NC MARKETREADY™

Fresh Produce Safety – Field to Family

A Program of NC Cooperative Extension

Module 4:
Health and Hygiene

Acknowledgments

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Module 4: Health and Hygiene

Estimated duration: *2 hours*

Instructional overview:

- The risk of contamination of North Carolina produce because of improper hygiene practices is minimized thanks to the active and effective work of the agents who train the growers, supervisors, farm workers and visitors.

Instructional objectives:

- Understand the principle of good health and hygiene practices.
- Recognize the common symptoms for food-borne illness.
- Learn the potential routes of infection and spread of food-borne illnesses
- Develop first-aid awareness.

Equipment, supplies and materials needed:

- Laptop and LCD projector
- PowerPoint (PPT) presentation on CD
- Nametags, pens

The following supplies can be obtained from the N.C. Department of Agriculture (NCDA):

- Poster on Restrooms
- Magnets
- Bilingual poster and brochure on Hand Washing
- Preparation needed:
- Review Module 4 and PPT prior to the day of the workshop; become familiar with Good Agricultural Prices (GAPs) programming—how each module is an integral part of the other modules.
- Secure a laptop computer with PowerPoint capability and an LCD projector. Save a copy of the presentation (from CD) on computer.
- Make copies of workshop activities, pre-test and post-test (if applicable) for all participants.
- Obtain, easels, flip charts and markers if needed.
- Prepare room to accommodate participants and projector. Prepare sign-in sheet and nametags, as applicable.
- Put together sample first-aid kit
- Obtain bilingual magnets that encourage people always to wash their produce.
- Find an available restroom facility near the classroom for hand-washing activity. A timer would be helpful to at least measure how long hands were washed.
- Obtain bilingual brochure that explains how to wash hands properly and the risks of not doing so (NCDA/U.S. Food and Drug Administration).

Distribute Pre-test (HO 2-1)

Welcome

Have participants make nametags and introduce themselves

Activity

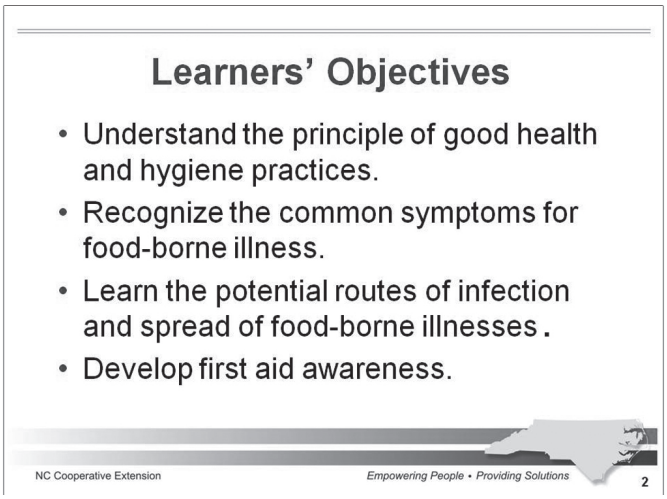
Participant Pre-test

Module 4

Welcome
Have participants make nametags and introduce themselves

Teaching Procedures:
Use Module 4 PPT to lead class discussion

PPT 4-1: Module 4: Health and Hygiene
No notes



PPT 4-2: Learners' Objectives
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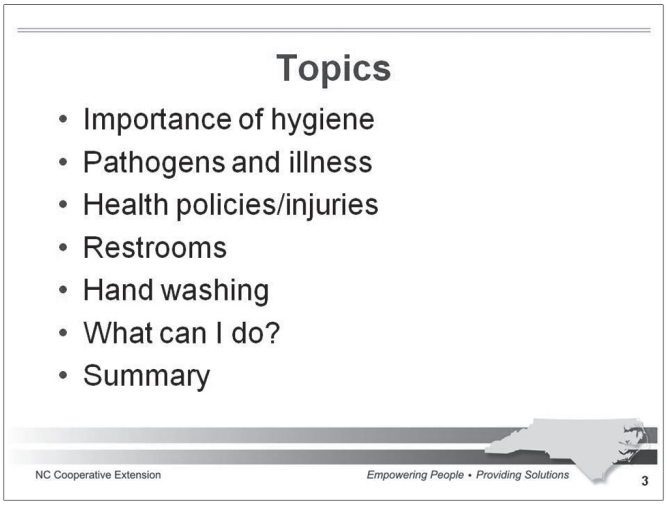

PPT 4-3: Topics
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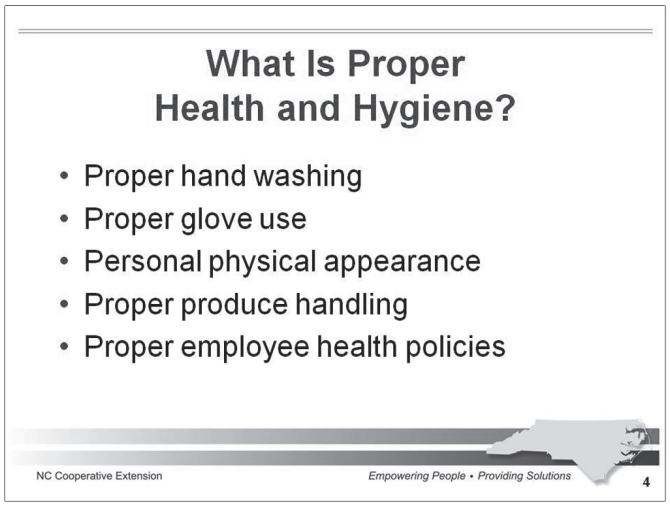


PPT 4-4: What Is Proper Health and Hygiene?

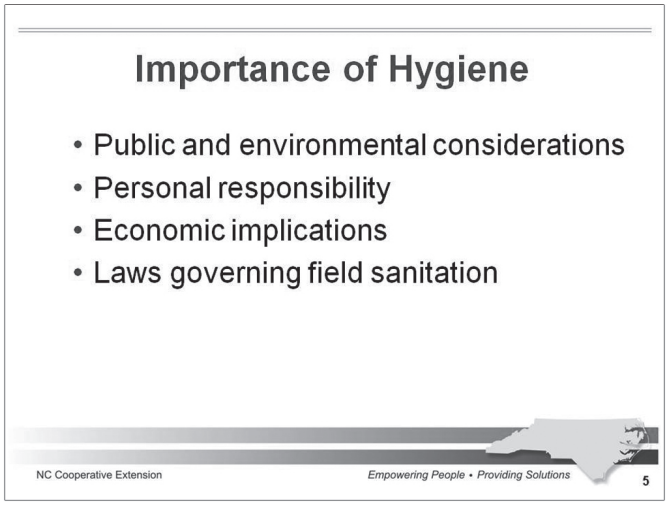
Proper hand washing is the first step toward safety in food handling. Health in this sense refers to the absence or prevention of illnesses and injuries.

According to the FDA's 1999 white paper, poor personal hygiene and improper hand-washing are the third most important cause of food-borne illnesses. The paper also cited the finding that 93 percent of outbreaks involved sick workers handling produce. Problems associated with these outbreaks include poor personal hygiene, poor

PPT 4-4 (continued)

hand washing, improper glove use, open sores and eating while on the job. While proper health and hygiene are important, equally important are water quality and manure management, as you will see in later training.

It is important for farm managers and owners to establish programs and policies that reflect the proper procedures for personal hygiene and health for anyone in contact with farm operations.



PPT 4-5: Importance of Hygiene

Hygiene is defined in current English dictionaries as "the science of health."

There is a direct link between poor personal hygiene and food-borne illnesses. In fact, over half of the traced outbreaks traced back through the 1990's have been tracedattributed to poor hygiene practices. For this reason, it is very important that handlers of fresh fruit and vegetable on the farm or in the packinghouse understand and practice basic habits of good hygiene. Equally important , on the growers' side , is to provide proper facilities and policies that promote these practices.

Public and Environmental Considerations. Many

PPT 4-4 (continued)

of the pathogens have a human or environmental origin. Thus, proper hygiene helps to reduce the transfer of pathogens from person to person and from person to produce.

Personal responsibility. It is the individual's responsibility to practice proper hygiene. Support of individual responsibility within the fresh produce chain is essential.

