Hazard Analysis Critical Control Point (HACCP)

HACCP is a food safety system designed to identify and control hazards that may occur in the food production process. The HACCP approach focuses on preventing potential problems that are critical to food safety known as 'critical control points' (CCP) through monitoring and controlling each step of the process.

HACCP applies science-based controls from raw materials to finished product. It uses seven principles standardized by the Codex Alimentarius Commission.

HACCP Principles

Principle 1. Identify and analyze hazards associated with the food. Hazards could be biological (e.g., foodborne bacterial pathogens); chemical (e.g., toxins, allergens); or physical (e.g., metal fragments, broken glass).

Principle 2. Determine the critical control points (CCPs). These are points of the process at which the hazard can be controlled or eliminated (e.g., cooking).

Principle 3. Establish critical limits for each CCP. A critical limit is the criterion that should be met to ensure food safety in a product (e.g., minimum cooking temperature and time to ensure elimination of harmful bacteria).

Principle 4. **Establish a monitoring procedure** to ensure each CCP stays within its critical limits. Monitoring can be carried out by observations (visual) or by measurement (e.g., determine who and how the temperature and time will be monitored during cooking). The most common measurements taken are time, temperature and moisture content.

Principle 5. **Establish corrective actions** if the CCP is not within the established limits. By applying corrective actions, the control of hazards is regained (e.g., reprocessing or disposing of food if the minimum cooking time and temperature are not met). Corrective action must be taken immediately.

Principle 6. Establish verification procedures to confirm that the HACCP plan is operating effectively and according to written procedures. This verification may include reviewing HACCP plans, CCP records, microbial sampling (e.g., verify that the time and temperature recording devices are calibrated and working properly).

Principle 7. Establish record-keeping and documentation procedures that demonstrate that the correct procedures have been followed. This includes monitoring documentation, actions taken to correct a potential problem, validation documents (e.g., scientific information that

supports the use of specific time and temperature for cooking).

Need for HACCP

In the past few years the food industry has faced new challenges such as the increasing number of emerging pathogenic bacteria (e.g., *E. coli* 0157:H7), increasing public concern of chemical contaminations of food (e.g., lead in food, allergens). HACCP prevents and controls these and other major food safety concerns, minimizing food safety risks of the product. HACCP allows food processors to offer a safer product to the consumers, protecting their health and life.

Benefits of HACCP

Although the main goal of HACCP is food protection, there are other benefits acquired through HACCP implementation, such as:

- Increase customer and consumer confidence
- Maintain or increase market access
- Improve control of production process
- Reduce costs through reduction of product losses and rework
- Increase focus and ownership of food safety
- Increase business liability protection
- Improve product quality and consistency
- Simplify inspections primarily because of the recordkeeping and documentation
- It is aligned with other management systems (ISO 22000)

Cost of Implementing and Operating HACCP

The cost of HACCP is dependent on the standard to which they operated prior to developing and implementing the HACCP system.

Some of the costs involved during the implementation and maintenance of HACCP are as follows:

Implementation Costs
- consultant fees
- investment in new equipment
- staff training
- structural changes to the plant
- staff time in documenting the system

Operational Costs
- record keeping
- product testing
- staff training
- managerial or supervisory time

For more information on food safety please contact the Food Safety and Inspection Branch at foodsafety@gov.mb.ca.