



THE FOOD
INDUSTRY
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Produce Safety Best Practices Guide for Retailers



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Introduction

Food safety is the number one priority of both the produce industry and the retail food industry. Produce safety has brought challenges in recent years. Food Marketing Institute (FMI) and our industry partners are committed to working together to identify the issues and find solutions.

This guidance document is divided into two parts: Part 1: produce safety guidelines throughout the supply chain, and Part 2: produce handling practices in retail stores.

For supply chain standards, federal and state food safety regulations are the baseline. As retailers work with supply chain partners, we have established a step-based program for all farms—including small farms—in which training materials are available to strengthen the food safety program. The goal is to develop or build on existing food safety programs and to continuously improve through knowledge gained from emerging science and produce safety events. This document can serve as best practice guidelines for a retailer supplier approval list. Additionally, this document will be updated on a regular basis to maintain its effectiveness.

The intended audiences for Part 1 are buyers, produce category managers, perishable managers and any retail executives involved in produce procurement or produce standards. The audiences for Part 2 are in-store retail associates, food safety professionals and HR professionals who train in-store associates on produce handling.

PART 1.

Working with Produce Suppliers

FMI and our member companies are committed to strengthening food safety programs through collaborative efforts with suppliers and trade associations. A retail buyer, for example, may use Part 1 to verify that an existing or potential supplier has a food safety foundation in place.

Good Agricultural Practices (GAPs) and HACCP-based food safety principles should form the foundation for a preventive approach to food safety. For the purposes of this document, the best practices apply to international and domestic grower/shippers, harvesters, coolers, packers (to include in-field packers, copackers and repackers), packinghouses, wholesalers, processors and distributors.

It is important to highlight additional food safety resources for smaller growers in order to ensure that the same food safety foundation is applied to all produce. Many cooperative extension services are available to help with the development and maintenance of a food safety foundation. The following link may be helpful for retailers and small growers; it describes a voluntary audit—administered by the US Department of Agriculture (USDA)—that focuses on best agricultural practices to verify that fruits and vegetables are produced, packed, handled and stored in the safest manner possible to minimize risks of microbial contamination: <http://www.ams.usda.gov/AMsv1.0/GAPGHPAuditVerificationProgram>.

While larger growing operations may have the resources in place to build their food safety plans, this is often not the case with small growers. Retailers may need to partner with such small growers to help them get started on building their food safety plans through outreach, education and guiding suppliers to resources they can use. The following link references a webinar designed as a food safety resource for small growers: http://www.fmi.org/docs/default-source/food-safety-additional-resources/bringing_food_safety_to_local_growers_-_webinar_pdf.pdf?sfvrsn=2.



Roles and Responsibilities

Communication between retailers and suppliers is essential and should occur at least annually to address roles, responsibilities and expectations. The supply chain for produce can be complex. All those who grow, harvest, pack, distribute or otherwise handle produce should have a written food safety program in place. Retailers should ensure all requirements and specifications are clearly and fairly communicated and, if necessary, work with suppliers to identify educational opportunities for food safety training.

Product Specifications

Produce commodity specifications should be established and clearly communicated during the procurement process. Product specifications should include information about general food safety requirements.

Commodity Risk

Prevention of biological, physical and chemical contamination that can harm consumers should be the focus for all commodities and for all food safety programs at all stages of the supply chain. Risk factors should be assessed by commodity, production practices, outbreak history, growing location, intended use and for ready-to-eat produce. Additionally, commodity risk factors should address consumer dietary preferences, which are ever-changing, and may affect the manner in

which produce is consumed as well as the types, quantities and frequency of produce consumed. Changes in consumer preferences can be addressed through good communication between the buyer and grower.