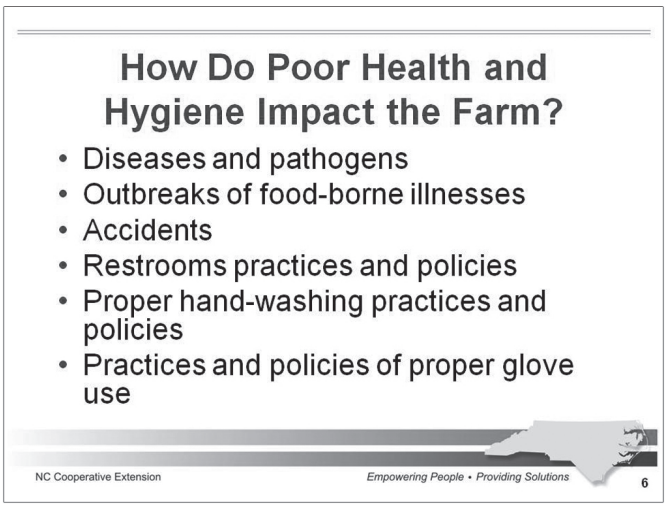
Economic Implications. Proper hygiene is an essential element of the GAPs program. Economic impacts can include loss of productivity, increased out-of-pocket health costs and reduced quality of produce.

It is our responsibility to help to keep North Carolina's fresh produce clean and safe. It is our responsibility to protect our people and our economy.

Laws governing field sanitation. Operators should operate their facilities or farms in accordance with the laws and regulations that describe field and facility sanitation practices. The field sanitation laws prescribed under the Occupational Safety and Health Act 29 Code of Federal Regulations (CFR) 1928.110, subpart I, described in more detail in later slides, indicate the appropriate number of toilets

PPT 4-5 (continued)
to the number of workers, proper handwashing facilities, maximum worker-to-restroom distance and how often such facilities should be cleaned.

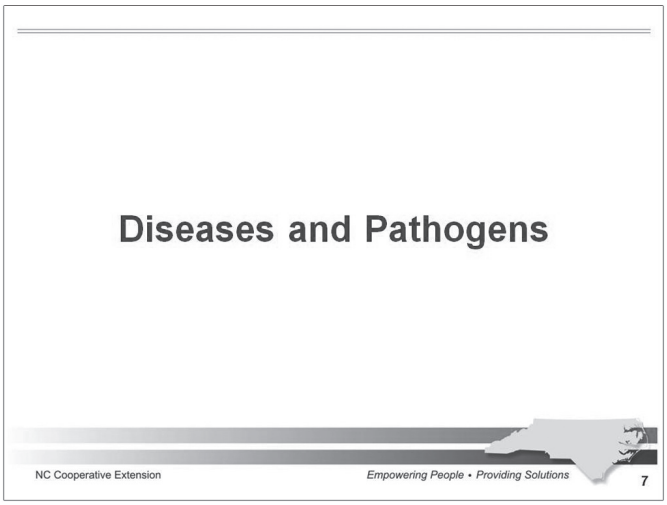
Today, food-borne diseases threaten not only our health but also our economy. It is in our power to keep North Carolina's fresh produce clean and safe. It is in our power to protect our people and our economy.



PPT 4-6: How Do Poor Health and Hygiene Impact the Farm?

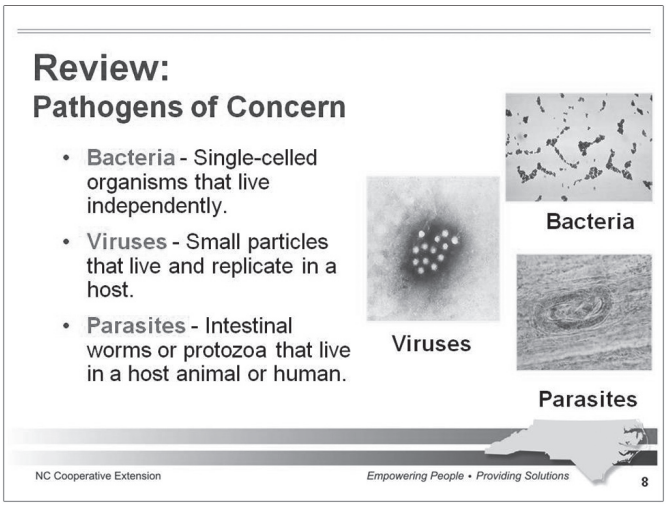
Poor hygiene is one of the three major causes of contamination on the farm. The other two causes are related to water and manure.

Hand washing is the most important of these topics because it is the major way to prevent the spread of pathogens from and to humans.



PPT 4-7: Disease and Pathogens

No notes



PPT 4-8: Review: Pathogens of Concern

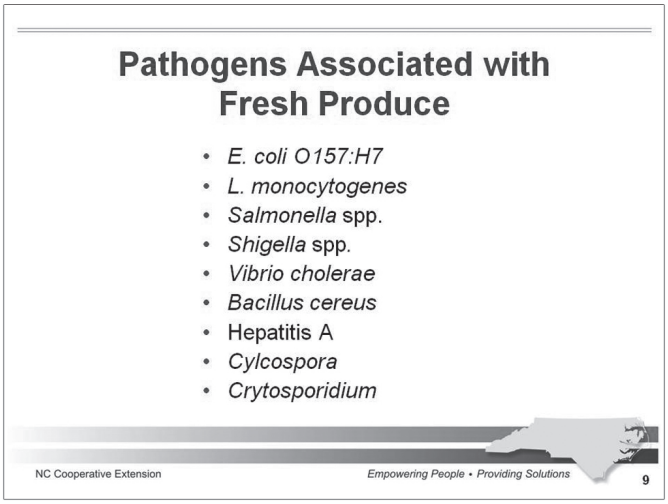
Human bodies carry a variety of microorganisms. Some are non-pathogenic while others are pathogenic. A pathogen is an organism that causes infections and/or diseases. These microorganisms can be split into two groups: resident and transient. Resident microorganisms reside permanently on different parts of the body of both humans and animals (i.e., hair, skin and nasal cavities). Very high levels of *Staphylococcus aureus*, a resident microorganism, are found in boils and pimples.

PPT 4-8 (continued)

The second group is the transitory microorganism from sources such as feces, raw manure, dirty surfaces, soil etc.. Pathogens from feces include but are not limited to *Salmonella* spp., *E. coli* O157:H7, *Cryptosporidium* and Hepatitis A. These have been the ones implicated in the most recent food-borne outbreaks.

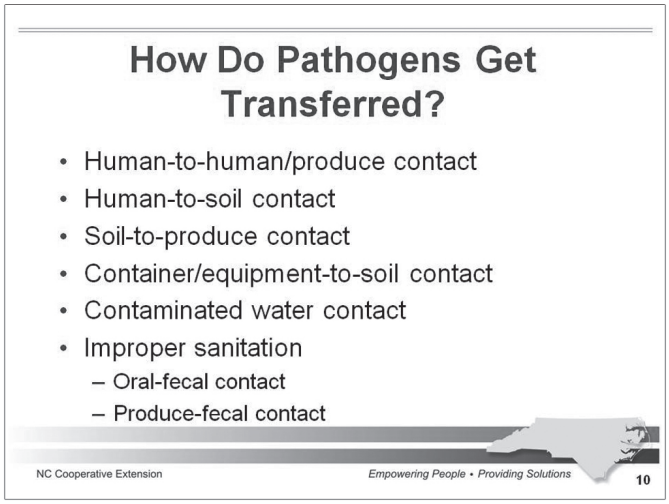
Illnesses that Require Reporting

The Centers for Disease Control and Prevention (CDC) publishes a list of infectious and communicable diseases transmitted through food each year. With food handlers, it is important to note that CDC has no evidence that HIV is transmissible through food. Therefore, a food employee who has tested positive for HIV is not of concern unless he or she is suffering from a disease caused by one of the pathogens listed later.



