



carolina farm  
stewardship association

# Fundamentals of On-Farm Food Safety

AUDIT TIPS AND STRATEGIES FOR SMALL AND  
MID-SCALE PRODUCE OPERATIONS

Written By: Patricia Tripp, M.S. and Roland McReynolds, Esq.

This manual made possible by a Specialty Crops Block grant awarded by the U.S. Department of Agriculture and the North Carolina Department of Agriculture and Consumers Services.

This document is for guidance purposes only.

# Table of Contents

## 3 Introduction

- 3 The Market Value of GAP Certification
- 4 Choosing an Audit Standard
- 4 History of Harmonized GAP
- 5 FSMA vs. GAP
- 6 Alignment of the USDA Harmonized GAP Program with FSMA
- 7 How to Use This Manual

## 9 Harmonized GAP Overview

- 9 Leadership for your Food Safety Program
- 9 Your Food Safety Manual
- 10 Understanding the Harmonized GAP Audit Scopes
- 10 Timing the Audit
- 12 Listing Products on the GAP Certificate and Audit Report
- 12 The Audit Standard
- 13 Audit Scoring
- 14 Documentation Requirements
- 15 How to Conduct a Risk Assessment
- 15 When to Conduct a Risk Assessment
- 17 Audit Frequency and Termination
- 18 Audit Costs
- 18 Scheduling an Audit
- 19 What to Expect on Audit Day
- 20 Providing Audit Results to Buyers
- 20 Next Steps for Using this Manual

## 21 General Questions (G)

- 21 G-1: Management Responsibility
- 23 G-2: Food Safety Plan or Risk Assessment
- 27 G-3: Documentation & Recordkeeping
- 28 G-4: Worker Education and Training
- 31 G-5: Sampling and Testing
- 33 G-6: Traceability
- 36 G-7: Recall Program
- 38 G-8: Corrective Actions and Food Safety Incidents
- 39 G-9: Self-Audits
- 40 G-10: Worker Health/Hygiene and Toilet/Handwashing Facilities
- 45 G-11: Waste Management

## 47 Field Operations and Harvesting (F)

- 47 F-1: Field History and Assessment
- 49 F-2: Agricultural Chemicals/Plant Protection Products
- 51 F-3: Water System Description
- 52 F-4: Water System Risk Assessment
- 54 F-5: Water Management Plan
- 56 F-6: Animal Control
- 58 F-7: Soil Amendments
- 60 F-8: Vehicles, Equipment, Tools and Utensils
- 62 F-9: Pre-harvest Assessment
- 63 F-10: Water/Ice Used in the Harvesting and Post-harvest Operations
- 65 F-11: Containers, Bins and Packaging Materials
- 66 F-12: Field Packing and Handling
- 67 F-13: Post-harvest Handling and Storage (Field Prior to Storage or Packinghouse)
- 68 F-14: Equipment Sanitation and Maintenance

## 69 Post-Harvest Operations (P)

- 69 P-1: Produce Sourcing
- 69 P-2: Agricultural Chemicals
- 70 P-3: Facility
- 73 P-4: Pest and Animal Control
- 74 P-5: Equipment, Tools and Utensils
- 75 P-6: Maintenance and Sanitation
- 77 P-7: Post-Harvest Water/Ice
- 78 P-8: Containers, Bins and Packaging
- 79 P-9: Storage
- 81 P-10: Transportation (Packinghouse to Customer)

## 83 Logo Use

- 84 Appendix A: Important Links
- 85 Appendix B: Request for Audit Services Form (SC-287)
- 86 Appendix C: Specialty Crops Inspection Division Vendor Form (SC-430)
- 87 Appendix D: Audit Preparation Checklist (North and South Carolina)

# Introduction

As most produce farmers and handlers are aware, food safety is a major concern in the market for fruits and vegetables. From nationwide foodborne illness outbreaks associated with spinach in 2006 and romaine lettuce in 2018, to the 15 illnesses and one death caused by local strawberries from an Oregon roadside stand in 2011, thousands of consumers have suffered over the last 15 years due to produce contaminated with pathogens. No specialty crop farmer wants their customers to be among these statistics. Protecting your customers requires a commitment to understanding food safety risks in your operation, and to implementing effective practices to control those risks.

Foodborne illness outbreaks also disrupt markets at the local, regional and national levels. In an attempt to address this threat, more and more produce buyers are requiring proof that their suppliers are implementing effective food safety programs all the way to the farm level. As this trend has accelerated, small-farm operators have consistently identified the food safety certification process as a roadblock to getting their fresh produce into food service, institutional, and retail markets. Since 2011, the Carolina Farm Stewardship Association (CFSA) has worked with farmers, researchers, state and federal government agencies, technology companies, other sustainable agriculture organizations, and produce buyers to evaluate, quantify, and help overcome the barriers that small-farm operators face in attaining food safety certification.

Through these efforts, CFSA has documented real-world examples of how small, diversified farms can cost-effectively manage food safety risks, and meet Good Agricultural Practices (GAP) standards. We have seen that it is possible for these types of farms to actually pass a GAP audit, without breaking the bank and without changing sustainable and organic crop production practices. Since 2011 CFSA has assisted over 200 small and mid-sized farms across the Carolinas in implementing GAPs, and has helped food hubs that work with those farms establish their food safety programs.

The intent of this manual is to share tips and strategies learned from these farms' experiences that other small, diversified produce operations can employ to meet wholesale buyers' GAP certification requirements. Committing to a culture of food safety in your operation is an essential step toward tapping the market opportunities for sustainably-grown fruits and vegetables in today's changing local food production and distribution systems. Through this manual, CFSA aims to help you build that culture.

## The Market Value of Gap Certification

In many cases, implementing a food safety program may meet a buyer's requirements without the need for a GAP audit. Some buyers that are particularly committed to purchasing from local farms have special programs in place for small to midsized farms with under \$1 million/year in annual produce sales. The foundation of success with those buyers, and in selling in supply chains that require GAP certification, is having a food safety program that accurately assesses food safety risks in your operation, implements reasonable steps to reduce those risks, and provides ongoing monitoring to ensure the system is working. It typically takes 2-3 months to develop and implement a food safety program, and if done well, it will actually improve the efficiency of your produce operation.

## Choosing an Audit Standard

Expanding your wholesale produce markets will at some point require you to obtain GAP certification. There are several different standards, or 'brands', of GAP certification, and each one has its own 'owner' and one or more Certification Bodies (CBs) approved to conduct audits under the owner's standard. The most common GAP standards are very similar, with roughly 90 percent of their requirements in common. However, because there are differences, it is essential to know which standard(s) your buyers or potential buyers require, and the rules and protocols used by the CBs that audit under that standard, so you don't waste time and money preparing for the wrong certification.

### What to do When a Customer Says You Need a 'GFSI' Audit

It is common for a buyer to state that it requires an audit standard that is benchmarked to the Global Food Safety Initiative (GFSI). But because your buyer representative may not necessarily be a food safety expert, they may not have a deep understanding of what GFSI actually means. In fact, most GFSI-benchmarked standards are related to processed foods, not the production and handling of fresh fruits and vegetables, and are not appropriate to farm settings or mom-and-pop operations. Moreover, some CBs are not recognized by GFSI, even if they are auditing to a standard that is GFSI-benchmarked.

For example, because GFSI does not accept government agencies as CBs, the US Dept. of Agriculture's Harmonized GAP (HGAP) audit cannot be GFSI benchmarked, even though USDA is auditing to the same HGAP standard that many non-governmental CBs use for fresh produce. If a buyer states to you that they want a "GFSI audit," you should have a detailed conversation to understand more precisely what food safety assurances that buyer is looking for; if you can help them understand that a farmer-friendly non-GFSI-benchmarked standard like USDA HGAP strongly promotes food safety, they are likely to accept such an alternative standard. To learn more about GFSI recognized certification programs, visit <https://www.mygfsi.com/certification/recognised-certification-programmes.html>.

## History of Harmonized GAP

The USDA Harmonized GAP (HGAP) Audit Program was developed as part of the Produce GAP Harmonization Initiative, an industry-driven effort to develop a uniform food safety audit standard for pre-harvest and post-harvest activities for fresh produce operations. Launched in 2009, the initiative is led by the United Fresh Produce Association (UF) and is a collaboration of growers, shippers, produce buyers, audit organizations, and government agencies, including USDA. Prior to UF's launch of the Produce GAP Harmonization Initiative, third-party produce audit providers commonly applied divergent standards in assessing fresh produce safety, leading to confusion in the marketplace. Uncertain which audit scheme was 'best', different produce buyers required different audits, meaning that producers selling to multiple buyers often had to undergo a different audit for each, leading to widespread audit fatigue and substantial audit costs for farms. The goal of the UF harmonized standard is "one audit by any credible third party, acceptable to all buyers."

The USDA Harmonized GAP audit is applicable to all fresh produce commodities, all sizes of on-farm operations, and all regions in the United States, and it is becoming widely accepted by buyers. Undergoing the audit is voluntary.

## **Food Safety Modernization Act (FSMA) vs. Good Agricultural Practices (GAP)**

The Food Safety Modernization Act (FSMA) was signed into law on January 4, 2011. FSMA covers a huge range of foods, including processed foods for humans, animal feed, and fresh produce. The law requires the US Food and Drug Administration (FDA) to enforce science-based minimum standards for the growing, harvesting, packing and holding of fruits and vegetables grown for human consumption. FDA published its final FSMA Produce Safety Rule (PSR) in 2015, and government inspections of farms under the PSR began in 2019.

Being GAP certified is not the same as being FSMA compliant. The fundamental difference between the PSR and GAP is that compliance with the PSR is legally required for any covered farm, and GAP certification is a market access program to which farms voluntarily submit to in order to sell to buyers that require a GAP audit. Table 1 below illustrates what this distinction means for individual farms.

Within the produce marketing industry, the PSR is considered the legal minimum level of food safety. Since only a small percentage of farms are likely to be inspected under FSMA in any one year, and some farms will never be inspected at all, buyers know they cannot rely on PSR inspections as an annual assurance of food safety compliance. Consequently, buyer-imposed programs for food safety such as GAP continue. Regardless of whether your operation is covered by and in compliance with the PSR, or not covered or exempt from the rule, any GAP standard will require additional policies and procedures that are not part of FSMA. Many GAP audit programs have aligned their standards to the PSR to give farmers and buyers alike assurance that producers that pass a GAP audit are also in conformance with relevant technical components of the PSR.

**TABLE 1: Key Differences Between FSMA Produce Safety Rule and GAPs**

Produce Safety Rule	Good Agricultural Practices
<b>Inspection Frequency:</b> Only a small number of farms will receive a PSR inspection in any given year.	<b>Inspection Frequency:</b> If a farm wants to continue selling produce to buyers that require GAP certification, it must undergo a GAP audit every year.
<b>Farms and Crops Covered:</b> Farms with very low produce sales (under approximately \$27,000 in 2019), or that only grow produce that is rarely consumed raw are not covered by FSMA.	<b>Farms and Crops Covered:</b> A buyer is free to require GAP certification for any size of farm, and for any crop regardless of whether it has to be cooked before being consumed.
<b>Food Processing:</b> Produce grown for food processing that will kill pathogens (i.e. canning, jams and jellies, dehydration, etc.) is not covered by FSMA.	<b>Food Processing:</b> Buyers are free to require GAP certification for produce grown for food processing even if the processing activity will kill any pathogens.
<b>Local Food Markets:</b> A farm with total food sales less than the FSMA exemption threshold (\$550,000 in 2019) that sells the majority of its foods directly to consumers; or to retail outlets in the same state as or within 250 miles of the farm, is exempt from most PSR requirements.	<b>Local Food Markets:</b> Buyers are free to require GAP certification for any size of farm, regardless of whether the farm sells most of its food in local markets.
<b>Inspection Agency:</b> In most states, FDA has entered agreements with state departments of agriculture and other state agencies authorizing those agencies to conduct PSR inspections on FDA's behalf.	<b>Inspection Agency:</b> GAP standard owners license Certification Bodies (CBs) to conduct audits under the GAP standard. For the USDA HGAP program, AMS authorizes state departments of agriculture to conduct HGAP audits.

### **Alignment of the USDA Harmonized GAP Program with FSMA**

The USDA aligned its voluntary Harmonized GAP Audit Program with the FDA's Food Safety Modernization Act's Produce Safety Rule in 2018 in an effort to streamline regulatory and market food safety requirements. The goals of the alignment were to advance preventive food safety practices required under FSMA, and facilitate market access for the specialty crops industry by assuring buyers that all relevant technical components and metrics in the Produce Rule are addressed in the HGAP audit.

The USDA FSMA-Aligned Harmonized GAP (USDA HGAP) audit **is not a substitute for FDA or state regulatory inspections**. The USDA HGAP audit remains a voluntary, user-fee funded audit program to facilitate market access.

## USDA Harmonized GAP Program Acceptance Criteria

To align the USDA Harmonized GAP Standard with the Produce Safety Rule requirements, USDA has updated its HGAP checklist to reflect **81 mandatory** items: For each of these 81 items, the auditor must either find that you are in compliance with the requirement, or that it is not applicable to your operation. **If the auditor deems any one of these items non-compliant, you will not meet the acceptance criteria to pass the audit even if you are in compliance with every other applicable requirement of the standard.**

Failing an audit does not mean you are subject to a government enforcement action for violating FSMA, but it does mean you will need to take corrective actions and possibly undergo a follow-up audit in order to achieve certification. Until you address any mandatory corrective actions and resolve any imminent food safety risks that are identified in the course of the audit, you will not receive a GAP certificate and so will not gain access to buyers that require one.

You are responsible for paying audit fees regardless of whether you meet the acceptance criteria on the first or any subsequent audit attempts. So making every effort to comply with all mandatory checklist items applicable to your operation from the start makes sense and can save you money.

USDA intends that passing the USDA Harmonized GAP audit will give buyers confidence that your operation is compliant with the PSR. Moreover, passing the audit can give you confidence that you are implementing industry-standard best practices for produce safety.

## How to Use This Manual

Understanding the nuts and bolts of the GAP audit process is the foundation for a successful audit. The critical idea is to prioritize the food safety concerns relevant to your farm based on risks and resources available to address those risks. Good preparation, organization, recordkeeping, and understanding of audit scoring allow you to maximize your chances of passing, and minimize your time and expense in implementing food safety practices and recordkeeping protocols.

This manual is intended to assist your produce operation in the identification of risks from potential sources of biological, chemical and physical hazards in growing, harvesting, packing and transporting fresh produce, and to provide a tool to guide you in successfully navigating a USDA HGAP Audit.

**The manual was developed based on challenge areas small and medium-scale produce operations have consistently encountered in pursuing GAP certification.** It provides details and explanations related to those challenges and the requirements of the standard that may be more difficult for a smaller operation to meet. While these examples may or may not align exactly with your operation, they illustrate successful approaches to addressing food safety challenges on your farm, and model how to think about these issues in preparation for a USDA HGAP audit.

During an audit, you should be prepared to advocate to the auditor about how your operation's practices and strategies mitigate food safety risks. Your food safety

program will be unique to your farm, and conversations between you and the auditor are critical opportunities to demonstrate to the auditor that you understand your farm's specific risks and have an effective program in place to manage those risks.

This manual tracks the USDA HGAP [Checklist](#), examining specific risks you should consider when conducting risk assessments and creating a comprehensive food safety plan. You can use the USDA HGAP Checklist and this manual side-by-side in drafting your Standard Operating Procedures (SOPs) or in reviewing a food safety plan template.

As a companion to this manual, the Carolina Farm Stewardship Association makes available templates for conducting key risk assessments and for keeping certain critical records. Where these templates are referenced in this manual, they are indicated in the color [blue](#) with a hyperlink to template itself. The templates also are available on the Carolina Farm Stewardship Association [website](#).

## ***Steps to GAP Success***



# Harmonized GAP Overview

The success of your audit preparation will depend on your familiarity with the requirements of the HGAP standard, your identification of the food safety risks on your farm, and the policies and procedures you implement as mitigation strategies. All operations are unique, and the HGAP standard considers this in its design and requirements.

## Leadership for Your Food Safety Program

Accountability is important to any food safety management system. The first requirement of a food safety program is to designate a Food Safety Manager who is responsible for the food safety program and ensuring that all policies and procedures are followed. There can be more than one Food Safety Manager, and you may also choose to delegate some food safety responsibilities to other staff members, who therefore become 'food safety responsible' persons. All food safety responsible person(s) must be present during the audit.

Even when you and your family are the main or only source of labor in your operation, if you are the one(s) making the decisions relevant to running the farm or business, you are also 'management.' As part of its food safety responsibility, management must provide adequate resources and ensure that all workers, whether employees or family members, are properly trained and that all food safety policies and procedures are followed.

## Your Food Safety Manual

A food safety manual is a requirement for all GAP certifications. You must have a food safety manual complete prior to requesting your audit. Necessary components of your food safety manual are:

1. Risk Assessments
2. A food safety plan with written Standard Operating Procedures (SOPs)
3. Recordkeeping

The documents above must cover all aspects of your growing, harvesting, and handling processes, and must show that you have identified relevant potential sources of risks, determined the likelihood of the harm related to each risk, and have addressed those risks through either preventive or corrective actions that are appropriate to likelihood of harm.

The auditor may ask you to submit a copy of your food safety manual along with your request to schedule an audit. Being organized, and ensuring that your food safety plan and other documents included in your manual are easy to locate and read, can make passing a GAP audit an efficient and gratifying experience.

## Understanding the Harmonized GAP Audit Scopes

Before you schedule your audit, you will need to decide which scopes of your operation you want audited. The USDA HGAP audit consists of four scopes, included on a single checklist. The scopes are:

1. General Questions (Required for every audit)
2. Field Operations and Harvesting (Applicable to all growing operations)
3. Post-Harvest Operations (Applicable to all post-harvest activities)
4. Logo Use (Applicable to operations who intend to use the USDA GAP & GHP logo on packaging or promotional materials).

### Tip

#### Confirm buyer requirements before requesting any audit.

It is important for you to check with your buyer to confirm that the buyer will accept the USDA HGAP Standard for the crops and volume of product you want to sell. The buyer may specify certain scopes that you must undergo as part of its food safety requirements.

## Timing the Audit

To avoid the potential of undergoing multiple audits in a given year, the timing of your audit is important. During an audit, the auditor will require that you demonstrate all activities covered under your scope. A HGAP audit is conducted to observe your policies and procedures, not the crop(s) itself. Choose a date when you can demonstrate the greatest variety of relevant harvest techniques and post-harvest handling activities.

If you are seeking to certify only one crop with a short production season, the timing of your audit will depend on whether you have already established a relationship with a buyer, or are preparing to scale up

production to supply larger markets next season. If you are seeking GAP certification so you can obtain new customers for next season, it may be best to undergo a GAP audit at the end of your current season so that you are fully prepared and certified at the beginning of the following season for that short-season crop. Your off-season months are an optimal time to market your newly-GAP certified operation to new buyers. Being certified when the new season starts means you will not suffer delays in the certification process, delays that might otherwise lose you a prospective buyer to other growers that already have their GAP certificate.

If you currently have a buyer and are not yet certified, you will want to schedule your audit just prior to the start of harvest so you can maximize the window for selling that crop. During an audit, the product used to demonstrate harvest techniques does not have to be at its 100% ripened stage at the time of your audit. For example, you may harvest green strawberries during an audit to ensure that you receive verification of your audit right as the season begins.

If you are certifying one crop with a long production season, you have greater flexibility. Try to time your audit so that you can get the most out of the 12 months the certificate will last you.

If you grow a variety of crops year round and want to certify many or all of them, it is optimal to schedule your audit at a time during the year when you are able to demonstrate the greatest variety of harvest techniques. This may or may not be the same time period as when you are harvesting the largest variety of crops. Your audit certificate will list specific crops, and the auditor will observe all of the processes

associated with production of those crops that are relevant under your audit scope(s). The auditor must see you demonstrate harvest techniques, including any post-harvest activities that fall within the scope of your audit, as applicable. The auditor will not necessarily observe every single step of every single crop, but they will want to observe processes common to multiple crops wherever possible. Care in scheduling will ensure that the auditor can observe the maximum number of harvesting techniques and include the maximum number of crops in your audit.

If there is a specific crop that a buyer has asked to be included on the GAP certificate that was not observed during the audit, ask the auditor if it can be included in the audit as a non-observed crop. Be sure to point out that similar harvest and post-harvest handling techniques are used as with a crop that the auditor did observe.

## Tip

### You don't need separate audits for every crop.

Grouping similar crops together that you harvest and handle the same way (“root crops” for carrots, parsnips and celery root; “leafy greens” for chard, kale and collards; “herbs” for basil, cilantro, and tarragon; etc.) is an acceptable practice, and will save you the cost of obtaining separate audits for individual crops. Keep in mind that, if a buyer is requesting an audit to cover a particular crop, you may want that crop specifically listed on the audit certificate. Confirm your buyer's expectations in advance of your audit.

**Example:** If you grow tomatoes and summer and winter squash, you can schedule your audit for late summer when the auditor can observe summer squash harvesting and include winter squash as an ‘unobserved’ crop. Both of these crops grow in direct contact with the ground and similar harvest techniques are used. You may also want to consider grouping your crops, especially if you are very diversified. In this example, you may ask the auditor to include ‘squash’ on your certificate, which will include summer and winter squash varieties.

Occasionally, it may be necessary for the auditor to return to the farm to conduct an inspection on additional products if the auditor is not satisfied that the harvesting technique or post-harvest handling was fully verified during the original audit. The auditor may also determine that a second, unannounced

verification inspection will be required, depending on the results and observations in the initial audit. Verification audits are not standardized, but determined on a case-by-case basis. Any follow-up inspection will result in additional audit costs, including travel time and expenses. If the auditor is not able to include an unobserved commodity, discuss a follow-up visit during the closing meeting and agree on a window of time when the auditor may return to observe that crop process.

