Basic Certification. Certificate valid for 3 years. 15 hours every 3 years of approved course work or meeting attendance required for renewal. See examples on the next page.

Successful completion of Basic Certificate Track, Advanced Core Courses, and appropriate Advanced Course required for Advanced Certification. Certificate valid for 3 years. 15 hours every 3 years of approved course work or meeting attendance required for renewal.

Dairy Foods Certificate Program – Examples

Example 1: I want to earn an Advanced Science of Cheese Certificate. What courses should I take?*



Example 2: I need to renew my Basic and/or Advanced Certificate. How do I do that?**

Attend Association Meeting	Attend Dairy Foods Extension Workshop	Attend State and Federal Regulatory Webinar, Training or Meeting
NYS Association for Food Protection NYS Cheese Manufacturers Northeast Dairy Foods Association American Cheese Society IAFP IFT NADRO AFDO SQF Dairy Practices Council Other meetings (pending approval)	Any Dairy Foods workshop Any track Other Dairy Foods workshops outside of the Certificate program	Processing Plant Superintendent Dairy Lab Seminar CMI School CMI Update NCIMS

*Example progression. Our team will work with you to customize your progression.

**Must complete 15 hours every 3 years for Basic Certification and/or Advanced Certification renewal.

Dairy Foods | Core Courses

Dairy Science and Sanitation

Available in English and Spanish

Online (Self-Paced), 2 CEUs – The Dairy Science and Sanitation Workshop is tailored to dairy processing personnel and is designed to help participants understand the basic principles of dairy science and safety, as well as emphasize dairy processing establishment needs related to dairy sanitation to ensure that proper programs are conducted in their establishments.

The course consists of online lectures that cover basic dairy science, including composition of milk, dairy microbiology, dairy food safety, as well as an overview of dairy regulations. Participants will also learn the basics of cleaning and sanitizing principles as well as unit operations that include: raw milk production and receiving, dairy processing, plant equipment and design, general control of pathogenic and spoilage microorganisms, in-depth information on cleaning and sanitizing chemicals, their properties and applications, and a discussion on CIP and COP systems and common errors seen in the industry.

Learning Outcomes

- Basic dairy microbiology/food safety overview
- Good manufacturing practices/dairy sanitation
- Milk composition and unit processing operations
- Dairy regulations/Food Safety Modernization Act

High Temperature Short Time (HTST) Pasteurizer Operator

Multiple Delivery Styles (Live via Zoom or On-Campus)

3 Day Course, 3 CEUs – This workshop is designed for pasteurizer operators, but is beneficial to all involved with milk pasteurization, including production, QA/QC and maintenance personnel. The course is instructed by industry experts and representatives from NYS Department of Agriculture & Markets and provides an overview of the design, operation, cleaning and maintenance of HTST systems. All required regulatory tests for HTST pasteurizers will be discussed and/or presented in a hands-on format to meet the training requirements for performing HTST system testing under the NY State Broken Seal Policy. Information on HTST/UHT systems will be covered. Background in dairy microbiology, product safety and quality will also be provided.

Learning Outcomes

- HTST and UHT operation components
- Regulatory requirements for HTST operation
- Cleaning and sanitizing HTST programs
- Requirement as part of NYS Broken Seal Program

Dairy Foods | Core Courses

Vat Pasteurizer

Available in English and Spanish

Online (Self-Paced), 1 CEU – This course is designed for individuals interested in vat pasteurization methods, rules, and regulations.

Learning Outcomes

- Basic dairy microbiology/food safety overview
- Good manufacturing practices/dairy sanitation
- Milk composition and unit processing operations
- Dairy regulations/Food Safety Modernization Act

Advanced Core Courses

Environmental Monitoring Programs

Hybrid Course, 2 CEUs – This course will prepare participants to develop and implement an effective Pathogen Environmental Monitoring program that will achieve greater product safety and quality. The course will focus on pathogens of concern and the importance of environmental sampling programs. Potential sources of contamination will be identified and control steps outlined. Participants will work in small groups to develop an Environmental Monitoring Plan and discuss mitigation steps and corrective actions to control microbial contamination in a food processing facility.