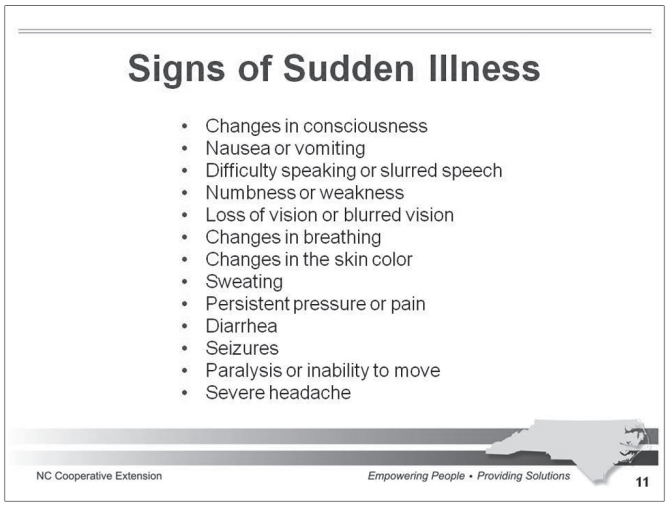
PPT 4-9: Pathogens Associated with Fresh Produce

E. coli and *Salmonella* are bacteria and are the most common bacterial pathogens. *Cyclospora* and *Crytosporidium* are parasites. Hepatitis A is a virus.



PPT 4-10: How Do Pathogens Get Transferred?

With each of these modes of transfer, there are methods you can follow that will reduce pathogens' cross-contamination. The major way to reduce risk of human pathogen transfer is to provide training on proper worker hygiene, which includes proper hand washing, proper restroom procedures and other sanitation steps.



PPT 4-11: Signs of Sudden Illness

Mention that supervisors should always be trained to be familiar with the typical signs and symptoms of infectious illnesses.

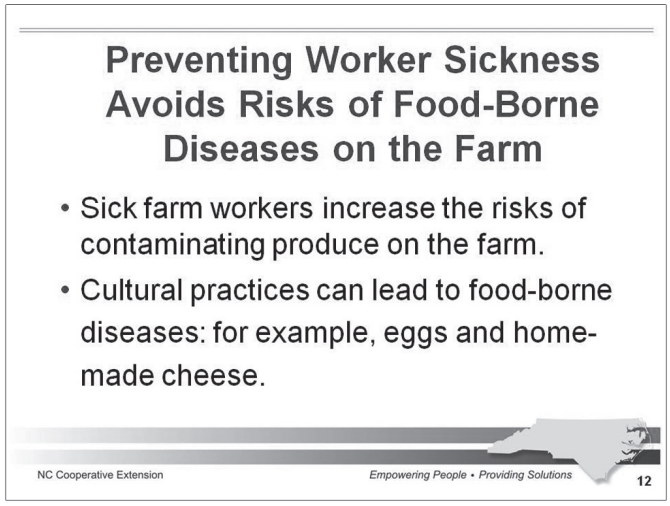
"Signs of Sudden Illness" and pathogens transmitted to or by food and their common symptoms have been made into a handout (reference HO 2-5).

Additional Information:

Pathogens Transmitted to or by Food and Their Common Symptoms:

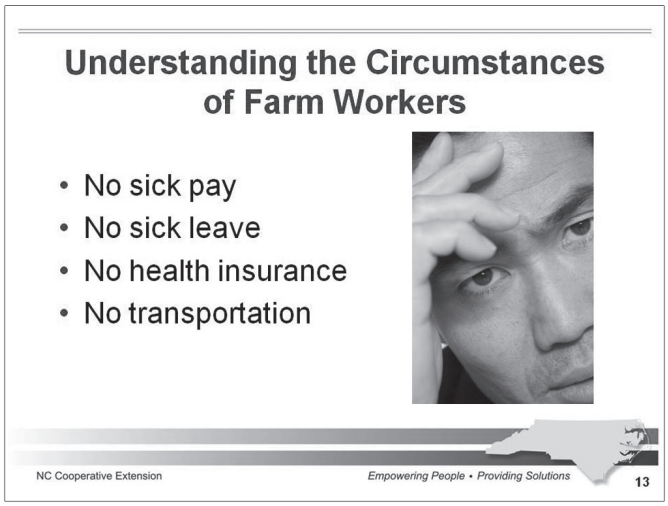
Caliciviruses (Norovirus) – D, F, V
Hepatitis A virus – F, J
Salmonella Typhi – F
Shigella species – D, F, V
Staphylococcus aureus – D, V
Streptococcus pyogenes – F, S
Campylobacter jejuni – D, F, V
Cryptosporidium parvum – D
Entamoeba histolytica – D, F
Enterohemorrhanic *Escherichia coli* – D
Enterotoxigenic *Escherichia coli* – D, V
Giardia lamblia – D
Non-typhoidal *Salmonella* – D, F, V
Taenia solium
Vibrio cholerae 01 – D, V
Yersinia enterocolitica – D, F, V

KEY: D = diarrhea; V = vomiting; S = sore throat with fever; F = fever; J = jaundice



PPT 4-12: Preventing Diseases Avoids Risks of Food-Borne Diseases on the Farm

Because sick farm workers increase the risks of contaminating produce, helping them to be healthy is a way of decreasing those risks. Farm workers and even supervisors might have different types of cultural practices that can lead to food-borne diseases. A significant change in cultural practices should be attributed to restroom facilities and the flushing of toilet paper after use. In some Latino populations, sewage facilities do not support the flushing of toilet paper, and thus toilet paper is typically placed into trash receptacles. During a GAPs audit, if toilet paper is found in the trash receptacles this can account for automatic audit failure due to the contamination hazard it represents.



PPT 4-13: Understanding the Circumstances of Farm Workers

Emphasize that it is not possible to solve a problem, any problem, without analyzing it from different angles. In order to prevent contamination of fresh produce because farm workers are sick, it is essential to understand their social circumstances as well as our own behaviors.

Discuss with participants the "When we are sick..." circumstances.

Additional Information:

Farm workers' health is a complex topic. In some cases, our behavior is the same as workers'

PPT 4-13 (continued)

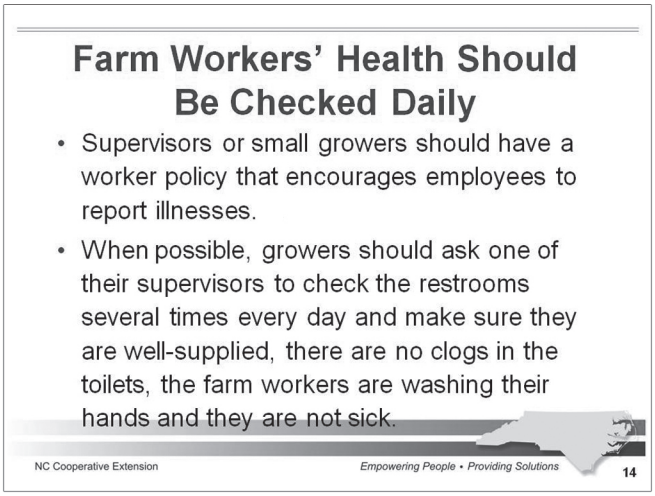
behavior but their social circumstances are much more difficult. For example, when we are sick we still get paid if we stay home, yet many times we go to work sick anyway and we make our colleagues sick, too. We justify our behavior by saying that our job is so important that we can't stop working. Farm workers do not get paid when they are sick so they will go to work. Their justification is that their job is the only way they can support themselves and their families.

Also, when we are sick, we can use our sick leave or our vacation time but sometimes we might choose to save these days as much as possible and work while sick. Farm workers do not have sick leave or vacation time or voluntary time. If they don't work, they don't get paid.

When we are sick, we have health insurance to cover our expenses. Farm workers do not have health insurance to cover their expenses and they earn very little money.

When we are sick, we usually have transportation to go to the hospital or to the doctor, or we have a friend or family member to drive us. Farm workers often do not have transportation to go to the doctor and their medical options can be very far away from the farm they work. Many times farm workers can't get to a doctor because managers are too busy to drive them or because there is a lot of work to be done.

Managers and supervisors may want to be aware that health care and transportation for sick farm workers might help keep North Carolina fresh produce safe.