**Example:** If you are undergoing the Post-Harvest Operations scope for tomatoes and fall root vegetables, you will need to be able to demonstrate any washing, packing and transportation of the products to be covered under the audit. If the audit happens during summer tomato production and washing is not part of your post-harvest process for tomatoes, the auditor will not evaluate checklist item P-7.4 (Operation's Food Safety Plan includes produce washing process, if used). Therefore, for fall root crops that are washed post-harvest, you may have to undergo an unannounced audit during the fall to complete the Post-Harvest Operations scope.

**NOTE:** It doesn't hurt to let your chosen auditing agency know that you are only able to undergo a single audit per year, if possible; the agency may be willing to help you figure out the optimal time for them to schedule their visit. During the audit, help the auditor see why only one audit is necessary and be an advocate for your farm. Show as many crop management activities as you can during the audit and help the auditor understand your processes.

## Listing Products on the GAP Certificate and Audit Report

Once USDA has approved your audit, you will receive an audit certificate as well as a complete audit report. Your audit report will detail all the crops covered in your audit. However, there is only space on the certificate to list up to 20 crops; if a buyer is requesting more than 20 of your crops be listed on the certificate, discuss the situation with your auditing agency when scheduling the audit. Although USDA can edit the certificate to add more, obtaining the edited certificate may take more time, leading to potential delays in your ability to market your audited crops to buyers. It is recommended that you group crops on your certificate without specifying varieties (lacinato kale, dinosaur kale, etc.), growing methods (organic, conventional, hydroponic, etc.), or any post-harvest handling activities (drying, etc.), unless your buyer has specifically requested that level of detail on the certificate. All commodity types harvested during the day of the audit may be listed on your certificate.

## The Audit Standard

The USDA Produce GAPs Harmonized Food Safety Standard should be used as a guide as you work through this manual.

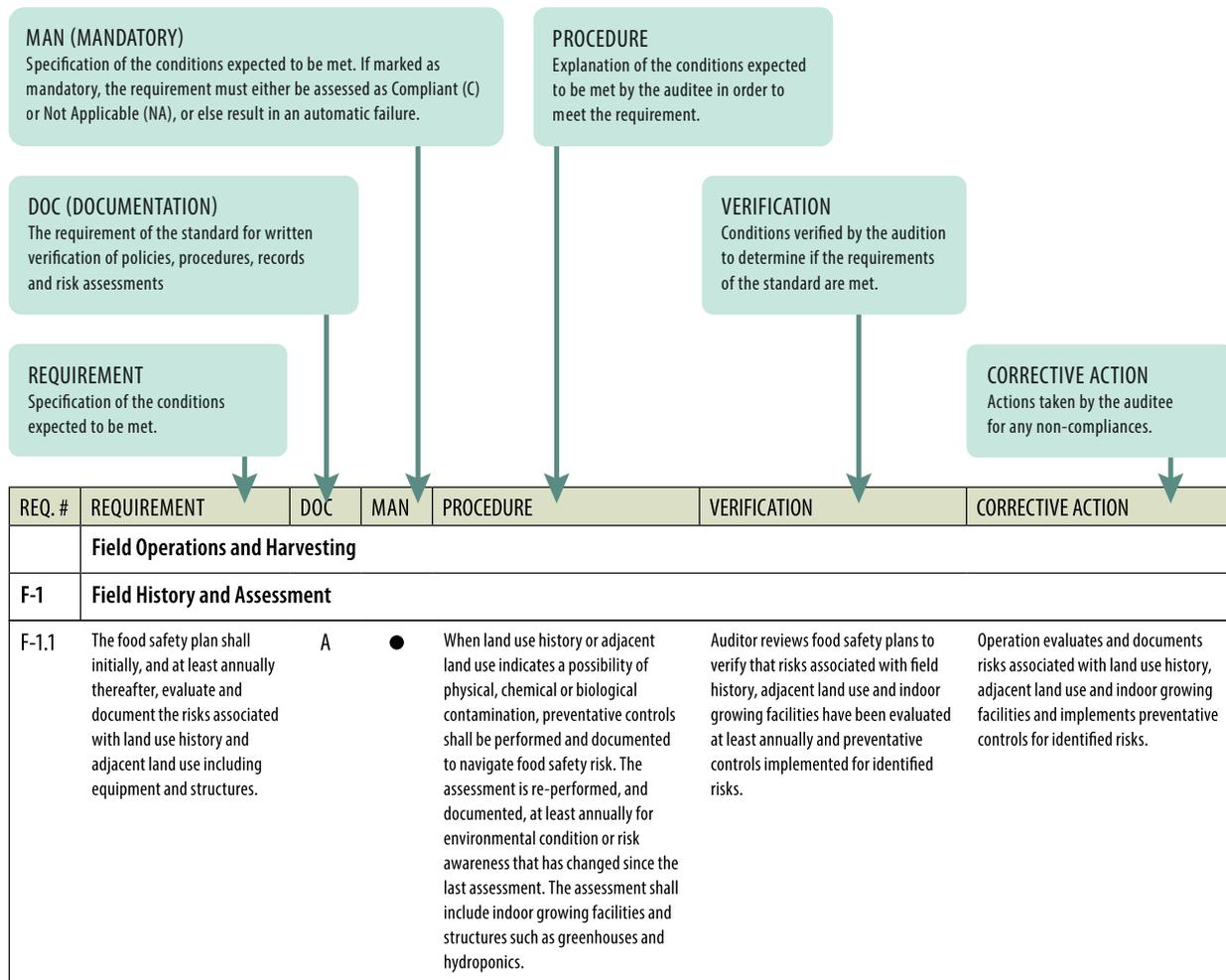


Figure 1: Sample from USDA HGAP Standard. The standard describes not only the food safety requirement, but any documentation that is required to meet the standard, whether the requirement is ‘mandatory’ (meaning a noncompliance will result in automatic failure of the audit), general procedures the auditor will follow to verify compliance, and the fundamental actions the operation would need to undertake to correct a noncompliance.

## Audit Scoring

As part of its FSMA-alignment process, the USDA has updated the acceptance criteria necessary to achieve certification, resulting in the 81 of ‘mandatory’ items as discussed above. As you go through an audit, the auditor will mark each audit checklist item in the scopes applicable to your operation as Compliant (C), Corrective Action Needed (CAN), Immediate Action Required (IAR) or Not Applicable (NA). The auditor will document all findings associated with questions answered CAN, IAR, or NA in the auditor comment section of the checklist, and may include at their discretion any observations made during the audit associated with any checklist items, even those marked C.

**TABLE 2: Excerpt from Produce GAPs Harmonized Food Safety Standard USDA Checklist**

Name of Auditee:								
Date of Audit:								
Req. #	Requirement	DOC	MAN	C	CAN	IAR	NA	Auditor Comments
<b>General Questions</b>								
<b>G-1</b>	<b>Management Responsibility</b>							
G-1.1	A food safety policy shall be in place.	WP	•					
G-1.2	Management has designated individual(s) with roles, responsibilities, and resources for food safety functions.	WP	•					

The USDA HGAP audit checklist includes a Corrective Actions Report document (CAR), and the auditor will fill in this form for all checklist items marked as CAN or IAR. The CAR should include all information relevant to the specific requirement of the unmet standard, the documents required to achieve compliance (if any), whether the requirement is mandatory, and the auditor’s comments. The auditor will review any CARs during the closing meeting of the audit and discuss any actions required to achieve compliance, including a timeframe for implementing those corrective actions or providing needed records. You have until the end of the next business day after the completion of the onsite audit to submit documentation of corrective actions, as well as any required records that were not available onsite during the audit, and have those records included in the audit. These additional materials may be submitted via email, fax, or in person.

**IMPORTANT NOTE:** It may be possible to address noncompliances that the auditor initially identifies in real time during the audit. In most circumstances an auditor would not consider such a situation a ‘corrective action’, since being able to respond appropriately to a food safety issue during an audit demonstrates that your food safety program is working. The auditor may describe the situation and your response in the audit report.

The USDA HGAP acceptance criteria are described below, and failing any of them will result in an **AUTOMATIC FAILURE**:

**Tip****Always maintain food safety records according to the frequency specified in your Standard Operating Procedures (SOPs).**

The USDA considers the falsification of records as an “IAR”, resulting in an automatic fail of the audit. Attempting to ‘catch up’ records that were supposed to have been kept at the time crop production, harvest or handling activities took place, or at other designated frequencies as part of your food safety program, could be considered falsification of records. Keep all records up to date at all times.

1. There must no be any questions assessed as an “IAR” (Immediate Action Required).
2. There must be no falsified records.
3. Any question with a • in the MAN column must be assessed as “Compliant” or “NA”.
4. The operation must have performed all applicable risk assessments, designated with an “A” in the DOC column.
5. An operation that has undergone a previous Produce GAPs Harmonized Food Safety Audit must have addressed all CANs or IARs from that previous audit, following the established corrective action procedure in its food safety plan.
6. In any of the major scopes assessed (G, General Questions; F, Field Operations and Harvesting, and P, Post-Harvest Operations), at least 80% of the questions not answered as “NA” must be marked compliant.

**Documentation Requirements**

The documentation component of a food safety management program — writing policies and procedures, and creating and maintaining recordkeeping systems to verify that your farm is following your food safety plan — can feel like an overwhelming process for farmers, who are typically outside, focused on managing the health and productivity of their crops and soils. Yet time and again throughout the produce industry, farmers report that once they implement a food safety program, their operations become more efficient, and their ability to identify and mitigate risks and correct problems when they occur is dramatically improved.

The USDA HGAP Checklist describes the specific documentation requirements in the format as shown in Table 2: Under the ‘DOC’ column, the checklist classifies any documents needed for that requirement as Written Procedures (WP), Records (R) or Risk Assessments (A).

**Written Procedure (WP)**

A written procedure is a document that describes the process or desired outcome of a food safety plan activity. One type of written procedure is a Standard Operating Procedure (SOP), which describes step-by-step actions that must be followed to assure consistent behavior by everyone covered by the SOP. Written procedures must describe the activities of your operation and the policies and procedures in place to mitigate potential food safety risks. The written SOP will specify the records you will use to fully comply with the procedure.

**Record (R)**

A record provides verification that the results of your food safety program were achieved or provide evidence of activities performed. Examples of records include:

- Water test results
- Checklists, logs, and risk assessments
- Service records
- Invoices/traceability records
- Training certificates

Documentation can take many forms, including written logs, pictures of daily whiteboard notes, digitally recorded cooler temperature logs, invoices, etc.

**Risk Assessment (A)**

A risk assessment provides verification that efforts have been made to evaluate potential food safety hazards within your operation.

**Tip****Rank your risks.**

When conducting a risk assessment, you must document the potential physical, chemical or biological hazards on your farm, as well as the likelihood each hazard will impact the safety of fruits and vegetables.

**Likelihoods may be expressed as:**

**Low**  
**Medium**  
**High**

**How to Conduct a Risk Assessment**

Risk assessments are the most important elements of a food safety program and involve reviewing all aspects of the farm and its operational practices.

**The most common pathogen contamination hazards come from four sources: water, workers, waste, and wildlife.**

Risk assessments are conducted within an operation to identify potential food safety hazards, and especially those related to these four contamination routes. You develop your food safety program based on the risk of hazards specific to your farm and your food production and handling operations. Any potential hazards identified must be addressed through preventive or corrective action to minimize the risk of occurrence and cross-contamination. For audit purposes, the risk assessments you need to conduct are dependent on the scope of your audit and your operations.

**When to Conduct a Risk Assessment**

For each potential hazard relevant to your farm, you should conduct a risk assessment on the following frequencies:

- On an annual basis, at minimum.
- When major changes to processes or procedures occur. For example, when a new crop is introduced on the farm, or new post-harvest equipment is installed.
- Before harvesting a crop ([Pre-Harvest Risk Assessment](#)).
- When an incident occurs causing injury or harm on the farm.

**TABLE 3: Risk Assessments required for the USDA Harmonized GAP Audit Standard**

Scope	Required Risk Assessment(s)
General Questions	None
Field Operations and Harvesting	<ul style="list-style-type: none"> <li>• Land Use History and Adjacent Land Use</li> <li>• Water System Risk Assessment</li> <li>• Animal Control Risk Assessment</li> <li>• Soil Amendment Risk Assessment</li> <li>• Pre-Harvest Risk Assessment</li> </ul>
Post-Harvest Operations	<ul style="list-style-type: none"> <li>• Allergen Risk Assessment</li> <li>• Produce Washing Risk Assessment</li> </ul>
Logo Use	None

In the case of food production and public health, risk may be defined as the likelihood of a hazard contaminating a food item. Hazards are classified as biological, chemical or physical contaminants, unintentionally added in or on food, which may have adverse health effects. Specific examples of these hazards are described in Table 4.

**TABLE 4: Examples of Sources of Food Hazards by Category**

Biological	Chemical	Physical
Humans	Pesticide	Glass
Wildlife	Antimicrobial Residue	Metal
Rodents	Oil/Fuel	Rocks
Microorganisms	Cleaning Chemicals	Wood

It can be difficult to conceptualize some food safety hazards on a farm, simply because any particular condition or activity has been viewed as ‘normal’, or has been in place for many years without causing any known problems. Hazards that operations frequently overlook or underestimate include:

- **Water:** Water can be a major potential source of contamination. To reduce the risk of potential cross contamination from a water source, the ideal practice is to not let water (other than rain) come into contact with the edible portion of a crop unless it is necessary for the production, harvest and handling of that crop in your operation. While preventing water from touching the edible portion of the crop may not be possible with some situations and crops, there are best practices you can put in place to reduce risks. If water is used post-harvest for washing or hydro-cooling, the best practice is to use a sanitizer in the water to prevent cross-contamination.

- **Damp Spaces:** Produce is sometimes stored in damp places, which can be optimal settings for pathogens to grow and survive. For example, the pathogen *Listeria monocytogenes* is very hardy at normal refrigeration temperatures, making moist conditions in cold storage facilities an ideal environment for its growth.
- **Chemicals:** Pesticides, herbicides and sanitizers are commonly used on the farm and can cause injuries to humans if they are not applied according to their label instructions, or for unapproved uses.
- **Vehicles and Equipment:** Oil and non-food grade lubricants can leak out of vehicles and equipment and become a source for cross-contamination, especially when used within the production areas where produce is being harvested.
- **Broken Glass:** Glass can get into packed produce from a broken light bulb above a packing line or storage area. Neon bulbs may be covered with a protective plastic sheath to avoid this risk.

These are just some of the commonly encountered examples of potential hazards that your risk assessment may need to consider. Each operation is different and therefore has different types and levels of risk to assess.

**If a risk is not identified within an operation, there is no need to implement a policy or procedure to mitigate that risk as part of your food safety program.** Any high risks identified during a risk assessment should be addressed immediately. Typically, there are minor changes that will need to be made as part of your preventive or corrective actions to reduce the likelihood or severity of an identified risk. Your goal is to reduce the risk to an acceptable level given its likelihood of impacting public health.

## Audit Frequency and Termination

A USDA HGAP certification expires one year from the date of the audit, so to maintain GAP-certified status you must undergo a GAP audit **PRIOR** to your current audit's expiration date. It is a good idea to request your annual audit at least six weeks in advance and plan your audit early in your preferred crop season. That way, in the event you do not meet all acceptance criteria the first time you undergo an audit, you may have time to implement and document corrective actions or request a follow-up audit and still market your crops to buyers requiring an audit before your season is over.

### Tip

#### Coordinate audit schedules with neighboring farms.

An audit typically takes 2 to 5 hours on the farm, not including travel time for the auditor. It is possible that a farm within your immediate area may also be planning an audit. When planning your audit, try to coordinate with a nearby farm and request that the auditor split the travel expenses between both operations. It will only be possible for an auditor to conduct two audits within a given day.

The USDA maintains the right to conduct an unannounced audit at any time to verify an operation is consistently implementing its food safety plan. Also, a follow-up audit to address a CAN finding on an initial audit may happen with little advance notice. Therefore it is important to always maintain “audit ready” status within your operation.

In the event that you are notified during an audit that you will not pass, you have the choice to continue the audit or to terminate it. If you terminate the audit, you might not be provided a full audit report, but you will receive a report from USDA covering the auditor's observations and findings while they were on site. You will be billed

for the auditor's preparation and travel time, as well as the time the auditor spent at your operation. Receiving a completed final audit report with all findings is a beneficial tool in preparing for a re-audit, so it may make sense to continue the audit even if you learn you will not pass that day. The auditor must continue the audit if you request them to do so, unless the problem is an imminent threat to public health.

## Tip

### Take advantage of GAP audit cost shares.

Your state department of agriculture or local farmer organizations may have cost share funds available to help offset GAP certification fees, especially for operations that are going through certification for the first time. Some states also have cost shares available for water testing costs, cold storage facilities, and other uses relevant to produce safety. The way these programs typically work is that, after you have paid your invoice, you submit a request for cost share funds to the agency along with proof of payment and a copy of your GAP certificate.

For North and South Carolina, CFSA maintains a list of available cost share programs on our [website](#).

## Audit Costs

The federal rate for audit services in federal fiscal year 2019 is \$108 per hour, per auditor, including billable hours for audit preparation, travel time to and from the audit site, and preparing the final audit report for submittal to the USDA, which conducts the final review of the audit results and approves the audit for certification. All applicants undergoing a USDA GAP audit performed by a state Department of Agriculture under agreement with USDA will receive two bills for the audit service, one from the state and one from USDA.

**NOTE:** USDA reviews its fees on an annual basis, which may result in an increase in hourly audit rates in future years. Check the AMS website to confirm the current hourly audit rate.

## Scheduling an Audit

To obtain audit services, you will need to set up a vendor account directly with the USDA, using the Specialty Crops Inspection Division Vendor Form (SC-430). This is a one-time process: Once your operation is in the USDA's vendor system you do not need to take this step for subsequent audit requests. An example of how to complete the form is included in Appendix C of this manual. Failure to set up an account or to pay either the state or USDA bill may result in cancellation of your GAP certification. The vendor form must be submitted directly to SCI Division Audit Services Branch (ASB) using one of the following methods:

1. Email to: [SCReimbursement@ams.usda.gov](mailto:SCReimbursement@ams.usda.gov)
2. Fax to: 866-230-9168
3. Mail to: USDA, AMS, SCI, ASB  
1400 Independence Avenue, SW  
Stop 0247, Room 0707-S  
Washington, DC 20250-0247

Request your audit date in a timely manner as discussed above, and with plenty of time before your current audit (if any) expires. To schedule an audit, complete the Request for Audit Services (Form SC-237A) and a signed Agreement for Participation in the GAP/GHP Audit Verification Program Form (Form SC651) and

scan or email the completed forms to the appropriate contact. Quick Links to the forms are located in Appendix A. An example of a completed Request for Audit Services (Form SC-237A) is located in Appendix B.

Additionally, you may be asked to submit your food safety manual directly to the auditor. It is not mandatory that you submit your manual prior to the audit; however, it may reduce the on-site audit time if the auditor is able to review your policies ahead of time. To contact your state Department of Agriculture directly, you can find local contact information organized by state at <https://www.ams.usda.gov/services/how-request-gap-and-ghp-audit>.

## What to Expect on Audit Day

The auditor will arrive on your farm at a predetermined time on the date of the audit. The audit will include the following components:

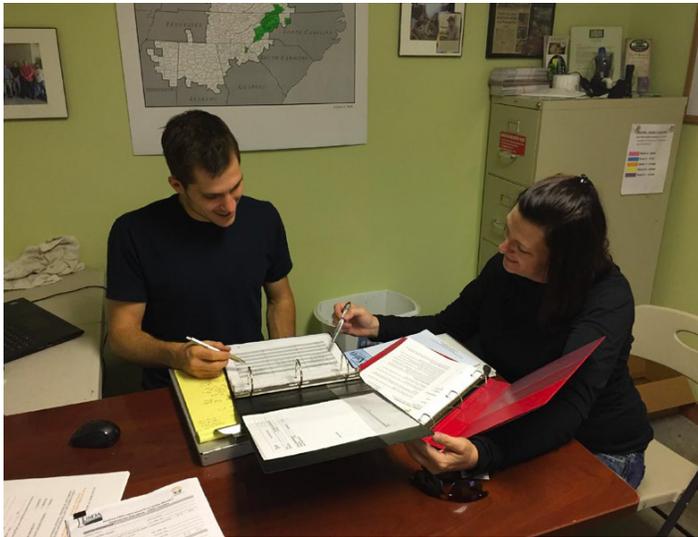


Photo 1: Desk audit review of food safety manual.

### 1. The Opening Meeting

- Auditor will ask you to complete and sign any necessary forms, including providing the auditor permission to be onsite conducting the audit.
- Auditor will request to see your food safety manual.
- Auditor will provide you with the opportunity to ask any questions.

### 2. Document Review

- Auditor will review your written policies and procedures and verify accompanying recordkeeping components identified within your SOPs.
- Auditor may interview workers, including family members and employees, during the desk audit.

### 3. Field and Post-harvest Handling Activity Walk-Around

- Auditor will ask you questions and make visual observations during a tour of the operation. **STAY FOCUSED...TIME IS MONEY.**

- Auditor may interview workers, including family members and employees, during the walk around.
- Consider driving the auditor around the operation if it is feasible and can save time.
- Only show the auditor the operations relevant to the scopes and processes that you are including in the audit.

### 4. Closing Meeting

- Auditor will review their findings with you, including questions that were marked “not applicable” (NA) to your operation.
- Take notes on the auditor’s findings during the closing meeting, especially any CAN or IAR findings. The auditor will not leave any documentation of non-conformances at the time of the audit because audit findings must be approved by USDA before your audit report is issued.
- Auditor will provide you with the opportunity to ask any questions.

**NOTE:** The auditor is not allowed to consult during the audit. However, they can provide clarification of what the requirements of the standard are.

## Providing Audit Results to Buyers

Upon completion of a successful audit, you will receive a copy of the completed audit report and a certificate in the mail through the US Postal Service or other courier, which may be used for verifying to buyers your successful completion of an audit. You should receive your certificate within six weeks.

Additionally, the USDA has a website, searchable by state, which buyers can use for verification, found at: <https://apps.ams.usda.gov/GAPGHP/reportG05.aspx>. In the event that you do not receive your certificate in a timely manner, a buyer may be satisfied with temporarily utilizing the online verification system until you are able to supply your certificate.

