

## Citrus-Specific GAPs and the need for continued HACCP-Based Training for Florida's Fresh Producers and Packers



Michelle D. Danyluk  
UF IFAS CREC  
mddanyluk@ufl.edu

## Fruits and Vegetables



- Significant increases in the number of produce associated foodborne disease outbreaks in the U.S.
- Produce associated outbreaks per year more than doubled from 1973-1987 and 1988-1998

## Why Should We Care?



Every year foodborne illnesses result in an estimated:

- 76 million cases of foodborne illness.
- 325,000 people hospitalized for foodborne illness.
- 5,200 needless deaths each year.
- Economic losses between 10-83 billion dollars.

## Good Agricultural Practice



- Commonly called GAP or GAPs
- Should be considered an "Insurance Policy", not a burden
- Basic GAPs are a collection of common sense, easy to implement practices.
- Many are already being performed by prudent growers when performing daily tasks

## Basic tenets of GAPs



1. Pesticides and there use
2. Employee Hygiene and Training
3. Field Sanitation and Harvesting Practices
4. Water
5. Soil, Manure & Biosolids
6. Vertebrate Pest control
7. Traceability/Records/Documentation



## Citrus-Specific Gaps




- Fear exists that metrics developed for leafy greens or tomatoes will be uniformly applied to all fresh fruits and vegetables, including fresh citrus
- Production practices of citrus and other tree crops, are significantly different from annual and row crops
- GAP metrics should not be a "one size fits all" regulation
- Florida Citrus-Specific Gaps are currently being developed at UF.




## HACCP

- Hazard Analysis and Critical Control Point
- A food safety system (not quality, although that may result).
- Basic premise is prevention rather than inspection.




## A HACCP Program:

- Deals with control of factors affecting the ingredients/raw agricultural commodities, product and process
- Has two objectives
  - Ensure the product safe to consume, through the application of scientific principles
  - Prove it




## Benefits of HACCP

- Focuses on identifying and preventing hazards from contaminating food.
- Is based on sound science.
- Permits more efficient and effective government oversight, primarily because the recordkeeping allows investigators to see how well a firm is complying with food safety laws over a period rather than how well it is doing on any given day.




## Origin of HACCP

- Development of foods for the space program
- Partnership of the Pillsbury Co., U.S. Army Natick Labs and NASA




## Federal Overview


- Until 1997, the use of HACCP within the food industry was voluntary
- Mandatory programs
  - Meats and poultry (USDA)
  - Seafood (FDA)
  - Juice (FDA)



## HACCP Prerequisites


- A system for food safety control
  - Not stand-alone, must be build upon key prerequisite programs
    - GAPs
    - GMPs







## GMPs

- Good manufacturing practices
- GMPs covered in 21 CFR Part 110 (Part 110 in Title 21 of the Code of Federal Regulations)
- Individual sections cover specific aspects, i.e. §110.10 covers personnel
- GMPs are NOT new and all food processors and packagers must follow them
- Basic good management, but serious repercussions if not taken seriously



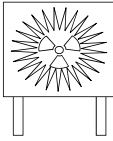

## The 7 Steps of HACCP

1. Hazard Analysis (HA)
2. Identify the Critical Control Points (CCP)
3. Establish critical limits or thresholds which must be met at each CCP
4. Establish procedures to monitor CCPs
5. Establish the corrective action taken when critical limits are exceeded.
6. Establish procedures to verify that the HACCP system is working
7. Establish effective record keeping that will document the HACCP

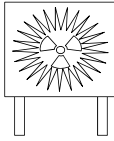

## Step 1: Hazard Analysis

- Hazard: A biological, chemical or physical agent that is REASONABLY likely to cause illness or injury in the absence of its control.



## Step 1: Hazard Analysis

- The “where” and “how” of potential problems are the *hazard analysis* part of HACCP
- HA covers all types of food safety hazards
  - Biological
  - Chemical
  - Physical


## Step 2: Identify CCP's

- Critical Control Point: A point, step, or procedure in a food process at which a control measure can be applied and at which control is essential to reduce an identified food hazard to an acceptable level.
  - Hazard Prevention
  - Hazard Elimination
  - Hazard Reduction

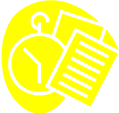
## Step 3: Establish Critical Limits

- Each CCP has one or more critical limits to assure that hazards are:
  - Prevented
  - Eliminated
  - Reduce to acceptable levels
- The limits relate to a process that will ensure safety by controlling
  - Time
  - Temperature
  - Concentration of sanitizer
  - Etc.




### Selection of a Critical Limit

- Example of a good choice of critical limit:
- Processing at a certain temperature for a specific time
  - Hazard – presence of pathogens
  - CCP – surface sanitation
  - Critical Limit – minimum process time and sanitizer concentration




### Step 4: Monitoring Procedures

- **Monitor** – to conduct a planned sequence of observations or measurements to assess whether a process, point or procedure is under control and to produce an accurate record for future use in verification.




### Step 5: Corrective Action

- **Corrective action** – procedures to be followed when a deviation occurs.
- And a deviation WILL occur



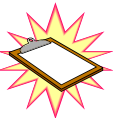
### Step 6: Verify HACCP is Working

- **Verification** – those activities, other than monitoring, that establish the validity of the HACCP plan and that the system is operation according to the plan



### Step 7: Record-keeping

- To be effective, a plan must be developed and maintained.
- Keep sufficient records to prove your system is working.
- If a CCP is added, modified or changed, the HACCP should reflect the changes and be updated.
- Establish a system by which such changes can be made.



### Summary

- Everything adopted in GAPS can assist in moving to HACCP based training
- HACCP, need to take good practices to the next level and document critical control points as well as corrective action