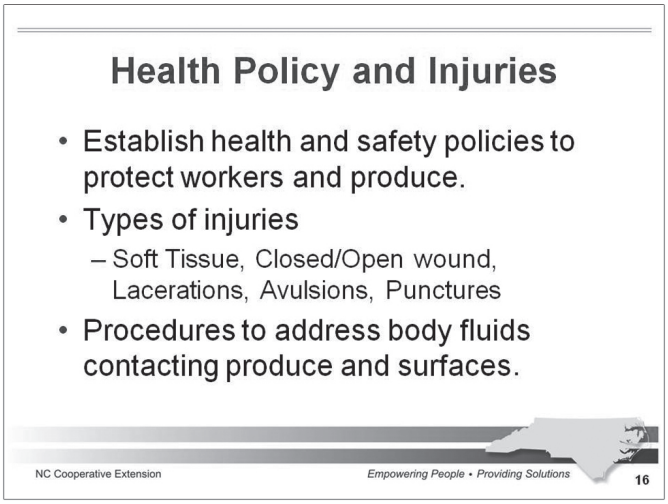


PPT 4-14: Farm Workers' Health Should Be Checked

No notes

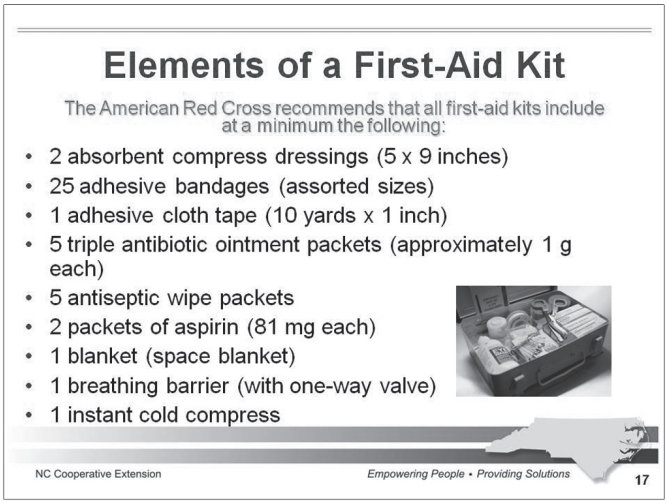
PPT 4-15: Accidents and Injuries

Accidents and injuries can increase contamination from one person to another, and from humans to produce. They can also cause a loss in productivity due to down time or lost days of work.



PPT 4-16: Health Policy and Injuries

The first step a farm or food establishment can take to protect its workers and their products is to introduce standard procedures and policies governing health and safety, contact with body fluids and steps to contain contamination.

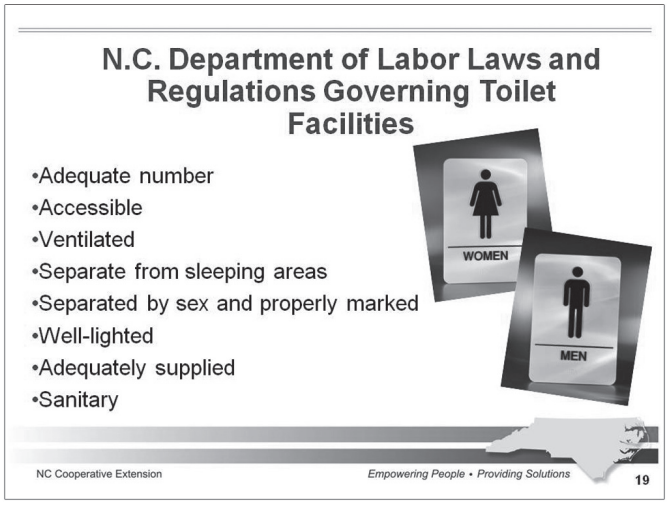


PPT 4-17: Elements of a First-Aid Kit

- Read The American Red Cross recommendation about what a first-aid kit should include at a minimum.
- Ask participants always to remember that first-aid kits are not only necessary but are also essential to their own business, to reduce the possibilities of outbreaks of food-borne illness.
- It is recommended that the agents receive first-aid training from a professional, such as The American Red Cross or other accredited organization in order to learn what the supervisors need in their training.

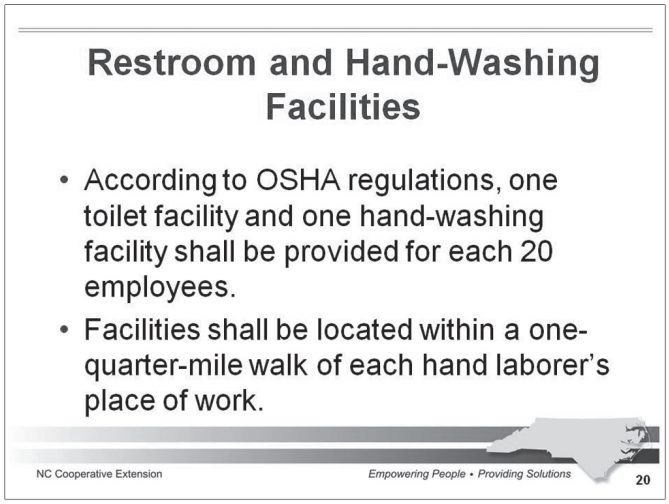
PPT 4-18: Restrooms

No notes



PPT 4-19: Laws and Regulations Governing Toilet Facilities

The N.C. Department of Labor requires an adequate number of toilet facilities be provided based on the number of workers in the crew. It is not only required by law, but essential for growers to provide the necessary equipment and supporting policies to limit possible contamination sources.



PPT 4-20: Restroom and Hand-Washing Facilities

- It is very important that adequate numbers of restrooms and hand-washing units are available for the convenience of workers.
- Restrooms must be stocked with sufficient toilet paper. Toilet and hand-washing stations must be clean and be inspected by a supervisor regularly.
- Provisions must be made to dispose of hand-washing rinse water from the production fields to avoid produce contamination.

PPT 4-20 (continued)

- Employees should be able to use restrooms at any time they feel the need and not just during break time. Growers or farm managers should communicate to farm workers the dangers surrounding urination or defecation in the woods near the production field. If harvesting takes place in constantly changing locations, the grower must move the toilet as needed.

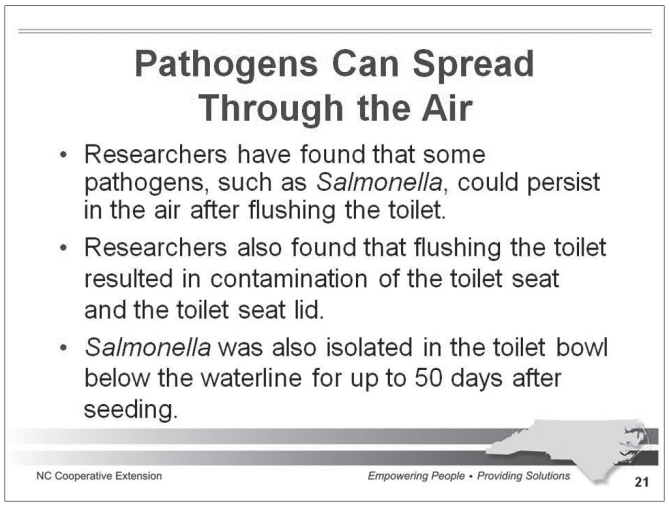
PPT 4-20 (continued)

Additional Information:

- Definitions from CFR 1928.110:
- "Hand-washing facility" means a facility providing either a basin, container or outlet with an adequate supply of potable water, soap and single-use towels.
- "Potable water" means water that meets the standards for drinking purposes of the state or local authority having jurisdiction, or water that meets the quality standards prescribed by the U.S. Environmental Protection Agency's National Interim Primary Drinking Water Regulations, published in 40 CFR Part 141.
- "Toilet facility" means a fixed or portable facility designed to collect and contain feces and urine and supplied with toilet paper adequate for employee needs. "Toilet facility" includes biological, chemical, flush and combustion toilets and sanitary privies.

Requirements. Agricultural employers shall provide the following for employees engaged in hand-labor operations in the field, without cost to the employee:

- Potable drinking water
- Toilet and hand-washing facilities
- Maintenance
- Reasonable use.