## Next Steps for Using this Manual

The sections that follow provide overviews of each section of the four HGAP audit scopes:

1. General Questions (Required for every audit)
2. Field Operations and Harvesting (Applicable to all growing operations)
3. Post-Harvest Operations (Applicable to all post-harvest activities)
4. Logo Use (Applicable to operations who intend to use the USDA GAP & GHP logo on packaging or promotional materials)

Within each scope, the manual highlights key challenge areas small and medium-scale produce operations have consistently encountered in meeting the requirements of the USDA HGAP audit. The details and examples presented within this manual may not align exactly with your operation, but they illustrate successful approaches to addressing food safety on your farm, and model how to think about these issues in preparation for a USDA HGAP audit. Remember to use the USDA HGAP [Checklist](#) as you prepare for your audit, with this manual as an accompanying resource.

This manual is meant to be used in conjunction with risk assessment and recordkeeping templates that are provided on the Carolina Farm Stewardship Association's [website](#). These templates are free for your use, and can be incorporated into your operation's food safety program.

**READER'S NOTE:** Throughout the examples that follow, HGAP checklist items — including columns for the requirement number, the requirement itself, the type of documentation applicable to the item, and whether the item is mandatory or not — will be reproduced as they appear in the USDA HGAP audit standard, with one exception. In the standard, the 'Mandatory' column is marked with a '•' symbol if the item is mandatory, and is blank if the item is not. In this manual, the column will use 'YES' in the 'Mandatory' column to indicate if the item is mandatory, and 'NO' if it is not.

# General Questions

## Questions G-1 – G-11

The General Questions section contains an overview of food safety requirements for all types of operations undergoing a USDA HGAP audit. **The General Questions scope is mandatory for all operations.**

### G-1 Management Responsibility

The individual(s) in charge of a produce operation is responsible for ensuring that the food the operation distributes to the food supply chain is not harmful to human health or unfit for human consumption. Even when you and your family are the main or only source of labor in your operation, if you are the one(s) making the decisions relevant to running the farm or business, you are also ‘management.’ As part of its food safety responsibility, management must provide adequate resources and ensure that all workers, whether employees or family members, are properly trained and that all food safety policies and procedures are followed. Management must designate an individual to be accountable for the food safety program, including a disciplinary policy for any personnel who violate established food safety policies or procedures.

Req.#	Scope	DOC	MAN
G-1.1	A food safety policy shall be in place.	WP	YES
G-1.2	Management has designated individual(s) with roles and responsibilities for food safety functions.	WP	YES

#### Food Safety Policy (G-1.1)

A food safety policy (see example below) is typically a written statement of one page or less that describes management’s commitment to food safety, including a commitment to provide adequate resources to food safety efforts. The policy should provide a general statement on how the commitment will be implemented, monitored and verified. The policy must be communicated to workers in appropriate languages.

### G-1.1 Example of a Food Safety Policy, including Management Commitment Statement

Our Policy: Carolina Farms, LLC understands that food safety and quality is ultimately our responsibility. Management is committed to providing our customers with quality food by financially supporting and guiding the development, implementation and maintenance of efforts within our farming operation to promote food safety, quality and continuous improvement for all our products. The comprehensive approach is designed to address biological, chemical and physical hazards. Carolina Farms, LLC will provide necessary staff, training and resources needed to implement, maintain and carry out all tasks associated with the food safety and quality policies and procedures.

Our Commitment: At Carolina Farms, LLC we hold ourselves accountable to fully implement our Food Safety Program and continuously seek ways to improve the food safety system in our entire produce supply chain. We are committed to transparency and sharing information on food safety issues across our business and with regulators, customers, vendors, suppliers and consumers. We hold our growers, vendors, and suppliers accountable for fully implementing our requirements of them.

A signed version of this commitment will be posted and communicated to all employees and visible to all visitors of the farm.

---

Farmer John  
Owner/Food Safety Manager

### Management Responsibility (G-1.2)

Accountability is a fundamental component of a food safety program. Management must designate individuals that are responsible for food safety activities, including if possible alternate individuals who can stand in when the primary person is absent. Individuals who have the authority to make food safety-related decisions — including any third parties responsible for any of your farm’s relevant production and food safety activities, such as labor contractors, consultants, etc. — play an important role in maintaining a food safety culture, and therefore it is important to communicate all food safety roles and responsibilities to all relevant personnel.

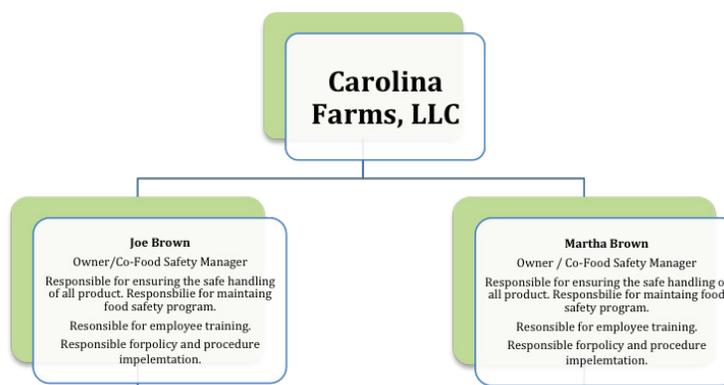


Figure 2: Sample Organizational Chart

**G-1 Pre-Audit Checklist:**

- The food safety policy must be communicated to employees during training and/or by posting the policy in a common area in appropriate languages.
- Senior management must sign the policy.
- Create an organizational chart or make a list of food safety responsible individuals (see example on previous page).
- Include an alternate individual who has responsibility and authority in the absence of the primary food safety-responsible individual.
- Include a 24-hour contact phone number for each food safety-responsible individual in case of an emergency.
- Post the list of responsible individuals, including emergency contact information, in a common area within the operation.

Req.#	Requirement	DOC	MAN
G-2.1	There shall be a written food safety plan. The plan shall cover the Operation. The Operation and products covered shall be defined.	WP	YES
G-2.2	The food safety plan shall be reviewed at least annually.	R	NO
G-2.3*	Operation has an Approved Supplier program for all incoming materials, including packaging.	R	YES

\* G-2.3 is applicable to the Post-harvest Operations Scope only.

**G-2 Food Safety Plan, including Risk Assessment****Food Safety Plan (G-2.1)**

You must have a written food safety plan that fully covers the scope of your operation that will be included in the audit. Your food safety program must be in place for a long enough period of time prior to the audit to demonstrate it is effective, typically 1 to 2 months, including records. Risk assessments are the first step in preparing your food safety plan and are a mandatory requirement if your audit covers either the Field Operations and Harvesting scope or the Post-Harvest Operations scope.

Include a general overview of your operation at the beginning of your food safety manual, describing the following:

- How long you have been in operation;
- Your growing practices (organic, conventional, biodynamic, hydroponic, etc.);
- Your primary markets;
- Whether you only conduct field harvest, or if there are post-harvest activities.

In addition, your food safety manual, which guides implementation of your food safety plan, should include the following components:

- Daily operational policies and Standard Operating Procedures (SOPs)
- Risk assessments required for your operation scope.
- Recordkeeping logs to verify the completion of activities required in the food safety plan.

Your written food safety plan must identify any physical, chemical, and biological hazards reasonably likely to occur in your produce production, harvesting and handling operations, and include control procedures such as monitoring, verification and recordkeeping. The plan must be reviewed at least annually, and you must document the review procedure and any revisions made as necessary, including the date of the review. For the Post-harvest Operations scope only, a current list of approved raw material suppliers (e.g. vendors for packaging materials, sanitizers, etc.) is required, including a procedure for accepting materials from alternate sources.

The HGAP Standard itself does not clearly specify a minimum timeframe for a program to be in place, and so is up to the auditor's discretion whether your system has been in place long enough for you to have sufficient records and processes in place to demonstrate conformance to your food safety plan. For a short season crop, it is understandable that you may not have been maintaining records for very long; however USDA generally recommends that you have your program, including records, in place for at least 21 days prior to the audit. **It can save you wasted auditor travel costs to have a discussion prior to audit day with the auditor or auditing agency regarding the length of time your food safety program has been in place.**

### **Writing a Standard Operating Procedure (SOP)**

The HGAP standard specifies when a Standard Operating Procedure (SOP) is needed, which the checklist designates with 'WP' (Written Procedure) in the Documentation column. An SOP is a procedure specific to your operation that describes the activities necessary to complete tasks in accordance with industry standards; local, state and federal laws; the requirements of your food safety plan; or your policies and procedures for running your business.

SOPs should be written in a way that if you hand someone the procedure, they will be able to do the specific task. Think of it as a "How To" document. Having SOPs in place can create:

- A more efficient, profitable operation;
- A roadmap to assist in resolving issues;
- A tool to assist in training your employees.

You will begin by determining the purpose and scope of the SOP. The purpose is the reason for the development and implementation of the SOP. The scope should contain the areas of your operations the SOP applies to.

## Farm Maps

Farm maps are very beneficial in demonstrating the flow of your operation. Additionally, the maps can be used to diagram your water system, building uses, location of pest traps, and other necessary components of your food safety program. The map may be hand drawn, based on a printed photo or map, or digital.

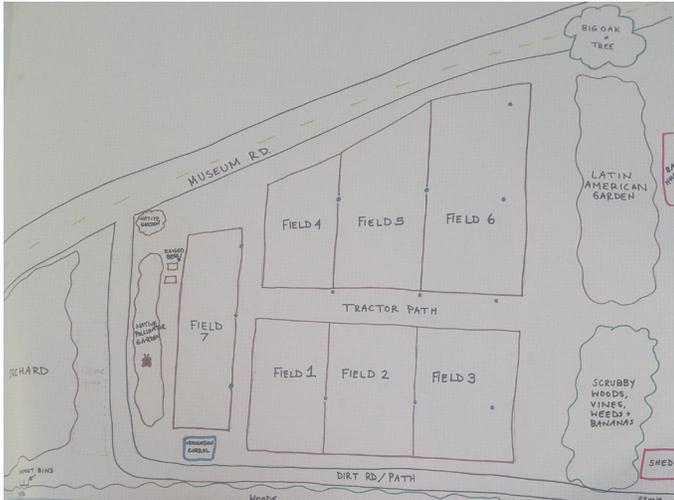


Photo 2: Your farm map can be hand drawn. Adding details of wells/water access points and irrigation systems makes the map more useful for risk assessment.

## Crop Categories

Within your food safety plan, it is useful to include a table listing the crops that you grow and the acreage or square feet of the growing area for each, to formally document to the auditor what crops you want to be included in the audit. Grouping these crops into similar categories will allow for more items to be listed on your GAP certificate compared to listing each crop and variety. Grouping crops also allows the flexibility to add additional varieties of a crop without having to undergo an additional audit. For example, listing ‘leafy greens’ means that if, during the year covered by your audit, you add kale to your mix that you weren’t growing at the time of the audit, that kale will still be covered under your audit certificate. If you have a buyer requesting an audit for a specific crop, be sure the crop is identified in the list so that it will be included on your certificate.

Crops	Acreage
Herbs	0.02
Vegetables	3.0
Root Vegetables	1.5
Sweet Potatoes	1.0
Leafy Greens	1.0
Total Acres	6.52

Figure 3: Example crop table.

**Annual Food Safety Plan Review (G-2.2)**

The food safety plan must be reviewed upon implementation and at least annually thereafter, with written verification that the review was completed. The purpose of the review is to verify that all policies and procedures are current. Any new processes must be taken into consideration and, if necessary, an SOP be written or modified to reflect those new processes and procedures.

**Approved Supplier Program (G-2.3) (Post-harvest Operations scope only)**

The HGAP standard requires that you maintain a list of the suppliers who are approved sources for post-harvest supplies that may have an impact on food safety, such as packing and packaging supplies. The list must specify the products approved for purchase from each supplier. In assembling the list, you should ensure that the suppliers follow appropriate practices to prevent or control any food safety risks that might be related to the materials you purchase from them. For instance, if you are purchasing clamshells for packaging blueberries, your approved suppliers should handle those containers in a manner that prevents them from being a source of contamination to produce, such as protecting the clamshells from contact with pests and chemicals. If you have been farming for a while, you likely have developed long-standing relationship with suppliers, and this checklist item simply requires you to compile those suppliers and the products they provide you into a single list.

**G-2 Pre-Audit Checklist:**

- The food safety plan identifies physical, chemical, and biological hazards reasonably likely to occur and hazard control procedures, including monitoring, verification and recordkeeping, for all provisions covered in the audit. (Use the [risk assessment templates](#) and the [HGAP Standard](#) to guide this process.)
- Create a documentation system for the annual management review of your food safety program. This can be as simple as creating a log including the date of the review, who conducted the review, and the components assessed.
- Have a current list of your approved post-harvest material suppliers, including packaging supplies. (Applicable only if you are undergoing the Post-harvest Operations scope.)
- Write a procedure for accepting materials from alternate sources in the event your current approved supplier is not able to provide you with the product in a timely manner. (Applicable only if you are undergoing the Post-harvest Operations scope.)

### G-3 Documentation and Recordkeeping

In most cases, documentation is the only means of demonstrating to an auditor that your food safety plan is being consistently followed. Documentation can take many forms, including written logs, pictures of daily whiteboard notes, digitally recorded cooler temperature logs, invoices, etc. Whatever their format, your records and documents must demonstrate that your SOPs and policies: (1) are being followed, and (2) address the food safety hazards identified in your food safety plan. Ensure that all documentation required under your food safety program is readily available for inspection. In the event that you do not have a record available during the audit, you will need to gather that information within a reasonable timeframe, typically within 24 hours, or as required by prevailing regulation. In such a case, you will determine with the auditor how to submit this information once you have obtained it. Documents and records may be maintained in hard copy on-site or at an off-site location, or electronically. Documentation must be retained for a minimum period of two years, or as required by prevailing regulation.

Req.#	Requirement	DOC	MAN
G-3.1	Documentation shall be kept that demonstrates the food safety plan is being followed.	R	YES
G-3.2	Documentation shall be readily available for inspection.	R	YES
G-3.3	Operation has an Approved Supplier program for all incoming materials, including packaging.	R	YES

#### Recordkeeping Overview

A proper recordkeeping system is one of the most important components of your food safety program. Table 5 below identifies the three document types specified in the HGAP audit.

**TABLE 5: HGAP Document Categories**

Record Type	Description
<b>RECORD (R)</b>	A record is something that must be kept to show an action was taken. Examples include pre-harvest checklists and activity logs such as a master cleaning schedule.
<b>WRITTEN POLICY (WP)</b>	A policy is a written statement in the food safety plan describing the goals and acceptable procedures for an activity. Includes Standard Operating Procedures (SOPs).
<b>RISK ASSESSMENT (A)</b>	A process to identify potential hazards on a farm and/or packinghouse, determine the likelihood of an incident occurring, and the corrective or preventive actions that should be taken to mitigate the hazards impacting the food safety of fruits and vegetables.

**Tip****Organic certification records do double duty.**

If your farm is certified organic, you are already required to keep certain records that are also relevant for GAP certification, and you don't need to reinvent the wheel. Here's a list of key documents that can do double-duty:

- Field map
- Land history
- Seed stock documentation
- Manure application records
- Compost monitoring records
- Cleaning records for equipment and transportation
- Traceability system records

Records must be kept in 'real-time' when the activity occurs. Maintaining current records is necessary for maintaining 'audit-ready' status. While the effort to maintain records can seem burdensome, remember that records have benefits beyond GAP compliance, providing critical information that will be relevant in production planning, soil health management, yield projections, and more.

**Modifying Documents**

In the event that you need to correct an error in any of your documents, including records or policies and procedures, changes may be made by crossing out the incorrect information and writing in the correction. Never use white out on any food safety documents, as it creates a presumption that records have been falsified. Written records must be maintained with permanent ink.

**G-3 Pre-Audit Checklist:**

- Maintain active recordkeeping templates and checklists in areas where covered activities are being conducted so workers have easy access to complete them. Place completed records in your food safety manual.
- Ensure all records are up to date and maintained in real time. In the event a mistake is made on a record, cross out with a single line and write the accurate information on the next entry line.
- Keep records on file for at least two years.

**Tip****Auditors assess more than food safety.**

All food safety programs require compliance with applicable local, state and federal regulations.

The Harmonized GAP Standard references "prevailing regulations", referring to regulations pertaining to pesticide use and disposal, adequate toilet facilities and break areas, the Food Safety Modernization Act for farms that are covered by the law, etc. This is not a comprehensive list, so consider all regulations that may be implicated in any checklist items.

**G-4 Worker Education and Training**

You must provide an effective worker education and training program for all individuals that work directly in contact with produce during harvest and post-harvest activities. New employees must complete a training program prior to beginning work; refresher trainings must be conducted at least annually, and as needed during the growing season if your food safety plan dictates, to make sure all workers understand food safety risks and how they can reduce risks while working. Workers must also have the resources required to properly do their jobs. General health and hygiene policies are an important component of the education and training program and should be the primary training focus.

**Food Safety Training (G-4.1)**

All employees in your operation need to be trained on your food safety policy and plan, and should also receive training on sanitation and personal hygiene as appropriate to their job responsibilities. Training should take place upon hire, and refresher training must take place as prescribed in your food safety plan. You must document all training presentations and activities, including the names of the employees participating. Any food safety responsible individual in your operation may conduct the employee trainings required under G-4.1.

Req.#	Requirement	DOC	MAN
G-4.1	All personnel shall receive food safety training.	R	YES
G-4.2	Personnel with food safety responsibilities shall receive training sufficient to their responsibilities.	R	YES
G-4.3	Contracted personnel are held to the relevant food safety standards as they would be as employees.	R	YES

**Tip****Changes in duties trigger new training.**

For example, an employee who was working in the field managing and harvesting crops who then begins working in product washing and packing areas will need to be trained on the processes and procedures in the pack shed, especially related to washing produce and sanitizing food-contact surfaces.

Employee training must be conducted in a language your workers can understand. Key subjects to emphasize are how and when to properly wash hands; the importance of starting work in clean clothes; why employees cannot work when they are sick; and how to handle injuries and illnesses on the farm, including immediately reporting all injuries and illnesses to management and excluding ill/bleeding employees from produce handling activities.

You will need to hold employees accountable for the farm food safety practices and SOPs that are relevant for their duties. It is important to clearly communicate which food safety responsibilities each individual is responsible for completing and why these practices are important.

Refresher training should include any new processes and procedures implemented under your food safety program since any prior training took place. Ongoing training applies contractors and visitors as well. Posting signs, in appropriate languages, throughout the farm is beneficial in notifying visitors and contractors of health and hygiene practices, as well as providing a constant reminder to employees.

## Food Safety Responsible Person Training (G-4.2)

Anyone designated in your food safety plan as food safety responsible individual must be able to demonstrate knowledge of food safety principles during an audit. This individual can provide verification of their food safety knowledge through:

- Completing at least one formal food safety course/workshop or other education, as demonstrated by a relevant post-secondary degree, course completion certificate or receipt, attendance at a relevant food safety meeting, or a company training record;
- Demonstrating that they have sufficient job experience to have the necessary food safety knowledge; OR
- Compliance with any applicable law or regulation regarding food safety training.

Food safety trainings are conducted throughout the year by various agencies in North and South Carolina. CFSA maintains an event calendar for most food safety trainings conducted in the Carolinas. The calendar is accessible at <https://www.carolinafarmstewards.org/food-safety-trainings/>.

**NOTE:** When an operation passes a food safety audit, that success can be used as verification that the operation's food safety responsible person(s) has demonstrated the knowledge required under G-4.2, if that individual(s) hasn't undergone and isn't legally required to attend formal training. For example, a farm that is exempt from FSMA can use passing the HGAP audit as verification of G-4.2; for a farm covered under FSMA, the responsible person must meet FSMA's training requirements.

## Contracted Personnel (G-4.3)

HGAP requires that contracted personnel must be trained to the same food safety requirements as employees doing the same work would be. You must have procedures and/or records to verify that contracted personnel are aware of all relevant food safety requirements, such as signage in toilet facilities, break areas, and areas where harvest and post-harvest activities take place. If contracted personnel are on-site during an audit, the auditor may interview the contractor crew chief to determine their food safety competency. General health and hygiene policies should be the main focus of contractor training. Signage and posting general health and hygiene policies throughout your operation is verification of compliance with this standard.



Photo 3: Signage used for employee reminders providing policies for contractors and visitors meeting the requirements of G-4.3.

**G-4 Pre-Audit Checklist:**

- Keep verification of employees' trainings (degree or course certificates or receipts, food safety meeting attendance lists, company training records, etc.) on file. If you rely on non-job specific food safety trainings provided by other organizations to train any of your employees, obtain copies of those employees' completion certificates for those courses.
- Keep records of all company training activities on file, including topics covered during the training and participant names and signatures.
- Post printed general health and hygiene policies throughout the operation, and in a language employees and contracted staff can understand. This may include signage about handwashing, use of designated break areas for eating, requirements for personal protection equipment, and other signs that can act as constant reminders of essential food safety practices.
- A Visitor Sign-in Record is not required specifically in the standard, but may be used to satisfy the records requirement for this checklist item. This log can include a statement that the visitor fully understands all health and hygiene requirements and agrees to abide by them.

**G-5 Sampling and Testing**

As part of your risk assessments, you must determine the frequency of any microbial testing based on the risk associated with the element of your operation that is being tested, such as water, compost, or the post-harvest handling environment. Recognize that testing for a hazard may not be required if your risk assessment determines the hazard can be prevented from causing contamination. For example, if you produce compost for use on your farm using a scientifically valid composting method, with appropriate monitoring and documentation of composting temperatures and durations, it is not necessary to obtain third party testing of your finished compost.

**TABLE 6: Microbiological Contamination Sources, Indicators and Causes**

Source	Common Microbial Indicator	Potential Cause
Water	Generic <i>E. coli</i>	Fecal contamination of the water source.
Compost	Coliforms	Incomplete treatment of compost containing raw manure of animal origin and/or human biosolids.
Environment	<i>Listeria spp.</i>	Harborage of <i>Listeria monocytogenes</i> in produce handling, storage and processing areas, especially in cold moist environments.

