

HACCP Principle 1: Conduct a Hazard Analysis

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Hazard Analysis



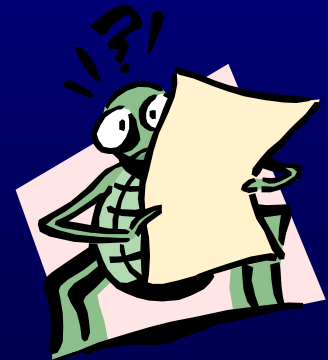
- **Prepare a List of Hazards that are of “such significance that they are reasonable likely to cause injury or illness if not effectively controlled.”**
- **Describe Control Measures**
 - **Not all hazards can be prevented, but virtually all can be controlled**

Hazard Analysis

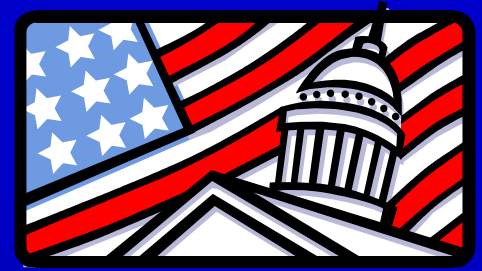
Hazard Analysis				
Product: Ground Meats				
Process Step	Potential hazard introduced, controlled or enhanced at this step B= Biological C= Chemical P= Physical	Should the hazard be addressed in the HACCP plan?	Justification for decision.	What control measures can be applied to prevent the significant hazards?
Step 1: Receive Fresh Beef and Pork Trim	B- Pathogens on incoming material C- Hydraulic fluid, oil P- Foreign materials, hooks, bones, plastic	B- Yes C- No P- No	B - Potentially high severity, high occurrence C- Low occurrence, according to plant experience,; Low severity. P- Low occurrence, according to plant; Low severity.	B- Temperature control of product.

Important!!!

- **If Hazard Analysis is not done Correctly:**
 - Hazards warranting control are not Identified
 - Plan will not be effective even if it is carefully followed

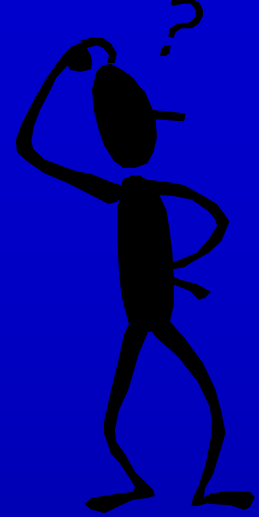


FSIS Definition



- **“Reasonably Likely to Occur”**
 - **“If a problem has occurred more than once, ...agency will deem hazard reasonable likely to occur, even if no demonstrable health risk”**
- **“Control” “Absence of Control”**
 - **“...if an establishment institutes a control, the control should be a CCP”**

What Does This Mean?



- If there is a hazard that is “reasonably likely to occur” and the control measure is within your establishment then it is a CCP.
- Regulatory HACCP!

Food Safety Hazards

- **ZERO TOLERANCE -**
- **FSIS regards its requirements for no visible feces on carcasses as food safety “performance standards”**
- **Companies are “obliged” to include CCP’s to assure that the standard is met.**



Purpose of Hazard Analysis

- **Identify Significant Hazards and Control Measures**
- **Can be used to Modify a Process or Product to Further Assure or Improve Safety**
- **Basis for Determining Critical Control Points (CCP)**

Hazard Analysis

- **Series of Questions to Determine Factors that Effect the Safety of the Product**
- **Questions Vary Depending on Product and Process**



Two Steps of Hazard Analysis

1. Hazard Identification

- “Brainstorm”**
- List all Potential Hazards**

2. Hazard Evaluation

- Base on Severity and Likelihood of Occurrence**
- Consider Short Term and Long Term Exposure**

Hazards:

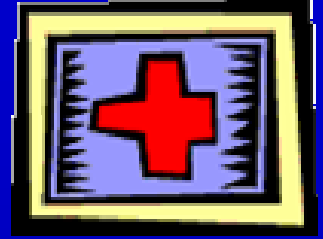
- **Significant - Low Risk Hazards Usually Addressed in GMP and/or SSOP's.**
- **Likely to Occur**
- **Prevention, Elimination or Reduction to Acceptable Levels is Essential to Produce a Safe Product**
- **Do NOT include Quality Concerns**

Significance of Hazard

- **Severity**
 - Magnitude and Duration of illness
 - Public Health Impact
- **Occurrence**
 - Experience
 - Epidemiological Data
 - Information in Technical Literature



Determining Risk



- **An estimate of likely occurrence of hazard**
- **Based on - Experience, epidemiological data, and other information from the scientific literature.**
- **Severity is the seriousness of the risk.**

Severity and Likelihood

Likelihood of Occurrence

High	HL	HM	HH#
Med.	ML	MM	MH
Low	LL*	LM	LH
	Low	Medium	High

#Probably Yes

*Probably No

Potential Questions:

- Does the food contain ingredients that might cause microbiological, physical or chemical hazards?
- Which intrinsic factors must be controlled to assure food safety?
- Have there been food-borne outbreaks associated with this product?
- Is there a “kill step” in the process to control pathogens?

Hazard Analysis

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Potential Questions

- Is there potential for recontamination after processing?
- What is the microbial content of the food? Does it change during storage?
- Does the equipment function properly to destroy microbial hazards?
- Can equipment be properly sanitized?
- Are employees trained to handle food safely?

Control Measures

- **Physical/Chemical or Other Factors that can be used to Control Hazard**
- **May be More than one Control for Each Hazard**
- **Each Control Measure may Control More than one Hazard**

Important

- **Each Hazard Must be Considered and Documentation must be Provided.**
- **Identification of a Hazards is NOT an exact Process. It is Debatable.**
- **Must rely on Expert Opinion, Epidemiological Data, and Scientific Literature to Come to a Logical Decision.**

Group Exercise

- **List Process Steps on Hazard Analysis Worksheet.**
- **Identify all Chemical, Physical, and/or Biological Hazards Associated with each Step.**
- **Determine if Hazard Significant.**
- **Document why a hazard was determined to be significant/insignificant.**
- **Cross Insignificant Hazards off List.**
- **Identify Control Measures for each Significant Hazard.**