

DR. VANDANA SHARMA  
PHD, SCIENCE

# INTRODUCTION

- Food is a very essential element for the survival of human beings. Everybody expect that the food they eat is clean, wholesome and safe for consumption. Unfortunately, the ingestion of contaminated food due to microbes can result food poisoning. Food-borne disease is at best unpleasant and at worst, it can be fatal.
- Hazard analysis and critical control point (HACCP) is an internationally agreed approach to food safety management system. It was initially developed for use by food processors to prevent or control hazards, but the application of HACCP system has been evolving and expanding to form a basis for official food control and for establishing food safety standards for the international food trade as well.
- HACCP is a proactive approach to food safety management and it is flexible, where necessary control measures can be adapted to changes in operations. HACCP helps to target resources to the most critical part of the food operations, and it is applicable to the entire food chain, from the raw material to the end product.
- In addition, the application of HACCP system can aid inspection by food control regulatory authorities, and promote international trade by increasing buyer confidence in food safety.

**HACCP overcomes many of the limitations of the traditional approaches to food safety control.**

- ✓ focuses on identifying and preventing hazards that may render food unsafe
- ✓ is based on sound science
- ✓ permits more efficient and effective government oversight, primarily because the recordkeeping allows investigators to see how well a firm is complying with food safety laws and following practices that reduce the risk of unsafe food over a period rather than how well it is doing on any given day
- ✓ places responsibility for ensuring food safety appropriately on the food manufacturer or distributor
- ✓ helps food companies compete more effectively in the world market
- ✓ reduces barriers to international trade.

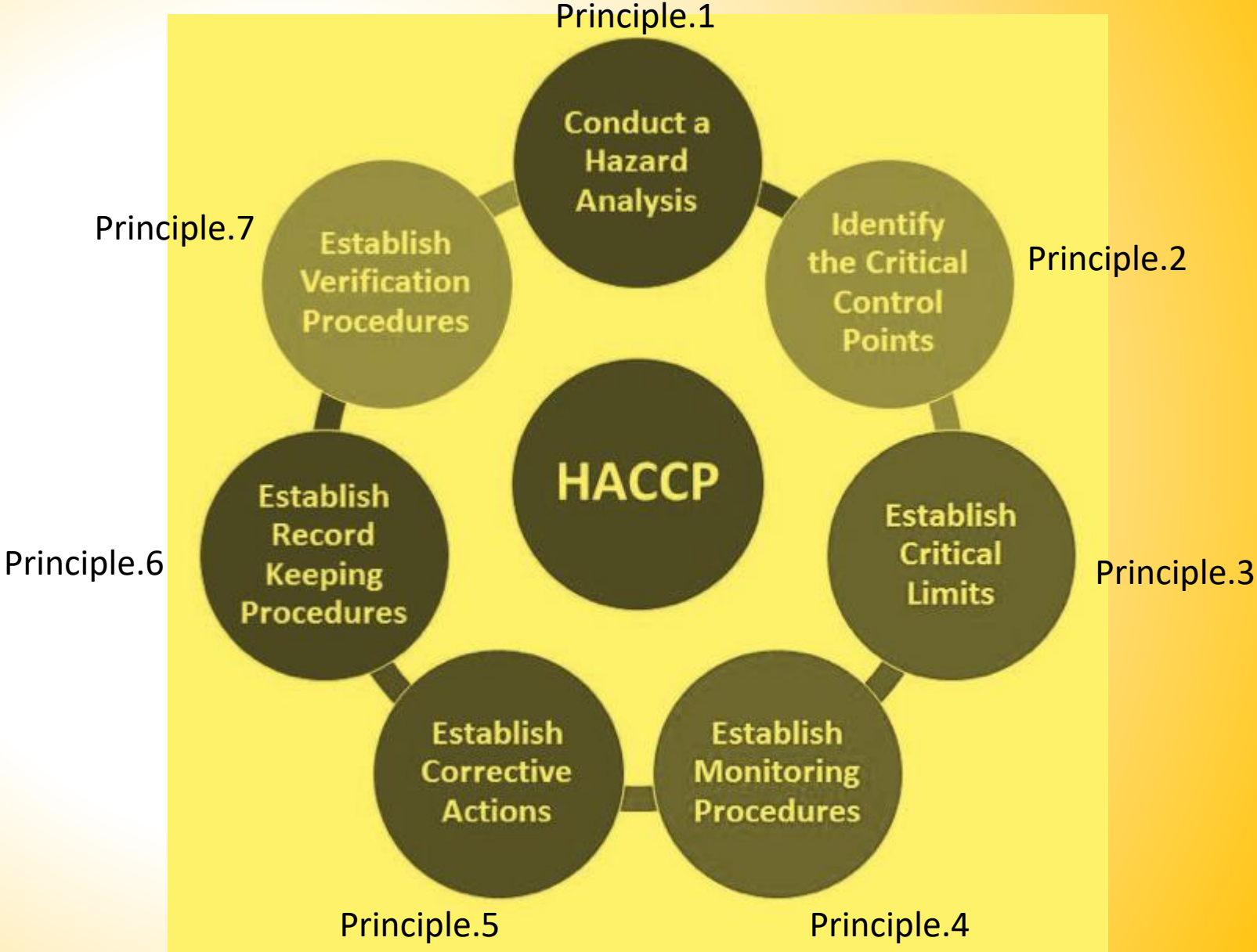
- It complements basic good hygienic practices in food safety assurance by targeting product-specific hazards, and devising control measures necessary for managing risks relevant to the product and conditions of operations.
- HACCP can be a powerful tool for the management of food safety only if it is correctly understood and applied, and if there is adequate commitment by the management for providing necessary resources and expertise.

