



# Introduction to Codex HACCP and Hazard Analysis for Risk-Based Measures Workshop

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## **Disclaimer**

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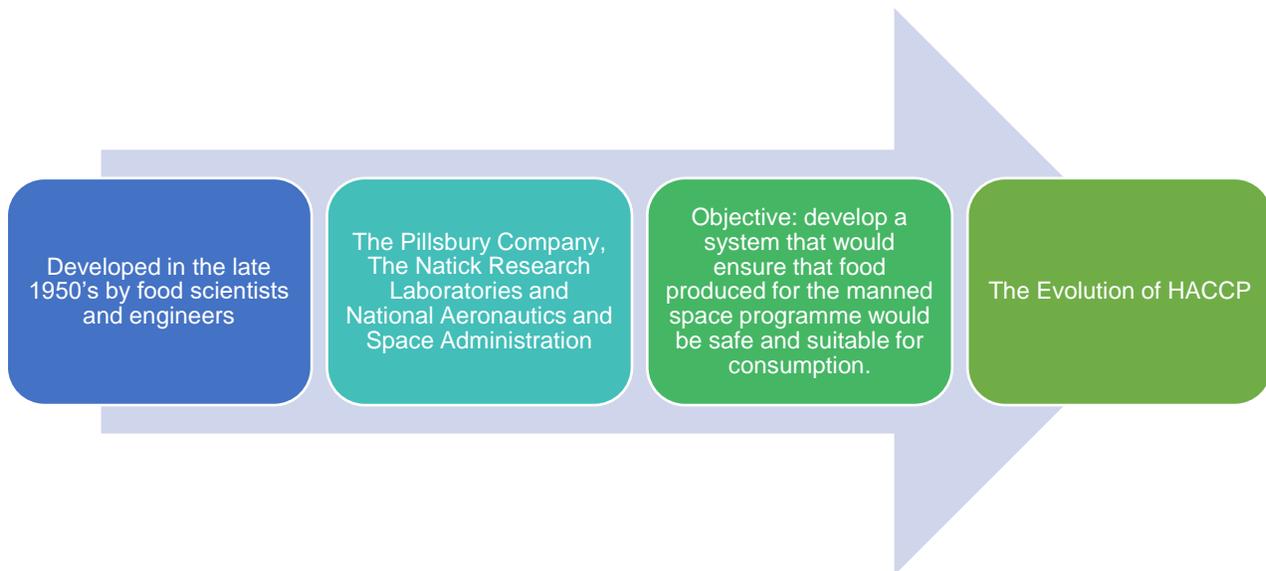
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# 1. History and evolution of the HACCP system

## 1.1 Where it all began



Hazard Analysis Critical Control Point system also known as HACCP, was originally developed in the late 1950s by a team of food scientists and engineers from The Pillsbury Company, the Natick Research Laboratories, and the National Aeronautics and Space Administration (NASA). The team's objective was to develop a system that would ensure that food produced for the manned space programme would be safe and suitable for consumption. This system was designed to identify and manage food safety hazards as a preventative measure to food safety. This preventative measure to food safety was an essential criterion to eliminate and significantly reduce the risk of astronauts suffering from food poisoning while in a zero-gravity environment.

Although this system of preventative measures could not guarantee zero presence of bacteria, it could however assure the production of safe food through the identification and management of hazards associated with each step in the process and the conditions under which the food was produced.

### The Evolution of HACCP

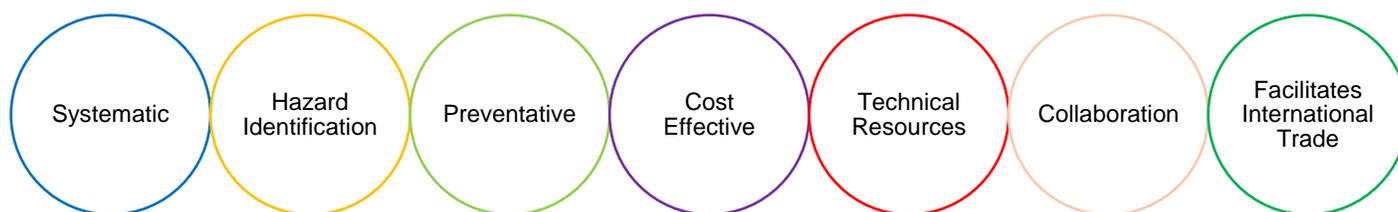
The Pillsbury company introduced the concept of HACCP during a Food Protection Conference in 1971. This concept of preventative measures rather than relying on product testing to verify food safety, was positively received by food businesses and regulatory authorities. The Food and Drug Administration also known as FDA, took the initiative to incorporate the concepts of HACCP into its low acid and acidified food regulations in 1974. By the early 1980's and 90's, HACCP was becoming widely used by the major food companies on a global scale.

In 1989, followed by an amendment in 1997, The National Advisory Committee on Microbiological Criteria for Foods (NACMCF) published the first HACCP document.

Both the Codex and NACMCF committees revised their standards, incorporating prerequisites within the guidelines as the essential foundations to a successfully applied HACCP system.

The version of the *Recommended International Code of Practice-General Principles of Food Hygiene including Annex on HACCP System and Guidelines for its Application* was adopted by the Codex Alimentarius Commission in 1997. HACCP Guidelines were revised in 2003. The current version of the Recommended International Code of Practice General Principles of Food Hygiene [CAC/RCP 1-1969, Rev 4 (2003)], incorporates the guidelines for the application of the HACCP system inclusive of the preliminary steps to the application of the seven principles.

## 1.2 Benefits of an integrated HACCP system



The preventive approach of HACCP based procedures not only improves food safety management but also complements other food safety management systems (FSMS) (see section 3, A customer and regulatory perspective). The HACCP principles can be applied across a variety of food sectors, from agricultural production to food service, from multinational manufacturers to small processors.

### **So, what are the advantages of integrating HACCP principles into a food business FSMS?**

Firstly, HACCP system takes a systematic approach identifying all food safety hazards that are likely to occur within each step of the food business process. Typically, a food manufacture scope of operation would include; receipt of raw materials, storage, processing, handling and distribution.

