Food Safety Basics
Hazard Analysis & Critical Control Point (HACCP)

Objective: Understand the objectives, structure and possible project uses for HACCP
Who Cares and Why

Saves your business money in the long run
Avoids you poisoning your customers
Food safety standards increase
Ensures you are compliant with the law
Food quality standards increase
Organizes your process to produce safe food
Organizes staff promoting teamwork/efficiency
Due diligence defense in court.
Origins of HACCP

- Pioneered in the 1960’s during Apollo program
- Adopted by many food processors and the U.S. government
- Designed to minimize the risk of food safety hazards.
Where Does HACCP Fit in?

- Basic Requirements
- Food Safety Assurance
- Quality Assurance
- Cultural and Managerial Approach

- GHP
- Principles of HACCP
- ISO 9000 (eg)
- TQM (eg)

- Requirements
- Food Safety Assurance Plan (HACCP Plan)
- Quality System
HACCP Basics

- Used in food processing and service
- Preventive and risk-based
- A management tool used to protect the food supply against biological, chemical and physical hazards
- Voluntary but becoming a requirement through integration into ICS per buyer requirements, ISO 22000, etc.
Hazards

- A biological, chemical or physical agent that is reasonably likely to cause illness or injury in the absence of its control
Biological Hazards

- Microorganisms
  - Yeast
  - Mold
  - Bacteria
  - Viruses
  - Protozoa

- Parasitic worms
Chemical Hazards

- Naturally Occurring
- Intentionally added
- Unintentionally added
Physical Hazard

- Any potentially harmful extraneous matter not normally found in food
  - Glass
  - Wood
  - Stones
  - Metal
  - Plastic
**Principles of HACCP**

- Conduct hazard analysis
- Identify critical control points
- Establish critical limits
- Monitor each CCP
- Establish corrective actions
- Establish verification procedures
- Establish record-keeping and documentation procedures
Hazard Analysis Basics

- Purchase & delivery?
- Storage?
- Processing
- Preparation?
- Cooking/Re-heating?
- Cooling? Hot holding?
- Service?
Control Measure Determination

Can I remove the hazard?  Yes  How?

No

Can I control the hazard?  Yes

No

What new controls are required?  Can I improve controls?

Can I improve controls?

Yes

Are the controls to the standard recognised by my industry?*

Yes

Implement control

Review

US AID
FROM THE AMERICAN PEOPLE

Food Safety Basics
Critical Control Point Limits

- Identify Critical Control Points
- Determine Critical Limits

- Cooking & Re-heating
  - 75°C & Above: Bacteria Die within Seconds
  - 63°C: Bacteria Die Very Slowly (within hours)
  - Danger Zone
  - 100°C: Virtually no Bacterial Survival
  - Chilled (High Risk) Foods
    - Recommended Storage Temperature: 8°C & Below
      - 5°C & Below: Bacteria Multiply Very Slowly
      - -18°C: Virtually No Bacterial Growth
  - Hot Holding
  - Cool cooked foods within 1½ hours

Food Safety Basics
Setting Limits & Monitoring Performance

- Temperature reading records
- Visual observation
- Organoleptic analysis
- Stock rotation checks
- Setting of safe limits
- Training
- Supervision
Prerequisite Programs

- Procedures, including GMPs, that address operational conditions provide the foundation HACCP systems
  - GMP
    - Good Manufacturing Practice
  - SCP
    - Sanitation Control Procedure
  - SSOP
    - Sanitation Standard Operating Procedure
  - FMEA
    - Failure Mode Effective Analysis
  - HACCP
    - Hazard Analysis and Critical Control Point
Common Prerequisite Programs

- Facilities & equipment
- Standard operating procedures
- Supplier controls
- Production specification
- Personnel policies
- Traceability and recalls
Preliminary Steps | How to HACCP

- Assemble HACCP team
- Describe production & distribution systems
- Identify intended use and consumers of food
- Develop flow diagram
- Verify flow diagram
HACCP Plan & Support Documents

- Hazard Analysis Worksheet
- Records related to performing hazard analysis and establishing critical limits
- Data used to establish safe product shelf life
- HACCP team members and their responsibilities
- Summary of preliminary steps taken in the development of a HACCP plan
- Prerequisite programs
Elements of Verification

- CCP verification activities
  - Calibration of monitoring devices
  - Targeted sampling and testing
  - CCP record review
- HACCP system verification
  - Observations and reviews
  - Microbiological testing
  - Documentation coherency
  - Management review
- Actual process changes
  - Legal compliance
  - Buyer confidence
How HACCP can help USAID projects
HACCP Wrap-up

- Preventative approach to food safety
- Can help identify process improvements
- Reduces the cost of end product testing
- Provides evidence of due diligence
- Reduces the likelihood of product recall
- Enhances customer trust
- Improves staff motivation and efficiency
Exercise

- Break into three groups and use the olive oil production process diagram to describe how the principles of HACCP could be used in the design, procurement, and implementation of a project promoting olive oil production.