Personal Hygiene

Personal hygiene and sanitation are essential for preventing foodborne illness.

- Practice and promote proper handwashing techniques (wash hands for 20 seconds using warm water and soap, rinse well, and dry with a clean cloth or paper towel). Pay special attention to cleaning around the fingernails—especially after working in the garden.
- Be aware of children's habits in the garden, especially toddlers in diapers, in handling potentially contaminated material or playing with or petting domestic animals or pets before handling or eating produce.
- Be aware of the potential for garden gloves, outer garments, and shoes to transfer contamination from one place (such as a manure pile or compost bin) to your edible garden, harvest equipment, or kitchen.

Handling Fresh Produce

Information about safe handling of fruits and vegetables is available online at:

- Safe Handling of Fruits & Vegetables: http://anrcatalog.ucdavis.edu/pdf/8121.pdf

Garden and Harvest Sanitation

- Any surface, container, or tool that comes in contact with fresh produce could be a source or transfer point of pathogens. Well-planned food handling practices in the garden and home can reduce the likelihood of cross contamination.
- Before use, clean and sanitize all surfaces that will contact food, including harvest equipment (bins, totes, gloves, boxes, buckets, bushel baskets). Consider maintaining separate pruners that are used only for your edible plants.
- Surfaces can be cleaned with hot soapy water.
- Clean surfaces can be sanitized a number of ways. Bleach is an inexpensive and widely available sanitizer: make a solution with 1 teaspoon unscented liquid bleach per quart (4 cups) of water.
  - ◊ Flood the surface with the bleach solution and allow it to stand for several minutes, then rinse thoroughly with clean water and dry with a paper towel or clean cloth.

Acknowledgements

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More Resources Available Online

http://ucfoodsafety.ucdavis.edu/Consumers/

Resources for Backyard Farming
http://ucfoodsafety.ucdavis.edu/Backyard_Farming/

University of California
Agriculture and Natural Resources

Funding for this project was provided, in part, by the University of California Division of Agriculture and Natural Resources.

Published January 2015

Food Safety Tips for Your Edible Home Garden

This publication provides an overview of home garden and gardening practices important to consider to keep your edible plants safe to eat and share. You can easily develop a food safety plan for your home garden by applying these practices which are drawn from research and "hands-on" practical experience.

Food Safety

Most of the fruits and vegetables consumed in the United States are wholesome and free of microbes that cause foodborne illness (pathogens). Many fruits and vegetables have natural barriers, such as skins and rinds, which help protect the internal edible parts from direct contamination with pathogens.

However, the fruits, vegetables, culinary herbs and edible flowers we enjoy eating can be contaminated with pathogens any time from planting through food preparation. Adequate cooking kills most pathogens but they are very difficult to remove by even vigorous washing—this is especially important to keep in mind for garden produce that is eaten raw or only lightly cooked or blanched. For these foods preventing microbial contamination is the most effective food safety practice.

Foodborne illness can affect anyone, but some groups including the very young, the very old, and those with weakened immune systems, are at greater risk and can suffer serious lifelong complications and even death. Unfortunately, some forms of these pathogens are very aggressive and can cause severe illness, even in healthy young adults.

The home garden is not free from pathogens. The best approach to maintaining the wholesomeness of your home garden's harvest is to be aware of potential risks and establish practices that will minimize the chance of contamination.

Water

- Water is one of the most likely vehicles to bring pathogens in direct contact with fresh produce. Be familiar with the seasonal quality of any surface water source used for gardening. These can include water from ponds, lakes, streams, seasonal creeks, spring boxes, cisterns, and any other water source that is exposed to the environment.
- Graywater (wastewater from baths, showers, clothes washers, and bathroom sinks) is not recommended for irrigation of edible plants as it can contain pathogens or harmful levels of personal care chemicals.
- Use potable water (pathogen free) equal in quality to water from a municipal water system for:
  - ◊ any foliar (leaf surface) applications
  - ◊ cleaning fresh produce after harvest
- Ensure that home wells are designed and maintained to prevent contamination of the water from surface runoff or soil infiltration.

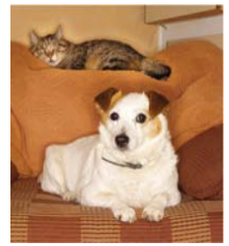
When you are unsure of the water quality, irrigation methods such as sub-surface trickle irrigation or drip irrigation under a mulch will minimize contact between the water and the edible parts of the plant.

Animal Fecal Contamination

Plants that attract birds, deer, rodents, or other domestic animals or wildlife may increase the risk of some types of contamination that may be hard to avoid or notice.

It is not possible to eliminate all influences of animals from the garden environment, but you can take steps to minimize their presence or activities. Feces from all animals—wild, domestic, or pets—can contain pathogens.

- Keep domestic animals and pets out of the edible garden area during the growing and harvest seasons, especially if the produce to be harvested is close to the ground.



- Consider excluding larger animals that might graze on vine crops or low branches of fruit trees.
- Weed- or pest-eating geese, chickens or ducks can introduce pathogens and may not be wise additions to your garden.
- Trim vegetation at the edges of fruit and vegetable patches that can serve as gathering, nesting, or hiding places for animals such as birds, rats and mice.
- Locate scavenging-animal attractants such as piles of decaying fruit and vegetables to be composted away from your garden and within a fenced-in area.

Composted Manure

Proper management can reduce pathogens.

- Properly composted or heat-treated manure fertilizers and green manures are unlikely to be a source of microbial pathogens.
- Do not use manure from pigs, dogs, or cats for composting or fertilizer. Some parasites from these animals are not destroyed by composting and are likely to remain infectious to humans.

Green manure is a plant cover crop that is grown and then incorporated into the soil to add nutrients and organic matter. "Green manure" does not mean raw animal manure.

Non-composted Manure

The use of non-composted manure in the edible garden is not recommended.

- If you do choose to use non-composted manure:
  - ◊ Maximize time between the manure application and the earliest likely harvest — at least 60 days before planting.
  - ◊ Do not apply manure after seeding or transplanting edible plants.
  - ◊ Do not leave non-composted manure on the soil surface. Mix manure into the soil at least 8 in (20 cm) deep. Depending on local conditions, pathogens survive longer in manure on the soil surface than when mixed into healthy soil. Manure on the soil surface is more likely to be spread in water runoff or by traffic to non-treated areas.
- Be careful not to contaminate edible crops when applying non-composted manure to other landscape areas or plants.
- Think about how using manure slurries teas may directly and indirectly cause your edible garden to be contaminated—and try to minimize these effects.

Septic Systems

- Ensure that any septic system is properly installed and maintained and the drain field is well separated—ideally, at least 1000 feet (300 meters) from an edible garden. Faulty septic systems and poorly designed drain fields have caused foodborne illnesses.