

Post-harvest Water

Best Practices To Ensure On-farm Food Safety



Water is used for many post-harvest activities such as rinsing produce, commodity movement, cooling, ice production, post-harvest fungicide and wax applications, cleaning, sanitizing and hand-washing.

Human and plant pathogens easily can be spread through water, and a pre-harvest contamination event can be amplified by post-harvest water.

All water used for post-harvest activities must be the equivalent of drinking water (must be potable water). That means no detectable E. coli should be present in a 100 milliliter sample. If post-harvest water is contaminated, immediately stop all activities and take corrective actions.

Steps to ensure post-harvest water quality and safety

1. Start with warm, potable water.
2. Use sanitizers (also called disinfectants) to prevent cross-contamination.
 - Add sanitizer using the recommended rate on the product label.
 - Monitor and record the temperature of the water used to disinfect produce to prevent pathogen infiltration into the products.
 - Temperature should be measured using a calibrated thermometer.
 - Monitor and record the pH of the water using a calibrated pH meter or pH test strips.
 - Monitor the oxidation reduction potential, or ORP, of the water using an ORP meter.
 - Monitor the levels of sanitizer in the water and adjust the concentrations, as needed, using a sanitizer specific test kit.
 - Monitor how dirty the water is by testing for turbidity.
 - Change water when it is dirty or when switching crops.

3. Rinse with potable water. Check sanitizer label before rinsing, since some sanitizers do not require or do not recommend a final rinse step.

When should a sanitizer be added to water?

- When washing produce using dunk tanks or other forms of bulk water.
- Wax applications.
- Water used to move produce (flume water).
- Water used to clean food contact surfaces (i.e., tables, benches, containers).
- Water used to clean equipment (i.e., conveyor belts, sorters, knives).

What types of sanitizers can be added to water used for post-harvest activities?

Sanitizers used for post-harvest activities must be food-grade sanitizers. Always check the product label or contact the manufacturer to make sure the product is registered and labeled for food use.



pH meter and CL meter

For more information on sanitizers and instructions on how to use them, consult the Southeastern U.S. Vegetable Crop Handbook (www.thepacker.com/grower/2015-southeastern-us-vegetable-crop-handbook). Some sanitizers you can use include:

- Chlorine bleach
- Chlorine dioxide
- Chlorine gas
- Ozone
- Peroxyacetic acid
- Hydrogen peroxide
- Peroxyacetic acid plus hydrogen peroxide
- Hydrogen dioxide
- Electrolyzed water

Why should detailed records be maintained?

All records must be kept on the farm and be readily available within 24 hours of a formal request by an

auditor or inspector. Records should be kept for a minimum of two years. Maintain a log sheet with the following items:

- Date and time the sanitizer was added
 - Sanitizer concentration (ppm)
 - pH
 - Turbidity (NTU)
 - Water temperature
 - Type of produce treated
 - Contact times (amount of time produce was exposed to the chlorine solution)
 - Initials of the recorder
1. Keeping detailed records is necessary for audits and inspections.
 2. Record keeping provides evidence the task was completed and allows for worker accountability.
 3. Detailed records can reveal discrepancies in water quality or product effectiveness.



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