PPT 4-21: Pathogens Can Spread Through the Air

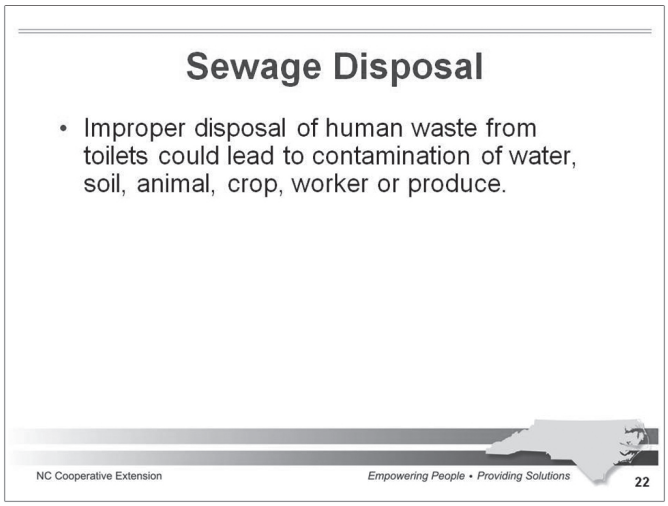
It is very necessary to clean and sanitize the restrooms every day. When possible, avoid the use of common restrooms by sick employees. Research has shown that *Salmonella* can survive in bathrooms and toilets in domestic homes following salmonellosis.

Additional information:

Survival of *Salmonella* in bathrooms and toilets in domestic homes following salmonellosis. Although the primary cause of salmonellosis is consumption of contaminated foods, secondary spread of the disease can occur from person to person and also to other foods.

PPT 4-21 (continued)

- Person-to-person spread within family groups is often associated with poor personal hygiene, but there is the opportunity for airborne and surface-to-surface spread within the toilet and bathroom, especially during the diarrhea phase.
- The survival and environmental spread of *Salmonella* bacteria from domestic toilets was examined in homes, where a family member had recently suffered an attack of salmonellosis. In four out of six households tested, *Salmonella* bacteria persisted in the biofilm material found under the recess of the toilet bowl rim which was difficult to remove with household toilet cleaners. In two homes *Salmonella* bacteria became incorporated into the scaly biofilm adhering to the toilet bowl surface below the water line. *Salmonella* enteritidis persisted in one toilet for four weeks after the diarrhea had stopped, despite the use of cleaning fluids.
- *Salmonella* species were not isolated from normally dry areas such as the toilet seat, the flush handle and door handle.



PPT 4-22: Sewage Disposal

Operators should follow EPA regulations.

Improper disposal of human waste from toilets could contaminate water, soil, animals, crops, workers or produce. To prevent drainage into the field, install systems and practices that ensure safe management and disposal of waste from permanently installed or portable toilets. Operators should follow EPA regulations for the use or disposal of sewage sludge, 40 CFR Part 503, or refer to EPA's "Domestic Septage Regulatory Guidance: A Guide to the EPA Part 503 Rule," or corresponding or similar standards, regulations or laws for international operators.

Cleaning. The potential spread of infection may be caused by aerosol contamination of surfaces

PPT 4-22 (continued)

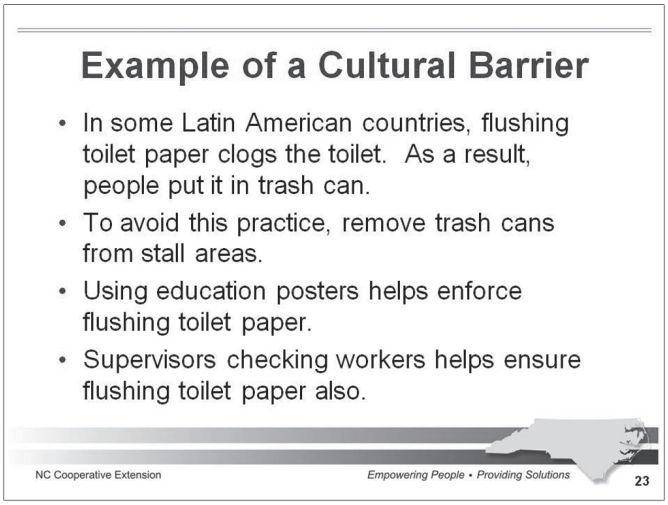
after flushing a domestic toilet. Researchers have found that household contamination with by *Salmonella enterica* increases when occupational exposure exists. The aim of this research was to determine the level of aerosol formation and fallout within a toilet cubicle after flushing a toilet contaminated with indicator organisms at levels required to mimic pathogen shedding during infectious diarrhea.

Examples of Good Agricultural Practices to consider are as follows:

- Use caution when servicing portable toilets**.** Waste water from portable toilet facilities that may drain into a field can contaminate fresh produce. Sewage transport trucks need direct access to toilet facilities to ensure proper collection and disposal of wastes through a municipal sewage system or a sub-surface septic tank system.
- Have a plan for containing and treating any effluent in the event of leakage or a spill. Operators should be prepared in case effluents leak or spill in a field. Refer to 40 CFR Part 503 for additional guidance.

Good field sanitation helps reduce the potential for contaminating produce and ensures that employees and consumers are protected from food-borne diseases. More sanitation practices will be covered in another module.

For more information, see OSHA Field Sanitation Standards (CFR 1928.110- Field Sanitation) regulations at http://www.nclabor.com/ash/ash_blue_book.pdf (Appendix D, page 16), or call N.C. DOL at 919-807-2923 (Regina C. Luginbuhl).



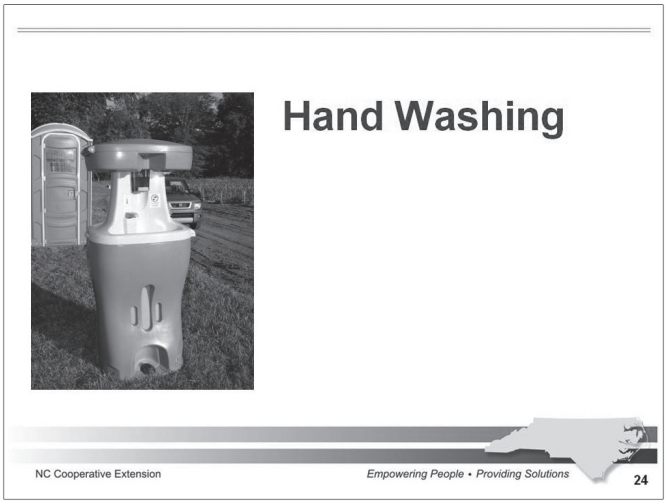
PPT 4-23: Communication and Cultural Barriers

In some Latin American countries, it is not possible to flush the toilet paper because it would clog the toilet. In order to solve this problem, growers should consider the following suggestions:

- Remove the trash cans from the stall areas and only place them in the hand-washing areas. This will ensure that trash cans do not have toilet paper in them. It also helps workers to understand that the toilet paper has to be flushed in the toilet. This would eliminate the problem of overflowing trash cans in the toilet areas.

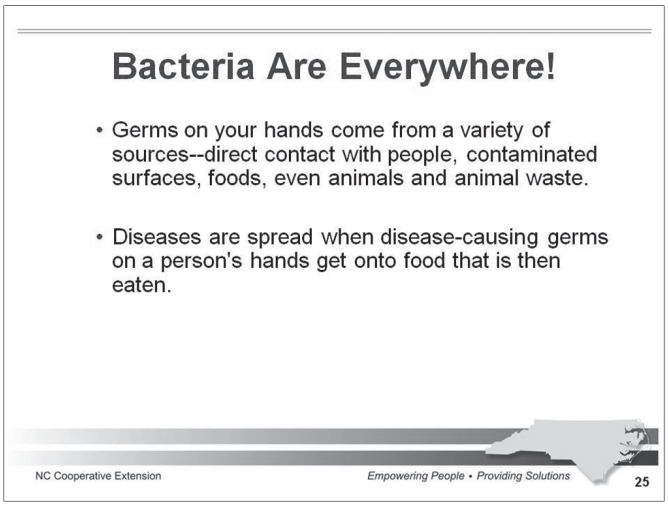
PPT 4-23 (continued)

- Posters can be placed on the walls showing the toilet paper down the toilet.
- Growers may want to have a supervisor who mainly checks the hygiene of the restrooms and that of the farm workers, and who makes sure the restrooms are well supplied.
- Agents can also help reduce the reluctance of workers to flush by asking the farm workers to flush toilet paper during training. By flushing it several times during training, the workers will realize that there is no risk of a clog.
- NCDA has a free bilingual poster with recommendations about this topic.
- If there is not a trash can in the toilet area, workers will flush the toilet paper more often.
- Training the farm workers about hand washing after using the restroom is critically important.



PPT 4-24: Hand Washing

The picture on the left shows a better arrangement—hand-washing units are separated from the port-a-john. This also gives supervisors and other workers an opportunity to visually inspect their toilet facilities and adopt corrective measures if necessary.



