

## Module 1 – Introduction to HACCP

### Page 1: Hazard Analysis & Critical Control Points

#### Contents

This module will provide introductory information on:

- How HACCP evolved
- How HACCP works
- The Canadian **HACCP system** (called FSEP)
- What HACCP does and does not do
- Benefits of HACCP



#### Learning Objectives

At the end of this module you should understand:

- What HACCP stands for
- What the **HACCP system** is based on
- How and where HACCP is used in the food industry in Canada and the world
- How HACCP benefits food companies

### Page 2: Definition of HACCP

**Definition:** HACCP is a systematic process of identifying and assessing **hazards** and risks associated with a food operation and defining the means of their control.

- Hazards have the potential to cause harm and can be biological (e.g., **bacteria**), chemical (e.g., cleaners) or physical (e.g., glass fragments).

#### Evolution of HACCP

- In the 1960's the Pillsbury Corporation developed a **food safety** control system called "HACCP" (**Hazard Analysis & Critical Control Points**).
- This "zero defect" food system was developed at the request of NASA to prevent foodborne illness for the first manned space mission.
- Later, the HACCP concept was publicly presented at the first conference for food protection in 1971.

#### Evolution of HACCP in Canada

- Canada's first mandatory food safety inspection program based on HACCP principles was developed by the Department of Fisheries and Oceans.
- The system, called the Quality Management Program (QMP) became mandatory for Canadian fish and seafood exporting companies, in 1992.
- In 1993, Agriculture Canada developed the Food Safety Enhancement Program (FSEP) for various commodity groups.
- In 2005, this HACCP program became mandatory for federally registered meat processors which export out of province.

- In 2015 food businesses conducting certain activities require a license to carry out certain activities. Some businesses will also require a Preventive Control Plan such as HACCP. This is governed under the Safe Food for Canadians Act

Link: <http://www.inspection.gc.ca/food/toolkit-for-businesses/handbook-for-food-businesses/eng/1481560206153/1481560532540?chap=2>

### More Info:

1960's: Pillsbury develops HACCP concept for NASA and later adopts it as a company wide food protection system

1971: HACCP Concept presented for the first time in the US at a National Conference on Food Protection, where risk assessments were combined with critical control points

1973: A HACCP system was adopted for the Low-Acid Canned Food Regulations following a botulism outbreak in canned soup.

1983: WHO Europe recommends HACCP

1991/93: Codex Alimentarius includes HACCP in Codes and issues HACCP guidelines

1992: Canada's DFO mandates HACCP for seafood/fish exporting companies.

1993-1995: FAO and WHO consultations

1993: Canada develops FSEP HACCP system for agriculture based processors.

1997: Codex issues revised guidelines. FDA's Seafood HACCP becomes mandatory.

2005: FSEP is mandatory for federal (Canadian) meat facilities.

2015: Safe Food for Canadians Regulations.

### Page 3: Evolution of HACCP Worldwide

- In the US, HACCP based systems have become mandatory for meat, poultry, and fish plants.
- Internationally, **HACCP systems** have been implemented in many countries. It has been incorporated into the World Health Organization / Food & Agriculture Organization standard, (Codex Alimentarius) and is now required of most food businesses in Europe.

### What is HACCP?

- HACCP is **preventative** in that it puts controls in place to ensure **food safety**.
- HACCP is **systematic** in that it covers all aspects of food production.
- HACCP is **thorough** in that it identifies potential **hazards** at every step, for every ingredient or food.
- HACCP is **internationally recognized** in that most countries have implemented some form of this food safety system.

### HACCP Determines

- Where **hazards** can be minimized or controlled.
- What to do to control hazards.
- How to train employees.
- How to implement the system.
- What information to record.



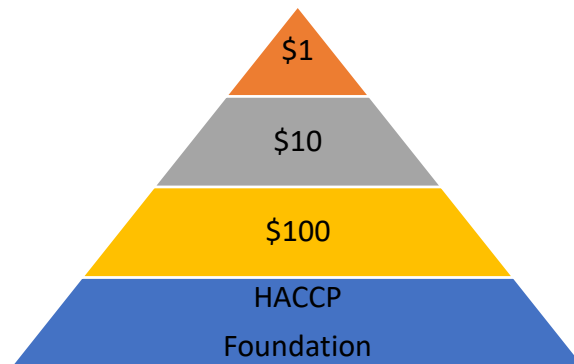
#### Page 4: How Does HACCP Work?

- It involves using controls to minimize **food safety** risk.
- It works to decrease the possibility of risk to an acceptable level (but does not eliminate **hazards**).
- It is not a traditional quality control inspection system, although quality improvement is often a by-product of HACCP implementation.



#### Page 5:

With HACCP you are implementing protection against loss of control.



For each dollar to implement a HACCP system, \$10 is saved in rework and \$100 saved in recall.

