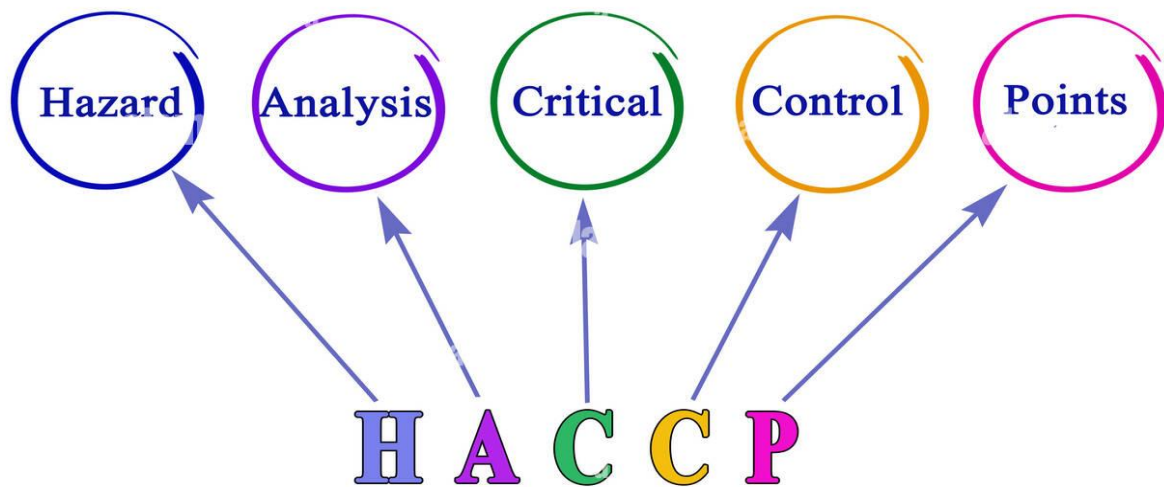


CHAPTER V

HACCP



- *Chapter V Objectives*
- *Generality*
- *Qualities of HACCP System*
- *Hazards*
- *Critical Control Points*
- *Principles of HACCP*
- *Steps of HACCP Implementation*
- *Advantages of HACCP*
- *Activities*

V-1 Chapter V objectives

At the end of the Chapter V , in relation to the subjects covered, the student must be able to:

- **Understand** the basic principles of HACCP;
- **Learn** the Critical Control Point;
- **Learn** the notion of Hazards;
- **Learn** the Types of Hazards;

V-2 Generality

- Hazard Analysis Critical Control Point, or HACCP, is a system that seeks out and averts possible issues before they arise;
- Food firms can employ HACCP to ensure that, during the food production process, they do not violate any laws by putting consumers at danger;
- It is a methodical approach to risk assessment and one way to meet UK hygiene legislation's requirement for risk assessment;
- The safety and quality of all items are now managed using the whole HACCP system;

It's regarded as one of the best instruments for managing the risks connected to the food and beverage processing, distribution, sales, and catering industries at a time when it's essential to give customers unquestionable products and prevent any detrimental effects on their health.

This system entails :

- Determining the stages in a product's manufacture where possible risks could arise;
- Evaluating the likelihood that the risk points will materialize, as well as the severity of the consequences if they do;
- Selecting the elements that are most important for consumer safety;
- Putting controls in place, keeping an eye on output, and acting when needed;
- Regularly reviewing the HACCP plan even in the absence of any changes to the food operation. This should be done anytime there are changes to the operation.

V-3 Features of the HACCP protocol

HACCP is methodical in that possible risks are found before an issue arises; Effective because it concentrates control efforts at the potential hotspots for risk; On the spot: The food sector can have instantaneous control over its processes.

Food businesses can use HACCP to ensure that consumers are not put in risk by their products. Although no two businesses are exactly same, a HACCP system's specifics will change over time, but its principles will never change.

- **Activity 18 (Chap V) What is Hazard ?**

A substance present in food—whether it biological, chemical, or physical—that could be harmful to the consumer.

V-4 Hazards

A hazard is any physical, chemical, or biological agent that, in the absence of regulation, has a plausible risk of spreading disease or inflicting injury.

Hazards in HACCP refer to situations or substances in food that have the potential to inflict disease or harm.

V-3-1 Categories of Hazards

The following categories of hazards can be the focus of a HACCP plan:

- **Physical risks** (such as glass, stones, or metal);
- **Chemical hazards** (such as those that are either naturally occurring, purposefully added, or accidentally contributed);
- **Biological hazards** (such as hazardous bacteria);
- Packaging;
- Equipment.