PPT 4-25: Bacteria Are Everywhere!

Throughout the day, you accumulate germs on your hands from a variety of sources such as direct contact with people, contaminated surfaces, foods, even animals and animal waste. If you don't wash your hands frequently enough, you can infect yourself with these germs by touching your eyes, nose or mouth. And you can spread these germs to others by touching them or by touching surfaces that they also touch, such as doorknobs. You can always contaminate food.

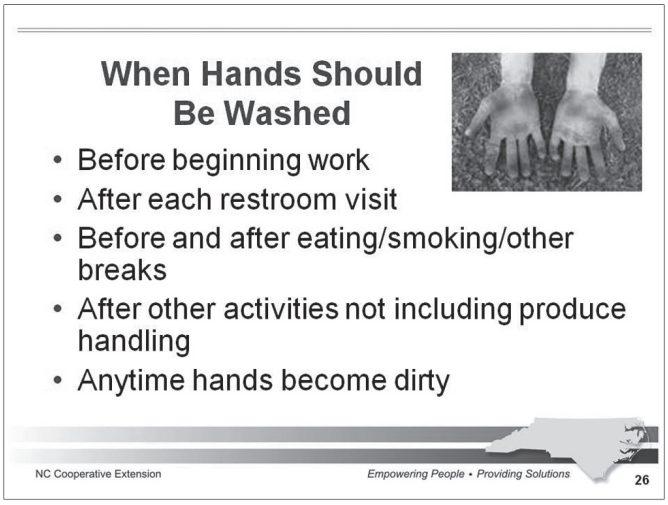
PPT 4-25 (continued)

Hands are the part of the body that are most exposed to micro-organisms because they touch many things every day. Some diseases are spread when disease-causing microorganisms on a person's hands get into food that he or she touches. When the food is eaten, the microorganisms enter the body and cause food-borne illness.

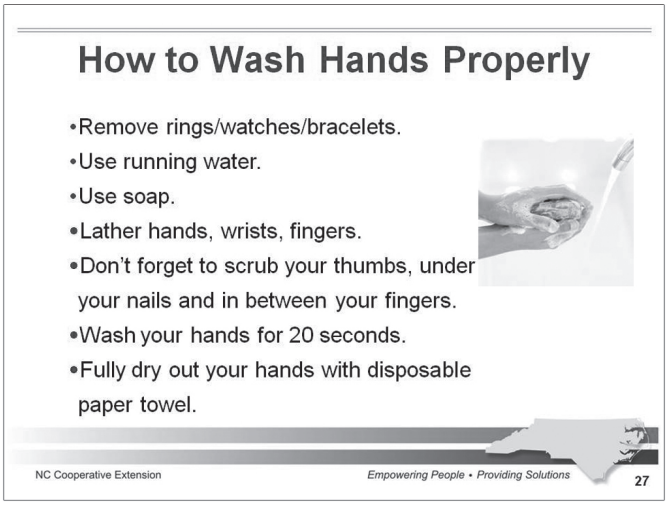
Viruses, bacteria, and fungi multiply themselves by thousands of times on our hands, and they do it in a few minutes. If at any point from the farm to the table we touch food without first properly washing our hands, we will certainly contaminate produce and anything else we eat or touch.

Infectious diseases that are commonly spread through hand-to-hand contact include the common

PPT 4-25 (continued)
cold, flu and several gastrointestinal disorders, such as infectious diarrhea
Activity: "Germ City"
"Germ City" is an educational program. Participants will find out first hand if they do a good job of washing their hands. If their hands are not well washed the lotion that represents germs will glow. "Germ City" can be done using a tent or a black piece of cloth.
Participants, after having some lotion applied on their hands, wash their hands as they usually do and go back inside the tent or into the dark room. If their hands still glow, it means they did not do a proper hand washing.
This slide will be shown if participants are doing the "Germ City" exercise.
The agents test their own practice of hand washing.
Trainer Notes: "Germ City"
The trainer recommends the agents to use "Germ City" in their training because people learn better from practical experience. The agents learn the following:
- Proper hand washing is the best way to avoid contaminating produce;
- The proper method of good hand washing; and
- When hand washing should be done while working on the farm.



PPT 4-26: When Hands Should Be Washed
Workers should learn that sanitation practices include when to wash their hands. Hands should be washed every day before the beginning of work, after using restroom, eating or smoking, touching trash, scratching your body parts or wounds, sneezing in your hands, handling waste materials, chemicals or cleaning materials, and after breaks. All visitors should be advised to wash their hands before going into the parking area or entering the field.



PPT 4-27: How to Wash Hands Properly
Proper Hand Washing
One of the most important aspects of a farm worker's hygiene is proper hand washing. Proper hand washing can reduce contamination and the spread of bacteria. Hand-washing training and periodic refresher courses in hand washing can help to ensure that employees know how to wash their hands properly.
Note: Many farm workers think that if they wash their hands with cold water while they are working or just finished working and their bodies are still warm, because of the strong change of temperatures in their bodies they might get a cold or

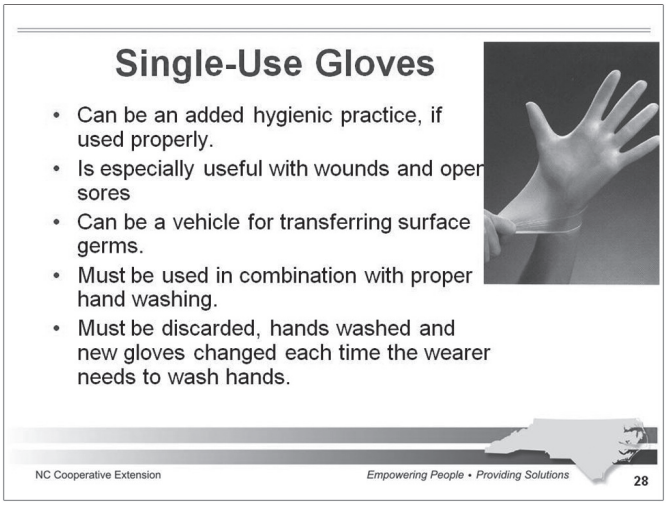
PPT 4-27 (continued)

get arthritis. It is very important to be aware and to address this belief during training.

Follow these steps for proper hand-washing: (Make handouts of these tips):

- Remove rings and bracelets.
- Use soap and running water.
- Lather hands and arms up to elbows with soap for 20 seconds.
- Wash the backs of hands, wrists, between fingers and under fingernails using a nailbrush.
- Rinse hands and arms under running water.
- Dry hands and arms with disposable paper towels. Turn off running water with the paper towels, not with your bare hands.
- Open the exit door with a paper towel then dispose of the towel in the garbage container provided.

Growers need to be able to supply the proper hand-washing tools. Equipment and training guidance can be found on this website www.ncfreshproducesafety.org under "Growers Resources."



PPT 4-28: Single-Use Gloves

Using disposable gloves should not take the place of proper hand washing. If gloves are used, it is very important that proper attention is given to replace them. Gloves can become a means of spreading pathogens when they are not properly used or replaced after potential contamination (e.g., after a worker uses the restroom). Gloves should be replaced on the same schedule as hand-washing—before starting work, after an absence from the work station, after blowing the nose, touching the face and after breaks. Gloves should be of good quality (latex, plastic, etc.).

Use of gloves in no way lessens the need or importance of hand washing and proper hygienic practice.

PPT 4-29: Hand-Washing Facilities

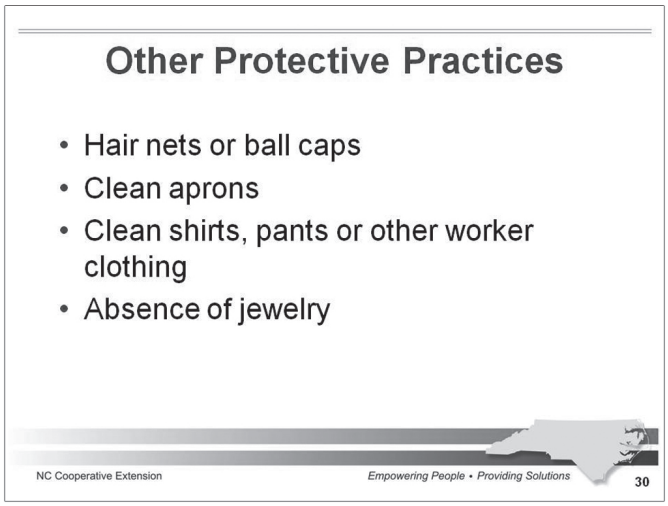
Each hand-washing station should be equipped with a basin, water, liquid soap, sanitary hand-drying devices (such as disposable paper towels) and a waste container. Water needs to be running, potable and preferably warm. This unit is equipped with a foot pump, allowing hands-free washing which is the favored practice. Each unit should have a basin to capture gray water. Do not allow water for hand washing (gray water) to go into the field because it can be a potential source of contamination. Dispose of gray water anywhere acceptable to dump.

