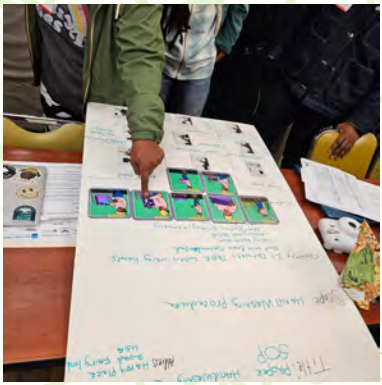

FOOD SAFETY SUPERVISOR'S

PRODUCE TRAINer MANUAL

A pick what you need toolkit to build up your worker training program

v1.0.2024

TABLE OF CONTENTS

“Culture is the way we do things around here.”

Frank Yiannas

(2008). Food safety culture: Creating a behavior-based food safety management system. Springer Science & Business Media.

ACKNOWLEDGEMENTS

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OUR PURPOSE

The purpose of this manual is to empower you to efficiently train your workers in essential food safety practices. It is designed to be a flexible resource, so you can pick and choose specific lessons based on immediate training needs - take what you need now, leave what you don't need till next season.

The manual aims to address the following goals:

- Reducing farm liability from unsafe food handling
- Identifying and correcting potential foodborne risks promptly
- Improving food safety culture and morale
- Increasing productivity
- Limiting worker turnover
- Empowering workers to carry out their jobs confidently and safely

The lessons in this manual are focused in developing workers' risk assessment skills, including hazard identification, the importance of standard operating procedures (SOPs), and practical risk management relevant to farm operations.

This manual is adaptable, incorporating visual aids, role-play, and hands-on activities. Users can modify lessons to suit their farm's time requirements, as there are short, medium and long versions for each lesson.

Ask for constructive feedback.

OUR GOALS

Facilitation materials are provided in each lesson so you can adapt it to your farm's unique needs, whether it's training new workers, volunteers, or refreshing established employees.

Each lesson is designed to sequentially build off one another, but they can work as standalone activities; you have the ability to choose what specifically your workers need to learn this season based on farm need:

- Introductory Video: What is Risk Assessment?: Produce Farm and Packing House
- Lesson 1: Farm Food Safety Eye Spy
- Lesson 2: Visual SOP Builder: Working with Animals & Preparing a Bin for Harvest
- Lesson 3: Risk Assessment in Action: Harvest Day Decisions

For each lesson, the manual provides:

- A brief overview of the activity, including key take always and learning objectives
- Materials list, background information, and suggested resources
- Training activities and discussion questions categorized by duration (short, medium, longer) based on the number of workers involved.

Thank you for utilizing this manual as a practical tool to efficiently train workers, promoting consistent food safety practices, and enhancing your farm operation's food safety culture. Remember, focus on what's needed now and revisit other lessons as your operation evolves.

WHY ILLUSTRATIONS? FROM AN EXPERT

You may be wondering “why the training lessons are illustration-heavy?” While both illustrations and photographs can enhance the learning experience, it is important to anticipate the learner’s needs.

The advantage of an illustration is that you have control over what is shown. You can remove the background or change color to improve clarity and readability for the learner for improved learning. In the below example of a wheelbarrow, you can see that additional details in the photo option may distract from the supplies in the wheelbarrow.

Moreover, the background may be seen as blending in with the wheelbarrel. While visual clarity can be accomplished with photography, items may need to be staged to control for background and lighting - which is sometimes not possible on working farms.

As part of this grant, the authors visited multiple small- to medium-diversified farms in Maryland and collected reference photographs for many of the illustrations in the training and this manual.

THE FSMA PRODUCE SAFETY RULE AND THIS MANUAL

All people who work on produce farms, including volunteers, MUST be trained in the principles of health and hygiene as well as on their specific job responsibilities.

The training content in this manual addresses, in part, a few important regulatory requirements from a risk assessment lens. They include, but are not limited to:

- 21 CFR 112.2: Training adequate to a person's job duties
- 21 CFR 112.22: Health and hygiene considerations, recognizing produce that should not be harvested, as well as identifying and communicating food safety issues related to harvest equipment
- 21 CFR 112.83: Assessing growing areas for animal intrusion
- 21 CFR 112.112: Identifying and not harvesting produce that is likely to be contaminated

For a complete training program, these lessons should be combined with formal health and hygiene training as well as any additional training you may need to conduct at your farm due to your specific activities (i.e., transplanting, equipment cleaning and sanitizing, compost turning, etc.) to completely satisfy regulatory requirements. Check out training resources in the appendices to develop your complete farm training program.

More on the federal requirements for worker training programs on the next page.

Your Workers and the:

PRODUCE SAFETY RULE (PSR)[1]

Who to train?

All workers who handle produce covered by the PSR (includes produce typically consumed raw). All volunteers who handle covered produce need to be trained as if they are paid workers.

What to include?

Workers must be trained in:

1. Principles of food hygiene and safety;
2. How their health and personal hygiene can result in contamination of produce or food contact surfaces; and
3. PSR standards that are applicable to the worker's job responsibilities.

Workers who conduct harvest activities must also be trained to:

1. Evaluate contamination risks before and during harvest (animal activity, damage, etc.);
2. Never harvest produce that is dropped or contaminated with feces; and
3. Only use clean harvest and packing containers.

Why train?

Training workers in food safety reduces produce safety risks, improves farm morale, and empowers them to notify supervisors when they notice potential sources of contamination. Training should cover the causes of contamination, including feces, footwear, clothing, tools & equipment, hands/jewelry, and illness & injury.

When to train?

Upon hiring, provide workers with an introductory training with basic food safety concepts and at least one refresher training annually throughout the season. Topic-specific refresher trainings might be offered more frequently, when necessary.

How to train?

Training programs must be easily understood and supervised by a qualified person. Keep records (of who was trained, the date they were trained, and what was covered.[2]

[1] For more information about training workers, see 21 CFR Subpart C, §§ 112.121-112.130.
[2] For more information on records, see 21 CFR Subpart O, §112.161. Required record templates, including for worker training, are available online from the Produce Safety Alliance, Records Required by the FSMA Produce Safety Rule, https://producesafetyalliance.cornell.edu/resources/general-resource-listing/

Questions? Contact the Maryland Department of Agriculture at 410-841-5769, produce.safety@maryland.gov

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CELEBRATING PROGRESS AND MEASURING SUCCESS

How will you measure success? Whether for a growing season, a week, a day, or a particular activity such as harvesting…how will your team know if progress is being made? Work with your team to identify how to celebrate progress and measure success. It is good for morale, and it feels good to celebrate people and important events on the farm.

Take time to get feedback from workers and other supervisors and/or owners. Think of how farm activity (**fill in the blank**) _____ will look and feel like when the team is successful.

Starting Questions:

- Can an incentive program be developed? What is a reasonable incentive?
- What will successful training look like?
- Knowledge checks
- Identify a change in behavior or communication
  - Are workers talking about food safety more?
  - Are workers talking to their supervisor(s) more?

Write out here how you want to measure the success of training on your farm

- _____

Example photos of success measured by behavior change:

Before-Dirty **After-Clean**

Are there outlets where you can share progress and successes? Would this be good press information to gain new markets?

LEADING WORKER DEVELOPMENT & QUICK PUBLIC SPEAKING TIPS

Farm supervisors are key to advocate safe food handling practices around the farm. To prepare for your role of leading worker training, you will want to review the materials to make sure you have the space, time, and equipment you need for the number of workers you are training.
As you lead the training:

Practice.

- Estimate the time needed to complete the desired training(s).
- Test portions out with a colleague for feedback.

Be prepared.

- Provide accommodations to ensure the training is accessible.
  - Will you need someone to help interpret/translate materials?
  - Need more visuals, time for training, or room accommodations?
- 24 hours before training, make any copies and print all training records.
- Arrive 15-30 minutes before the training to set the space, papers, and greet workers.

Speak the language/lingo.

- Use plain language.
- Use lingo/jargon only when necessary and be sure to define it.
- Will you need a translator?

LEADING WORKER DEVELOPMENT & QUICK PUBLIC SPEAKING TIPS

Be positive.

- You set the tone of the learning environment.
- Smiling and inviting others into your space will get workers excited to engage.

Be prompt.

- Start and end on time.
- Share that you want everyone to have a chance to talk, but you may need to limit some discussions to respect everyone's time.

Be compassionate.

- Negativity, frustration, and/or shutting someone down will spread and stop the learning process.
- Think of how you may want to handle unforeseen situations.

Ask for constructive feedback.

- Being open to feedback can improve future training.
- Being open to feedback will improve communication between workers as well as between workers and supervisor(s).
- Being able to reflect and evaluate your performance will improve your teaching over time.

Quick Public Speaking Tips.

