


Risk Analysis



OFFICE OF THE TEXAS STATE CHEMIST
Texas Feed and Fertilizer Control Service • Agriculture Analytical Service

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RESEARCH

Incorporating a Framework of Risk Analysis into the Food Industry

- ❑ Current model lacks scientific rationale
- ❑ Dictated by the competing interests of various stakeholders
- ❑ Hard to apply regulation uniformly
- ❑ Food production technologies are constantly evolving
- ❑ New pathogens being discovered
- ❑ Need to modernize the food regulation system

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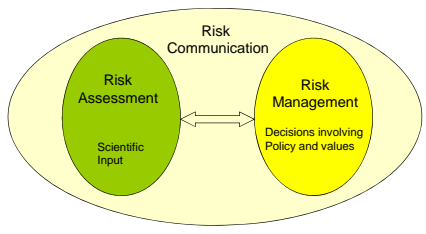
Risk Analysis in the Food Industry

- ❑ Science based analysis for reaching sound consistent solutions to food safety problems
- ❑ Reduce food-borne illnesses and strengthen food safety systems
- ❑ Assesses possible links between hazards in the food chain and actual risk to human health

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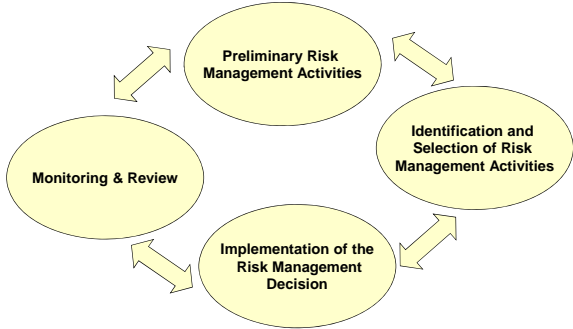
What is Risk Analysis?

A systematic, disciplined approach for making food safety decisions



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Generic Risk Management Framework



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Risk Management Framework – Preliminary Risk Management

- ❑ Questions to be answered
 - What is the risk?
 - How serious is it?
 - How should the risk be assessed?
 - Do you need a risk assessment?
 - What is the goal of your risk management policy?
- ❑ Steps to be implemented:
 - Identify Food Safety Issue
 - Develop Risk Profile
 - Establish risk management goals
 - Establish risk assessment policy
 - Commission a risk assessment (if needed) & consider results
 - Ranking and rating the risk,

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Risk Management Framework – Identification & Selection of Risk Management Options

Questions to be Answered

- What are the range of management options available to resolve the food safety problem?
- Which of the options provides the highest level of consumer protection at the lowest cost?
- Which of the options is most practical and feasible?
- Which option will have the most support from all the stakeholders?
- Which factors need to be considered when making the decision about the best option?

Steps to be implemented:

- Identify possible options
- Evaluate options
- Select preferred options

Risk Management Framework – Implementation of Risk Management Decision

Questions to be Answered

- Are control measures in place to verify and validate implementations?
- If not, what should these control measures be?
- At which points in the production, should control measures be implemented?
- What are the different stakeholder groups who will be responsible for verifying the control measures?
- Who will be responsible for the implementation of the risk management decision?

Steps to be implemented:

- Validate controls where necessary
- Implement selected controls
- Verify Implementation

Risk Management Framework – Monitoring & Review

Questions to be Answered

- Have the intended results of risk management been achieved?
- Are there any unintended consequences?

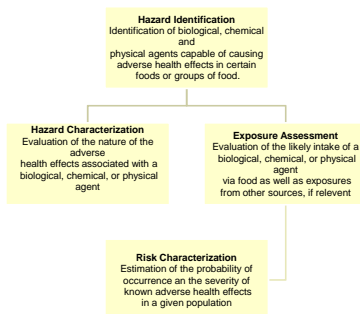
Steps to be implemented:

- Monitor Outcomes of Controls
- Review Controls where indicated

Risk Assessment

- Provide Scientific basis for Risk Analysis
- Used or characterize the potential adverse effects from exposure to hazards
- SPSS requires Risk Assessment for developing and applying standards for food in international trade

Implementing Risk Assessment



Hazard Identification

- Key step in Risk Assessment
- Risk Profile might have already identified the risk
- Begins process of estimating risk

Hazard Characterization

- Describes the nature and extent of the adverse effects known to be associated with a specific hazard
- If possible, establishes a dose response relationship between levels of exposure and likelihood of different adverse effects

Exposure Assessment

- Characterizes the amount of hazard that is consumed by various members of the exposed population
- In establishing consumption amount, the level of the hazard throughout the food production chain is considered
- Acute vs. Chronic adverse health effects are considered

Risk Characterization

- Outputs from the first three steps are used to generate estimates of risk
- Uncertainty and Variability
- "Notional Zero Risk"

Characteristics of Risk Assessment

- Basis in Science
- Objective and Transparent
- Separate functionally from Risk Management
- Structured Process
- Have a method in place for dealing with uncertainty

Alternatives to Risk Assessment

- Risk Profiles
- Ranking Tools
- Epidemiology
- Combine above approaches

Risk Communication

- Characterized by an interactive exchange of information and opinions throughout the risk analysis process
- Involves all stakeholders
- Share information about risk, risk-related factors and risk perceptions, risk assessment findings and the basis for risk management decisions

When is communication crucial

- ❑ Identification of the Food Safety Issue
- ❑ Establishing Management goals
- ❑ Sharing risk assessment results
- ❑ Implementation
- ❑ Monitoring and Review

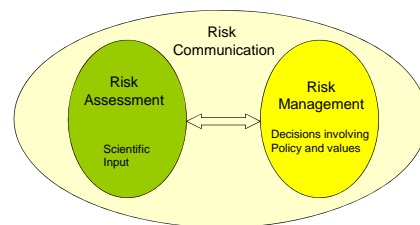
Keys to Successful Communication

- ❑ Have well established goals of communication
- ❑ Use appropriate communication strategies – determined by food safety problem, stakeholders, culture
- ❑ Know your stakeholders
- ❑ Select appropriate methods and media for communication

Risk Communication Pitfalls

- ❑ Risk Communication is not Public Education
- ❑ Risk Communication is not Public Relations
- ❑ Telling people a food is safe will not necessarily assure them

Risk Management



Resources

- ❑ Food Safety Risk Analysis: A Guide for National Food Safety Authorities (WHO & FAO)

END

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