

**Table of Contents** ————— **Page**

Executive Summary.....	1
Introduction.....	1
Food Safety Issues for Fresh Produce .....	2
GAPs: Food Safety Plan for Growers .....	3
Application of GAPs to Organic Operations .....	4
USDA GAP Audit Matrix	
General Questions.....	5
Issues for Organic Producers .....	6
Part 1 – Farm Review .....	6
Issues for Organic Producers .....	8
Part 2 – Field Harvest and Field .....	9
Packing Activities	
Issues for Organic Producers .....	10
Part 3 – House Packing Facility .....	10
Issues for Organic Producers .....	12
Part 4 – Storage and Transportation .....	12
Issues for Organic Producers .....	14
Part 6 – Wholesale Distribution Center/ .....	14
Terminal Warehouses	
Issues for Organic Producers .....	16
Part 7 – Preventive Food Defense Procedures .....	16
Issues for Organic Producers .....	18
Conclusions .....	18
References .....	18
Other GAP Resources .....	19
Appendix A: List of GAPs forms available online.....	19

**EXECUTIVE SUMMARY**

Organic agricultural producers can use this document as a guide to implement Good Agricultural Practices (GAPs) in their operations. Organic producers should use their Organic System Plan (OSP) and GAPs plan as dynamic management tools specific to their operations. Organic producers must first comply with U.S. Department of Agriculture National Organic Program (USDA

NOP) standards for organic agriculture production given in the Code of Federal Regulations, 7 C.F.R. § 205. Good Agricultural Practices are utilized in a food safety plan that is specific to the farm operation; they should be used as a means to address food safety issues in food production that can also be easily applied to organic operations.

This document reviews the seven-part USDA GAP audit with regulations and reasoning behind each audit point to increase understanding and allow for easier adaptation and implementation of GAPs in a farming operation. Although some procedures and practices seem redundant, it is necessary to ensure compliance with either GAP or NOP requirements. Each program plan (NOP or GAP, including documentation) must be maintained separately for each certifying agency. There are many resources available both in print and online to help agricultural producers fully utilize GAPs within their operation.

**INTRODUCTION**

The goal of this publication is to provide organic agricultural producers with a guide to implement Good Agricultural Practices (GAPs) within their operations. Organic producers must first comply with U.S. Department of Agriculture National Organic Program (USDA NOP) standards for organic agriculture production given in the Code of Federal Regulations, 7 C.F.R. § 205 (available at <http://ecfr.gpoaccess.gov/>).

The Organic System Plan (OSP) is used by the organic producer and the certifying agent to evaluate compliance with USDA NOP standards for organic agriculture production. The OSP is a plan specific to the operation and is a dynamic tool to manage organic production. The type of organic operation may be crop production, livestock, wild harvest, or handler, or a combination of these types. There are five broad or general areas of evaluation, with specific requirements for

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**Table 1. Pathogens Associated with Fresh Produce Commodities from 1996 to 2006 (adapted from RTI International, 2009)**

Category and commodity	Common pathogens
In order of prevalence of foodborne outbreaks	In order of prevalence
1. <b>Leafy greens:</b> lettuce; mesclun; spinach; romaine, leaf, iceberg, and bagged lettuce	<i>E. coli</i> O157:H7 (EHEC), <i>Salmonella enterica</i> , Norovirus
2. <b>Tomatoes:</b> roma, cherry, grape	<i>Salmonella enterica</i> , Norovirus
3. <b>Melons:</b> watermelon, cantaloupe, honeydew, musk	<i>Salmonella enterica</i> , <i>E. coli</i> O157:H7 (EHEC)
3. <b>Crucifers:</b> cabbage, coleslaw, broccoli	<i>E. coli</i> O157:H7 (EHEC), <i>Cryptosporidium parvum</i>
4. <b>Mixed produce:</b> salads (lettuce-, vegetable-, or fruit-based, garden, green, house, chef, cucumber), mixed vegetables, mixed fruit, green beans	<i>E. coli</i> O157:H7 (EHEC), <i>Salmonella enterica</i>
4. <b>Carrots</b>	<i>Salmonella enterica</i>
5. <b>Herbs:</b> basil, parsley, cilantro	<i>E. coli</i> O157:H7 (EHEC)
6. <b>Berries:</b> strawberry, raspberry, blackberry, blueberry, grapes	<i>E. coli</i> O157:H7 (EHEC)

each area, which must be addressed by the OSP for organic production of crops and/or livestock as per federal regulation 7 C.F.R. § 205.201:

- The organic practices and procedures
- A list of approved substances
- A description of monitoring procedures
- A description of recordkeeping methods
- A description of preventative methods to control cross-contamination with non-organic production or comingling of non-organic products
- Previous compliance with NOP organic practices

There are several resources available online to assist producers with organic production and plan development:

National Center for Appropriate Technology (NCAT)  
<https://attra.ncat.org/organic.html>

USDA Agriculture Marketing Service  
<http://www.ams.usda.gov/AMSV1.0/NOP>

Organic producers are accustomed to recordkeeping and monitoring to maintain an organic system with very specific NOP standards. GAPs are utilized in a food safety plan that is specific to the farm operation. They are a management tool to address food safety issues in agricultural production and can also be easily applied to organic operations (Suslow, 2002). Even though some points are redundant, each program should be managed and maintained separately.

### **FOOD SAFETY ISSUES FOR FRESH PRODUCE**

During the past few years, there has been more information about foodborne illness associated with fresh produce. While the actual incidence of illnesses has been low, media coverage of contamination is widespread.

We know that there is the potential of foodborne illness from fresh produce.

Unlike most dairy and meat products, fresh produce does not undergo a “kill” step such as cooking to reduce microbial contamination. Fresh fruits and vegetables are often considered ready-to-eat and served fresh or used as part of a salad or other food that is not heated. This means that any pathogenic (illness-causing) microorganisms that might be present at harvest or after handling in the packing room can remain on the produce all the way to the consumer’s kitchen (CAST, 2009).

A grower or produce handler needs to know about foodborne illnesses and what causes them. This information can help focus food safety efforts on the hazards most likely to affect fresh produce. Microorganisms (bacteria, viruses, parasites, and molds) are the most common cause of foodborne illness. Table 1 lists various foodborne illness outbreaks associated with fresh produce. Because microorganisms cannot be seen, it is important to learn to control the food production environment to reduce the chances of contamination of fresh fruits and vegetables.

### **Time-Temperature Relationships**

Temperature is one of the most important and easily controlled growth factors for microorganisms. Microorganisms can grow excessively at temperatures that support growth for two or more hours. Temperatures favorable for growth range from 41° to 140°F; this range is known as the “danger zone” (FDA, 2009). Temperature control is an important way to maintain the quality of produce and minimize the growth of pathogens. Monitoring the temperatures of fresh produce and water is critical at all stages of handling, especially during harvesting, packing house activities, and transportation to final retail location.

## **Bacteria**

Pathogenic bacteria are responsible for most foodborne illness. Pathogenic bacteria, such as *Salmonella*, *Staphylococcus*, and *Listeria*, on fresh produce have been found to cause illness. Harmful bacteria may be brought into your operation by animals, people, shoes, trucks, equipment, or boxes contaminating clean produce. Once the contaminated food is consumed, bacteria and bacterial toxins cause illness. The best defense is to learn to control the production environment to minimize the presence of microorganisms and prevent their growth (CAST, 2009).

## **Viruses**

Viruses are another type of microorganism that can cause foodborne illness. Although the virus particles are not alive, they use food as a transport mechanism to get into a host organism. Once inside a human, they attach to a host cell, then reproduce rapidly and cause illness. Viruses are often found in contaminated water or an infected food handler or farm worker who came into contact with food. Viruses, such as norovirus and hepatitis A, have been identified in several outbreaks in fresh food prepared in restaurants. Following good hand-washing techniques and isolating sick workers can help to prevent the spread of viruses (Koopmans and Duizer, 2004).

