



Cantaloupe Assignment Extension Educator's Outreach

Assignment Background

- In 2011 and 2012, FDA responded to two major outbreaks traced to fresh cantaloupe
- More than 400 people became ill and at least 36 individuals died as a result of these two outbreaks
- FDA investigations revealed multiple findings of insanitary production, handling conditions, and practices in packinghouses, across different regions

Assignment Outreach Background

- FDA believes that Cooperative Extension (CE) agents are in a good position to promulgate the message of Good Agricultural Practices (GAPs)
- CE can provide individualized feedback on specific findings to cantaloupe growers in their region
- CE involvement in assisting with feedback regarding the cantaloupe assignment will be integral to leveraging outreach opportunities to their local growing communities and stakeholders.
- FDA anticipates that CE agents will be able to reach out to available resources to aid in crafting recommendations for growers to best adhere to GAPs.

Existing FDA Guidance

- FDA Guidance for Industry: Guide to Minimize Microbial Food Safety Hazards of Melons; Draft Guidance. 2009.
- FDA Form 483, Inspectional Observations at Chamberlain Farms at Owensville, IN on August 14-31 2012. FDA, 2012.
- FDA Guidance for Industry: Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables. 1998.
- Letter to Cantaloupe Industry on Produce Safety; February 25th, 2013

Packing-house Good Agricultural Practices re: Cantaloupes and Other Melons

- Packinghouse and Equipment Sanitation
- Worker Health and Hygiene
- Packinghouse Melon Dump Operations
- Melon Cooling Medium
- Cooling Delays
- Documentation and Records

Sample Findings

Packinghouse and Equipment Sanitation

- Facility sanitary design and sanitation programs are critical to ensuring that melons exiting these unit operations do not experience net increases in microbial populations
- Operations may be used seasonally and thus be dormant for many months, leaving them susceptible to pest infestations

Observations

- Food Contact Surfaces (FCS) & packing equipment
 - Partially cleanable
 - Residue observed on the packing line
- Cleaning schedules:
 - Once a day before processing begins in the morning
 - Once a day at the end of production
 - Every night and once again in the morning
- Handling line was not washed and sanitized prior to each use
- Use of sanitizing compounds (e.g. Quaternary Ammonia, Chlorine) without soap or any other cleaning compound to first clean the processing equipment

Observations

- Some firms had no objectionable conditions; packing equipment was in clean and good repair
- Firms had processing equipment that was not designed to be easily cleaned or sanitized
- Exposed wood FCS's not cleaned
- Brushes on conveyor belts showed signs of dirt and mud build up
- Bins stored on the floor where employees and visitors walk
- Concrete floors

Observations

- Numerous flies in the packing areas
- Many firms have a pest control program in place and there were no signs of pest intrusion
- After hearing about outbreaks, some firms:
 - Added environmental swabbing as a micro-testing program
 - Added sanitizing agents to their cleaning program
 - Replaced brush rollers on the processing line
 - Changed their sanitizer for their equipment from chlorine dioxide to quaternary ammonia

Worker Health and Hygiene

- Infected employees who work with fresh produce increase the risk of transmitting foodborne illnesses
- Operators should become familiar with the typical signs and symptoms of infectious diseases
- All employees should be trained to follow good hygienic practices including the importance of:
 - good hygiene, hand washing, hand washing techniques, and of using toilet facilities
- Each producer should develop a sanitation training program for their employees

Observations

- Visibly soiled clothing observed contacting washed cantaloupes
- Individuals did not wash their hands prior to touching washed cantaloupes
- Gloves appeared to be cleanable

Observations

- At some firms worker practices seemed appropriate to avoid contamination, no adverse observations were made
- Workers washed their hands before packaging
- Individuals entering the packing areas without washing their hands
- An employee on the packing line carried water from the floor onto the side of the packing line

Packinghouse Melon Dump Operations

- Melons typically unloaded by dry or water dump operations
- Melons also may be floated out of gondolas in water filled sumps

Observations

- Some firms actively participate in the Eastern Cantaloupe Growers Association and others utilize the Canadian GAPs Program
- Most firms do not use dump tanks (DT)

Observations

- The water in the DTs was treated and monitored in a variety of ways including:
 - Continuous-flow chlorination system
 - Chlorine levels periodically monitored to verify levels
 - ORP and pH measured throughout the day
 - Chlorine test strips used
 - Some firms were unsure as to what level the sanitizer should be maintained

Melon Cooling/Washing Medium

- Melons typically are cooled by forced-air cooling
- Melons may also be cooled by chilled water drench or flume immersion
- Microbial reduction on melon surfaces during cooling/washing dependent on disinfectant concentration and contact time
- Once present on the surface of a melon, human pathogens cannot be completely eliminated by washing

Melon Cooling/Washing Medium

- Soaking is NOT an effective means of eliminating surface microbial contamination of the melon rind
- Melon cooling and wash water may be a significant source of microbial cross-contamination if there is insufficient water disinfectant present
- Infiltration when cooling or wash water is colder than cantaloupes

Cooling Delays

- Delays in cooling when melon rinds are wet from washing operations, or from dew, may allow for multiplication of human pathogens on the rind surface of melons

Observations

- Pre-cooling with a forced air system
- Product temperatures were maintained in cold storage
- Condensate from condenser units dripping onto cartons of packaged cantaloupes
- Dump tank water drained where it created a puddle of stagnant water
 - Culled-cantaloupes also in the same area, acting as an animal attractant and could be a source of pathogens

Documentation and Records

- Postharvest documentation and records maintained:
 - operational information about the product and practices
 - tracing information about the product

~For Facilities Only~

- 21 CFR part 1, subpart J, "Establishment, Maintenance, and Availability of Records," already impose certain recordkeeping requirements on persons who manufacture, process, pack, transport, distribute, receive, hold, or import food in the U.S.
- The records meant to identify the immediate previous sources and immediate subsequent recipients of food, including its packaging

Observations

- All firms had some product tracing mechanism in place
- Tracing is conducted through a variety of methods including:
 - Barcode stickers with the batch number and number of melons packed per carton are applied to each carton along with a pallet tag
 - Sales receipts that track by lot number are retained
 - Electronically via produce industry software and bill of lading
 - Electronic & paper hybrid system enabling tracing down to field level

Summary