Learning Outcomes

- Identify the pathogens of concern in a food processing facility and describe which foodborne illnesses are associated with each
- List potential contamination sources within a food processing facility
- Create a plant zone map
- Develop a Sampling Plan
- Differentiate between different types of swabbing activities and explain the best practices for each
- Analyze trends in monitoring data
- Generate a Corrective Action Plan
- Identify opportunities for continuous program improvement

SOP and Technical Writing

Hybrid Course, 2 CEUs – This course presents the process of writing and maintaining Standard Operating Procedures for both regulatory compliance and everyday employee usage.

Dairy Foods | Core Courses

Learning Outcomes

- Outline regulatory requirements
- Determine which processes to document
- Evaluate the relationship between process documents
- Identify the audience
- Explain systems, activities, and processes
- Tense and word choice
- Writing effective documents
- Review and revision process
- Document compliance

AI in Food Safety: Ethical and Efficient Food Safety Document Writing

2 Day Course – This workshop provides participants with the knowledge and practical experience to effectively use Artificial Intelligence (AI) tools to develop key components of a food safety management system, including Standard Operating Procedures (SOPs), policies, training materials, and system verification activities. The course addresses the responsible and ethical use of AI and how these tools can improve efficiency, standardization, and accessibility while maintaining compliance with food safety regulations and audit standards.

Attendees will gain hands-on experience using AI to generate document drafts, experiment with different strategies for prompt engineering for precise and context-aware outputs, and understand how different technical approaches (e.g., inference with large language models, retrieval-augmented generation, fine-tuning) can enhance document quality and consistency. The course also covers the ethical use of AI so that participants are prepared to integrate AI safely and responsibly into their documentation workflows.

The course will conclude with a breakout in which participants can workshop a document of their choice independently with instructor consultation and support. This course is designed for beginner to intermediate users of AI—**no coding or technical background is required**.

Learning Objectives

- Identify opportunities to apply AI for developing food safety documentation, including SOPs, policies, and verification activities.
- Use prompt engineering to guide AI-generated content for clarity, accuracy, and regulatory compliance.
- Understand and compare technical approaches such as large language model inference and retrieval-based content generation.
- Evaluate and refine AI-generated text to ensure precision and alignment with organizational standards.
- Discuss ethical considerations and data governance principles in the use of AI for food safety applications.
- Collaborate with IT, HR, and QA teams to integrate AI responsibly within existing documentation systems.

Dairy Foods | Core Courses

Who Should Attend

This workshop is designed for professionals responsible for developing or managing food safety documentation who wish to explore practical, accessible AI tools. It is particularly relevant for:

- Food safety, quality assurance, and regulatory compliance professionals responsible for maintaining documentation systems.
- Supervisors and managers developing or revising facility-level procedures and training materials.
- Consultants, educators, and extension specialists supporting food safety system development and training.
- IT/HR professionals supporting documentation systems and AI tool deployment in compliance environments.

Learning Outcomes

- Use AI tools to efficiently draft, refine, and maintain food safety documentation.
- Evaluate AI outputs for technical accuracy and compliance.
- Integrate AI-assisted document generation into existing quality systems.
- Identify ethical considerations and data governance principles associated with AI tools in regulated industries.
- Apply hands-on learning through breakout sessions to create and review AI-assisted documentation aligned with their own operations.

Evaluation

This workshop does not include a formal examination. Participants will engage in case studies, peer review, and breakout activities to apply learned skills. They will also provide structured feedback on course content and delivery to inform future Extension programming.

Leadership Skills for Success

Live via Zoom

3 Two-Hour Sessions, 2 CEUs – Master critical communication and leadership skills to effectively manage employees, establish priorities and delegate responsibilities while building awareness of team dynamics and engaging employees through group problem-solving and decision making. Gain the commitment of others and add value to your organization by being clear about the results you want to achieve, the environment you want to create, and how you will develop and deploy talent. Become an effective leader with the ability to build relationships and manage workplace communications to be heard and understood by others while enhancing employee engagement and ensuring alignment and collaboration among members.