Physical

Chemical

Biological

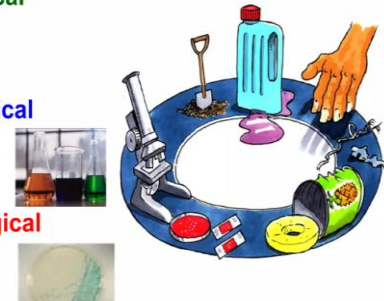


Fig 47 . Food Hazards

➤ **Activity 19 (Chap V) State five sources of microbiological hazards?**

(**Raw food. People. Animals. Insects. Rodents. Farm animals. Sewage**).

V-5 Critical Control Point (CCP)

An identifiable location where a risk may arise in the production chain is known as a Critical Control Point (CCP). The risk is addressed in order to keep it from happening. This can be a technique, a point, or an action that must be taken in order to apply control and prevent, eliminate, or lower a risk to a level that is acceptable. Multiple hazards can be controlled with a CCP (e.g. refrigeration storage). On the other hand, multiple CCPs can be required to manage a single danger.

□ When risks may be avoided, points like these can be designated as CCP.

- Controlling the reception stage can prevent the introduction of chemical residue;
- Controlling the formulation or component addition stage can prevent a chemical hazard;
- Controlling the growth of pathogenic bacteria can be achieved by chilling or refrigerated storage.

□ CCP can be found in areas where risks can be removed, like:

- Cooking is one way to destroy pathogenic (harmful) bacteria;
- Using a metal detector to find and remove contaminated products from the processing line is another way to eliminate metal particles;
- Freezing is one way to destroy parasites.

□ Points that have their dangers lowered to tolerable levels are considered CCPs.

Examples of such points include:

- The presence of foreign objects can be reduced by the use of automatic collectors and hand sorting;
- shellfish from authorized waters can reduce some biological and chemical dangers.

V-6 Principles of HACCP implêmentation

The system has three main phases:

1-Perfect knowledge of the food product

2- Hazard analysis, defining critical points and permissible limits, in the context of the study of a given hazard;

3- Verification, documentation and ongoing adaptation of the system, enabling the method to be used as a tool for improving quality.

HACCP is a preventive control system designed to guarantee food safety.

- 1- Hazard Analysis
- 2- Determine The Critical Control Point
- 3- Establish Critical Limits
- 4- Critical Control Points Monitoring
- 5- Corrective Actions
- 6- Establish Verification Procedures
- 7- Record Keeping Procedures

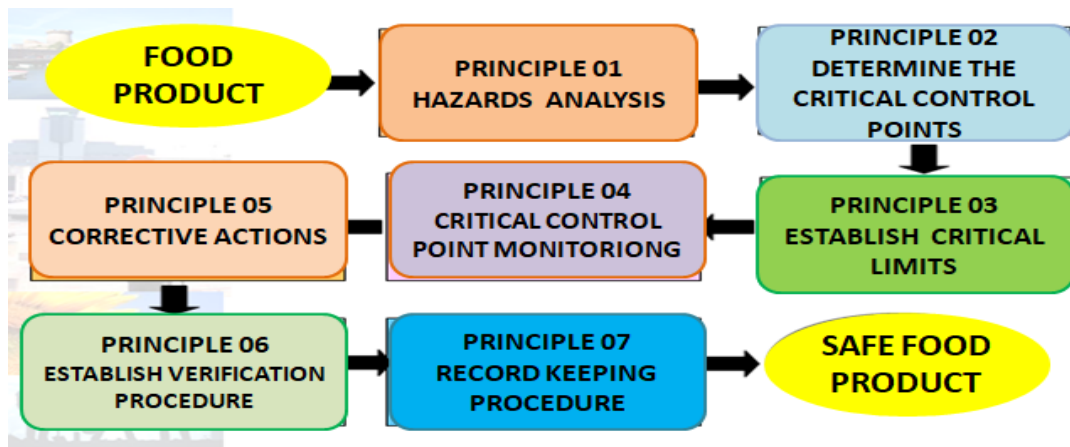


Fig 48. HACCP PRINCIPLES

1. Hazard analysis

Finding any dangers that need to be stopped, removed, or brought down to a manageable level is the first step.

From the time raw materials are received until the completed product is released, all possible risks must be taken into account.

If a hazard is likely to happen or is likely to put consumers at intolerable risk, it needs to be controlled.

2. Determination of the (CCP)

Finding the CCP at the stages where control is necessary to stop a hazard from happening, get rid of it, or bring it down to a manageable level.

3. Establish critical limits

A biological, chemical, or physical limit that needs to be regulated at a CCP is linked to a critical limit, which can be either a maximum or minimum value.

This is adjusted to stop, get rid of, or lessen a risk to a manageable level.