Allergens

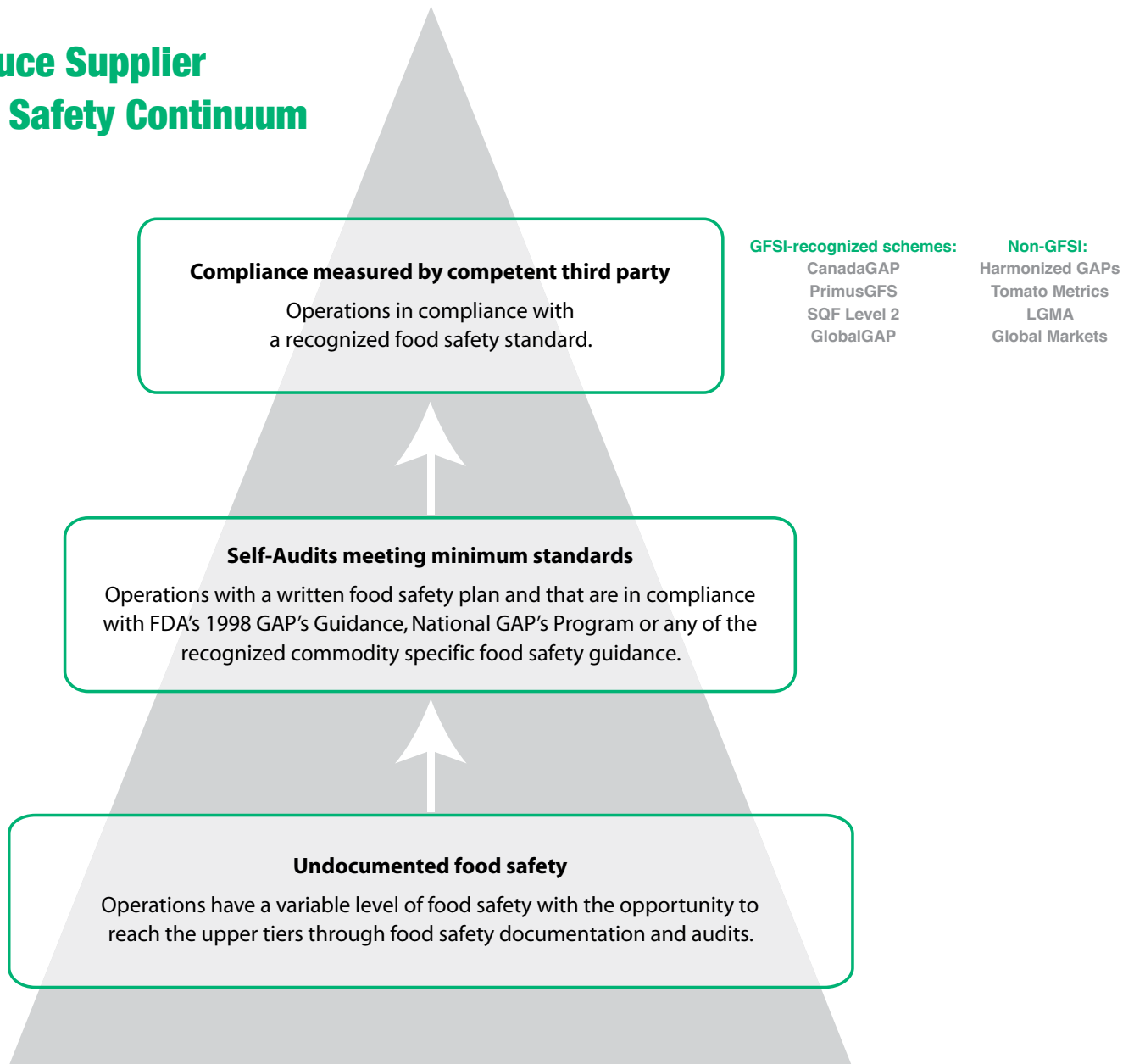
When applicable, produce best practices should include a protocol to prevent risk of cross-contact from nuts/tree nuts, or their products, to other produce.



Figure 1. On Farm Guidelines

The diagram depicts an increasing standard, from bottom to top of pyramid, in which the bottom tier represents an opportunity to reach the upper tiers through food safety documentation and audits, the middle tier represents an operation’s awareness and implementation of food safety practices and the top tier represents third party verification of compliance.

Produce Supplier Food Safety Continuum



Education and Training Resources for On-Farm Produce Safety

- Center for Produce Safety
- National GAPs Program
- Northwest Horticultural Council
- On Farm Food Safety Project
(Familyfarmed.org)
- Produce Marketing Association
- Produce Safety Alliance
- State Departments of Agriculture
- State Retail Associations
- United Fresh Produce Association

PART 2.

