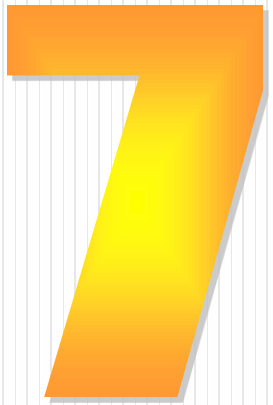
Seven HACCP Principles

Identification, Evaluation, and Control of Food Safety Hazards



Objectives

Upon completion of this module, you will be able to:

- Describe what HACCP is.
- List the seven principles and describe the significance of each.

7 HACCP Principles

- Provided framework for HACCP Final Rule

NACMCF

7 HACCP Principles

- HACCP is a systematic approach to the identification, evaluation, and control of food safety hazards
- Prevention based system to assure food safety

Preliminary Steps
HACCP Plan Development

- Assemble the HACCP team
- Describe the food
- Identify the intended use and consumers
- Develop and verify a flow diagram which describes the process

Preliminary Steps
Regulation 9 CFR 417.2(a)(2)

- A flow chart describing the steps of each process and product flow in the establishment shall be prepared, and the intended use or consumers of the finished product shall be identified.

7 HACCP Principles

- Conduct a Hazard Analysis
- Determine Critical Control Points
- Establish Critical Limits
- Establish Monitoring Procedures
- Establish Corrective Actions
- Establish Recordkeeping Procedures
- Establish Verification Procedures

Principle 1
Conduct Hazard Analysis

- Hazard
  - Biological, chemical, or physical agent that is likely to cause illness or injury if not effectively controlled

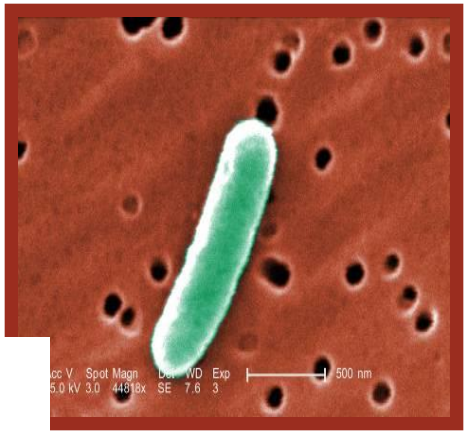
Identify Hazards

Principle 1 - Conduct Hazard Analysis

- Multi-step process
  - Hazard identification
  - Hazard evaluation
  - Hazard control measures

Principle 1
Conduct Hazard Analysis

- Step 1 - Hazard Identification



Principle 1
Conduct Hazard Analysis

- Hazard identification considers all aspects involved in the production of the product

Principle 1
Conduct Hazard Analysis

- Hazards in animals or raw materials?
- Avenues for contaminants?
- Sources of known pathogens?
- Process permitting survival and multiplication of pathogens or toxin production?

Principle 1
Conduct Hazard Analysis

- Is there a step that destroys pathogens?
- Pathogen growth under normal storage?
- Product safety devices available?
- Does packaging method affect pathogens?
- Product linked to foodborne disease?

Principle 1
Conduct Hazard Analysis

- Step 2 - Hazard Evaluation
  - Not Reasonably likely to occur
  - Reasonably likely to occur

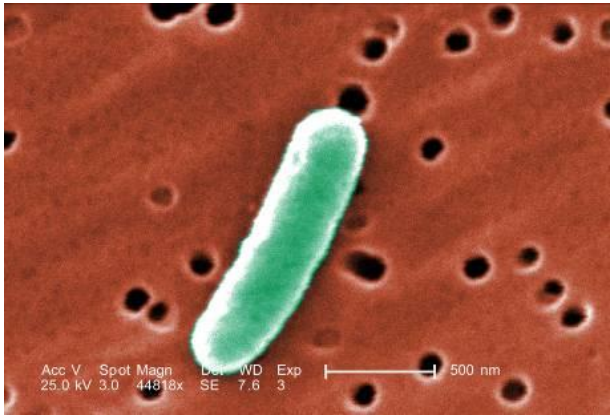
Principle 1
Conduct Hazard Analysis

- Hazard evaluation considers all aspects involved in the production of product
  - Not reasonably likely to occur (NRLTO)
    - NRTLO even in absence of control measure
    - NRTLO due to existence of specific SSOP or prerequisite program

NRLTO

Principle 1
Conduct Hazard Analysis

- Prerequisite Programs examples
  - Purchase specifications for raw materials
  - Antimicrobial ingredients in RTE products
  - Employee hygiene specific for post lethality exposed product area



Principle 1
Conduct Hazard Analysis

- Step 3 - Hazard control measures identified

Controls

Principle 1 Hazard Analysis
9 CFR 417.2 (a)(1)

- (a) Hazard analysis.
  - (1) Every official establishment shall conduct, or have conducted for it, a hazard analysis to determine the food safety hazards reasonably likely to occur in the production process and identify the preventive measures the establishment can apply to control those hazards…….

