HACCP: Case study – microbiological example

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Implementation Steps

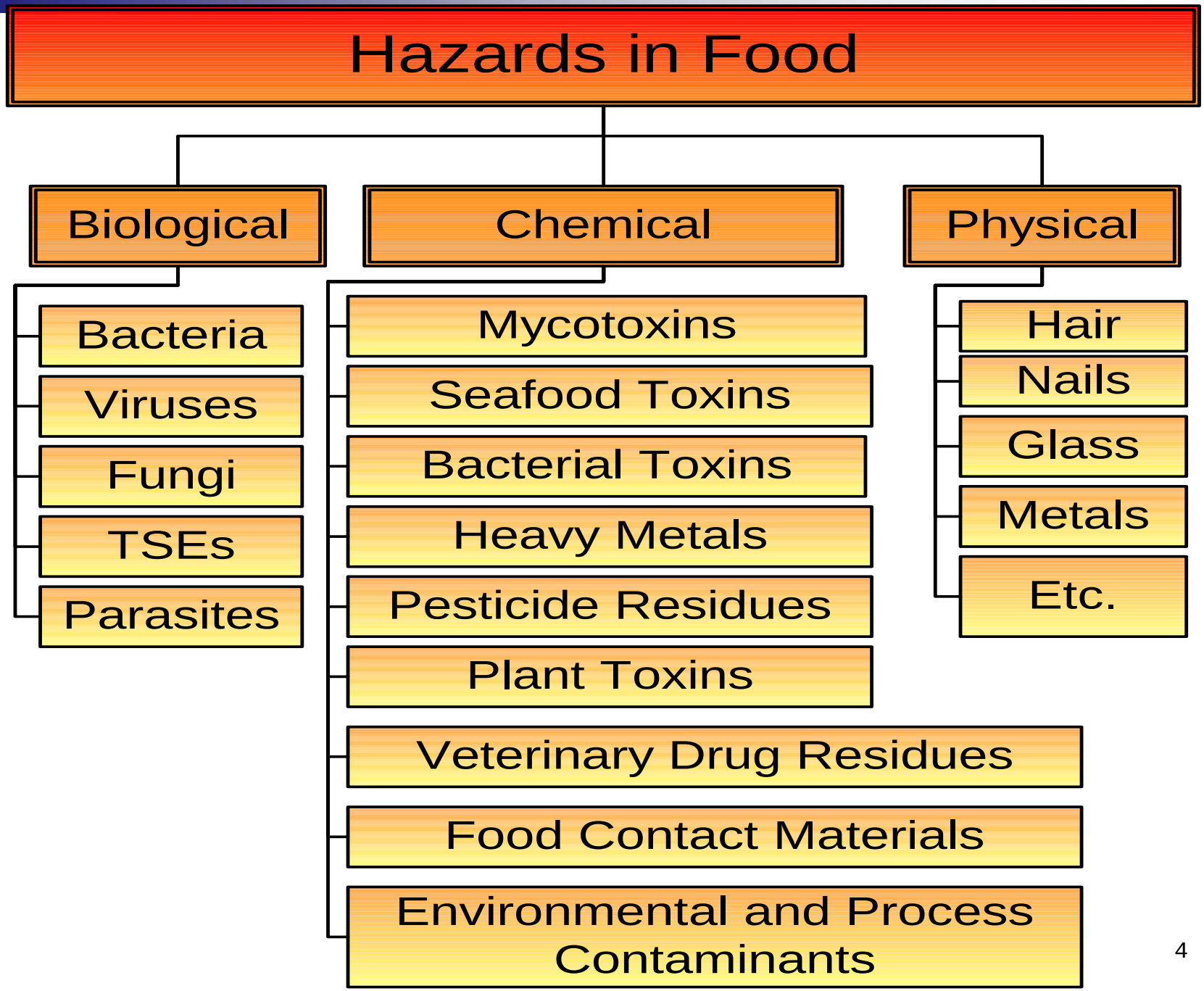
1) Identify Critical Control Points (Principle 7)
2) Identify Control Points
3) Conduct a Hazard Analysis (Principle 6)
4) Establish Critical Limits (Principle 8)
5) Establish Monitoring procedures (Principle 9)
6) Establish Corrective Actions (Principle 10)

Step 1 – Hazard Analysis

Carry out a hazard analysis (at each process step) by identifying and listing all potential hazards and list the measures to control the identified hazards:

<u>In the abattoir</u>:

- Biological (pathogenic)
  - contamination, growth, survival
- Chemical
  - cleaning chemicals, medicines, herbicides
- Physical
  - people, premises, plant, packaging, pests


Hazards in Food
Biological
Chemical
Physical
Bacteria
Viruses
Fungi
TSEs
Parasites
Mycotoxins
Seafood Toxins
Bacterial Toxins
Heavy Metals
Pesticide Residues
Plant Toxins
Veterinary Drug Residues
Food Contact Materials
Environmental and Process Contaminants
Hair
Nails
Glass
Metals
Etc.