HACCP is described as "a food safety program developed ... for astronauts...; [it] focuses on preventing hazards that could cause food-borne illnesses by applying science-based controls, from raw material to finished products... Traditionally, industry and regulators have depended on spot-checks of manufacturing conditions and random sampling of final products to ensure safe food. This [past] approach, however, tends to be reactive, rather than preventive, and can be less efficient than the new system..."

- HACCP is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.
- HACCP is designed for use in all segments of the food industry from growing, harvesting, processing, manufacturing, distributing, and merchandising to preparing food for consumption.
- HACCP Plans are prepared for each process or product, and identify possible hazards and controls in place to make sure the hazards are eliminated or controlled to ensure acceptable levels in the food product.
- The focus of HACCP is not on having a standardized production process but on having a monitoring process that is adequate to assure each business (regardless of its manufacturing process) is producing a safe product by minimizing the risk of a food safety problem.

# HACCP Principles

HACCP system is comprised of seven principles, and its application is not a stand-alone system, but it should be seen as an element of food safety management.



1. **Analyse hazards** - Potential hazards associated with a food and measures to control those hazards (biological, e.g. a microbe; chemical, e.g. a toxin; or physical, e.g. ground glass or metal fragments) are identified.
2. **Identify critical control points** - These are points in a food's production - from its raw state through processing and shipping to consumption by the consumer - at which the potential hazard can be controlled or eliminated. Examples are cooking, cooling, packaging, and metal detection.
3. **Establish preventive measures with critical limits for each control point** - For a cooked food, for example, this might include setting the minimum cooking temperature and time required to ensure the elimination of any harmful microbes.
4. **Establish procedures to monitor the critical control points** - Such procedures include determining how and who should monitor the cooking time and temperature.
5. **Establish corrective actions when monitoring shows that a critical limit has not been met** - For example, reprocessing or disposing of food if the minimum cooking temperature is not met.
6. **Establish procedures to verify that the system is working properly** - For example, testing time-and-temperature recording devices to verify that a cooking unit is working properly.
7. **Establish effective record keeping for documentation** - This would include records of hazards and their control methods, monitoring of safety requirements and action taken to correct potential problems.