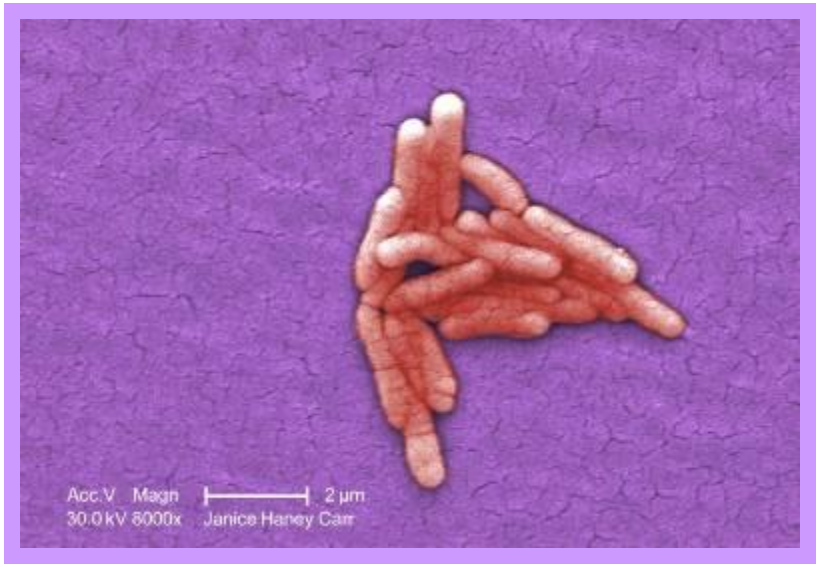
Principle 2
Determine CCPs

- Critical control point (CCP)
  - Point, step, or procedure at which control can be applied and a food safety hazard can be prevented, eliminated, or reduced to an acceptable level

CCP

Principle 2
Determine CCPs

- Examples of CCPs for pathogens
  - Cooking
  - Stabilization
  - Drying
  - Fermentation
  - Pasteurization
  - Acid rinses

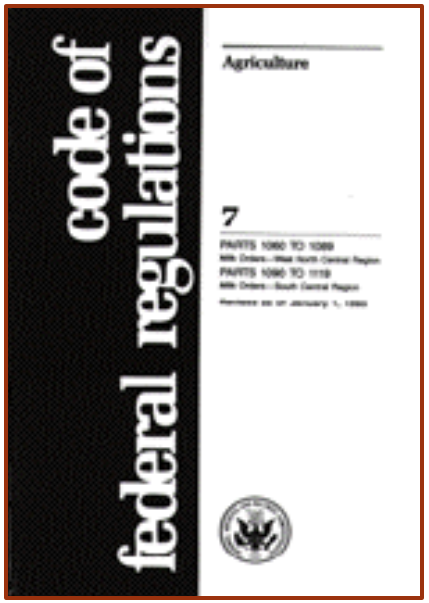


Principle 2
Regulation 9 CFR 417.2(b)(1)

- Every establishment shall develop and implement a written HACCP plan covering each product produced by that establishment whenever a hazard analysis reveals one or more food safety hazards that are reasonably likely to occur, based on the hazard analysis conducted in accordance with paragraph (a) of this section.

Principle 2
Regulation 9 CFR 417.2(c)(2)

- List the critical control points for each of the identified food safety hazards



Principle 3
Establish Critical Limits

- Maximum or minimum value to which a process must be controlled at a CCP to prevent, eliminate, or reduce the hazard to an acceptable level
  - Most often based on process parameters
    - Time/temperature
    - Physical dimensions
    - Water activity
    - PH

Principle 3
Regulation 9 CFR 417.2(c)(3)

- List the critical limits that must be met at each of the critical control points.
- Critical limits shall, at a minimum, be designed to ensure that applicable targets or performance standards established by FSIS, and any other requirement set forth in this chapter pertaining to the specific process or product, are met;

Principle 4
Establish Monitoring Procedures

- Observations or measurements to assess whether a CCP is within the CL
- Continuous preferred
- If discontinuous must be sufficient to ensure control
- Assignment and training of monitoring personnel is very important

