



The Arizona Leafy Greens Food Safety Training Kit



Harvesting Safe
Arizona Leafy Greens

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Harvesting Safe
Arizona Leafy Greens

Introduction

The Arizona Leafy Greens Food Safety Training Kit (AZTK) was developed to establish a uniform food safety training program for the industry. This program provides strategies that can be used with the employees at the Leafy Greens growing and harvesting operations. The AZTK content covers the employee training areas suggested in the “Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens.”

The AZTK includes three lessons designed to provide employees in the leafy greens industry with the knowledge, skills and a comprehensive explanation of the food safety rules and policies that they need to follow at work. However, each company is different and different rules and policies may apply at each worksite.

Before organizing a program, the instructor should become familiar with the lessons and how to present them. Therefore, it is advisable to read this entire instructor’s guide carefully and understand the content and organization of the program.

The AZTK contains the following components:

Overview of the AZ Food Safety Training Kit

Section 1. Instructor’s Guide

Section 2. Lesson Plans

Lesson 1 – Foodborne outbreaks and leafy greens contamination

Lesson 2 - Personal hygiene and handwashing

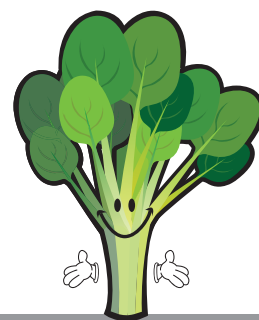
Lesson 3 - Cross-contamination in the field

Section 3. Additional Resources

The supplementary slide presentations are included in two formats: Microsoft PowerPoint, and a flipchart to use at a tailgate meeting in the ranch (“Tailgate Food Safety Training Kit.”)



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Overview of the Arizona Leafy Greens Food Safety Training Kit



The Arizona Leafy Greens Food Safety Training Kit (AZTK) was developed with the sponsorship of Arizona Leafy Green Products Shipper Marketing Agreement (AZ LGMA). The lessons are designed to provide employees in the industry with the knowledge and skills they need to minimize the risk of product contamination. The lessons are presented in English and Spanish.



Target Audience

The AZTK was developed for production supervisors, quality control personnel, extension educators, and/or industry consultants who wish to conduct food safety training at leafy greens ranches. The lessons are specifically targeted at workers who handle leafy greens before, during or after harvest. However, others who may come into contact with leafy greens or who are key in the growing process should receive food safety training. We recommend that supervisors, managers and owners also participate in the training; this is an excellent way to send a strong message to employees that the ranch is seriously committed to its food safety program.

The lessons in this kit were specifically developed to take into account cultural attributes of Hispanic workers who make up the majority of employees in the Arizona leafy greens industry. Thus, they are presented in both English and Spanish. Uniform application of the lessons in this kit makes it possible for every employee in the industry to receive the same basic food safety training, whether presented in-house by supervisors or by external trainers.



Goals and Objectives

The overall goal of the program is to insure the wholesomeness and safety of fresh leafy greens.

The specific objectives are as follows:

1. Provide training materials on food safety and hygiene practices that are specifically designed for workers in the Arizona leafy greens industry.
2. Develop materials (in English and Spanish) that take into account specific cultural attributes of Hispanic leafy greens handlers.
3. Help the leafy greens industry satisfy third party audit training requirements for leafy greens growers.



Lessons Summary

The following lessons are included:

Lesson 1. Foodborne Outbreaks and Leafy Greens Contamination.

The instructor will describe the outbreak which occurred in 2006 as a result of contaminated bagged spinach distributed nationwide. The lesson discusses governmental actions, their impact on industry, and their economic effect. The effect that a similar outbreak could have on the Arizona Leafy Greens industry is presented. Finally, the three categories of leafy greens contaminants are presented and examples of contamination that can occur in the ranch are also discussed.

Lesson 2. Personal Hygiene and Handwashing.

The instructor will describe the concept of personal hygiene and its importance to food safety. The instructor will cover three areas of personal hygiene that are critical for safe leafy greens production: 1) protective garments and clothing, 2) personal practices, 3) personal health and wounds. For each of these areas, the instructor will explain and demonstrate appropriate procedures and behaviors for lowering the risk of leafy greens contamination, with emphasis on good personal hygiene practices by explaining the purpose of and the correct procedure for handwashing as well as correct glove usage.

Lesson 3. Cross-Contamination in the Field.

The instructor will describe the concept of cross-contamination, its causes, why it is a problem for leafy greens and its importance to food safety. Prevention strategies and ways to prevent cross-contamination are also covered. The instructor will describe situations that can happen in the ranch that might lead to product contamination. These events include animal intrusion discovery, glass in the field, blood in harvested product, and unsuitable packaging materials. For each of these areas, the instructor will explain and demonstrate appropriate procedures and behaviors for lowering the risk of leafy greens contamination.



How to Use the Training Kit

The AZTK contains the following sections:

Overview of the Arizona Leafy Greens Industry Training Kit

1. Instructor's Guide
2. Lesson Plans
3. Additional Resources

A brief description of each of the sections is presented below.

1. Instructor's Guide

The Instructor's Guide contains important information for planning and implementing an effective training session at a leafy greens facility. Because this section of the AZTK can make training sessions run more smoothly, it is strongly recommended that instructors become familiar with this material before training begins. In addition there is information on the importance of follow-up training and continuous enforcement of food safety rules. Make sure to discuss these points with the upper management at the company where the training program is being held.

2. Lesson Plans

The lesson plans are the core of the AZTK, and instructors should thoroughly understand this section before starting training sessions.

The first page of each lesson plan contains a summary of the lesson along with learning objectives to be met during the training session. The following pages include a copy of each slide that supplements the text. This lesson page contains the PowerPoint program. Under each slide is text that the instructor can use to explain the material. The information within brackets is intended to deepen the instructor's understanding, not to be read to participants. Additionally, several activities are embedded in the PowerPoint presentations and come with specific instructions for conducting them.




3. Additional Resources

This section contains posters that can be used as message re-enforcers after the training and to remind employees of the need to follow good food safety practices every day. An example of a log to document each training session is included in this section. Also included is a knowledge test to evaluate the extent to which the participants learned the material. A certificate of attendance template can be printed for presentation to participants at the end of the training.

Example of a Lesson Plan Page


Module 1

Foodborne Outbreaks
& Leafy Greens
Contamination



What is my Job?

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What is my Job?

In this lesson we learned about foodborne illnesses, foodborne outbreaks and food contaminants. You play a key role in protecting from contamination the leafy greens you work with. Your job is to always follow your company's food safety policies and procedures.

Do not improvise. If you are not sure about something, talk to your supervisor. If you see something wrong, immediately let your supervisor know about the situation.

This is the end of our discussion about foodborne outbreaks and leafy greens contamination. Are there any questions?

Thank you for coming. Please be sure that you have signed the attendance sheet.

21

← Copy of the
PowerPoint Slide

← Slide's Title

← **Scripted Text.**
This indicates text that the instructor can use to explain the material within each slide. Instructions for presenting the information are placed within brackets and in italics. This material should not be read to participants.

← Page Number



Activities

People learn by doing. The AZTK includes several activities designed to enhance the learning process. The location of the instructions for the activity within the lesson plan indicates the point during the training session at which they should be presented. Some of the activities are embedded in the slide presentations and require no preparation steps. However, a few require planning well before training sessions begin; instructions are provided in the lesson plans.

The descriptions for each activity are in three sections:

- (1) Purpose of the Activity. This describes the information to be introduced or reinforced by the activity.
- (2) Supplies. This tells which supplies and materials will be needed for conducting the activity. It is advisable to look at these at least a week or two in advance and just before starting the training session to make sure everything that is needed is ready.
- (3) Procedure. This section describes the process for preparing and conducting the activity.

Module 1

Foodborne Outbreaks & Leafy Greens Contamination

Activity 2

Leafy Greens Contaminants

Leafy Greens Contaminants (Page 1 of 2)

Let's move on, but first let's do an activity.

[Leave this slide up while you pass out the prepared Ziploc® bags containing contaminants.]

Where have you seen the things in these bags? *[Give participants time to look, think and answer.]*

Some of these materials have actually been found in harvested containers at various ranches and packing houses.

What would happen if a consumer found any of these materials along with their leafy greens?

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This slide alerts you to the point during the training session where you need to conduct an activity.

Module 2

Harvesting Safe Arizona Leafy Greens

Instructions for Conducting an Alternate Version of Activity 2 - Practicing Handwashing

Purpose of the Activity:
To demonstrate the correct handwashing procedure.

Supplies:
1. Have the GloGerm™ or GlitterBug® lotion and UV light ready. You can order the GloGerm™ or the GlitterBug® kit at:

GloGerm™ Company http://www.glogerm.com/ 800-842-6622	GlitterBug® Breve Co. http://www.glitterbug.com/ 801-466-6677
---	--

2. Before starting the training session, make sure that there is a handwashing station nearby. It should have running water and be properly stocked with liquid soap, disposable paper towels and a trash container.

Procedure:

1. Take the participants to a handwashing station.
2. Apply GloGerm™ or GlitterBug® lotion to your hands and ask a couple of participants to volunteer to apply some lotion to their hands.
3. Put your hands and the participants' hands under the UV light and show them to others. You may have to dim the lights in order to see the glow.
4. Ask the volunteers to just soak their hands instead of washing them properly.
5. Wash your hands using the correct handwashing procedure.
6. Put your hands under the UV light and show them that your hands are not glowing. Now ask the volunteers to put their hands under the UV light and show the glow.
7. Ask participants to tell you what happened and why they think their hands still glow.

48

This page includes the instructions for planning and conducting the activity. A list of supplies is also included here.



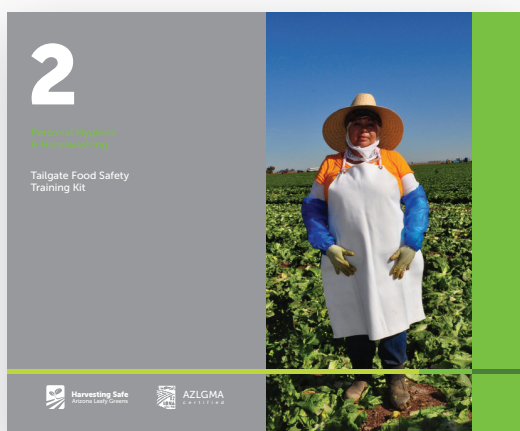
How to Use “The Tailgate Food Safety Training Kit”

The training has been developed to rely on illustrations and visual aids containing simple messages. To use the tailgate food safety training kit, set the flipchart on a table and flip through the pages.

Each page contains an illustration that corresponds to the text on the following page. Each page contains text that is a script that the instructor can read to participants to explain the material that participants are looking at on the illustration. After reading, flip the page and go to the next one.

The training session is designed to last no more than 25 minutes. The 10-12 employees in a session should be able to see the flipchart; therefore, the instructor need not memorize the text. However, to make the training session more effective, the instructor should become familiar with and thoroughly understand it. Information for the instructor [*within brackets*] is intended to improve the learning experience, not be read to participants. Each text page contains a small box depicting the picture that is on the presentation side of the page.

