Food Safety

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Why is Food Safety Important?

• There has been a rise in the number of people getting sick from the consumption of fresh produce within the last 40 years

• Simple preventative actions can significantly reduce outbreaks from occurring
Six Major Sections

- Worker Health/Hygiene
- Water Quality
- Manure/Compost
- Livestock/Wildlife
- Storage/Traceability
- General Sanitation
Worker Health/Hygiene

Workers should have access to

– Clean bathrooms with:
  • Potable (drinkable) water
  • Soap (which can be coupled with hand sanitizer, but not substituted)
  • Single-use towels
  • Trash can with lid
  • Signage to encourage proper hand-washing in the appropriate language

– First aid kit
Worker Health/Hygiene

Portable toilet facilities

- Locate a safe distance away from field to avoid potential hazardous waste accidents
  - Run-off should be considered
- Have a plan in place to contain and treat waste in case a spill or leak occurs
- Hand-washing station should be outside of bathroom facility
- Check facilities often to ensure they are fully stocked and clean
Worker Health/Hygiene

Training should be done each year on hygiene, including:

- Location and correct use of bathroom facility
- Proper hand-washing
- Daily use of clean clothes
- Steps to be taken if cuts occur in the field
- The effect of worker health/hygiene on food safety
Worker Health/Hygiene

- Look for signs and symptoms of typical infectious diseases
- Sick workers should report any illness and be sent home if possible contamination could arise
- Any injury in the field should be reported and proper protection supplied
  - i.e. Band-Aid, gloves, etc.
  - the worker should be found another task if they pose a risk to food safety
Water Quality

• Total generic *E. coli* is what should to be measured and is expressed as colony forming units (CFU’s) per 100 milliliters (ml) of water

• The recommended amount of testing done each year is:
  – 3 times for surface water
  – 2 times for well water
  – 1 time for potable water

Mass DEP Searchable Laboratory Database: http://public.dep.state.ma.us/Labcert/Labcert.aspx
Water Quality

- Usually the state recreational water standards are the acceptable level for irrigation water
- This means there is variation from state to state
- Never take water samples after rain, this will skew the results to be higher than they actually are
- Keep records of results
- Backflow preventers should be used
Water Quality

- **Pre-harvest**
  - Recreational water standard:
    - Massachusetts
      - below 126 CFU’s of generic *E. coli*/100 ml of water
    - Vermont
      - below 80 CFU’s of generic *E. coli*/100 ml of water

- **Post-harvest**
  - Potable water is needed for all post-harvest activities
    - Massachusetts
      - below 20 CFU’s of *E. coli*/100 ml of water
    - Vermont
      - 0 CFU’s of *E. coli*/100 ml of water
Manure/Compost

- Know the source
- Compost that contains animal manure must be treated as manure, unless compost is complete
- Pasturing animals (including chickens) is a manure application
- Manure standards are the same as in the organic standards: 120 days from application to harvest
- Food Safety Modernization Act (FSMA) recommendation is currently 9 months
- Record pile temperatures and dates when compost is mixed
- Physical barriers can be used to protect areas of fresh produce to limit runoff
Livestock/Wildlife

• Outside
  – Keep livestock and pets separated from produce fields
    • 120 days
    • This includes runoff to fields from livestock areas
  – Mow on a regular basis to limit wildlife from inhabiting the area
  – Work to minimize wildlife damage
  – Do not harvest produce with damage or evidence of fecal material

• Inside
  – Check for birds or nests on rafters, packing houses, bathrooms or any other clean areas
  – Establish and maintain a pest control program
    • Check rodent stations regularly
  – Block entry points to reduce pests in buildings
Storage/Traceability

- Always know one step backwards and one step forwards for produce
  - Keep an emergency contact list of these handlers
  - Backwards may be your farm or supplier
- Track the harvest location and date/time of crop harvest
- Have a map of the farm showing field and crop locations for accurate harvest tracking
- Protect empty harvest and packing containers from contamination
- Frequently check truck and packing house cooler temperatures
General Sanitation

- Have cleaning schedule
  - Assign responsibilities for cleaning trucks, wagons, containers, knives, etc.
  - Soap and water is good; sanitizers is better

- Harvesting
  - Ideally pick when the harvest is dry
  - There should be no eating or drinking within the field
    - Perimeter is encouraged for eating and drinking
  - Trash from workers should be disposed of daily
  - Leave crops with bird or other animal droppings in the field
  - Cool produce quickly
General Sanitation

Packing House

- Remove as much soil and debris from the harvested crop as possible *in the field*
- Identify and clean/sanitize all food-contact surfaces
- Hair should be pulled back
- Clean boots should be worn inside
  - Coming from the field into the packing house can introduce pathogens
- Sort and dispose of produce that is damaged or shows disease symptoms to reduce spread of disease
- Discard containers if broken or cannot be properly cleaned
- Be aware not to introduce harmful pathogens *after* washing, cooling or packaging fresh produce
- Clean packing house after each day of use
- Cover any light bulbs that could potentially break and fall into produce
- Keep vents and grates clean and free of debris
General Sanitation

Animal contact areas

- Instruct the public to wash their hands before and after petting or feeding the animals
- Provide a clean-up station at the beginning and the end of the petting zoo area
- Post signs indicating the location of hand-washing facilities
- Do not allow human food or drinks in animal areas
- Ensure that no feed is fed to the animals unless you provide it
General Sanitation

Farmers Markets

– Food should be stored at least 6” off the ground or on pallets
– Keep produce shaded with a canopy, umbrella or constructed stand
– Use a spray bottle of potable water to keep produce moist and promote evaporative cooling
– Display produce on clean ice made with potable water
– Extra produce should be maintained at temperature at or below 45°F
– Have one individual handle the money to reduce the chance of cross contamination
Conclusions

- Good hygiene practices
- Use clean water
- Be careful with manure
- Separate animals from produce
- Traceability data
- Good sanitation