If you have identified risks that require microbiological or chemical testing as a preventive measure, the standard requires that you use a Good Laboratory Practices (GLP) certified lab for that testing, and that the lab applies validated methods for detecting or quantifying the organisms or chemicals that you are concerned about. Sample collection procedures will vary depending on the lab's validation method, so once you identify an approved lab, make sure it provides you sample collection instructions. You must document your sample collection, testing results, and actions taken to correct any variations or non-conformances, and maintain those records for two years. The HGAP standard requires you to have a

written procedure governing any testing you perform that covers the test frequency (monthly, annually, etc.), the sampling methods, the test procedures, and the actions to be taken based on the results.

Req.#	Requirement	DOC	MAN
G-5.1	Where laboratory analysis is required in the Food Safety Plan, testing shall be performed by a GLP laboratory using validated methods	R	NO
G-5.2	Where microbial analysis is required in the Food Safety Plan, samples shall be collected in accordance with an established sampling procedure and prevailing regulations.	WP	NO
G-5.3	Tests, their results and actions taken must be documented.	R	NO
G-5.4	All required testing shall include test procedures and actions to be taken based on the results.	R	YES

### Lab Accreditation (G-5.1)

Laboratories must undergo a Good Laboratory Practices (GLP) audit to be accredited for conducting certain tests. GLP laboratories will have verification of their certification, including the specific scope of the certification. You should obtain this information in writing from the laboratory to verify its credentials prior to submitting samples, and maintain a record of the lab's certification in your food safety manual. Larger laboratories may make this information available on their websites. Acceptable laboratory certifications include a GLP audit certificate, or proof of participation in a laboratory Proficiency Testing Program (PTP) that shows the lab uses scientifically valid testing methods for detecting or quantifying the target organism(s) or chemical(s) that your food safety plan addresses. Common PTP certifications to look for include AOAC, A2LA or the Food and Drug Administration's BAM.

### Sampling Protocols (G-5.2)

Include a written sampling protocol in your food safety plan that explains how to collect samples for any required microbiological testing. The laboratory conducting your microbial analysis will recommend a sampling procedure that can be transferred to your SOP for the specific testing being conducted.

### Documentation of Test Results, Corrective Actions (G-5.3)

All test results and any corrective actions taken based on test results that are out of compliance with the testing parameters in your food safety plan should be documented, with records kept in your food safety manual. For example, water test results must be kept on file according to the record retention policy stated in your food safety plan. A [Water Source Testing Record](#) can be used as a quick reference document that will assist in ensuring compliance with your water testing program and that corrective actions are documented.

### Testing SOPs (G-5.4)

For pre-harvest water, your [Water System Risk Assessment](#) will dictate the necessity and frequency of any water testing program for microbial hazards, based on likelihood of microbiological contamination of the water source (surface, well, or public supply) and application methods used (frost protection spray, overhead irrigation, drip irrigation, fertigation, pesticide application spray, etc.). From that risk assessment you will build your water risk management plan for pre-harvest water, which must cover:

- the testing frequency for each water source;
- the acceptable microbial water quality threshold;
- your sampling methods;
- the test procedures; and
- the actions you will take if the test results exceed the threshold for the microbial hazards identified in your food safety plan.

### G-5 Pre-Audit Checklist:

- Keep the GLP or other pertinent laboratory certificates (ISO 17065, AOAC, BAM) or other supporting documentation for your chosen laboratory on file.
- Write an SOP including scientifically valid methods for sample collection, to maintain consistency in sample collection and ensure accurate laboratory results.
- Conduct water tests at the established frequencies for the indicator stated in your food safety program, i.e. generic *E. coli*.
- Maintain original laboratory reports and place in your food safety binder.
- Keep written documentation of all corrective actions taken in response to test results.

## G-6 Traceability

A documented traceability program ensures that in the event of a recall your produce can be traced one-step-forward (to a wholesale buyer) and one step back (to the source of the produce or any production inputs). The standard requires you to conduct a traceability exercise annually, locating 100 percent of the products shipped to recipients (excluding direct-to-consumer sales) within 4 hours, or as required by applicable regulations. The exercise may be conducted during an audit, although this is likely to make the audit longer and therefore more expensive.

Direct-to-consumer sales are exempt from the one-step forward traceability requirement, but you must still be able link produce sold through direct-to-consumer channels with the field source of that produce and the inputs used to grow it.

Req.#	Requirement	DOC	MAN
G-6.1	A documented traceability program shall be established.	WP, R	YES
G-6.2	A trace back and trace forward exercise shall be performed at least annually.	R	NO



Figure 4: Leaf Lettuce Process Flow Diagram

**Traceability Program (G-6.1)**

Traceability can easily be accomplished through existing records, including field maps/numbers, input records (fertilizers, soil amendments, fertilizers, seeds/transplants, etc.) for trace-back, and harvest records and invoices or bills-of-lading for trace-forward. Minimum requirements for traceability system records include the date of harvest, quantities harvested, field or block numbers, and transporter and non-transporter data. Keep records of all data necessary to successfully conduct a traceability exercise and test the system on a regular basis as prescribed in your food safety plan. Make sure you have tested the system to ensure 100% reconciliation of the product as required in item G-6.2 of the standard. A traceability exercise is one of the first steps in conducting a mock recall.

The purpose of a traceability exercise is to test your current record system’s effectiveness in isolating potential causes of contamination, such as any pesticide and manure applications to the product or fields, employee health/hygiene issues, and unusual events such as flooding or wildlife intrusion, and so improve your ability to withhold or recall contaminated product from the market if necessary, and prevent unsafe products from reaching customers. A Process Flow Diagram, (see Figure 4) can be helpful in creating a traceability program, allowing you to visualize every step involved in managing produce within your operation. Correctly implemented, a traceability program can reduce out-of-date product losses, lower inventory levels, quicken the identification of process and supplier difficulties, and improve the effectiveness of logistics and distribution operations.

**Assigning Lot Numbers**

Any item that needs to be traced forward or backward should be coded with a unique identifier, so the essential element of a traceability system is a lot code or lot number.

The lot number identification typically follows the product throughout the supply chain, although it may be changed by an entity further down the supply chain for consistency with that operation’s internal system. The downstream receivers of your product should link their lot number to the one that you assigned to the product prior to distribution. The lot number must allow you to trace a product to a harvest or production date and identify either the location from which a commodity

was harvested (e.g., field number), or the location of production for a value-added product. The lot number must be included on all packing or packaging units you are providing to your buyer.

The numbering system developed does not have to be complicated and should fit the scale of your operation. Below is an example of a lot code developed for a farm. Lot codes are not standardized and therefore you have the flexibility to create a system internally to fit the needs of your operation.

Harvest Date	Produce	Field or Production Area	Lot Number	Packing Date	Shipping Date	Customer Receiving Shipment	Initials
4/17/19	Tomatoes	Field #1	T-41718-1	4/17/19	4/18/19	Carolina Produce	TT

In the above example, the Lot Number T-41719-1 indicates the product harvested (T = tomatoes), the date of harvest (41719 = 4/17/19), and the field from which the crop was harvested (1 = field number 1).

### Traceability Exercise (G-6.2)

In addition to having a program, HGAP requires you to conduct a traceability exercise annually, locating 100 percent of the products shipped to recipients (excluding direct-to-consumer sales) within 4 hours, or as required by applicable regulations.

To conduct the exercise, determine a product and lot number that you are going to trace, and gather available records relating to that product from your food safety manual or accounting files. You will likely start with your harvesting or production records, which should include the lot numbers. Make sure you can identify the source of the product (field where harvested or the external supplier), the date of harvest or receipt from the supplier, the quantities harvested or received, and any customers to whom the product was shipped. Confirm that all contact information for the buyer(s) is on file and is accurate: It is beneficial to confirm this information by email as part of your record for conducting the traceability exercise. Note how long it took to complete the traceability exercise and how much of the product you were able to locate.

### G-6 Pre-Audit Checklist:

- Write a traceability SOP and implement the traceability program that allows for adequate trace-back and trace-forward of products being distributed through wholesale channels.
- Confirm all records that link the product with the source of the produce (i.e., purchasing product from another grower) or production inputs (seeds, compost, etc.) are kept on file.
- Ensure all product shipping records include the date of harvest, quantities, lot number, and the transporter or non-transporter of the product.
- Document the results of the trace back and trace forward exercise, noting the time it took to achieve 100% reconciliation.

**Tip****Get marketing mileage out of your traceability plan.**

For farms that market directly to the consumer through CSA programs, roadside stands, farmers' markets, and U-pick, contacting these types of customers in the event of a recall can be difficult to unrealistic. Some of the ways small-farm operators can contact these types of patrons are through email sign up sheets, website notifications, and signs at the farmstand/farmers' markets. The system you create by preparing for a recall has marketing benefits as well, as having customer email lists and proactively communicating with direct market clients can help build your brand.

**G-7 Recall Program**

A recall program is a written plan of action that is constructed, tested and evaluated to ensure you can efficiently reconcile all products you have shipped in the event that a potentially harmful food product has been distributed to consumers. The program must be prepared, implemented, reviewed and tested on an annual basis to ensure everyone with recall team responsibilities understands their role and responsibility in the event of a recall. The recall plan must incorporate the steps you will take to notify direct-sales customers of the need to dispose of contaminated product. This is accomplished through an annual mock recall exercise.

Establish your recall team, and develop a written recall plan, including (1) an up-to-date list of customers; local, state and federal regulators; your insurance carrier; an attorney; and other essential contacts that you would need to notify in the event of a recall, and (2) a communication plan to inform those customers and contacts about recall in a timely manner. The standard requires that a mock recall be conducted annually, following the instructions in your recall plan, and include a traceability exercise.

Req.#	Requirement	DOC	MAN
G-7.1	A documented recall program, including written procedures, shall be established.	WP, R	YES

### Six Steps for Conducting a Mock Recall Exercise

Step 1: Confirm contact info for all recall team members.

Step 2: Determine the product and lot number that will be used for the mock recall.

Step 3: Determine the quantities involved in the lot and the amount of product in the marketplace, using your traceability and inventory systems, and identify the customers who have received the product.

Tip: Invoices are the best place to access this information. The lot numbers and customer contact info should already be recorded on your invoices beside the product description as part of your traceability program.

Step 4: Contact a customer that received this product by phone and explain to them that you are in the process of testing your product traceability systems. Tell them that you will be sending a follow-up email that you need them to respond to.

Tip: If multiple customers received the same lot number, it is not necessary during the mock recall to contact them all.

Step 5: Send an email to the customer(s) you have chosen for the mock recall (see example below).

Dear Buyer,

As part of our food safety program, we conduct a traceability exercise on an annual basis. We have chosen to analyze lot number B1071617, 10# Broccoli, of which you received 4 cases. Please respond to this email letting me know how many cases you currently have in stock and how many have been sold.

It is important that you respond to this email as soon as possible. Our food safety program requires that we are able to trace all products within 4 hours. This is only a traceability analysis: you do not need to dispose of the product. Please distribute or consume the product as usual.

Thank you for assisting us with this exercise.

–ABC Farms

Step 6: Print confirmation email upon receipt from buyer. Complete the [Mock Recall Record](#) in your food safety manual. Attach the email to your Mock Recall Record and maintain with your recordkeeping.

**Tip**

**Don't call it a mock recall when talking to customers.**

When testing your recall program, there is no need to risk unnecessarily alarming or confusing your customers by using the word 'recall.' You don't want to take the chance that the person you talk to doesn't hear the word 'mock' and only hears 'recall.' Using terms like 'traceability system verification' or 'traceability exercise' can help you avoid a costly misunderstanding.

**G-7 Pre-Audit Checklist:**

- Designate a recall team, including individuals with different roles within your operation (management, production, shipping/receiving, sales/marketing), and any lawyers and outside food safety experts you work with.
- Write a recall plan or SOP that clearly describes each step of a recall and accountable individuals.
- Conduct a mock recall exercise at least annually and prior to your first audit to test the recall plan for effectiveness. The mock recall must include the trace back and trace forward exercise. The auditor will review the most recent mock recall performed.

**G-8 Corrective Actions and Food Safety Incidents**

When conducting a self-audit (see G-9 below) or when an incident occurs, a corrective action for any noncompliance identified must be made as soon as possible. A noncompliance is where expected standards have not been met, such as staff not following hygiene practices, products not meeting specification, contamination problems, or customer complaints. The corrective actions may have limited value if they do not address the root cause of the food safety related incident. All non compliances must be investigated to understand the cause so that a preventive action can be taken to prevent it from recurring and avoid future corrective actions.

All corrective actions should include the determination of the cause(s), and an action plans(s) to address the immediate issue(s) regarding the non-conformance; the individual(s) responsible; the corrective action(s) taken; the timeline to take corrective action(s); and the development of preventive actions to help avoid future noncompliance, if necessary.

**NOTE:** If a noncompliance is identified during an audit that cannot be addressed immediately while the audit is happening, and a corrective action is required in order to pass the audit, you will need to provide the auditor with documents, records, and/or photographs that show that the non-conformance has been addressed. The auditor and USDA audit reviewer must verify and approve the submitted evidence: They may reject the corrective action if sufficient evidence is not submitted, if they are not satisfied that the corrective action has been implemented fully, or if they deem that the action does not sufficiently mitigate the risk.

Req.#	Requirement	DOC	MAN
G-8.1	The Operation shall have documented corrective action procedures.	WP, R	YES

### Stages in Preventing a Reoccurrence

1. Implement a short-term action to prevent any unsafe or sub-standard produce from being used or distributed.
2. Identify the 'root-cause' that led to the problem in the first place.
3. Determine which products were affected.
4. Discuss and agree on steps that will be taken to address the root cause with your food safety responsible staff (preventive action).
5. Evaluate the preventive action on a scheduled basis until you are confident that it is having the desired effect.
6. Confirm that the preventive action is adequate to minimize the risk associated with the noncompliance.

A corrective action summary can be used to assist in tracking any preventive control verification activities (see below).

Corrective Action Summary					
Date	Non-Compliance	Cause(s)	Corrective Actions/ Preventive Actions	Completed	Responsible Person
6/15/19	Customer Complaint – Spoiled Product	First-In, First-Out (FIFO) Procedure not being followed.	6/16/19	6/16/19	TT

#### G-8 Pre-Audit Checklist:

- Document a corrective action procedure within your food safety program, including the individual responsible for overseeing a corrective action, and methods and timelines to address noncompliances.

### G-9 Self-Audits

A self-audit helps evaluate the food safety system you have in place and confirm standard requirements are met, and is a great tool to improve performance. An effective self-audit will find noncompliances with the standard: It is highly unlikely that your food safety program is perfect. The self-audit process should help you identify potential enhancements of your program, and therefore support your food safety policy goal of continuous improvement.

A self-audit must be conducted at least annually, or when a change within your process takes place. For example, if you previously field-packed product that required no washing, but now have to wash that product to meet buyer specifications, a self-audit is needed.

A self-audit can be customized to meet the needs of your operation, but if you are undergoing a USDA HGAP audit, the HGAP [Checklist](#) is the best tool for conducting the self-audit and ensuring you meet the requirements of the standard.

Req.#	Requirement	DOC	MAN
G-9.1	The Operation shall have documented self-audit procedures.	R	NO

- Conduct a self-audit using the most current version of the Harmonized GAP checklist. For any checklist items that you mark as corrective action needed (CAN), immediate action required (IAR), or not applicable to your operation (NA), you must provide a detailed explanation in the comment column of the checklist.

## G-10 Worker Health/Hygiene and Toilet/Handwashing Facilities

Good worker health and hygiene practices are critical in ensuring that your employees do not contaminate product. Your operation's personal hygiene and handwashing policies not only apply to you and your employees, but to visitors, buyers, product inspectors, auditors and other personnel in product handling areas, including the field. The food safety responsible individual must ensure compliance with these policies by all persons in produce handling areas, including an auditor.

During an audit, the auditor may assess the effectiveness of your hygiene policies and procedures in shaping workers' behavior by interviewing an employee or by observing workers' health and hygiene practices during the audit. It is a good idea to let employees know prior to the auditor's arrival that verification activities may include interviewing them, and that the auditor is always making visual observations while on site.

Req.#	Requirement	DOC	MAN
G-10.1	Operation shall have a policy for toilet, hygiene, and health.	WP	YES
G-10.2	Employees and visitors shall be made aware of and follow all personal hygiene practices as designated by the Operation.		YES
G-10.3	Toilet facilities and restrooms shall be designed, constructed, and located in a manner that minimizes the potential risk for product contamination and are directly accessible for servicing.		YES
G-10.4	Toilet facilities shall be of adequate number, easily accessible to employees and visitors and in compliance with applicable regulations.		YES
G-10.5	The practice of disposing of used toilet tissue on the floor, in trash receptacles, or in boxes is prohibited.		YES
G-10.6	Toilet and wash stations shall be maintained in a clean and sanitary condition.	R	YES

Req.#	Requirement	DOC	MAN
G-10.7	Personnel shall wash their hands at any time there may be a source of contamination.		YES
G-10.7	Personnel shall wash their hands at any time there may be a source of contamination.		YES
G-10.8	Signage requiring handwashing is posted.		NO
G-10.9	Clothing, including footwear, shall be effectively maintained and worn so as to protect product from risk of contamination.		YES
G-10.10	If gloves are used, the Operation shall have a glove use policy.		YES
G-10.11	If protective clothing is required by the Operation in product handling areas, it shall be handled in a manner to protect against contamination. When appropriate, racks and/or storage containers or designated storage area for protective clothing and tools used by employees shall be provided.		YES
G-10.12	The wearing of jewelry, body piercings and other loose objects (e.g. false nails) shall be in compliance to company policy and applicable regulation.		NO
G-10.13	The use of hair coverings shall be in compliance to company policy and applicable regulation.		NO
G-10.14	Employees' personal belongings shall be stored in designated areas.		NO
G-10.16	Operation shall have a written policy that break areas are located so as not to be a source of product contamination.	WP	NO
G-10.17	Drinking water shall be available to all employees.	R	NO
G-10.18	Workers and visitors who show signs of illness shall be restricted from direct contact with produce or food-contact surfaces.	WP	YES
G-10.19	Personnel with exposed cuts, sores or lesions shall not be engaged in handling product.		YES
G-10.20	Operation shall have a blood and bodily fluids policy.	WP	YES
G-10.21	First aid kits shall be accessible to all personnel.		NO

## Policies and Training (G-10.1 - G-10.2)

Your policies and procedures to meet G-10 requirements should be customized to the actual situation and practices of your operation, and must be effective in preventing cross-contamination of products and food contact surfaces. Employees must be properly trained on the health and hygiene policy of the farm, as well as any policies that are job specific relating to health and hygiene. At a minimum, the training should cover: the importance of good hygiene and handwashing, proper handwashing technique, when to wash hands, first aid procedures, properly using the restroom facilities, illness/injury procedures, and your policy on taking breaks and eating. Training can be in the form of formal presentations, videos, demonstrations, or one-on-one instruction.

The hygiene policy must apply to all employees, contractors, visitors, buyers, product inspectors, auditors, and other personnel who are in the production or handling areas. You should treat the auditor as a visitor and inform them about health and hygiene practices on your farm. If you keep a sign-in sheet for farm visitors, make sure the auditor signs in, too.

Training for visitors is especially important in U-pick operations, where customers are entering your crop production areas, and customers should be informed of your hygiene procedures when they receive their U-pick containers. Consider posting signs in various areas before the entrance into U-pick areas advising customers to wash hands before picking and to not eat in the field, and identifying the location of bathroom facilities.

## Toilet Facilities and Handwashing Stations (G-10.3 - G-10.6)

Sanitary toilet facilities must be accessible to employees at all times during work hours. Federal Occupational Safety and Health Administration (OSHA) rules require that one toilet and one handwashing station must be provided for every 20 employees and be located within  $\frac{1}{4}$  mile from their work station or production field. Facilities must be stocked with single use towels, toilet paper, and hand soap, and potable water for handwashing must be available.

### Proper Handwashing Technique

If hands are not washed properly, the effectiveness of a handwashing policy will not mitigate the risks of cross-contamination. Research shows that the most effective way to remove soils and bacteria from hands are:

1. Wet hands and arms (to elbow) thoroughly with clean, running water.
2. Apply a food-grade soap and rub hands together.
3. Scrub vigorously for 20 seconds.
4. Rinse thoroughly to remove all traces of soap.
5. Dry hands using a single-use paper towel (Reusable towels can become a course of cross-contamination).

Employees who are handling or packaging produce need wash their hands:

- Before beginning or returning to work;
- After visiting the bathroom;
- Before and after eating, smoking and other breaks;
- After any other activities besides produce handling; and
- Anytime hands become dirty

Designs and directions from the University of Minnesota Cooperative Extension for building an inexpensive portable handwashing station are available [here](#).

Even if your restrooms and handwashing stations look and smell clean, the auditor will review cleaning records. You must document that the facilities your employees use are regularly cleaned, sanitized, and inspected to ensure they are properly stocked and clean. If you are renting portable toilets, the service company may note service dates on a whiteboard record inside the toilet facility: Do not rely on this as a record. Such whiteboards are often erased, or the service company may fail to keep them up-to-date. The use of invoices for service dates, and your internal records of more frequent inspections, if any, will serve as verification for question G-10.6.

### **Clothing and Footwear (G-10.9)**

Cross-contamination can occur with clothing and footwear, particularly when there are livestock or other animals on the farm. Clothing worn by individuals handling produce must be clean at the beginning of the workday to avoid cross-contamination. Transfer of pathogens, especially from shoes, can occur when workers move from livestock care to handling produce. Having dedicated footwear for use when working with livestock, or a footwear sanitation station that workers must use when moving from livestock areas to produce areas, can minimize food safety risks.

### **Glove Use Policy (G-10.10)**

A glove use policy must be in place when rubber, disposable, cloth or other gloves are used in contact with the produce during harvesting and/or post-harvest activities. When reusable gloves are worn, the policy must specify when gloves are used, cleaned, replaced and stored so that they not become a potential source of cross-contamination. Gloves may not be used in place of handwashing and hands must be washed prior to putting gloves on.