## **Molds**

There was a time when we thought that molds were harmless. New research has found that molds often develop toxins that may make a person ill, or may potentially cause cancer. *Penicillium*, *Aspergillus*, and *Byssochytrium* molds are known to produce patulin, a mycotoxin (mold toxin) that has been detected in apple and pear juices. Mycotoxins have also been found in grains and cheese. These toxins are usually controlled by proper culling and disposal of damaged or rotted fruits and vegetables (FDA, 2001).

## **Parasites**

Parasites are microorganisms that live inside a host organism, but part of their life cycle can occur outside in the environment. Parasites may be found in contaminated water or soil, but can also be passed along by an infected worker with poor personal hygiene. Though parasites are most likely found in raw animal or seafood products, one parasitic organism associated with produce is *Cyclospora cayentanensis*. Although cooking fresh produce will kill parasites, parasitic infections can also be controlled by good hand washing and using good-quality water (USDA FSIS, 2011).

## **Chemical Hazards**

Any chemical used in a facility can contaminate food via direct contact with foods or food preparation surfaces. Chemicals should be labeled and properly stored away from production areas. Check water supplies to be sure they do not contain hazardous chemicals, including lead (Katsuyama, 1993).

## **Physical Hazards**

Most incidents of physical contamination, such as hair or gum, are more unsightly or unappetizing than dangerous. However, some physical contamination of a food product can be serious, resulting in injury to the consumer. Equipment, pallets, or harvesting containers in poor condition can be sources of physical contamination. Avoid the use of glass in food operations, and shield light bulbs to prevent contamination if breakage occurs. Routine monitoring and maintenance of equipment that handles produce will reduce the chance of serious physical contamination. Following good manufacturing practices in the packing house and retail operations will also help with incidental minor physical contamination (Katsuyama, 1993).

## **GAPs: FOOD SAFETY PLAN FOR GROWERS**

A food safety plan for food producers must have a standard or measurement that is used to gauge the level of risk involved in a certain practice or procedure used in the production of food. The GAPs audit verification checklist developed by the USDA is such a standard. The USDA GAP audit is based on a Food and Drug Administration Center for Food Safety and Applied Nutrition (FDA CFSAN) document *Guidance for Industry: Guide to Minimize Microbial Food Safety Hazards for Fresh-cut Fruits and Vegetables* (2008). A GAP auditor can evaluate an agricultural producer for GAP certification for all or part of the operation.

Auditors evaluating a facility for adherence to GAP standards will stop an audit if it is apparent that certain unsanitary conditions exist or if documents have been falsified. Conditions that allow for direct contamination of food production areas, including evidence of rodent and insect activity, will result in an automatic “unsatisfactory” rating. Additionally, an unsatisfactory rating will be given if employees are observed with poor hygienic practices.

The USDA GAP audit has several sections but starts with a section of “general questions” that deal with meeting basic implementation of a food safety plan with specific requirements for each, such as:

- A documented food safety plan with a designated responsible person
- Traceability or a trace-back system and testing of this system
- Visitors and workers have access to potable water and clean toilets with hand-washing facilities
- Signs are posted to reinforce employee training on sanitation and hygienic practices
- Designated areas for smoking and eating for employees
- Sick or injured workers to be segregated and treated following company policy; any affected or exposed product is properly disposed of
- Only licensed personnel can apply regulated materials to fields and other facilities

A facility seeking GAP certification must complete all the general questions of the audit before proceeding with the other six sections that only apply to that operation. If the facility does not have a packing house then that section is not part of the audit. The USDA GAP audit has the following six sections with specific requirements for each section:

- **Part 1: Review of farm operation**
- **Part 2: Harvesting and field packing activities**
- **Part 3: Packing house/shed facility**
- **Part 4: Storage and transportation**
- **Part 5: (reserved)**
- **Part 6: Wholesale distribution center**
- **Part 7: Preventive food defense procedures**

## **APPLICATION OF GAPs TO ORGANIC OPERATIONS**

The following tables evaluate and explain the reason for each question in the **USDA GAP audit**. Included are the points assigned to each question as well as the level of documentation (“Doc”) needed to satisfy that audit point. For a facility to receive GAP certification, the audit must receive a passing score of 80% of the points adjusted for “N/A” or non-applicable points. Under the Doc column, a “**D**” requires that the facility have a written procedure as well as a record used to monitor that particular procedure; “**R**” requires a record, such as a purchase receipt, log, or checklist, to be used to monitor the procedure; and “**P**” requires a policy or standard procedure to be included in the food safety plan. Several requirements can be satisfied with the same document or record, but must be written specifically to address the various issues. Not every audit question requires documentation. Appendix A contains examples of forms that can be used for recordkeeping. However, there are several resources available online to help producers generate all of these documents.

### **Cornell GAPs farm and packing house recordkeeping sheets**

<http://www.gaps.cornell.edu/rks.html>

### **NMSU GAPs signs and recordkeeping forms**

<http://aces.nmsu.edu/ces/foodtech/gap-nm.html>

### **FamilyFarmed.org On-Farm Food Safety Project**

<http://onfarmfoodsafety.org>

Challenges specific to organic producers will be addressed following each table in a section called “Issues for Organic Producers.” Each organic producer must develop specific solutions or remedies appropriate for their operation. However, general recommendations will be discussed, and appropriate reference to federal regulations will be noted.

**Adapted from USDA GAP Audit Matrix (USDA, 2012)**

**General Questions: Implementation of a Food Safety Program**

Questions	Reason	Points	DOC
P-1. A documented food safety program that incorporates GAP and/or GHP has been implemented. unsatisfactory	Demonstrates that a program is in place at facility.	No = automatic failure	D
P-2. The operation has designated someone to implement and oversee an established food safety program. unsatisfactory Name: _____	Indicates who has responsibility for program.	No = automatic failure	D

**Traceability**

G-1. A documented traceability program has been established.	Must be able to track produce from field to initial distribution.	15	D
G-2. The operation has performed a “mock recall” that was proven to be effective.	Must show that the firm is able to control product during a recall.	10	R

**Worker Health and Hygiene**

G-3. Potable water is available to all workers.	Must have a safe water supply to have healthy workers.	10	R
G-4. All employees and all visitors to the location are required to follow proper sanitation and hygiene practices.	Good sanitation and hygiene practices required to have a clean area.	10	P
G-5. Training on proper sanitation and hygiene practices is provided to all staff.	Staff must be trained to know good sanitation and hygiene practices.	15	D
G-6. Employees and visitors are following good hygiene/sanitation practices	Must observe and correct practices of employees and visitors.	15	
G-7. Employees who handle or package produce are washing their hands before beginning or returning to work.	Must observe and correct practices of employees.	15	
G-8. Readily understandable signs are posted to instruct employees to wash their hands before beginning or returning to work.	Signs serve as helpful reminders of good practices.	10	
G-9. All toilet/restroom/field sanitation facilities are clean. They are properly supplied with single-use towels, toilet paper, hand soap or antibacterial soap, and potable water for hand washing.	Toilet and hand-washing facilities must be clean and well supplied so that people will use facilities.	15	
G-10. All toilet/restroom/field sanitation facilities are serviced and cleaned on a scheduled basis.	Toilet facilities must be clean so that people will use facilities.	10	R
G-11. Smoking and eating are confined to designated areas separate from where product is handled.	Product can be contaminated with bacteria by smoking and eating.	10	P
G-12. Workers with diarrheal disease or symptoms of other infectious disease are prohibited from handling fresh produce.	Workers that are sick can contaminate product.	15	P
G-13. There is a policy describing procedures that specify handling/disposition of produce or food contact surfaces that have come into contact with blood or other body fluids.	Blood or body fluids serve as a reservoir for bacteria that can contaminate product.	15	P
G-14. Workers are instructed to seek prompt treatment with clean first aid supplies for cuts, abrasions, and other injuries.	Workers must be safe and healthy before handling produce.	5	P
G-15. Company personnel or contracted personnel that apply regulated pre-harvest and/or post-harvest materials are licensed. Company personnel or contracted personnel applying non-regulated materials have been trained on its proper use.	Use only licensed personnel or contractors to protect the firm for liability and proper application of materials.	10	R

**General Questions: 180 total points x 0.80 = passing score**

**Issues for Organic Producers — General Questions**

There are no specific challenges for organic production in this section of the GAP audit. Portable toilets in any farming operation must be set up properly to protect from any sewage discharge, especially in active crop production areas. Additionally, there must be a plan to clean up and contain any accidental contamination from a portable toilet. The organic certifier must approve the portable toilet for organic operations. Adequate sanitation and hand-washing facilities must be provided to employees working in fields (1 unit per 20 persons) to meet requirements in the Occupational Safety and Health Act (29 C.F.R. § 1928.110; Lehtola et al., 2007).