Sample Pages of the Tailgate Food Safety Training Kit’s





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1. Instructor's Guide



The lessons provided in the AZTK are designed to help leafy greens growers to reach the food safety training goals required in the “Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens.”

Concepts in each of the lessons are conveyed and reinforced using established adult education principles for communicating food safety risks including discussion topics, demonstrations, and hands-on activities. It is the responsibility of each ranch to make sure that the knowledge and skills provided in this program are implemented and followed daily.

This section contains recommendations for creating the best possible learning environment for a training program. Please read it carefully before beginning the program.



Program Delivery

The learning objectives, content, delivery format, discussion topics, and hands on learning activities in this kit have been developed to provide an optimal learning environment for teaching the basics of food safety to leafy greens workers. Each lesson has been developed as a set of slides and visuals aids that should take approximately 20-25 minutes.

Of the various ways to present the training program, the easiest and most convenient is through a PowerPoint presentation. However, since some training sites are not equipped with a computer and a projector, three presentation options are offered. The effectiveness of the training sessions should not be affected by the format as long as all the material in each lesson is presented.

Power Point Slides

Presenting the slides and visual aids as Microsoft PowerPoint presentations is the most efficient way to deliver the lessons. For this method, you will need a laptop computer that is loaded with Microsoft PowerPoint or PowerPoint Presentation software and a computer projector. Since the program files are very large, it is advisable to copy them to your computer hard drive before using them.

Printed Posters or Handouts

A low technology option for presenting the materials is to print the slides, posters, and handouts on paper and pass them out to the participants. Each individual may then follow along as the instructor goes through the lesson.



Tips for Improving the Effectiveness of the Training Sessions

We know that learning is not effective when participants are bored, tired, hungry or distracted. The amount of material that participants retain is often proportional to the amount of fun they are having. Therefore, make the training comfortable, even entertaining, while at the same time maintaining a respectful environment that conveys the impression that food safety is a serious matter. Keeping a positive attitude about the training sessions is an important starting point for developing a food safety culture.

People learn better by “doing” rather than just by “hearing.” The activities included in the lessons give participants hands-on experience that reinforces the information. Read through the lessons and prepare the easy-to-assemble activity materials ahead of time. Here are a few tips for making the most of each training session:

Do Your Homework



Obtain a copy of the company's food safety rules and policies and be sure that your message is consistent with these policies. For instance, some companies require specific types of hair restraints or the use of gloves when handling leafy greens.

Handwashing Stations



The second lesson teaches handwashing skills, perhaps the most important component of the training program. Therefore, it is important to present the lesson near a handwashing station or a restroom equipped with a sink. Before starting the training, make sure the handwashing station has running water and is properly stocked with soap, disposable paper towels and a trash container.

Location



The food safety training lessons are designed for presentation in a conference room or at the ranch. If the location does not have a well-equipped conference room, be creative in locating a place to hold successful training sessions. Consider the employees' lunchroom, a warehouse, a shop, or even a common area in worker housing facilities.



Scheduling

Each lesson is designed to take about 20-25 minutes. All lessons may be presented in one sitting. But if there are time restrictions or if it appears that the attention span of the participants is limited, the lessons may be presented in three sessions held on different days.

If you schedule the training session around meal times or during breaks, workers are more likely to be thinking about food. People have routines for eating at work, so whenever possible, plan your training sessions accordingly. Another poor scheduling choice is to hold a training session at the end of the day when workers are tired and ready to go home.

Workers who are paid on a per-piece basis may present another challenge for scheduling training.

For instance, harvesters may see training as a waste of time and may be reluctant to attend since they will not be earning income during the session. Companies that pay workers while attending food safety training sessions make an important investment that could protect them in the future.

In any case, it is your obligation as an instructor to make it clear why food safety training is important to the workers and to the success of the company. Remember, keeping a positive attitude about the training sessions is an important starting point for developing a positive food safety culture.



Preparation

It is important for the instructor to arrive early at the training site to check that the equipment is working properly and to make sure all the materials are ready. Perhaps more importantly, it allows for interaction as the participants arrive, which helps to establish a good environment. Be respectful of others' time by starting the session on time and pacing the lesson to fit within the scheduled time.



Class Size

Small class sizes are recommended since some people feel intimidated about participating in larger groups. To boost participation and create a better learning environment, limit the class size to no more than 10-12 workers.



Projection Screen

If you are using PowerPoint slides, you will need a projection screen or a light colored wall that is free of any obstructing objects that might block or distort the images.



Seating

Make sure each participant has a comfortable place to sit. This will encourage participant attention throughout the session.



Food and Beverages

Providing a simple snack and beverage or even lunch for the group can help to keep the right attitude during training sessions. But keep in mind that rich foods high in fat or sugar can cause drowsiness.



Power

It is important that electrical outlets are working and conveniently located at the selected training location. Keep in mind that you may need extension cords for a computer and a projector.



Noise and Distractions

The place you choose for training should be quiet enough so that the instructor can clearly be heard and discussions can occur without distraction. Nothing is worse for maintaining a good learning environment than having the instructor yell to be heard over a loud piece of equipment or power generator. An excessively noisy place definitely is not conducive to learning. Also ask participants to turn off their cell phones.



Lighting

The light in the room should be low enough to allow participants to clearly see details of the slides or overheads. However, dim light may induce drowsiness and reduce attention.



Documenting Food Safety Training

If your food safety plan is to be audited by a customer or a consultant, be prepared to provide evidence that your workers have received the training. A written company policy presented to an employee during an orientation or a signed statement from the worker promising to follow food safety rules is usually not sufficient evidence.

Instead, an auditor will be looking for a report or records from the trainer or consultant describing the information that was given in the training, the date and location of the training, and an attendance list. Therefore, documenting your food safety training is essential.

One of the main responsibilities of the trainer is to make sure that each participant signs an attendance sheet at the beginning of the training session and to file it in a safe place along with other documentation needed during an audit. Section 3 in the AZTK includes an example of a log to print and use to document each training session. A certificate of attendance template that can be printed and presented to each worker after finishing the program is also included.

Evaluating Food Safety Training

Continuous self-evaluation is necessary to determine how successful you have been in training sessions. In Section 3, a knowledge test is provided that you can use to evaluate the extent to which participants have learned the material. There are three ways to use the test:

1. Give the test immediately after all lessons are completed. This will give you a group average of how well the group learned as a result of training. Participants who score poorly compared to the rest of the class may require individual attention or retraining.
2. Conduct pre- and post-tests. Giving the test before training begins and then again immediately after all lessons are completed will provide a measure of how much the training session actually increased food safety knowledge. This will tell you if your efforts have been worthwhile and will help you to identify individual participants who may need additional training.



Evaluating Food Safety Training (cont.)

3. Conduct follow-up testing. Retesting several weeks or months after training has been completed can tell you how well participants have remembered what they learned. Declining scores may signal that it is time to conduct another training session.

Another point to consider is testing methods for those that have reading and writing limitations. A good solution may be to administer the test to individuals in a face-to-face format by reading the questions aloud and then recording answers on a score sheet.

Follow-Up Training and Supervisory Enforcement of the Rules

Merely acquiring knowledge does not always result in positive changes in behavior. This means that employees may know that regular handwashing is necessary to keep food safe, although actual increases in handwashing might not occur. In order for handwashing and other hygienic practices to become a habit, enforcement and monitoring is essential.

Management commitment is the key to the success of any food safety program, and the AZTK is no exception. But it is difficult for managers and owners to make sure that food safety practices learned during training sessions are followed on a daily basis.

The author's research at Penn State University has shown that supervisors and middle management are critical to maintaining appropriate food safety behaviors in the work environment because they deal directly with the daily routines that occur at the ranches and have experience in the complicated tasks associated with enforcing rules in other areas.

Therefore, training must be followed by supervisory enforcement of food safety rules. Management support of the importance of supervisors in this role will contribute to the success of the food safety program.

Here are a few recommendations that supervisors and everyone in management can follow to help to ensure the success of your food safety training program:

Follow-Up Training and Supervisory Enforcement of the Rules

Supervisors and other employees in leadership positions must act as role models by setting an example for handwashing and other rules. In other words, they must “practice what they preach.” If they do not follow the same rules as other employees, they will lose credibility and become less effective in enforcing rules. Some companies have found success by having supervisors wash their hands at the same time as workers in the morning or after breaks. Over time, the behavior becomes a habit for everyone.

A successful food safety training program also requires that supervisors respectfully communicate the rules to workers. Supervisors should not be hesitant to ask employees if they have washed their hands and insist that they wash them if they have not done so. If an employee is doing something wrong, describe the problem and, if possible, demonstrate the appropriate way to perform the procedure. Rule enforcement is most effective when done in a respectful manner. Instead of harsh comments or a loud voice, use comments such as “please,” “thank you,” “you are welcome,” “I would like you to do this” or “let’s all work together to do this.” If regular lapses in behavior occur and disciplinary actions are required, talk to the worker in private. Never embarrass an employee in front of others since this can unnecessarily create a tense work environment.

Consistent and fair enforcement of food safety rules is also essential. Each employee who has received the training knows how important it is to follow the rules; no excuses can be made for lapses in appropriate behaviors.

Showing favoritism to certain employees has no place within a ranch. If supervisors do not enforce rules fairly or show favoritism, workers will see little reason to follow the rules. This may be a problem if family or friends are involved. However, asking family and friends for their support in following the food safety rules can be helpful.

When workers are conscientiously following the rules on a daily basis, take note of it by mentioning this to them. Regular, positive reinforcement and rewards are always more effective than negative comments and disciplinary actions.

Module 1

Foodborne Outbreaks & Leafy Greens Contamination



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Foodborne Outbreaks & Leafy Greens Contamination

Lesson Summary

The instructor describes the spinach outbreak in 2006 as a result of contaminated bagged spinach distributed nationwide: governmental action and the impact on the industry, as well as the economic effects. The effect that a similar outbreak could have on the Arizona Leafy Greens industry is presented. Finally, the three categories of leafy greens contaminants are presented and examples of contamination that can occur in the ranch are also discussed.

Learning Objectives



After this lesson, participants will be able to:

- Describe a foodborne illness and list its symptoms.
- Describe a recent foodborne outbreak originating in fresh produce and its impact on consumers and the produce growers.
- State the impact a foodborne outbreak can have on their work time, job security and family income.
- Describe how the Arizona Leafy Greens could cause a foodborne outbreak.
- Identify the three types of leafy greens contamination.
- Identify personal actions to prevent product contamination.



Why Are We Here?

Thank you for coming today. Please be sure to sign the attendance sheet.

Let's talk about why are we here today. We are going to talk about food safety. We will find out how food might be contaminated and how we in the leafy greens industry can help protect the leafy greens from becoming contaminated.

Our customers require that employees who work in the ranches are trained in food safety.

Activity 1

Leafy Greens Dishes



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Activity 1 - Leafy Greens Dishes

Before we begin, let's do an activity that will help us to understand foodborne illnesses.