### **Protective Clothing (G-10.11)**

If an activity or process that happens in your operation requires workers to wear protective clothing, such as applying plant protection chemicals, you should have a policy or procedure addressing how and when protective clothing is to be used, cleaned, replaced, and stored to prevent it from being a source of contamination. The auditor will likely observe whether appropriate storage areas are designated and are available for use based on your written policy. Hair coverings are addressed in G-10.13, and can be included in the protective clothing policy with an explanation of when and where hair coverings are required.

### **Jewelry, Body Piercings and Loose Objects (G-10.12)**

Jewelry, body piercings and other loose objects can fall off while handling produce and become a potential physical contaminant. Be aware of the potential risks and implement proper policies and procedures to not only protect the product, but also protect the employees from injuries that may result from dangling objects being caught in or on equipment.



Photo 4: Consider the risk of pathogen transfer from any livestock on your operation.

**Hair Coverings (G-10.13)**

The use of hair coverings is not mandatory, but if you do require them, or that long hair be pulled back, you must include that rule in your health and hygiene policy. It is a best practice to require a hair covering when workers are handling harvested, non-packaged produce.

**Personal Belongings (G-10.14)**

Personal belongings can be a potential source of contamination and therefore should not be stored in produce handling areas. The designated storage area for workers' personal effects can include vehicles.

**Designated Break Areas (G-10.15 – G-10.17)**

Smoking, eating, chewing gum or tobacco and, drinking (other than water) may only happen in designated break areas located outside of produce handling areas. Drinking water is exempt from this requirement and is allowed within produce handling areas. Urinating, defecating, or spitting is prohibited within production and produce handling areas. Break areas may be located near the production areas, but must be separated from all produce handling areas, including food contact surfaces and production equipment, and any other areas area where cross-contamination of product could occur.

**Illness, Injuries and First Aid (G-10.18 – G-10.21)**

Any individual showing signs of illness, for example vomiting or diarrhea, must not be allowed to handle produce or be within produce handling areas. You are required to have a written policy on what to do in the event that a worker, including a manager, becomes ill, which may include reassigning ill workers to other duties that do not involve contact with produce or food contact surfaces, such as lawn maintenance or clerical activities. If your only workers are you and your family members, you should have a policy in place that if all the worker/ family members are ill then no produce handling will occur that day.

A blood and bodily fluid policy must be in place specifying procedures for the handling, cleaning and disposal of food or product contact surfaces that have been in contact with blood or other bodily fluids. In the event an injury occurs, you must visually inspect produce, soil, and food contact surfaces in the area where the injury took place for bodily fluid contamination. In the event contamination occurs, the contaminated objects and surrounding area must be blocked off until they can be cleaned and sanitized, with any produce or soil that has been contaminated be disposed of properly.

A procedure must be in place for handling any injuries that occur on the farm. Open sores, cuts, or lesions on the hands must be bandaged and the hands gloved; injury sites on other parts of the body must be covered to minimize cross-contamination. All injuries that happen onsite should be reported to management upon occurrence, and employees should be instructed to seek prompt treatment with clean first aid supplies when they suffer cuts, abrasions or other injuries. First aid kits should be stocked and located near produce handling areas at all times. Make sure that any perishable items in the first aid kit have not passed their expiration dates.

**G-10 Pre-Audit Checklist:**

- Ensure policies and procedures for worker health and hygiene practices are in place.
- Post the health and hygiene policy in clear view for visitors, buyers, inspectors, or others arriving on your farm.
- Ensure each employee has signed your health and hygiene policy and include the signed copies in your food safety manual.
- Have a system in place to verify that all visitors, contractors and others visiting your operation understand the policies. This can be in the form of signage. A [Visitor Log](#) is not required, but may be used to demonstrate compliance with this checklist item.
- Post signs in appropriate places instructing people to wash their hands after each toilet visit in/at restrooms and handwashing stations.
- Locate any portable toilets and handwashing stations away from immediate produce handling areas and ensure that your SOP includes details on what to do in the event of a spill.
- Comply with OSHA Regulations by providing at least one toilet facility for every 20 employees located within ¼ mile from the area they are working.
- Conduct and document employee health and hygiene training.
- Request from service provider or have on file microbial test results verifying the water used in the handwashing station meets drinking water standards.
- Have a permanent recordkeeping system in place to track the cleaning and stocking of the toilet and handwashing facilities. A best practice is daily visual inspection and cleaning weekly, or more often as needed.
- If hand sanitizer is used, a best practice is to locate the hand sanitizer away from the handwashing stations to avoid people using it instead of soap during handwashing.
- Visually inspect all employees for clean and appropriate clothing specific to their job duties.
- If applicable, dedicate a clean area to use for storing protective clothing.

**G-11 Waste Management**

Improperly storing or disposing of garbage can attract unwanted pests, rodents and wildlife to product handling areas, resulting in the potential for contamination of the produce. Cross-contamination can also occur from contaminated trash or other waste not being enclosed in its dedicated container (for example trash blowing into

the fields or materials that are soiled by bodily fluids being handled improperly). Therefore, it is a best practice to implement a waste management plan for the control, storage and disposal of trash, litter, and waste in areas used for produce handling operations. Under no circumstance should trash come into contact with produce: All trash handling and removal must be conducted in a manner that does not pose a risk for produce contact.

A written waste management policy or procedure is not necessarily required, but all auditors will pay close attention to your waste management practices and verify their effectiveness through visual observations and by smell. Culled product –

**Tip****Remove culls from production fields.**

Culled product is considered trash and should not come into contact with produce you intend to distribute. Leaving culled produce in the field may be considered a noncompliance if those culls are likely to contact produce intended to be harvested.

crops that are not marketable due to damage or flaws – is considered waste and should be disposed of properly so as not to attract wildlife or pests and rodents to produce fields or produce handling areas. Cull disposal methods include: removal from the farm along with non-vegetative litter by a waste management service; proper composting; or other means that prevent the culls from posing a risk of contamination of crops or produce handling areas.

Req.#	Requirement	DOC	MAN
G-11.1	Operation has implemented a waste management plan.		YES
G-11.2	Trash shall not come into contact with produce.		YES

**G-11 Pre-Audit Checklist:**

- Implement procedures that minimize the potential for trash, litter, or waste to attract or harbor pests, and or contaminate produce, food contact surfaces, areas used for produce handling activities, water sources, and water distribution systems.
- Ensure employees are trained (or retrained when necessary) on the waste management procedure.
- Make sure all trash is disposed of properly in trashcans and dumpsters with lids.

# Field Operations and Harvesting

## Questions F-1 – F-14

The Field Operations and Harvesting scope addresses the activities of growing and packing produce in the field or in greenhouse and indoor growing operations. Any post-harvest activities (wash/pack on-farm activities, cold storage, or transport to customer) are not covered under this scope.

### F-1 Field History and Assessment

The previous land use of your production area, and the previous and current uses of lands adjacent to your production areas, can contribute to physical, chemical or biological contamination, and therefore a risk assessment must be conducted annually to identify any potential contaminants present on your land or entering your land from your neighbors' property. This includes indoor growing facilities such as greenhouses and hydroponic systems, and structures located on the farm.

All indoor growing and field storage buildings must be constructed and maintained in a manner that prevents contamination of produce, allows for proper cleaning and sanitation, and does not provide harborage for contaminants or pests. Any temperature-controlled areas, including coolers and staging areas, must be properly sealed and be constructed in a manner that provides adequate drainage, such as installed drains or floors that are graded to minimize standing water. Contamination of produce, raw materials and/or food contact surfaces can occur from drips or condensate that falls from fixtures, ducts, pipes and other overhead structures. Use drip pans to minimize this potential cross-contamination. Assess air intakes to ensure that they are not pulling airborne contaminants into your buildings from neighboring farms or other sources.

Sewage and septic systems must be maintained and continuously operated in a manner to that does not serve as a potential contamination source to produce, food contact surfaces, areas used for produce handling, water sources, or water distribution systems. An act of nature such as flooding can negatively impact a sewage or septic system, and is considered a significant event that would trigger reexamination of the system and monitoring to ensure the system remains functional.

Req.#	Requirement	DOC	MAN
F-1.1	The food safety plan shall, initially and at least annually thereafter, evaluate and document the risks associated with land use history and adjacent land use, including equipment and structures.	A	YES  YES
F-1.2	For indoor growing and field storage buildings, building shall be constructed and maintained in a manner that prevents contamination of produce.		
F-1.3	Sewage or septic systems are maintained so as not to be a source of contamination.		YES

### **Land Use History and Adjacent Land Use Risk Assessment (F-1.1)**

The guidance provided previously in this manual on conducting a risk assessment is useful in fulfilling the requirements to this question. Use the [Land Use History and Adjacent Land Risk Assessment Template](#) and incorporate it into your food safety program.

### **Livestock Rotations**

If you also raise livestock on your farm and incorporate the animals into your production system by rotating them into fields where you grow or intend to grow produce, this must be taken into account in your land use risk assessment. Such a practice can be beneficial for reducing pest and weed pressure in subsequent vegetable crops, and the manure and urine that accumulates in the crop production area from the animals can be valuable in building carbon and nutrients in the soil, and in promoting soil health generally. However, because animal waste is a high risk to be a source of pathogens, the practice also must be documented as a manure application in your risk assessment. You should take steps to ensure that an appropriate time interval takes place the time between the removal of the animals from the field and the harvest of crops from field.

### **Flooding**

Flooding of your crop production areas would be an event that would trigger a new land use assessment, and you will likely need to undertake corrective actions. Floodwaters are likely to contain contaminants, such as raw manure or feces, pathogens, agricultural chemicals, fuel, heavy metals, or other chemical contaminants, so it is important to test the soil for microbial, chemical, and heavy metals contamination after flooding occurs. Produce present in a field at the time of flooding where the edible portion of the crop has come in contact with floodwaters is deemed 'adulterated' by the FDA, and should not to be sold for human consumption. This applies to both above ground crops and root crops, as root crops can internalize contaminants.

Before cleaning up or destroying crops in flooded fields, check with your local Farm Services Agency or Natural Resources Conservation Service offices regarding documentation to certify losses, procedures for initiating claims, and possible financial assistance. If you are an organic grower, floodwaters may contain residues of prohibited substances. Contact your certifier to discuss your situation.

Flooded soils should be allowed to dry sufficiently and then be reworked, tilling to at least six inches deep, before planting crops. Adding compost or other organic matter when tilling will be beneficial to the soil. The soil should be retested for nutrient levels after floodwaters recede, as the pH and nutrient levels of the soil may have changed.

**NOTE:** Water from heavy rainfall that pools on the surface of saturated soils is NOT considered flooding.

**Indoor Growing and Storage Areas (F-1.2)**

Buildings and equipment structures and surfaces (floors, walls, ceilings, doors, frames, hatches, etc.) shall be constructed in a manner that facilitates cleaning and sanitation on an ongoing basis. These areas must not serve as harborage for contaminants or pests and must allow for visual inspection.

Temperature controlled and cold storage product holding areas, including loading docks where applicable, must be appropriately sealed, drained and graded to prevent water accumulation on the floor and prevent entry by pest and rodents. *Listeria monocytogenes*, which grows best in moist conditions at temperatures below 41 F, is a pathogen concern in cold storage areas, and therefore it is important to minimize any unnecessary moisture. Fixtures, ducts, pipes and overhead structures must be installed and maintained so that drips and condensation do not contaminate produce, raw materials or food contact surfaces. In the event you have drip pans installed, they must be drained and the condensate disposed of away from product and product contact surfaces.

Air intakes, or condenser fans, can become a potential source of contamination. For example, if there is a risk of airborne contaminants on your farm, you must take steps to prevent equipment or building air intakes from introducing those contaminants onto produce or into produce handling areas.

**Sewage or Septic Systems (F-1.3)**

Sewage and septic systems can become damaged from significant acts of nature, such as flooding or earthquakes, and from general wear and tear. In the event that your sewage or septic system is not working properly, all produce growing areas, food contact surfaces, areas used for produce handling, water sources, or water distribution systems must be inspected to ensure that cross-contamination has not occurred as a result. Any faulty sewage or septic equipment, whatever the cause, must be repaired in a timely manner, typically within 24-48 hours.

**F-1 Pre-Audit Checklist:**

- Annually conduct and document in writing a land use history/adjacent land use risk assessment, including the likelihood that a contamination event might occur. Complete and record any corrective actions or preventive actions needed during the assessment.
- Inspect all indoor growing areas and storage buildings to ensure that the building and equipment can be cleaned and is maintained to prevent product contamination, including a thorough pest and rodent inspection.
- Inspect all sewage and septic systems ensuring they are in working order.

**F-2 Agricultural Chemicals/Plant Protection Products**

Agricultural chemicals, whether conventional or organic, play a role in protecting plants from damage caused by insect pests, weeds or disease. Many of these materials are hazardous and present risks to human and animal health and the environment if they are not applied consistently with label instructions or for uses for which they are not intended. Biocides, waxes and plant protection products (PPPs) used in post-harvest handling activities are also considered agricultural chemicals and will be covered in the Post-harvest Operations Scope.

Req. #	Requirement	DOC	MAN
F-2.1	Use of agricultural chemicals shall comply with label directions and prevailing regulation.	R	YES
F-2.2	If product is intended for export, agricultural chemical use, including post-harvest chemicals, shall consider requirements in the intended country of destination.		NO
F-2.3	Agricultural chemicals shall be applied by trained, licensed or certified application personnel, as required by prevailing regulation.	R	NO
F-2.4	Water used with agricultural chemicals shall not be a source of product or field contamination.	R	NO
F-2.5	Agricultural chemical disposal shall not be a source of product or field contamination.	R	NO

## Tip

### Who Regulates the Use of Pesticides?

#### Environmental Protection Agency

- Evaluates all pesticide risks and benefits.
- Registers all pesticides at the federal level.
  - Sets pesticide tolerances for food.
- Holds all authority granted under the Federal Insecticide, Fungicide, and Rodenticide Act.

#### Food and Drug Administration

- Monitors domestic and imported foods for levels of pesticide residue.

#### United States Department of Agriculture

- Monitors meat, poultry, produce and egg products for pesticide residues.

#### State Pesticide Regulatory Programs

Most states have the legal authority and statutory responsibility to register pesticides and regulate pesticide use, storage, disposal, and certification.

Programs dealing with pesticide food safety and residue monitoring vary from state to state. Contact your state Department of Agriculture for more details.

### Environmental Protection Agency (EPA) Labeling (F-2.1)

Agricultural chemicals — including waxes, pesticides, biocides, and plant protection products — can pose a chemical contamination risk if not used properly. The Environmental Protection Agency (EPA) has the responsibility to ensure that chemicals used on produce do not endanger public health. The original label of the chemical must always stay intact with the original container. For transfer containers, the name of the product and concentration must be clearly written on the container. You must ensure that the product is approved for use on the crops you are growing, follow the label directions, and only apply the material for its intended use. The label instructions will address application rates, worker protection standards, personal protection equipment, container disposal, storage, approved uses of the material, and possibly other factors. In the event you have questions, it is a best practice to check with your state and/or regional EPA office, state department of agriculture, or local cooperative extension service for more information.

Many EPA registered products require the individual applying the product to have a pesticide applicators license, or be trained by and working under a licensed individual within the operation. However, non-EPA-regulated products, including many products approved under the National Organic Program, do not require an applicator's license.

### **Application of Agricultural Chemicals (F-2.3)**

Personnel can easily contaminate fresh produce through improper application methods or by contaminating themselves. All personnel responsible for the application of agricultural chemicals must be trained or licensed, or supervised by licensed personnel maintaining compliance with prevailing state or EPA regulation. In most cases, if you are purchasing products that do not require a state-issued pesticide applicator's license be presented at the time of purchase, training personnel to follow the label instructions on a product is sufficient. HGAP auditors will examine records of the training to verify compliance.

### **Water Use with Chemicals (F-2.4)**

You must consider the risks associated with water used in combination with agricultural chemicals as part of your [Water Use Risk Assessment](#) and water management plan (see F-4 and F-5 below).

### **Agricultural Chemical Disposal (F-2.5)**

All waste agricultural chemicals should be disposed of in a manner does not pose a risk to food safety or the environment. The product label provides instructions for proper disposal, however your local or state pesticide regulatory office may have additional rules. Chemical containers cannot be reused for any purpose and must be rinsed prior to disposal for certain types of pesticides and containers. A recycling program may require that you drill a hole in the container to avoid additional use. If a recycling program is not available in your area, confirm that you are allowed to dispose of the rinsed container in the trash.

#### **F-2 Pre-Audit Checklist:**

- Maintain all labels for agricultural products currently in use, and train employees who use the products on their proper use and application following label instructions.
- All records of agricultural chemical use and application must include evidence of compliance with approved uses and label instructions, and be maintained in an organized fashion and accessible during the audit.
- Make a photocopy of the active agricultural chemical application license, if applicable, and place in your food safety plan recordkeeping system.
- A current water test must be on file for the water source used for mixing agricultural chemicals.
- Records on file must include the means of disposal of chemicals and for cleaning of application equipment.

## **F-3 Water System Description**

Water is well-suited to be a carrier of pathogens that can contaminate crops, and so water that directly contacts the edible portion of crops is a key risk to address in your food safety plan.

Req.#	Requirement	DOC	MAN
F-3.1	A water system description shall be available for review.	WP	YES
F-3.2	The water source shall be in compliance with prevailing regulations.		NO
F-3.3	Water systems shall not be cross-connected with human or animal waste systems.		YES

### Water Sources and Uses (F-3.1)

A water system description addresses all water sources and the areas that the water sources serve. The description can be a written narrative, a map, photographs or drawings, or a combination. A map is especially handy for showing the water system for easy reference, and can also serve to designate field numbers and structures on the farm. Whatever the format, the description should identify the location of the water source(s), any permanent fixtures of the system (including any above ground or underground water storage tanks), and the flow of water through it. Permanent fixtures, including wells, gates, reservoirs, valves, returns and other above-ground features must be easily identifiable within the system description, including their field location, or location within hydroponic, aeroponic or aquaponic operations. During the audit, the auditor will review the water system description and/or map and verify its accuracy. All water must be sourced from a location and in a manner that is compliant with prevailing regulation for the intended use of the water.

### Separation from Waste Water (F-3.3)

Water systems that are intended to convey untreated human or animal waste must be separated from conveyances that deliver water used in crop production and harvesting. Noncompliance with this requirement is an IAR and results in automatic failure of the audit.

### F-3 Pre-Audit Checklist:

- Create a map or other written description of all water sources and distribution systems to identify the flow of the water through your operation.

## F-4 Water System Risk Assessment

Conducting a water system risk assessment will allow identification of potential hazards associated with your water system. Start by identifying your water source(s) and the uses you make of the water from each source. Microbial contamination from a water source is the primary concern; however, wells and open water sources can also become contaminated by misuse of chemicals, as well as physical contaminants. Surface water sources, such as ponds, lakes, rivers, reservoirs, and canals, should be assessed to determine if an adjacent land use, or wildlife presence, creates any potential contamination risk. Wells must be assessed to ensure that the casings are intact and effectively preventing ground leeching of pathogens into the well water.

**Tip****Tap local soil & water agencies to improve water quality.**

If your water source is surface water (a pond, lake, stream, creek or river), it is critical to prevent polluted runoff from contaminating that source. Key strategies are berms and/or diversions to direct runoff away from the water source, and maintaining separation of domestic animals and large wildlife from the water with fencing, distance and topography. The Natural Resources Conservation Service (NRCS) provides cost share funding for water quality protection enhancements such as fencing to keep domestic animals out of surface waters, combined with wells, to provide an alternative water source. Berms, windbreaks, micro-irrigation systems, and other enhancements may also be eligible for funding. Contact your local NRCS office or your local soil and water conservation agency for more information about these options.

When assessing water risks, consider whether you are using irrigation methods that result in direct water contact with the edible portion of the crop, such as overhead irrigation (high-risk), or that limit such contact, such as drip irrigation (low-risk). This will determine the frequency with which your water should be tested to meet microbial water standard as defined in your food safety plan. The time between irrigation and harvest may also play a determining factor in water quality impacted by UV rays and drying.

You must conduct a water system risk assessment at least annually, but the USDA HGAP standard requires that you review that assessment seasonally, and any time there is a change made to the system or a situation occurs that could introduce contamination in the system, such as flooding. The guidance provided previously in this manual on conducting a risk assessment is useful in fulfilling the requirements to this question. Use the [Water System Risk Assessment Template](#) and incorporate it into your food safety program. Table 7 below overviews the relative risk levels of various irrigation practices.

**TABLE 7: Risk Levels Associated with Common Irrigation Methods**

Drip Irrigation:	Low Risk	A type of micro-irrigation where the system emits water at a very slow rate directly to the soil where plant roots are growing. System may be on the soil surface or buried below the surface.
Flood/furrow/surface irrigation:	Medium Risk	Water is pumped or brought to fields and allowed to flow along the ground among the crops.
Micro-irrigation:	Low Risk	A system where water is distributed under low pressure through a piped network in a pre-determined pattern and applied as a small discharge next to or adjacent to each plant. Includes various systems (drip, micro-spray, micro-sprinklers, mini-bubbler) distinguished by the type of emitters used to deliver water to the plants.
Micro-sprinklers/sprays:	Low/Medium Risk	A type of micro-irrigation with fixed micro-sprays that deliver water at a higher rate and cover a larger area than drip emitters. Typically used in tree orchards, also in aeroponic operations.
Overhead/sprinkler irrigation:	High Risk	System where water is piped to one or more central locations and distributed by overhead high-pressure sprinklers or guns. Sprinklers can be fixed or mounted on moving platforms.
Sub-irrigation/seepage irrigation:	Low Risk	A method of artificially raising the water table to allow the soil to be moistened from below the plant root zone. A system of canals, weirs, gates, and pumps are used to increase and decrease water level in a network of ditches, controlling the water table. Hydroponic systems are based on the same principle.

Req.#	Requirement	DOC	MAN
F-4.1	An initial risk assessment shall be performed and documented that takes into consideration the historical testing results of the water source, the characteristics of the crop, the stage of the crop, and the method of application.	A	YES

#### F-4 Pre-Audit Checklist:

- Conduct a water risk assessment addressing any potential physical, chemical and biological hazards and hazard control procedures for the water distribution system.

