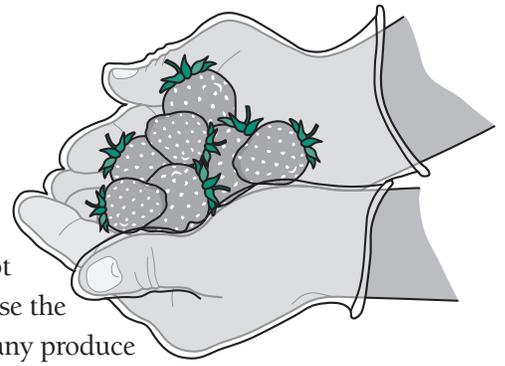


On-farm Food Safety: Guide to Food Handling



Staff training on procedures for providing safe, quality foods will minimize risks of contaminating fresh produce at any point of the farm operation—from pre-production to post-harvest packing and transportation. This publication provides a brief description of how to minimize risks from the human element. It includes a checklist of points to cover in an orientation session for individuals who will work with food products and offers sources for training materials and policy guides.

Historically, fresh produce has not been a food safety concern because the relatively high acid content of many produce items does not allow for bacterial growth. However, as fresh fruit and vegetable consumption increases for diet and health reasons and as more products are imported to ensure year round availability, fresh produce can no longer be assumed to be free from risk for foodborne illness. In fact, a recent outbreak of Hepatitis A was linked to fresh green onions.

All foods can become contaminated with bacteria, viruses, parasites, or fungi. These biological hazards are present in soil and water, and on human hands and clothing. Chemical hazards also exist from cleaning agents or inappropriate sanitizing. Physical hazards are those that are not expected to be part of the food item, such as a dropped earring or bandage.

Food producers and handlers threaten the safety of food through poor hygiene and health, unclean clothing or shoes, or unsafe practices. Food can become contaminated by direct contact with the hazard or by cross contamination through another object. Training for all food handlers is an essential step in ensuring safe food.

Health, Hygiene, and Handwashing

Individuals who are ill should not be around food. That statement seems reasonable, but the reality is that nature has no “sick days”—ripe produce must be harvested. In addition, reminding employees about the importance of basic health practices reinforces the message that their behavior affects the safety and quality of your product.



Most editions of the Food and Drug Administration's *Food Code* specify that individuals who have been diagnosed with *Salmonella typhi*, *Shigella* spp. *Escherichia coli* 0157:H7, or Hepatitis A should not be handling food. Individuals who have acute gastrointestinal illness—such as diarrhea, fever, or vomiting—or a sore throat with fever should be restricted from working with exposed food. However, these employees could still work in non-food areas, such as transporting closed boxes.

If an employee has an open cut or sore on the hand, an impermeable bandage and a clean, single-use glove over the bandage should be worn when handling food. Employees with persistent coughs or sneezing, a

Food safety is in your hands!



All individuals who work with food at any stage (planting to packing) hold the safety of the product in their hands.

runny nose, or discharge from the eyes, nose, or mouth should not be working directly with food, cleaned equipment, or packages that may come in contact with the food. They could, however, transport closed boxes or work in non-food areas.

Keeping employees hydrated in hot summer weather is important but only covered beverage containers should be used in areas where food is handled. As a general rule, employees should not eat or drink while on the job. A dedicated space for break areas should be near a handwashing sink so staff can wash hands before returning to work.

Producers should take great care to remove any *visible* soil from the product. The same care should be taken for *invisible* debris transferred from hands at any phase of the operation or even in a U-harvest operation. Simply washing hands correctly and at the appropriate times (after using the restroom, eating, or smoking) can go a long way in reducing pathogen levels.

Different handwashing methods have varying levels of effectiveness in removing bacteria and viruses. The least effective method is rinsing hands in water. The best method involves rubbing hands together with soap lather and warm water for 20 seconds—the time it takes to sing Happy Birthday twice.

Large, state-of-the-art processing facilities have handwashing sinks with foot pedals or automatic sensors. Farm operations can use similar safety features by developing procedures and helping staff make a habit of following those guidelines.

Sample Handwashing Procedure

1. Rub hands together with soap under warm running water for 20 seconds (sing 'Happy Birthday' twice).
2. Dry hands with disposable towel.
3. Use towel to turn off faucet.
4. Discard towel.

If the towel dispenser has a handle, ask staff to wash hands, turn towel crank, wash hands again, use the towel to dry hands, and then use towel to turn off faucets.