[The next three slides include a series of questions. Ask each question and give participants time to look, think and answer each of the questions.]

[The purpose of this activity is to show that leafy greens are used in many different types of food and that even though it may look, smell and taste good, it can still be contaminated and make someone sick.]

Activity 1

Leafy Greens Dishes



Leafy Greens Dishes

Let's take a minute to think about the following photos.

What do you think of the meals when looking at these pictures?

Would you eat them?

Have you had any of these foods lately?

[Give participants some time to look, think and answer.]

Activity 1

Leafy Greens Dishes



Leafy Greens Dishes

What about these dishes? Which one looks better?

If a food looks good to eat, does that mean that it is safe to eat?

They look good and probably smell and taste good as well.

Do you think any of these dishes can make us sick? If so, why?

[Give participants time to answer.]

Activity 1

Leafy Greens Dishes



Leafy Greens Dishes

Restaurant and home-prepared food can become contaminated and make people sick.

A contaminated food can taste good, smell good and even look good, yet make you sick.

A foodborne illness is caused by eating contaminated food. The feeling you get when you eat too much is called indigestion; this is not the same as being ill from eating contaminated food.

Everyone, including you and your family, is vulnerable to foodborne illnesses. An important part of your job is to prevent leafy greens from becoming the cause of a foodborne illness.



Susceptible Populations

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Susceptible Populations

A foodborne illness outbreak occurs when two or more people become sick from eating the same contaminated food.

Anyone can get a foodborne illness, since everyone consumes food. However, people can be affected differently, depending on their age, immune system and other factors.

The risks and dangers of a foodborne illness are more severe in susceptible populations; those groups of people are less capable of fighting disease. Susceptible populations include the elderly, infants, young children, pregnant women, individuals with suppressed immune systems (such as people with AIDS), people receiving chemotherapy, and organ transplant recipients.



Contaminated Spinach

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Contaminated Spinach

Foodborne illnesses can have serious consequences for a food company, including employees. Let's talk about a real situation where people got sick eating fresh produce.

A few years ago, four people died as a result of eating contaminated spinach. The outbreak was highly publicized in newspapers throughout the country.



Today's News

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Today's News

As of January 2007, 205 confirmed illnesses were attributed to the outbreak. One hundred four people were Hospitalized; 31 of these patients developed hemolytic-uremic syndrome (HUS), a serious kidney complication.

What do you think about this incident?

[Give participants time to think about this question before answering.]



***E. coli* O157:H7 & Spinach**

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***E. coli* O157:H7 & Spinach (Page 1 of 2)**

Foodborne illnesses can have serious consequences for food companies and their employees. Let's take a closer look at this spinach incident.

On September 11, 2006, the Centers for Disease Prevention and Control (CDC) received notice of a foodborne illness outbreak in Wisconsin.

Based on epidemiological studies, Wisconsin public health officials associated the outbreak with consumption of bagged spinach.

On September 14, 2006, the U.S. Food and Drug Administration (FDA) announced that consumers should not eat bagged spinach because of an outbreak of illness due to contamination with the potentially deadly bacteria *Escherichia coli* O157:H7.



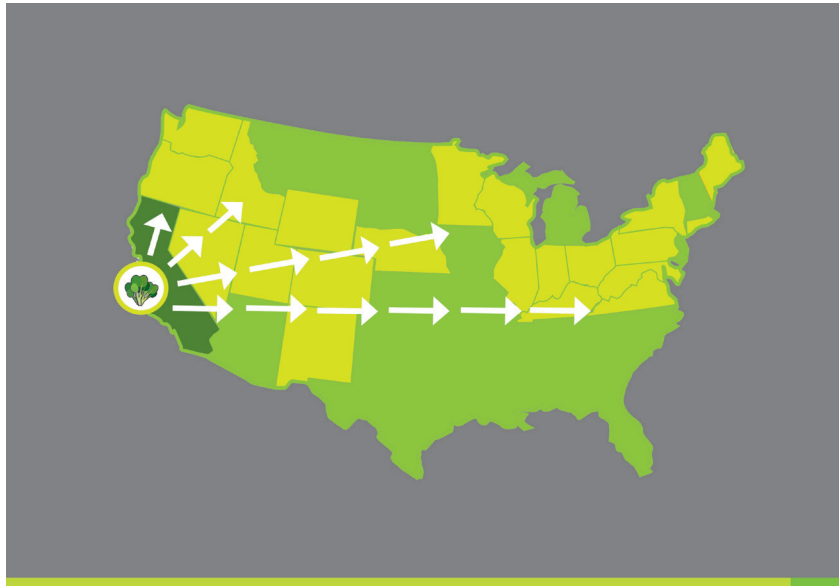
***E. coli* O157:H7 & Spinach (Page 2 of 2)**

E. coli O157:H7 is a living microorganism, it only takes a few of these organisms to make someone sick. *E. coli* causes diarrhea that is often bloody and can be accompanied by abdominal cramps.

The investigators found the following potential environmental risk factors for *E. coli* O157:H7 contamination:

- Presence of wild pigs in and around spinach fields.
- Irrigation wells used for produce near to surface waterways exposed to feces from cattle and wild life.

However, no definitive conclusions could be made on how the bacteria *E. coli* O157:H7 contaminated the spinach.



California Spinach

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California Spinach

The spinach was grown in California, but by the time the outbreak was declared over, 205 people became sick in 26 States and Canada.

The states where people got sick are marked on this map.

Spinach outbreak information obtained from:
California Department of Health Services and US Food and Drug Administration. Investigation of an *Escherichia coli* O157:H7 outbreak associated with Dole pre-packaged spinach. 2007;1–50 [cited 2007 Apr 17]. Available from <http://www.dhs.ca.gov/fdb/HTML/Food/EnvInvRpt.htm>

Calvin, L. 2007. "Outbreak Linked to Spinach Forces Reassessment of Food Safety Practices." *Amber Waves*. Vol. 5, Issue 3, p. 24-31. USDA-Economic Research Service, Washington, D.C.



Financial Implications

Harvesting Safe
Arizona Leafy Greens



Financial Implications

Stores and restaurants immediately cleared bagged spinach from their shelves and menus. Spinach harvesting and marketing ceased.

Consumers all over the country stopped buying spinach.

Hundreds of people lost their jobs. Some people estimated that the spinach industry lost more than 100 million dollars.

Even one year after the outbreak, people were still not eating as much spinach as they did before.

This was a serious warning for the entire leafy greens industry.



Leafy Greens What If...Breaking News

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Arizona Leafy Greens



Leafy Greens What If...Breaking News

This just in! Three more children have died. The Arizona's leafy greens outbreak is spreading across the country.

Three hundred people became ill after eating leafy greens from an Arizona field.

Seven hundred and fifty people have been hospitalized and 12 people have died in 35 states across the nation.

This incident is becoming one of the largest foodborne outbreaks related to produce.



No to Leafy Greens!

If there is an outbreak caused by Arizona Leafy Greens, people would stop buying them.

Just like what happened with spinach!

Do you think that an outbreak could happen in the Arizona leafy greens industry? Why?

[Let participants answer.]



Could It Happen Here?

Harvesting Safe
Arizona Leafy Greens



Could It Happen Here?

What would happen to this company and to your jobs?

The ranch would close and workers in the leafy greens industry would be laid off because people would not buy the product.

This means that you and your family would be directly affected by a leafy greens outbreak.

[Generate a short discussion on the consequences of this to the ranches and workers' jobs.]

Instructions for Conducting Activity 2 - Leafy Greens Contaminants



Purpose of the Activity:

To demonstrate physical contaminants and how they can get onto leafy greens.

Supplies:

1. Gather objects that may be physical contaminants in leafy greens. Objects that have actually been found in product may include: candy, chewed gum, bottle caps, candy and food wrappers, pens and pencils, napkins, hair, nails, wood chips, bills and coins, etc.
2. Place each object in an individual Ziploc sealable plastic bag; with enough bags so each participant will have a bag.

Procedure:

1. Pass out the individual Ziploc sealable plastic bags with physical contaminants, make sure you have enough bags so each participant can have a bag.
2. Ask each participant to show and describe to the class what is in their bag.
3. Lead the following discussion:
 - Ask the participants where they have seen these materials.
 - Guide them to the idea that all these materials have actually been found in leafy greens containers at various packing plants.
 - Ask the participants what would happen if a consumer found or even ate any of these materials along with their salad?
 - Ask them to identify which objects could cause someone to break a tooth or cause them to choke.
4. Discuss their answers and make sure they understand how physical contaminants can end up in the final product. Contamination can result in leafy greens being rejected by the buyer, reduces the quality of the product and could even injure someone.
5. Close with the following message: A physical contaminant is any foreign material that gets into food because of poor practices during harvesting, decoring, sorting, handling, or packing. Illness, serious injuries, choking and even a bad reputation can result from finding physical contaminants in leafy greens.

Activity 2

Leafy Greens Contaminants



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Arizona Leafy Greens



Leafy Greens Contaminants (Page 1 of 2)

Let's move on, but first let's do an activity.

[Leave this slide up while you pass out the prepared Zip-loc® bags containing contaminants.]

Where have you seen the things in these bags? *[Give participants time to look, think and answer.]*

Some of these materials have actually been found in harvested containers at various ranches and packing houses.

What would happen if a consumer found any of these materials along with their leafy greens?



Leafy Greens Contaminants (Page 2 of 2)

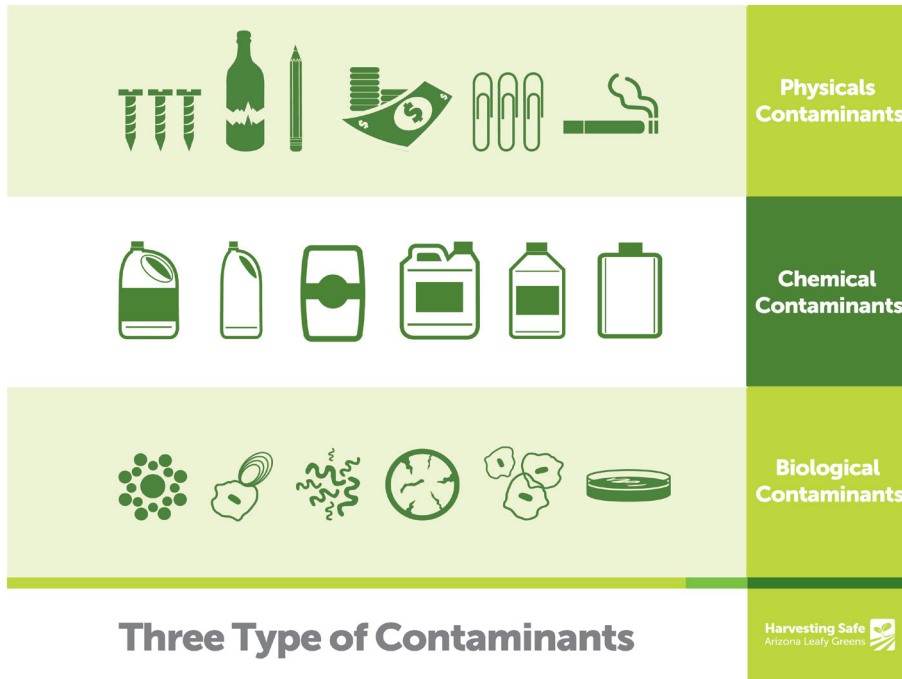
What if the person accidentally ate one of these things?

