

Food Safety in Community Gardens



Learning Objectives

- Discuss the prevalence of foodborne illness associated with produce.
- Define produce safety challenges.
- Define key contamination sources in the garden.
- Describe how to construct a portable handwashing station.
- Understand how to properly wash produce.
- Learn how to recover produce from garden flooding

Foodborne illness in the US

- 48 million cases of foodborne illness
- 127,839 hospitalizations
- 3,037 deaths



Discussion

What foods are considered risky that you consume?



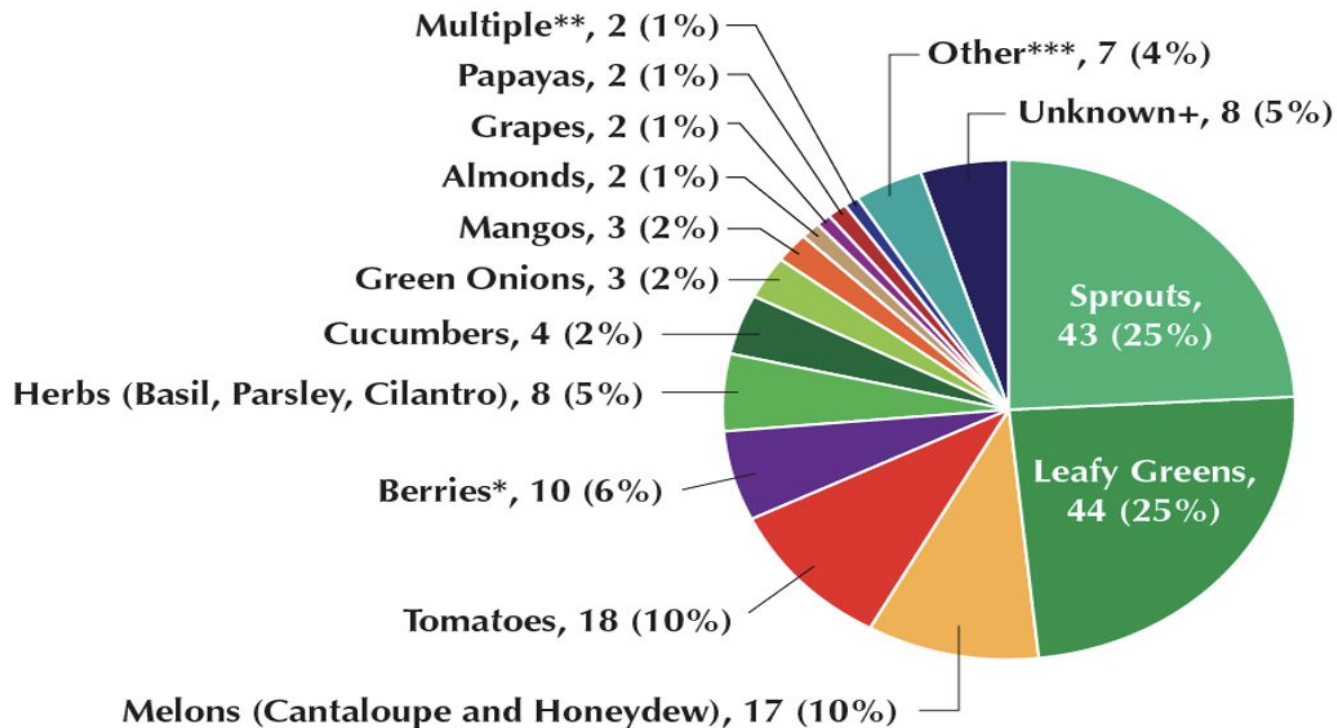
Populations at a Higher Risk

- People who are more likely than the general population to experience foodborne diseases:
 - **Y**oung (preschool age and younger)
 - **O**ld (elderly)
 - **P**regnant women and unborn babies
 - **I**mmune compromised (weakened immune systems)



Outbreaks Associated with Produce

FDA Outbreaks Linked to Produce Contamination Likely Prior to Retail: 1996–2014



Case Study

Summer 2011, Colorado

Listeria monocytogenes
multi-state outbreak linked to
whole cantaloupe due to
contamination at Jensen Farms

- 147 illnesses
- 33 deaths



Case Study

Winter 2019, California

- Multi-state *E.coli* O157H7 outbreak linked to contaminated romaine lettuce harvested from the Salinas Valley growing region
 - 167 illnesses
 - 85 hospitalizations