**Part 1 – Farm Review**

**Water Usage**

Questions	Reason	Points	DOC
1-1. What is the source of irrigation water (pond, stream, well, municipal, other)? Please specify.	Must know water source since dirty water can be a source of contamination to a crop.	N/A	
1-2. How are crops irrigated (flood, drip, sprinkler, other)? Please specify.	Irrigation method can spread contamination.	N/A	
1-3. A water quality assessment has been performed to determine the quality of water used for irrigation purpose on the crop(s) being applied.	Water quality tests give contamination level and may determine crop use and irrigation method.	15	D
1-4. A water quality assessment has been performed to determine the quality of water used for chemical application or fertilization	Water quality tests give contamination level and may determine application method.	15	D
1-5. If necessary, steps are taken to protect irrigation water from potential direct and nonpoint source contamination.	Irrigation water can be contaminated at any point and must be remedied before use.	15	

**Sewage Treatment**

1-6. The farm sewage treatment system/septic system is functioning properly and there is no evidence of leaking or runoff.	Sewage can contaminate water or soil directly.	15	
1-7. There is no municipal/commercial sewage treatment facility or waste material landfill adjacent to the farm.	Adjacent non-farm facilities can contaminate soil and groundwater.	10	

**Animals/Wildlife/Livestock**

1-8. Crop production areas are not located near or adjacent to dairy, livestock, or fowl production facilities unless adequate barriers exist.	Adjacent non-farm facilities can contaminate soil, groundwater, and crop fields.	15	
1-9. Manure lagoons located near or adjacent to crop production areas are maintained to prevent leaking/overflowing, or measures have been taken to stop runoff from contaminating the crop production areas.	Manure storage must be properly maintained to prevent contamination of soil, groundwater, and crop fields.	10	
1-10. Manure stored near or adjacent to crop production areas is contained to prevent contamination of crops.	Manure storage must be properly maintained to prevent field contamination.	10	
1-11. Measures are taken to restrict access of livestock to the source or delivery system of crop irrigation water.	Livestock can contaminate soil, groundwater, and crop fields.	10	
1-12. Crop production areas are monitored for the presence or signs of wild or domestic animals entering the land.	Tracks, crop trampling, or fecal material can indicate animal movement in fields.	5	R
1-13. Measures are taken to reduce the opportunity for wild and/or domestic animals from entering the crop production areas.	Animals can contaminate soil, groundwater, and crop fields.	5	R

(continued on next page)

**Part 1 – Farm Review (continued)**

**Manure and Municipal Biosolids (Option A, B, or C)**

Questions	Reason	Points	DOC
<b>Option A: Raw Manure</b>			
1-14. When raw manure is applied, it is incorporated at least 2 weeks prior to planting and a minimum of 120 days prior to harvest.	Time is need to break down microbes in raw manure.	10	R
<b>Manure and Municipal Biosolids (Option A, B, or C)</b>			
<b>Option A: Raw Manure</b>			
1-15. Raw manure is not used on commodities that are harvested within 120 days of planting.	Apply raw manure only with long-season crops, > 120 days.	10	R
1-16. If both raw and treated manure are used, the treated manure is properly treated, composted, or exposed to reduce the expected levels of pathogens.	Properly treated manure is a lower risk than raw manure.	10	R
1-17. Manure is properly stored prior to use.	Manure storage must be properly maintained to prevent field contamination.	5	
<b>Option B: Composted Manure</b>			
1-18. Only composted manure and/or treated biosolids are used as a soil amendment.	Properly treated manure is a lower risk.	10	R
1-19. Composted manure and/or treated biosolids are properly treated, composted, or exposed to environmental conditions that would lower the expected level of pathogens.	Manure/biosolids compost must achieve 130° to 160°F for 5 to 15 days or comparable treatment to reduce pathogen levels.	10	D
1-20. Composted manure and/or treated biosolids are properly stored and are protected to minimize recontamination.	Compost storage must be properly maintained to prevent field contamination.	10	
1-21. Analysis reports are available for composted manure/treated biosolids.	Compost analysis must verify low fecal coliform count (< 1,000 most probable number [MPN]).	5	R
<b>Option C: No Manure/Biosolids Used</b>			
1-22. No animal manure or municipal biosolids are used.	Lowest-risk option.	35	P
<b>Soils</b>			
1-23. A previous land use risk assessment has been performed.	Avoid previously contaminated soil and runoff areas.	5	R
1-24. When previous land use history indicates a possibility of contamination, preventative measures have been taken to mitigate the known risks and soils have been tested for contaminants and the land use is commensurate with test results.	Avoid previously contaminated soil and water runoff areas, and plant crops appropriately.	10	R
1-25. Crop production areas that have been subjected to flooding are tested for potential microbial hazards.	After flood events, test fields for contamination level.	5	R
<b>Traceability</b>			
1-26. Each production area is identified or coded to enable traceability in the event of a recall.	Record production areas and crop fields.	10	R
<b>Farm Review: 190 total points x 0.80 = passing score</b>		<b>152</b>	

## Issues for Organic Producers — Farm Review

The farm review section of the GAP audit offers the most challenges for organic producers that must be addressed early on in the process for GAP certification.

In many cases, organic producers are already dealing with these issues and can comply with GAPs with minor adjustments.

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### GAP audit question

1-4	<p><b>Recommendation</b></p> <p>This question would not apply (“N/A”) to organic producers that only use water for irrigation. However, growers must consider upstream operations in the area and monitor water quality for microbial contamination on a regular basis even though they may not have control of water source. Consider testing water at the point of use for fecal contamination levels at the start of the irrigation season and any time contamination may have occurred from excess rainfall or runoff from other operations (Schneider et al., 2010).</p>
1-8	<p>Milking parlors and pens holding livestock must be maintained to control manure discharge into active crop production areas. These types of operations pose a higher risk of discharge contamination via failure or leakage of manure lagoons into surrounding areas, contaminating soil and water. Organic regulation 7 C.F.R. § 205.239(a)(1-5) also specifies how to deal with this issue.</p>
1-9 & 10	<p>Organic producers already maintain manure lagoon and storage areas to prevent contamination of crop production areas per 7 C.F.R. § 205.239(e).</p>
1-11 to 13	<p>Reduce wild and domestic animal as well as livestock activity in crop production areas with fencing or other deterrents specific to the crop and production methods. Organic producers can locate bat houses and bird perches outside of their fields and take steps to minimize risk by putting a berm around them so waste does not wash into fields (Davis and Kendall, 2005). Organic regulation 7 C.F.R. § 205.206(3) mentions that cultural practices should reduce disease or pests in fields, and 7 C.F.R. § 205.239(e) states that pastures and other outdoor areas must be managed to reduce the potential for contamination of soil or water. Documentation of monitoring of crop production areas can be added to records used for pest management (7 C.F.R. § 205.206).</p>
1-14 to 1-17	<p>Raw manure can be applied before planting, but the crop must be harvested 120 days later. This is more restrictive than 7 C.F.R. § 205.203(c)ii, which allows for different harvest dates for different crops. Organic producers wishing to obtain GAPs certification should follow the GAPs requirement.</p>
1-18 to 1-21	<p>Composted manure must be properly treated and stored, and supported with documentation as stated in 7 C.F.R. § 205.203(2)ii. GAPs require verification of low fecal coliform count before use. Additionally, 7 C.F.R. § 205.203(e)2 strictly prohibits the use of biosolids in organic crop production. Composted manure should be composted accordingly to meet both NOP and GAPs requirements.</p>
1-24	<p>Previous land use history is valuable for planting appropriate crops or setting aside for decontamination if needed for organic production or for food safety issues (7 C.F.R. § 205.202).</p>
1-26	<p>Organic production areas and records are maintained as stated in the farm’s OSP (7 C.F.R. § 205.103) and can be used for traceability in case of a recall.</p>