Which items could cause a person to choke or break a tooth?

Contaminants can cause loss of sales. Some companies have lost accounts due to physical contaminants, which damage the quality of the product and even cause injuries.

[Close with the following message:]

The contaminants we see here can get into food because of poor practices during harvesting, coring, sorting, handling, or packing. Illness, serious injuries, choking and even a bad reputation can result from finding physical contaminants in harvested leafy greens.



Three Types of Contaminants

Now let's look at types of contaminants and how we can prevent them from getting on the product you work with.

The three main types of contaminants are

1. Physical contaminants
2. Chemical contaminants
3. Biological contaminants

Food safety programs, including this one, aim to minimize the risk of product contamination.

It is part of your job to protect the leafy greens you harvest from becoming contaminated and causing a food-borne outbreak.



Physical Contaminants

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Arizona Leafy Greens



Physical Contaminants

A physical contaminant is a soft or hard foreign material that is incorporated to leafy greens by accident or due to poor practices during harvesting, coring, sorting, handling, packing or storing. The items we just passed around were all physical contaminants.

Physical contaminants include:

- Nails & clips
- Hair
- Pencils & pens
- Broken glass
- Money
- Cigarettes & candy wrappers

When you find a physical contaminant in product, tell your supervisor immediately.



Chemical Contaminants

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Arizona Leafy Greens



Chemical Contaminants

Chemical contamination occurs when food products come in contact with harmful chemical compounds during growing, picking and packing.

Chemical contaminants in the field include:

- Pesticides
- Cleaning compounds
- Sanitizing products
- Machine oils

If you see any chemicals that are used incorrectly or not stored properly, report it immediately to your supervisor.

Remember to ALWAYS follow the proper procedures when handling chemicals at work.



Biological Contaminants

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Arizona Leafy Greens



Biological Contaminants

Biological contaminants are the third category. Microorganisms or microbes are very small living organisms; they can be seen only under the microscope.

Even though there are many types of microorganisms (such as bacteria, yeasts, molds, parasites, and viruses), in this lesson, we will refer to all of them as microbes.

We generally live in harmony with microbes. They are found everywhere: in the air, water, our body, soil, the environment and even in food. Most microbes are not harmful. But several could grow enough to make us sick.



The Good, The Bad & The Ugly

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Arizona Leafy Greens



The Good, The Bad & The Ugly

Microbes can be classified into 3 categories:

- The good,
- The bad, and
- The ugly

The GOOD include microbes that are beneficial for humans and are used to produce foods such as beer, bread, yogurt and cheese. Some of them are used to produce drugs and antibiotics.

The BAD microbes are called pathogens and are the ones that make people sick.

The UGLY microbes do not hurt people, but they cause spoilage of food. They produce undesirable tastes, odors, textures or appearances. Spoilage is a food quality issue, not a food safety issue. In this lesson, we will focus on the bad microbes.



The Bad Microbes

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Arizona Leafy Greens



The Bad Microbes

But there are also bad microbes all around us in the environment. These are the ones that cause foodborne illnesses. We definitely want to avoid getting bad microbes on the leafy greens we work with.

We carry some of these bad microbes on or inside our body.

Good production and sanitary practices can keep leafy greens from becoming contaminated with bad microbes.



What is my Job?

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Arizona Leafy Greens



What is my Job?

In this lesson we learned about foodborne illnesses, foodborne outbreaks and food contaminants. You play a key role in protecting from contamination the leafy greens you work with. Your job is to always follow your company's food safety policies and procedures.

Do not improvise. If you are not sure about something, talk to your supervisor. If you see something wrong, immediately let your supervisor know about the situation.

This is the end of our discussion about foodborne outbreaks and leafy greens contamination. Are there any questions?

Thank you for coming. Please be sure that you have signed the attendance sheet.

Module 2

Personal Hygiene & Handwashing



AZLGMA
certified





Personal Hygiene & Handwashing

Lesson Summary

The instructor will describe the concept of personal hygiene and its importance to food safety. The instructor will cover three areas of personal hygiene that are critical for safe leafy greens production: 1) protective garments, 2) personal practices, 3) personal health and wounds.

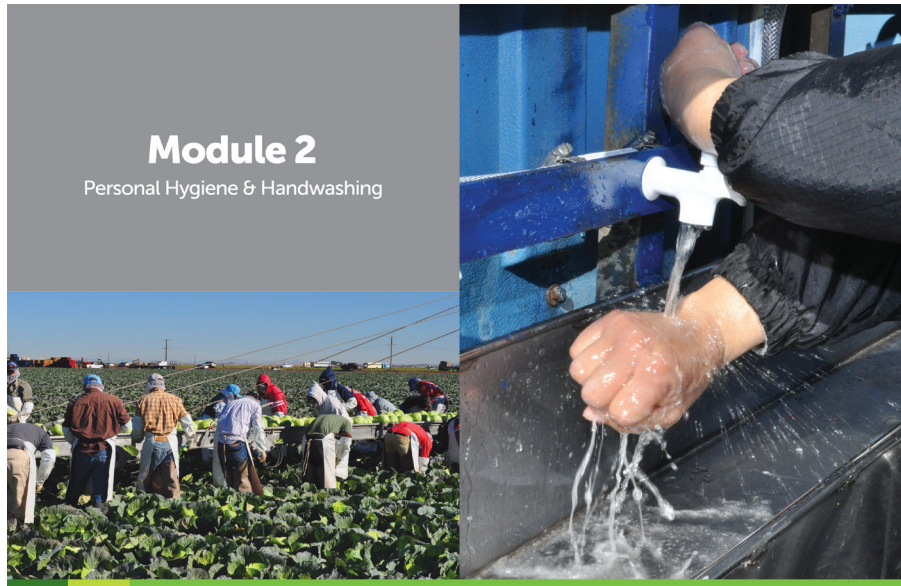
For each of these areas, the instructor will explain and demonstrate appropriate procedures and behaviors for lowering the risk of leafy greens contamination. To emphasize the importance of good hygiene, the instructor will explain the purpose of and the correct procedure for handwashing. Correct glove usage to prevent contamination will also be described.



Learning Objectives

At the end of this lesson, participants will be able to:

- State how poor personal hygiene directly affects the safety of leafy greens.
- List the three areas of personal hygiene.
- Demonstrate correct usage of clothing and how to properly wear a hair restraint.
- Tell another worker why personal hygiene policies must be followed while working with leafy greens.
- State the importance of handwashing to avoid product contamination.
- List the situations when handwashing is required.
- Demonstrate appropriate handwashing techniques.



Personal Hygiene & Handwashing

Thank you for coming today. Please sign the attendance sheet.

In this lesson, we will cover personal hygiene and handwashing.

These topics are very important for lowering the risk of leafy greens contamination.

We will discuss specific procedures that must be followed at work.

Good personal hygiene is critical for minimizing the risk of food contamination. It is essential to prevent the introduction and spread of microbes in the growing and harvesting areas.



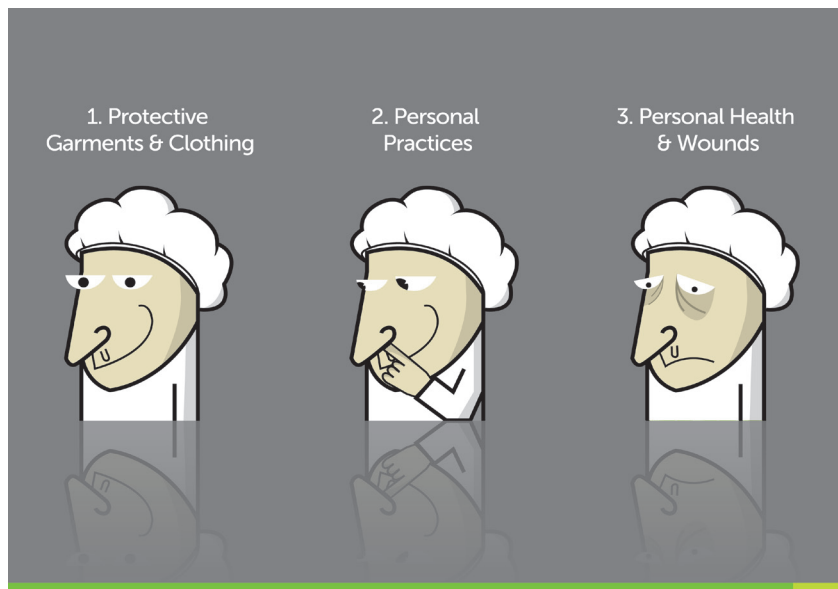
Personal Hygiene

What is “personal hygiene”?
[Let a participant give a definition.]

Personal hygiene refers to habits of cleanliness: clothing, hair, hands - everything! The person you see in this picture provides an example of very poor hygiene.

Food contamination can result from poor personal hygiene practices at work.

Personal hygiene stops being a personal issue when handling food that others will eat. Your personal hygiene practices could affect the safety of leafy greens.



The Three Areas of Personal Hygiene

Harvesting Safe
Arizona Leafy Greens



The Three Areas of Personal Hygiene

Good personal hygiene is critical for minimizing the risk of food contamination. We will classify personal hygiene into three areas:

1. Protective garments and appropriate clothing: aprons, arm sleeves, hair restraints, and gloves.
2. Personal practices: snacking, eating, drinking, smoking, and using the restroom.
3. Personal health and wounds: health status and any wounds.



Arm Sleeves, Hairnets, Gloves & Aprons



1. Protective Garments & Clothing

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Arizona Leafy Greens



Protective Garments & Appropriate Clothing

Proper clothing and coverings include uniforms, aprons, arm sleeves, hair restraints and gloves.

To keep product clean and safe, you need to bath daily and wear clean clothes to work everyday. Shorts, tank tops or torn clothing are not acceptable. You should also wear clean closed-toe shoes or boots.

In some instances, employees may have to use protective garments such as arm sleeves and aprons at all times during harvest operations.

ALWAYS maintain adequate personal cleanliness and wear suitable protective garments specific to your job functions.



Hair Restraints & Beard Nets

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Arizona Leafy Greens



Hairnets & Beard Nets

It is important to keep hair from falling into food. Hair harbor bacteria and can cross contaminate food. Consumers consider food with a strand of hair unappealing.

The employer usually provides appropriate hair restraints.

You also should properly tie long hair back. When wearing a hairnet, cover all your hair and ears.

If you have a beard or mustache, you are required to wear a beard net.

Some companies allow their employees to wear hats. If you wear a hat, you still may need to wear a hairnet under the hat.



Arm Sleeves & Aprons

Harvesting Safe
Arizona Leafy Greens



Arm Sleeves & Aprons

If harvesting value added product, wear an apron and arm sleeves.