Dairy Foods | Specialized Courses

The Science of Cheese (Basic Level)

Hybrid Course, 2 CEUs – This workshop is designed for cheese manufacturers or others interested in the basic concepts of cheese making and is a required part of the Dairy Extension Basic Science of Cheese Certificate.

The course may also be taken as a stand-alone training. The course begins with an online lecture component covering the key areas related to vat pasteurization and basic cheese making techniques, cheese culture basics, milk defects, and cheese defects. The course will also include cheese making activities.

Learning Outcomes

- Foodborne pathogens resulting from unpasteurized milk
- Components of vat pasteurization
- Thermometer requirements
- Chart recorders and chart requirements
- Milk quality which impacts cheese making
- Cheese culture and chemistry and microbiology
- Cheese making unit operations and techniques and hands-on cheese making

The Science of Cheese (Advanced Level)

2 Day Course, 2 CEUs – This workshop is designed for advanced level cheese manufacturers or others interested in the advanced concepts of cheese and is a required part of the Dairy Extension Advanced Science of Cheese Certificate. The course may also be taken as a stand-alone training. The workshop will provide attendees with a review of information in key areas related to the complex chemistry of cheese, cheese styles and standards of identity, advanced microbiology, advanced cheese problems and defects, and food safety challenges in the cheese industry. It is expected that the attendee has a variety of applied experience as this course is designed to test overall knowledge and problem-solving as it relates to cheese. This course assumes the attendee understands applied concepts and science as it relates to cheese before arrival.



Dairy Foods | Specialized Courses

Learning Outcomes

- Milk components and advanced chemistry of cheese
- Cheese styles and standards of identity
- Cheese defects during process and affinage

The Science of Yogurt and Cultured Dairy Products (Basic Level)

Hybrid Course, 2 CEUs – This workshop is designed for yogurt and fermented dairy product manufacturers and is a required part of the Dairy Extension Basic Yogurt and Fermented Dairy Products Certificate. The course may also be taken as a stand-alone training. The workshop will provide attendees with information in key areas related to milk quality and its impact on finished dairy products, product evaluation and defects, ingredients in cultured dairy products, and product processing and formulation.

Learning Outcomes

- Milk quality and impact on cultured dairy products
- Culture microbiology and hands-on cultured dairy making
- Unit operations and sanitation in cultured dairy production
- Formulation utilizing different ingredients

The Science of Yogurt and Cultured Dairy Products (Advanced Level)

2 Day Course, 2 CEUs – This workshop is designed for advanced level yogurt and fermented dairy product manufacturers and is a required part of the Dairy Extension Advanced Yogurt and Fermented Dairy Products Certificate. The course may also be taken as a stand-alone training. The workshop will provide attendees with information in key areas related to advanced microbiology, chemistry in fermented milk and dairy product production, advanced sensory product evaluation, safety and quality assurance.

Learning Outcomes

- Milk components and advanced chemistry of cultured-dairy making
- Innovations in cultured dairy production
- Advanced sensory characteristics

Dairy Foods | Specialized Courses

Fluid Milk Processing for Quality and Safety

Hybrid Course, 2 CEUs – This workshop is designed for those involved and/or interested in fluid milk processing and testing with the intent of providing the tools to support and improve on quality assurance/control and food safety programs for bottled milks. While the course design assumes participants have some prior knowledge of dairy microbiology and processing (e.g., Dairy Science & Sanitation Course), critical concepts will be reviewed and expanded on for those who do not have prior knowledge.

Learning Outcomes

- Basic microbiology in relation to milk quality and safety
- Influence of raw milk quality on pasteurized milk quality and shelf life
- Fluid milk processing parameters
- Tools for assessing milk quality and shelf life

Introduction to Artisan Ice Cream and Frozen Desserts

Hybrid Course, 2 CEUs – This course is designed for the artisan ice cream manufacturer and will focus on select types of frozen desserts, including their composition and physical properties, ingredients, sensory, as well as equipment and the manufacturing process.