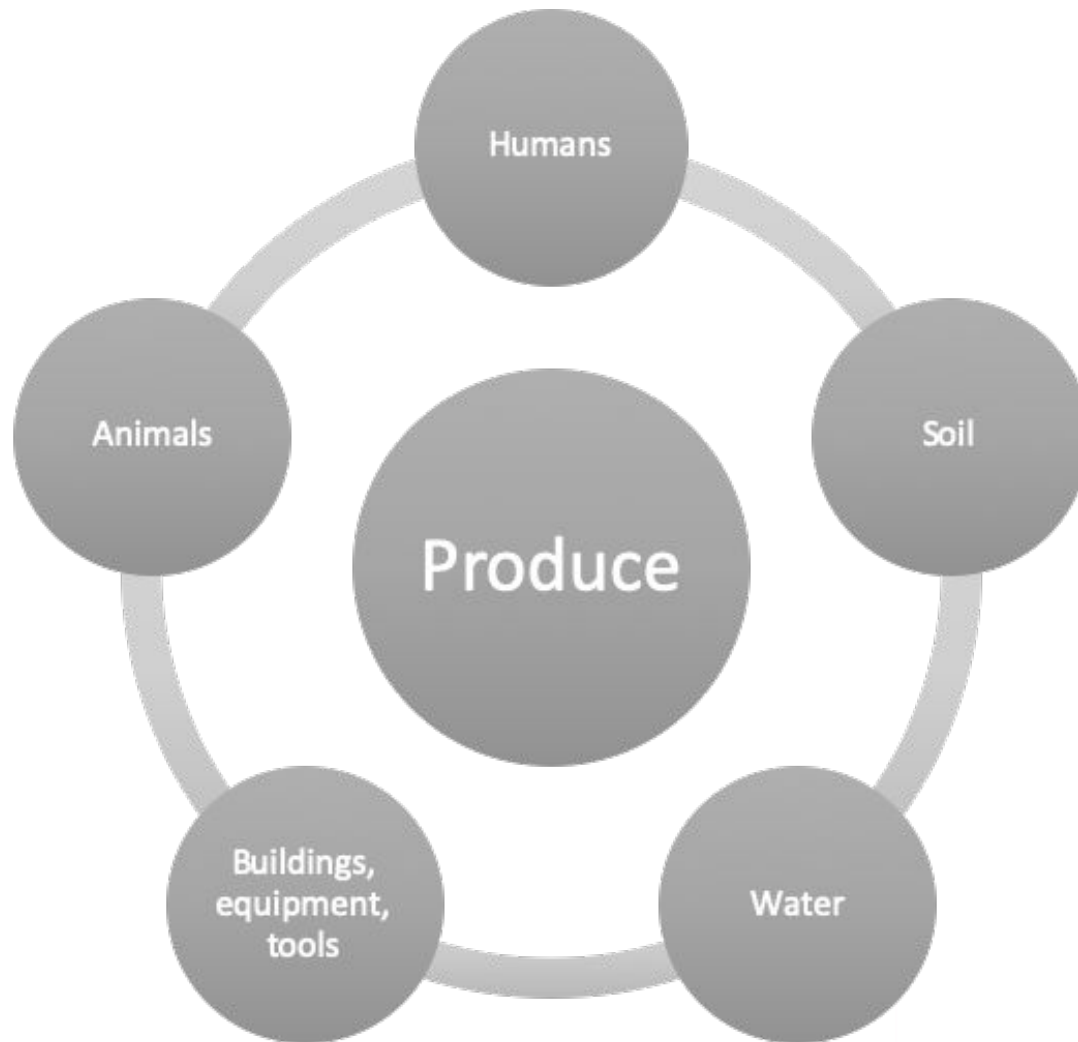


Produce Safety Challenges

- Fresh produce is often consumed raw (i.e., not cooked)
- Bacteria can multiply on produce surfaces and in fruit wounds, provided the right conditions are present
- Contamination is often sporadic



Contamination Sources



Farm-to-fork Continuum

**Pre-harvest
(Raw
Produce)**



**Harvest
from Field**



**Post-Harvest
(Storage and
Consuming)**



Standards for Produce Safety

1. Clean and sanitized hands
2. Clean and sanitized surfaces
3. Safe soil amendments
4. Safe water

Risk reduction involves addressing each of these.