By identifying the hazards that are likely to occur, food businesses can assess the risk these hazards pose to food safety. The identification of these hazards allows for a preventative approach to managing potential foods safety risks and company liability. This preventative approach to food safety reduces the reliance of end product testing, product losses and rework that may have occurred under other FSMS's.

The identification of significant hazards allows for a more focused approach to managing and monitoring critical control points (CCPs) within a food business.

Continuous monitoring of CCPs reduces the risks of recalls and product withdrawals which in turn reduces costs associated with insurance and business liability protection. In addition, the records and documentation generated from monitoring CCPs also offers due diligence defense in a court of law.

The use of HACCP principles focuses technical resources into critical parts of the food operation. Whilst complementing other FSMS's, HACCP principles facilitate an approach to risk assessment, increasing the management and operatives focus and ownership of food safety disciplines.

The integration of HACCP principles within a FSMS not only facilitates international trade due to its recognition on a global scale but complies with relevant legislation and guidelines. This in turn increases customer and consumer confidence in the management of food safety hazards.

## 2. The Codex guidelines for the application of the HACCP systems

### 2.1 HACCP objectives

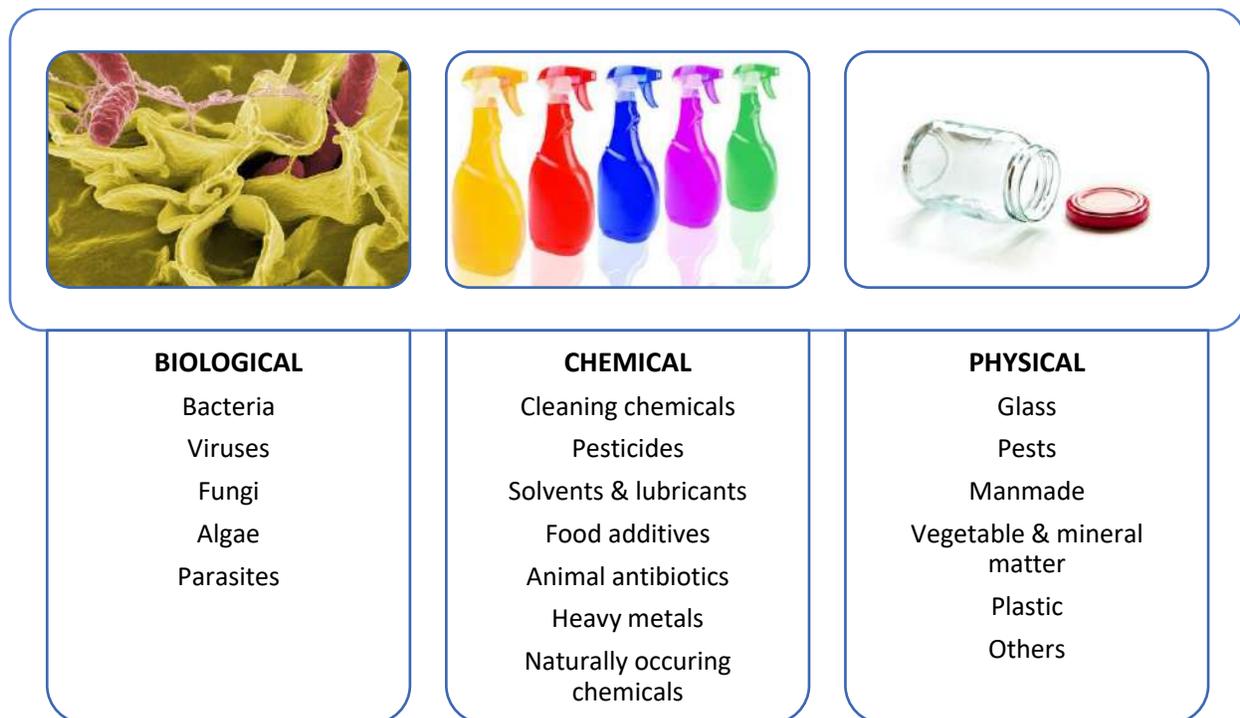
The HACCP system ultimate objective is to identify specific food safety hazard which have the potential to cause illness, injury or death. Food safety hazards are categorised as biological, chemical and physical hazards. The focus of control is either by preventing, eliminating or reducing the effects of these food safety hazards to an acceptable level for ensuing food is produced in a safe and suitable manner.

### 2.2 Food Safety Hazards

Codex definitions describe hazards as a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect. The Food Act 2014 aligns with this definition and defines hazards as, “a biological, chemical, or physical agent that;

- is in food or has the potential to be in food, or is a condition of food, or has the potential to affect the condition of food; and
- causes or could cause an adverse or injurious effect on human life or public health”

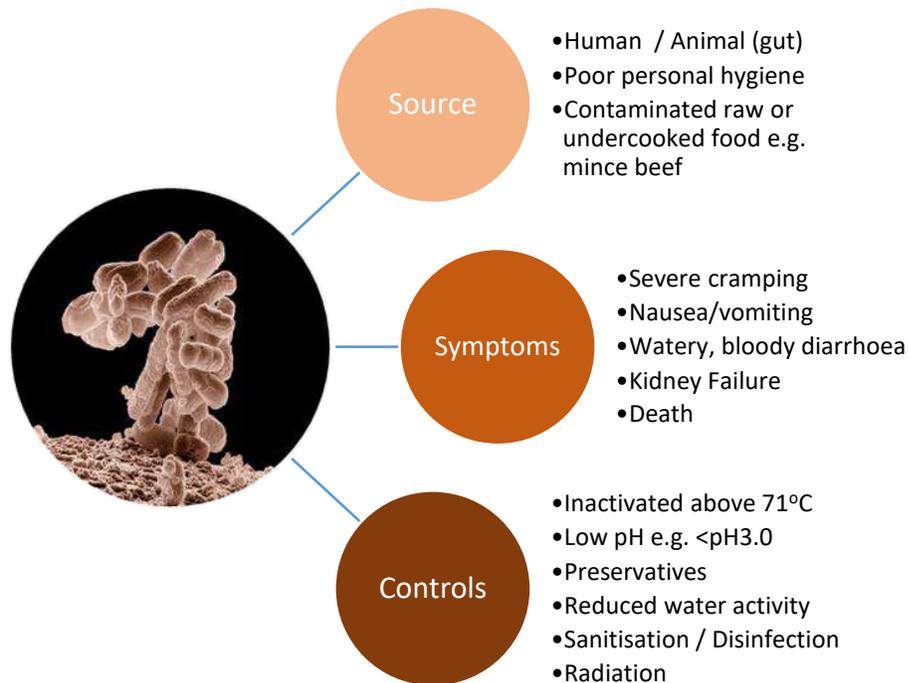
**This diagram illustrates examples of hazards in each of the hazard categories**