### F-5 Water Management Plan

Build your water management plan from the results of your water system risk assessment. A water management plan is a written procedure to minimize contamination risks, taking into account your water sources, your intended uses for the water, and your methods of delivery. The plan should include: water testing/sampling frequencies; acceptable microbial load limits; monitoring procedures; verification activities; corrective actions; preventive actions to avoid contamination; and documentation activities. You must review the management plan following any system changes identified in your water system risk assessment, and adjust the management plan as necessary to ensure microbial water quality.

All employees whose duties include overseeing the water system must be trained according to those responsibilities, and retrained in the event there is an oversight leading to potential contamination in the water system.

Req.#	Requirement	DOC	MAN
F-5.1	There shall be a water management plan to mitigate risks associated with the water system on an ongoing basis.	WP	YES
F-5.2	Water testing shall be part of the water management plan, as directed by the water risk assessment and current industry standards or prevailing regulations for the commodities being grown.	WP	YES
F-5.3	Water testing shall be part of the water management plan, as directed by the water risk assessment and current industry standards or prevailing regulations for the commodities being grown.	WP	YES
F-5.4	If water is treated to meet microbiological criteria, the treatment is approved and effective for its intended use, and is appropriately monitored.	R	YES
F-5.5	If post-harvest handling is used to achieve microbial criteria, Operation has documentation supporting its use.	R	YES

Req. #	Requirement	DOC	MAN
F-5.6	If Operation uses an alternative approach to regulatory microbiological testing, Operation has scientific data or information to support the alternative.	R	YES

The auditor will review the water management plan for accuracy and completeness relative to the risk assessment results. This will include verifying that a water testing program is in compliance with the risk assessment and current industry standards or prevailing regulations, and that the water testing program is outlined in the water management plan.



Photo 5: Example of a portable water treatment system used for irrigation.

The standard does not specifically dictate the target organism that your production water should be tested for; the acceptable limits for any target organism; or the frequency of testing. You must make these decisions based on your water risk assessment, and any regulatory requirements applicable to your farm. For outdoor production systems, generic *E. coli* testing, with results reported with a numeric count, not merely presence/absence, is likely the best target organism to measure.

#### F-5 Pre-Audit Checklist:

The water management plan must contain:

- Preventive controls
- Monitoring and verification procedures
- Corrective action plans
- Documentation of
  - Water test results
  - [Post-harvest Water Treatment and Monitoring Record](#)
  - Post-harvest handling records (to document microbial die-off or removal rates) and monitoring records
  - Supporting documentation for alternate approaches to any microbiological testing required by prevailing regulations
- Circumstances that will trigger review of the plan
- Training requirements
- Written water test procedure

### What to do if You Fail Your Water Test

If testing shows a water source is failing the microbial quality standard in your food safety plan that is relevant for how you use the water, you should conduct an environmental survey to find the cause and retest the water source as soon as possible after resolving the issue. Issues to investigate could include: a crack in your well casing, a faulty well seal, contaminated runoff, wildlife contamination, or other causes.

Steps to mitigate these circumstances could include: treating the water source with an approved disinfectant; repairing the well casing; providing a riparian buffer for livestock around an irrigation pond; fencing livestock out of irrigation ponds and their drainage basins; or switching to another source of water until test results meet the acceptance criteria in your food safety plan.

A more aggressive sampling program (i.e., sampling once per week instead of once per month) may be necessary if an explanation for the contamination is not readily apparent. Do not use water from that water system in a manner that directly contacts edible portions of crops until the water can meet the outlined acceptance criteria for its use.

If treatment of the water source is necessary, the disinfectant or other treatment method must be: approved for use in treating water; delivered in a manner to ensure that the treated water is consistently safe and of adequate sanitary quality for its intended use, or consistently meets the relevant microbial quality criteria; and monitored at a frequency adequate to ensure that the treated water is consistently safe and of adequate sanitary quality for its intended use, or consistently meets the relevant microbial quality criteria.

## F-6 Animal Control

Animals, whether they are your pets, wildlife or livestock, are potential sources of microbial food safety hazards for farm operations growing fresh produce. You must evaluate the risk that these hazards will result in contamination of your produce and implement prevention steps to minimize that risk.

Req. #	Requirement	DOC	MAN
F-6.1	The Operation has a written risk assessment on animal activity in and around the production area.	A	YES
F-6.2	The Operation routinely monitors for animal activity in and around the growing area during the growing season.	R	YES
F-6.3	Based on the risk assessment, there shall be measures to prevent or minimize the potential for contamination from animals, including domesticated animals used in farming operations.	WP, R	YES

## Wildlife Control

Farmers obviously want to keep wildlife from eating cash crops, but there are food safety risks to consider as well. Auditors understand that wildlife exists on a farm and that mitigation strategies may not always be effective. When planting crops, you should take into consideration that there may be areas you need to exclude from production. For example, if you have power lines that run over a field on which birds commonly perch, this will likely result in bird droppings on any produce located under the power lines.

In the event that you or an employee identify produce in the field or location in a production field that has been contaminated by wildlife, there must be a risk assessment of the area to determine a radius around the contaminated site within which any produce will not be harvested. Employees must be trained to rope off an adequate area around contamination until further assessment take place, for example 3 ft. x 3 ft. square.

Additional measures that may be useful in mitigating wildlife are:

1. Installing reflective materials, scarecrows, or owls within the production areas.
2. Using an OMRI approved perimeter spray.
3. Using scare tactics, such as noisemakers.
4. Installing portable electric fencing.

The auditor will review the written risk assessment to ensure it has been performed for the current season and is complete; your monitoring records to ensure the frequency of monitoring is consistent with the schedule written in your food safety plan; and any corrective or preventive actions taken to address instances of animal intrusion.

### Tip

#### Avoid tracking pathogens into crop fields.

Your shoes can be potential sources of contamination, especially when livestock is present on the farm. Consider having a designated pair of boots that are worn strictly for livestock care activities to prevent cross-contamination from your footwear to crop production areas or produce handling areas.

## Livestock and Poultry

Whether you already have livestock or poultry incorporated into your farming system, are considering expanding into animal production activities, or have neighbors raising animals on land adjacent to your farm, you must ensure adequate systems and practices are in place to minimize the risk of pathogens from those animals contaminating produce. Locate plant and animal production areas strategically to avoid contamination, taking into account the topography and any potential for water runoff and airflows to transmit pathogens into crop production fields: Vegetable production areas should not be located downhill from active livestock grazing areas.

Based on your risk assessment findings, you may want

to consider installing berms, tree rows, or other barriers to minimize food safety risks from adjacent lands or livestock production areas.

### F-6 Pre-Audit Checklist:

- Conduct an [Animal Control Risk Assessment](#) of the growing fields and adjacent land, prior to each growing season, focusing on domestic and wild animal activity, noting crop characteristics, type and approximate number of animals, proximity to the growing field, water sources and other relevant factors.

- Routinely monitor and document findings of animal activity within growing fields, and adjacent lands.
- Establish an SOP that includes actions to prevent or minimize the potential for contamination of produce with pathogens from animal feces, including domesticated animals used in farming operations. The SOP must contain a process for documenting any mitigation or corrective actions, as well as preventive actions to prevent a reoccurrence.

## F-7 Soil Amendments

Biological soil amendments are any soil amendments containing biological materials such as stabilized compost, manure, non-fecal animal byproducts, peat moss, pre-consumer vegetable waste, table waste, agricultural tea, or yard trimmings, alone or in combination. These materials are extremely valuable to building and maintaining health soils and can greatly contribute to overall plant and soil health. Animal-based soil amendments — Biological Soil Amendments of Animal Origin (BSAOAOs) — are amendments that include untreated cattle manure, poultry litter, swine slurry, horse manure, bone and blood meal, and sewage sludge biosolids, and are considered potential sources of microbial contaminants. Use of BSAOAOs is acceptable under the USDA HGAP standard when treated and/or handled properly so that they do not become likely sources of contamination to covered produce, food-contact surfaces, storage areas, agricultural water sources and distribution systems, or non-animal-origin soil amendments.

Req. #	Requirement	DOC	MAN
F-7.1	The food safety plan shall address soil amendment risk, preparation, use, and storage.	A, R	YES
F-7.1	If a soil amendment containing raw or incompletely treated manure is used, it shall be used in a manner so as not to serve as a source of contamination of produce.	R	YES

### Treated vs. Untreated BSAOAOs

When using raw manure or passively composted manure fertilizer, it is important to use best management practices to reduce risk from pathogens, such as: proper storage to prevent introduction of pathogens into the material; thorough incorporation of the material into the soil; maximizing the time between application of an untreated material to the field and harvest of produce crops; following proper composting practices; and keeping records of the application of the material. Manure that is composted improperly or incompletely may contain pathogenic bacteria, and therefore should be treated as raw manure. Following the National Organic Program standard for incorporating raw manure into the soil — 120 days prior to harvest for crops that are in contact with the soil, or 90 days prior for crops that do not come into contact with the soil — will meet the USDA HGAP standard, if you maintain proper documentation of your application of the material.

Consistent with the requirements of the FSMA Produce Safety Rule, USDA HGAP provides that compost that is made with BSAOAOs may be applied to crop fields with no minimal interval between application and harvest of produce from that field if it has been adequately processed to eliminate pathogens of human concern. For compost produced on-farm, 'adequate' processing means either:

- static composting that maintains aerobic conditions at 131 F (55 C) for 3 consecutive days followed by adequate curing; or
- turned composting that maintains aerobic conditions at a minimum of 131 F (55 C) for 15 days (which do not have to be consecutive), with a minimum of five turnings, and followed by adequate curing.

Curing is complete when the pile temperature is the same as the ambient air temperature; the pile does not have to be covered or insulated. You must document the composition of your compost and your composting process to prove that the time and temperature thresholds have been met. If you decide to include performance standards and microbial testing for on-farm composting in your food safety plan, you must also keep all testing records.

For commercially produced compost, you must obtain documentation from the manufacturer of adequate treatment, and/or a microbiological analysis or letter of guarantee indicating that the material meets one of the microbial standards in the PSR. It would be a best practice to get both types of documentation, and keep those documents along with your records of application of the compost. There are two PSR microbial performance standards for compost:

- Testing that shows less than 3 MPN/4g of *Salmonella* and less than 1,000 MPN/g of fecal coliform. Compost that meets this standard must be applied in a manner that minimizes the potential for contact with covered produce; and
- Testing that shows: *L. monocytogenes* is not detected using a method that can detect one CFU/5g; *Salmonella* is not detected using a method that can detect 3 MPN/4g of total solids; and *E. coli* O157:H7 is not detected using a method that can detect 0.3 MPN/g. There are no restrictions on the application or use of compost that meets this standard.

Compost teas are made with compost containing BSAOAOs that meets the treatment requirements described above, and with water that has no detectable generic *E. coli* per 100ML of water, may be used in the same manner as the compost itself would be. If you use compost tea, consider developing an SOP for your tea-making process, and maintain records of that process and of water testing results for the water source used in making the tea, along with all other BSAOAO processing and application documentation.

#### **F-7 Pre-Audit Checklist:**

- Conduct a [Biological Soil Amendment of Animal Origin Risk Assessment](#) that considers preparation, use and storage of animal-based soil amendments.
- For any animal-based soil amendments used, maintain records of composition, dates of treatment, treatment methods used, and application dates.
- Maintain records that provide evidence of adequate processing to eliminate pathogens of human concern. For purchased amendments, this documentation can be in the forms of a Letter of Guarantee, Certificate of Analysis (COA), or test results. For on-farm composting, records must be maintained verifying adequate processing (time and temperature) and demonstrating compliance with any process or microbial standards described in your food safety plan.

- For any animal-based soil amendments used, maintain records of composition, dates of treatment, methods used, and application dates.

### **Best Practices for Raw Manure Applications**

- Raw manure should be incorporated into the soil at least 2 weeks prior to seeding or transplanting.
- Raw manure should be applied and incorporated into the soil at least 120 days prior to harvest for crops that do come into contact with the soil.
- Raw manure should be applied and incorporated into the soil at least 90 days prior to harvest for crops that do not come into contact with the soil.
- Records of raw manure application should include the dates of application and the planting/harvesting of crops grown in the crop production area.

The best practices above are based on the USDA National Organic Program (NOP) Standards.

## **F-8 Vehicles, Equipment, Tools and Utensils**

Spoilage bacteria and pathogens can survive and grow on surfaces that remain wet or where nutrients are readily available from the accumulation of plant material or soil. To prevent this accumulation and the hazards it creates, surfaces of equipment, tools, utensils, and harvesting containers, including knives, that come in contact with produce must be cleaned and sanitized on a regular basis. Equipment used in the field in the production of fresh fruits and vegetables must be kept in good condition, and stored so as not to cause cross-contamination.

The auditor will observe production practices during the audit, including the use of vehicles, equipment, tools, and utensils that may potentially come into contact with produce, for evidence of food safety risks. All records pertaining to the maintenance, cleaning and sanitation procedures will be reviewed. Where water tanks are in use, the auditor will review tank cleaning procedures for steps to prevent contamination of produce.

Req.#	Requirement	DOC	MAN
F-8.1	Equipment, vehicles, tools utensils and other items or materials used in farming operations that may contact produce are identified.	R	NO
F-8.2	Equipment, vehicles, tools and utensils used in farming operations which come into contact with product are in good repair, and are not a source of contamination of produce.	WP	YES
F-8.3	Vehicles, equipment, tools and utensils shall be controlled so as not to be a source of chemical hazards.	R	YES
F-8.4	Vehicles, equipment, tools and utensils shall be controlled so as not to be a source of physical hazards.		NO
F-8.5	Cleaning and sanitizing procedures do not pose a risk of product contamination.		NO
F-8.6	Water tanks are cleaned at a sufficient frequency so as not to be a source of contamination.	WP	YES

### Cleaning and Sanitation Best Practices

Cleaning is the complete removal of soil and debris from a surface using a detergent labelled for use with food contact surfaces. Sanitizing is the reduction of microorganisms to levels considered safe from a public health standpoint, usually by applying an approved disinfectant. Cleaning and sanitation of the food contact surfaces of equipment, vehicles, tools, and utensils is a multi-step process:

- 1) Rinse off all debris.
- 2) Clean with an approved soap.
- 3) Thoroughly rinse off soap.
- 4) Apply sanitizer approved for food contact surfaces, following the label instructions. For some products, the label instructions may indicate that the sanitizer needs to be rinsed off.
- 5) Store the cleaned and sanitized objects in a way that avoids recontamination prior to their next use.

**NOTE:** Sanitizer will not be effective when applied to a dirty surface, or if soap residue is still on the surface.

**F-8 Pre-Audit Checklist:**

- Develop and implement an SOP for the cleaning, sanitizing, and storage and handling of all food contact surfaces to reduce and control potential for contamination. The SOP must include equipment and vehicles that are in the field infrequently.
- Maintain records of the date and method of cleaning and sanitizing of equipment.
- Maintain records of maintenance for all vehicles and equipment that may impact food safety.
- Include in the SOP a written procedure to address chemical spills and leaks (fuel, oil, hydraulic fluids), which might occur during equipment and vehicle operation in the field.

## Harvesting

### F-9 Pre-harvest Assessment

A pre-harvest risk assessment is often considered a nuisance for growers. But when considering this task, realize that you are always out looking at your crops, scouting for pests and disease, and evaluating yields.

**Tip**

**Make the most of pre-harvest assessment.**

As you write your food safety plan, consider additional monitoring activities that could be incorporated into your pre-harvest risk assessment, listing these activities at the top of the page, and verifying the activities are conducted by initialing and dating in multiple blocks at the bottom of the page. This creates one document that may be used for multiple of recordkeeping, covering many tasks. Record any non-conformance found on a [Notice of Unusual Occurrence and Corrective Actions](#) form.

Consider incorporating the requirement to conduct an assessment prior to harvest with these activities to create efficiencies within your operation. Your assessment must consider any conditions that may be reasonably likely to result in physical, chemical, or biological contamination of the produce, and document any findings or conclusions.

The auditor will review the written risk assessment to ensure it has been performed for the current season and is complete; review monitoring records to ensure the frequency of monitoring is consistent with the schedule written in your food safety plan; and review any corrective or preventive actions taken in response to findings of pre-harvest assessments.

Req.#	Requirement	DOC	MAN
F-9.1	A pre-harvest risk assessment shall be performed.	A	YES

**F-9 Pre-Audit Checklist:**

- Conduct a [Pre-harvest Risk Assessment](#), considering all potential contamination sources. Ensure that the food safety plan includes policies and procedures to mitigate food safety risks identified during the risk assessment.

## F-10 Water/Ice Used in the Harvesting and Post-harvest Operations

### Tip

#### Sanitizer, water change schedule key to recirculated water management.

Washing fruits and vegetables using recirculated water can amplify a small problem into a huge problem if not properly managed. Use an approved sanitizer, following the label instructions appropriate for the crop, in a least one step of the wash process. Regular monitoring and documenting of the actual free sanitizer levels in wash water is important. Accumulation of organic matter, such as dirt, in recirculated water not only reduces the overall free sanitizer levels, but may interfere with the operation of some sanitizer testing equipment. Create a water change schedule and document the process on a regularly scheduled basis (i.e., hourly).

Water and ice used during harvest activities in the field that directly contacts the harvested crop, or that is used on food contact surfaces, must meet the EPA Drinking Water Standards, with zero detectable generic *E. coli*. Relevant harvest activities could include washing produce prior to field packing, and top-icing within a consumer package as a cooling aid. These activities can amplify cross-contamination risks because water may become contaminated during use. Options for water to use to meet the microbial standard include: municipal drinking water; water from a source on your farm that has been tested to have no detectable generic *E. coli*; and treated water that is tested to have no detectable generic *E. coli*. Sanitizer use in a field dump tank is required for preventing cross-contamination from organic matter settling in the water during use, so a wash water quality monitoring and record system must be in place to ensure the efficacy of the sanitizer.

In the event that deliberate flooding is used during harvest activities (such as for cranberries, watercress), special consideration or variances may be made. Ice and water must always be sourced/manufactured, transported, and stored under sanitary conditions. If ice machines are in use, testing of the ice may be required to ensure that the machine does not present a contamination risk.

Req.#	Requirement	DOC	MAN
F-10.1	Operation has procedures for water used in contact with product or food contact surfaces.	WP, R	YES
F-10.2	Water use SOPs address the microbial quality of water or ice that directly contacts the harvested crop or is used on food-contact surfaces.	R	YES
F-10.3	Water use SOPs address treatment of re-circulated water, if used.	R	YES
F-10.4	Water use SOPs address condition and maintenance of water-delivery system.	R	YES
F-10.5	If applicable to the specific commodity, water use SOPs address control of wash water temperature	R	NO



Photo 6: Dump tank requiring recirculated water SOP.

### Recirculated Water Use (F-10.3)

When using recirculated water for post-harvest produce washing in the field, you must use an approved sanitizer to ensure that the water will meet the EPA Drinking Water Standard, i.e. zero generic *E.coli*. The purpose of the sanitizer is to keep the water from becoming a source of contamination: It does not disinfect the produce itself, and should not be used for disinfecting produce.

Your recirculated water SOP must include monitoring the water quality at prescribed frequencies, depending on the type and volume of produce being washed. For example, if you are washing root crops, the dirt and debris will quickly soil the water reduce the efficacy of the sanitizer, and therefore the water will need to be monitored on a more frequent basis. The SOP should call for the water to be changed when it visually appears to be dirty.

For monitoring, use test strips that measure the sanitizer's available active ingredient(s). For example, when using a food grade chlorine bleach in a dump tank, you must monitor the sanitizer strength using test strips that measure free chlorine. 'Free chlorine' differs from 'total chlorine' in that free chlorine is the portion of the chlorine that is actually available as an active sanitizer: Measuring total chlorine will not provide an accurate assessment of the sanitizer's effectiveness. Your SOP should also include checking on a regular basis that the test strips available on premises are not expired.

### Water Infiltration

Some commodities pose a higher risk for infiltration of water into the product when it is submerged. Infiltration occurs when a temperature difference between the water and the produce creates a pressure differential that causes air spaces inside the fruit or vegetable to contract, thereby allowing water to be pulled into the produce. If pathogens are present in the cooling/wash water, they may infiltrate the produce, and subsequent washing will not reduce levels of these pathogens. There are industry standard, commodity-specific wash processes for products with a high risk of infiltration including tomatoes and cantaloupes. These recommendations may include the utilization of an overhead spray bar instead of a dump tank to avoid submersion. In the event that a dump tank must be used, maintaining the correct water temperature is important to avoiding infiltration. The wash water temperature should be at least 10°F higher than the pulp (center) temperature of the product. Food safety or post-harvest physiology experts with industry associations, cooperative extension, or other entities can provide further information on high infiltration-risk commodities.

**F-10 Pre-Audit Checklist:**

- Keep water test results for all water sources and for ice on file.
- Incorporate water treatment and monitoring procedures into SOP if using recirculated water.
- Address the condition and maintenance of the water delivery system in your SOP, including ice machines.
- Maintain water temperature monitoring procedures for commodities with specific water temp requirements.

**F-11 Containers, Bins and Packaging Materials**

The USDA HGAP audit covers the sanitary use and maintenance of harvest containers, bins, and packaging materials that come into contact with produce. Storage areas used for these materials must be clean and sanitary, free from pests and rodents, and be organized in a manner to allow an auditor to examine them easily. Harvest containers, totes, bins, packing materials and pallets should be visually inspected, clean and intact, and free of any foreign materials prior to use. An auditor will look for a written policy on that inspection process; although the written policy is not a mandatory item, it is an easy area to pick up (or lose) a ‘compliant’ finding during your audit. All harvest containers must be appropriate to the commodity being harvested and suited for their intended purpose, and all containers designated for harvesting produce must not be used for any other purpose, unless they are clearly marked or labeled for that purpose.

