Good Agricultural Practices (GAPs) for Gardeners & Urban Food Producers

Buckeye ISA Project

Mike Hogan
Extension Educator & Associate Professor
Ohio State University Extension – Franklin County
Food Safety

What first comes to mind when you think about…

- Cantaloupe from Colorado
- Spinach from California
- Jeni’s!
- Chipotle!
Foodborne Illness in the U.S.

- 76 million cases in U.S. each year
- Resulting in 325,000 hospitalizations
- And 5,000 deaths
- Produce accounts for 25% of outbreaks
Most at-risk:

- children < five years old
- Adult > 65 years old
- Pregnant
- Immune-suppressed (HIV, chemotherapy, organ transplants, etc.)
Safest Food Supply in the World?

- 33% of Canadians get sick yearly from food
- 25% of Americans get sick yearly from food
- 2% of British get sick yearly from food
- 1% of French get sick yearly from food
What is GAP’s?

• GAP = Good Agricultural Practices

• A comprehensive system for reducing foodborne illnesses spread primarily by microbes

• It is Quality Assurance
Food Safety

Grow Produce Safely
ID Risks & Fix

Store & Handle food properly
Ship food properly

Handle produce properly
ID Risks & Fix
Buy from safe Growers

Prepare food properly
ID Risks & Fix
Buy from safe Growers and Retailers

The Ohio State University
College of Food, Agricultural, and Environmental Sciences
Goal of GAP and GHP

Minimize fruit and vegetable contamination from before planting through post-harvest:

• Before planting
• During production
• At harvest
• Post harvest
GAP’s include:

- Recordkeeping/mapping
- Site characteristics:
  - History, drainage, neighboring use
- Soils and soil amendments
- Field sanitation
- Water
- Human health and hygiene
- Animals (wild and domestic)
GAP’s include:

• Pesticides, fertilizers, other inputs
• Transportation
• Storage
• Marketing
• Traceability
• Consumer education
Before Planting

• Previous land use
• Drainage
• Floodplain?
• Availability of water (including potable)
• Physical hazards: (glass, nails, staples, wood, etc.)
During Production

Water:

• Know the source
• May need to test non-municipal
• Consider path of harvested water
• Avoid use of natural surface water from ditches, ponds, retention basins, etc.
During Production

Water:

• Consider what you are watering:
  ➢ Soil
  ➢ Plant
  ➢ Edible plant parts

• Hang hose, don’t store on ground

• Use only potable water for drinking and hand washing
During Production

Soil and soil amendments:

- Test, test, test!
- Know the source and quality of soils brought into the garden
- Best to apply only composted manures
- If you apply raw manure, do so in autumn, or 120 days before harvest
During Production

Soil and soil amendments:

• Store fresh manure and other non-composted organic materials away from where produce is being grown

• Compost in bins, and locate composting area away from where produce is being grown

• Mulches, wood-chips
Other crop inputs:

• Always follow label directions for all pesticides, fertilizers, and other crop inputs (even organic products too!)

• Pay particular attention to pre-harvest limitations (PHL) and postharvest intervals (PHI)
During Production

Keep out the critters:

- Fence entire site if practical
- Keep compost piles covered
- May need to control rodent or bird populations in certain situations
- Don’t leave food scraps around
- Beware of dog! (and cat)
During Production

Human hygiene:

• Know where feet have been
• Provide potable water for hand-washing
• May need toilet facilities for large community garden
During Production

- Discard any food item which has come into contact with:
  - Animals – feeding or feces
  - Human waste, bodily fluids, blood
  - Flood water

- Scout garden before harvesting and mark with flag/tape to alert others of contaminated produce
Human health and hygiene are especially critical to food safety during harvest.

Educate gardeners and family members about food safety.
Proper hand washing is critical:

- Reduces infections by 35% to 50% & reduces GI illnesses by up to 80%
- Provide potable water, soap, and single-use towels at garden site
- Hand sanitizer does not work on soiled hands. Wash hands first.
- Facilitate proper hand washing with soap and water for 20 seconds
Harvest

- Consider disposable gloves for picking, especially with cuts or open wounds
- Ask gardeners to refrain from picking when they are ill (call in sick!)
- Pick when produce is dry
- Do not harvest damaged or diseased produce, or at least split harvest and separate
- Consider composting damaged produce
Harvest

• Use only clean containers for harvest
• Use new, single-use plastic liners if using wood or cardboard containers
• Cool product down quickly
Post-Harvest

- Human hygiene again critical
- Consider not washing produce
- Use only potable water for washing produce
- Duration of washing is important
- Water should be within 10 degrees of produce temperature
- Use sanitizer to reuse water
Post-Harvest

• Don’t store produce wet
• Store at correct temperature
• Transport in clean vehicle
• Don’t transport with raw meats, gasoline, pesticides, or equipment
Post-Harvest

Educate consumers, both buyers and others who receive the products which you grow
Summary

• Quality assurance for produce is important to prevent foodborne illness

• Everyone in the production and marketing chain has responsibilities

• Human hygiene probably the weakest link in the system
Additional Training

• OSU Extension offers in-depth GAPs training workshops for producers, including a certificate of participation

• Go to http://producesafety.osu.edu for location and times of classes and additional information
For More Information

- www.extension.osu.edu
- www.gaps.cornell.edu
- www.Ucgaps.ucdavis
- www.Extension.psu.edu/food-safety/farm
- www.ams.usda.gov/AM Sv1.0/
- www.opgma.org