### 2.2.1 Intrinsic Factors

There are several factors for consideration when identifying all potential hazards that are reasonably expected to occur (see *Principle 1 Conduct a Hazard Analysis*).

In addition to identifying specific hazards, it is important to understand the intrinsic properties of each hazard, the severity of the risk they pose, and know how they may react in certain environments or processing steps.



*E coli* 0157:H7 is one of the key pathogenic bacteria that causes death in vulnerable group (young children, elderly, immunocompromised, pregnant, allergen sufferers). This microorganism is found in human and animal guts. It has an optimum growth temperature of 37°C however can grow between 7-50°C and can grow in the presence or absence of oxygen. The presence of this strain of *E coli* is always associated with faecal contamination either from the raw materials (e.g. through animal contamination) or from inadequate cleaning, sanitization and personal hygiene during handling and processing.

In addition to knowing the characteristics of the hazard, it is also important to know how these hazards can be controlled and at what stage in the process should these controls be applied.

Consideration must be given to the following potential processing steps to ensure that the hazard is controlled in each stage of the process;

- The composition of ingredients and formulations,
- The preparation and handling,
- The processing equipment,
- The food safety treatments applied (cooking, pasteurization, sterilization, filtration, sieving),
- The intrinsic factors of the product (key characteristics compositional elements of the product e.g. pH,  $a_w$ , alcohol content),
- The shelf life and storage conditions of the product.

### 2.2.2 Sources of information

As stipulated by CODEX HACCP, there should be appropriate product specific knowledge and expertise within the business for the development of an effective HACCP plan. This may be accomplished by assembling a multidiscipline team (*see the key steps and HACCP principles as described by CODEX HACCP*) or alternatively obtained from an external source such as a food consultant, regulatory authorities, legislation, HACCP literature and guidance material.

These following sources offer free information to assist the operator in ensuring they fully understand the characteristics of the hazards that may be associated with their food operation.

- MPI Hazard Database including key biological, chemical and physical hazards associated with specific food ingredients.
- Bad Bug Book published by the Centre for Food Safety and Applied Nutrition, of the Food and Drug Administration (FDA), U.S. Department of Health and Human Services.
- SafeFood 360 Whitepaper – Developing a HACCP plan (March 2014).
- You tube offer free courses in the application of HACCP principles.
- The web offers a vast amount of HACCP related information on a global scale.

## 2.3 Definitions

The following definitions and key words have been extracted from *Recommended International Code of Practice General Principles of Food Hygiene and HACCP System and Guidelines for its Application [CAC/RCP 1-1969, Rev 4 (2003)]*.

Cleaning	The removal of soil, food residue, dirt, grease or other objectionable matter.
Contaminant	Any biological or chemical agent, foreign matter, or other substances not intentionally added to food which may compromise food safety or suitability.
Contamination	The introduction or occurrence of a contaminant in food or food environment.
Disinfection	The reduction, by means of chemical agents and/or physical methods, of the number of micro-organisms in the environment, to a level that does not compromise food safety or suitability.
Establishment	Any building or area in which food is handled and the surroundings under the control of the same management.
Food hygiene	All conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain.
Hazard	A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.
HACCP	A system which identifies, evaluates, and controls hazards which are significant for food safety.
Food handler	Any person who directly handles packaged or unpackaged food, food equipment and utensils, or food contact surfaces and is therefore expected to comply with food hygiene requirements.
Food safety	Assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.
Food suitability	Assurance that food is acceptable for human consumption according to its intended use.
Primary production	Those steps in the food chain up to and including, for example, harvesting, slaughter, milking, fishing.
Control (verb):	To take all necessary actions to ensure and maintain compliance with criteria established in the HACCP plan.
Control (noun):	The state wherein correct procedures are being followed and criteria are being met.
Control measure:	Any action and activity that can be used to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

<b>Corrective action:</b>	Any action to be taken when the results of monitoring at the CCP indicate a loss of control.
<b>Critical Control Point (CCP):</b>	A step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.
<b>Critical limit: Deviation:</b>	A criterion which separates acceptability from unacceptability. Failure to meet a critical limit.
<b>Flow diagram:</b>	A systematic representation of the sequence of steps or operations used in the production or manufacture of a particular food item.
<b>HACCP:</b>	A system which identifies, evaluates, and controls hazards which are significant for food safety.
<b>HACCP plan:</b>	A document prepared in accordance with the principles of HACCP to ensure control of hazards which are significant for food safety in the segment of the food chain under consideration.
<b>Hazard:</b>	A biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.
<b>Hazard analysis:</b>	The process of collecting and evaluating information on hazards and conditions leading to their presence to decide which are significant for food safety and therefore should be addressed in the HACCP plan.
<b>Monitor:</b>	The act of conducting a planned sequence of observations or measurements of control parameters to assess whether a CCP is under control.
<b>Step:</b>	A point, procedure, operation or stage in the food chain including raw materials, from primary production to final consumption.
<b>Validation:</b>	Obtaining evidence that the elements of the HACCP plan are effective.
<b>Verification:</b>	The application of methods, procedures, tests and other evaluations, in addition to monitoring to determine compliance with the HACCP plan.