Images from Trish Moore and iStock

FARM FOOD SAFETY CULTURE

On-farm food safety culture encompasses the shared values and behaviors of agricultural workers and organizations that consistently prioritizing and practicing food safety measures prevent foodborne hazards and protect public health. Having a strong food safety culture is the most important tool in a farm's toolbox to support effective worker training programs and consistent adoption of food safety practices up to the farm's expectations.

How do you build food safety on your farm? Here are a few key components:

- Strong leadership sets the tone of farm food safety culture. When Leaders lead by example, it shows workers that the organization is committed to daily food safety practices as a shared responsibility and priority for everyone on the farm.
- Promote and reward transparent communication to demonstrate that workers' needs are valued and taken seriously.
- Provide the right space, equipment, and tools that are easily accessible for workers to easily choose food safe behaviors.
- Focus training not only on "why" certain food safety practices are important, but also "how" to execute tasks.

Strong food safety culture promotes positive work environments, and overall enhances the efficiency of a farm operation. Think about the current state of food safety culture on your farm, and what building blocks you can focus on further developing this growing season.

FARM FOOD SAFETY CULTURE

Food safety culture is a practice of continual improvement. Use the farm safety culture pyramid below to help you assess where you are and target the next level up for your leadership to work towards during this growing season.

The Food Safety Ladder

The farm is committed to ongoing training, education, and employee engagement. Workers are empowered to make food safe decisions and share the value that food safety is a critical aspect of their job.

Level 4, Continually improving

The farm proactively addresses potential food safety issues; workers are engaged although they still rely on supervision and management to lead food safety behaviors.

Level 3, Involving

The farm develops a food safety management system with training, some monitoring, and documentation to adhere to regulatory requirements.

Level 2, Managing

The farm addresses food safety issues only when they arise, not proactively.

Level 1, Reactive

DIFFERENT LEARNING STYLES

As a supervisor, it is important to understand how your workers learn best so they are knowledgeable and empowered to complete their farm duties. Visuals, Auditory, Read/Write, and Kinesthetics (VARK) is one model to illustrate the diversity of how people learn. This toolkit offers lesson options to use these learning styles for training workers. Examples include:

- Visual: Lesson one farm scene.
- Kinesthetic: Lesson two and three application of learning.
- Auditory: Lesson two hands-on discussion of visual SOPs.

VARK: Visual, Auditory, Read, and Kinesthetic

Another model, Kolb's four-stage learning cycle, emphasizes the continuing nature of how people learn, and the upkeep required over time to keep learning fresh.

The takeaways for supervisors:

- Lean on seasoned workers and those specialized in specific duties, to share their experiences to help train new workers.
- Provide time for discussion and reflection to assist with worker learning of new knowledge.
- Incorporate experiential hands-on learning when possible.

Morales-Rodríguez, M. L., Ramírez-Saldivar, J. A., Sánchez-Solís, J. P., & Hernández-Ramírez, A. (2012). Design of an Intelligent Agent for Personalization of Moodle's Contents. Res. Comput. Sci., 56, 11-17. University of Puget Sound (2024). Kolb - Learning Cycle. https://www.pugetsound.edu/experiential-learning/available-resources/creating-critical-reflection-assignments-resource-1/kolbs

INTRODUCTION VIDEO: FARM RISK ASSESSMENT

Overview

What is risk assessment, and how does it apply to my work on the farm? In this short video, learn about how decision making with food safety in mind works to keep you and the produce you work with safe.

This activity reviews why hazard identification and food safety risk assessments are important. Trained worker's keen eyes spot hazards to be fixed so that produce is not contaminated. Contaminated produce, if eaten, can make people sick – and we don't want to get our grandma sick!

INTRODUCTION VIDEO: WHAT IS RISK ASSESSMENT?

Key Takeaways

- Farms can contain food safety hazards.
- Workers can recognize hazards and do something about them to keep produce safe

Learning Outcomes

- List three food safety hazards.
- Recognize the role of risk assessment.
- Discuss how hazards and risk assessment apply to your farming operation.

Introduction Video: What is Risk Assessment?

Prerequisites: none. Total Activity Time: 05-30 minutes

Instructor resources and notes before training workers:

- Watch the 30-second video "What is Risk Assessment?"
- Review group discussion questions
- Modify discussion to your farm as needed
- Introduce yourself, ask learners what they do on the farm
- Encourage learners to share unique features on their farm

Space & Group Size:

- 2-10 workers
- Space that is good for group discussion
- Create multiple groups if needed

Supplies:

- Device that supports access to the internet or a downloaded version of the video
- Hands-on demonstrations as the supervisor sees fit

Short (5 minutes) Training:

- Watch the 30-second video "What is Risk Assessment?"
- Lead discussion and additional training needs

Discussion Questions

- When were times you used hazard identification at work?
  - Did you realize you were assessing risk, which is needed for public health?
  - What are our current strengths in identifying hazards and risks?
  - How can we improve how we identify hazards and risks?
- What are some ways we are communicating hazards and risks with each other? And with supervisors?
  - What is going well for us in communicating hazards and risks?
  - How can we improve our communications with each other on hazards and risks?
- What are some ways we can celebrate progress and measure our success? _____

Introduction Video: What is Risk Assessment?

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Space & Group Size:

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Supplies:

- Device that supports access to the internet or a downloaded version of the video
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  - Did you realize you were assessing risk, which is needed for public health?
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  - How can we improve how we identify hazards and risks?
- What are some ways we are communicating hazards and risks with each other? And with supervisors?
  - What is going well for us in communicating hazards and risks?
  - How can we improve our communications with each other on hazards and risks?
- What are some ways we can celebrate progress and measure our success? _____

ACTIVITY OUTLINE

Review Questions

1. What are some key elements of risk assessment highlighted in the video?

Answers can include looking for potential hazards and judging what to do that keeps the food safe, etc.

2. What is one aspect of risk assessment emphasized in the video?

A) Ignoring potential hazards

Answer: B) Identifying and evaluating potential risks

C) Avoiding all risks at all costs

D) Conducting risk assessment only after accidents occur

3. What type of hazard is glass falling onto the harvest while it's staged in the packing house?

A) Biological

B) Chemical

Answer: C) Physical

Bonus – What should you do if you see this occur?

Answers include, alert your supervisor, remove any affected produce bins with glass on them and dispose of them safely, clean the area.

Medium (15 minutes) training add-ons

What is Risk Assessment and why is it important when working on a farm?

- **Risk assessment:** Is making a judgment about a hazard's ability or likelihood to contaminate the produce you are growing, harvesting, or packing. This includes deciding how you need to act to protect the safety of the product you are working with.

ACTIVITY OUTLINE

What is the difference between biological, chemical, and physical hazards on a farm?

- **Biological hazard:** An organism or agent that poses a threat to the health or well-being of living organisms. These hazards can include bacteria, viruses, fungi, parasites, and other microorganisms that can cause illness or disease when ingested, inhaled, or come into contact with skin.
- **Chemical hazard:** Any substance that has the potential to cause harm to human health, either through direct contact, ingestion, inhalation, or absorption. These hazards can include toxic chemicals, pesticides, cleaning or sanitizing agents, or other substances that can cause acute or chronic health effects if exposure occurs.
- **Physical hazard:** Any condition or substance that can cause physical harm or injury to individuals. These hazards can include sharp objects like glass and wood, and insect parts.
- **Public health:** Promotes and protects the health of all people and their communities. Public health improves our quality of life, helps children thrive, reduces human suffering and saves money.

Long (30 minutes) training add on

The supervisor adds specific hazards and risks for the group to consider based on the commodity, season, and/or specific duty.

LESSON 1: FARM-FOOD SAFETY EYE SPY

Overview

In the last video, we learned the three food safety hazards and recognized the role of risk assessment.

In this lesson, we will take a bird's eye view of a mixed-use farm and identify common hazards that may be present during daily work.

LESSON 1: FARM-FOOD SAFETY EYE SPY

Key Takeaways

- Farms can contain food safety hazards.
- Worker practices like tool sanitation, housekeeping, handwashing, and hygiene can reduce risk to keep produce safe.

Learning Outcomes

- Be comfortable in identifying hazards that may be present at the farm.
- Be able to determine food safe practices to keep produce safe.
- Recognize how germs can spread from one place to another (cross-contamination) on the farm.

LESSON 1 - Farm-Food Safety Eye Spy

Learner Prerequisites: Watch the video "What is Risk Assessment"

Total duration of activity: 05-30 minutes

Instructor resources for training workers:

- Review the background on hazard identification and risk management
- Your farm's worker training policy, for workers to review prior to the lesson (optional)
- Modify discussion to your farm as needed
- Prepare any hands-on demonstrations
- Lesson 1 Handout (Appendix C) and/or online access to produce TRAINer

Space & Group Size:

- 2 - 10 workers
- Space that is good for group discussion
- Create multiple groups if needed

Supplies:

- Farm's worker training policy, for workers to review prior to the lesson (optional)
- Whiteboard to discuss (optional)
- Hands-on demonstrations as the supervisor sees fit

Online training:

Device that supports access to the internet

- Optionally, one projector can be used to make this a group activity.