Finally, put signs up to alert workers, visitors and others to your policies of hand washing!

PPT 4-29: (continued)

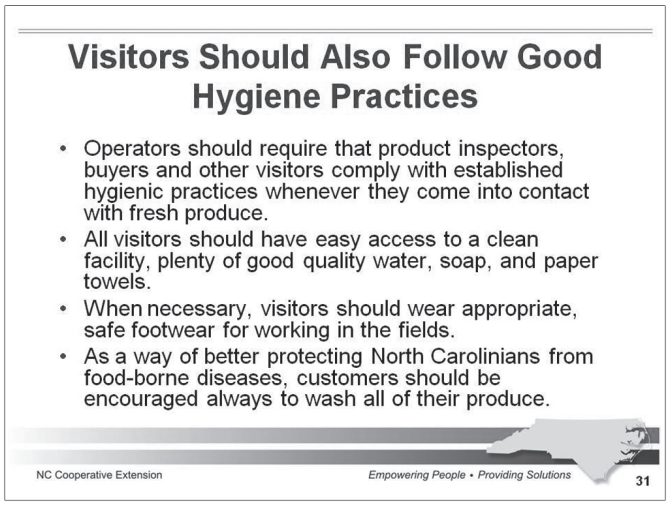
Many farms do not have enough hand-washing stations, and some growers, especially the small ones, can not afford to buy enough hand-washing stations for their farms. Offering the growers designs of affordable hand-washing stations would be a great contribution to keeping North Carolina's fresh produce safe.

The Fresh Produce Safety Task Force is working on these designs. Once the designs are ready, the agents should promote them among the growers. (See http://www.ncfreshproducesafety.org)



PPT 4-30: Other Protective Practices

- The manager or supervisor should make sure that workers wear clean and adequate clothing because dirty clothing can contaminate produce.
- Workers should wear a hair restraint such as a hair net, hat, cap or head band because it will prevent hair from falling into produce packages.
- Aprons must be changed whenever they become dirty. Dirty or soiled aprons can contaminate produce.
- Workers should be trained to limit the wearing of jewelry while working in the facility. Workers must not wear jewelry on their arms or hands, except for a wedding ring (single wedding band, not diamond ring). Jewelry could get caught on equipment and/or fall into produce.

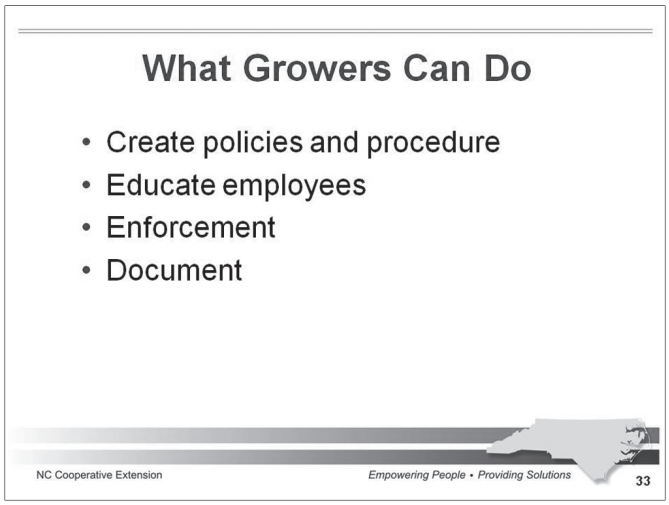


PPT 4-31: Visitors Should Also Follow Good Hygienic Practices

- Operators should require that product inspectors, buyers and other visitors comply with established hygienic practices whenever they come into contact with fresh produce.
- All visitors should have easy access to a clean facility, plenty of good quality water, soap and paper towels.
- As a way of better protecting North Carolinians from food-borne diseases, customers should be encouraged always to wash all of their produce.

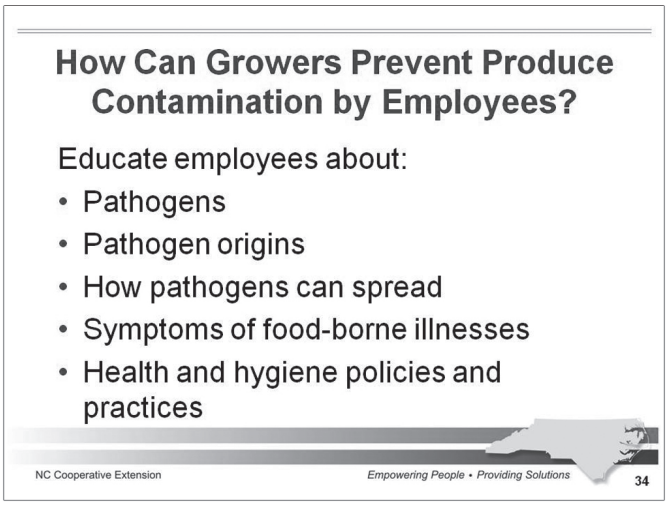
The trainer mentions and shows a magnet produced by the N.C. Department of Agriculture, Food and Drug Protection Division. It is available in both English and Spanish.

PPT 4-32: Restrooms and Hand-Washing Facilities



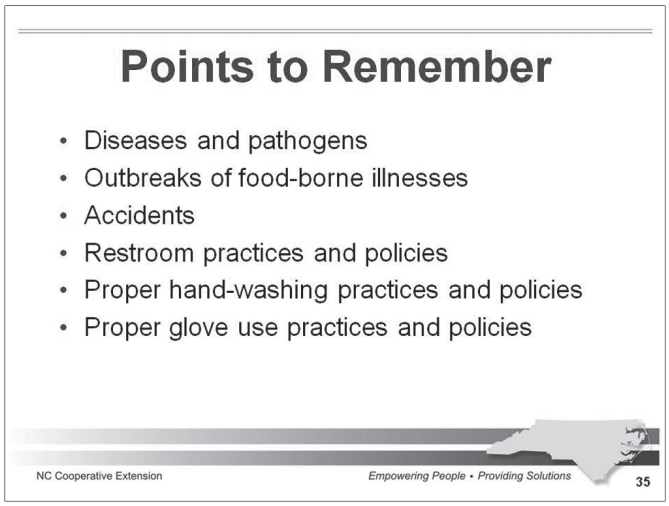
PPT 4-33: What Can Growers and Workers Do?

Education is key in creating preventative policies and procedures. Contact your local NC Cooperative Extension Agent for the educational modules that address all of the GAPs' eight practices, the GAPs Fresh Produce Safety Plan Template, and the other resources available on the ncfreshproducesafety.org web site.



PPT 4-34: How Can I Prevent Produce Contamination by Employees?

Information about all of these components can be found in further modules.

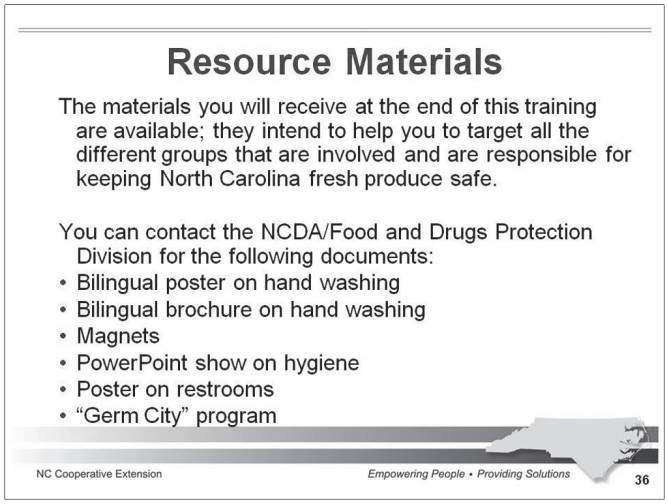


PPT 4-35: How Do Health And Hygiene Impact the Farm?