## 2.4 Preliminary requirements and principles of the HACCP system

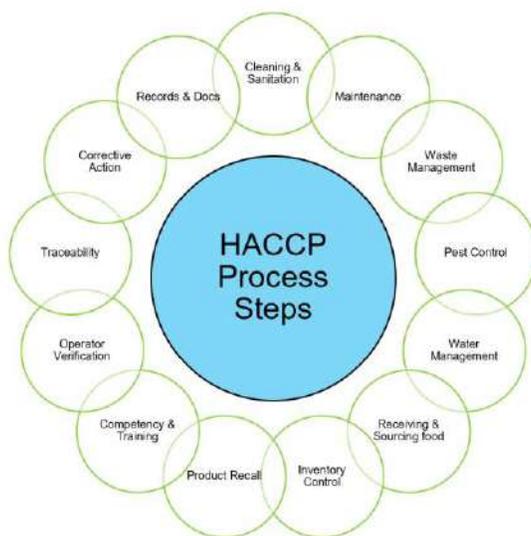
Prior to applying the seven principles of the HACCP system, CODEX have identified key steps to be considered to ensure the application of the principles are successful. Although not indicated in the *logical sequence for application of HACCP* as stated in the *HACCP System and Guidelines for its Application [CAC/RCP 1-1969, Rev 4 (2003)]*, CODEX has reinforced the message that management commitment, the establishment of prerequisite programs and training of personnel are necessary to facilitate the successful application and implementation of the HACCP system.

### 2.4.1 Management Commitment

It is essential to the viability of the HACCP system that a food safety culture is effectively communicated through reporting channels from senior management positions to those responsible for the operation and implementation of the business objectives. As stipulated by CODEX HACCP, this commitment may be demonstrated through the provision of adequate resources, the implementation of effective communication, a system for management review and mechanisms for continual improvement in food safety awareness.

### 2.4.2 Prerequisite Programs (PRPs)

CODEX HACCP defines documentation, implementation and ongoing maintenance of prerequisite programs (PRPs) as essential for the successful application of the HACCP system. PRPs also known as supporting programmes, provide the foundations for an effectively HACCP system. PRPs are mainly focused on facility-wide programs such as cleaning and sanitation, pest control, waste management, rather than product specific processes. It should be noted that food borne illness is often associated with a failure of a PRP rather than a CCP within a HACCP plan e.g. post-process recontamination and/or unsanitary production environments.



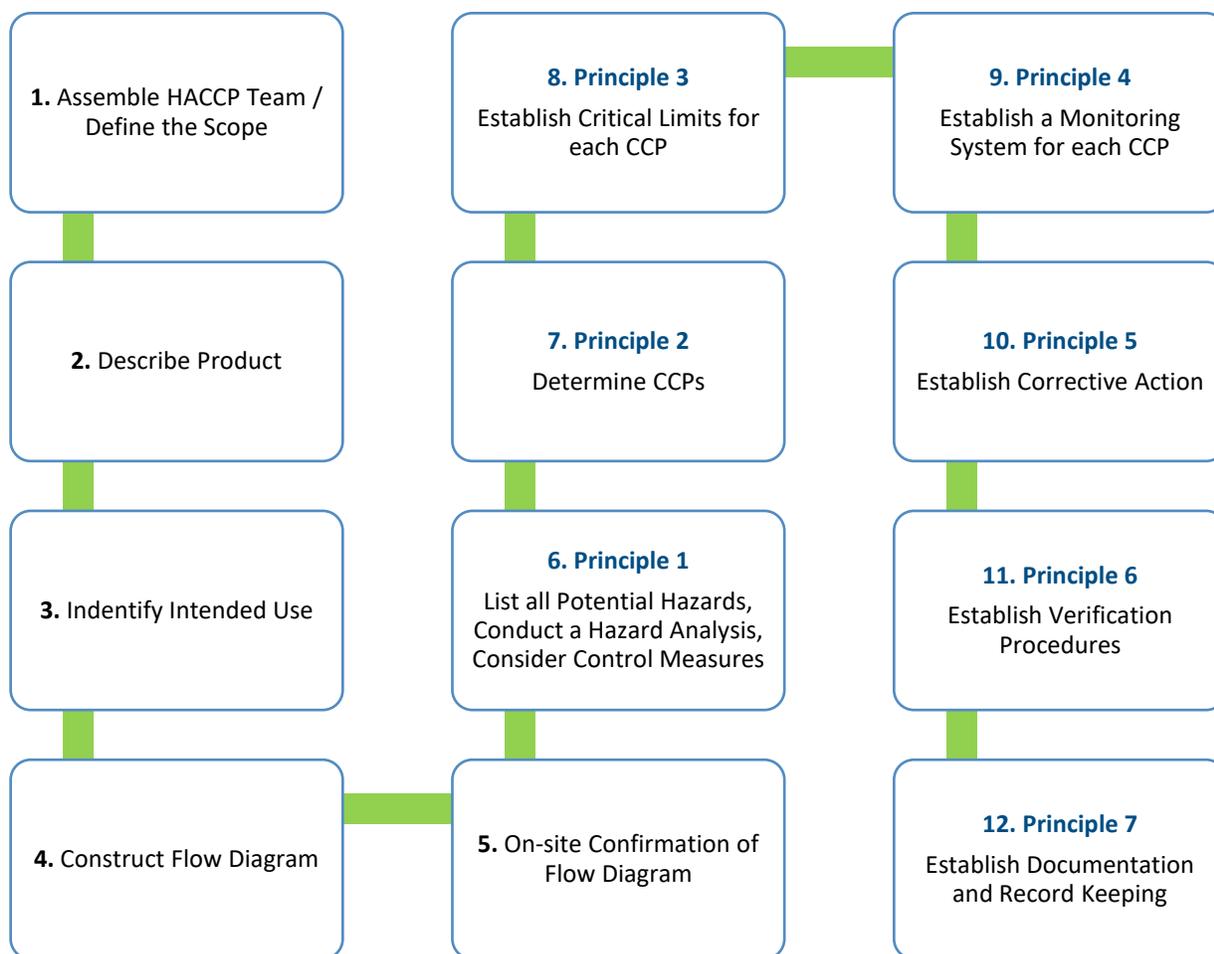
*Recommended International Code of Practice General Principles of Food Hygiene [CAC/RCP 1-1969, Rev 4 (2003)]*, details the primary production and general hygiene principles which apply throughout the food chain to the point of sale. The Food Regulations 2015 have incorporated the PRP requirements in Subpart 2 – Safety and Suitability for Food Control Plans and National Programmes (see *The Food Act 2014 and Associated Legislation*).