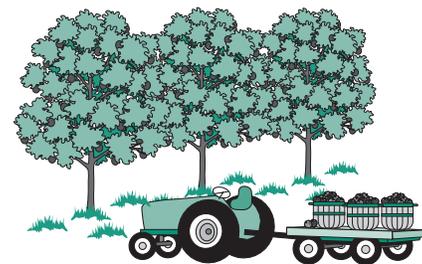
Clothing and Footwear

Recent cases of foot-and-mouth disease have forced producers to look more carefully at cross contamination issues related to footwear and clothing. Cross-contamination from shoes and clothing has been identified as a vehicle for many pathogens.

Thinking about your operation in terms of stages of production or points of product development (production, harvest, and packed, cleaned product) is one way to identify where safe handling practices are necessary. Requiring workers to wash hands and change gloves or aprons between

each stage helps promote safe food handling habits. Disposable plastic gloves are inexpensive and can be useful, especially for the packing process.

Farm workers who do not live on site or who have made deliveries off site are potential carriers of harmful bacteria or other contaminants on their hands, clothing, and shoes. Staff may have pets at home, live on acreages with livestock, or have contact with other producers' operations. Although the best practice would be to require staff to change clothes and shoes when reporting to work, this may not be feasible. However, requiring staff to wash hands and put on a clean apron when entering food areas can reduce the chance for contamination from external sites.



Keeping simple records documenting when training is conducted and who attends reminds staff that the time spent learning and reviewing safe handling practices is important. In some areas, being able to prove that farm staff receive such training also might give the operation a marketing advantage over competitors.

Possible Policies to Reduce Contamination and Cross Contamination

- Individuals will wash hands when reporting for work and after eating, drinking, smoking, and using the toilet.
- Individuals who are composting or applying manure, weeding, or planting will wash hands and change gloves prior to harvesting ripe product. Because many pathogens live in the soil, failure to wash hands between tasks can cross contaminate the product. If cloth gloves are worn, separate pairs should be dedicated for each specific use or site. Disposable gloves will be changed between tasks.
- Individuals who harvest, wash, and/or pack product will wash hands and put on a clean apron and gloves after harvesting and before washing or packing.
- Hair restraints must be worn during the washing and packing process. Hats, scarves, hair nets, or other covering that restrains hair can reduce the chance of loose hairs falling on product.
- No jewelry will be worn during washing or packing. Rings with settings, long necklaces, and earrings can pose safety and contamination risks. One exception might be the wearing of a plain wedding band.

Training and Documentation

Training materials, as well as policies and practices that have been developed as standard operating procedures (SOPs) for foodservice operations can be modified for use with farm operations. Sample Word documents are available for downloading from Iowa State University Extension at this Web site: <http://www.iowahaccp.iastate.edu>.

Producers can save themselves many headaches by taking the time to teach staff procedures that encourage safe food handling habits. An orientation session for new staff followed by periodic staff gatherings provides a way to stress the importance of following recommended procedures and also gives staff a forum for asking questions and sharing ideas.

New Staff Orientation Checklist

- Tour of operation
- Meet other workers
- Handwashing
(when, where, how, and why)
- Health and illness
(what and why)
- Eating and drinking
(when, where, and why)
- Clothing and footwear
(what, when, and why)
- Hair restraints
(what, when, and why)
- Jewelry (what, when, and why)

Once hired, staff should be trained on specific tasks associated with their jobs. Training can be done by other staff if the producer is certain the right information will be communicated. Providing new staff with printed information about how to perform the job also is very helpful. Sample reference materials are available for downloading from the Iowa State University "Local Foods" Web site(see page 4).



Summary

Safe produce begins on the farm. All farm employees play an important role in ensuring that fresh and safe fruits and vegetables are sold to patrons. Producers need to provide training sessions that encourage staff to follow safe food handling habits related to health, hygiene, and handwashing.

References and Resources

More information about produce marketing and food safety is available at the following Web sites.

Local Foods: From Farm to Foodservice, Hotel, Restaurant, and Institution Management Extension, Iowa State University

<http://www.extension.iastate.edu/hrim/localfoods>

Drake University Agricultural Law Center

- <http://www.law.drake.edu/centers/default.aspx?pageID=aboutAgCtr>
- *The legal guide for direct farm marketing* by Neil Hamilton.
Call 515-271-2065 for ordering information.

HACCP: Hazard Analysis Critical Control Point Information Center Iowa State University Extension

<http://www.iowahaccp.iastate.edu/sections/farmfoodsafety.cfm?action=resources>

ISU Extension publications

<http://www.extension.iastate.edu/pubs>

National AgLaw Center

Farmers' markets rules, regulations, and opportunities

<http://www.law.drake.edu/centers/pdf/farmersMarkets.pdf>

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