Food Safety Metrics
- Industry Perspective -

Measuring Progress of Food Safety – Current Status and Future Directions
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Grocery Manufacturers Association
Food Safety Metrics are Important!
Food Safety Metrics are Important!

.....But why?
Why are Food Safety Metrics Important?

Impact on Government
- Regulatory policy
- Public health priorities
- Consumer confidence
Why are Food Safety Metrics Important?

**Impact on Government**

**Impact on Industry Food Safety Efforts**
  - Risk or safety assessments
  - Development of appropriate preventive controls
  - Food safety plans
  - Plant design
  - Industry funded or conducted research
Industry Metrics
Industry Metrics

- Process records
  - Time/temperature recordings
  - Preventive control validation data
  - pH records
Industry Metrics

- Process records
  - Time/temperature recordings
  - Preventive control validation data
  - pH records

- Compliance data
  - Audit Scores
  - Surveillance data
Industry Metrics

- Process records
  - Time/temperature recordings
  - Preventive control validation data
  - pH records
- Compliance data
  - Audit Scores
  - Surveillance data
- Industry practices
  - Mock recall efficiency
Do these metrics result in safer foods . . . ?
Do these metrics result in safer foods . . . ?

. . . Not necessarily !
Do Metrics Improve Safety?

Industry Metrics
- Process records
  - Time/temperature recordings
  - Validation data
- Compliance data
  - Audit Scores
  - Surveillance data
- Industry Practices
  - Mock Recall efficiency

Public Health Metrics
- Surveillance results
  - FoodNet
  - OutbreakNet
  - Passive reporting
- Attribution
Do Metrics Improve Safety?

Industry Metrics
- Process records
  - Time/temperature recordings
  - Validation data
- Compliance data
  - Audit Scores
  - Surveillance data
- Industry Practices
  - Mock recall efficiency

Public Health Metrics
- Surveillance results
  - FoodNet
  - OutbreakNet
  - Passive reporting
- Attribution

Public Health Goal
- Reduced morbidity and mortality!
Do Metrics Improve Safety?

Public Health Goal
- Reduced morbidity and mortality!

Industry Metrics
- Process records
  - Time/temperature recordings
  - Validation data
- Compliance data
  - Audit Scores
  - Surveillance data
- Industry Practices
  - Mock recall efficiency
Food Safety Metrics

What is the right target?
Food Safety Objectives (FSO)

How safe is safe enough?
10
Food Safety

Co-Lead Agencies:
Food and Drug Administration
Food Safety and Inspection Service,
U.S. Department of Agriculture

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## Healthy People 2010 Goals

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<tr>
<th>Reduction in Infections Caused by Microorganisms</th>
<th>1997 Baseline</th>
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Food Safety Objectives (FSO)

Definition

- Maximum frequency or concentration of a hazard at the time of consumption to protect consumers
Food Safety Objectives (FSO)

Definition

Requires active input from

- Policy makers
- Regulators
- Consumers
- Industry
Food Safety Objectives (FSO)

Performance Objectives
Food Safety Objectives (FSO)

Performance Objectives
(Performance criteria)

Control Measure
(Preventive controls, Processes)
How FSOs Influence Metrics

Production

Manufacturing

Transportation

Preparation

Consumption
How FSOs Influence Metrics

- Production
  - Performance Objective*
    - Manufacturing
  - Performance Objective*
    - Transportation
  - Performance Objective*
    - Preparation
  - FSO*
    - Consumption

*metric based
How FSOs Influence Metrics

Performance Objective* → Manufacturing

Performance Objective* → Transportation

Performance Objective* → Preparation

FSO* → Consumption

Control measure

*metric based
Food Safety Objectives

A simplified guide to understanding and using Food Safety Objectives and Performance Objectives

by The International Commission on Microbiological Specifications for Foods (www.icmsf.org)
9th November 2005

1. Introduction
2. Good practices and HACCP
3. Setting public health goals - the concept of Appropriate Level of Protection (ALOP)
4. A Food Safety Objective (FSO)
5. A Performance Objective (PO)
6. The difference between an FSO, PO and Microbiological Criteria (MC)
7. Responsibility for setting an FSO
8. Setting a PO
9. Responsibility for compliance with the FSO
10. Meeting the FSO
11. Not all FSOs are feasible
12. Concluding remarks
13. Further reading

Summary

“Food Safety Objectives” (FSO) and “Performance Objectives” (PO) can be used by an authority to communicate food safety levels to industry and other governments. FSOs and POs are distinct levels of foodborne hazards that cannot be exceeded at the point of consumption and earlier in the food chain respectively, and can be met using good practices (GAPs and GHPs) and hazard analysis critical control point (HACCP) programs. FSOs, and particularly POs, also allow for a comparison of the degree of safety provided by different food processing techniques. The principles of using good practices and HACCP, in order to produce safe foods, will not change with the introduction of these concepts, i.e., the good practices and HACCP are the tools for achieving an FSO or PO. An FSO should only be developed if a need for this has been specifically identified, e.g., when it is anticipated that an FSO will improve food safety. FSOs and POs serve a purpose different from a microbiological criterion, which describes sampling and testing of foods for acceptability or rejection. Assessing processing and preservation parameters is the preferred option to check that an FSO or a PO is met, but sometimes, sampling and testing against a microbiological criterion can be used for this purpose.
Summary

- Food safety metrics is of great interest and importance to the food industry.
- The aim of food safety metrics should be to reduce foodborne illness.
- Government, industry and consumers must work together to identify and adopt appropriate metrics.
Thank you!