Retail In-Store Produce Handling

The following produce handling best practices are designed for supermarket employees, managers, engineering/maintenance staff and associated food safety professionals. The goal of the best practices is to incorporate food safety into everyday departmental tasks. Part 2 of this document was developed using the U.S. Food and Drug Administration (FDA) Food Code and FMI member retail food safety experience. It outlines best practices from receiving to customer display in order to prevent produce contamination.

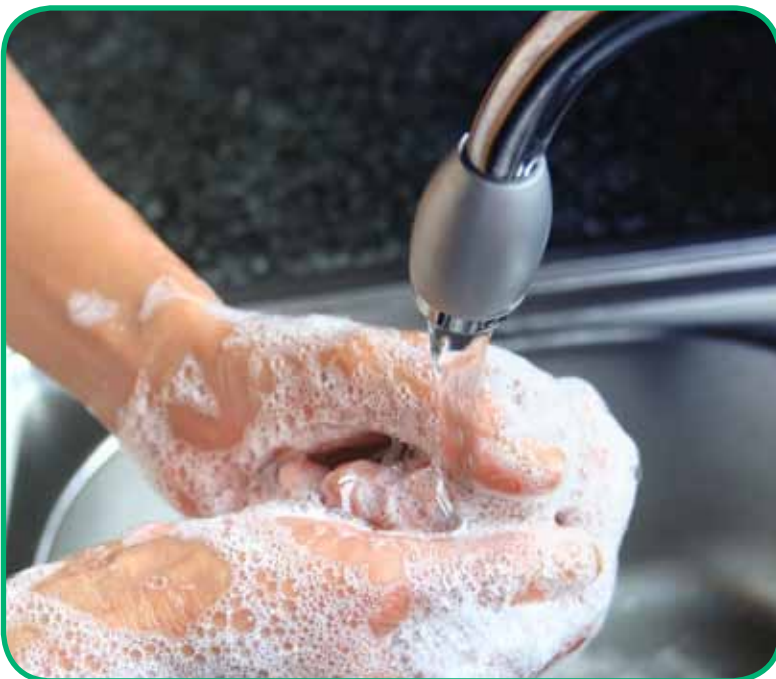
Employee Training

- All employees should receive basic food safety training including training on hand washing and hygiene practices, proper temperature control and food handling.
- At least one employee should be trained through a program such as the FMI SafeMark program and certified by the National Registry for Food Safety Professionals.
- Only authorized personnel (e.g., employee cutting fruit) should be admitted to the prep room to reduce cross-contamination of product. The manager, or person in charge, should visually inspect the prep room to make sure the food is protected through hair restraints, proper glove use, proper hand washing, no eating or drinking, proper storage of personal items and proper condition and sanitation of equipment.

Receiving

Receiving of whole produce, fresh-cut produce and other products

- Ensure supplier is on an approved supplier list – addressed in Part 1 of this document.
- Inspect delivery vehicle, when possible, to verify that vehicle and incoming product are free of signs of cross-contamination.
- Accept only products free of visible damage such as mold, evidence of pests, temperature abuse, cross-contamination and compromised packaging.
- Temperatures should be monitored and verified. Use a calibrated and sanitized probe thermometer to ensure internal product temperature of time/temperature control for safety food (TCS) is at 41°F or below. Recommendations to maintain the quality of non-TCS produce are available through various research programs; examples can be found on the following website: <http://postharvest.ucdavis.edu/producefacts/>.
 - It is acceptable to squeeze the probe between two packaged products where necessary.
 - The FDA Food Code defines TCS produce as follows:
 - raw seed sprouts,
 - cut melons,
 - cut leafy greens,
 - cut tomatoes or mixtures of cut tomatoes that are not modified in a way so that they are unable to support pathogenic microorganism growth or toxin formation.



- Immediately place all products into a sanitary storage area, with particular attention to placing TCS into cold storage.
- A pest control program should be in place to protect produce in all applicable areas of store.