Process Hazard Analysis		Product **Bovine carcase**				
Step **Evisceration**		Author: **HACCP Team**	**Decision Tree**		Date	Page of
Hazard	Cause	Control Measure	Q1	Q2	CCP Y/N	Comment
Biological Hazards: **Contamination**	**Poor work practice**	**Training of Operative in SOP**				
Chemical Hazards: **Not Applicable**						
Physical hazard **Not Applicable**						

What can go wrong?

Why did it go wrong?

What can I do about it?

Step 2 - Control Points

Definition:

- **A Control Point is any point at which a hazard can be controlled, eliminated or reduced to an acceptable level.**
- **Examples???**

Clean animals, steam pasteurisation etc.

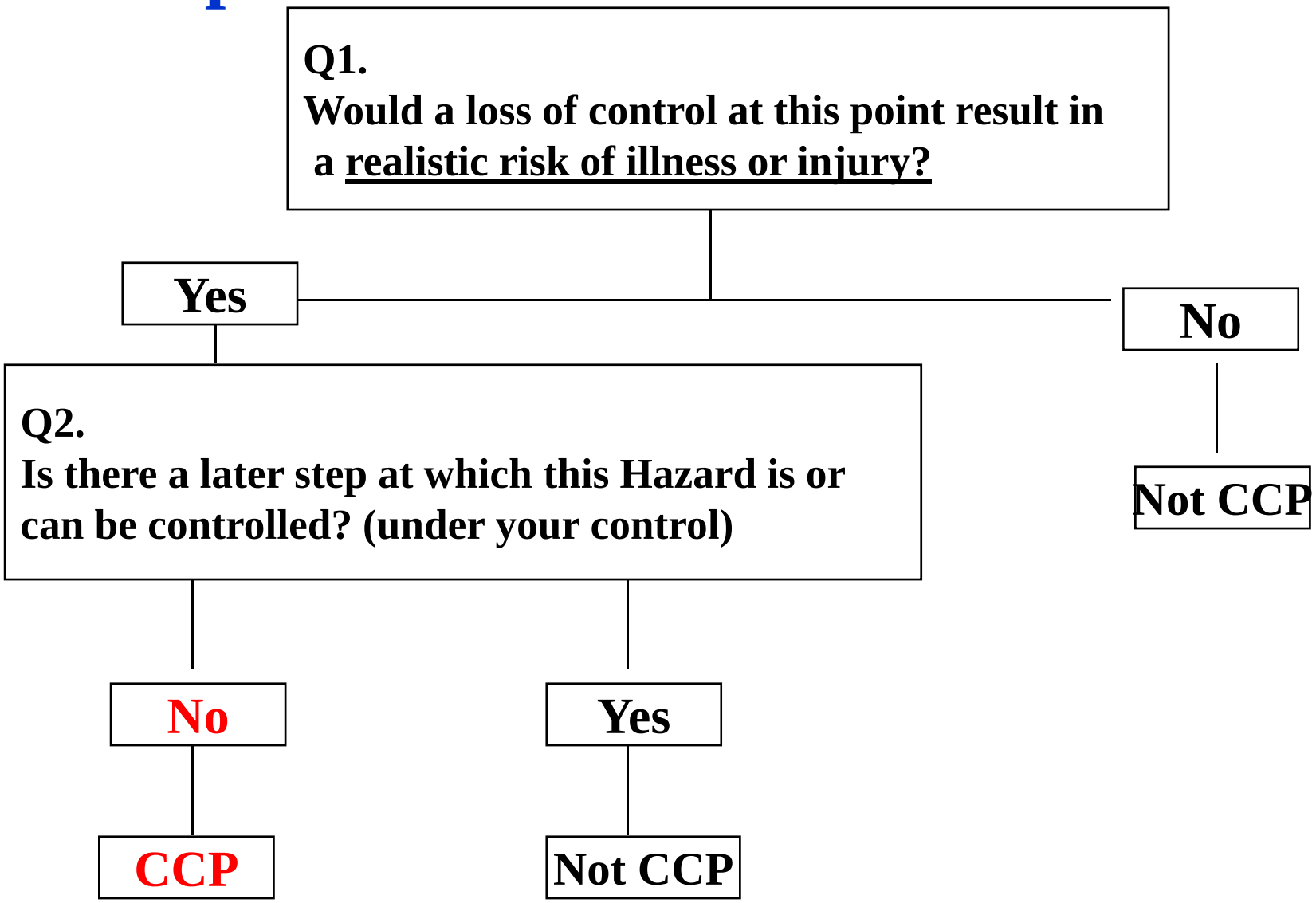
Step 3 – Critical control points (CCPs)