Heavily soiled and/or damaged aprons and arm sleeves should be replaced.

Protective garments aim to protect the product from becoming contaminated.

Follow your company dress code to minimize the risk of leafy greens contamination.

Remember, protective garments are intended to protect the food products from contamination, not to protect you from the food.



Glove Usage

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Arizona Leafy Greens



Glove Usage

The use of gloves may be mandatory for some employees. Always follow your company's policy.

Here are few things you need to know about your gloves:

- Keep your gloves clean and sanitary.
- Immediately replace a dirty, torn, or contaminated glove.
- Dispose the old gloves in the designated trash container.
- Remove your gloves before entering the restroom.

Reusable gloves must be cleaned and sanitized. Gloves are used to protect food from contamination, not for protecting your hands. Remember to ALWAYS wash your hands before putting on your gloves.



2. Personal Practices

Let's move on to good personal practices. These are some of our daily behaviors and include other areas important to personal hygiene. We all must follow certain good hygiene practices in the field while harvesting in order to protect the leafy greens.

Wherever products are grown or handled, the following personal practices are prohibited:

- Smoking
- Chewing gum
- Eating and drinking
- Snacking
- Spitting

Do not bring personal items such as jewelry, backpacks, and personal adornments. Do not wear jewelry and other personal objects in areas where product is grown or handled. None of these things are allowed around leafy greens in the ranches!



Eating & Drinking

Harvesting Safe
Arizona Leafy Greens



Eating & Drinking

When eating and drinking, we can transfer saliva from our mouths to our hands and increase the risk of contaminating food. Saliva contains millions of bad microbes; we do not want to pass them to food.

All workers and management must eat and drink **ONLY** in designated areas away from equipment and unharvested product where the risk of contaminating leafy greens with microbes is low.

When going to break, remove your protective garments and follow the company policies.

Eating and drinking only in designated areas helps prevent contamination. Remember to always wash your hands before returning to work.



Smoking & Tobacco Products

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Arizona Leafy Greens



Smoking & Tobacco Products

The practices are the same for smoking and other uses of tobacco products.

Smoke only in the designated areas.

Remember to wash your hands before returning to work.



ALWAYS! Use the Restrooms

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Arizona Leafy Greens



ALWAYS! Use the Restrooms

Feces are definitely a major source of contamination. ALWAYS use the restrooms provided by the company.

The company should provide at least one toilet facility per 20 employees, each within 1/4 mile or 5 minute walk of the work site.

Some companies have a one-strike policy for employees who urinate or defecate outdoors.



Toilet Paper

The following is a sensitive topic:
If not properly disposed, soiled toilet paper could be a major source of contamination.

It is very important to put soiled toilet paper in the toilet, not in the trashcan or on the floor.

A food safety inspector finding soiled toilet paper on the restroom floor or in the trashcan result in an audit's major deviation.



Personal Items

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Arizona Leafy Greens



Personal Items

Do not bring any personal items to your working area; these might fall onto product.

Personal items are NOT allowed in the field or near the equipment (loose items such as pens and pencils, backpacks, radios, CD players, headphones, cell phones, etc.)

Properly store personal items at a designated area before starting to work.



Jewelry & Make Up

Harvesting Safe
Arizona Leafy Greens



Jewelry & Make Up

Now let's talk about jewelry: many of us like to wear jewelry such as rings and watches, and many women like to wear make up and nail polish.

But in leafy greens production areas, we have to think about the customer. Jewelry, make up, and nail polish can fall into the product, equipment, or containers we are handling, thereby becoming physical contaminants.

Do not wear any jewelry - no rings, brooches, watches, bracelets, necklaces, pins, earrings, nose rings, hair-pins, combs, or such. The only piece of jewelry that may be worn is a plain wedding band.



Leaving Working Areas

Harvesting Safe
Arizona Leafy Greens



Leaving Working Areas

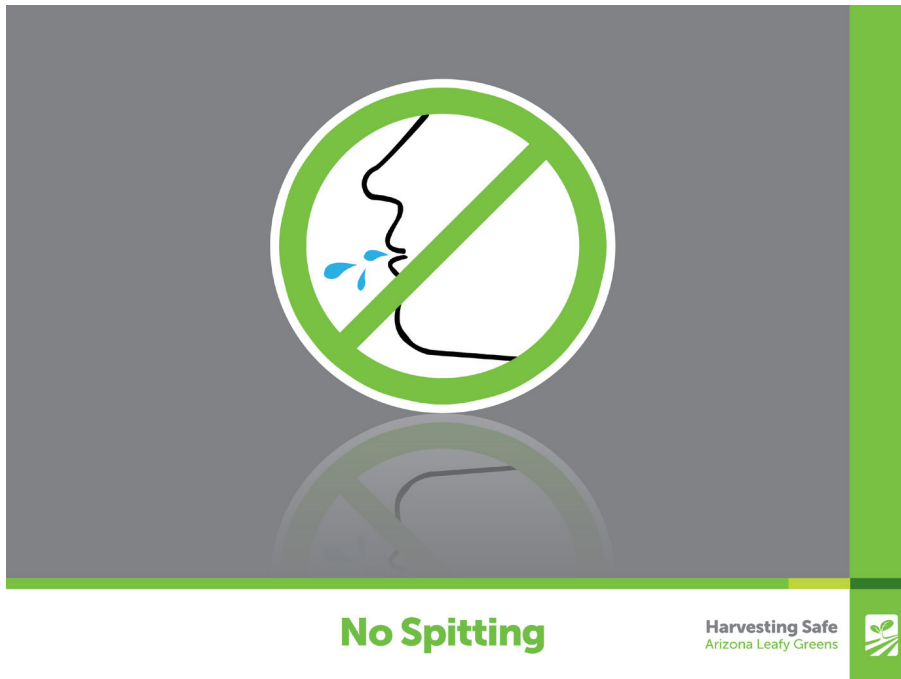
It is important to wear clean clothes and follow the company dress code. Before leaving the work area to go to the restroom, lunch, or anywhere else, put all coats, aprons, gloves, and other protection equipment such as arm guards or plastic sleeves (hair coverings, if required) in a designated area; do not drop these items on the ground.

Put the items back on when returning to work.

Remember to wash your hands before returning to work.

Finally, when leaving production areas, remember to always follow the previously designated walkways.

DO NOT take shortcuts.



No Spitting

Spitting is a dirty habit that can spread disease. Sputum might land unnoticed in the product. Remember that saliva contains millions of microbes.

Spitting is strictly prohibited in the field.

OPTIONAL DEMONSTRATION:

We all notice people spitting at the ranch.

[Spit directly [trying to be loud] into a cup/bottle that contains water, coffee, or juice. Pass it around and offer the participants a drink from this container.]

How would you feel if you had to drink from that container?



Sneezing, Coughing & Nose Blowing

Harvesting Safe
Arizona Leafy Greens



Sneezing, Coughing & Nose Blowing

When we spit, sneeze or cough, we can contaminate food with saliva. Do not sneeze or cough directly on the leafy greens you are harvesting or handling. Do not spit while you are in food production areas.

What if you can't move away quickly? Should you sneeze into your arm and change your outer garments? If you sneeze and cough, you should never use your uniform as a paper towel.

If you use your hands to cover a sneeze, cough or blow your nose, wash your hands right away.

Do not blow your nose in the field or near product. Go to an appropriate area outside the field and wash your hands afterwards.



3. Personal Health & Wounds

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Arizona Leafy Greens



3. Personal Health & Wounds

General health and wounds is the last area of personal hygiene in this lesson.

Several foodborne outbreaks have resulted from sick employees working with food products.

Suffering from some diseases will ban workers from the fields. Ill employees can pass some bad microbes can be passed to food.

While proper personal hygiene techniques can prevent the transfer of harmful microorganisms from employees to the food they are producing, such practices were not good enough in a few instances.



Personal Health

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Arizona Leafy Greens



Personal Health

The Arizona Leafy Greens industry agreement states: “Workers with diarrhea disease or symptoms of other infectious disease are prohibited from handling fresh produce.”

Workers who have one of these diseases can contaminate leafy greens and make someone who eats them sick. If you have any of the following signs or symptoms, do not work around leafy greens:

- Diarrhea
- Hacking cough
- Some types of fever
- Vomiting
- Jaundice
- Sore throat with fever
- An infected sore or wound.

If you have any of these symptoms, do not contact the product or food contact surfaces. It may be appropriate to perform non-food handling duties at work. Each company is different; follow your company policies on this matter.



Wounds & Cuts

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Arizona Leafy Greens



Wounds & Cuts

The same goes for wounds and cuts. The Arizona Leafy Greens Industry Agreement states: “Workers with open cuts or lesions are prohibited from handling fresh produce without specific measures to prevent cross contamination of product.”

If you have a cut or an open sore you should report it to your supervisor before you start working. If you cut your hand or finger while harvesting leafy greens, tell your supervisor about the incident. Check that you are OK and stop the bleeding. However, if the cut is major or bleeding can't be stopped, seek medical attention. If the cut is not serious, wash your hands, apply a bandage, then cover it with a glove. Use only bandages provided by your supervisor; these are metal detectable. Your supervisor will decide if it is appropriate for you to return to work.

Did blood get on any product? Any product that comes in contact with blood or any other body fluid must be disposed properly.

Activity 1

Personal Practices



Harvesting Safe
Arizona Leafy Greens



Activity 1 - Personal Practices

Before we move on, let's review some examples of situations that happen within the leafy greens industry and that we covered today.

I will display a slide with two pictures and ask you what is wrong in the picture on the left side of the slide.

We will then look at the correct way that is shown in the picture on the right side of the slide.

[The purpose of this activity is to demonstrate appropriate personal hygiene practices that should be followed in the leafy greens industry.]

Note to the instructor: It is recommended that you go through these slides relatively quickly to make time for the final handwashing activity, which is an essential component of the training.



Incorrect / Correct - Personal Items

What is incorrect in this picture? Why?

[Participants must answer both questions.]

The picture on the left side shows the employee leaving personal items in the harvesting machine.

Personal items are NOT allowed in the field or near the equipment.

As illustrated on the right, store personal items in a designated area before starting to work.



Incorrect / Correct - Jewelry

What is incorrect here in this picture?

[Let participants answer.]

The harvester is wearing earrings and a chain when working with food products

In the picture on the right, she removed her jewelry. Also note that she is wearing clean clothes and gloves.



Incorrect / Correct - Leaving Working Areas

Can anyone tell me what is wrong?

This picture shows an employee wearing protective garments when entering the restroom.

Clothing/garments can become contaminated in the restroom.

Remove your protective garments before entering the restroom and store them at a designated area.

Some companies require employees to remove hair coverings when leaving harvesting areas.

When you go to break, remember to remove your protective garments and follow the company policies.



Incorrect / Correct - Gloves

What is incorrect in this picture?

Why?

[Participants must answer both questions.]

The worker is not wearing gloves while working in the field.



Incorrect / Correct - Arm Sleeves

What is incorrect in this picture?

Why?

[Participants must answer both questions.]