## Part 2 – Field Harvest and Field Packing Activities

### Field Sanitation and Hygiene

Questions	Reason	Points	DOC
2-1. A documented pre-harvest assessment is made on the crop production areas. Risks and possible sources of crop contamination are noted and assessed.	Assess crop condition and avoid harvesting crops that may have been exposed to contamination.	15	D
2-2. The number, condition, and placement of field sanitation units comply with applicable state and/or federal regulations.	Map location of portable toilet units if used.	10	
2-3. When question 2-2 is answered "N/A" (sanitation units are not required), a toilet facility is readily available for all workers.	Workers must have toilet facilities available to them to maintain sanitation in fields and Occupational Safety and Health Act.	10	
2-4. Field sanitation units are located in a location that minimizes the potential risk for product contamination and are directly accessible for servicing.	Minimize potential negative impact of portable toilet with proper location and setup of unit.	10	
2-5. A response plan is in place for the event of a major spill or leak of field sanitation units or toilet facilities.	Have a plan to be able to react quickly in the event of leak or spill of sewage.	10	P

### Field Harvesting and Transportation

2-6. All harvesting containers and bulk hauling vehicles that come in direct contact with product are cleaned and/or sanitized on a scheduled basis and kept as clean as practicable.	Only use clean containers to collect produce. Dirty containers can be a source of contamination.	10	D
2-7. All hand harvesting equipment and implements (knives, pruners, machetes, etc.) are kept as clean as practicable and are disinfected on a scheduled basis.	Only use clean hand tools to collect produce. Dirty tools can be a source of contamination.	10	D
2-8. Damaged containers are properly repaired or disposed of.	Damaged containers can be a source of contamination.	5	
2-9. Harvesting equipment and/or machinery that comes into contact with product is in good repair.	Damaged equipment can be a source of contamination.	10	
2-10. Light bulbs and glass on harvesting equipment are protected so as not to contaminate produce or fields in the case of breakage.	Un-protected light bulbs can be a source of contamination.	10	
2-11. There is a standard operating procedure or instructions on what measures should be taken in the case of glass/plastic breakage and possible contamination during harvesting operations.	A standard procedure allows for a quicker reaction in the event of glass/plastic breakage contamination.	5	P
2-12. There is a standard operating procedure or instructions on what measures should be taken in the case of product contamination by chemicals, petroleum, pesticides, or other contaminating factors.	A standard procedure allows for a quicker reaction in the event of chemical, petroleum, or pesticide contamination.	5	P
2-13. For mechanically harvested crops, measures are taken during harvest to inspect for and remove foreign objects such as glass, metal, rocks, or other dangerous/toxic items.	Mechanical harvesting equipment can be a source or transfer point of contamination.	5	
2-14. Harvesting containers, totes, etc. are not used for carrying or storing non-produce items during the harvest season, and farm workers are instructed in this policy.	Have a policy for containers only used for harvesting to reduce contamination.	5	P
2-15. Water applied to harvested product is microbial safe.	Use potable water on harvested product to reduce contamination.	15	R
2-16. Efforts have been made to remove excessive dirt and mud from product and/or containers during harvest.	Excess dirt can be a source of contamination and reservoir for microbes.	5	
2-17. Transportation equipment used to move product from field to storage areas or storage areas to processing plant which comes into contact with product is clean and in good repair.	Transport equipment can be a source or transfer point of contamination.	10	
2-18. There is a policy in place and has been implemented that harvested product being moved from field to storage areas or processing plants are covered during transportation.	Covered transport reduces the likelihood of contamination.	5	P
2-19. In ranch or field pack operations, only new or sanitized containers are used for packing the product.	New or sanitized containers reduce the likelihood of contamination.	10	D
2-20. Packaging of materials used in ranch or field pack operations are properly stored and protected from contamination.	Improper storage of packaging material can be a source of contamination.	10	
2-21. Product moving out of the field is uniquely identified to enable traceability.	Identify field-packed product for tracking purposes.	10	D

**Field Harvest and Field Packing Activities: 185 total points x 0.80 = passing score**

**148**

### Issues for Organic Producers — Field Harvest and Field Packing Activities

There are no specific challenges for organic production in this section of the GAP audit. However adequate sanitation and hand-washing facilities must be provided to employees working in fields to meet Occupational Safety and Health Act 29 C.F.R. § 1928.110 requirements. Portable toilets require proper setup, and must be located at a proper buffering distance away from active crop production areas to reduce the possibility of contamination with biosolids or runoff from any field unit. The organic certifier would have to approve the location and setup of the portable unit.

### Part 3 – House Packing Facility

#### Receiving

#### Questions

Questions	Reason	Points	DOC
3-1. Product delivered from the field which is held in a staging area prior to packing or processing is protected from possible contamination.	Product must be protected from potential contamination from dust, birds, rodents, insects, etc.	5	
3-2. Prior to packing, a product is properly stored and/or handled in order to reduce possible contamination.	Product must be protected from dust, birds, rodents, and insects to prevent possible contamination.	5	

#### Washing/Packing Line

3-3. Source water used in the packing operation is potable.	Potable water is the only safe water source to use on harvested product.	15	R
3-4. If applicable, the temperature of processing water used in dump tanks, flumes, etc., is monitored and is kept at temperatures appropriate for the commodity.	If water temperature is more than 10°F different than produce temperature, it can be absorbed by produce.	10	D
3-5. Processing water is sufficiently treated to reduce microbial contamination.	Untreated processing water can be a source of contamination. Treat with proper antimicrobial agent at safe and legal levels.	10	D
3-6. Water-contact surfaces, such as dump tanks, flumes, wash tanks, and hydro coolers, are cleaned and/or sanitized on a scheduled basis.	Good sanitation is essential to have a clean processing area and clean produce.	10	D
3-7. Water treatment (strength levels and pH) and exposure time are monitored and the facility has demonstrated it is appropriate for product.	Water treatment antimicrobial concentration must meet minimum and maximum levels and acidity to be effective.	10	D
3-8. Food contact surfaces are in good condition; cleaned and/or sanitized prior to use and cleaning logs are maintained.	Proper sanitation is essential to have a clean processing area.	15	D
3-9. Product flow zones are protected from sources of contamination.	Ensure that the product flows from an area of dirty to clean without crossing over.	10	
3-10. The water used for cooling and/or to make ice is potable.	Potable water is the only safe water source.	15	R
3-11. Any ice used for cooling produce is manufactured, transported, and stored under sanitary conditions.	Make and keep ice clean to reduce contamination from ice to produce.	10	R

#### Packing House Worker Health and Hygiene

3-12. Employee facilities (locker rooms, lunch and break areas, etc.) are clean and located away from packing area.	Employee facilities can be a source of contamination.	10	
3-13. When there is a written policy regarding the use of hair nets/beard nets in the production area, it is being followed by all employees and visitors.	Policies must be enforced and followed by all employees and visitors.	5	P
3-14. When there is a written policy regarding the wearing of jewelry in the production area, it is being followed by all employees and visitors.	Policies must be enforced and followed by all employees and visitors.	5	P

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### Packing House General Housekeeping

