APPLICATION OF HACCP PRINCIPLES FOR THE MEAT INDUSTRY

GUIDANCE SHEET NO: 2

INTRODUCTION TO HACCP

HACCP A SYSTEM FOR RISK-BASED FOOD SAFETY MANAGEMENT

The traditional approach for food safety management consisted of establishing product standards and testing samples of each batch of end products against established criteria (microbiological, chemical and physical) to establish the safety of the product. This approach has the disadvantage that it does not take account of the complex nature of most food safety risks and only tests a small sample of products from each batch. There is always a chance of dangerous products reaching the consumer.

An example of the limitations of the end product testing approach was seen in 1978 when 20 people in the United Kingdom died from botulism poisoning after consuming tinned salmon. The product was produced to an established standard and end product testing indicated that the batch was safe to consume. However, a small percentage of cans were contaminated with Clostridium botulinum which had produced the deadly botulin toxin. The reasons for the contamination were traced to defects in factory design (lack of separation of raw and cooked product processing areas) and poor hygiene practices by the workers (workers placed contaminated clothing on top of cans that were cooling down after retort cooking). If the factory had implemented a risk-based proactive system for food safety management such as HACCP the fatal poisoning could have been avoided.

The Hazard Analysis and Critical Control Points (HACCP) system is a risk-based proactive approach which helps food business operators to identify the points in their food activities which are critical to food safety and to take the necessary steps to ensure that these points are adequately controlled.

The concept of HACCP originated in the early days of the American space programme as a method of giving a very level of assurance that food for astronauts would be safe. It was recognised that foodborne illness in space would almost certainly be fatal. Even HACCP cannot provide a 100% guarantee of a safe food product but an effective HACCP system will provide at least 99% assurance of food safety which is much higher than relying on end product testing.

The HACCP system is designed to identify potential hazards and suitable control measures in advance of anything going wrong. To identify the points in the production process where effective control is critical for ensuring safety. At these critical points, the requirements for ensuring product safety are quantified (eg temperatures and times for a cooking process), methods of monitoring the critical points are developed along with pre-planned plans of action to use if something goes wrong with the process that could lead to a food safety risk. The rest of the HACCP system focuses on documenting evidence that the system is working properly, verifying the effectiveness of the system and making sure that effective food safety management is maintained continuously.

HAZARD ANALYSIS CRITICAL CONTROL POINT SYSTEM (HACCP)

The HACCP system is divided into 7 principles which are as follows:

1. Hazard analysis: Identify any hazards that must be prevented, eliminated, or reduced to acceptable levels.

2. Critical Control Points: Identify the critical control points (CCPs) at the step or steps at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels.

3. Critical Limits: Establish critical limits at CCPs which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards.

4. Monitoring: Establish and implement effective monitoring procedures at CCPs.

5. Corrective Actions: Establish corrective actions when monitoring indicates that a CCP is not under control.

6. Verification: Establish procedures, which shall be carried out regularly, to verify that the above measures are working effectively.

7. Documentation and Record Keeping: Establish documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the above measures.

PRELIMINARIES FOR HACCP

Before you start working through the 7 principles of HACCP there are several preliminary steps that you must work through to establish the foundations for the HACCP system, these are:

1. Obtain the full commitment of the senior management team to the process of implementing HACCP.

2. Form your HACCP team.

3. Decide the scope of the HACCP system.

4. Assess the level of implementation of Good Hygienic Practices (GHP) in the factory. GHP's are an essential foundation for any successful HACCP system. If your GHP is not fully implemented or defective you are unlikely to successfully implement HACCP.

5. Describe your product(s) and identify the intended use.

6. Prepare and verify process flow diagrams for your factories production processes.

RECOMMENDED APPROACH FOR THE CAREC ADVANCED HACCP COURSE

The CAREC Level 3 Advanced Course on Application of HACCP Principles for the Meat Industry will guide you through the entire process of developing and implementing a HACCP system in your factory. You should go through all of the presentations and guidance sheets before starting on the HACCP process.

After going through this guidance sheet, you should go through the presentation and guidance sheet on the importance of HACCP in international trade (S3) unless your factory is purely focused on serving a domestic market.

The recommended order for the rest of the course is outlined in the following tables:

Table 1. Preliminaries for HACCP

Session / Guidance Sheet	Summary of Content
S4. Management commitment	Obtain written commitment from senior management for the process of development and implementation of the HACCP system.
S9. Formation of the HACCP team.	Decide who to include in your HACCP team, with reasons for inclusion.
S6. Scope of the HACCP system.	Decide the scope of your HACCP system, what will the limits of the system? Will the system apply to all products and processes within the factory or only to selected areas?
S5. Good Hygienic Practices (GHP).	Review of GHP's in your factory to identify current status and address weaknesses and gaps in the existing GHP system.
S7. Describe your product and identify the intended use.	Development of product descriptions and identification of types of consumers and ways that the product may be consumed.
S8. Process Flow Diagrams (PFD)	Guidance on preparation of PFD's

Table 2. Development and implementation of HACCP

Session / Guidance Sheet	Summary of Content
S10/S11. Hazard analysis (Principle 1).	Listing potential hazards, hazard analysis and development of control measures.
S12/S13. Critical Control Points (Principle 2).	Determination of CCP's.
S14. Critical Limits (Principle 3).	Procedure for determining critical limits.
S15. Monitoring (Principle 4).	Development of the monitoring plan.
S16. Corrective actions (Principle 5).	Development of corrective action plans.
S18. Validation (Principle 6 part 1).	Procedure for checking that the HACCP system is ready for use.
S19. Verification (Principle 6 part 2).	Procedure for verifying that the HACCP system is working correctly.
S20. Documentation and Records (Principle 7).	Documentation and record keeping requirements.
S21. Maintenance of HACCP (Principle 6 part 3).	Process for review and updating of the HACCP system to maintain effectiveness.
S17. Implementation of HACCP.	Guidance on preparation of standard operating procedures and training requirements.