#### Page 6: Canadian HACCP

- The Canadian version of HACCP is called the **Food Safety** Enhancement Program or “FSEP”.
- FSEP is an example of Preventive Control Plan (PCP).
- FSEP is based on HACCP principles and meet the needs of an effective HACCP system



Link: <http://www.inspection.gc.ca/food/requirements-and-guidance/preventive-control-plans/the-food-safety-enhancement-program/eng/1525869691902/1525869759693>

- The FSEP program is based on 2 main parts:

#### The FSEP System

1. The HACCP plan covers a list of hazards for each product at each processing step, and includes all raw materials and ingredients.
  - After hazards are listed, **Critical Control Points** (CCP) and their limits are determined.
  - Corrective actions are developed for each CCP in the event that there is a **deviation**.
  - **Verification** and documentation complete the system.

## Page 7: The FSEP Approach to HACCP



## Page 8 The FSEP System

2. FSEP's Prerequisite Program covers 7 areas:

- A. Premises
  - B. Conveyances, purchasing, receiving and storage
  - C. Conveyances and equipment in the establishment
  - D. Personnel
  - E. Sanitation & Pest Control
  - F. Recall
  - G. Operational Prerequisite Programs
- Each section has detailed instructions on what is to be done in the plant, to minimize risks.

## Page 9: Why Use HACCP?

- It reduces reliance on finished product testing and inspections.
- It reduces production costs & business risk, including the chances of a **recall**.
- It reduces the risk of food borne disease, increases confidence in the food supply & improves public health.
- It is used as an international marketing tool and facilitates global trade.

## What HACCP Does Not Do

- It will not ensure good quality products are produced or ensure products will meet all legal & regulatory requirements (e.g., percent of fruit in a jam).
- It cannot ensure Employee Health & Safety regulations are met.
- It does not control non-food safety issues (e.g., degree of browning).

## Effective HACCP

A properly developed **HACCP system** will ensure you "say what you do" and "do what you say".

- How?
  - Say it:** by developing written procedures.
  - Do it:** by following procedures during processing and production.
  - Prove it:** by documenting that all written procedures were followed.
- HACCP is effective when personnel are effectively trained to: "say what they do" and "do what they say".
- HACCP is proven to be effective when personnel monitor and verify procedures.
- To be effective, a HACCP program must continuously be reviewed and improved to ensure what you **say** and **do** is accurate.

## Page 10: Where in the World is HACCP?

## Page 11 Is HACCP Difficult to Use?

- HACCP is thought to be complicated and require unlimited resources and expertise.
- Initially, expertise is required for analysis and reviewing.
- As well, a plant must commit the resources to implement and follow HACCP, including a **HACCP Coordinator**.
- Day to day **monitoring** is straightforward although dedicated personnel and training is required.

## Costs of HACCP

There are some costs for companies to implement HACCP including:

- Cost of training (manuals, time taken away from production, etc.).
- Administrative support that may be required for **verification** and other duties.
- Additional (temporary) resources may be needed while implementing HACCP.
- There may be costs for **validation** studies to ensure the HACCP plan is working effectively.
- New equipment may be required to properly implement HACCP (e.g., **calibration** equipment or **monitoring** equipment such as a metal detector).

## Saving with HACCP

At the same time, there are potential savings with HACCP, which include:

- Decreased product testing on line.
- Decreased human resources for product testing.
- Earlier release of finished products (means less time in inventory and less throwing away of product too close to best before dates).
- Other reduced costs
  - E.g., decreased costs for testing ingredients if pre-approve suppliers
- Decreased **recall** and/or product re-work costs.



## Benefits of HACCP

- The main benefits of having an effective **HACCP system** are that risks are reduced and problems are found and corrected, preventing repetitive problems.
- As a result, there are:
  - Fewer customer complaints.
  - Fewer **recalls**.
  - More favorable **audits** and test results.
  - Increased profits.

TIP: A functional and compliant HACCP system may provide a processor with a “due diligence” defense in legal cases.

(Due diligence means taking all reasonable precautions and sufficient effort in monitoring precautions to avoid committing the offence).

## Future of HACCP

- HACCP is being implemented in many commodities, and is being extended to production, distribution and retail operations (e.g., “farm to fork”).
- An effective **HACCP system** is becoming the standard for international trade.
- Companies are taking a pro-active approach and choosing to become HACCP compliant before it is enforced.

## Page 12 Knowledge Check: \$Cost or Savings\$

Click and drag the items (in grey boxes) to either the “Savings” or “Cost” boxes. Once completed, click on “Check Answers”.

## Page 13: Summary

- HACCP evolved from a specific food safety concern to a globally used system of reducing food safety risks.
- A HACCP system requires that you prove you are doing what you say you will do.
- The Canadian regulatory HACCP system is called FSEP and includes Prerequisites and a HACCP plan.
- While there are costs to implement HACCP, the benefits are numerous and can positively impact a company’s bottom line.

## Resources

- General information and history of HACCP:  
<http://www.inspection.gc.ca/food/requirements-and-guidance/preventive-control-plans/the-food-safety-enhancement-program/eng/1525869691902/1525869759693#a63>
- HACCP Alliance:  
<http://haccpalliance.org/alliance/haccpqa.html>
- FAO (part of Codex Alimentarius) system for HACCP implementation:  
<http://www.fao.org/DOCREP/005/Y1579E/y1579e03.htm>