

**PROPER CARE AND HANDLING**

# Fruits and Vegetables from Harvest or Purchase to Preparation

Fruits and vegetables are an important part of a healthful diet. They are low in calories, fat, and sodium. They also supply fiber, vitamins, minerals, and other health-promoting phytochemicals. There is evidence that eating at least 2½ cups of vegetables and fruits each day is associated with a reduced risk of cardiovascular disease, including heart attack and stroke. Some vegetables and fruits may be protective against certain types of cancer.

However, there have been rare cases of people becoming ill from eating contaminated fruits and vegetables. Outbreaks of foodborne illness have been caused by sprouts, melons, tomatoes, and lettuce contaminated with harmful bacteria. Very young children, the elderly, and people with impaired immune systems are particularly at risk for foodborne illness.

Many people also have concerns about pesticides on the surface of fruits and vegetables. However, pesticide residues are generally well within limits set by the federal government, which means they are not present at levels that could harm individuals. Contamination with harmful bacteria and viruses is a far greater threat to health.

Simple steps can ensure that the fruits and vegetables you eat are safe. To reduce your risk of exposure to microbial and chemical contaminants, follow these guidelines.

## From the Home Garden

- Most bacteria and parasites that make people sick come from the feces of animals and humans. Do not use raw or incompletely composted manure for growing produce. Never add feces from humans or pets to your compost pile. Avoid access of wild animals and pets into your garden.
- Wash your hands thoroughly with soap and water before harvesting.
- Take care when picking fruits and vegetables that show symptoms of disease. The plant disease organisms by themselves are not harmful to consume. But any tissue damage that occurs can create conditions that promote the growth of other potentially harmful microorganisms.

## At the Farmers Market or Grocery Store

- Ask the farmer or produce manager if safe farming methods, known as Good Agricultural Practices (GAP), were used to grow and handle the produce they sell.
- Purchase only high-quality fruits and vegetables. Bruised, shriveled, or slimy produce may harbor harmful bacteria.
- Be sure cut produce or salad mixes that you buy have been kept refrigerated or on ice. Most bacteria grow slowly, or not at all, at temperatures below 40°F.
- Add perishable fruits and vegetables to your bag or cart toward the end of shopping so they remain cool.
- Keep meats, fish, and poultry in plastic bags to prevent juices from dripping onto fruits and vegetables.

## On the Way Home

- In summer, minimize the time that food sits in the car. Plan ahead so fresh produce shopping is your last trip of the day.



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## In the Kitchen

- Immediately refrigerate perishable fruits and vegetables. Store cut, trimmed, or washed produce in the refrigerator's crisper drawer to maintain quality and safety.
- Put meats, poultry, and seafood in containers, then store them below fruits and vegetables in the refrigerator. This will prevent meat juices, which may contain harmful bacteria, from dripping onto your produce.
- Potatoes, tomatoes, pears, whole melons, and other fruits and vegetables are sometimes stored at room temperature to maintain quality or speed ripening. Keep these items in a clean, dry place, away from areas where meats, fish, and poultry are prepared.
- Discard fruits and vegetables that have been stored beyond their shelf life or are shriveled or slimy.

## Preparation

- Wash your hands before preparing foods. Hands should be scrubbed thoroughly with hot, soapy water for about 10–15 seconds before and after handling fresh produce, raw meat, poultry, or seafood, as well as after using the bathroom, changing diapers, or handling pets.
- Removing outer leaves or peeling may decrease the amount of pesticide residues or harmful microbes on fruits and vegetables.
- Wash all fruits and vegetables with cool tap water to remove dirt and residues. Some companies are marketing “produce-cleaning” solutions, but these have not been proved more effective than plain water in removing microorganisms.
- Scrub firm produce with a clean produce brush. Melons and cantaloupes have been involved in several cases of foodborne illness. Before slicing these fruits, the rind must be scrubbed thoroughly to prevent the knife from transferring bacteria to the cut surface.
- Don't wash fruits and vegetables with household soaps and detergents. These products have not been approved for washing produce.
- Don't cross-contaminate. Use clean cutting boards and utensils when handling fresh produce. Use one clean cutting board

for fresh produce and a separate one for raw meat, poultry, and seafood.

- Wash surfaces often. Cutting boards, dishes, utensils, and countertops should be washed with hot, soapy water after coming in contact with fresh produce or raw meat, poultry, or seafood.
- Cutting boards and countertops can be sanitized with a solution of one teaspoon of chlorine bleach in one quart of water. However, be aware of the hazards associated with storing and using bleach, and do not apply the solution directly to fruits and vegetables.
- Refrigerate fresh produce within two hours of peeling or cutting. Discard cut produce left at room temperature for more than two hours.

## Serving

- Fresh-cut produce should be held unrefrigerated on the table no longer than four hours.
- At the serving table, don't let the outer rinds of melon or cantaloupe touch freshly cut surfaces.
- Use a cooler with ice or ice gel packs to transport or store cut fresh fruits and vegetables at picnics or other summer events. Keep raw meats in a separate cooler.

For more information about food safety, contact your local Penn State Extension office or visit the Penn State Food Safety website at [extension.psu.edu/food/safety](http://extension.psu.edu/food/safety).

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