Req.#	Requirement	DOC	MAN
F-11.1	Operation has a written policy regarding storage of harvesting containers.	WP	NO
F-11.2	Operation has written policy regarding inspection of food contact containers prior to use.	WP	NO
F-11.3	Operation has a written policy regarding acceptable harvesting containers.	WP	YES
F-11.4	Operation has written policy prohibiting use of harvest containers for non-harvest purposes.	WP	YES

**F-11 Pre-Audit Checklist:**

- Include a one-sentence policy that “all harvest containers, bins and packaging materials will be visually inspected to ensure they are clean, intact, and free of foreign materials prior to use” in your food safety plan.
- Apply the policy, and ensure these materials appear to be clean prior to use. Auditors can tell from their visual observations when containers have not been cleaned and sanitized on a regular schedule.
- Use only harvest containers that will not cause damage to the harvested produce in the field or during transport.
- If harvest containers are used for non-harvest purposes, label those containers prominently to ensure that they are not used for holding produce.

## F-12 Field Packing and Handling

Harvesters must be trained to harvest crops in ways that minimize damage and waste, with minimal handling, to maintain the quality of the produce and minimize scarring and damage that could become a food safety issue. When produce becomes contaminated while on the plant or after harvest, the produce must be disposed of properly. If a harvested produce item does not grow in contact with the ground, but is dropped on the ground, that item must be culled. Contact with the soil of cut surfaces of harvested produce, such as the stem end of a head of lettuce, should be avoided.

When cloths or other cleaning materials are used to wipe produce prior to packing, you should have a procedure in place to prevent cross-contamination, and train workers to apply it; single-use towels would be a lower cross-contamination risk than multi-use ones. Glass, metals, rocks and other physical contaminants are likely present in crop fields, so during harvesting and field packing produce and containers should be visually inspected for these hazards, and any physical contaminants removed upon discovery.

Req.#	Requirement	DOC	MAN
F-12.1	Operation shall have a written policy that visibly contaminated, damaged or decayed produce is not harvested, or is culled.	WP	YES
F-12.2	Product that contacts the ground shall not be harvested unless the product normally grows in contact with the ground.	WP	YES
F-12.3	Harvest procedures shall include measures to inspect for and remove physical hazards. Operation has written policy prohibiting use of harvest containers for non-harvest purposes.		NO
F-12.4	Cloths, towels, or other cleaning materials that pose a risk of cross-contamination shall not be used to wipe produce.		NO
F-12.5	Packaging materials shall be appropriate for their intended use.		YES
F-12.6	Packaging shall be stored in a manner that prevents contamination.		NO
F-12.7	Operation has written policy regarding whether packing materials are permitted in direct contact with the soil.	WP	NO

**F-12 Pre-Audit Checklist:**

- Properly train harvest workers not to harvest, or to cull, visibly contaminated, damaged or decayed produce.
- Have a written SOP regarding produce and packing material that comes into contact with the soil, including that cut surfaces of harvested produce will not come into contact with soil.
- Ensure that the packaging is appropriate to the commodity being harvested and suited for its intended purpose.

**F-13 Post-harvest Handling and Storage (Field Prior to Storage or Packinghouse)**

Once produce is harvested, it must be handled in a manner that prevents damage or contamination during post-harvest handling or storage. The auditor will make visual observations to verify that harvested produce is handled in a manner to protect it from becoming contaminated. All materials that come into contact with the produce must be clean, sanitized when possible, in good repair, and stored in an area that does not pose a food safety hazard.

Req.#	Requirement	DOC	MAN
F-13.1	Harvested produce is handled in a manner such that it is not likely to become contaminated.		YES
F-13.2	Materials that come in contact with the produce shall be clean and in good repair.		YES
F-13.3	Harvested produce shall be stored separately from chemicals which may pose a food safety hazard.		YES

**F-13 Pre-Audit Checklist:**

- Train employees in good handling practices.
- Make sure that pallets, bins, totes, and materials that come into contact with produce during handling or storage are clean, and are sanitized if necessary and practicable.
- Store chemicals, including cleaning fluids and non-food grade lubricants, separate from harvested produce.

# Transportation (Field to Storage or Packinghouse)

## F-14 Equipment Sanitation and Maintenance

Good Agricultural Practices must be maintained through every step of the supply chain to ensure that cross-contamination does not occur. Equipment is often overlooked as a potential source of contamination. Shipping units (trucks, trailers, ATVs) must be clean, in good working order, and free of objectionable odors before loading. Additional requirements may need to be implemented for certain high-risk commodities, based on the risks associated with the operational practices. All refrigeration units (reefer trucks) used to transport produce must be in working order and not serve as a potential source of contamination during transport. The auditor will review your cleaning and ‘inspection-prior-to-loading’ procedures for shipping units, and conduct an inspection of equipment during the audit.

If loading and unloading is observed during the audit, the auditor will assess whether responsible personnel take necessary steps to minimize the potential of physical damage to produce that could impair product quality or introduce or promote the growth of pathogens. The equipment used for loading/unloading will be visually inspected for cleanliness and proper maintenance, and to ensure that it is intended for such use.

Req.#	Requirement	DOC	MAN
F-14.1	The Operation shall have a policy, written procedures, and a checklist to verify cleanliness and functionality of shipping units (e.g., trailer).	WP, R	YES
F-14.2	Loading/unloading procedures and equipment shall minimize damage to and prevent contamination of produce.		NO

### F-14 Pre-Audit Checklist:

- Have a written SOP requiring shipping units to be clean, functional and free of objectionable odors prior to loading, and requiring that refrigeration units are in working order.
- Maintain a recordkeeping system to act as verification of shipping unit inspections. You can include this information on a load ticket or other existing shipment document such as an invoice.

# Post-Harvest Operations

## Questions P-1 – P-10

The Post-Harvest Operations scope applies to all operations that handle, process, pack, store or distribute fresh produce after harvesting takes place. A food hub, for example, would fall under this scope, as well as an on-farm packinghouse that washes, repacks, or further handles harvested produce. The scope includes sourcing product from other operations for distribution, as well as sanitation practices, post-harvest agricultural chemical use, and transportation to the customer.

### P-1 Produce Sourcing

Ensuring your produce suppliers are reputable and reliable demonstrates your commitment to food safety, and implementing a program for approving those suppliers is the optimal method for achieving this control. If you are aggregating produce from multiple small farms for shipment to a larger buyer, you should have an approved supplier program. Although this is not a mandatory item under the USDA HGAP standard, an auditor will assess whether you require compliance from produce suppliers with Field Operations and Harvesting scope of the standard, and failure to do so could be marked as a CAN. If you do impose this requirement, you will need to have on file proof that your supplying farms follow HGAPs in growing and harvesting the produce they provide to you.

**NOTE:** This requirement does not mean suppliers have to undergo an HGAP audit. Rather, they should have documentation that are abiding by a food safety program for the production and harvesting of produce that is aligned with the Produce GAP Harmonization Initiative. For produce suppliers that are not HGAP audited, establish a system to verify that they implement HGAPs in growing and harvesting the crops they provide to you.

Req.#	Requirement	DOC	MAN
P-1.1	The Operation has a policy and takes affirmative steps to ensure that all fresh produce that are packed or stored in the Operation are grown following requirements in Field Operations and Harvesting harmonized standard.	R	NO

#### P-1 Pre-Audit Checklist:

- For operations that supply you with produce, obtain copies of and documentation that verifies those suppliers' compliance with the Field Operations and Harvesting scope of the harmonized standard (USDA or others).

### P-2 Agricultural Chemicals

Agricultural chemicals applied post-harvest (e.g., biocides, waxes and plant protection products) must be registered for such use as required by prevailing regulation, which may be either a state or a federal rule. Always follow label instructions, including application rates, worker protection standards, personal protection equipment, container disposal, storage, and any requirements that are specific to the chemical or compound.

Req.#	Requirement	DOC	MAN
P-2.1	Use of agricultural chemicals shall comply with label directions and prevailing regulation.	R	YES
P-2.2	If product is intended for export, pre- and post-harvest agricultural chemical use shall consider requirements in the intended country of destination.		NO
P-2.3	Agricultural chemicals shall be applied by trained, licensed or certified application personnel, as required by prevailing regulation.	R	NO

### **Agricultural Chemicals (P-2.1)**

You must keep records of any post-harvest chemical use, including the date of application, application rate, crop, and any records for monitoring the chemical's presence after application that may be required by the prevailing regulation.

### **Exporting Product (P-2.2)**

If your product is intended for export, all pre-harvest and post-harvest agricultural chemical use must take into account the requirements in the intended country of destination. If the product is not intended for export, the auditor will mark P-2.2 as not applicable on the audit checklist.

### **Trained, Licensed or Certified Applicator (P-2.3)**

Agricultural chemicals that are applied post-harvest must be applied by trained, licensed or certified application personnel, as required by prevailing regulation. The auditor will review records that demonstrate that application personnel are licensed and/or trained in compliance with prevailing regulation.

### **P-2 Pre-Audit Checklist:**

- Train workers how to properly handle and apply any agricultural chemicals used post-harvest, focusing on following label instructions.
- Maintain a copy of any staff members' pesticide application trainings, licenses, or certifications in the food safety manual, ensuring that any licenses or certifications have not expired.

## **P-3 Facility**

The building(s) where any produce handling or storage activities take place within your operation must be constructed and maintained in a manner that allows for proper cleaning and sanitation, and that does not provide harborage for contaminants or pests. Any temperature controlled areas, including coolers and staging areas, must be properly sealed and be constructed in a manner that provides adequate drainage, such as floor drains or floor grading, to minimize standing water. Contamination of produce, raw materials and/or food contact surfaces can occur from drips or condensate that falls from fixtures, ducts, pipes and other overhead structures. Use drip pans to minimize this potential cross-contamination.

Assess air intakes to ensure that they are not pulling airborne contaminants into your buildings from neighboring farms or other sources.

Req.#	Requirement	DOC	MAN
P-3.1	Building shall be constructed and maintained in a manner that prevents contamination of produce during staging and cooling.		YES
P-3.2	Adequate lighting shall be provided in all areas.		NO
P-3.3	Only essential glass and brittle plastic shall be present in the building.	R	NO
P-3.4	Catwalks above product zones are protected to prevent produce or packaging contamination.		NO
P-3.5	Operation has procedures to prevent pest harborage in any equipment stored near the building.		NO
P-3.6	If applicable, Operation has a written Allergen Control Program.	A, WP	YES

**Building Construction and Maintenance (P-3.1)**

This HGAP standard does not require that buildings where produce is handled be completely enclosed. A covered area, with open sidewalls, is sufficient for handling and storing produce, as long as there are proper policies and procedures in place to ensure that contamination from wildlife or the environment is minimized. If your packing facility is open to the environment, you will want to visually inspect frequently for wildlife or environmental hazards that might emerge in an open structure, such as looking for signs of birds nesting inside the structure. A best practice is to document such inspections in your food safety manual.

**Lighting (P-3.2)**

Adequate lighting is necessary to ensure that cleaning, sanitation, and repairs can be conducted properly and safely. The auditor will visually observe that all areas where produce is handled or stored are well lit during the audit.



Photo 7: Example of an appropriate open packing shed.



Photo 8: This light cover is insufficient to protect produce below from contamination in the event the light bulb breaks.

### **Glass and Brittle Plastic (P-3.3)**

It may be necessary for glass and brittle plastic to be present in an area where produce is handled, but you must take precautions to avoid physical contamination of product from the glass or plastic. Coated silicone light bulbs and plastic sleeves for fluorescent light bulbs can contain glass from broken bulbs. If plastic covers are used on a fluorescent light fixture, any broken covers need to be replaced in a timely fashion.

### **Contamination from Catwalks (P-3.4)**

If there are catwalks in your facility, they must be positioned to protect product handling areas or packing supplies from overhead contamination. The catwalks must be made of a solid surface or otherwise have catch trays attached underneath to prevent particles from falling onto food contact surfaces, with kick plates to keep dirt and debris from falling over the sides. Alternatively, product or supplies located beneath the catwalk or other overhead sources of potential contamination may be covered with a tarp or other nonporous, nonabsorbent blanketing.

### **Pest Harborage (P-3.5)**

Unused equipment, trash piles, and overgrown grass near a packinghouse are attractive places for pests to live because they provide shelter with easy access to potential food sources inside the building. An auditor will assess the area surrounding your packinghouse for such pest harborage sites. Any 'bone yard' for equipment accumulation should not be located around buildings where produce is handled or stored, and any equipment stored outside should be far enough away to allow for mowing around the buildings' perimeters. The plant material trimmed from crops and produce culled during post-harvest handling should be disposed of or composted away from produce handling areas.

### **Allergen Control (P-3.6)**

For some potential consumers of your products, exposure to even trace amounts of food allergens can cause very serious illness or even death. Produce that comes into contact with food allergens can cause allergic reactions, and so care should be taken to ensure that allergens are not introduced into your produce crops. Implementing controls for the 'big eight' allergens (wheat, soy, peanuts, tree nuts, dairy, eggs, fish, shellfish), if applicable, is important avoid cross-contamination of product. Storing peanut snacks for workers, or eggs produced on the farm for your personal use, in coolers with produce that is meant for sale are examples of seemingly benign activities that can lead to allergen contamination.

In the event allergens are stored or handled in the same areas as produce, you must have an allergen control program in place with SOPs for addressing allergen hazards. For example, if you wash eggs in the same sink as produce, you must have a clean break in between with proper sanitation between washing eggs and washing produce. Allergens should never be stored above fresh produce, including in temperature-controlled areas. Posting signage identifying designated allergen storage is a best practice.

**P-3 Pre-Audit Checklist:**

- Mow areas around structures used for handling and storing of produce.
- Conduct an [Allergen Risk Assessment](#) to identify if there is any reasonable potential that any of the eight major allergens (wheat, peanuts, tree nuts, milk, eggs, soybeans, fish and shellfish) being present in produce handling or storage areas.
- If you identify allergen contamination risks, write and implement an allergen control program listing the allergens and providing for segregation of those allergens from produce during storage and handling.

**P-4 Pest and Animal Control**

You must have a pest and animal control program to ensure that disease vectors are controlled in areas where produce is handled and packing supplies are stored. Domesticated animals are prohibited from packing, cooling and storage facilities, unless procedures are in place for their safe presence. Excessive pest and wild animal sightings, or excessive droppings (feces), during an audit can result in an automatic failure. Your pest control program may be managed in-house, and documented using the [Pest and Rodent Control Record](#). It is not necessary to hire a contract pest control company.

For enclosed structures used for storage or handling of produce, the interior walls, floors and ceilings must be well maintained and free of major cracks or crevices that would allow for pest entry. If you do not have completely enclosed structures, measures must be taken to ensure that all materials and produce are protected from potential pest- or animal-borne contaminants.

Req.#	Requirement	DOC	MAN
P-4.1	Operation has procedures to manage pests to the extent appropriate to the Operation.	WP	YES
P-4.2	Operation restricts animals from food handling areas.		YES
P-4.3	If used, pest control devices, including rodent traps and electrical flying insect devices, are located so as to not contaminate produce or food handling surfaces.		NO

**Tip****Don't let pest traps become pest lures.**

Use caution when choosing pest control options, being careful not to lure pests and rodents into your greenhouses, high tunnels and other building structures with traps baited with food. Sticky traps or hotel-type Tin-Cats without bait are recommended to avoid attracting pest and rodents that would not otherwise enter your facilities.

**P-4 Pre-Audit Checklist:**

- Have a written pest control program in place, including: management of storage of equipment outside or other conditions that could provide harborage for pests; and maps of pest trap locations inside and outside of the operation.
- Maintain pest-control logs, or have reports from contract pest control providers on file, that include dates of inspection, inspection reports and steps taken to eliminate any problems.
- For applications of pesticides (insecticides or rodenticides), maintain the pest control operator's credentials on file.

- In areas where animals are prohibited (packinghouse, cooling and storage areas), hang signs stating pet policy procedures, or include the pet policy in the visitor/contractor policy and employee training sessions.
- In the event you use interior pest traps, use only non-toxic traps and pest control devices inside the packinghouse or storage building. Traps must be located so that they do not contaminate produce or food handling surfaces.

## P-5 Equipment, Tools and Utensils

You must take steps to prevent equipment, tools and utensils from being potential sources of chemical, physical or microbiological contamination within your facility.

Req.#	Requirement	DOC	MAN
P-5.1	All food contact equipment, tools and utensils are designed and made of materials that are easily cleaned and maintained.		YES
P-5.2	Equipment is installed in a way that provides access for cleaning.		NO
P-5.3	Equipment lubrication is managed so as not to contaminate food products.		NO
P-5.4	All instruments used to measure temperature, pH, antimicrobial levels and or other important devices used to monitor requirements in this section shall be adequately maintained and calibrated at a frequency sufficient to assure continuous accuracy.	R	YES
P-5.5	Foreign material control devices are inspected and maintained.	R	NO



Photo 9: Proper storage of harvest tools to prevent potential cross- contamination.

### Food Contact Surfaces (P-5.1)

A best practice for food contact surfaces like packing lines is to ensure they are made of non- porous materials and have smooth welds. If equipment is older and may contain areas that could harbor bacteria, be sure to implement procedures allowing for additional precautions to minimize cross-contamination to the best of your ability.

### Equipment Installation (P-5.2)

Ensure that cooling, packing and other food contact equipment is positioned at least six inches away from walls to allow for proper inspection, cleaning, and sanitation.

**Equipment Lubrication (P-5.3)**

Only use food-grade lubricants on food processing and packaging equipment, unless the manufacturer specifies that a non-food grade lubricant must be used for proper operation of the equipment. If non-food grade lubricants are present in your facility, store them so they are not a potential source of contamination to produce of food-contact surfaces.

**Foreign Material Control Devices (P-5.5)**

If you use foreign material control devices, be sure to include them in your [Preventive Maintenance and Sanitation Schedule](#) or other equipment maintenance program called for in your food safety plan.

**P-5 Pre-Audit Checklist:**

- To the best of your ability, avoid porous surfaces (wooden broom handles, sponge rollers) that can harbor bacteria.  
**NOTE:** The use of wood pallets and tables is acceptable if maintained in good condition, per industry standard.
- Maintain and document a schedule and procedures for repairing, cleaning, and sanitizing all food contact surfaces used in storage and handling of produce.  
**NOTE:** This question does not specifically require a written SOP; however the checklist compliance procedure itself states that procedures must be documented.

**P-6 Maintenance and Sanitation**

Scheduling regular maintenance, cleaning, and sanitation of equipment on a regular basis can minimize potential contamination. Always ensure that equipment, tools, and utensils are in good working order, and any temporary repairs to such items are permanently resolved in a timely manner. Waste management, sewage or septic system monitoring, gray water disposal, and general grounds maintenance are issues within this section that the auditor will focus on, primarily through visual inspections.

Certain areas within a packinghouse are often overlooked as part of regularly scheduled cleaning procedures, such as drains in wet and dry zones, walls, ceilings, pipes, and drip pans or condensers in cold storage units. A cleaning and sanitizing schedule can be developed for certain items or areas to be cleaned less frequently than others (weekly vs. monthly). Establishing timelines and responsibilities as part of your preventive maintenance and/or master cleaning schedule is recommended. Ensure that all cleaning agents are approved for the intended use. Be sure to include all food contact surfaces in the preventive maintenance and/or master cleaning schedule.

The auditor will visually inspect the perimeter of all structures used for produce handling and packaging for trash, leaves, trim, culls, waste water, and other waste materials that may attract pests and rodents and so become a source of produce contamination. Ensure these areas are clean, and that grassy areas are maintained reasonably free of these conditions, including standing water.

Req.#	Requirement	DOC	MAN
P-6.1	A Preventive Maintenance and/or Master Cleaning Schedule, with related SOPs, shall be established.	WP, R	YES
P-6.2	Any temporary repairs on food contact surfaces are constructed of food-grade material. Operation has a procedure to ensure that permanent repairs are implemented in a timely manner.		NO
P-6.3	All cleaning agents shall be approved for their intended use on food contact surfaces.		NO
P-6.4	Cleaning equipment and tools are clean, in working order and stored properly away from product handling areas. Foreign material control devices are inspected and maintained.		NO
P-6.5	Food contact surfaces shall be cleaned, sanitized and maintained according to the Food Safety Plan.	R	YES
P-6.6	Transporting equipment shall be maintained to prevent contamination of products being transported.	R	YES
P-6.7	Waste materials and their removal are managed to avoid contamination.		YES
P-6.8	Outside garbage receptacles/dumpsters are closed and located away from building entrances and the area around such sites is reasonably clean.		NO
P-6.9	The plant grounds are reasonably free of litter, waste culls, vegetation, debris and standing water.		NO
P-6.10	Sewage or septic systems are maintained so as not to be a source of contamination.		YES
P-6.11	The sewage disposal system is adequate for the process and maintained to prevent direct or indirect product contamination.		YES

#### **P-6 Pre-Audit Checklist:**

- Maintain transportation equipment (pallet jacks, carts, trolleys, and forklifts) to prevent contamination; list them on the preventive maintenance and/or master cleaning schedule.
- Lines used for washing, grading, sorting, or packing should be cleaned and sanitized prior to use as appropriate per the produce washing risk assessment required in P-7.4.

## P-7 Post-Harvest Water/Ice

Water sources used during post-harvest activities must be clearly identified within the water system description. The water delivery system must be maintained so as to not create unsanitary conditions, or serve as a source of pathogen contamination of

produce, water sources or equipment. All water systems used in handling finished products must be equipped with a backflow prevention device or a means to prevent cross connections between product contact water and wastewater. If antimicrobial chemicals are used in your wash water, their labels must indicate that they have been registered with and approved by the EPA, FDA, or the prevailing local regulatory agency for use on food, and all instructions for use on the label must be followed. The original label of the chemical must always stay intact with the original container.

The auditor will likely request verification of maintenance records and will visually observe the water system connections during the audit. It may be necessary to have a plumbing contractor conduct an annual inspection of the backflow prevention devices installed to ensure proper functionality: The contractor’s invoice will serve as adequate documentation. At a minimum backflow prevention devices should be installed so that they can be inspected as part of your regular maintenance schedule.