This worker is wearing a clean apron, gloves and arm sleeves, but his sleeve is not worn properly. Sleeves should cover all your forearms.

All body parts must be covered when working with value added food products.

In the picture on the right you can also see the employee is wearing a hair restraint and the beard net properly.



Incorrect / Correct - Eating

What is incorrect in this picture?

Why?

[Participants must answer both questions.]

Employees are eating near the field.

All of us - workers and management - must eat and drink **ONLY** in designated areas away from equipment and un-harvested product where the risk of contaminating leafy greens with microbes is low.

Remember to wash your hands before returning to work.



Incorrect / Correct - Arm Sleeves

What is incorrect in this picture?

Why?

[Participants must answer both questions.]

This worker is wearing gloves, arm sleeves, and a clean apron, but her sleeve is torn. The sleeve should be replaced immediately.

All body parts must be covered when working with value added food products.



Incorrect / Correct - Hair Restraints

What is incorrect in this picture?

Why?

[Participants must answer both questions.]

This harvester is not wearing his hairnet.

In the next picture the worker is wearing his hairnet correctly: Hairnets should cover all visible hair and the ears.

If you wear a hat, you still may need to wear a hairnet.



Incorrect / Correct - Beard Net

What is incorrect in this picture?

Why?

[Participants must answer both questions.]

This harvester is not wearing his beard net properly.

In the next picture the worker is correctly wearing his beard net.

If you have a beard or mustache, you are required to wear a beard net.



What is Incorrect? - Wrist Watch

This is the last activity's slide.

What is incorrect in this picture?

Wearing watches is not acceptable at work.

They represent a physical hazard to food.



Handwashing

Harvesting Safe
Arizona Leafy Greens



Handwashing

Now we are going to talk about the single most important food safety practice – handwashing.

Handwashing is an easy and effective way to reduce the spread of biological contamination on leafy greens. Your hands are in contact with leafy greens all the time: they must be clean to prevent contamination.

Your hands can spread microbes to everything you touch.

The rule is simple: handwashing reduces the number of microbes on hands and reduces the chance of contaminating the leafy greens you work with. It is the simplest and, probably, the fastest way to minimize contamination.

Improper handwashing has been responsible for a number of foodborne illnesses.

		<p>Before:</p> <ul style="list-style-type: none"> Putting on Gloves Starting Work
		<p>After:</p> <ul style="list-style-type: none"> Using the Restroom Taking a Break or Eating

When is Handwashing Needed?

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When is Handwashing Needed?

Always wash your hands before going to your workstation at the beginning of the day.

But that is not enough! Handwashing must be a regular activity; keep your hands clean throughout the day. Wash your hands often throughout the day. Wash your hands **BEFORE**:

- Putting on gloves.
- Starting work.

You should also wash your hands **AFTER** doing the following:

- Using the restroom - **THIS IS THE MOST IMPORTANT!**
- Taking a break or eating lunch.
- Coughing or sneezing in your hands.

Wash your hands often thoroughly anytime that they could have become soiled or contaminated.

You Should Wash Your Hands Before Putting On Your Gloves



Are Gloves Enough? NO

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Arizona Leafy Greens



Are Gloves Enough? NO

If you wear gloves, does that mean that you do not have to wash your hands? *[Wait a moment for a response.]*

NO, gloves cannot completely protect products from contamination.

You must wash your hands before putting on gloves. If you have contaminated or dirty hands, you will pass the microbes to the gloves and then to the product.

Reusable gloves must also be washed and then sanitized.

Handle gloves as though they were your hands.



Proper Handwashing Procedure



Proper Handwashing Procedure

There is a correct way to wash your hands. A quick soak or wetting your hands without soap is not good enough. Let's go over each of the handwashing steps:

Step 1. Wet your hands with water.

Step 2. Apply soap.

Step 3. Lather and scrub your hands and arms for about 20 seconds. Do not forget the areas under your nails and between your fingers.

Step 4. Rinse thoroughly with water.

Step 5. Dry your hands using a clean paper towel.

Step 6. If required for your job, put on your gloves.

Please note that some companies might require their employees to use hand sanitizers after hand washing and before putting on gloves.



Step 1 - Proper Handwashing Procedure

Let's review each handwashing step in more detail.

If you do not do all of the steps, or do them in the wrong order, you have not washed your hands properly.

The first step is to wet your hands with water.



Step 2 - Proper Handwashing Procedure

Step 2 is to apply the soap to your hands.

Soap loosens bacteria and soil that adhere to the skin's surface.



Step 3 - Proper Handwashing Procedure

For step 3, lather and scrub your hands and arms for about 20 seconds. Do not forget the areas under your nails and between your fingers.

Remember, it takes about 20 seconds to do a good job.

Create sufficient friction and ensure finger tips and areas between fingers are rubbed.

Friction is probably the most important factor in removing bacteria from hands.



Step 4 - Proper Handwashing Procedure

Step 4. Rinse thoroughly with water.

Make sure to remove all soap during this step.



Step 5 - Proper Handwashing Procedure

Step 5. Dry your hands thoroughly using a clean paper towel and toss it in the trash can.

Do not dry your hands on your working clothes or outer garments. You would be recontaminating your hands with this practice.

Some companies require their employees to use hand sanitizers after handwashing and before putting on gloves.

Other companies also require sanitizer application on gloves. Always follow your company procedures.



6

Proper Handwashing Procedure

If required for your job, put on your gloves



Step 6 - Proper Handwashing Procedure

If you work in an area where gloves are required, put them on!

If your company also requires sanitizer application on gloves, do so before returning to work.

Now you are ready to go to work.



Hand-Glove Sanitizer

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Arizona Leafy Greens



Hand-Glove Sanitizer

Some ranches require employees to use hand sanitizers after handwashing.

Other companies also require sanitizer application on gloves.

Do not skip this procedure. Hand sanitizers can reduce bacterial populations on clean hands or clean gloves. However, they should not be used in place of proper handwashing.

If a hand sanitizer is used at your facility, use only the one provided by the company, not one brought from home. ONLY FDA/USDA approved sanitizers can be used in leafy greens production.

Activity 2

Practicing Handwashing



Harvesting Safe
Arizona Leafy Greens



Practicing Handwashing (Page 1 of 2)

That is the end of the lecture. But before we end, we have an important activity: We will go through the six handwashing steps at the handwashing station.

Now I want everyone to show me that you know the correct way to wash your hands. I need a volunteer to start.

[Ask for a volunteer to come up to the sink. Make sure he/she goes through the previously discussed steps, especially the lathering step for 20 seconds.]

[Ask the rest of the group to judge how well the volunteer washed his/her hands.]



Practicing Handwashing (Page 2 of 2)

[When the first volunteer is finished, demonstrate the correct handwashing procedure to all participants, then have the rest do the same procedure. Be sure each person follows the correct handwashing procedure.]

This is the end of our discussion about personal hygiene and handwashing. Are there any questions?

[If you have the GloGerm™ or GlitterBug® lotion proceed to do the handwashing activity included in the next page.]

Thank you for coming. Please be sure that you have signed the attendance sheet.



Instructions for Conducting an Alternate Version of Activity 2 - Practicing Handwashing

Purpose of the Activity:

To demonstrate the correct handwashing procedure.

Supplies:

1. Have the GloGerm™ or GlitterBug® lotion and UV light ready. You can order the GloGerm™ or the GlitterBug® kit at:

GloGerm™ Company
<http://www.glogerm.com/>
800-842-6622

GlitterBug® Brevis Co.
<http://www.glitterbug.com/>
801-466-6677

2. Before starting the training session, make sure that there is a handwashing station nearby. It should have running water and be properly stocked with liquid soap, disposable paper towels and a trash container.

Procedure:

1. Take the participants to a handwashing station.
2. Apply GloGerm™ or GlitterBug® lotion to your hands and ask a couple of participants to volunteer to apply some lotion to their hands.
3. Put your hands and the participants' hands under the UV light and show them to others. You may have to dim the lights in order to see the glow.
4. Ask the volunteers to just soak their hands instead of washing them properly.
5. Wash your hands using the correct handwashing procedure.
6. Put your hands under the UV light and show them that your hands are not glowing. Now ask the volunteers to put their hands under the UV light and show the glow.
7. Ask participants to tell you what happened and why they think their hands still glow.

Module 3

Cross-Contamination in the Field



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Cross-Contamination in the Field

Lesson Summary

The instructor will describe the concept of cross-contamination, its causes, why it is a problem for leafy greens and its importance to food safety. Prevention strategies and ways to prevent cross-contamination are also covered. The instructor will describe situations that can happen in the ranch that might lead to product contamination. These events include animal intrusion discovery, glass in the field, blood in harvested product, and unsuitable packaging materials.

For each of these areas, the instructor will explain and demonstrate appropriate procedures and behaviors for lowering the risk of leafy greens contamination.

Learning Objectives

At the end of this lesson, participants will be able to:

- State what cross-contamination is and how it can be prevented at the ranch.
- Report to their supervisor any potential situation for cross-contamination.
- Demonstrate correct practices to prevent cross-contamination.
- Describe cross-contamination agricultural practices.





Cross-Contamination in the Field

Thank you for coming today. Please remember to sign the attendance sheet.

This lesson covers cross-contamination in the field.

This topic is very important to protect leafy greens from becoming contaminated.



Cross-Contamination

Harvesting Safe
Arizona Leafy Greens



Cross-Contamination

You probably have heard the term “cross-contamination” at work. Does anyone know what cross-contamination is?

Cross-contamination is the transfer of harmful substances or microbes (contaminants) from something DIRTY to something CLEAN - in our case, to the leafy greens we work with.

Cross-contamination is a serious matter because it can make our customers ill, as well as reduce the leafy greens shelf life and/or quality.

We will cover several practices in the field may that lead to cross-contamination.



Hand Harvesting Equipment

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Hand Harvesting Equipment

One way to prevent leafy greens contamination is to keep your hand harvesting equipment such as knives and coring rings clean.

You should ALWAYS use harvesting tools in proper condition. No chipped knife blades, broken handles, or tape on handles are allowed on the fields.

Bins, tables, baskets, mechanical harvesters, brushes and buckets must be cleaned and sanitized daily.

Sanitize your harvesting knives at the end or beginning of each day, every return to work, after breaks or lunches, when moving from field to field, and if contamination or adulteration has occurred.



Cleaning & Sanitizing Picking Knives

Harvesting Safe
Arizona Leafy Greens



Cleaning & Sanitizing Picking Knives

At the harvesting site, you have a chlorine or other chemical sanitizing solution at the proper concentration. Your supervisors are in charge of providing these solutions, and they monitor them regularly.

When leaving the field for breaks or other purposes, leave your knife in the provided container with sanitizer until you return to work.

Make sure to follow the company policy for cleaning and sanitizing your harvesting equipment, and remember that knives and other picking equipment must stay within your company.



Harvesting Machines

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Arizona Leafy Greens



Harvesting Machines

Harvesting machines can also be a source of contamination. Any farming equipment that comes into contact with raw manure, untreated compost, waters of unknown quality, animal hazards or other potential sources must be cleaned and sanitized following company procedures. If you spot any of these contamination sources when harvesting, it is your job to notify your supervisor immediately.