Learning Outcomes

- The composition of ice cream and origin of the ingredients within the food system
- The physical and chemical changes that occur during ice cream production
- The equipment involved in making ice cream and product development
- The sensory properties of ice cream

Dairy Foods | Food Safety Courses

Accredited HACCP Training

Available in English and Spanish

Online (Self-Paced), 2 CEUs – This course is designed for individuals who have responsibility for building, maintaining, and updating plant HACCP programs that will meet customer and third-party requirements. This course is accredited under the International HACCP Alliance and is designed to meet the requirements set for GFAI, NCIMS, FSIS, and the FDA.

Implementing SQF Systems

2 Day Course – This workshop is designed to give participants an understanding of the SQF Code, how to implement requirements in food production, manufacturing, storage, distribution, and packaging to achieve or maintain SQF Certification. Students must have completed a HACCP course of at least 16 hours prior to taking this course.

Introduction to Food Safety Principles

Available in English and Spanish

Online (Self-Paced) – This introductory course is tailored to processing personnel and is designed to help participants understand the basic principles of food safety in a processing plant. The benefit of using this course is to quickly train your frontline employees in the importance of Food Safety.

The course consists of self-paced online modules with knowledge checks at the end of each module that will cover basic food safety including Good Manufacturing Practices, Basic Microbiology and Foodborne Illness, and Food Safety Programs. The course is ideally suited for production line personnel, sanitation personnel and maintenance personnel.

This course provides baseline knowledge and is not intended to be a comprehensive training. We are offering this course based on a subscription price. Companies are granted access to the course through Canvas for the designated time purchased. Companies have unlimited access to the content and can train unlimited employees through the subscription period. Contact Louise Felker (lmf226@cornell.edu) for subscription pricing information.

Dairy Foods | Regulatory Courses

FSMA Preventive Controls Qualified Individual Training*

Multiple Delivery Styles (Live via Zoom or On-Campus)

3 Day Course, 2.5 CEUs – The *Current Good Manufacturing Practice, Hazard Analysis, and Risk-Based Preventive Controls for Human Food* regulation is intended to ensure safe manufacturing/processing, packing and holding of food products for human consumption in the United States. The regulation requires that certain activities must be completed by a preventive controls qualified individual who has successfully completed training in the development and application of risk-based preventive controls. This course developed by the FSPCA is the standardized curriculum recognized by FDA; successfully completing this course is one way to meet the requirements for a preventive controls qualified individual. These courses are taught by Lead Instructors trained by the FSPCA, who have been instructed in how to teach the FDA-recognized standardized curriculum.

*Course description provided by the Food Safety Preventive Controls Alliance

Intentional Adulteration Vulnerability Assessments (IAVA)

1 Day Course – This course will provide participants with the knowledge to conduct vulnerability assessments under the Mitigation Strategies to Protect Food Against Intentional Adulteration (IA) regulation of the U.S. Food and Drug Administration (FDA). This regulation is one of several regulations that guide implementation of the provisions of the 2011 Food Safety Modernization Act (FSMA), which focuses on safe food practices.

The Mitigation Strategies to Protect Food Against Intentional Adulteration regulation (referred to as the IA rule) is aimed at preventing intentional adulteration from acts intended to cause wide-scale harm to public health, including acts of terrorism targeting the food supply. The regulation requires that certain activities must be completed by a “food defense qualified individual” who has successfully completed training in the conduct of a vulnerability assessment. This course developed by the FSPCA is the “standardized curriculum” recognized by FDA. Successful completion of this course is one way to meet this requirement. These courses are taught by Lead Instructors trained by the FSPCA, who have been instructed on how to teach the FDA-recognized standardized curriculum.