### Tip

**Make sure post-harvest water treatment agents are food grade.**

Water is a high-risk route for bacterial contamination and must be monitored at all times when it comes into contact with harvested product or food-contact surfaces, with corrective actions ready to deploy if problems occur. When product is immersed in water, water temperature differentials during immersion must be controlled in the case of products susceptible to infiltration of the water. Never mix cleaning products (i.e., dish washing liquid and germicidal bleach) without reviewing the labels, because two products combined could form a carcinogen that can infiltrate the product and become a public health concern. And all products used in cleaning/sanitizing post-harvest water must be labeled for use on food (“food grade”) to ensure harmful chemicals do not contaminate the surface of or infiltrate produce.

Req.#	Requirement	DOC	MAN
P-7.1	A water system description shall be prepared.	R	YES
P-7.2	Documented scheduled assessment of water system including delivery equipment shall be performed.	R	YES
P-7.3	Water use SOPs address the microbial quality of water or ice that directly contacts the harvested crop or is used on food-contact surfaces.	R	YES
P-7.4	Operation’s Food Safety Plan includes produce washing process, if used.	A, WP	YES
P-7.5	If used, water antimicrobial treatments shall be monitored sufficiently to assure continuous control.	R	YES
P-7.6	Re-circulated water that contacts product or food contact surfaces shall be treated using an approved antimicrobial process or chemical treatment.		
P-7.7	Operation has documentation demonstrating regulatory approval of the wash water antimicrobials in use.	R	

Req.#	Requirement	DOC	MAN
P-7.7	Operation has documentation demonstrating regulatory approval of the wash water antimicrobials in use.	R	
P-7.8	If wash water antimicrobial is used, it shall be used in accordance with established operational procedure and manufacturer instructions.	R	
P-7.9	If applicable to the specific commodity, water use SOPs address control of immersion water temperature.	R	
P-7.10	Water-change schedules shall be developed for all uses of water where water is re-used.		
P-7.11	Debris, damaged and/or visibly contaminated produce shall be removed from wash areas/dump tanks to the extent possible.		

### P-7 Pre-Audit Checklist:

- A water system description must be on file.
- Microbial test results must be on file for all water or ice that comes into direct contact with the harvested crop, or is used on food-contact surfaces. The SOP must state that the water or ice will meet the EPA microbial standards for drinking water (zero generic *E. coli*), or any other relevant state or local regulation, whichever is more stringent.
- If used, antimicrobial water treatments must be monitored sufficiently to assure continuous control. This is especially important for recirculated water.
- When using recirculated water, use an antimicrobial treatment sufficient to prevent cross-contamination from soiled water. (See F-10 for more information on post-harvest water treatment.)
- Conduct routine checks to verify that back siphonage and backflow prevention units are functioning properly, and keep documentation of system's annual service on file.
- Conduct a [Produce Washing Risk Assessment](#), considering the commodity, type of wash system (single-pass or recirculated), type of sanitizer (label instructions), and water quality.
- Incorporate an SOP in your food safety plan clearly describing the wash process, acceptance criteria, monitoring of wash water, and corrective and preventive actions.

### P-8 Containers, Bins and Packaging

Containers, bins, and packaging should be used for their intended purpose (unless otherwise labeled) and stored properly to prevent potential contamination. Have a written procedure for handling containers, bins and packaging that covers whether product-contact containers are permitted in direct contact with the ground, and a pre-use inspection policy that specifies what an acceptable product-container is (new cardboard boxes, RPCs, etc.). In the event that pallets are used to keep product from contacting the ground, they must be kept clean and in good condition as appropriate for the intended purpose; otherwise they may present opportunity for cross-contamination.

Req.#	Requirement	DOC	MAN
P-8.1	Specifications for all packaging materials that impact on finished product safety shall be provided and comply with prevailing regulations.	R	
P-8.2	Operation has written policy regarding storage and post-storage handling of product-contact containers.	WP	
P-8.3	Operation has written policy regarding whether product-contact containers are permitted in direct contact with the ground.	WP	
P-8.4	Operation has written policy regarding inspection of food contact containers and bins prior to use.	WP	
P-8.5	Operation has written policy regarding acceptable product-contact containers.	WP	YES
P-8.6	Operation has written policy prohibiting use of product-contact containers for non-product purposes unless clearly marked or labeled for that purpose.	WP	
P-8.7	Pallets shall be kept clean and in good condition as appropriate for their intended use.		

#### **P-8 Pre-Audit Checklist:**

- Compile a list of all packing material product specifications, i.e., Romaine Lettuce, 20 ct., 1 1/9 bushel wax box.
- Prepare a Standard Operating Procedure incorporating the requirements of P-8.2 – P-8.6 of the standard.
- Ensure that a designated area for clean pallets is easily distinguished by posting signs. Broken or heavily soiled pallets must be discarded.

### **P-9 Storage**

Storage areas used for products and supplies can become a source of potential contamination if not properly maintained and organized. Shared storage spaces can result in cross-contamination of produce: For example, storing chemicals near produce could result in adulteration of food in the event of a chemical leak or spill. When storing products, the storage areas and conditions must be appropriate to the commodities being stored. Cold storage areas must be fitted with temperature monitoring equipment or suitable temperature monitoring devices, and monitoring records should be on file to verify that temperatures are appropriate for the commodity. Cooling equipment should be maintained in a manner so as to not serve as a potential contamination source through drips or condensation. To the extent possible maintain spaces between pallets and walls to ensure that adequate inspections, cleaning, and sanitation can occur.

Req.#	Requirement	DOC	MAN
P-9.1	Product storage areas and conditions shall be appropriate to the commodities stored.		
P-9.2	Iced produce is handled so as not to serve as a source of contamination.		
P-9.3	Non-product storage areas shall be maintained so as not to be a source of product or materials contamination.		
P-9.4	Materials and packaging materials shall be protected from contaminants.		
P-9.5	Adequate space shall be maintained between rows of stored materials to allow cleaning and inspection.	WP	
P-9.6	All chemicals shall be stored in a secure separate area. All chemicals shall be properly labeled.		
P-9.7	When produce is cooled, it is cooled to temperatures appropriate to the commodity according to current established regulatory or industry standards.	R	
P-9.8	Where temperature control is required for food safety, cooling facilities shall be fitted with temperature monitoring equipment or suitable temperature monitoring device.	R	
P-9.9	Cooling equipment shall be maintained so as not to be a source of product contamination.		YES



Photo 10: Icing of cauliflower. No produce should be stored beneath.

### Top-Icing (P-9.2)

When top-icing product, dry products and other food items should be stored above the iced product to avoid cross-contamination from water that drips from melting ice. The auditor will visually observe all storage areas and inspect iced product on the premises during the audit to assess whether all stored materials are protected from contamination. Strategically storing product should be considered during cold storage and transportation.

**P-9 Pre-Audit Checklist:**

- Ensure all product is protected from contamination, including the boxes it will be shipped in. Consider condensation drips in cold storage areas.
- Place all iced items on bottom shelving in coolers and avoid stacking of iced product on non-iced product.
- Cover all materials and packaging materials stored in unenclosed areas with a clean tarp or other clean wrapping. Inspect all stored material areas to ensure adequate spacing for proper pest/rodent visual monitoring and cleaning.
- Check labels on chemical containers to ensure they are attached, and store chemicals in a secured (locked) area.
- For commodities that require temperature control for food safety, such as leafy greens, maintain cold storage area temperature monitoring logs to verify that the appropriate temperatures to avoid microbial growth on product post-harvest are being maintained.
- Ensure temperature monitoring devices are installed and in good working order.
- Periodically inspect cooling equipment for evidence of pest/rodent contamination, as well as condensation and drips.

**Tip****Understand the use and purposes of chilled transportation.**

Cold transport units are not designed to cool product: They only maintain temperatures during transport. This should be considered when loading produce to ensure the product maintains its quality during transportation.

**P-10 Transportation (Packinghouse to Customer)**

You should have a written policy specifying the requirements for cleanliness and functionality of shipping units and conveyances (truck, trailer, etc.). When refrigerated transportation is required for food safety, the standard suggests that you establish predetermined temperature requirements for transporters and that the vehicle cargo area be pre-cooled prior to loading, with a thermostatic device in place in the cargo area as necessary to monitor and maintain the required temperature. If internal product (pulp) temperature monitoring is part of your food safety program, the written procedure should include when and how to measure product temperatures prior to or during loading. This process may be a requirement of your buyer.

Improperly loading and unloading shipping units can cause damage to the produce, creating a potential route of pathogen entry. Use boxes designed for specific commodities to provide the stability needed to protect the products inside.

During an audit, the auditor may review all written cleaning procedures and inspection records verifying the cleanliness and functionality of all shipping units used at ambient or controlled temperatures. The written procedure must state that the unit will not be used for raw animal or animal product transport, or for other materials that reasonably may be a source of contamination with biological, chemical, or physical hazards, unless proper cleaning and procedures are in place.

Req.#	Requirement	DOC	MAN
P-10.1	There is a written policy for transporters and conveyances to maintain a specified temperature(s) during transit.	WP	
P-10.2	Prior to loading, the vehicle shall be pre-cooled.	WP, R	
P-10.3	The refrigerated transport vehicles shall have properly maintained and fully functional refrigeration equipment.	WP	
P-10.4	Where required, temperatures of product are taken and recorded prior to or upon loading.	WP	
P-10.5	The Operation shall have a policy, written procedures, and a checklist to verify cleanliness and functionality of shipping units (e.g., trailer).	WP, R	YES
P-10.6	Loading/unloading procedures and equipment shall minimize damage to and prevent contamination of produce.		

**P-10 Pre-Audit Checklist:**

- Ensure all shipping units are clean, functional and free of objectionable odors before loading, and cooled prior to loading, as written in your food safety program, and/or as required for compliance with current industry practices or commodity specific regulatory requirements.
- Make sure that when refrigerated transport is used, refrigeration units are in working order and do not serve as potential source of contamination.
- Maintain records of verification that shipping units have been washed between loads if prior transport included materials that reasonably may be a source of contamination.

# Logo Use

## Questions L-1 – L-4

USDA GAP program participants that maintain compliance with the program requirements may apply to use the GAP & GHP program logo, although use of the logo is not mandatory. Participants who choose to use this logo must undergo the Logo Use scope of the USDA HGAP Audit and submit a written request utilizing the [Logo Use Request for Audit Program Form \(SC- 652\)](#) with supporting documents as stated in the [Instructions for Use of the GAP & GHP Logo](#).

## Appendix A: Quick links

USDA Harmonized GAP Standard <https://www.ams.usda.gov/sites/default/files/media/HarmonizedStandard.pdf>

USDA Harmonized GAP Checklist <https://www.ams.usda.gov/sites/default/files/media/HarmonizedGAPChecklist.pdf>

Complete the Request for Audit Services (Form SC-237A) <https://www.ams.usda.gov/resources/sc237a>

USDA Harmonized GAP Program Alignment with FDA Produce Safety Rule Frequently Asked Questions <https://www.ams.usda.gov/sites/default/files/media/FAQsUSDAGAPFSMAProduceSafetyRuleAlignment.pdf>

Participation in Audit Services Form (SC-651) <https://www.ams.usda.gov/sites/default/files/media/SC651.pdf>

Specialty Crops Inspection Division Vendor Form <https://www.ams.usda.gov/sites/default/files/media/SC430VendorForm.pdf>

Specialty Crops Inspection Division Vendor Form Completion Instructions <https://www.ams.usda.gov/sites/default/files/media/InstructionforCompletingSC430forAuditServices.pdf>

Logo Use Request for Audit Programs Form <https://www.ams.usda.gov/sites/default/files/media/SC652.pdf>

Instructions for Use of the GAP & GHP Logo <https://www.ams.usda.gov/sites/default/files/media/Instructions%20for%20the%20Use%20of%20the%20GAPGHP%20Audit%20Verification%20Program%20Logo.pdf>

CFSA Risk Assessment and Recordkeeping Templates <https://www.carolinafarmstewards.org/usda-harmonized-gap-handbook-and-recordkeeping-templates/>

## Appendix B: Request for Audit Services Form (SC-287A)



Print

Save

Reset

OMB No. 0581-0125  
Exp. 8/31/2019

### AGRICULTURAL MARKETING SERVICE, SPECIALTY CROPS PROGRAM REQUEST FOR AUDIT SERVICES

(This is the only acceptable form for fax or electronic submission to USDA for audit requests)

NOTE: Fill in all appropriate blocks. Requested services may be delayed because of incomplete information. Type of service requested must be selected below. Services will be declined if the request is beyond our scope of certification. Once a request has been received, a USDA representative will make contact within 48 hours of receipt to schedule the audit.

<b>DATE OF REQUEST:</b>		<b>ANTICIPATED DATE OF AUDIT:</b>	
-------------------------	--	-----------------------------------	--

AUDITEE INFORMATION		FARM / FACILITY INFORMATION	
Company Name:		Location:	
Street Address:			
City, State & Zip:		Total Acres / Total Sq Feet to be audited:	
Phone Number:			
Contact Person:			

APPLICANT INFORMATION		COMMODITIES TO BE COVERED BY AUDIT (Please List)	
Company Name			
Phone Number:			
Fax Number:			
E-mail:			
Contact Person:			

#### TYPE OF AUDIT SERVICES REQUESTED (Please choose at least one)

<input type="checkbox"/> Produce GAPs Harmonized Audit - <i>Field Operations &amp; Harvesting</i>	<input type="checkbox"/> USDA Good Agricultural Practices and Good Handling Practices (GAP&GHP) Audit (choose scopes below)
<input type="checkbox"/> Produce GAPs Harmonized Audit - <i>Field Operations &amp; Harvesting w/ Global Markets Primary Production Addendum</i>	<input type="checkbox"/> Part 1 – Farm Review
<input type="checkbox"/> Produce GAPs Harmonized Audit - <i>Post Harvest</i>	<input type="checkbox"/> Part 2 – Field Harvest & Field Packing Activities
<input type="checkbox"/> Produce GAPs Harmonized Audit – <i>Post Harvest w/ Global Markets Primary Production Addendum</i>	<input type="checkbox"/> Part 3 – House Packing Facility
<input type="checkbox"/> Mushroom Specific GAP Audit (M-GAP)	<input type="checkbox"/> Part 4 – Storage & Transportation
<input type="checkbox"/> Tomato Audit Protocol - <i>Open Field Production, Harvest &amp; Field Packing</i>	<input type="checkbox"/> Part 6 – Wholesale Distribution Center / Terminal Warehouse
<input type="checkbox"/> Tomato Audit Protocol - <i>Packinghouse</i>	<input type="checkbox"/> Part 7 – Preventative Food Defense Procedures
<input type="checkbox"/> Tomato Audit Protocol - <i>Greenhouse</i>	<input type="checkbox"/> Food Defense
<input type="checkbox"/> Tomato Audit Protocol – <i>Repacking and Distribution</i>	<input type="checkbox"/> Other:
<input type="checkbox"/> Plant Systems Audit (PSA)	

<b>ADDITIONAL REMARKS</b>	
---------------------------	--

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0125. The time required to complete this information collection is estimated average 2 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

**Non-Discrimination Policy:** In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

## Appendix C: Specialty Crops Inspection Division Vendor Form (SC-430)



**United States  
Department of  
Agriculture**

Save

Print

Reset

### SPECIALTY CROPS INSPECTION DIVISION VENDOR FORM

TO BE FILLED OUT BY THE ORIGINATING OFFICE			
CHECK ONE: <input checked="" type="checkbox"/> NEW APPLICANT <input type="checkbox"/> UPDATING EXISTING APPLICANT INFORMATION			
DATE:	PACA LICENSE NUMBER:		
06/24/19			
ORIGINATING OFFICE (include office # and state):	APPLICANT NUMBER (IF NEW LEAVE BLANK):		
APPLICANT NAME:	CONTACTS:		
Carolina Farm, LLC	Jenny Jones		
ADDRESS (STREET ADDRESS REQUIRED):	CITY	STATE:	ZIP:
123 Rusted Gate Lane	Carolina	NC	27284
BILLING ADDRESS (IF DIFFERENT THAN STREET ADDRESS):	CITY:	STATE:	ZIP:
DOING BUSINESS AS (Use this section if certificate recipient is different to the person above):			
PHONE:	FAX:		
919-XXX-XXXX			
EMAIL:	TAX ID NUMBER (REQUIRED):		
jenny@rustedgate.com	Enter EIN number or SS # if sole proprietor		
<input checked="" type="checkbox"/> <b>SCENARIO A:</b> AN APPLICANT THAT IS NOT LISTED IN THE FEIRS/BIIS GLOBAL LIST OF APPLICANTS. <input type="checkbox"/> <b>SCENARIO B:</b> AN APPLICANT THAT IS LISTED IN THE GLOBAL FEIRS/BIIS DATABASE, BUT DOES NOT HAVE AN ACCOUNT NUMBER FOR THE LOCAL OFFICE.			
APPLICANT WILL BE A:	DATE SENT TO SERVICE CENTER OR BILLING STAFF:		
<input checked="" type="checkbox"/> BILLING <input type="checkbox"/> COD	6/24/19		
TO BE FILLED OUT BY SERVICE CENTER OR BILLING STAFF			
DATE RECEIVED:	FMMI NUMBER:		
APPLICANT NUMBER GENERATED (LIST NUMBER HERE):	NOTES:		
DATE ENTERED INTO FEIRS/BIIS & FMMI:			
DATE ORIGINATING OFFICE NOTIFIED APP. IS IN FEIRS/BIIS & FMMI:			

## Appendix D: Audit Preparation Checklist (North and South Carolina)

USDA Harmonized GAP Audit Preparation Checklist									
Check When Complete	Task								
<input type="checkbox"/>	<b>Develop and implement your Food Safety Program (SOPs, Records, etc.)</b>								
<input type="checkbox"/>	<p><b>Schedule your audit</b> based on when you have the most crops in production and are able to demonstrate the most harvest techniques. <b>To schedule your audit, complete the Request for Audit Services (Form# SC-237A) on the USDA AMS website.</b>  <a href="https://www.ams.usda.gov/sites/default/files/media/SC237Aexp083119.pdf">https://www.ams.usda.gov/sites/default/files/media/SC237Aexp083119.pdf</a></p> <table border="1"> <thead> <tr> <th>North Carolina*</th> <th>South Carolina*</th> </tr> </thead> <tbody> <tr> <td>Vincent Wyche</td> <td>Matthew Burleson</td> </tr> <tr> <td><a href="mailto:Vincent.Wyche@ncagr.gov">mailto: Vincent.Wyche@ncagr.gov</a></td> <td><a href="mailto:fv@scda.sc.gov">mailto: fv@scda.sc.gov</a></td> </tr> <tr> <td>252-799-4020 office</td> <td>803-737-2523 office</td> </tr> </tbody> </table>	North Carolina*	South Carolina*	Vincent Wyche	Matthew Burleson	<a href="mailto:Vincent.Wyche@ncagr.gov">mailto: Vincent.Wyche@ncagr.gov</a>	<a href="mailto:fv@scda.sc.gov">mailto: fv@scda.sc.gov</a>	252-799-4020 office	803-737-2523 office
North Carolina*	South Carolina*								
Vincent Wyche	Matthew Burleson								
<a href="mailto:Vincent.Wyche@ncagr.gov">mailto: Vincent.Wyche@ncagr.gov</a>	<a href="mailto:fv@scda.sc.gov">mailto: fv@scda.sc.gov</a>								
252-799-4020 office	803-737-2523 office								
<input type="checkbox"/>	<b>Hang Signage:</b> General Health and Hygiene Policy and Handwashing Signs and Designated Break Area, and other food safety related signs								
<input type="checkbox"/>	<b>Conduct Food Safety Trainings</b> with all employees upon hire and a review just prior to the audit is recommended. Include any new processes or procedures implemented since prior training.								
<input type="checkbox"/>	<b>Print a copy of the Table of Contents to provide to the auditor.</b> This is a time saving technique. You may allow the auditor to take this with them to complete your audit report off-site.								
<input type="checkbox"/>	<b>Print a copy of your farm maps.</b> The auditor may request a copy of your Farm Map to include with you audit submission and file. It is fine for the Auditor to ask for these and may be taken off-site.								
<input type="checkbox"/>	<b>Conduct necessary water tests</b> based on your Water Management and Use SOP.								
<input type="checkbox"/>	<p><b>Conduct Food Safety Risk Assessments</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Pre-harvest Risk Assessment</li> <li><input type="checkbox"/> Weekly Risk Assessment</li> <li><input type="checkbox"/> Land Use History and Adjacent Land Risk Assessment</li> <li><input type="checkbox"/> Water System Risk Assessment</li> <li><input type="checkbox"/> Animal Control Risk Assessment</li> <li><input type="checkbox"/> Biological Soil Amendments of Animal Origin Risk Assessment</li> <li><input type="checkbox"/> Allergen Risk Assessment</li> <li><input type="checkbox"/> Produce Washing Process Risk Assessment</li> </ul>								
<input type="checkbox"/>	<b>Conduct a Self-Audit</b> utilizing the correct USDA Harmonized GAP audit Checklist (Version 4.0)								
<input type="checkbox"/>	<p><b>Have you purchased the following items?</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> First-Aid Kits (Make sure staff knows all locations)</li> <li><input type="checkbox"/> Liquid Hand Soap, and single use paper towels for all handwashing stations</li> <li><input type="checkbox"/> Additional handwashing stations for field locations and outdoor break areas</li> <li><input type="checkbox"/> Mouse traps (tin-cats), number and add to farm map</li> <li><input type="checkbox"/> Personal Protection Equipment (PPE), i.e., disposable gloves for injuries, required as part of your Food Safety Plan</li> <li><input type="checkbox"/> Water Monitoring Testing Strips, where applicable.</li> <li><input type="checkbox"/> Drinking water for employees</li> </ul>								
<input type="checkbox"/>	<p>Conduct Mock Recall (This include conducting a traceability exercise)  <a href="https://www.carolinafarmstewards.org/how-and-why-to-conduct-a-mock-recall-in-preparation-for-a-gap-audit/">https://www.carolinafarmstewards.org/how-and-why-to-conduct-a-mock-recall-in-preparation-for-a-gap-audit/</a></p>								

**\* NOTE:** For operations located in other states, find the contact for your state Department of Agriculture audit services at <https://www.ams.usda.gov/services/how-request-gap-and-ghp-audit>.