Key Areas in the Garden

- Site Selection
- Water
- Compost
- Animals
- Handwashing
- Sanitation
- Tools
- Volunteers



Site Selection

Best Practice

Know the history of your site



Is it prone to flooding, animal crossing, run-off, chemicals or metals in the soil?

Water

Best Practice

Use a tested water source

Without knowing about the safety of your water, you could be introducing pathogens into your garden.

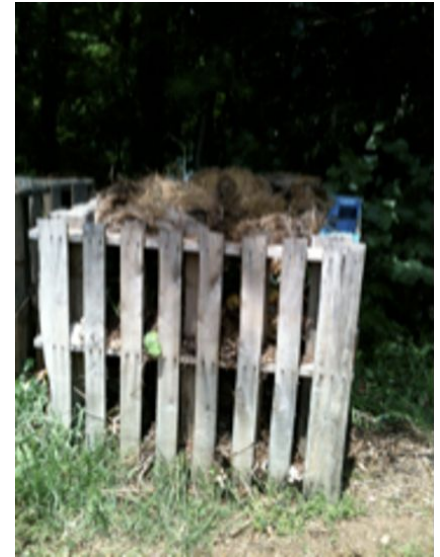


Compost

Best Practice

Proper location & use

- Use certified compost
- If self-composting, place compost bin away from garden
- If the compost is already in use, create barriers to keep the contents from getting into the garden, with careful attention on flooding
- Do not use animal feces in the compost



Compost Styles



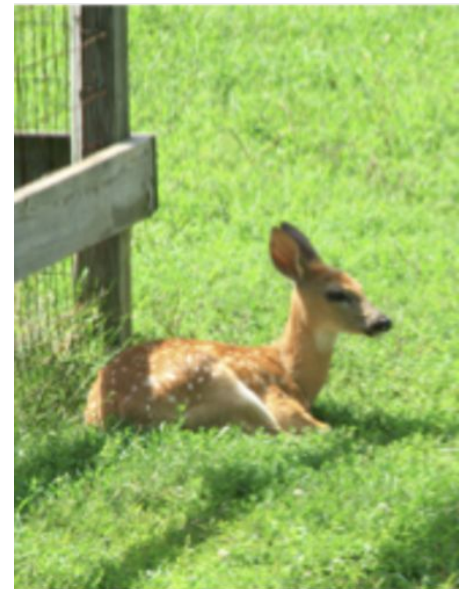
Animals

Best Practice

Keep animals out of the garden

Use a fence or other control measures:

- Trim tree branches
- Mow weeds/grass
- Manage trash, mulch
- Erect deterrents
- Harvest regularly



Handwashing

Best Practice

Wash hands correctly and often

- **Wet** hands with clean running water
- **Apply** soap
- **Rub** hands together to make a lather and scrub them well; scrub the backs of hands, between fingers, and under nails for at least 20 seconds
- **Rinse** hands well under running water
- **Dry** hands using a single-use towel

Handwashing Stations



Handwashing Stations



Sanitation and Tools

Best Practice

1. Use sanitized tools (2 T bleach/gallon)
2. Wear single-use, latex gloves when harvesting
3. Place produce into clean and sanitized containers



Use risk-reduction strategies **before, during, and after** harvest.

What About Washing Produce?



Volunteers

Best Practice

**Make it easy to follow safety procedures
and explain the “why”**



Set the standard

Recovering from Garden Flooding

- Increased risk of *E. coli*, *Listeria*, *Vibrio*, *Salmonella*, *Hepatitis A* and norovirus when eating produce from a flooded garden
- Cooking flood contaminated produce will kill pathogens but it won't remove chemical contaminants or improve quality



Sanitizing Produce

- Some produce from a flooded garden that can be safely washed, sanitized and cooked may be preserved by freezing or canning.
 - To sanitize, rinse produce with potable water, followed by a brief (2 minute) soak with a dilute bleach solution of 2 tablespoons of bleach per gallon of water. Rinse again with potable water.

Transporting Produce

- Ensure vehicles and packaging are clean and sanitary
- Use chest coolers or insulated bags with ice packs
- Encourage recipients to promptly refrigerate / store produce to maintain freshness and safety



Review

- Foodborne illness and produce
- Produce safety challenges
- Contamination sources
- Making a portable handwashing station
- Washing produce
- Recovering from garden flooding