### 2.4.3 Training

A documented HACCP system is ineffective if the requirements as stipulated by the plan has not been effectively implemented through initial and continuous ongoing training for all levels of employees and management. A HACCP system is designed to be flexible and constantly evolving. This flexibility is especially important when new product lines or equipment are introduced. Any changes in the plan must be appropriately communicated to all key staff members to ensure its success.

### 2.4.4 CODEX HACCP Steps

The diagram illustrates the key steps and HACCP principles as described by CODEX HACCP.



1. **Assemble HACCP team / Define the Scope** Ideally a multidisciplinary team (experts in different areas of the business operation). Alternatively, opt for an expert where expertise is lacking. The HACCP team are required to define the scope of the HACCP plan defining the start and end point of the HACCP study including products, processes and food safety points of consideration.
2. **Describe product** A full description of the product(s) including relevant safety information (pH, regulatory limits, heat treatments, freezing, brining, smoking etc), packaging, durability, storage conditions and methods of distribution. Product descriptions may be grouped aligning with similar product characteristics or processing steps.
3. **Identify intended use** Expected use of the product by the end user or consumer e.g. ready-to-eat (RTE)/further preparation required, intended for vulnerable groups.
4. **Construct flow diagram** Detailing all steps in the operation for a specific product(s). Process flows may be grouped, aligned with products manufactured or processed under similar processing steps. Steps preceding and following a specified operation should also be considered to determine control of all aspects of the process e.g. procurement, retail sales.
5. **Onsite confirmation of flow diagram** HACCP team to confirm the processing operation against the flow diagram during all stages of production e.g. nightshift and dayshifts. The confirmation of a flow diagram should be performed by a person or persons with sufficient knowledge of the processing operation e.g. the production manager, key operating staff.
6. **Principle 1**

**Conduct a hazard analysis;**

  1. **List all potential hazards** that are reasonably expected to occur at each step in the process e.g. procurement, receipt, storage, processing, manufacture, packing, distribution (retail, wholesale, catering) to point of consumption.
  2. **Conduct a hazard analysis;**  
The HACCP team must determine which of the hazards identified are required to be reduced or eliminated to acceptable levels to ensure food is produced in a safe and suitable manner. This may be achieved by determining;
    - the likely occurrence of the hazard and severity of their impact on health effects e.g. see risk matrix Appendix 1.
    - the qualitative and/or quantitative evaluation of the presence of hazards,

- the survival or multiplication of microorganisms of concern,
  - the production or persistence in foods of toxins, chemicals or physical agents; and
  - the conditions leading to the above.
3. **Consider control measures** (if any) can be applied to each hazard. More than one control measure may be used to control a hazard e.g. time and temperature combinations. Also, more than one hazard may be controlled by a specific control measure e.g. chilled and frozen storage temperatures for raw, in-process and finished products.

## 7. Principle 2

### **Determine the Critical Control Points (CCPs).**

Determination of CCP's can be facilitated by the CODEX decision tree (see Appendix 2). In some cases, the questions asked may need to be modified to ensure effective CCP identification. If a CCP has been identified and no control measure exist at this step or any other step in the process, then the product or process steps must be modified to enable a control measure to be implemented.

## 8. Principle 3

### **Establish critical limits for each CCP**

Critical limits applied to a CCP must be validated and measurable and may consist of more than one critical limit e.g. time and temperature combination, moisture levels and  $A_w$ , pH, available chlorine, sensory parameters; visual appearance, texture. Critical limits validated by experts or governing bodies may be applied as long as conditions of operation have been applied as per the expert's recommendations (see Appendix 3).

## 9. Principle 4

### **Establish a monitoring system for each CCP**

Monitoring is the scheduled measurement or observation of a CCP relative to its critical limit. The monitoring procedures must be able to detect loss of control at the CCP. The monitoring system should facilitate adjustment of the process prior to loss of control of a CCP. Monitoring should be rapid in its approach since most CCP's relate to in process activities. Physical and chemical measures are often used over microbiological testing as they are performed rapidly and can also be used as an microorganism indicator. All records and documents associated with monitoring CCPs must be signed by the person conducting the monitoring and verified by an independent official of the company e.g. Technical Manager (see Appendix 3).

## 10. Principle 5

### **Establish the corrective actions**

Established documented corrective actions must be stated for each CCP to ensure immediate action is taken when monitoring indicates that a particular CCP is not under control. These actions must state how control can be reestablished, the disposition of affected product (rework, disposed) and the deviation of procedures to prevent reoccurrence of loss of control. Records of corrective action must be maintained (see Appendix 3).

## 11. Principle 6

### **Establish verification procedures**

Verification activities and frequency of their application are required to determine that the documented HACCP plan continues to be effective and working as intended. These activities should be carried out by someone other than the person who is responsible for monitoring and performing corrective action procedures e.g. Technical / Compliance Manager. External experts or qualified third-party person should be considered if verification activities cannot be performed in house (see Appendix 3).

Examples of verification activities include;

- Review of the HACCP system and plan and its records
- Review of deviations and product dispositions
- Confirmation that CCPs are kept under control

**Validation activities** should include actions to confirm the efficacy of all elements of the HACCP system e.g. validation of CCPs, control measures, verification activities.

## 12. Principle 7

### **Establish documentation and record keeping**

Documented procedures and accurate record keeping is essential to the application of the HACCP system. Consideration of the size and complexity of the operation will determine the detail required within records and procedures. Operatives may utilise expertly developed HACCP guidance material provided that the documentation used is reflective of the food operative's practices e.g. Processed Meats Code of Practice Part 4: HACCP Application.

Record examples may include;

- CCP monitoring activities
- Deviations and associated corrective actions (CAR)
- Verification procedures performed
- Modifications to the HACCP Plan.