In-person training:

- Picture of farm scene

Important factors to consider:

- As workers on the farm, you have the most impact on the safety of the produce you work with. Your expert eyes can spot hazards and your TIMELY actions can make sure that the produce you work with does not become contaminated.
- All farms are very different, so hazards present in this lesson may not be present on the farm you work at. This is okay! Encourage learners to think about unique hazards that may be present on their farms.
- Often, there is more than one way to safely manage a hazard on the farm. Encourage learners to discuss multiple ways to work safely other than what is provided in the lesson.
- Always make sure workers stay safe. Don't let them get hurt while doing farm work.

ACTIVITY OUTLINE

Short (5 minutes) Training:

Focus on "What is risk assessment and why is it important when working on a farm?" Go through a scenario or two if time permits.

Instructors notes

- Introduce yourself, ask learners what they do on the farm.
- Tell learners what they are going to do in this activity (e.g., "In this lesson, we will identify common farm hazards and talk about how we can work to reduce food safety risk.").
- Encourage learners to share unique features on their farm.
- Review the definitions, or ask learners how they define risk assessment, hazard, and cross contamination.

- **Risk assessment is** making a judgment about a hazard's ability or likelihood to contaminate the produce you are growing, harvesting, or packing. This includes deciding how you need to act to protect the safety of the product you are working with.

- What is a **hazard**? Something that has the ability to contaminate produce or otherwise compromise the safety of the produce.

- What is **cross contamination**? The transfer of harmful microorganisms (such as bacteria, viruses, or parasites) from one source to another, leading to the contamination of fresh produce. This can occur through various means, such as contact with contaminated water, equipment, tools, or surfaces. For example, if harvesting equipment used for one type of produce comes into contact with soil, water, or surfaces contaminated with pathogens, there's a risk of transferring those pathogens to the harvested produce.

ACTIVITY OUTLINE

Medium (15 minutes) training

LESSON INSTRUCTIONS AND DISCUSSION: Go through as many of the relevant icons to your farm and ask the following questions:

- Why is this farm feature a hazard, or, how could this contaminate produce?
- What would you do if you found this on your farm to make sure you are working food safe?
- What are the policies that we have on our farm to make sure everyone works safe?

Instructor notes

- Emphasize that visibly contaminated produce should never be harvested or brought into the pack house.
  - What would you consider to be visibly contaminated produce?
- Play up communication with their supervisor on hazards that are found where the employee is not sure what to do. This may spark discussion on communication around the farm, and this is okay!
- As this activity is centered on workers, be sure to center the conversation around what the learners can do on the farm to keep produce safe. Activities that are more under the purview of supervisors or farm managers (i.e., taking water tests) are okay to mention, but make sure you bring it back to activities the workers actually perform.

TABLE 1: INSTRUCTOR REFERENCE FOR ICONS IN LESSON 1

Hazard in scene	WHY This Hazard is Important to Manage for Food Safety
Your hands are unwashed	Unwashed hands transfer germs to produce during handling; hand sanitizer is not effective at killing some germs.
There are chickens in the packhouse	Animals and their poop can carry germs like *Salmonella* and pathogenic *E. coli.* Separate them from produce activities. Have a sanitation program to reduce cross contamination when animals or animal-related work is done in this area.
Poop is in the field during harvest	Germs from poop contaminate produce directly through splash, or by mixing with water. Contamination can spread during sorting and washing activities.
The well cap has come loose	Unmanaged water used for irrigation can be a source of germs, and spreads during irrigation, foliar application, or post harvest water uses.
Your hand tools are outside with yesterday's dirt on them	Dirty tools spread human and plant pathogens (germs) around the farm. Sanitation programs and proper storage protect these tools from contamination.
The packhouse sink is dirty	Germs in a dirty sink or low quality water can contaminate produce during washing.
Trash and debris are building up around the pack area.	Trash and debris around the packing area can attract pests and lead to contamination of otherwise clean packing materials.
You feel sick today	When you are sick, germs spread through coughing, sneezing, diarrhea, and puking. This can make other workers sick and allow germs to spread from your body to other areas of the farm, including onto produce.
You are wearing your sty clothes while handling produce.	Farm clothes become contaminated from working with manure or animals and could spread germs around the farm. To keep produce safe, use different clothes for animal and produce activities .
The compost pile has food scraps continually added to it	Compost piles that have table scraps, scat, or livestock manure can contain germs. Safe handling, application to the field, and wait times before harvesting crops is crucial to maintain food safety if this pile will not undergo a scientifically validated compost process.
Pig sty wheelbarrow is being used for produce activities	Tools and equipment that are used for animals, manure, or compost work can be contaminated from germs in poop. Without proper control of these items on the farm, they can directly contaminate produce.
The harvest bin has a crack in it	Chipped equipment presents a physical risk to consumers and provides safe homes for germs to grow and contaminate produce.
There are no records for today's harvest	No records on the harvest makes it difficult to track food safety issues (like signs of animal intrusion) and trend important crop data.

ACTIVITY OUTLINE

Long (30 minutes) training add-ons

Discussion*:* ask learners what else they see on the farm picture that could be a hazard, and how they can work to manage this risk?

- Why is this farm feature a hazard, or, how could this contaminate produce?
- What would you do if you found this on your farm to make sure you are working food safe?
  - Some options to get the conversation started include
    - position of the well in the walkway
    - position of the compost pile in the walkway
    - proximity of the compost pile to the produce field
- What are some ways we can celebrate progress during hazard assessment and measure our success?

You, the trainer can add specific scenarios for discussion based on worker feedback, farm commodities grown, season, and/or specific worker duties.

Do not forget training records! See Appendix B for record templates

LESSON 2:VISUAL SOP BUILDER, WORKING WITH ANIMALS AND PREPARING A BIN FOR HARVEST

Overview

In the last lesson (1), we learned how to spot hazards on the farm and take action to make sure that the produce you work with does not become contaminated.

This lesson, we will learn with pictures and words the importance of doing farm tasks in a specific order to make sure we are working food safe. Standard operating procedures (SOPs) covered are working with animals and prepping harvest bins prior to harvest.

LESSON 2:VISUAL SOP BUILDER, WORKING WITH ANIMALS AND PREPARING A BIN FOR HARVEST

Key Takeaways

- Farm tasks must be done in the right order to make sure we are working safely.
- Clean, THEN sanitize equipment when washing
- Remove animal area clothes and wash up before working with produce.

Learning Outcomes

- Recognize the value of on-farm SOPs
- Explain the best farm risk management practices step-by-step
- Feel comfortable write and/or draw an SOP

Lesson 2: Visual SOP Builder, Working with Animals and Preparing a Bin for Harvest

Learner Prerequisites: Lesson 1, Farm-Food Safety Eye Spy

Training time: 05-30 minutes

Instructor resources before training workers:

- Review SOPs for working with animals and/or preparing harvest bins
- Lesson 2 cutouts (Appendix D) and/or online access to Produce TRAINer
- (Optional) Copies of your Farm's SOPs for harvest, working with animals, or other farm activities, for workers to review prior to the lesson
- Modify discussion to your farm as needed
- Prepare any hands-on demonstrations

Other information for this lesson:

Space & Group Size

- Between 2 - 10 workers
- Space that is good for group discussion
- Create multiple groups if needed

Supplies:

- (Optional) Copies of your Farm's SOPs for harvest, working with animals, or other farm activities, for workers to review prior to the lesson.
- Copies of blank SOP matrix (Appendix D) and pens/pencils for employees to draw their own SOP
- Whiteboard to discuss (optional)
- Hands-on demonstrations as the supervisor sees fit

In-person training:

Cut outs of each SOP step for working with animals and/or preparing harvest bins

Online training:

- Device that supports access to the internet
  - Optionally, one projector can be used to make this a group activity.

Note: This interactive can also be played with the keyboard. Type card numbers or tab to select cards, and use the arrow keys to move. Press space to put a card down, and type underlined letters on buttons to activate them.

Important factors to consider:

- Why are Standard Operating Procedures (SOPs) important to farm hazard management?
  - Effective SOPs manage known hazards before they have the chance to compromise produce safety.
  - An effective SOP outlines practices for completing a farm task that may increase food safety risks if not done correctly.
- SOPs are likely something that workers are already accustomed to doing, as many farm tasks need to be completed step-by-step, in the correct order (i.e, planting, mixing pesticides, etc.). This exercise takes it one step further by writing/drawing the instructions. When instructions are written/drawn, they can be used as training material for new workers and reference material for experienced workers.
- All farms are very different, so SOPs present in this lesson may not be present on the farm you work at. This is okay! Encourage learners to think about unique SOPs that may be important for work on their farms. This model of simple SOP making can be used to develop your farm's specific SOPs.
- Always make sure workers stay safe. Don't write an SOP that would compromise their safety.