Questions	Reason	Points	DOC
3-15. Only food-grade approved and labeled lubricants are used in the packing equipment/or machinery.	Protect product from incidental contact or contamination.	10	R
3-16. Chemicals not approved for use on product are stored and segregated away from packing area.	Maintain separation to protect product from accidental exposure to non-approved materials.	10	
3-17. The plant grounds are reasonably free of litter and debris.	Litter and debris hide insects and vermin, allowing them access to facility.	5	
3-18. The plant grounds are reasonably free of standing water.	Standing water can harbor insects and harmful bacteria.	5	
3-19. Outside garbage receptacles/dumpsters are closed or are located away from packing facility entrances and the area around such sites is reasonably clean.	These areas can hide vermin that can gain access to facility.	5	
3-20. Packing facilities are enclosed.	Enclosed facilities are easier to maintain for sanitation and pest infestation.	5	
3-21. The packing facility interior is clean and maintained in an orderly manner.	Processing areas must be kept clean and uncluttered to reduce contamination of clean produce.	5	
3-22. Floor drains appear to be free of obstructions.	Drains must not pool any water inside facility.	5	
3-23. Pipes, ducts, fans and ceilings which are over food handling operations are clean.	Protect product from environmental contamination.	5	
3-24. Glass materials above product flow zones are contained in case of breakage.	Glass from light fixtures could contaminate product.	10	
3-25. Possible wastewater spillage is prevented from contaminating any food handling area by barriers, drains, or a sufficient distance.	Maintain wastewater pipes, drains, lines, etc. in processing area.	10	
3-26. There is a policy describing procedures which specify handling/disposition of finished product which is opened, spilled, or comes into contact with the floor.	Have a written plan to handle contaminated product.	15	P
3-27. Only new or sanitized containers are used for packing the product.	Dirty containers can contaminate clean product.	10	D
3-28. Pallets and containers are clean and in good condition.	Dirty containers can contaminate clean product.	5	
3-29. Packing containers are properly stored and protected from contamination (birds, rodents, and other pests).	Dirty containers can contaminate clean product.	10	
<b>Pest Control</b>			
3-30. Measures are taken to exclude animals or pests from packing and storage facilities.	Pests and animals can transport contamination from outside into storage facilities.	10	D
3-31. There is an established pest control program for the facility.	Must have a plan to control pests and problem areas in facility.	10	D
3-32. Service reports for the pest control program are available for review.	Documents demonstrate that problem areas are treated to control pests.	5	R
3-33. Interior walls, floors, and ceilings are well maintained and are free of major cracks and crevices.	Simple building maintenance will reduce access by pests.	5	
<b>Traceability</b>			
3-34. Records are kept documenting the source of incoming product and the destination of outgoing product which is uniquely identified to enable traceability.	Must be able to show source of product and where the product was initially distributed	10	D
<b>House Packing Facility: 290 total points x 0.80 = passing score</b>		<b>232</b>	

## Issues for Organic Producers — House Packing Facility

GAP audit question	Recommendation
3-15 & 16	Food-grade chemicals, such as lubricant, detergent, and sanitizers or antimicrobial agents, must also be NOP-approved substances listed in 7 C.F.R. § 205.600.
3-30 & 31	Pest control addressed in OSP must outline methods including physical exclusion, traps, and permitted application of pesticide with appropriate monitoring and documentation (7 C.F.R. §205.206).

### Part 4 – Storage and Transportation

Product, Containers, and Pallets Questions	Reason	Points	DOC
4-1. The storage facility is cleaned and maintained in an orderly manner.	Storage areas, tanks, and silos can be sources of contamination or harbor pests.	5	
4-2. Bulk storage facilities are inspected for foreign material prior to use and records are maintained.	Facilities such as silos or tanks are inspected prior to use.	5	R
4-3. Storage rooms, buildings, and/or facilities are maintained and sufficiently sealed or isolated to be protected from external contamination.	Storage areas, tanks, and silos can be sources of contamination or harbor pests.	10	
4-4. Storage grounds are reasonably free of litter and debris.	Grounds surrounding storage areas can be sources of contamination or harbor pests.	5	
4-5. Floors in storage areas are reasonably free of debris.	Trash can be source of contamination or harbor pests.	5	
4-6. Possible wastewater spillage is prevented from contaminating any food handling areas by barriers, drains, or a sufficient distance.	Control wastewater flow, which can be source of contamination or harbor pests.	10	
4-7. There is a policy describing procedures which specify handling/disposition of finished product which is opened, spilled, or comes in contact with the floor.	Must have a procedure in place to deal with accidental exposure of final product to contamination.	15	P
4-8. Packing containers are properly stored and sufficiently sealed to be protected from contamination (birds, rodents, pests, and other contaminants).	Contamination can occur at any time if containers are left unprotected.	10	
4-9. Pallets, pallet boxes, tote bags, portable bins, etc. are clean, in good condition and do not contribute foreign material to the product.	Contamination can occur at any time if containers are left unprotected.	5	
4-10. Product stored outside in totes, trucks, bins, other containers, or on the ground in bulk is covered and protected from contamination.	Contamination can occur at any time if containers are left unprotected.	10	
4-11. Non-food grade substances such as paints, lubricants, pesticides, etc., are not stored in close proximity to the product.	Non-food grade materials can be a source of contamination.	10	
4-12. Mechanical equipment used during the storage process is clean and maintained to prevent contamination of the product.	Any handling equipment can become a source of physical or microbial contamination.	5	D
<b>Pest Control</b>			
4-13. Measures are taken to exclude animals or pests from storage facilities.	Pests and animals can be a source of and can transport contamination from outside into storage facilities.	10	D
4-14. There is an established pest control program for the facility.	A plan is available with methods used to control pests in the facilities.	10	D
4-15. Service reports for the pest control program are available for review.	Documents demonstrate that a plan is being followed.	5	R

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**Part 4 – Storage and Transportation (Continued)**

<b>Pest Control Questions</b>	<b>Reason</b>	<b>Points</b>	<b>DOC</b>
4-16. Interior walls, floors, and ceilings are well maintained and are free of major cracks and crevices.	Simple building maintenance will reduce access by pests.	5	
<b>Ice and Refrigeration</b>			
4-17. The water used for cooling/ice is potable.	Portable water has been treated to reduce contamination.	15	R
4-18. Manufacturing, storage, and transportation facilities used in making and delivering ice used for cooling the product have been sanitized.	Ice can be contaminated during manufacturing, storage, and transportation; these areas must be sanitized on a regular basis.	10	R
4-19. Climate controlled rooms are monitored for temperature and logs are maintained.	Monitoring ensures that proper temperatures are maintained.	5	D
4-20. Thermometer(s) are checked for accuracy and records are available for review.	Thermometers must be accurate to measure temperatures correctly. Records of calibration must be maintained.	5	D
4-21. Refrigeration system condensation does not come in contact with produce.	Condensation can be a source of contamination.	10	
4-22. Refrigeration equipment (condensers, fans, etc.) is cleaned on a scheduled basis.	Equipment can be a source of contamination.	10	D
4-23. Iced product does not drip on pallets of produce stored below.	Melted ice can be a source of contamination.	10	
<b>Transportation</b>			
4-24. Prior to the loading process, conveyances are required to be clean, in good physical condition, and free from disagreeable odors and obvious dirt/debris.	Conveyors or compartments of vehicles used to transport produce can be a source of contamination.	10	P
4-25. Produce items are not loaded with potentially contaminating products.	Produce can be contaminated by other products in the compartment.	10	P
4-26. Company has a written policy for transporters and conveyances to maintain a specified temperature(s) during transit.	Transportation company has an obligation to operate according to client specifications.	10	P
4-27. Conveyances are loaded to minimize damage to product.	Produce can be contaminated if containers are damaged.	5	P
<b>Worker Health and Personal Hygiene</b>			
4-28. Employee facilities (locker rooms, lunch and break areas, etc.) are clean and located away from storage, shipping, and receiving areas.	Employee facilities can be a source of contamination or harbor pests.	10	
4-29. When there is a written policy regarding the use of hair/beard nets in the storage and transportation areas, it is being followed by all employees and visitors.	Policies to reduce contamination must be monitored and enforced.	5	P
4-30. When there is a written policy regarding the wearing of jewelry in the storage and transportation areas, it is being followed by all employees and visitors.	Policies to reduce contamination must be monitored and enforced.	5	P
<b>Traceability</b>			
4-31. Records are kept recording the source of incoming product and the destination of outgoing product which is uniquely identified to enable traceability.	Records of all incoming and outgoing products allow for tracking when products must be segregated for a food safety issue.	10	D
<b>Storage and Transportation: 255 total points x 0.80 = passing score</b>		<b>204</b>	

## Issues for Organic Producers — Storage and Transportation

There are no specific challenges for organic production in this section of the GAP audit because 7 C.F.R. § 205.206 specifies methods for pest control and maintenance of storage areas, sanitary conditions of containers, and the interior of buildings in organic operations.