4. Monitoring of Critical Control Points (CCPs)

If a CCP is not within critical boundaries, it must be determined by a scheduled series of measurements or observations.

This helps to produce an accurate record that may be referred to later for confirmation.

5. Remedial measures

Corrective actions are the steps taken after a risk in food production is identified.

The goal is to address and eradicate the risk factor and restore control of the CCP.

To stop an issue from happening again in the future, the reason must be found.

Corrective measures can take the following forms:

- Moving the impacted product or materials to a different line where the deviation wouldn't be deemed important;
- Isolating and holding the product for safety assessment;
- Reprocessing;
- Product destruction.

6. Procedures of Verification

Verification procedures, in addition to CCP monitoring, validate the HACCP plan and show that the system is operating as planned.

This is typically completed in the event of a system failure or a significant alteration to the procedure or final product. Even when there are no signs of these two events, annual inspections are routinely carried out.

7. Record keeping procedures

Maintaining records and providing documentation aid in proving that the earlier HACCP concepts have been used successfully.

These records could be of the development of the HACCP plan, CCP monitoring, corrective actions or verification activities.

The following four categories of HACCP records exist:

- HACCP plan and supporting paperwork utilized during plan development;
- CCP monitoring records;
- Documentation of remedial measures;
- Documentation of verification procedures;

V-7 Steps of HACCP implementation

STEP 1: Define the field of study An HACCP study applies to

- A single product or a family of similar products from the same Factory
- A single manufacturing process
- In relation to a group of identified hazards

STEP 2: Setting up the HACCP Team

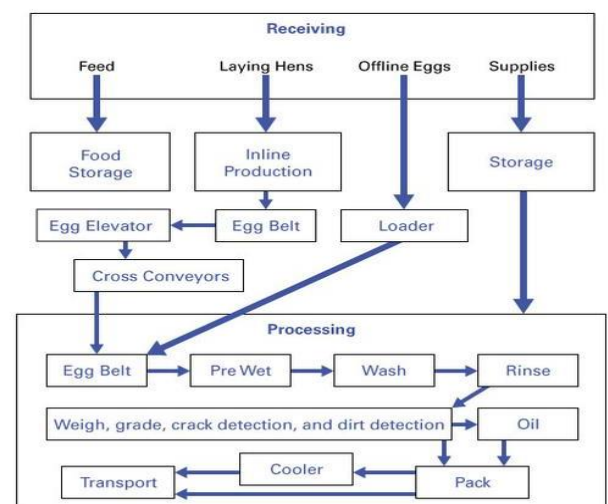
Even though HACCP procedures are multivalent, they are implemented by a multidisciplinary team rather than by a single person. The coordinator, who oversees communication and the team as a whole, makes up the group.

STEP 3: Describe The Product

- Input Formulation
- Intermediate products
- Finished Product Formulation

STEP 4: Identify The Product's Intended Use

- Certain types of use reduce the risks
- Consider normal conditions of use



STEP 5: Draw Up A Fabrication Diagram

To draw up the diagram, we break down the process each stage

Fig 49. Shell Egg Flowchart

- Precise technical information
- Duration, premises, equipment, sequences
- Interfaces are described

STEP 6: Check The Fabrication Diagram On Site**STEP 7: Analysing Hazards**

- Danger
- Risk
- Causes
- Preventive measures

STEP 8: Establish Critical Limits And Target Levels For Each Ccp Identified**STEP 9: Setting Up A Ccp Monitoring System****STEP 10: Draw Up A Corrective Action Plan: Process And Product****STEP 11: Draw Up Documentation: Plan, Procedures And Records****STEP 12: Check The Compliance And Efficiency System****STEP 13: Plan To Update The System****V-7 Advantages of HACCP**

The HACCP system has a lot of advantages:

- Comply with regulations.
- Meet customer requirements.
- Strengthen the Quality Assurance system.
- Help design new food products or processes.
- Respond to a specific problem.

➤ **Activity 20 (Chap V) What does the phrase "food safety management" mean to you?**

Procedures and guidelines that guarantee the food a food business sells is safe to consume and uncontaminated

➤ **Activity 21 (Chap V) What is the acronym for 'HACCP'?**

Risk analysis, critical control point.

- **Activity 22 (Chap V) State three possible consequences of consuming food containing a physical hazard.**

Choking. Cuts. Internal injury. Burns. Broken teeth.

- **Activity 23 (Chap V) List the three advantages of HACCP**

Adherence to the law. defense of careful consideration. both resourceful and proactive. Every worker that is engaged. Safety was introduced during the product development process. fosters a mindset of food safety. reduces the risk. defending a brand. recognized on a global scale.

- **Activity 24 (Chap V) Which organisation defined the seven principles of HACCP?**

Codex Alimentarius

