The Centers for Disease Control and Prevention (CDC) estimate that each year in the United States approximately 48 million people acquire a foodborne illness, of which 128,000 are hospitalized and 3,000 die. The number of illnesses caused each year by fresh produce is greater than for any other type of food. Many of these illnesses can be prevented by having your workers follow pre- and postharvest personal practices that lower contamination risks.

Below is a summary of the responsibilities that harvesters and handlers need to take seriously to prevent human contamination of produce, and what farm supervisors and owners need to do to support a health and hygiene program.

Responsibilities for Harvesters and Handlers

It is critical for those who work with fresh produce to follow good hygiene practices.

Keeping Healthy

Workers who are sick should not have direct or indirect contact with fresh produce. Anytime the following symptoms occur, workers who handle produce should report them to their supervisor:
- Vomiting
- Diarrhea
- Jaundice (a sudden yellowing of eyes or skin)
- Sore throat with a fever

Blood and bodily fluids are potential sources of foodborne disease outbreaks, such as hepatitis A. Wash, bandage, and report open, bleeding, or infected cuts. Put on a plastic glove to prevent the bandage from coming off and falling into the produce. Use brightly colored bandages—they are easier to spot if they fall into a harvest basket or packing box. If produce handlers see any blood on the produce, they should immediately report this to their supervisor.

Saliva is full of microorganisms. Workers should never spit in areas where produce is picked, handled, or stored. Coughs and sneezes should be directed away from the produce.

Using Good Hygienic Practices

- Practice good hygiene, including bathing and showering.
- Keep fingernails short. Long nails provide hiding places for soils and microorganisms and make handwashing difficult. They also can puncture the skin of fruits and vegetables, which provides conditions for growth of spoilage or disease-causing microorganisms.
- Do not allow work clothes to become excessively dirty. Filthy work clothes can become a source of contamination.
- Change or cover clothes and shoes or boots when moving from areas where animals are housed or graze to areas where produce is harvested and handled.

Good Handwashing Practices

Regular handwashing is one of the most effective ways to keep fresh produce safe.
- Employees who handle or package produce must wash their hands before starting work, after breaks and lunch, after working in dirty areas such as when handling animals or pesticides, and especially after using the bathroom.
Because smoking and eating involve hand-to-mouth contact, confine these activities to designated areas separate from harvesting and handling areas and require that hands be washed before returning to work.

**Proper Handwashing Procedure**

Here are the essential steps that research has shown to be most effective for eliminating soils and bacteria from hands:

1. Wet your hands and wrists thoroughly with clean, running water.
2. Apply enough soap to build a good lather.
3. Scrub vigorously for at least 10 to 15 seconds.
4. Rinse thoroughly to remove all traces of soap.
5. Dry hands using a disposable paper towel. Never use common or shared towels, which can spread contaminants from one person to the next.

Failure to properly wash hands is often because too little time is taken for scrubbing, or because areas between the fingers, on the back of the hands, or the wrists are missed. Incomplete hand drying can also be a problem. Take a few extra seconds to completely dry your hands. Microorganisms are more easily transferred from wet surfaces than from dry ones.

**Using Gloves**

Gloves are not often used in agricultural operations. Most people find them cumbersome, uncomfortable, and perhaps unsafe because they can get snagged in equipment. As long as produce harvesters and handlers are healthy and wash their hands regularly, gloves are not likely to provide an additional level of safety. But for those operators who require glove use during harvesting or handling, the following guidelines apply:

- Be sure that gloves are not so large that they easily tear on sharp objects, or so small that they stretch and break easily.
- Warm, moist conditions inside gloves are ideal for supporting rapid growth of bacteria. Hands should be washed before gloves are put on and they should be replaced at least every 4 hours thereafter.
- Change gloves if they tear or may have come in contact with a contaminated surface.

**Responsibilities for Owners and Supervisors**

Produce handlers and harvesters play an important role in preventing produce contamination when they follow the practices just described. But if handwashing and hygiene practices are going to be effective, farm owners need to provide adequate sanitary facilities and training on their proper use.