Dairy Lab Seminar

1 CEU – Provides dairy laboratory personnel with regulatory, procedural and scientific updates.

Certified Milk Inspectors Training School

2.5 CEUs – Provides detailed instruction of required dairy farm inspections and is a required course for Certified Milk Inspectors (CMI), those who inspect dairy farms. Offered once each summer.

Dairy Foods | Specialty Training Programs

Sensory Immersive Experience in Dairy

2 Day Course, 2 CEUs – This training will provide training in the basic components of sensory evaluation including psychological consideration in sensory analysis, physiology of sensory perception, reviewing the components of flavor and exploring flavor and texture attributes during hands-on sensory sessions.

Membrane Processing

2 Day Course, 2 CEUs – This workshop is designed for those involved and interested in the fractionation, separation, concentration, and drying of dairy products and ingredients. Quality, processing, food safety and cleaning are aspects of the courses. While the course design assumes participants have some prior knowledge of dairy processing, critical concepts will be reviewed and expanded on for those who do not. This course can be taken as a stand-alone program.

Fundamentals of Labeling

1 Day Course, 1 CEU – This workshop will provide attendees with an understanding of the labeling requirements for dairy products, ranging from label creation to compliance enforcement. Participants in regulatory, research & development, quality assurance, procurement, marketing, and operational roles are encouraged to attend. This workshop applies to dairy processors of any size as well as entrepreneurs. Discussion content will include requirements per the Code of Federal Regulations (CFR), regulations specific to NYS, and essential considerations from the Pasteurized Milk Ordinance (PMO). This workshop will focus on the fundamentals, while also exploring real-life examples. Participants from all experience levels within NYS and beyond are welcome to attend. No prerequisites are required.

Dairy Processing Plant Superintendent

Annual update provides dairy plant personnel with regulatory and extension updates. Offered at 4 locations each spring. Required update for all NY State Dairy Processing Plant Superintendents (PPS).

Certified Milk Inspectors Annual Update

Provides regulatory and extension updates on farm inspection and milk quality. Offered at 4 locations each fall. Required update for licensed Certified Milk Inspectors (CMIs).

New York State Fair Dairy Judging and Awards Program

This program provides dairy plants the opportunity to receive awards and recognition for product quality at New York State Fair. Coordination and judging of dairy products for state fair competition occurs each summer at Cornell.

Dairy Foods | Course Calendar

Topic	Date Offered	Location	Category	Training Delivery
CORE COURSES				
Dairy Science and Sanitation (English & Spanish)	Rolling Admission, On-Demand	Online	Certificate Program	
Dairy Science and Sanitation (English & Spanish)	For 2026 dates, visit DFE website	For 2026 locations, visit DFE website	Certificate Program	
HTST Pasteurizer Operator	April 7–9, July 21–23	Cornell University (Ithaca, NY)	Certificate Program, Food Processing	
HTST Pasteurizer Operator	October 6–8	Live via Teleconference (Zoom)	Certificate Program, Food Processing	
Vat Pasteurizer (English & Spanish)	Rolling Admission, On-Demand	Online	Certificate Program, Food Processing	
ADVANCED CORE COURSES				
Leadership Skills for Success	September 9–11	Live via Teleconference (Zoom)	Certificate Program	
SOP and Technical Writing (Hybrid Format)	November 3	Online & Live via Teleconference (Zoom)	Certificate Program, Food Processing	
Environmental Monitoring Programs (Hybrid Format)	November 4	Online & Cornell University (Ithaca, NY)	Certificate Program, Food Safety	
FOOD SAFETY COURSES				
Accredited HACCP (English & Spanish)	Rolling Admission, On-Demand	Online	Certificate Program, Food Processing, Food Safety, Regulatory	
Accredited HACCP (English & Spanish)	For 2026 dates, visit DFE website	For 2026 locations, visit DFE website	Certificate Program, Food Processing, Food Safety, Regulatory	
Introduction to Food Safety Principles (English & Spanish)	Rolling Admission, On-Demand	Online	Food Safety	
Implementing SQF Systems	August 25–26	Cornell University (Ithaca, NY)	Food Safety, Regulatory	