SOP Components

1. **Purpose**
2. **Scope**
3. **Responsibility**
4. **Materials**
5. **Procedure**

ACTIVITY OUTLINE

Short (5 minutes) Training:

Instructor notes

- Introduce yourself, ask learners what they do on the farm.
- Tell learners what they are going to do in this activity and what the learning outcomes are (e.g., “In this lesson we will work on building step by step instructions for two farm tasks; getting ready for harvest and working with animals.”).
- Encourage learners to share SOPs on their farm (e.g., “Can you think of farm practices that would benefit from having step-by-step instructions? Why?”).
- Outline that SOPs are helpful resources for both new and experienced workers (e.g., “SOPs can be used as training material for new employees and a reference for experienced workers.”).
- **What is an SOP? Why are SOPs important when working on a farm?**
  - **A Standard operating procedure (SOP)** is a set of step-by-step instructions on how to complete a farm task.
  - SOPs are important on the farm because they ensure tasks like harvesting, washing produce, packaging, cleaning, and sanitizing, are safe, effective, and repeatable.
- Speed round! If time remains, allow workers to complete one farm scenario. Allow for open discussion following their work.

Correct Steps for each SOP

Getting Ready for Harvest	Wash hands	Inspect bins	Remove debris	Wash bins	Sanitize bins	Inspect field*	Harvest
Working with Animals	Don apron & boots	Work with animals	Remove apron	Change boots and leave	Wash equipment	Wash hands	Resume produce activities

* Note, participants may choose to inspect the field before starting - discuss with a group if this strategy would work for your farm.
* Note, participants may want to add additional handwashing events to this SOP. Use this as a jumping off point for discussion.

ACTIVITY OUTLINE

Medium (15 minutes) training add-ons
Choose one scenario to go over with your learners.

Instructions: Online
Learners select the order of tasks that conclude in a correctly executed SOP. To perform this exercise together, ask the workers which task they think should be first in the order, then second, third, etc. After all tasks are ordered, click [CONFIRM STEPS] to determine if the SOP is in the right order for maximum risk reduction. If the steps are not in the right order, the lesson will prompt the learner to try again at the step that is in the improper order.

Instructions: In-person
Give groups a set of SOP cards and have them work together to see what order is best. If your workers are competitive, you could create a prize for the group that gets the order right in less time.

Scenario 1: Getting Ready for Harvest Instructions and Discussion

Discussion question: Why is it important to have an SOP for getting ready for harvest?

- Not having an SOP can increase food safety risks. Answers can include: not washing hands, taking out a harvest bin that is dirty / possibly contaminated, harvesting in an area that could be contaminated by significant animal intrusion, etc.

Other questions:

- Why should we do this step at this point in the process?
- What is the difference between cleaning and sanitizing?
- What are we looking for when we are inspecting the field?

ACTIVITY OUTLINE

Instructor notes

- **Cleaning:** removes dirt and other organic matter from the surface.
- **Sanitizing:** reduces the number of microorganisms (including germs) on a clean surface. Sanitizers do not work on surfaces that are dirty, therefore cleaning must occur prior to sanitizing for effective sanitation.
- **Field inspection:** this is done to look for significant animal intrusion or other major hazards prior to harvest. Note that there are many methods for effective field inspection, from it being a supervisor's job prior to harvest, to delegating this task to the harvest workers themselves. Whichever method is chosen must also have practices for identifying any hazards present and making sure no product is harvested that could be contaminated. If signs of animal intrusion are found (significant trampling, feces, etc.), safely address it by flagging it, burying it, or otherwise removing it.

<u>Scenario 2: Working in the Animal Area Instructions & Discussion</u>

- **Discussion question:** Why is it important to have an SOP for working with animals?

Answers that increase food safety risk can include: cross-contamination from not washing hands, shared clothing, shared equipment, etc.

- **Cross contamination** is the transfer of harmful microorganisms (such as bacteria, viruses, or parasites) from one source to another, leading to the contamination of fresh produce. Since animal areas can be a source of foodborne pathogens, cross contamination risk to produce areas is high without additional food safety practices in place.

Other questions:

- Why should we do this step here?
- What is cross contamination?
- How would cross contamination happen when working with animals?
- What are some ways we can celebrate progress in SOP construction or execution?

View Appendix D for a Blank SOP Matrix

ACTIVITY OUTLINE

Long (30 minutes) training add-on

- Go over both scenarios with your learners.
- Activity: Using Appendix D, have learners draw/write a simple SOP for other farm tasks. Have learners share their SOP with the group.

Instructor notes

- Give the learners a bank of possible farm tasks if they are struggling (i.e., washing produce, packing produce) OR pick a farm task that your workers might need some extra practice in.
- Focus feedback on making sure that the task includes all necessary steps (don't forget about gathering supplies or washing hands!), are illustrated in sequential order, and minimizes food safety risk.

You, the trainer, can add specific SOPs based on the commodity, season, and/or specific duty.

LESSON 3: RISK ASSESSMENT IN ACTION, HARVEST DAY DECISIONS

Overview

In the last lesson (2), we learned how to explain the value of on-farm SOPs, practice writing/drawing an SOP, and discussed how to reduce risks step-by-step.

Now we will practice risk assessment in action! Follow two farm workers through a harvest day and use recirculated water. Help them choose the best options to reduce foodborne risks.

LESSON 3: RISK ASSESSMENT IN ACTION, HARVEST DAY DECISIONS

Key Takeaways

- Never harvest anything that has poop on it, or could be otherwise contaminated.
- If washing produce, the sink must be clean before you start.
- If using wash water sanitizer, ALWAYS read and follow the directions.

Learning Outcomes

- Explain the concept of risk assessment.
- Learn to assess and make informed decisions to reduce risk at the time of harvest.

Lesson 3: Risk Assessment in Action, Harvest Day Decisions

Learner Prerequisites: Lesson 2, Visual SOP Builder

Training time: 05-30 minutes per lesson

Instructor resources before training workers:

- Review risk assessment
- Lesson 3 Handout (Appendix E) and/or online access to produceTRAINer
- (Optional) Farm employee SOPs for scouting, produce washing, or other activities, for workers to review prior to the lesson
- Modify discussion to your farm as needed
- Prepare any hands-on demonstrations

Important factors to consider:

Why is risk assessment at the farm vital to learn?

- Workers touch produce, so what they do can make produce safe to eat or not.
- Informed workers can quickly see things that might make food unsafe. They can act quickly to reduce the risks of produce being unsafe to eat.
- Workers often make daily risk assessments, making the best choice under various needs (i.e., the safety or quality of the crop, safety of the workers, most efficient process, well-being of the animals, etc.). Talking about food safety risk assessment will help develop the learner's expertise to spot and manage hazards while working on the farm.
- Encourage learners to think about specific hazards they face on the farm, and their management strategies (i.e., field next to a cow pasture, creek, etc).
- Always make sure workers stay safe. Don't let them get hurt while doing farm work.

Space & Group Size:

- Between 2 - 10 workers
- Space that is good for group discussion
- Create multiple groups if needed

Supplies:

- (Optional) Farm employee SOPs for scouting, produce washing, or other activities, for workers to review prior to the lesson
- Whiteboard to discuss (optional)
- Hands-on demonstrations as the supervisor sees fit

Online training:

- Device that supports access to the internet
- Optionally, one projector can be used to make this a group activity.

Note: This interactive can also be played with the keyboard. Type card numbers or tab to select cards, and use the arrow keys to move. Press space to put a card down, and type underlined letters on buttons to activate them.

Short (5 minutes) Training:

What is risk assessment and why is this important when working on a farm?

Instructor notes

- Introduce yourself, ask learners what they do on the farm.
- Tell learners what they are going to do in this activity and what the learning outcomes are (e.g., “In this exercise we will put what we have learned in previous lessons to the test by deciding what to do when presented with some examples of potentially risky situations on the farm.”).
- Risk assessment is a process to identify food safety hazards and work to make sure they do not affect produce.
- Go through a modified selection (1 to 3) of the most important scenarios that are relevant for your farm, following the instructions below.

ACTIVITY OUTLINE

Instructor notes and key terms

Review the definitions of cleaning, sanitizing, and cross contamination in previous lessons.

- **PPM (parts per million):** Very dilute concentrations of substances, usually used to describe sanitizer concentrations. One ppm is equivalent to one milligram of a chemical per liter of water (Bihn et al., 2019).

- **Recirculating water:** Water that washes multiple batches of produce. Examples include dunk tanks where water is changed after x amount of produce loads, and many industrial produce washers. This method of washing conserves water, however, it must be managed to ensure that the quality of the water remains adequate for the duration of washing activities.

- **Single pass water:** Water that only contacts produce once. Examples include produce in a strainer washed via running water from a faucet or produce on a screen washed by a hose.

- **Dwell time:** The amount of time produce or a surface has to be in contact with a sanitizer for the sanitizer to be effective in killing bacteria.