**Toilet Facilities**

Keep toilet facilities clean, convenient to use, and available for use upon request. If facilities are unpleasant to use or not accessible, workers might use a nearby woods or even the growing field to relieve themselves. Such practices can increase contamination risks to dangerous levels. Use the following OSHA (Occupational Safety and Health Administration) worker protection standards for specific recommendations on locating, supplying, and maintaining sanitary facilities. These sanitation standards apply to both portable and permanent facilities such as home bathrooms when they are used as produce worker toilet and handwashing facilities:

- There should be at least one toilet facility and one handwashing station available for every 20 workers.
- Every worker should be given reasonable opportunity to use toilet facilities during the work day.
- Facilities must be located within a ¼-mile walk from the field. If this is not possible, then the facilities can be located farther away if vehicle access is available.
- Keep toilet facilities clean, serviced, supplied with toilet paper, and functioning properly.
- Handwashing stations must be equipped with single-use towels, hand soap, a trash container, and running water that meets microbial drinking water standards.
- Each toilet facility should have a sign that reminds and instructs workers on when and how to wash their hands. If workers do not speak English, signs should be written in the language(s) they understand.
- Locate toilet facilities far enough from growing fields and pack/storage locations to prevent contamination in the case of a spill.
If waste water from portable toilet facilities leaks or spills, it can drain into fields and contaminate 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 subsurface septic tank system. Have a plan for containment and treatment of any effluent in the event of leakage or a spill so the situation can be immediately corrected.

Policies and Procedures
Make sure good health and hygiene practices are the norm on your farm by establishing well-defined written procedures that require all workers and visitors to follow the same personal practices for preventing contamination. For example:
- Prohibit workers with diarrheal disease or symptoms of other infectious diseases from handling fresh produce.
- Establish procedures for disposing of produce or cleaning food-contact surfaces that have come into contact with blood or other bodily fluids, harmful chemicals, or broken glass.
- Confine smoking and eating activities to designated areas separate from where produce is grown and handled.
- Require that hair be protected from falling into the produce by using caps or scarves, or keeping long hair tied back.
- Prohibit wearing of jewelry that could fall into the harvested produce.
- Require short fingernails to avoid damaging produce.
- Require workers to change clothes and footwear between handling animals or applying pesticides and harvesting or handling produce.

Establish a Training Program
All full- and part-time harvesters and handlers, including supervisors, should have a good understanding of basic sanitation and hygiene principles. The level of knowledge needed will vary depending on the type of operation and tasks performed.
- Each operation should develop a farm food safety training program that covers the recommendations in this fact sheet.
- Train workers at hiring and provide a periodic refresher or follow-up training session as needed.
- Depending on the facilities available and the number of people to be trained, formal presentations, one-on-one instruction, or demonstrations (such as on good handwashing technique) may be appropriate.
- If a formalized training program is not practical, such as for part-time and seasonal field personnel, the operator or supervisor should verbally instruct and demonstrate to newly hired workers proper health and hygiene practices, such as proper handwashing techniques.
- Instruct workers to seek prompt treatment with clean first aid supplies for cuts, abrasions, and other injuries.
- Train workers to report signs and symptoms of infectious disease, including diarrhea, sudden yellowing of the eyes or skin, open sores, and infected wounds to their supervisors.
- Ensure that workers who apply regulated pesticides are licensed and those who apply nonregulated materials are trained on proper use.
- Train workers to think about how foot traffic could move manure or other contamination into the field and to avoid this by changing their shoes or clothes before moving into growing and handling areas.

Resources
Penn State Extension GAP Website: extension.psu.edu/food/safety/farm

Food Safety Field Training Kit for Fresh Produce Handlers. Portable, durable 19-page flip chart for training harvesters and handlers on personal hygiene and harvester practices to prevent produce contamination. Printed on 11x17 cardstock with laminated cover in English and Spanish. Order from Penn State Extension at extension.psu.edu/publications/agrs-129/view or call 877-345-0691.