Storage

- Temperatures should be monitored and verified as described above.
- Cleaning should be monitored and verified.
 - Food storage areas should be frequently cleaned, sanitized and monitored according to a sanitation standard operating procedure (SSOP). Cleaning areas include, but are not limited to walls, ceilings, overhead structures, shelving, floors, drains and cooling units; these areas should be clean, free of standing water and in good repair.
- Products should be visually inspected to prevent cross-contamination during storage. Visual inspection should include an evaluation for risk of splashing from water on floor, dripping water from cooling units over produce or risk from any other source of contamination.
- If ice is used to cool product, the following guidelines should be followed:
 - Ice must be from a potable water source.
 - Ice must be discarded after use.
 - Store iced product to avoid cross-contamination from dripping water.

Processing

- Prep room cleaning should be monitored and verified.
 - Follow storage guidelines in above section.
- Visual inspection for cross-contamination should be conducted.
 - Follow storage guidelines in above section.
- SSOPs should be adhered to for specific equipment, such as ice machines, cutting boards and knives.



- Crisping:
 - Ensure sink is cleaned and sanitized before and after crisping.
 - If produce is covered during crisping, the cover must be easily cleanable.
 - If a bath is used, follow sanitizer recommendations below.
- Rinse fruit and vegetables with running potable water to remove soil. If using a bath, an appropriate sanitizer should be used in compliance with label directions. If applicable to the commodity being washed in a bath (e.g., whole tomatoes), use water 10°F warmer than pulp temperature.
- Pre-chill fruits and vegetables before preparation of TCS. For example, pre-chill cantaloupe in a cooler before cutting.
- Use a clean and sanitized scrub brush for commodities with a tough rind or peel, such as carrots, cucumbers or citrus fruits. Clean and sanitize scrub brushes between uses to deter cross-contamination.
- Wash hands and use gloves appropriately (training required) to cut fruits and vegetables.
- Once TCS fruits and vegetables are cut, reduce internal temperature to 41°F or below and verify with internal reading using a sanitized and calibrated probe thermometer.

Processing (cont.)

■ Juice processing:

- A risk analysis for each type of vegetable/ fruit juice should be conducted.
- Juice from fruits and vegetables prepared on premises that doesn't undergo a 5-log reduction of the most resistant microorganism of public health significance should be labeled per the FDA Food Code 3-404.11.
- Cleaning and sanitizing protocols should be in place for the juice equipment (with consideration of cleaning/sanitizing equipment between the uses of produce with different risk levels to the consumer).
- If the juice is packaged and stored for sale, it should be maintained at 41°F or below unless it is determined to be non-TCS through using the FDA Food Code Annex 3 1-201.10(B) Decision Tree #1.

■ Nut butter processing:

- Employees should monitor the nut butter grinding area to deter cross-contact.
- Develop a rigorous cleaning/sanitizing protocol for the nut butter equipment (a food safety consultant may be necessary).
- Protocols should be in place to prevent cross-contact between tree nuts/peanuts, and their products, and other produce.

■ Perishable donations:

- Label donations and separate from other food for retail sale.
- Whole fruit should be cool, dry, without significant decay and stored in a sanitary container.
- Cut fruit should be bagged separately, at 41°F or less and without significant decay or color change.



Display

- Ensure product is labeled according to local, state and federal regulations. This includes displaying necessary allergen signage.
- Check code dates and cull for off-quality.
- Salad bar should be monitored by a trained employee and food shall be protected from consumer contamination with food guard or other device. Ensure that heat transfer is appropriate.
- Utensil handle should be stored to avoid contamination of food.
- Store allergens in a manner that deters cross-contact to non-allergen foods.
- Monitor condition of displayed products (e.g., mold, off-colors, off-odors), with particular attention to monitoring TCS at 41°F or below (e.g., bagged salads, cut fruit and salad bar items) using protocol from above sections.
- Ensure display cases are operating efficiently:
 - Ensure that return vents are not blocked
 - Use infrared thermometers to ensure air blowing across product is 37-39°F
 - Adjust product to address warm spots, such as corners of island cases and pegged sections
- Produce misters and reservoirs (if applicable) should use a potable water supply and be cleaned and sanitized per manufacturer's recommendation or at least once a week using procedures described in the FDA Food Code 5-205.14, whichever is more stringent. Mister display case trays and containers should be monitored to avoid standing water.