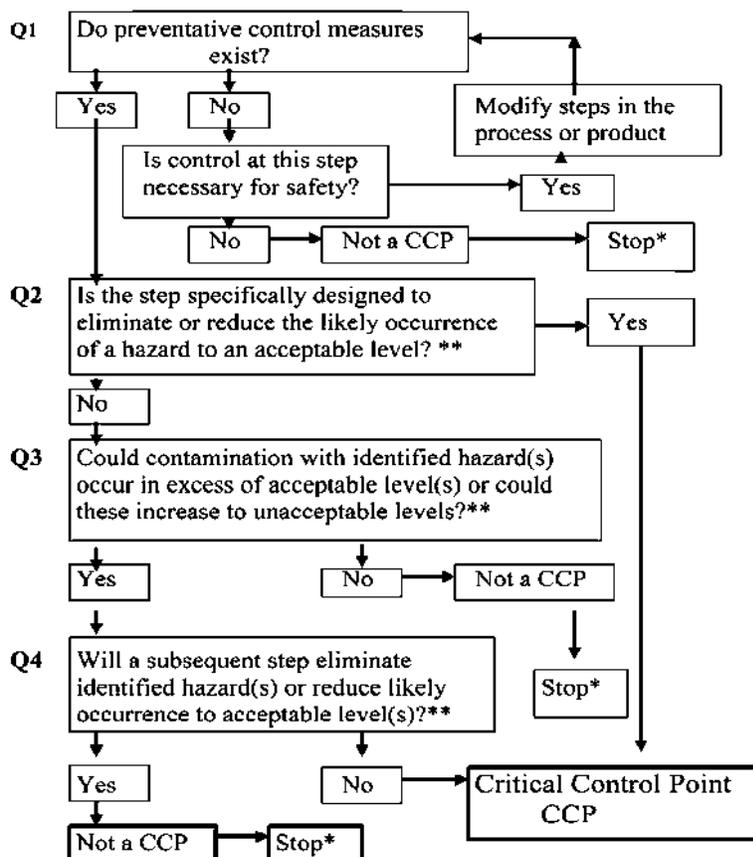
## Appendix 1: Example of a Risk Matrix

		Potential Consequences					
		L6	L5	L4	L3	L2	
		Minor injuries or discomfort. No medical treatment or measurable physical effects.	Injuries or illness requiring medical treatment. Temporary impairment.	Injuries or illness requiring hospital admission.	Injury or illness resulting in permanent impairment.	Fatality	
		Not Significant	Minor	Moderate	Major	Severe	
Likelihood	Expected to occur regularly under normal circumstances	Almost Certain	Medium	High	Very High	Very High	Very High
	Expected to occur at some time	Likely	Medium	High	High	Very High	Very High
	May occur at some time	Possible	Low	Medium	High	High	Very High
	Not likely to occur in normal circumstances	Unlikely	Low	Low	Medium	Medium	High
	Could happen, but probably never will	Rare	Low	Low	Low	Low	Medium

Source: <http://www.exampm.com>

## Appendix 2: CODEX Example of Decision Tree to Identify CCPs

(answer questions in sequence)



\*proceed to the next identified hazard in the described process

\*\* Acceptable and unacceptable levels need to be defined within the overall objectives in identifying the CCPs of HACCP plan.

### Appendix 3: Example of a CODEX HACCP Worksheet

1.

Describe Product

2.

Diagram Process Flow

3.

List							
Step	Hazard(s)	Control Measure(s)	CCPs	Critical Limit(s)	Monitoring Procedure(s)	Corrective Action(s)	Record(s)

4.

Verification

### 3. A Customer and Regulatory Perspective

It is interesting to note that the integration of HACCP with FSMSs was initially driven by the industry rather than by regulations. Customers like McDonald's required all their suppliers to implement HACCP to ensure the safety of the food sold in their restaurants.

#### 3.1 Global Food Safety Initiative Schemes



Today, HACCP is driven by regulatory and customer requirements such as Woolworths Quality Assurance scheme as well as Global Food Safety Initiative schemes (GFSI). The GFSI is an industry-driven initiative providing leadership and guidance on food safety management systems for ensuring food safety within the supply chain. This is achieved through the collaborative efforts of the world's leading food safety experts from retail, manufacturing, food service companies, as well as international organisations, governments and service providers to the global food industry.

The GFSI aim is to share knowledge and promote a harmonised approach to managing food safety across the industry whilst offering a benchmark model to determine equivalency between food safety schemes such as The British Retail Consortium, The International Food Standard (IFS), Safe Quality Food Initiative (SQF) and the International Standard for Organisation (ISO).



## 3.2 The Food Act 2014 and Associated Legislation



**Food Act 2014**  
**Public Act      2014 No 32**  
**Date of assent    6 June 2014**

### 3.2.1 Food Control Plans

Food operatives are required to demonstrate the implementation of procedures for the control of hazards identified during the production, processing and handling of food. Although not a mandatory requirement, incorporating a HACCP plan within an operatives Food Control Plan is one way of demonstrating how hazards are identified, prevented, eliminated and reduced to an acceptable level to enable food to be safe and suitable.

This following table references **key sections** within the Food Act 2014 and Food Regulations 2015 for a FCP that align with the requirements of the logical sequence for application of HACCP.

<b>CODEX HACCP</b>	<b>Food Act 2014</b>	<b>Food Regulations 2015</b>
<b>Assemble HACCP Team</b>	<ul style="list-style-type: none"> <li>• <b>Act 42(d)</b> the name, or the position or designation and the area of responsibility.</li> <li>• <b>Act43(h)</b> demonstrate competency, in relation to the safety and suitability of food, food production, processing, handling, to undergo appropriate training.</li> <li>• <b>Act 50(1)(d)</b> adequately implement and resource all operations under the plan including instructing, training and supervising staff to achieve safety and suitability of food and ensuring that staff have the necessary competency to achieve that purpose.</li> </ul>	<b>Regs 32</b> competency and training.
<b>Describe Product</b>	<ul style="list-style-type: none"> <li>• <b>Act 42(e)(i)</b> the type of food to which it applies.</li> <li>• <b>Act Schedule 1</b> food sectors subject to a FCP.</li> </ul>	<b>Regs 6(2)(b)</b> describe activities carried out within the physical boundaries of the business.