Let's take a look at the impacts again.

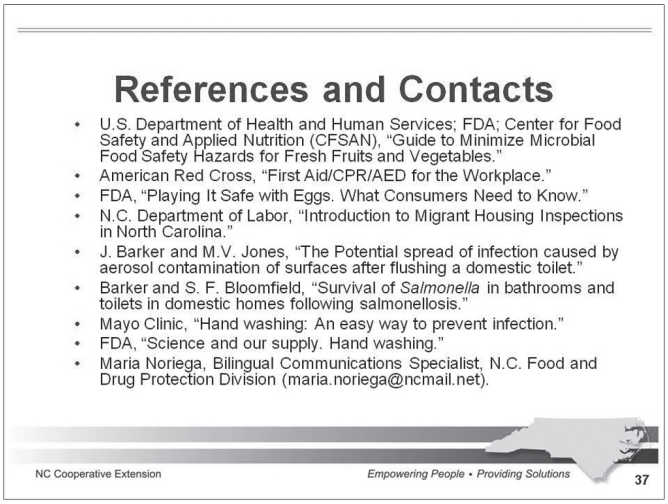
Hand washing is the most important of these topics because it is the best way to prevent the spread of pathogens among people.

If growers are looking at third-party certification as a part of GAPs, the observation of employee practices that may have jeopardized the safety of produce can result in an automatic failure of the audit. It is essential that not only workers, growers and visitors are trained in worker health and hygiene practices, but that also employees use these practices in their day-to-day operations.



PPT 4-36: Resource Materials

No notes



PPT 4-37 References and Contacts

No notes

Module 4: Health and Hygiene

Pre-Test/Post-Test

ID Number/Name: _____ Date: _____

1. Open wounds do not need to be immediately washed as they can not become infected. ..... True or False

2. Triple antibiotic ointment or cream can be applied to an open wound even if the person has allergies or sensitivities. ..... True or False

3. There is no need of worry about farm workers' health. ..... True or False

4. Cooked eggs, including hard-boiled eggs, and egg-containing foods should not sit out for more than two hours. Within two hours either reheat or refrigerate them. ..... True or False

5. Home-made cheese is safe as long as the milk is pasteurized. ..... True or False

6. Diarrhea is a common symptom of food-borne diseases. ..... True or False

7. Bacteria can harbor the joints and cause septic arthritis. ..... True or False

8. Pregnant women, seniors, children and people with a weak immune system are high risk groups for food-borne bacteria. ..... True or False

9. After going to the restroom, farm workers should always wash their hands for 15 seconds. ..... True or False

10. Liquid soap is required in the toilet facilities and in the hand-washing stations. ..... True or False

11. Waste water from portable toilet facilities may drain into a field. ..... True or False

12. Farm workers are the only group that needs to be educated about food safety. ..... True or False

13. To target different groups (growers, supervisors, farm workers) we need to use different strategies of communication. ..... True or False

14. The tools and materials we use for the trainers should be developed according to the group we target. ..... True or False

15. Supervisors and farm workers should pass a test after the training. ..... True or False

Module 4: Health and Hygiene

Pre-Test/Post-Test Answers

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2. Triple antibiotic ointment or cream can be applied to an open wound even if the person has allergies or sensitivities. ..... True or **False**

3. There is no need of worry about farm workers' health. ..... True or **False**

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15. Supervisors and farm workers should pass a test after the training. ..... **True** or False

Guidance for the Industry

Food Safety Initiative Staff, HFS-32
U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
http://vm.cfsan.fda.gov/~dms/prodguid.html

1) Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables—Worker Health And Hygiene:

> "Be aware of existing state and Federal regulations regarding standards for worker health, hygiene and sanitation practices during the growing, packing, holding and transport of human food." (http://www.foodsafety.gov/~acrobat/prodguid.pdf , p. 32)
>
> Operators should be aware of and follow applicable standards for protecting worker health established under the Occupational Safety and Health Act. In addition, the U.S. Code of Federal Regulations (CFR) Title 21, Section 110.10 (21 CFR 110.10) prescribes worker health and hygienic practices within the context of Good Manufacturing Practices (GMPs) in the manufacturing, packing or holding of human food. The standards in this section should be considered when establishing hygienic practices appropriate for the agricultural environment (field, packing facility and transport operations). Operators outside of the U.S. should follow corresponding or similar standards, or laws for protecting worker health.

2) Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables—Provide Protection from a Lesion:

> "A lesion that contain pus, such as a boil or infected wound that is open or draining, and that is located on parts of the body that might have contact with produce or produce harvesting, sorting, or packing equipment, increases the risk of contaminating fresh produce. If a worker has a lesion that cannot be effectively covered in such a way to prevent contact with fresh produce or related equipment, the employee should not be working in any aspect with fresh produce, utensils, or other food contact surfaces or equipment. " (http://www.foodsafety.gov/~acrobat/prodguid.pdf page 33)

First-Aid Kits

The American Red Cross recommends that all first-aid kits include at a minimum the following:

2 absorbent compress dressings (5 x 9 inches)
25 adhesive bandages (assorted sizes)
1 adhesive cloth tape (10 yards x 1 inch)
5 triple antibiotic ointment packets (approximately 1 gram each)
5 antiseptic wipe packets
2 packets of aspirin (81mg each)
1 blanket (space blanket)
1 breathing barrier (with one-way valve)
1 instant cold compress
2 pairs of non-latex gloves (size: large)
2 hydrocortisone ointment packets (approximately 1 gram each)
Scissors
1 roller bandage (4 inches wide)
1 roller bandage (3 inches wide)
5 sterile gauze pads (3 inches by 3 inches)
5 sterile gauze pads (4 inches by 4 inches)
Oral thermometer (non mercury/non-glass)
2 triangular bandages
Tweezers
First-aid instruction booklet

N.C. Department of Labor
Laws and Regulations—Toilet Facilities

Toilet facilities adequate for the capacity of the camp shall be provided.

Each toilet room shall be located so as to be accessible without any individual passing through any sleeping room.

Toilet rooms shall have a window not less than 6 square feet in area opening directly to the outside area or otherwise be satisfactorily ventilated. All outside openings shall be screened with 16-mesh material. No fixture, water closet, chemical toilet, or urinal shall be located in a room used for other than toilet purposes.

A toilet room shall be located within 200 feet of the door of each sleeping room. No privy shall be closer than 100 feet to any sleeping room, dining room, lunch area or kitchen.

Where the toilet rooms are shared, such as in multifamily shelters and in barracks type facilities, separate toilet rooms shall be provided for each sex. These rooms shall be distinctly marked "for men" and "for women" by signs printed in English and in the native language of the persons occupying the camp, or marked with easily understood pictures or symbols. If the facilities for each sex are in the same building, they shall be separated by solid walls or partitions extending from the floor to the roof or ceiling.

Where the toilet facilities are shared, the number of water closets or privy seats provided for each sex shall be based on the maximum number of persons of that sex which the camp is designed to house at any one time, in the ratio of one such unit to each 15 persons, with a minimum of two units for any shared facility.

Urinals shall be provided on the basis of one unit or 2 linear feet of urinal trough for each 25 men. The floor from the wall and for a distance not less than 15 inches measured from the outward edge of the urinals shall be constructed of materials impervious to moisture. Where water under pressure is available, urinals shall be provided with adequate water flush. Urinal troughs in privies shall drain freely into the pit or vault and the construction of this drain shall be such as to exclude flies and rodents from the pit.

Every water closet installed on or after August 31, 1971, shall be located in a toilet room.

Each toilet room shall be lighted naturally or artificially by a safe type of lighting at all hours of the day and night.

An adequate supply of toilet paper shall be provided in each privy, water closet or chemical toilet compartment.

Privies and toilet rooms shall be kept in a sanitary condition. They shall be cleaned at least daily.

Signs of Sudden Illness:

Changes in consciousness
Nausea or vomiting
Difficulty speaking or slurred speech
Numbness or weakness
Loss of vision or blurred vision
Changes in breathing
Changes in the skin color
Sweating
Persistent pressure or pain
Diarrhea
Seizures
Paralysis or inability to move
Severe headache