Sanitation must be done away from the product and other equipment. Runoff of water and cleaning products are not allowed to reach the growing area. Use only the water source authorized by your supervisor. When you are done cleaning, store the harvesting machines in an area away from potential hazards including, roads, buildings, wells, chemical storage areas, animals, and farm inputs. These practices will help to minimize the risk of cross-contamination.



Harvesting Machines - Food Contact Surfaces

Harvesting Safe
Arizona Leafy Greens



Harvesting Machines - Food Contact Surfaces

A food contact surface is the part of the equipment or an utensil with which food normally comes into contact, or from which food may drain, drip or splash into a food or onto a surface normally in contact with food.

Do not walk, step, sit, or lie on food contact surfaces of equipment. Make sure that drip pans are in place; check and clean them before the equipment enters field.

It is your job to follow proper procedures for cleaning and sanitizing food contact surfaces to minimize cross-contamination. Note that all cleaning procedures effectiveness is monitored and evaluated through documentation, visual and microbial evaluations. Your supervisors are in charge of documenting all monitoring activities and corrective actions. They also play a key role in preventing cross-contamination.



Containers & Packing Supplies Handling

Harvesting Safe
Arizona Leafy Greens



Containers & Packing Supplies

Packaging materials and containers can be another source of contamination.

Harvesting containers must be used to carry harvested product only. No foreign materials such as soda cans, rocks, nails, or clothing can be placed in or on the containers.

ALWAYS store containers and packaging materials on pallets or truck/trailers, not directly on the ground. Box assembly must be off the ground on pallets, trucks or trailers.



Container and Pallet Inspection

Harvesting Safe
Arizona Leafy Greens



Container and Pallet Inspection

Containers and all packaging materials must be inspected before use. Look for loose pieces, pests and pest droppings, damage, trash and debris.

Only clean and undamaged harvest materials (liners) and containers can be used in the field. Cartons, carton closing devices, poly bags, brushes, buckets, etc. must be free of dirt, diesel, oil, and grease. If you see any loose pieces, pests, pest droppings damage, trash and/or debris in any harvesting container while picking, report it immediately to your supervisor. Contaminated packaging materials must be discarded and contaminated reusable containers need to be washed properly.

Do not store or stage packaging materials or containers near water sources, pesticides, chemicals mixing or storage areas or portable toilets.



Harvested Product Protection

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Arizona Leafy Greens



Harvested Product Protection

Bad microbes can be in the dirt on the ground and cross-contaminate the harvested leafy greens.

If product falls on the ground while you are harvesting, leave it there or discard it properly!

Do not stack soiled bins on top of each other if the bottom of one bin has had direct contact with soil unless a protective barrier (i.e., liner, cover, etc.) is used to separate the containers.

Finally, any packaging container that contacts the ground must be sent back for sanitation or be disposed of properly.



Equipment Damage and Breakage

Harvesting Safe
Arizona Leafy Greens



Equipment Damage and Breakage

There should be no loose or damaged parts on harvest machines, tractors or trailers, including nuts and bolts, or glass lights.

Loose or damaged parts must be replaced or fixed immediately with the proper material: no use of string, tape, wire, and/or cardboard for temporary repairs.

Your job is not to fix things; however, if you see anything that is not working properly or does not look good, report it immediately to your supervisor.

Remember, maintenance employees should also follow good personal hygiene practices.



Leaks and Spills

Harvesting Safe
Arizona Leafy Greens



Leaks and Spills

Harvesting equipment must be free of fluid leaks or excess of grease.

Equipment leaks and spills must be cleaned and the affected soil and plants removed and disposed of properly.

Any leafy greens that come in contact with dirt, grease or oil must be discarded.

Portable restroom units must be cleaned and serviced regularly to prevent leaking or spilling.

If you spot a leak or a spill, stop harvesting and report it immediately to your supervisor.



Animal Intrusion

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Arizona Leafy Greens



Animal Intrusion

The crop or soil can be contaminated with bad microbes by animal intrusion. Animal hazards are feeding, skin, feathers, fecal matter or signs of animal presence in an area to be harvested in sufficient number and quantity to suggest to a reasonable person the crop may be contaminated.

Any type of animal in the field may lead to crop contamination, posing a significant risk to leafy greens since contamination can happen through physical contact or fecal matter.

You should **ALWAYS** report to your supervisor if you see any animals in the field, downed fences, animal tracks in the production block, animal feces, urine, or eaten plants in your working area.



Fecal Material

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Fecal Material

What if fecal material is found in the field?

If you find evidence of fecal matter, report it immediately to your supervisors. They should conduct and document a food safety assessment with qualified food safety personnel. Harvesting **CANNOT** begin again until the area is evaluated by completing a food safety assessment and made sure that the area is clear of contamination, prior to re-start.

Do not harvest any product that comes into contact with fecal matter. Do not harvest any product within 5 feet of contamination. **ALWAYS** be aware of the flagged areas. These represent buffer zones around any animal activity and will help to adequately control or minimize the risk of contamination.



Blood

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Arizona Leafy Greens



Blood

If you cut your hand or finger while harvesting leafy greens, tell your supervisor about the incident. Check that you are OK and stop the bleeding. However, if the cut is major or bleeding can't be stopped, seek medical attention. If the cut is not serious, wash your hands, apply a bandage, then cover it with a glove. Use only bandages provided by your supervisor; these are metal detectable. Your supervisor will decide if it is appropriate for you to return to work.

You and your supervisor must make sure that blood and/or body fluids did not get on any harvested and unharvested product, knives, or containers such as boxes or baskets. If blood got on any leafy greens or packing containers, these leafy greens should be thrown away immediately or cleaned and sanitized following the company's blood cleaning policy.



Glass

Harvesting Safe
Arizona Leafy Greens

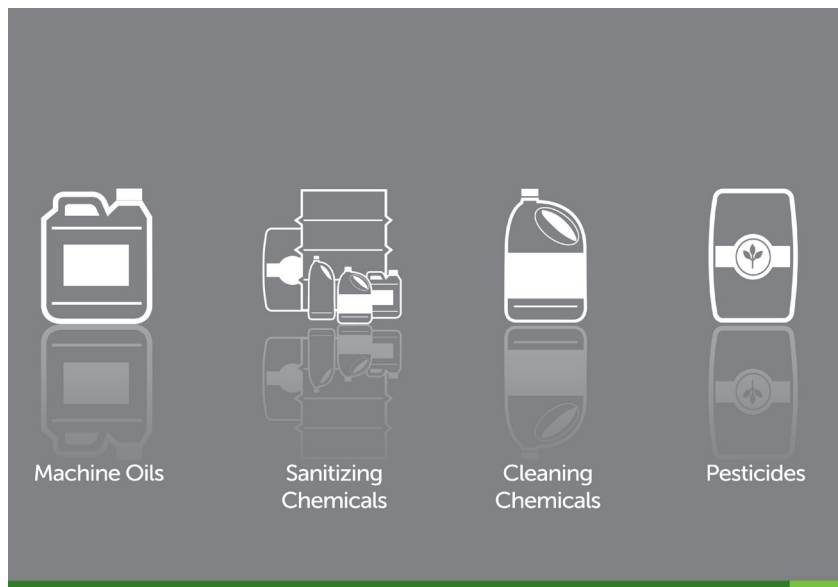


Glass

Glass or glass containers are not allowed in or in the field borders.

Approved glass and brittle plastics are restricted to authorized personnel; adequate measures are taken to prevent breakage. No unprotected glass is permitted in production areas unless it is a tool used to perform a job and is available only as glass material. Also, all lights must be shielded.

Broken glass in a leafy greens container! Do not just take the piece of glass out; you **MUST** throw all of this product away and report it immediately to your supervisor!



Chemicals

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Chemicals

Chemical contamination occurs when food products come in contact with harmful chemical compounds during growing, picking and packing.

Chemical contaminants in the field include:

- Pesticides
- Cleaning compounds
- Sanitizing products
- Machine oils

If you see any chemicals that are used incorrectly or not stored properly, report it immediately to your supervisor.

Remember to ALWAYS follow the proper procedures when handling chemicals at work.



Trash

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Arizona Leafy Greens



Trash

Waste and trash are sources of contamination and should be placed in designated containers. These containers should be emptied daily and more often, if necessary.

Cleaning waste containers or taking out trash might not be your responsibility, but if you see that receptacles are full, you should tell your supervisor immediately.

Eat only at designated areas and do not leave trash behind; it may end up in the field increasing the risk of contamination.

You must always wash your hands after handling waste or trash. This step will help prevent cross-contamination.



Visitors

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Arizona Leafy Greens



Visitors

The ranch should have a system for checking visitors in and out. This will ensure that visitors are accounted for.

All visitors must adhere to the company policies and procedures at all times. Do not hesitate to report to your supervisor any inappropriate behavior or any practice that might put the leafy greens at risk of contamination.

Activity 1

Case Studies



Harvesting Safe
Arizona Leafy Greens



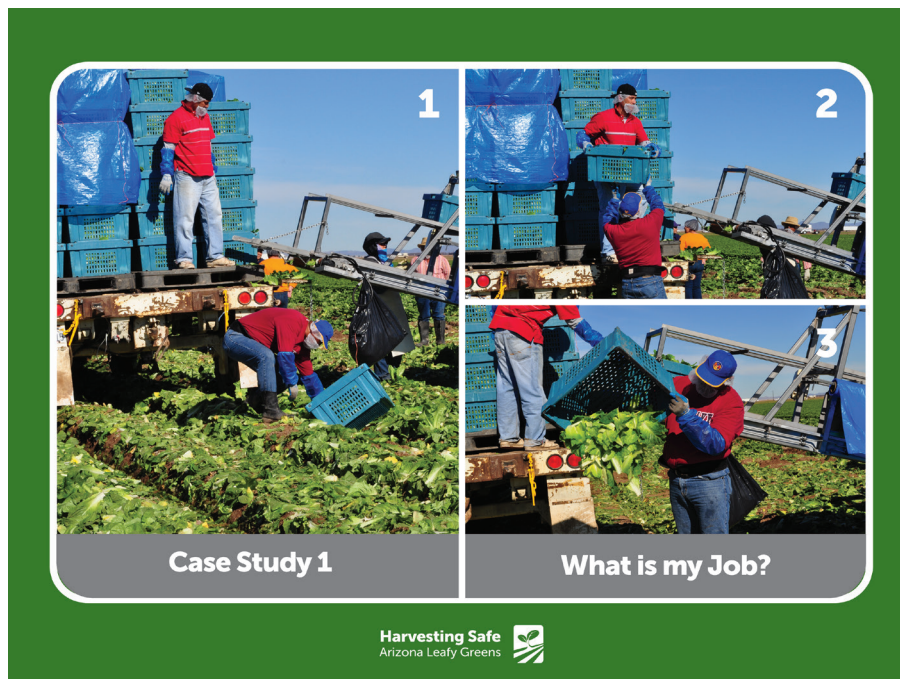
Activity 1 - Case Studies

Let's review some examples of situations that can happen within the leafy greens industry and that we covered today.