- **Harvest buffer flag:** A visual cue for other workers to indicate that a specific area should not be harvested to reduce food safety risk, or for some other reason. The buffer (usually circular ranging from inches to feet) is based on an individual farm's program and risk assessment. Ask your supervisor what the buffer policy is on the farm you are working at.

Bihn, E., Wall, G., Acuña-Maldonado, L., Fisk, C., Humiston, M., Pahl, D., Stoeckel, D., Way, R., & Woods, K. (2019). Produce Safety Alliance National Curriculum (Version 1.2). Produce Safety Alliance, Cornell University.

ACTIVITY OUTLINE

Medium (15 minutes) training:

Choose either "Decisions during harvest" or "Washing with recirculated water", and walk through with your learners.

Instructions: Have learners discuss what should be done at each scenario before agreeing on a selection (Part 1-Decisions During Harvest or 2-Using Recirculated Water). On the next page are a few guiding questions which can be posed to learners to facilitate discussion before a selection is made, unless otherwise noted. The correct choice must be made to continue through the lesson.

Scenarios

- Harvest Tote Selection
- Water contact from an unmanaged source on Blackberries
- Weeds in Tomato Rows
- Tomatoes near potential contamination
- Harvest Buffer Flag Without Visible Contamination

See Next Page For Questions

ACTIVITY OUTLINE

Scenario	Key questions
Harvest Tote Selection	• Why is it important to visually inspect harvest totes before use? (*Answers include: to ensure that we have clean totes that are not a likely source of contamination and that they will function properly*). • What are the potential hazards associated with using a bin with cracks or excessive dirt for harvesting? (*Answers include: cracks provide a niche for unwanted microbial growth, dirt indicates this harvest bin is not clean and can harbor contamination from previous activities).*
Water contact from an unmanaged source on Blackberries	• What are some ways to manage a stream irrigation water source? *(Answers include: drip irrigation, treating the water before the point of use, protecting the stream from sources of contamination, periodic microbial testing, etc.).* • What are the risks of harvesting berries that have contacted water, the quality of which we don't know? *(Answers include: since we don't know the quality, the water could be contaminated and therefore the berries that have been in contact with water could now be contaminated).* • After selection is made: What other steps should you take if you came across this scenario *(Answers include: cull the affected berries, place a flag or tape on the affected line/berries, stop and alert your supervisor).* • Bonus: How could this scenario have been prevented? *(Answers include: manage the stream, have a drip line preventive maintenance program where the line is assessed for issues before running irrigation on a regular basis, etc.).*
Weeds in Tomato Rows	• Why might workers need to assess the presence of weeds before harvesting? *(Answers include: to ensure that there are not signs of significant animal intrusion in the weeds, or the weeds are not significantly affecting the quality of the crop).* • What factors should workers consider/evaluate when deciding whether to harvest tomatoes in a row with high weeds? *(Answers include: signs of animal nests, poop, significant signs of herbivory (eating weeds or crops), trash, etc).*
Tomatoes near potential contamination	• What are the potential consequences of harvesting tomatoes that have been in contact with rainwater? *(Answers include: bird feces mixing with rain water can contain germs, so the tomatoes that are contacting the puddle could be contaminated).* • After selection is made: why is it important to use harvest buffer flags in this scenario? *(Answers include: because it isn't reasonable to remove the puddle, removing the affected tomato or flagging it communicates to others that these tomatoes are not safe to harvest).* • Bonus: what other steps should you take if you came across this scenario? *(Answers include: cull the affected tomatoes, alert your supervisor about the issue when appropriate to do so).*
Harvest Buffer Flag Without Visible Contamination	• What are the risks of harvesting produce from an area where a harvest buffer flag has been placed? *(Answers include: since harvest flags denote areas where hazards are, harvesting where the flag is placed could mean that you are harvesting potentially contaminated product).* • After selection is made: why should workers heed harvest buffer flags even if there's no visible contamination present? *(Answers include: because germs are microscopic, they can still be on the produce even after more obvious signs are no longer present).*

ACTIVITY OUTLINE

Scenario 2: Using Recirculated Water

Instructions: Have learners discuss what should be done at each scenario before agreeing on a selection (Part 1-Decisions During Harvest or 2-Using Recirculated Water). Below are a few guiding questions which can be posed to learners to facilitate discussion before a selection is made, unless otherwise noted. The correct choice must be made to continue through the lesson.

Scenarios:

- Preparing an Outside Sink for Produce Washing
- Adding Sanitizer to the Water
- Measuring Sanitizer Amount
- Dunking Lettuce Heads
- Continuing with the Same Water

Do not forget to keep wash water monitoring records (See Appendix B for record templates).

See Next Page For Questions

ACTIVITY OUTLINE

Scenario 2: Using Recirculated Water

Scenario	Key questions
Preparing an Outside Sink for Produce Washing	• What might be present in an outdoor sink that could affect the safety of the produce? (*Answers include: signs of animals from farm animals or wildlife, dirt and organic matter from past activities).* • How would you go about preparing this sink for washing vegetables? *(Answers include: first clean with soap, then sanitize the sink with a sanitizer approved for food contact surfaces at the appropriate concentration).*
Adding Sanitizer to the Water	• What risks are associated with not using sanitizer during produce washing? (*Answers include: germs, if present, can move freely in water from contaminated produce to other produce, contaminating large amounts of product. Sanitizer at the right concentration in the water prevents this cross-contamination.)* • What type of chemical should be used for this activity *(Answers are farm specific, but should include what is outlined in the farm SOP and/or any sanitizer approved for washing produce at the appropriate concentration).*
Measuring Sanitizer Amount	• What could happen if too little or too much sanitizer is added to the dunk tank? *(Answers include: too little will not be effective in preventing cross contamination, too much may present a worker safety hazard, can corrode equipment and be a chemical hazard to produce).*
Dunking Lettuce Heads	• Why might a worker choose to dunk and remove lettuce heads immediately versus waiting for a specified amount of time? *(Answers can be various here, learners should reference the farm washing SOP - which should outline washing steps per the specific sanitizer label the farm is using).*
Continuing with the Same Water	• What factors should be considered when deciding whether to continue washing produce with the same water? *(Answers include: consulting the farm wash SOP, if the water is too turbid/ full of organic matter, if something happens that could compromise the quality of the water (i.e. trash falls in the water), if sanitizer concentration is too low).* • How can workers determine if the sanitizer concentration in the water is still effective? (*Answers include: check with a ppm strip, ask supervisor for help).*

ACTIVITY OUTLINE

Long (30 minutes) training: Go through both above scenarios.

- What are some ways we can celebrate progress regarding risk assessments? How do we measure success?

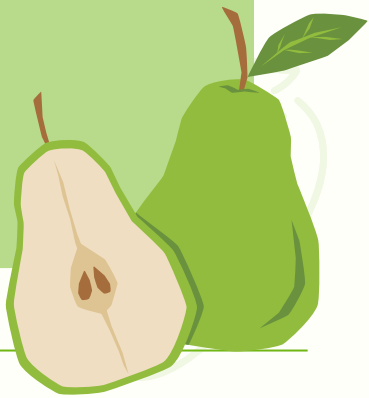
Optional Discussion: Ask learners to share risk assessments they have done on their farm,

- Can you think of a time where you had to make an on the spot decision while working on the farm?
- What was the scenario, and what did you decide?
- Why did you make the decision that you did?

Add specific risk assessment topics based on the commodity, season, and/or specific duty.

APPENDICES

Find all the resources for lessons here



UNIVERSITY OF MARYLAND EXTENSION

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Frequently Asked Questions for Value-Added Producers

Introduction

This publication summarizes frequently asked questions and answers for the cottage food producers and on-farm home processors. It includes definitions of common terms as well as guidance and recommendations surrounding manufacturing, processing, packaging, labeling, and selling of foods or food products produced by the Maryland cottage food businesses and on-farm food processors. If producers and processors have further questions regarding liability insurance based on their business model, the authors recommend visiting The University of Maryland's Agriculture Law Education Initiative (ALEI).