CODEX HACCP	Food Act 2014	Food Regulations 2015
<b>Identify Intended Use</b>	<ul style="list-style-type: none"> <li>• <b>Act 42(e)(ii)</b> the nature of the business or business covered by the plan.</li> <li>• <b>Act 42(e)(iii)</b> the scope of the plan; the trading operations under the plan.</li> <li>• <b>Act 50(1)(e)</b> Ensure that all operations under the plan are commensurate with the capability and capacity of the place, facilities, equipment and staff to achieve the safety and suitability of food.</li> </ul>	<b>Regs 6(2)(b)</b> describe activities carried out within the physical boundaries of the business.
<b>Construct Flow Diagram (define HACCP scope)</b>	<b>Act 42(e)(iii)</b> the scope of the plan; the trading operations under the plan.	<ul style="list-style-type: none"> <li>• <b>Regs 6(2)(a-b)</b> site plan describing the physical boundaries and layout of the food business and the activities carried out within those physical boundaries.</li> <li>• <b>Regs 6(2)(c)(i)</b> A description of activities within those physical boundaries that are not activities of the food business.</li> <li>• <b>Regs 6(2)(d)</b> A description of activities that are carried out in neighbouring premises that pose a risk to the safety or suitability of food.</li> <li>• <b>Regs 30(2)(a)</b> procedures must identify each step or combination of steps in the process.</li> </ul>
<b>On-site Confirmation of Flow Diagram</b>	<b>Act 42(e)(iii)</b> the scope of the plan; the trading operations under the plan.	<b>Regs 6(2)(b)</b> describe activities carried out within the physical boundaries of the business.
<b>Principle 1:</b> <ul style="list-style-type: none"> <li>• <b>List all potential hazards</b></li> <li>• <b>Conduct a hazard analysis</b></li> <li>• <b>Consider control measures</b></li> </ul>	<b>Act 42(g)</b> description of the hazards and other factors that are reasonably likely to occur or arise.	<b>Regs 30(1)</b> procedures for controlling hazards.

<b>CODEX HACCP</b>	<b>Food Act 2014</b>	<b>Food Regulations 2015</b>
<b>Principle 2: Determine CCPs</b>	<b>Act 42(g)</b> description of the hazards and other factors that are reasonably likely to occur or arise.	<b>Regs 30(2)(a)</b> steps in the process at which it is essential to prevent or eliminate a hazard or reduce to an acceptable level.
<b>Principle 3: Establish critical limits for each CCP</b>	<ul style="list-style-type: none"> <li>• <b>Act 42(h)(ii)</b> control of all relevant hazards.</li> <li>• <b>Act 42(i)</b> any validation information as appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Regs 30(b)</b> set out the criteria that must be met and the reason for each criterion.</li> <li>• <b>Regs 7</b> custom FCP must set out validation information.</li> </ul>
<b>Principle 4: Establish a monitoring system for each CCP</b>	<b>Act 42(h)(iii)</b> monitoring of appropriate parameters and limits.	<b>Regs 30(3)</b> procedures for hazard control.
<b>Principle 5: Establish corrective actions</b>	<ul style="list-style-type: none"> <li>• <b>Act 42(h)(iv)(v)</b> preventative and corrective action.</li> <li>• <b>Act 43(1)(h)</b> requiring persons who operate under a FCP to demonstrate competency, in relation to the safety and suitability of food, food production, and food processing and handling, to undergo appropriate training, and to provide training for staff as appropriate.</li> <li>• <b>Act 43(1)(i)</b> requiring reports to be made in respect of breaches of a FCP.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Regs 31(b)(ii)</b> Competency and training; any staff member or visitor who is responsible for a task specified in the FCP.</li> <li>• <b>Regs 33</b> corrective action.</li> <li>• <b>Regs 33(2)</b> Corrective Action; the operator must nominate a suitably skilled person to carry out the corrective action specified in subclause (1) if the operator's procedures do not provide for the corrective actions required to the loss of control.</li> <li>• <b>Regs 34</b> Breach of FCP must be reported</li> </ul>
<b>Principle 6: Establish verification procedures</b>	<ul style="list-style-type: none"> <li>• <b>Act 42(h)(vi)</b> operator verification activities</li> <li>• <b>Act 42(i)</b> validation information</li> <li>• <b>Act 43(j)</b> requiring samples and tests to be carried out in relation to matters covered by the FCP.</li> <li>• <b>Act 50 (1)(f)</b> after commencement of the operations to which the registered FCP relates, the plan is verified by an appropriate recognised agency or recognised person.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Regs 7</b> validation information</li> <li>• <b>Regs 30</b> operator verification</li> </ul>

CODEX HACCP	Food Act 2014	Food Regulations 2015
<p><b>Principle 7: Establish documentation and record keeping</b></p>	<ul style="list-style-type: none"> <li>• <b>Act 41</b> FCP must be in writing</li> <li>• <b>Act 42 (h)(vii)</b> documentation and record keeping</li> <li>• <b>Act 42(i)</b> validation information</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Regs 12-38</b> – Subpart 2 – safety and suitability examples of PRP's and record requirements include: <ul style="list-style-type: none"> <li>○ <b>Regs 7</b> validation information</li> <li>○ <b>Regs 32</b> operator verification</li> <li>○ <b>Regs 35</b> records must be kept</li> <li>○ <b>Regs 36</b> how long records must be kept</li> <li>○ <b>Regs 37</b> quality, content and availability of records</li> <li>○ <b>Regs 38</b> identification and availability of FCP documents</li> </ul> </li> </ul>

### 3.2.2 National Programme

It should be noted that current guidance for lower risk food sectors that fit under a National Programme (NP), makes no specific reference to the requirements to document a FSMS or HACCP plan. As a result, the Food Regulations 2015 for a National Programme, are more descriptive compared to those under a FCP. This is to offer the operator additional guidance on the expectations of how hazards may be controlled effectively.