ON-CAMPUS

ON-SITE

ONLINE

ZOOM

HYBRID

PARTNERSHIP

Dairy Foods | Course Calendar

Topic	Date Offered	Location	Category	Training Delivery
SPECIALIZED COURSES				
SCIENCE OF CHEESE				
The Science of Cheese (Basic Level) (Hybrid Format)	October 14	Online & Cornell University (Ithaca, NY)	Certificate Program, Food Processing	  
SCIENCE OF YOGURT				
The Science of Yogurt and Cultured Dairy Products (Basic Level) (Hybrid format)	April 28	Online & Cornell University (Ithaca, NY)	Certificate Program, Food Processing	  
The Science of Yogurt and Cultured Dairy Products (Advanced Level)	May 5–6	Cornell University (Ithaca, NY)	Certificate Program, Food Processing	 
FLUID MILK PROCESSING				
Fluid Milk Processing for Quality and Safety (Hybrid Format)	March 5	Online & Live via Teleconference (Zoom)	Certificate Program, Food Processing	  
ICE CREAM AND FROZEN DESSERTS				
Intro to Ice Cream and Frozen Desserts (Hybrid Format)	March 25–26	Online & Cornell University (Ithaca, NY)	Certificate Program, Food Processing	  
SPECIALTY TRAINING PROGRAMS				
AI in Food Safety: Ethical & Efficient Food Safety Document Writing	January 26–27	Live via Teleconference (Zoom)	Certificate Program	
Sensory Immersive Experience in Dairy	March 17–18	Cornell University (Ithaca, NY)	Food Processing	
Membrane Processing	August 18–19	Cornell AgriTech (Geneva, NY)	Certificate Program, Food Processing	
Fundamentals of Labeling	October 20	Live via Teleconference (Zoom)	Food Processing, Regulatory	

 **ON-CAMPUS**

 **ON-SITE**

 **ONLINE**

 **ZOOM**

 **HYBRID**

 **PARTNERSHIP**

Dairy Foods | Course Calendar

Topic	Date Offered	Location	Category	Training Delivery
REGULATORY COURSES				
FSMA Preventive Controls Qualified Individual Training	February 24–26	Live via Teleconference (Zoom)	Certificate Program, Food Safety, Regulatory	
FSMA Preventive Controls Qualified Individual Training	June 2–4	For 2026 locations, visit DFE website	Certificate Program, Food Safety, Regulatory	 
FSMA Preventive Controls Qualified Individual Training	November 17–19	Live via Teleconference (Zoom)	Certificate Program, Food Safety, Regulatory	
Dairy Lab Seminar	April 21	Live via Teleconference (Zoom)	Certificate Program, Food Safety, Regulatory	
Certified Milk Inspectors Training School (Hybrid Format)	July 29–31	Online & Cornell University (Ithaca, NY)	Certificate Program, Food Safety, Regulatory	   

 **On-Campus Trainings** take place at the Cornell University Stocking Hall Conference Center, unless otherwise noted. All courses listed are open to the public.*

 **On-Site Plant Trainings** can be offered off campus at industry sites or virtually; courses at company sites can be limited to attendees from the hosting company.*

 **Online (Self-Paced) Trainings** are completed online using eCornell or the Canvas Learning Management System.

 **Zoom Courses** are hosted via live teleconference (Zoom).

 **Hybrid Courses** include online as well as hands-on sessions.*

 **Partnership Courses** are conducted in partnership with other universities or organizations such as the New York State Department of Agriculture & Markets.*

*Course delivery subject to change due to public health guidance from Cornell University.

Dairy Foods | Extension Services

Industry Workshops (On-Site or Virtual)

Contact Louise Felker (lmf226@cornell.edu) for price quote and scheduling.