I will display a picture and ask you about the situation in that picture. You should discuss the cross-contamination potential of that specific situation.

[The purpose of this activity is to have participants discuss situations that lead to cross-contamination in the field.]

Remember, biological, physical and chemical contaminants are everywhere; therefore, cross-contamination can occur from food handlers like you or the environment (air, food contact surfaces, pests, equipment, etc.)



Case Study 1 - What is my Job?

What is happening in these pictures? *[Give participants a few seconds to provide answers.]*

In the first picture, the employee is putting back in the basket the product that fell on the ground. In the second picture, he is not following the company's procedure for product or packaging materials that come in contact with the ground. He is putting the product in the truck.

In the third picture, he is following the correct procedure. If product falls on the ground, leave it there or discard it properly! What would you do?

Remember, bad microbes can be in the dirt on the ground or soil and contaminate the harvested leafy greens. Your job is to protect them from contamination.



Case Study 2

What is my Job?

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Arizona Leafy Greens



Case Study 2 - What is my job?

What would you do in the following situations:

1. Cattle and pigs are held at a location near several cabbage fields; however, the fence has several holes.
2. A person is walking a dog in the middle of two lettuce fields.

[Give participants a few seconds to provide answers.]

You should ALWAYS report to your supervisor if you see any animals in the field, downed fences, animal tracks in the production block, animal feces, urine, or eaten plants in the production block.

Livestock, pets and wildlife must not have access to the fields. They can be a major source of contamination.



Case Study 3

What is my Job?

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Arizona Leafy Greens



Case Study 3 - What is my Job?

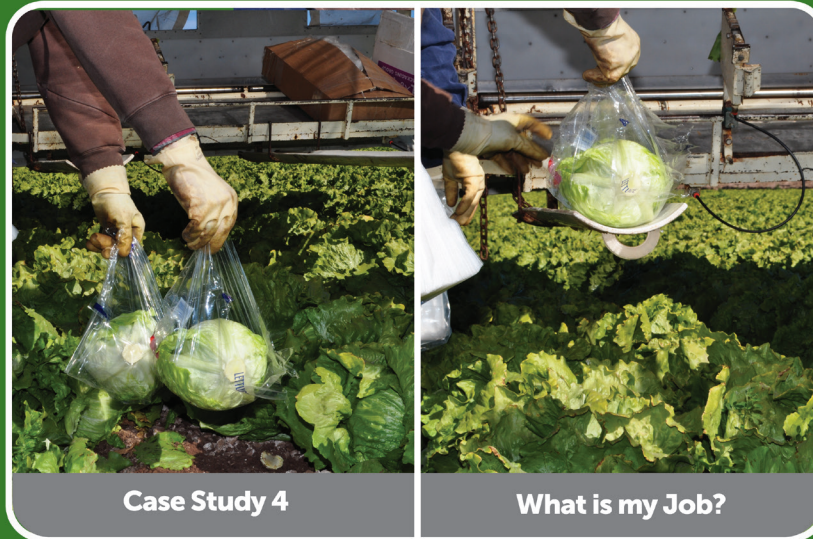
What would you do in the following situation:

You found hydraulic fluid in a couple of cabbages. You then found that a leaky hose on the harvesting machine.
[Give participants a few seconds to provide answers.]

You should immediately notify your supervisor about this incident.

Remember, any leafy greens that come in contact with dirt, grease or oil must be discarded. Harvesting equipment must be free of fluid leaks or excess grease.

Equipment leaks and spills must be cleaned and the affected soil and product removed and disposed properly.



Case Study 4

What is my Job?

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Arizona Leafy Greens



Case Study 4 - What is my Job?

What is happening in these pictures

The employee is putting back in the machine product that contacted the ground. This is an unacceptable practice because microbes can transfer to food from the ground. What would you do?

[Give participants a few seconds to answer.]

What are some other situations in the field that may promote cross-contamination? If you see a situation that is or has the potential of causing cross-contamination, notify your supervisor so that the situation can be addressed immediately.

This is the end of our discussion about cross-contamination. Are there any questions? Thank you for coming. Please make sure that you have signed the attendance sheet.

**We are Done
Thanks!**





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3. Additional Resources





Additional Resources

This section contains additional resources for reinforcing the messages presented during the lessons and for evaluating and documenting food safety training.

Posters

Make plenty of copies of the posters in this section. Displaying them in work and break areas reminds employees of the need to follow food safety practices every day. For highest quality, print out the high-resolution versions available on the CD or the Arizona Leafy Green Products Shipper Marketing Agreement (AZ LGMA) website.

Training Log

Use the training log template for documenting training sessions. Have every participant sign the sheet before training begins and file it in a safe place along with other files that may be needed during an audit.

Evaluation Resources

If you want to evaluate how well the participants did during the class, you may use the test included in this section. If some participants have reading and writing limitations, you may administer it in a face-to-face interview format.

Certificate of Attendance

A template for a training certificate is provided that may be issued to each participant after the lessons are completed. There is space on the template to write the name of individual participants.



Posters



It is recommended that you print out the high resolution version of these posters available on the CD or from the Arizona Leafy Green Products Shipper Marketing Agreement (AZ LGMA) website:

<http://www.azlgma.gov/>



Posters



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Training Log

FOOD SAFETY TRAINING LOG LISTA DE ASISTENCIA AL ENTRENAMIENTO

Harvesting Safe
Arizona Leafy Greens



DATE / FECHA		COMPANY-RANCH / COMPAÑÍA-RANCHO:	
NAME AND LOCATION OF TRAINING / LUGAR DEL ENTRENAMIENTO			
TOPICS / TEMAS <input type="checkbox"/> FOODBORNE OUTBREAKS & LEAFY GREENS CONTAMINATION <input type="checkbox"/> PERSONAL HYGIENE & HANDWASHING <input type="checkbox"/> CROSS-CONTAMINATION IN THE FIELD			
TRAINER / INSTRUCTOR			
SIGNATURE OF ATTENDEES / FIRMA DE LOS PARTICIPANTES			EMPLOYEE NUMBER (if applicable)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
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21			



Arizona Leafy Greens Food Safety Training Kit Test

Instructions: Read each of the questions carefully and pick the best answer.

1. Is it possible to determine if a food is contaminated with microbes?
 - a. Yes, it will have an unusual appearance, taste and smell.
 - b. Yes, you will be able to see the microbes on the product.
 - c. No. Contaminated food may look and appear normal.
 - d. I don't know.
2. What is an employee's responsibility to ensure food safety?
 - a. To properly follow the company's policies and procedures.
 - b. To harvest as much leafy greens during the shift as possible.
 - c. To hide records from the inspectors.
 - d. I don't know.
3. The three types of contaminants are biological, chemical, and _____.
 - a. Employees.
 - b. Physical.
 - c. Leaks and spills.
 - d. I don't know.
4. Which of the following is true about hair restraints?
 - a. Hair on the front of the head can hang down over the forehead.
 - b. Ponytails do not need to be covered.
 - c. All hair on the head and both ears should be covered.
 - d. I don't know.
5. Which of the following will increase the likelihood for leafy greens to become contaminated?
 - a. Covering a sore on your hand with a bandage and a glove.
 - b. Forgetting to wash your hands before touching leafy greens.
 - c. Listening carefully to your supervisor's instructions.
 - d. I don't know.
6. What should you do immediately before returning to work after lunch?
 - a. Put your jewelry back on.
 - b. Take off your hairnet.
 - c. Wash your hands.
 - d. I don't know.



Arizona Leafy Greens Food Safety Training Kit Test (cont.)

7. Which of the following practices may result in microbial contamination of leafy greens?
 - a. Remembering to clean and sanitize your harvesting equipment.
 - b. Getting unwashed hands on leafy greens after using the restroom.
 - c. Using cleansers and sanitizers incorrectly.
 - d. I don't know.

8. How long should you scrub your hands after applying soap?
 - a. 10 seconds.
 - b. 20 seconds.
 - c. 35 seconds.
 - d. I don't know.

9. When does cross-contamination occur?
 - a. When a food contaminant is transferred from something dirty to a leafy green or a food contact surface that is clean.
 - b. When employees wash their hands with soap and warm water.
 - c. When employees remove their gloves before entering the restroom.
 - d. I don't know.

10. Why is it important to practice good hygiene when handling leafy greens?
 - a. So that employees don't become a source of cross contamination.
 - b. So that employees feel comfortable and look good.
 - c. To prevent employees' injuries.
 - d. I don't know.

11. Why is wearing company-issued gloves and protective garments such as aprons important?
 - a. To protect the employee from the leafy greens and the dirt.
 - b. To protect the leafy greens from cross-contamination by the employee.
 - c. To keep the employees dress clothes clean.
 - d. I don't know.

12. Which practice is likely to lead to cross contamination?
 - a. An employee sneezes into his/her gloves and then immediately washes his/her hands and changes his/her gloves.
 - b. An employee removes his/her protective garments when entering the restroom.
 - c. An employee with diarrhea continues to work, but makes sure to wash his/her hands well.
 - d. I don't know.



Arizona Leafy Greens Food Safety Training Kit Test (cont.)

13. Which of the following is true regarding handwashing?
- a. You can touch your hair without washing your hands as long as your hair is clean.
 - b. It is only important to use hand soap when your hands are visibly soiled, otherwise, a hand sanitizer is fine.
 - c. You must scrub in between your fingers and on exposed parts of your arms.
 - d. I don't know.
14. Which of the following is true regarding harvesting containers?
- a. They can't be a source of contamination.
 - b. Harvesting containers must be used to carry harvested product only.
 - c. They can be on the ground briefly while staging product.
 - d. I don't know.
15. All pieces of jewelry must be removed before going to work on the field because:
- a. They can fall on the lettuce or leafy green vegetables and contaminate them.
 - b. They can be a hassle while using arm covers and hairnet.
 - c. They may shine too much.
 - d. They might get lost.

Answer key: Q1: c, Q2: a, Q3: b, Q4: c, Q5: b, Q6: c, Q7: b, Q8: b, Q9: a, Q10: a, Q11: b, Q12: c, Q13: c, Q14: b, Q15: a.

If you photocopy this test, be sure to block out the answers.



Certificate of Attendance

XXXXXX Leafy Greens Ranch
Your Logo

CERTIFICATE OF ATTENDANCE

for participation in the food safety training program



Harvesting Safe
Arizona Leafy Greens

This certificate of attendance signifies that the individual designated above
has completed the Harvesting Safe Arizona Leafy Greens training program.

[Instructor's Name]
[Instructor]
[Company's Name]

[Location, Day, Month, Year.]

[Instructor's Name]
[Instructor]
[Company's Name]



Disclaimer

The AZ Leafy Greens Food Safety Training Kit's content provides information to help minimize the risk of food contamination. By using this information, users should be aware that in no event shall the Arizona Leafy Green Products Shipper Marketing Agreement Marketing Committee or Hispanic Workforce Management, LLC be liable for any incidental or consequential damages resulting from use of this material.