COMMON QUESTIONS IN MAKING YOUR PRODUCT	COTTAGE FOODS PRODUCERS	ON FARM HOME PROCESSORS (LICENSE)
*Should I be **Good Agricultural Practices (GAP) certified** showing that I am using food safety practices to grow, harvest and hold produce?*	Optional. Customers may require Good Agricultural Practices (GAP) certification.	Optional. Producer growers may require Good Agricultural Practices certification.
*Do I need to comply with the **Food Safety Modernization Act Produce Safety Rule** for growing, harvesting, packing, or holding produce?*	Not Needed.	Likely not, unless you are only drying and packaging (e.g. herbs).
*Do I need to comply with the **Food Safety Modernization Act Preventive Controls Rule** for manufacturing food?*	Not Needed.	Your compliance depends if you are covered or exempt as defined by the Final rule.
*Should I have my practices, SOPs, farm/processing area layout, and records organized in a **Food Safety Plan**?*	Optional but recommended.	You may be required depending on the product (e.g. acidified canned goods, some type of pickles).
*Should I pursue **Liability Insurance**?*	Optional but recommended.	Maybe, depending on business model.
*Must I work with a **Processing Authority** to obtain a scheduled process for manufacturing my product?*	No, unless you need to verify your food does not contain potentially hazardous ingredients.	You may be required depending on the product (e.g. acidified canned goods, some type of pickles).
*Do I need to comply with **current Good Manufacturing Practices** regulations **(cGMPs)**?*	Not Needed.	Yes.
*Do I need a **Copacker** to package and label my product?*	Not Needed.	Optional, depending on product and scale.
*Am I required to register my facility with the **FDA** using form 3537?*	Not Needed.	Not Needed.
*Can I sell my products **online**?*	Yes, but you can only sell and ship within Maryland directly to consumers (e.g. farmer's market, mail delivery) or to a retail food store (includes additional requirements).	Yes, and food can be sold across state lines.

Additional Information

For additional information, please visit the **Maryland Rural Enterprise Development Center (MREDC)** and the **Maryland Department of Health Office of Food Protection**.

Definitions

Cottage Foods pertain to certain foods that can be made and/or packaged in a private home kitchen, like strawberry jam (COMAR 10.15.03).

On-Farm home processing is a license issued by the Maryland Department of Health that permits processing certain foods in a private home home kitchen, like dried herbs (COMAR 10.15.04.18).

Good Agricultural Practices (GAPs) certification refers to a voluntary third party audit program that measures execution of on-farm food safety practices to reduce food borne pathogen contamination.

The Food Safety Modernization Act Produce Safety Rule (FSMA) is a federal regulation that sets minimum standards for growing, harvesting, packing, and holding fresh produce.

The Food Safety Modernization Act Preventive Controls Rule (FSMA-PSR) is a federal regulation that sets minimum standards for processing food.

A **Processing Authority** is a qualified who has expert knowledge of food processing requirements and can evaluate a food processing protocol for those making certain foods (e.g. acidified products).

Current Good Manufacturing Practices (cGMPs) is a federal regulation that outlines standards for manufacturing food including hygienic practices, sanitary practices, and safe operation of facilities.

Resources

Legal Information Institute. (n.d.). Md. Code Regs. 10.15.04.18 - On-Farm Home Processing. Cornell Law School. https://www.law.cornell.edu/regulations/maryland/COMAR-10-15-04-18

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University of Maryland Extension. (2015, November). Launching a cottage food business in Maryland. University of Maryland Extension. https://extension.umd.edu/extension.umd.edu/sites/extension.umd.edu/files/publications/FS-1005%20Launching%20a%20Cottage%20Food%20Industry.pdf

United States Department of Agriculture. (n.d.). Crop insurance. Risk Management Agency. https://rma.usda.gov/en

NORTHEAST EXTENSION RISK MANAGEMENT EDUCATION

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USDA National Institute of Food and Agriculture
U.S. DEPARTMENT OF AGRICULTURE

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For more information on this and other topics, visit the University of Maryland Extension website at extension.umd.edu

Appendix A: Maryland Extension and other Produce Safety Resources

The University of Maryland works to help mitigate various food safety risks across the food supply chain to help meet the College of Agriculture & Natural Resources Strategic Initiatives

Such as:

- Encourage entrepreneurship in food production, accessibility, availability, and processing.
- Improve the health and well-being of populations through sharing knowledge of food production, processing, access, and consumption. Decrease chronic diseases and disease transmitted from animal to humans.

Ultimately our goals are:

- To improve the safety of Maryland's food supply from farm to table.
- Reduce foodborne illness and protect all Marylanders from preventable infectious diseases.

FARM RESOURCES

Tips: Familiarize yourself with your department of agriculture and county/city Extension Ag Agent, or specialist.

Program	Federal/National Resources	State Resources	University Resources
Good Agricultural Practices (GAPs)	USDA-AMS	MDA-GAPs	UME-GAPs PSLA ALEI Clearing House
Food Safety Modernization Act (FSMA)-Produce Safety Rule (PSR)	FDA-FSMA-PSR	MDA-FSMA-PSR	PSR Compliance Resources PSLA ALEI Produce Safety Alliance Clearing House
FSMA-Sprout Safety Alliance (SSA)	FDA-FSMA-SSA	MDA-FSMA-SSA	Sprout Safety Alliance Clearing House

Worker Training Record *Template*

Name and address of farm: _____ _____ **Date:** _____

Trainer:_____ **Training time:** _____

Topics Covered: _____

Training materials: Please attach any printed materials related to the training. Also reference any relevant SOPs or sections of the farm food safety plan that apply.

	Employee Name (please print)	**Employee Signature**
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____
11.	_____	_____
12.	_____	_____

Reviewed by: _____ **Title:**_____ **Date:**

FSMA PSR reference § 112.30(b) Confidential Record

Modified from On-Farm Decision Tree Project: Worker Health, Hygiene, and Training—v14 07/16/14
E.A. Bihn, M.A. Schermann, A.L. Wszelaki, G.L. Wall, and S.K. Amundson, 2014 www.gaps.cornell.edu

Water Treatment Monitoring Record *Template*

Name and address of farm: _____

Please see the food safety plan for overall water treatment procedures.

Date	**Time**	**Water pH**	**Water Temperature**	**Turbidity**	**Sanitizer (name & rate)**	**Corrective Action Needed** (yes or no)	**Initials**
10/14/16	*8:35 am*	*8.5*	*65° F*	*25 NTU*	*NaOCl 75 ppm*	*Yes - pH was too high, added citric acid; retested –pH 7.0*	*EAB*
10/14/16	*12:00 pm*	*7.0*	*72° F*	*47 NTU*	*NaOCl 55 ppm*	*no*	*EAB*

***Not all of the above factors may need to be recorded. Refer to the product's EPA label for specific use instructions.**

Reviewed by: _____ **Title:** _____ **Date:** _____

FSMA PSR reference § 112.50(b)(4) Confidential Record

Modified from On-Farm Decision Tree Project: Postharvest Water—v7 07/16/2014
E.A. Bihn, M.A. Schermann, A.L. Wszelaki, G.L. Wall, and S.K. Amundson, 2014 www.gaps.cornell.edu

Appendix C: Lesson One Scene

Appendix C Lesson 1 Print Out QUESTIONS

You need to use the pig sty wheelbarrow for produce activities. What should you do?

1. Clean and then sanitize the wheelbarrow before use with produce activities, or find another wheelbarrow.
2. Use this wheelbarrow without cleaning it, but only if all you are doing is carrying harvest bins and equipment to the field.

Poop is in the field during harvest. What should you do?

1. Do not harvest surrounding produce and flag or remove the poop.
2. It is okay to harvest produce with poop on it if the farm has strict protocols for sorting and washing post harvest hauls.

Your hand tools are outside with yesterday's dirt on them. What should you do?

1. Storing tools outside is okay as long as you clean them by wiping them down with a dry cloth prior to beginning work for the day.
2. Clean with soap and water, and then sanitize with the right sanitizer before using for the day, and at regular intervals determined by your supervisor.

The compost pile has food scraps continually added to it. Is this okay?

1. Wait to apply this type of compost when crops aren't present, like in the fall to prepare for spring planting.
2. Apply this compost to growing peppers and tomatoes.

Appendix C Lesson 1 Print out

You are about to harvest, but your hands are unwashed. How should you wash your hands?

1. Always wash with soap and water for 20 seconds, then dry with a single-use towel, whether your hands look dirty or not.
2. In order to minimize excess water usage around the farm, use hand sanitizer and wipe down hands unless your hands are visibly dirty.

You feel sick today. What should you do?

1. Call the supervisor, and tell them you need to stay home to prevent the spread of germs which can spread to produce and fellow workers.
2. Wearing a mask and gloves will make you safe to work while you are sick.

The well cap has come loose. What should you do?

1. Place the cap back on the well and continue your work."
2. Notify your supervisor about the issue.

Something comes up and only a few bins are harvested. Do you need to do the paperwork anyway?

1. Regardless of the amount harvested, record pre-harvest assessments, sanitation, and harvest quantity to document evidence of the food safety program.
2. Small harvests under 25lbs don't require records.

Appendix C Lesson 1 Print out

You notice a chicken has wandered into the packhouse. What should you do about it?

1. Put the chicken back in its home, away from produce handling. Clean and then sanitize all packhouse areas before working with produce.
2. Leave it alone. Chickens can act as insect pest prevention.

You notice a harvest bin has a crack in it. Can you use it to harvest?

1. No. Either fix it or don't use it for harvesting.
2. You can still use it to harvest as long as you are only harvesting large products like apples and cabbages.

The packhouse sink is dirty, but you need it for produce washing. What should you do?