Identify Critical Control Points (CCPs) in the process using a Decision Tree:

Definition:

Critical Control Points are those where a specific hazard must be controlled to protect the consumer, on the basis that no further process will adequately deal with that hazard

Simplified Decision Tree



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Process Hazard Analysis		Product **Bovine carcase**				
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Hazard	Cause	Control Measure	Q1	Q2	CCP Y/N	Comment
Biological Hazards: **Contamination**	**Poor work practice**	**Training of Operative in SOP**	**Y**	**Y**	**N**	**Final carcase Inspection**
Chemical Hazards: **Non Applicable**						
Physical Hazards: **Non Applicable**						

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Hazard	Cause	Control Measure	Q1	Q2	CCP Y/N	Comment
Biological Hazards: **Contamination**	**Poor carcase inspection**	**Training of Operative in SOP**	**Y**	**N**	**Y**	**CCP1**
Chemical Hazards: **Non Applicable**						
Physical Hazards: **Non Applicable**						

Beef HACCP Plan

HACCP Plan			PRODUCT **carcase Beef**		Author Section No.:			Date: Rev: Page of		
Step	**Potential Hazard** (What can go wrong?)	**Cause** (Why did it go wrong?)	**Control measure** (What can I do about it?)	**Critical Limits**	**Monitoring** Procedure Respon Freq (How do I check?)			**Corrective Action** (What can I do about it?)	**Doc Ref.** How do I prove?)	**Verification**
CCP1 Final carcase inspection	**Contamination Bacteria**	**Poor carcase Inspection**	**Correct training in carcase inspection**							

Step 4 –Critical Limits

A critical limit is a criteria which separates acceptability from unacceptability:

Step	Hazard	Critical Limit
CCP 1 Final carcase inspection	Contamination	Zero Visible Contamination

Important Points in Setting Limits

Ask yourself the following questions:

- Is the limit attainable?
- Is it legal?
- Will the limit sufficiently control the hazard?
- What criteria was used to set this limit?

Lamb HACCP Plan

HACCP Plan			PRODUCT **carcase Lamb**		Author Section No.:			Date: Rev: Page of	
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CCP1 Final carcase inspection	Contamination Bacteria SRM	Poor carcase Inspection	Correct training in carcase inspection	**No visual contamination (N.V.C.)**					
CCP ?? Carcase/ Offal Chilling **If not why not?**	Poor temperature control resulting in growth of bacteria	Mechanical failure or fridge breakdown. Poor chilling practice	Service and maintenance of chill unit. Training in temperature control	**Carcase less than 7°C for lamb and less than 3°C for offal in 24 hours**					

Step 5 –Monitoring

Establish a monitoring system to ensure control of the CCP by scheduled testing or observations:

- What? What is the Critical Limit?
- Where? Must be at the CCP or close as possible
- Who? Person responsible identified & trained
- When? Continuous or at defined intervals
- How? Describe the monitoring process

Important Points about Monitoring

- **Sometimes constant monitoring isn't possible.**
- **Sometimes micro testing cannot be avoided as a means of monitoring**

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CCP1 Final carcase inspection	Contamination Bacteria SRM	Poor carcase Inspection	Correct training in carcase inspection	No visual contamination (N.V.C.)	**Inspect every carcase after slaughter**	**Slaughter personnel**	**Every carcase**		

Step 6 - Corrective Action

- **Establish the corrective action to be taken when monitoring indicates that a particular CCP is moving out of control:**

- **if a critical limit is exceeded or not achieved a corrective action must be taken.**

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CCP Monitoring / Records

Final carcase Inspection Record

carcase No.		H/Q	S.Loin/ Flank	F/QR	S.R.M. Removal	**24 hr**	**48 hr**	**72 hr**
1								
2								

Signed:_____ Signed:_____

Slaughterman *Owner*

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CCP1 Final carcase inspection	Contamination Bacteria SRM	Poor carcase Inspection	Correct training in carcase inspection	No visual contamination (N.V.C.)	Inspect every side after slaughter	Slaughter personnel	Every carcase	Trim off contamination	Final carcase inspection record	**Weekly**

Implementation Procedures of HACCP systems in meat establishments

- **Hygiene Package 2006 - Changes?**
- All businesses after primary production must have a food safety system based on HACCP principles.
- Principles to be applied with **flexibility in some establishments**
- Pre-requisite programs may suffice in certain operations
- Critical Limits do not have to be numerical