

# Harvest and Field Sanitation Practices: Best Practices To Ensure On-farm Food Safety



Good agricultural harvest practices range from harvesting techniques and equipment to worker health and hygiene.

Fresh produce can become contaminated with pathogens before, during and after harvest. It is important to consider all potential microbial hazards when harvesting to ensure the safety and quality of the harvested product.

Taking the appropriate steps to implement good field sanitation practices will benefit the producers and consumers.

## Key Components of Harvest and Field Sanitation

### General Harvest Considerations

- To prevent the potential for cross-contamination, avoid harvesting on a rainy day or when produce is covered with heavy dew. Pathogens can be dispersed easily from plant to plant or fruit to fruit by water.
- Do not harvest produce contaminated with feces (human, animal or bird).
- Produce that is bruised, produce that has been damaged by insect feeding, rodents or birds and produce that is diseased should be separated from healthy or undamaged products during harvest. Damaged products must be heat-treated (for example, a processing stage that involves a heat-kill step) before it can be sold for human consumption.
- Fruit and vegetable crops that have dropped from the plants prematurely should not be harvested for fresh consumption.
- When practical, remove as much soil or plant debris from the produce before it leaves the field.

### Equipment Considerations

Harvest equipment extends beyond the tractor to include mechanical harvesting machinery, knives, pruners, containers, baskets, tables, brushes and other harvest

aids. Equipment can be a source of human and plant pathogens that could contaminate produce.

#### *Harvest Bins, Knives, Pruners and Other Harvest Aids*

- All types of harvest containers (plastic, wood or other recyclable materials) must be washed (with potable water) and sanitized (see Box 1). Wooden containers are difficult to sanitize adequately and should be avoided.
- Single-use cardboard harvest bins can be used only once.
- Never stand or sit on harvest bins.
- Wash as much soil and plant debris as possible from the harvest containers before moving them into a packing shed or storage shed.
- Knives, pruners and other harvest aids must be washed and sanitized before use in the field and between uses with various crops.
- Between uses, all harvest equipment must be sanitized and stored in covered areas that are not exposed to rodents, birds, dust or insects. Routine pest inspections and sprays must be conducted.
- Do not store harvest containers directly on the floor or directly against a wall. Harvest containers must be spaced at least 18 inches away from the walls of storage facilities.



*Dirty Container*

- Do not store pesticides, fertilizers or sanitizers in harvest containers during the offseason or in the same room as harvest containers and harvest aids.

#### *Aprons and Gloves*

Good agricultural practices do not require the use of aprons or gloves during harvesting. If aprons or gloves are used, however, the following practices must be followed:

- Disposable aprons and gloves are to be worn only once.
- Workers must change disposable gloves and aprons after harvesting is complete; before eating, smoking or using the restroom; and between fields or crop types.
- Workers must always wash and dry their hands after disposing of gloves before changing into a new pair.
- Reusable gloves and aprons must be washed with soap and water daily or before the next use.
- Dirty and clean gloves and aprons must be stored in separate and clearly labeled containers. Storage containers must be accessible to workers.

#### *Implements and Harvesting Machinery*

Routine cleaning and equipment maintenance can help prevent microbial contamination of fresh produce and prevent the movement of plant pathogens between fields.

- Power wash or use very hot water to remove as much soil and plant debris as possible from farm implements (tractors, cultivators, etc.). Consider washing equipment between fields and after all harvests.

### Record Keeping

Records on harvest and field sanitation practices must be kept and available for inspection within 24 hours of a formal request by the U.S. Department of Agriculture or other certified inspection agency.

### Box 1. Simple Protocol for Sanitizing Harvest Bins and Harvest Aids

**Step 1.** Rinse all loose soil and debris from the harvest container or harvest aid with potable water.

**Step 2.** Wash harvest containers or harvest aids with soap and warm to hot potable water.

**Step 3.** Before adding a sanitizer such as bleach, determine the water pH using a pH test strip or a pH meter. The water pH should be between 6 and 7.5.

**Step 4.** Place 1-2 tablespoons of common household bleach (5.25-6 percent active ingredient, nonscented and splashless) per gallon of potable water into a pail, bucket or sink. This equals a 100-200 parts per million concentration.

**Step 5.** Dip the nonporous harvest container or harvest aid into the sanitizing solution for 2 minutes. Porous containers will require a higher concentration of household bleach (600 ppm).

**Step 6.** For porous surfaces, rinse with potable water.

**Step 7.** Allow bins and harvest aids to air dry before using.

**Step 8.** Store sanitized containers appropriately. (See guidelines listed under "Harvest Bins, Knives, Pruners and Other Harvest Aids.")

**Step 9.** Record when and how you conducted this procedure, including the date, time and sanitizer concentration, in your record book.

A list of other effective sanitizers are registered for food use harvest equipment is available in the Southeastern U.S. Vegetable Crop Handbook ([www.thepacker.com/grower/2015-southeastern-us-vegetable-crop-handbook](http://www.thepacker.com/grower/2015-southeastern-us-vegetable-crop-handbook)).



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