### Part 6 – Wholesale Distribution Center/Terminal Warehouses

Receiving Questions	Reason	Points	DOC
6-1. All companies that supply fresh produce are required to have passed a third-party audit verification of GAP and/or GHP.	GAP-certified wholesalers must only handle certified GAP/GHP suppliers.	15	D
6-2. Upon receiving, conveyances are required to be clean, in good physical condition, and free from obvious objectionable odors, dirt, and/or debris at time of unloading.	Conveyors or compartments of vehicles used to transport produce can be a source of contamination.	10	P
6-3. Company does not accept produce items that are loaded with or are not protected from potentially contaminating products.	Questionable product must not be accepted and can be a source of contamination.	10	P
6-4. Refrigerated commodities are monitored for temperatures at time of receiving.	Temperature-abused product can be a source of contamination.	5	R
6-5. The company has a written policy regarding the disposition of product when temperatures are not within the company's guidelines at time of receiving.	Temperature-abused product must not be accepted and can be a source of contamination.	5	P
<b>Storage Facility/Temperature Control</b>			
6-6. The facility is clean and maintained in an orderly manner.	Unclean areas can be a source of contamination.	5	
6-7. Refrigerated rooms are monitored for temperature and logs are maintained.	Monitoring ensures that proper temperatures are maintained.	5	D
6-8. Thermometer(s) are checked for accuracy and records are available.	Thermometers must be accurate to measure temperatures correctly. Records of calibration must be maintained.	5	D
6-9. Refrigeration system condensation does not come in contact with produce.	Condensation can be a source of contamination.	10	
6-10. Refrigeration equipment (condensers, fans, etc.) is cleaned on a scheduled basis.	Equipment can be a source of contamination.	10	D
6-11. Iced product does not drip on pallets of produce stored below.	Melted ice can be a source of contamination.	10	
6-12. The water used for cooling/ice is potable.	Potable water has been treated to reduce contamination.	10	R
6-13. Manufacturing, storage, and transportation facilities used in making and delivering ice used for cooling the product are sanitized on a scheduled basis.	Ice can be contaminated during manufacturing, storage, and transportation; these areas must be sanitized on a regular basis.	10	D
6-14. There is a policy describing procedures which specify handling/disposition of finished product which is opened, spilled, or comes into contact with the floor.	Product exposed to the floor can be contaminated and must be reconditioned or disposed in garbage.	15	P
6-15. Product flow zones are protected from sources of contamination.	Product must flow from areas of dirty to clean with restricted access for cross contamination.	10	
6-16. Glass materials above product flow zones are contained in case of breakage.	Glass can be a physical hazard risk that can be reduced with proper fixtures.	10	
6-17. The grounds are reasonably free of litter and debris.	Litter and debris can be a source of contamination that can enter the facility.	5	
6-18. The grounds are reasonably free of standing water.	Standing water can be a source of contamination that can enter the facility.	5	
6-19. Outside garbage receptacles/dumpsters are closed or are located away from facility entrances and the area around such sites is reasonably clean.	These areas can be a source of contamination that can enter the facility.	5	
6-20. The facility is enclosed.	Facility must be able to be closed off from the outside.	5	
6-21. Floor drains appear to be free of obstructions.	Water from drains can back up into facility.	5	
6-22. Pipes, ducts, fans, and ceilings in the facility are reasonably clean.	Can be a source of contamination and must be cleaned and maintained on a regular basis.	5	
6-23. Possible wastewater spillage is prevented from contaminating any food storage or handling area by barriers, drains, or a sufficient distance.	Wastewater can be a source of contamination and must be properly contained.	10	
6-24. Non-food grade substances such as paints, lubricants, pesticides, etc., are not stored in close proximity to the product.	Non-food-grade materials can be a source of contamination and must be properly stored.	10	

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**Part 6 – Wholesale Distribution Center/Terminal Warehouses (Continued)**

<b>Pest Control Questions</b>	<b>Reason</b>	<b>Points</b>	<b>DOC</b>
6-25. Measures are taken to exclude animals or pests from the facility.	Pests and animals can be a source of contamination and can transport contaminants from outside into storage facilities.	10	D
6-26. There is an established pest control program for the facility.	Must have a plan in place to control pests in the facilities.	10	D
6-27. Service reports for the pest control program are available for review.	Documents demonstrate that a plan is being followed.	5	R
6-28. Interior walls, floors, and ceilings are well-maintained and free of major cracks and crevices.	Simple building maintenance will reduce access by pests.	5	
<b>Repacking/Reconditioning</b>			
6-29. Does the facility repack and/or recondition product?	Yes/No		
<b>If the answer to question 6-29 is YES, answer questions 6-30 through 6-41. If the answer is NO, then questions 6-29 through 6-41 are answered N/A.</b>			
6-30. Repacking/reconditioning processes are confined to an established location in the facility.	Reconditioned product can be a source of contamination and could be confused with prime product.	5	P
6-31. Food contact surfaces are in good condition; cleaned and/or sanitized prior to use and cleaning logs are maintained.	Documentation of food contact surfaces in good condition and sanitation procedures followed.	15	D
6-32. Source water used in the repacking operation is potable.	Potable water has been treated to reduce contamination.	15	R
6-33. Processing water is sufficiently treated to reduce microbial contamination of the product.	Processing water can be a source of contamination. Treat with proper antimicrobial agents at safe and legal levels.	10	D
6-34. Water treatment (strength levels and pH) and exposure time are monitored and are appropriate for product.	Proper sanitation is essential to have a clean processing area.	10	D
6-35. If applicable, the temperature of processing water used in dump tanks, flumes, etc., is monitored and is kept at temperatures appropriate for the commodity.	Water treatment antimicrobial concentration must meet minimum and maximum levels and acidity to be effective.	10	D
6-36. Any ice used for cooling produce is manufactured, transported, and stored under sanitary conditions.	Proper sanitation is essential to have a clean processing area.	10	R
6-37. Water used for chilling and/or to make ice is potable.	Potable water has been treated to reduce contamination.	15	R
6-38. Only food-grade approved and labeled lubricants are used in the repacking equipment/machinery.	Product must be protected from accidental contact or contamination.	10	D
6-39. Only new or sanitized containers are used for product repacking.	Maintain separation to protect product from accidental exposure to non-approved materials.	10	P
6-40. Pallets and other containers are clean and in good condition.	Contamination can occur at any time if containers are left unprotected.	5	
6-41. Packing containers are properly stored and protected from contamination (birds, rodents, other pest, etc.).	Contamination can occur at any time if containers are left unprotected.	10	
<b>Worker Health and Personal Hygiene</b>			
6-42. Employee facilities (locker rooms, lunch and break areas, etc.) are clean and located away from repack and storage area.	Employee facilities can be a source of contamination or harbor pests.	10	
6-43. When there is a written policy regarding the use of hair nets/beard nets in the facility, it is being followed by all employees and visitors.	Policies to reduce contamination must be monitored and enforced.	5	P
6-44. When there is a written policy regarding the wearing of jewelry in the facility, it is being followed by all employees and visitors.	Policies to reduce contamination must be monitored and enforced.	5	P