- Dairy Science & Sanitation (2.5 days)
- Preventive Controls Qualified Individual (2–2.5 days)
- HACCP Training (2 days)
- GMPs Training (2 days)
- Internal Audit Training (1 day)
- Sensory Training (1 day)
- Food Defense Training (2 days)
- Foreign Supplier Verification Programs Training (1.5 days)

Consulting Services

Contact Louise Felker (lmf226@cornell.edu) for price quote and scheduling.

Dairy Process Authority

Dairy Process review and validation available for dairy products. Fees charged for initial review, research, and on-site review. Submission options include the following:

- Product and Process Review/ Scheduled Process
- Reduced Oxygen Packaging (ROP)/ Vacuum Packing
- Lab Analysis
- Deviation Evaluation

Cornell's Process Authority works with food manufacturers to validate products for safety and stability. The Scheduled Process is a document that can be submitted to regulatory agencies, such as state or federal inspectors, to support safe food processing practices and ensure minimal risk of microbial pathogenic growth.

Pre-Audit Consulting

Preparing for a third-party audit and want to make sure that you're ready? Our team can visit your facility and conduct pre-audit consulting.

Document Review

Food safety plan and document review available, on-site and remotely.

Validation Sampling

Validation sampling of environmental monitoring programs available.

Food Processing and Development Laboratory

The Cornell University Food Processing and Development Laboratory (FPDL)

The Cornell University Food Processing and Development Laboratory (FPDL) is a highly flexible pilot plant that allows industry access to equipment and expertise to facilitate the development of new dairy products and/or to produce prototype products on a small-scale. The 'plug and play' design means that the FPDL can emulate your plant processing parameters for accurate product development projects while the company can get product trials completed without stopping actual production. Because the facility is a licensed dairy plant permitted by New York State, our products can be used for sensory or consumer acceptance studies.

The 6,000 sq. ft. main processing area is directly adjacent to Cornell's fully licensed dairy plant. The pilot plant houses a small-scale HTST system capable of continuous pasteurization of batches as small as 100 gallons with up to a 12-minute extended hold. The facility has multiple cheese vats from 50 to 500 gallon capacities (with associated equipment such as cheddar milling equipment, cheese presses, a variety of moulds, etc.). For yogurt and cultured products production, the facility has a Greek yogurt separator, fermentation vats from 50-500 gallons, several filling capabilities as well as fermentation rooms to 110°F. The FPDL has continuous and batch ice cream freezing capability as well as a walk-in hardening freezer (-40°F). The pilot plant also has access to very high-quality milk from Cornell's Vet School farm located less than a mile away. This combination allows for scaling up of production in order to provide a variety of products for consumer demonstrations, food shows and exhibitions.

The facility has full-time experienced professionals who are able to assist in all aspects of food product development and processing. Companies/individuals can visit the facilities and work collaboratively or the staff of the FPDL can process products to your specifications and ship it to you overnight. Customized small product development runs can be conducted with our established access to suppliers of ingredients, cultures and raw materials or, if a company prefers, with their supplied ingredients.

For more information visit the [FPDL website](#) or contact Beth Chapin (brm4@cornell.edu) with questions.



Cornell Institute for Food Systems Industry Partnership Program

Connecting Industry and Academia Across the Food Value Chain

Companies spanning agriculture, food processing, packaging, and retail are joining the Cornell Institute for Food Systems Industry Partnership Program (CIFS-IPP) to access differentiated research capabilities, strategic insights, and collaboration opportunities that support innovation and long-term competitiveness in a rapidly evolving food system.

Through engagement with Cornell University faculty—particularly CIFS Faculty Fellows—and peers across the sector, corporate members become part of a multidisciplinary network focused on addressing complex food systems challenges through applied, science-driven solutions. For more information, visit the CIFS website (cals.cornell.edu/cifs-ipp) or contact Rajni Aneja at ra283@cornell.edu.

