

# Foreign Material Contamination HACCP and Prerequisite Programs

**Troie Burch**

**Director of Quality Assurance  
Quik-to-Fix Foods**

**Southwest Meat Association**

September 24, 2002

FSIS Technical Conference; Omaha,  
Nebraska



# Food Safety Hazard

- PR/HACCP Final Rule definition:
  - Any biological, chemical, physical property that may cause a food to be unsafe for human consumption
  - Does not take into account "significance" in risk to human health

# Food Safety Hazard

- NACMCF definition:
  - a biological, chemical, physical agent that is reasonably likely to cause illness or injury in the absence of its control.
  - Takes into account "significance"

# HACCP - Hazard Analysis

- Product History - ingredients, processes
- Customer Complaints
- Is it a food safety hazard or a contaminate?

# Extraneous Matter

- Any object/material which may become a part of the product being produced, which is not designed to be a part of such product
- Not usually a significant risk, but depends on size, shape, and type

# Adulteration or Contamination

- Adulteration - the bearing of any deleterious substance which may render the food injurious to health
- Contamination must be addressed in SSOP, not in HACCP

# HACCP - Hazard Analysis

- Evaluate information on hazards to decide which are significant and reasonably likely to occur and must be addressed in the HACCP plan
- If not significant and reasonably likely to occur - not covered by HACCP, but in Prerequisite Programs

# HACCP - Hazard Analysis

- Low risk, low frequency- not HACCP
- Low risk, high frequency-depends
- High risk, low frequency-depends
- High risk, high frequency-HACCP

# Prerequisite Programs

- **Multiple Points of Evaluation**
  - Supplier Certification
  - Incoming Inspection
  - Sanitation/Preventive Maintenance
  - Processing Steps
  - Employee Practices
  - Finished Product Inspection
- **Employee Training**

# Supplier Certification

- Meats
  - Metal Detection - 10.5 mm ferrous
- Dry Ingredients
  - Letters of Guarantee
  - Sifters and Magnets
- Packaging
  - Letters of Guarantee

# Incoming Inspection

- Product packaging condition
- Food Code 3-202.15 Package Integrity
  - "Food packages shall be in good condition and protect the integrity of the contents so that the food is not exposed to adulteration or potential contaminants."

# Sanitation/Preventive Maintenance

- Proper assembly of equipment
- No extraneous material
- No missing or damaged parts

# Grinding

- Checks after every batch
  - Large object metal detection before pre-grind
  - Grind plate and knife blade check
  - Bone meat check
  - Knives and plates sharpened and inspected at end of each day
  - Metal detection before final grind

# Sifters and Magnets

- Dry ingredients
- Magnets remove enrichment

# Employee Practices

- Colored vs clear plastic gloves
- Proper placement of gloves when not in use
- Small Tool Policy

# Finished Product

- Visual at Packing
- Finished Product Metal Detection
  - 1.5 - 2.0 mm ferrous
  - 2.5 mm non-ferrous
  - 3.0 mm stainless steel 316

# Foreign Material

- In meat and non-meat items
- Wood
- Plastic
- Cardboard
- Metal - biggest concern
- UFO - unidentified foreign object

# Wood

- Likely source
  - pallets
- Pallet inspection program
- Pallet rebuild program
- Transfer to plastic pallets
- Slip sheets
- Wrap combo and wood pallet

# Plastic

- Likely source
  - Processing or measuring tools
  - Packaging
  - Liners frozen in meat
  - Chub ends frozen in meat
  - Gloves
- Small tool program

# Cardboard

- Likely source
  - faulty incoming packaging - frozen boxed meat and poultry products
  - sticks to the meat
  - frozen in the meat

# Metal

- Lead shot
  - finished product metal detection
- Injection Needles
  - Inspect equipment during production
- Meat Hooks
- Boning knives
  - Incoming 10.5 mm metal detection

# Metal continued

- Metal to metal rubbing
- Equipment - missing bolts, etc
- Metal detectors expensive for small processors
  - Cost of equipment
  - Trained employees

# Bone

- Not necessarily a contaminant - inherent
- Prevention/reduction methods
  - Visual inspection
  - Incoming Specifications
  - Grinding Specifications
  - Bone elimination equipment
  - Lack of re-use of bone meat

# Suspected Contamination

- **Metal**
  - If no finished product metal detection
    - Use another resource that has equipment to inspect
    - X-ray < 0.8mm or lowest detectable level
    - Double pass at 90 degrees

# Suspected Contamination

- With use of metal detection
  - Re-inspect product at higher sensitivity
    - < 0.8 mm ferrous or lowest detectable level
    - Double pass at 90 degrees

# Suspected Contamination

- Plastic - depends on density and material characteristics
  - X-ray < 0.8mm or lowest detectable level

# Challenges for Small Plants

- Lack of resources
- Small number of employees
- Large number of products

# Challenges for Small Plants

- Need flexibility for implementation
  - Non capital alternatives
  - Best means available
  - Based on strengths of company