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**Part 6 – Wholesale Distribution Center/Terminal Warehouses (Continued)**

Questions	Reason	Points	DOC
6-45. Prior to the loading process, conveyances are required to be clean, in good physical condition, free from disagreeable odors, from obvious dirt/debris.	Conveyors or compartments of vehicles used to transport produce can be a source of contamination.	10	P
6-46. Produce items are not loaded with potentially contaminating products.	Final consumer product must be shipped separately.	10	P
6-47. Company has a written policy for transporters and conveyances to maintain a specified temperature(s) range during transit.	Policies to reduce contamination must be monitored and enforced.	10	P

**Traceability**

6-48. Records are kept recording the source of incoming product and the destination of outgoing product which is uniquely identified to enable traceability.	Use and maintain documentation for effective trace back system.	10	D
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**Wholesale Distribution Center/Terminal Warehouses: 410 total points x 0.80 = passing score 328**

**Issues for Organic Producers — Wholesale Distribution Center/Terminal Warehouses**

There are no specific challenges for organic production in this section of the GAP audit. However, food-grade chemicals such as antimicrobial agents must also be NOP approved substances listed in 7 C.F.R. § 205.600. Operations with both conventional and organic production must maintain separate storage areas for chemicals used in order to mitigate unintended application of prohibited substances.

**Part 7 – Preventive Food Defense Procedures**

**Secure Employee/Visitor Procedures**

7-1. The company has a documented food defense plan and a person has been designated to oversee it. Name: _____	Demonstrates that a program is in place at facility.	5	D
7-2. Food defense training has been provided to all employees.	Demonstrates company and employee commitment to program.	5	D
7-3. Employees are aware of whom in management they should contact about potential security problems/issues. Name of management representative: _____	Employees must know beforehand to whom they should report potential breaches in security	5	
7-4. Visitors are required to check in (showing proof of identity) and out when entering/leaving the facility.	Visitors to facility have the potential to breach security measures.	5	D
7-5. The purpose of visitation to site is verified before admittance to the facility.	Visitors' purpose for visiting must be known prior to arrival.	5	D
7-6. Visitors are prohibited from the packing/storage areas unless accompanied by an employee.	Visitors must be accompanied throughout their visit, especially in finished product areas.	5	D
7-7. Incoming and outgoing employee and visitor vehicles to and from the site are subject to inspection.	Employees and visitors have the potential to breach security measures.	5	D
7-8. Parked vehicles belonging to employees and visitors display a decal or placard issued by the facility.	Identify vehicles of both employees and visitors.	5	
7-9. Staff is prohibited from bringing personal items into the handling or storage areas.	Personal items can become source of contamination or sabotage.	5	D
7-10. Staff access in facility is limited to the area of their job function and unrestricted areas.	Limit staff movement to work and common areas.	5	D
7-11. Management is aware of which employee should be on the premises and the employee's assigned area.	Employees are on premises and at their assigned areas during their work shift.	5	D
7-12. A system of positive identification of employees has been established and is enforced.	Policies for security must be monitored and enforced.	5	
7-13. Uniforms, name tags, or identification badges are collected from employees prior to the termination of employment.	Terminated employees have the potential to breach security measures.	5	D

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**Part 7 – Preventive Food Defense Procedures (Continued)**

**Secure Employee/Visitor Procedures**

<b>Questions</b>	<b>Reason</b>	<b>Points</b>	<b>DOC</b>
7-14. The mailroom is located away from the packing/storage facilities.	Mailed items can be a source of contamination or sabotage.	5	
7-15. Computer access is restricted to specific personnel.	Computers and networks can be sabotaged.	5	D
7-16. A system of traceability of computer transactions has been established.	Computers and networks can be sabotaged.	5	
7-17. A minimum level of background checks has been established for all employees.	Background checks offer data that employees do not openly disclose.	5	D
7-18. Routine security checks of the premises are performed for signs of tampering criminal or terrorist action.	Facility must be routinely checked for breaches in security.	5	D
7-19. Perimeter of facility is secured by fencing or other deterrent.	A perimeter fence offers a minimal level of security.	5	
7-20. Checklists are used to verify the security of doors, windows, and other points of entry.	Checklists are easy to use and serve as documentation.	5	D
7-21. A system is in place to account for all keys to the establishment.	Keys to facilities, equipment, etc. must be identified and signed out by designated employees only.	5	D
7-22. The facility has an emergency lighting system.	Lighting is critical for exit during emergency.	5	
7-23. The facility is enclosed.	Enclosed facility is easier to secure.	5	
7-24. Storage or vehicles/containers/trailers/railcars that are not being used are kept locked.	Unused storage containers or vehicles can be a source of contamination or sabotage.	5	
7-25. Delivery schedules have been established.	Follow established delivery schedules.	5	
7-26. The off-loading of incoming materials is supervised.	Supervise material deliveries.	5	
7-27. The organization has an established policy for rejecting deliveries.	Rejected deliveries follow policy procedures.	5	D
7-28. Unauthorized deliveries are not accepted.	Deliveries have the potential to breach security.	5	D
7-29. The company does not accept returned (empty) containers for packing of product unless they are sanitized containers intended for reuse.	Recycled or returned containers have the potential for contamination or sabotage.	5	D
7-30. The facility has a program in place to inspect product returned to the facility for tampering.	Returned products have the potential for contamination or sabotage.	5	D
7-31. The company has identified the individual(s), with at least one backup, who are responsible for recalling the product.	Must be able to track produce from field to initial distribution with a responsible person.	5	D
7-32. The operation has performed a “mock recall” that was proven to be effective.	Must show that company is able to control product.	5	D
7-33. Product imported from outside the United States is segregated from domestic product.	Imported products have the potential for contamination or sabotage.	5	D
7-34. Allergens handled by the facility are segregated from products to avoid cross contamination.	Allergenic products have the potential for contamination or sabotage.	5	D
7-35. Floor plans, product flow plans, and/or segregation charts are in a secure location.	Facility plans with product flow are critical to have in emergency situations.	5	D
7-36. The organization has registered with the FDA and has been issued a registration number (do not record the number on checklist).	Farms are exempt from Food Facility Registration unless they also perform activities such as manufacturing and processing foods.	5	D

**Preventive Food Defense Procedures: 180 total points x 0.80 = passing score**

**144**

## Issues for Organic Producers — Preventive Food Defense Procedures

There are no specific challenges for organic production in this section of the GAP audit. Farms are exempt from Food Facility Registration unless they also perform activities that require registration, such as manufacturing and processing foods (<http://www.fda.gov/Food/FoodDefense/Bioterrorism/FoodFacilityRegistration/ucm081610.htm>).

## CONCLUSIONS

Organic producers should use their Organic System Plan (OSP) as a dynamic management tool specific to their operation. Organic producers are accustomed to recordkeeping and monitoring to maintain an organic system to produce crops and livestock within very specific National Organic Program standards. Good Agricultural Practices (GAPs) are utilized in a food safety plan that is specific to the farm operation and should be used as a means to address food safety issues in food production that can also be easily applied to organic operations. As with any agricultural operation, many GAP practices are followed but lack a written policy, plan, or recordkeeping.

Reviewing the seven-part USDA GAP audit with regulations and reasoning behind each audit point to increase understanding allows for easier adaptation and implementation of GAPs into a farming operation. Although some procedures and practices seem redundant, it is necessary to ensure compliance with either GAP or NOP requirements. Each program plan (NOP or GAP), including documentation, must be maintained separately for each certifying agency. There are many resources available both in print and online to help agricultural producers fully utilize GAPs within their operation.