Additional Considerations

When remodeling, designing supermarkets or under general operating conditions the above best practices are most easily carried out when the following considerations are addressed:

- Easily cleanable equipment
- Efficient display case design for TCS (including employee and consumer education, such as smoke machine demonstration for cold case air flow)
- Active and preventive maintenance systems in place
- Facility is designed for easy cleaning of walls, floors and other areas
- Product is stored off of the floor
- Pest control procedures are in place
- Guidelines for employee personal hygiene
- SSOPs should be in place and updated
- Food safety, Engineering, Maintenance and Operations interdisciplinary cooperation and consulting for design

Additionally, the overall store design should emphasize a logical flow of processes to aid employee produce handling tasks from receiving to customer display.

Glossary

- Cooler:** Operation that conducts postharvest cooling to rapidly remove field heat from freshly harvested commodities before shipment, storage, or processing, essential for many perishable crops: <http://www.bae.ncsu.edu/programs/extension/publicat/postharv/ag-414-1/index.html>. (Accessed on 11.18.13)
- GAP Good Agricultural Practices:** Best agricultural practices to verify that fruits and vegetables are produced, packed, handled, and stored in the safest manner possible to minimize risks of microbial food safety hazards: <http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateN&page=GAPGHPAuditVerificationProgram>. (Accessed on 11.18.13)
- GFSI Global Food Safety Initiative:** A food safety benchmarking organization and collaborative approach that brings together international food safety experts from the entire food supply chain to share knowledge and promote a harmonized approach to managing food safety across the industry: <http://www.mygfsi.com/about-gfsi.html>. (Accessed on 11.18.13)
- Grower/shipper:** One who employs one or more than one of the following on behalf of their own or other grower's product: the production, harvesting, packing, cooling, transporting, marketing and selling. (FMI Definition)
- HACCP Hazard Analysis and Critical Control Points:** A systematic approach to the identification, evaluation, and control of food safety hazards: <http://www.fda.gov/Food/GuidanceRegulation/HACCP/ucm2006801.htm>. (Accessed on 11.18.13)
- Harvester:** One who manually or mechanically removes the product from the growing site. (FMI Definition)
- Packer:** One who packs produce into retail packaging. (FMI Definition)
- Repacker:** Refers to the process of handling the product inside the pack. Repack can occur for many reasons including quality assurance culling where the original product is not commingled and is returned to the original pack or the product is being moved from one pack to a new pack and may be commingled with other products: http://www.producetraceability.org/documents/Repacking_Best_Practice_Guide_v1_2_final_03232012.pdf. (Accessed 11.18.13)
- Copacker:** Company contracted by a supplier to pack the produce into retail packaging. (FMI Definition)
- In-field packer:** Company that packs harvested product into market ready packaging in the "field" or place of harvest. (FMI Definition)
- RTE Ready-to-eat:** Food in a form that is edible without additional preparation to achieve food safety: <http://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/ucm186464.htm>. (Accessed 11.18.13)
- SSOP Sanitation Standard Operating Procedure:** A set of directions that should (must) be followed to ensure food safety when completing certain tasks such as cooking chicken, cooling a food or sanitizing a work surface; taken from definition of SOP, with examples of SSOPs available at: <http://sop.nfsmi.org/>. (Accessed 11.18.13)
- Self-audit:** To review or inspect policy or procedure against an established standard or set of criteria. (FMI Definition)
- SQF Safe Quality Food:** A program that emphasizes the systematic application of HACCP for control of food quality hazards as well as food safety: SQF Code 7th Edition, July 2012, Safe Quality Food Institute, Arlington, VA.
- Supplier:** Refers to any food business involved in the production, manufacture, processing, transport, storage, distribution or sale of food, beverages, packaging or fiber, or providing support services to the food sector and run by a person, company, cooperative, partnership, joint venture, business or other organization: <http://www.sqfi.com/wp-content/uploads/Program-Vocab.pdf>. (Accessed 11.18.13)