1. Clean the sink with soap and water and then apply sanitizer before using it for washing.
2. Add sanitizer to the water during filling to ensure the sink is safe for washing.

You need to handle produce but you are wearing your sty clothes. What should you do?

1. Using the same farm clothes to do all farm work is safe so long as they are cleaned nightly.
2. Remove and store animal working clothes away from the produce area. Make sure hands and shoes are clean before beginning produce work.

Trash and debris are building up around the pack area. What should you do?

1. Ensure the packing area is regularly cleaned. So take out the trash and properly store materials for the next day's work.
2. Sweeping the floor and packing on a table will ensure food safety during packing.

Appendix C Lesson 1 Print out ANSWER KEY

- **Answer: (1)** Tools and equipment that are used for animals, manure, or compost work can be contaminated from handling germs in poop. Without proper control of these items on the farm, they can directly contaminate produce.
- **Answer: (1)** Germs from poop contaminate produce directly through splash, or by mixing with water. Contamination spreads during sorting and washing activities.
- **Answer: (2)** Dirty tools spread human and plant pathogens (germs) around the farm. Sanitation programs and proper storage protect these tools from contamination.
- **Answer: (1)** These types of compost piles can contain germs. Safe application to the field and wait times before harvesting crops is crucial to maintain food safety if this pile will not undergo a scientifically validated compost process.
- **Answer: (1)** These types of compost piles can contain germs. Safe application to the field and wait times before harvesting crops is crucial to maintain food safety if this pile will not undergo a scientifically validated compost process.
- **Answer: (1)** When you are sick, germs spread by coughing, sneezing, diarrhea, and puking. This can make other workers sick and allow germs to spread from your body to other areas of the farm, including onto produce.
- **Answer: (2)** Unmanaged water used for irrigation can be a source of germs, and spreads during irrigation, foliar. application, or post harvest water uses. Thus, it's best to notify your supervisor, so it can be determined if this water is still safe to use for farm activities. If not, you may need to use a different water source for the day's work, or wait until farm management can determine the water quality and/or treat the water.

Appendix C Lesson 1 Print out ANSWER KEY

- **Answer: (1)** Recordkeeping isn't just for tracking produce. It helps document evidence of a reliable food safety program. If there is ever an incident or injury, having no records makes it difficult to track food safety issues (like signs of animal intrusion) and trend important crop data. As a result, it's important to maintain accurate records, even on small harvests, and file them in a timely manner.

- **Answer: (1)** Animals and their poop can carry germs like Salmonella and pathogenic E. coli. Separate them from produce activities. Have a sanitation program to reduce cross contamination when animals or animal-related work is done in this area.

- **Answer: (1)** Chipped equipment presents a physical risk to consumers and provides a safe home for germs to grow and contaminate produce.

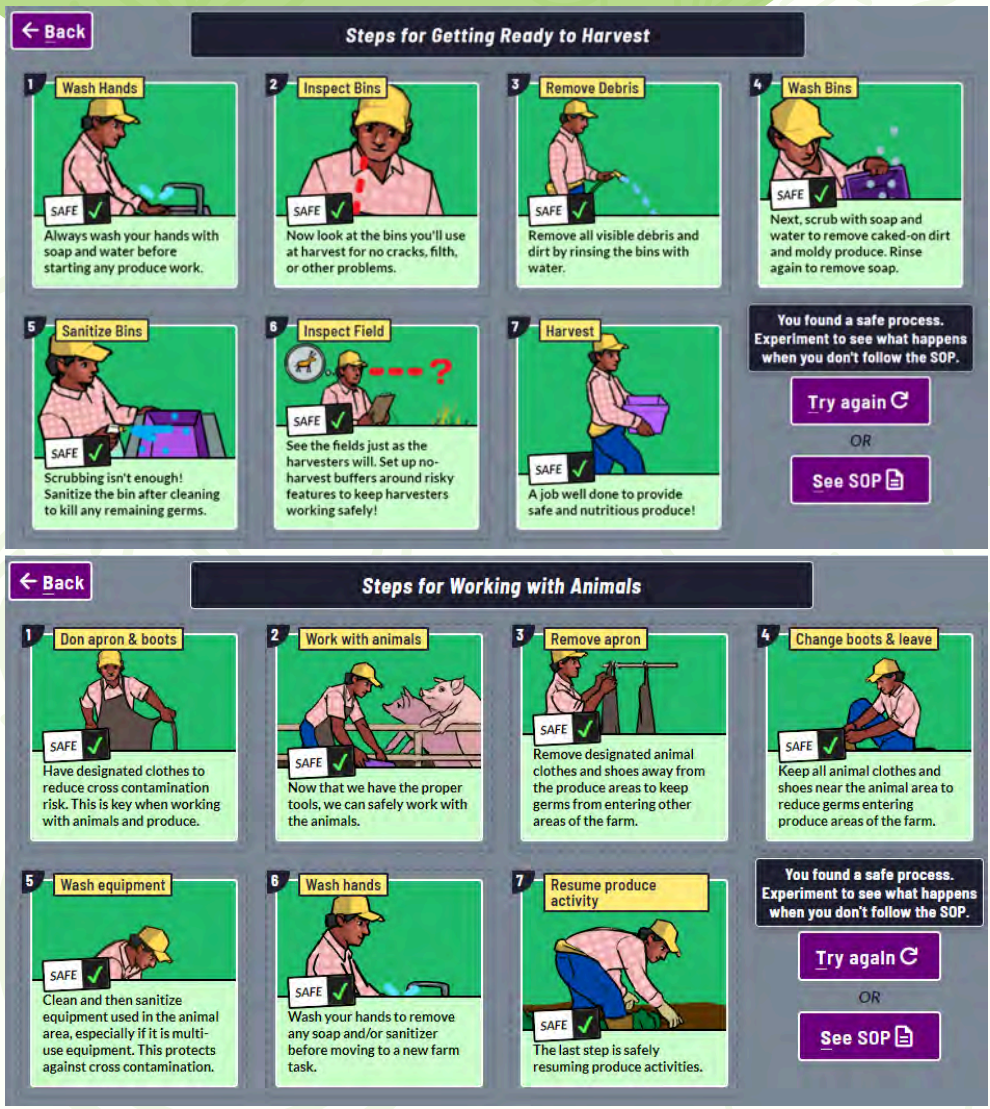
- **Answer: (1)** Germs in a dirty sink or low quality water can contaminate produce during washing. Always clean the sink thoroughly with soap and water and then a sanitizer before using it for produce washing. If dunking or using other types of recirculating water, use the labeled instructions on the sanitizer bottle to prevent cross contamination.

- **Answer: (2)** Farm clothes become contaminated from working with manure or animals, and they can spread germs around the farm. To keep produce safe, use different clothes for animal and produce activities.

- **Answer: (1)** Trash and debris around the packing area can attract pests and lead to contamination of otherwise clean packing materials.

Appendix D: Lesson 2 Print out SCRAMBLED

Appendix D: Lesson 2 Print out ANSWER KEY



Appendix D: Lesson 2 Print out SOP

Harvest SOP

1. Wash hands
2. Inspect bins
3. Remove debris
4. Wash bins
5. Sanitize bins
6. Inspect field
7. Harvest

Working with animals SOP

1. Don apron & boots
2. Work with animals
3. Remove apron
4. Change boots & leave
5. Wash equipment
6. Wash hands
7. Resume produce activity

The order workers perform SOP tasks is just as important as the tasks themselves.

When writing an SOP for your farm, make sure you specify the entire process from start to end!

This was one example of how to do this task correctly. Some steps on your farm may be different, talk about them with your supervisor!

Appendix D: Blank SOP Matrix

1	
2	
4	
5	
6	
7	
8	
9	

Appendix D: Blank-Visual SOP Matrix

Scope: **Purpose:** **Frequency:** **Procedure:**		
1	**2**	**3**
4	**5**	**6**
7	**8**	**8**

Appendix E: Lesson 3 Print Out QUESTIONS

Part 1: Decisions During Harvest

Which should the worker choose?

A worker is preparing to go to field to harvest. One of the first actions is to grab a harvest tote. There are two options for totes.

1. Clean and sanitized bin.
2. Bin containing tape, old packaging, and a visible crack.

What should the worker do?

The worker then goes to harvest blackberries. In one area, the worker sees the irrigation drip line is broken and water has touched some berries. The water is from an un-managed stream.

1. Place flag next to affected bush, skip plants in vicinity and notify supervisor.
2. Harvest berries that have water splash and continue harvesting down the row.

Should the worker harvest?

The worker moves on to harvesting staked bush tomatoes on plastic mulch.

At one of the rows they walk up to, they see high weeds mid row.

1. Yes, if after inspecting, the tomato quality is good and there are no signs of animals.
2. No, the worker should skip the row of tomatoes.

Appendix E: Lesson 3 Print Out QUESTIONS

Should the worker harvest?