The operator must at a minimum, be able to demonstrate hazards are controlled through recorded monitoring systems and some verification activities. The operator also needs to be able to demonstrate how procedures are communicated to ensure that good operating and manufacturing procedures are consistent throughout their operation.

This following table references **key sections** within the Food Act 2014, Food Regulations 2015 and other associated legislation for a NP that align with the requirements of the logical sequence for application of HACCP.

<b>CODEX HACCP</b>	<b>Food Act 2014</b>	<b>Food Regulations 2015 / Other associated legislation</b>
<b>Assemble HACCP Team</b>	<ul style="list-style-type: none"> <li>• <b>Act 76(h)</b> requiring persons who operate under a NP to demonstrate competency, in relation to the safety and suitability of food, food production, and food processing and handling to undergo appropriate training and to provide training for staff as appropriate.</li> <li>• <b>Act 80(d)</b> adequately implement and resource all operations under a NP e.g. instructing, training and supervising.</li> </ul>	<b>Regs 77</b> competency and training.
<b>Describe Product</b>	<b>Act schedule 2</b> food sectors subject to a National Programme.	Scope of operation cards
<b>Identify Intended Use</b>	<b>Act schedule 2</b> food sectors subject to a National Programme.	Scope of operation cards

<b>CODEX HACCP</b>	<b>Food Act 2014</b>	<b>Food Regulations 2015 / Other associated legislation</b>
<b>Construct Flow Diagram (define HACCP scope)</b>	No references	<ul style="list-style-type: none"> <li>• <b>Regs 76(2)(a)</b> procedures must identify each step or combination of steps in the process.</li> </ul>
<b>On-site Confirmation of Flow Diagram</b>	No references	No references
<b>Principle 1:</b> <ul style="list-style-type: none"> <li>• <b>List all potential hazards</b></li> <li>• <b>Conduct a hazard analysis</b></li> <li>• <b>Consider control measures</b></li> </ul>	No references	<ul style="list-style-type: none"> <li>• <b>Regs 76(1)</b> procedures for controlling hazards.</li> <li>• <b>Part 2 and 4:</b> Food Notice Requirements for Food Control Plans and National Programmes, 25 May 2017.</li> </ul>
<b>Principle 2: Determine CCPs</b>	No references	<b>Regs 76(2)(a)</b> steps in the process at which it is essential to prevent or eliminate a hazard or reduce to an acceptable level.
<b>Principle 3: Establish critical limits for each CCP</b>	No references	<b>Regs 76(b)</b> set out the criteria that must be met and the reason for each criterion.
<b>Principle 4: Establish a monitoring system for each CCP</b>	No references	<ul style="list-style-type: none"> <li>• <b>Regs 76(3)</b> procedures for hazard control.</li> <li>• <b>Part 2 and 4:</b> Food Notice Requirements for Food Control Plans and National Programmes, 25 May 2017.</li> </ul>

CODEX HACCP	Food Act 2014	Food Regulations 2015 / Other associated legislation
<p><b>Principle 5: Establish corrective actions</b></p>	<ul style="list-style-type: none"> <li>• <b>Act 76(1)(i)</b> requiring reports to be made in respect of breaches of a NP.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Regs 77(b)(ii)</b> Competency and training; any staff member or visitor who is responsible for a task that could adversely affect the safety or suitability of food.</li> <li>• <b>Regs 79</b> corrective action.</li> <li>• <b>Regs 79(3)</b> Corrective Actions; the operator must nominate a suitably skilled person to carry out the corrective action specified in subclause (1) if the operator's procedures do not provide for the corrective actions required to the loss of control.</li> <li>• <b>Regs 80</b> Breach of NP must be reported</li> <li>• <b>Part 2 and 4:</b> Food Notice Requirements for Food Control Plans and National Programmes 25 May 2017.</li> </ul>
<p><b>Principle 6: Establish verification procedures</b></p>	<ul style="list-style-type: none"> <li>• <b>Act 74(1)(a)</b> imposing verification requirements.</li> <li>• <b>Act 76(1)(j)</b> requiring samples and tests to be carried out in relation to matters under NP.</li> <li>• <b>Act 80(e)</b> verified by an appropriate recognised agent or person required verification frequency.</li> </ul>	<p><b>Regs 78</b> operator verification.</p>
<p><b>Principle 7: Establish documentation and record keeping</b></p>	<ul style="list-style-type: none"> <li>• <b>Act 74(1a)</b> imposing good operating practices and documentation requirements.</li> <li>• <b>Act 80(g)</b> keep a copy of all documents required to be kept under a NP.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Regs 45-82 – Subpart 2 –</b> safety and suitability examples of PRP's and record requirements include: <ul style="list-style-type: none"> <li>○ <b>Regs 81</b> how long records must be kept</li> <li>○ <b>Regs 82</b> quality, content and availability of records</li> </ul> </li> </ul>

## 4. References

Food Act 2014,

Food Regulations 2015,

Food Notice: Requirements for Food Control Plans and National Programmes 25 May 2017,

MPI Hazard Database including key biological, chemical and physical hazards associated with specific food ingredients,

NZQA registered unit standard 19514 version 4 SSB Code 100401, New Zealand Qualification Authority 2017,

Recommended International Code of Practice General Principles of Food Hygiene - HACCP System and Guidelines for its Application [CAC/RCP 1-1969, Rev 4 (2003)],

Bad Bug Book published by the Centre for Food Safety and Applied Nutrition, of the Food and Drug Administration (FDA), U.S. Department of Health and Human Services,

Safefood360 Whitepaper Developing HACCP Plan March 2014.

Combine your HACCP & HARPC Plan – A practical Step-by-Step Guide by Kassy Marsh of Techni-K Consulting Ltd,

HACCP: A Practical Guide (Third Edition) Guideline No 42 2003 Campden & Chorleywood Food Research Association Group,

<http://www.foodqualityandsafety.com/article/the-evolution-of-haccp/>

<http://www.myqfsi.com/about-us/about-qfsi/what-is-qfsi.html>

[http://slbs.org.lc/document\\_file/HACCP\\_Brochure\\_current.pdf](http://slbs.org.lc/document_file/HACCP_Brochure_current.pdf)

<http://www.examspm.com>