CIFS-IPP Offers Members and Affiliate Members Opportunities to:

- Foster collaborative research and educational initiatives with leading university and industry scientists
- Participate in curated forums that convene industry scientists, business leaders, and Cornell faculty
- Accelerate the translation of cutting-edge food systems academic research into commercial and operational applications
- Engage with Cornell students to develop a strong, diverse, and future-ready talent pipeline

CIFS-IPP Members and Affiliates also:

- Receive invitations to the CIFS Annual Symposium, seminar series, and other events showcasing emerging Cornell technologies and product innovations
- Benefit from facilitated access to Cornell faculty for high-level strategic and technical discussions
- Receive early notification of new collaborative research opportunities
- Engage with more than 200 Cornell students across food systems-related disciplines
- Access Cornell Food Science processing facilities and specialized services
- Network with world-renowned food science scholars and industry leaders, forming partnerships with many of the world's premier food and beverage companies
- Receive recognition of their support through the CIFS website, related digital and print materials, and logo displays in Stocking Hall

CIFS-IPP | Meet the Team



Rajni Aneja, MS, MBA

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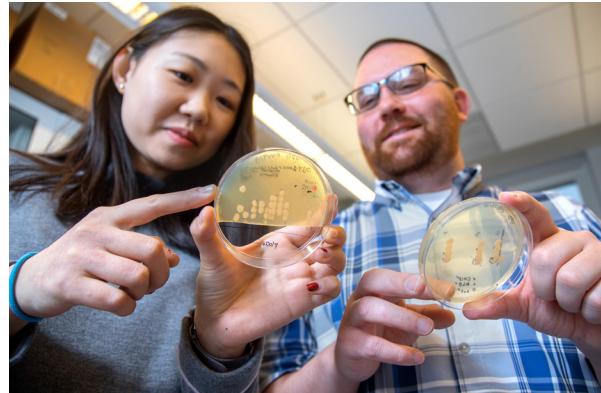


CIFS-IPP Member Companies

CIFS-IPP's success derives from the extensive collaboration between Cornell University's stellar research talent and our industry colleagues, including researchers, engineers, and business leaders. We are pleased to take this opportunity to honor and recognize the corporate members of CIFS-IPP for their dedication to advancing food science and technology.

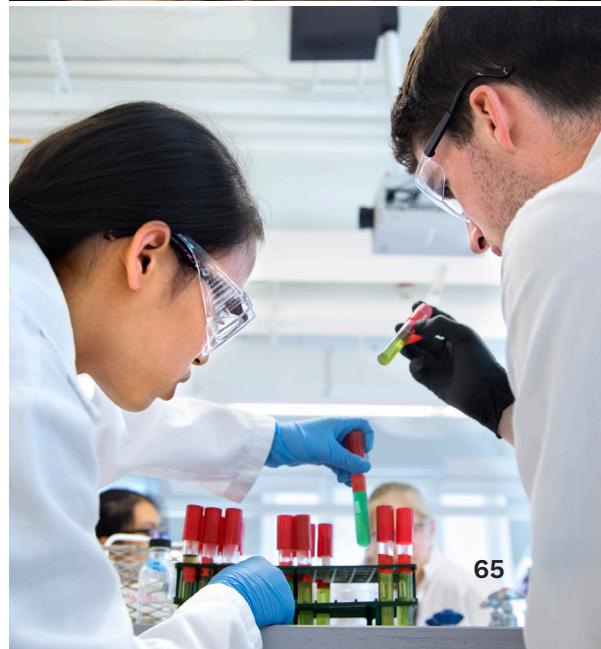
Full Members:

- Beech-Nut Nutrition Company
- GALLO
- hy Co., Ltd.
- Nestlé Health Science USA
- PepsiCo, Inc.
- Wegmans Food Markets, Inc.



Affiliate Members:

- Ingredion Inc.
- Reckitt Benckiser Group PLC
- Siena Development Group, Inc.
- Wan Ja Shan Brewery Co., Ltd.
- Xibushigu



For More Information



CALS Department of Food Science
cals.cornell.edu/food-science

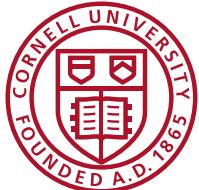
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