The worker sees a group of bush tomatoes still connected on the plant drooping onto the black plastic. It rained last night and there are some pools of water on the plastic that are contacting the tomatoes. In some areas, bird poo that was on the plastic is mixing with the water.

1. Yes, if there are no signs of animals and inspecting the tomato shows that the quality is good.
2. No, the worker should place a buffer flag on the drooping tomatoes.

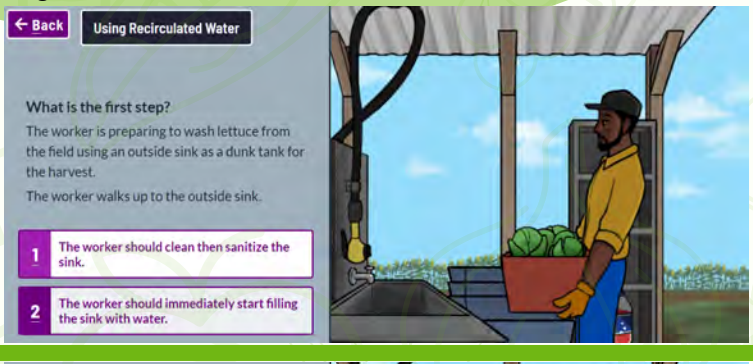
What should the worker do?

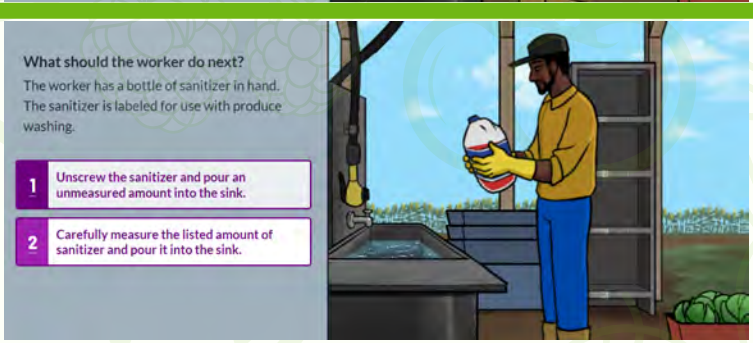
Worker continues down the row and sees a harvest buffer flag has been placed from yesterday's harvest. However, the worker does not see any poop on the tomato bush.

1. Harvest, but only after inspecting for poop.
2. Skip the plants in the vicinity and resume harvesting down the row.

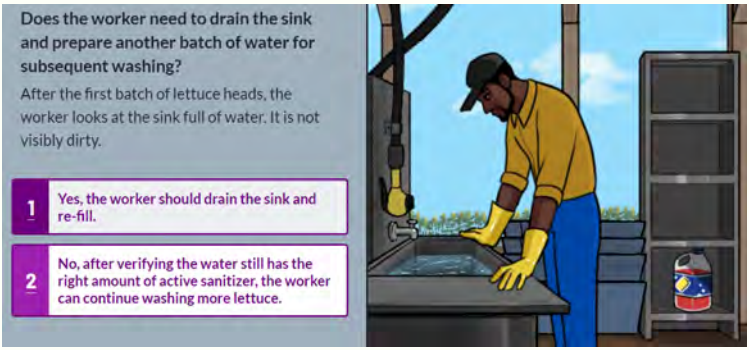
Appendix E: Lesson 3 Print Out QUESTIONS

Part 2: Using Recirculated Water



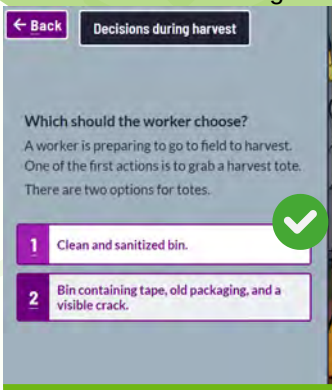


Appendix E: Lesson 3 Print Out QUESTIONS

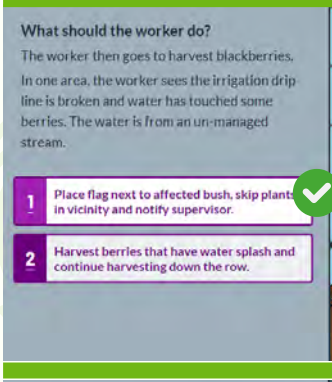


Appendix E: Lesson 3 Print Out ANSWER KEY

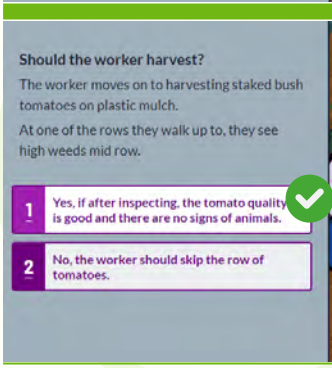
Part 1: Decisions During Harvest



Look for hazards before working in the field. Visually inspect the bins to make sure they are clean and ready for harvest.



Not managing the water quality means contaminated water may be contacting crops, and it is not okay to harvest. Use a flag to create a no harvest buffer to notify others harvesting after you.



Weeds have not been linked to significant hazards during harvest. If the tomatoes are good quality and there are no signs of animals, a no-harvest buffer may not be needed.

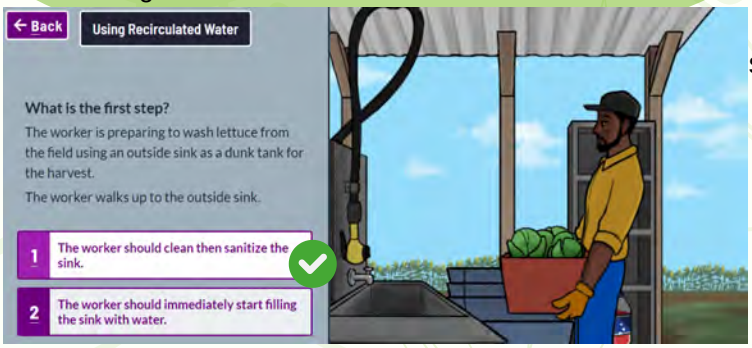
Appendix E: Lesson 3 Print Out ANSWER KEY

Rain puddles can mix with poop and spread them to produce if also on the plastic. Flagging this area alerts other workers that this crop is not safe to harvest.

Follow signs placed by your fellow workers. Even if the poop is not visible, contamination may still be in this spot and it is not safe to harvest.

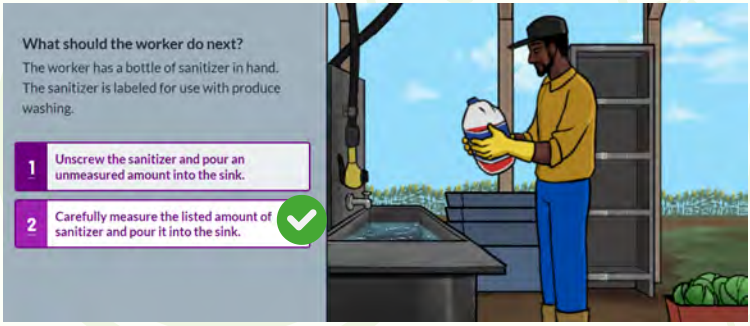
Appendix E: Lesson 3 Print Out ANSWER KEY

Part 2: Using Recirculated Water



Because items stored outside can easily become dirty, it is important to clean and sanitize this equipment before working with produce.

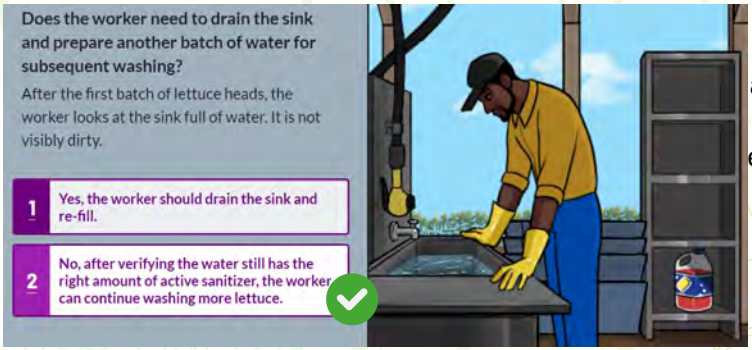
Using sanitizer when washing lettuce via dunking makes sure germs can't spread if present, keeping the water clean and the harvest safe.



Using sanitizer at the right concentration is important to stop cross contamination. Checking with a chemical testing strip can help add the right amount.

Appendix E: Lesson 3 Print Out ANSWER KEY

It depends on the sanitizer. Follow the label directions on the sanitizer; it will explain the right **Dwell Time** for product.



While it is important to change water on a schedule because sanitizer loses efficacy in water that is too turbid (cloudy), this will likely not be after one batch of washing product.

FOOD SAFETY SUPERVISOR'S

PRODUCE TRAINer MANUAL

A pick what you need toolkit to build up your worker training program

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