## REFERENCES

- Council for Agricultural Science and Technology (CAST). 2009. *Food safety and fresh produce: An update* [CAST Commentary QTA2009-1, Online]. Retrieved December 2011 from [http://www.cast-science.org/publications/?food\\_safety\\_and\\_fresh\\_produce\\_an\\_update&show=product&product\\_ID=2946](http://www.cast-science.org/publications/?food_safety_and_fresh_produce_an_update&show=product&product_ID=2946)
- Davis, J.G., and P. Kendall. 2005. *Preventing E. coli from garden to plate* [Publication no. 9.369, Online]. Retrieved January 18, 2012, from <http://www.ext.colostate.edu/pubs/foodnut/09369.html>
- Food and Drug Administration (FDA). 2001. *Patulin in apple juice, apple juice concentrates and apple juice products* [Online]. Available from <http://www.fda.gov/Food/FoodSafety/FoodContaminantsAdulteration/NaturalToxins/ucm212520.htm>
- Food and Drug Administration (FDA). 2008. *Guidance for industry: Guide to minimize microbial food safety hazards for fresh-cut fruits and vegetables* [Online]. Retrieved December 2011 from <http://www.fda.gov/food/guidancecomplianceregulatoryinformation/guidancedocuments/produceandplanproducts/ucm064458.htm>
- Food and Drug Administration (FDA). 2009. *FDA food code 2009: Specifications for receiving, 3-202.11 temperature* [Online]. Retrieved January 18, 2012, from <http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/FoodCode/FoodCode2009/ucm186451.htm>
- Katsuyama, A.M. 1993. *Principles of food processing sanitation*, 2nd ed. Washington, D.C.: The Food Processing Institute.
- Koopmans, M., and E. Duizer. 2004. Foodborne viruses: An emerging problem. *International Journal of Food Microbiology*, 90, 23–41.
- Lehtola, C.J., C.M. Brown, and W.J. Becker. 2007. *Field sanitation — OSHA standard 1928.110* [Publication #ABE132, Online]. Retrieved December 2011 from <http://edis.ifas.ufl.edu/oa120>
- National Organic Program, 7 C.F.R. § 205. 2000.
- National Sustainable Agriculture Information Service. 2011. *Organic farming* [Online]. Retrieved December 2011 from <https://attra.ncat.org/organic.html>
- Occupational Safety and Health Standards for Agriculture, 29 C.F.R. § 1928. 2011.
- RTI International. 2009. *Fresh produce risk ranking tool summary: Identification of priority pathogen-commodity combinations for quantitative microbial risk assessment* [RTI Number 0211460.001, Online]. Available from [http://foodrisk.org/default/assets/File/Produce\\_RRT\\_report\\_RTI.pdf](http://foodrisk.org/default/assets/File/Produce_RRT_report_RTI.pdf)
- Schneider, K.R., R. Goodrich-Schneider, and D.L. Archer. 2010. *Food safety on the farm: Good agricultural practices and good handling practices—Water* [Publication #FSHN06-02, Online]. Retrieved December 2011 from <http://edis.ifas.ufl.edu/fs136>
- Simonne, A., and D. Treadwell. 2008. *Minimizing food safety hazards for organic growers* [Publication #FCS8872, Online]. Retrieved December 2011 from <http://edis.ifas.ufl.edu/fy1062>

- Suslow, T. 2002. *Postharvest handling for organic crops* [Publication 7254, Online]. Available from <http://anrcatalog.ucdavis.edu/pdf/7254.pdf>
- U.S. Department of Agriculture. 2012. *USDA good agricultural practices good handling practices audit verification checklist* [Online]. Available from <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5091326>
- U.S. Department of Agriculture Food Safety Inspection Service (FSIS). 2010. *Safe food handling: Molds on food: Are they dangerous?* [Online]. Retrieved January 18, 2012, from [http://www.fsis.usda.gov/FactSheets/Molds\\_On\\_Food/](http://www.fsis.usda.gov/FactSheets/Molds_On_Food/)
- U.S. Department of Agriculture Food Safety Inspection Service (FSIS). 2011. *Foodborne illness & disease: Parasites and foodborne illness* [Online]. Retrieved January 18, 2012, from [http://www.fsis.usda.gov/Factsheets/Parasites\\_and\\_Foodborne\\_Illness/index.asp](http://www.fsis.usda.gov/Factsheets/Parasites_and_Foodborne_Illness/index.asp)

## **OTHER GAP RESOURCES**

- United Fresh—Produce GAPs Harmonization Initiative  
[http://www.unitedfresh.org/newsviews/gap\\_harmonization](http://www.unitedfresh.org/newsviews/gap_harmonization)
- GLOBALG.A.P.  
[http://www.globalgap.org/cms/front\\_content.php?idcat=9](http://www.globalgap.org/cms/front_content.php?idcat=9)

## **APPENDIX A: List of GAP Forms Available Online**

### **Cornell GAPs farm and packing house recordkeeping sheets**

<http://www.gaps.cornell.edu/rks.html>

- Worker training log
- Field sanitation unit service log
- Processing packing line water log
- Water treatment log
- Pest/rodent control log
- Cooler temperature log with calibration note
- Truck checklist log
- Illness/injury reporting log
- First aid kit monitoring log
- Manure application log
- Surface water testing log
- Mock traceback log
- Visitor log

## **NMSU GAPs recordkeeping forms and signs**

<http://aces.nmsu.edu/ces/foodtech/gap-nm.html>

### **Forms**

- Company information sheet checklist
- GAPs pack sheet
- Sanitation checklist
- Thermometer calibration log
- Ingredient and supplies inventory log
- Finished product inventory log
- Chemical inventory log

### **Signs**

- Drinking water (bilingual)
- Hand washing station (bilingual)
- Hand washing instructions
- First aid (bilingual)
- Non-potable water (bilingual)
- Report injuries (bilingual)
- Break areas (bilingual)
- Smoking area
- Male/female toilet facilities
- Danger flammable liquids (bilingual)
- Restricted area (bilingual)
- Danger chemical storage area (bilingual)
- No smoking, eating, or drinking

## **On-Farm Food Safety Project food safety documents**

<https://onfarmfoodsafety.org/>

### **General Requirements**

- Food Safety Plan Audit Log
- Deviations and Corrective Action Log
- Example Traceback Log
- Form 1: Recall Information
- Form 2: Product Information
- Form 3: Contact Information
- Form 4: Recall Notification
- Form 5: Product Retrieval
- Form 6: Follow-Up Plan
- Employee Training Log

### **Worker Health and Hygiene**

- Employee Training Log
- Accident/Injury Form
- Sewage & Septic Systems Equipment Inspection Log
- Personal Hygiene Facility Cleaning Log
- Break Area Cleaning Log

**Previous Land Use and Site Selection**

Risk Assessment Form  
Agricultural Inputs Form

**Agricultural Water**

Agricultural Water Inspection Log  
Risk Assessment Form  
Water Testing Result Log  
Employee Training Log

**Agricultural Chemicals**

Employee Training Log  
Agricultural Chemical Inputs Form  
Animals and Pest Control  
Risk Assessment Form  
Pest Control Log Form  
Employee Training Log  
Soil Amendments and Manure  
Compost Time and Temperature Log  
Agricultural Inputs Form  
Field Harvesting  
Employee Training Log

Equipment Inspection, Cleaning,  
Maintenance and Calibration Form  
Water Temperature Control and Monitoring  
Water Treatment Log  
Equipment List  
Risk Assessment Form  
Transportation (Field to Packing House)  
Employee Training Log  
Transportation Vehicle Inspection Log/  
Checklist

Equipment Inspection, Cleaning, Maintenance  
and Calibration Form  
Packing House Activities  
Approved Raw Materials List  
Equipment Inspection, Cleaning,  
Maintenance and Calibration Form  
Preventative Cleaning/Maintenance Schedule  
Cleaning, Maintenance, and Repair of  
Buildings Checklist  
Water Treatment Log  
Water Temperature Control and Monitoring  
Risk Assessment Form  
Cooler Temperature Log  
Thermometer Calibration Log  
Employee Training Log  
Final Product Transport  
Transport Vehicle Inspection Log/Checklist  
Equipment Inspection Form  
Refrigerated Vehicle Temperature Monitoring  
Employee Training Log



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