Principle 4
Establish Monitoring Procedures

- Track control of the process, and correct trends before deviation occurs
- Determine when the process has deviated from the critical limit
- Provide a written document to be used in verification

Principle 4
Regulation 9 CFR 417.2(c)(4)

- List the procedures, and the frequency with which those procedures will be performed, that will be used to monitor each of the critical control points to ensure compliance with the critical limits;

Principle 5
Establish Corrective Actions

- For deviations from CL or unforeseen hazards
- Address disposition
- Ensure no unsafe product is released
- Identify and correct the cause
- Ensure control of CCP
- HACCP plan may need modification

Principle 5
Regulation 9 CFR 417.2 (c)(5)

- Include all corrective actions that have been developed in accordance with § 417.3(a) of this part, to be followed in response to any deviation from a critical limit at a critical control point;

Principle 5
Regulation 9 CFR 417.3 (a)

- The written HACCP plan shall identify the corrective action to be followed in response to a deviation from a critical limit. The HACCP plan shall describe the corrective action and assign responsibility for taking the corrective action, to ensure……

Principle 5
Regulation 9 CFR 417.3(b)

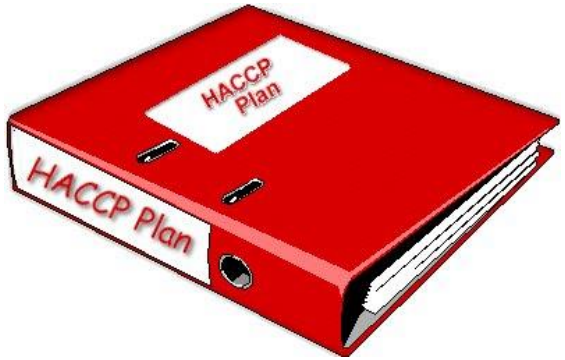
- If a deviation not covered by a specified corrective action occurs, or if another unforeseen hazard arises, the establish shall……

Principle 6
Establish Recordkeeping System

- Establish effective recordkeeping system
- Written evidence documenting the operation of the HACCP system

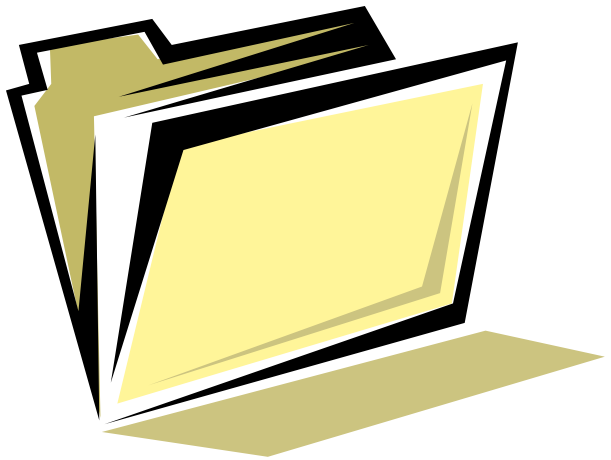
Principle 6
Establish Recordkeeping System

- Summary of the hazard analysis
- HACCP plan
- Supporting documentation
- Daily operational records



Principle 6
Regulation 9 CFR 417.2(c)(6)

- Provide for a recordkeeping system that documents the monitoring of the critical control points. The records shall contain the actual values and observations obtained during monitoring.



Principle 6
Regulations in 9 CFR 417.5

- 417.5(a)(1)(2)(3)-maintain (1) HA (2) HACCP plan (3) monitoring records
- 417.5(b)-entry on records, sign, date
- 417.5(c)- preshipment review
- 417.5(d)-records on computers
- 417.5(e)-record retention

Principle 7
Establish Verification

- Initial validation (First 90 days)
  - Ensures system is adequate to control hazards
- Ongoing verification (Continuous)
  - Periodic activities other than monitoring to ensure that the entire system functions properly
- Reassessment (Periodic as needed)
  - Periodic assessment to determines if the system needs modifying to remain effective

Principle 7
Regulations

- 417.2(c)(7) List the verification procedures, and the frequency with which those procedures will be performed, that the establishment will use in accordance with § 417.4 of this part.
- 417.4(a)(1) Initial validation
- 417.4(a)(2)(i)(ii)(iii) On going verification
- 417.4(a)(3) (i)(ii) and (b) Reassessment

HACCP Seven Principles Workshop

- Each group will be given one “HACCP Principle”.
- Discuss the meaning and significance of your assigned principle.
- Be ready to “report out”.