

Food Safety System Fundamentals

Objectives

1. Define “system” and give an example.
2. List two basic components of a food safety system and describe their relationship to each other.
3. Describe “systems thinking” and its application to food safety systems and assessing inspection findings.

System Definition

An assemblage or combination of things or parts forming a complex or unitary whole: *a mountain system; a railroad system.*

Note: Often systems exist within systems. Example: railroad system within the transportation system

A coordinated body of methods or a scheme or plan of procedure

Does FSIS have methods/plans/procedures for regulating meat and poultry producers?

Do food establishments have methods/plans/procedures to ensure safe food products?

Food safety system

Purpose

Evidence of failure

General causes of failure

Design Deficiencies

Hazards or preventive measures not identified

Programs/plans are not supported and effective

Programs/plans not maintained/reassessed (not re-evaluated routinely, after failures, or upon changes)

Execution Deficiencies

Poor execution of programs/plans. For example, not performing activities necessary to ensure product or process control, not maintaining records to demonstrate implementation and effectiveness of programs or plans, not taking appropriate follow-up actions to address deficiencies in execution of programs or plans, or not verifying that the programs or plans are being implemented.

Consequences of food safety system failure

Lack/loss of control, but no resultant food safety hazard

Isolated event vs. recurring events

Lack/loss of control resulting in an unsafe food

May impact another processor's system (e.g. undeclared allergen passed on to next processor)

Lack/loss of control with food safety hazard and adverse health outcomes (illness/injury/death)

Group Exercise-list the components of a food safety system

Hazard Analysis

Food Safety Hazard- Any biological, chemical, or physical property that may cause a food to be unsafe for human consumption

Reasonably Likely To Occur - a hazard for which a prudent establishment would establish controls because it historically has occurred, or because there is a reasonable possibility that it will occur in the particular type of product being processed, in the absence of those controls

Prerequisite Definition

“Prerequisite” means required beforehand, precondition

The World Health Organization defines **prerequisite program** as practices and conditions needed prior to and during the implementation of HACCP and which are essential for food safety.

Prerequisite programs provide a foundation for an effective HACCP system.

They are often facility-wide programs rather than process or product specific.

They may reduce the likelihood of certain hazards.

Prerequisite Program Examples

- ▶ Cleaning and sanitation
- ▶ Pest control
- ▶ Facilities & grounds
- ▶ Air system/Ventilation
- ▶ Water quality
- ▶ Chemical control
- ▶ Production equipment
- ▶ Cross contamination prevention
- ▶ Allergen control
- ▶ Personal hygiene
- ▶ Training
- ▶ Supplier control
- ▶ Specifications
- ▶ Receiving, storage, shipping
- ▶ Traceability/Recall
- ▶ GMPs

Food Safety System Basic Components

HACCP Plan

Controls food safety hazards that are reasonably likely to occur

Product and process specific

Prerequisites

Measures, procedures, and programs that provide a foundation for the HACCP system

Facility wide

May support determinations that a food safety hazard is not reasonably likely to occur

Systems Video – key points about food safety systems:

Composed of many interdependent parts

Subject to external disturbances

Dynamic. Conditions change

Conditions may be normal variation or represent loss of control

Each system is unique

Systems Thinking Concepts

Holistic system is any set (group) of interdependent parts. The parts generally are systems themselves.

Understand the parts in **relation** to the whole. (linkages)

Understand how things **influence** one another within a whole. (interactions)

Understand the parts of a system in the context of relationships with each other and other systems, **rather than in isolation.**

Car Brake System Example:

Describe the purpose, components and operation of the brake system

Describe how the parts of the brake system relate to each other and impact the function of the system

Describe how the brake system relates to and impacts other systems in the car.

Describe how other systems in the car relate to and impact the brake system.

Identify factors outside the car that impact the brake system.

BONUS QUESTION: What would you do if your brake system failed posing a safety risk to you and others?

SUBSTITUTION: Try substituting the name of any part of the food safety system (e.g. the name of a prerequisite program or part of the HACCP plan) in place of “brake system”. Use “food safety system” for “car”.

Purpose, Linkage, and Interaction

Throughout this course, you should seek to understand how the components of the food safety system relate to each other and how changes or deficiencies in one part of the system may affect the adequacy of other parts of the system. Always consider your findings in the context of the food safety system. What do they indicate about the adequacy of the food safety system? To conduct a proper assessment, you will often need to gather additional information. Consider whether the system is working or not working. Has adulterated product has been produced and shipped? Are there recurring issues/trends indicating the food safety system is not working? Are there findings that when considered collectively indicate the system isn't working? Considering the “Big Picture” is crucial to protecting public health.