

GOOD AGRICULTURAL PRACTICES REDUCE MICROBIAL CONTAMINATION

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The recent incidents of foodborne illness from contaminated spinach have reminded us how important our production practices are - both for the health of our customers as well as the health of our agricultural industries. Salad crops are particularly vulnerable to microbial contamination as they are eaten raw and have an edible portion that comes in contact with the ground or irrigation water. However, ANY crop that can be eaten raw can cause foodborne illness, if contaminated. This includes most of the tree fruits (apples, apricots, cherries, peaches, nectarine, persimmons, plums, etc.) and vegetable crops (green beans, sweet corn, sweet onions, green garlic, tomatoes, fresh herbs, cucumbers, melons, summer squash, peppers, etc.) that we grow in Brentwood.

Contamination can come from soil, water, manure, equipment, workers, or animals. It can occur either in the field or in the packing shed. This might be a good time to review your production practices for possible points of contamination and correct them before next season. Keep in mind that once produce has been contaminated, removing or killing the pathogens is very difficult. The best approach is to prevent the contamination in the first place. Below, I have included a brief overview of points to consider:

Manure and Animal management

- Hot compost or age manure before field application
- Incorporate manures/composts prior to planting
- Maximize the time between application and harvest
- Don't top dress with fresh manure or manure "teas"
- Exclude domestic animals (dogs, livestock, poultry) from fields during the growing and harvesting season
- Minimize wild animals in fields
 - Have an active control program for rodents (squirrels, voles, etc.)
 - Bare buffers around fields can discourage rodents, reptiles and amphibians from entering fields
 - Eliminate cull piles, food residues and other attractants for wild animals

Water for crop production

- Check irrigation water for fecal coliform contamination
- Be aware of water that passes close to livestock or sewage treatment areas.
- Foliar applications made within 2 weeks of harvest should be from potable water.

Worker health and hygiene: Hepatitis A outbreaks have been linked to infected workers. Any workers who touch fresh produce can contaminate it. This includes pickers, sorters, graders, packers.

- Train workers about microbial risks and proper procedures
 - Wash hands before handling produce
 - Wash hands after using the restrooms
- Supply soap, clean water, single use towels *and enforce use.*
- Provide clean restrooms and *enforce use.*
- Be careful when moving or servicing toilets to prevent leakage
- Provide bandages to handlers with cuts or lesions.
- Gloves should be kept clean if they touch produce.
- Re-assign sick employees to non- food contact jobs.

Field & Harvest Sanitation

- Harvest bins, equipment, implements and surfaces that touch fresh produce should be cleaned and sanitized daily.
- Remove excess soil in the field
- Minimize crop bruising and damage

Packing and Post Harvest: water that contacts fresh produce after harvest is widely recognized as the most essential pathogen control point.

- Use potable water for cooling, washing, dipping, grading, etc.
- Use potable water for making ice
- Chlorinate or sanitize wash water and monitor levels and pH
- Pay special attention to water quality in dump tanks and re-circulated water
- Cool produce quickly to minimize potential pathogen growth
- Clean and sanitize staging, loading & food contact surfaces regularly
- Keep birds and rodents out of packing and storage areas

For more detailed information:

UC Good Agricultural Practices website:

<http://ucgaps.ucdavis.edu>

- “Self Audit for Growers and Handlers”
- “Chlorination in Fresh Fruits and Vegetables”
- “Key Points of Control and Management of Microbial Food Safety: Information for Growers, Packers, and Handlers of Fresh-Consumed Horticultural Products”

UC Small Farm Center:

<http://www.sfc.ucdavis.edu> (Click Program Areas, then Food Safety)

- “Food Safety Begins on the Farm”

Overview of Good Agricultural Practices:

- “Guide to Minimize Microbial Food Safety Hazards for fresh Fruits and Vegetables” (US FDA 1998)

<http://www.foodsafety.gov/~dms/prodguid.html>

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- <http://ams.usda.gov/fv/fpbgapghp.htm>