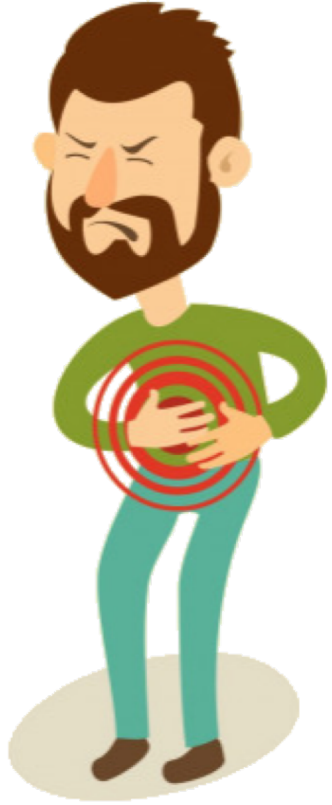# Air Catering Management

IAL 3210
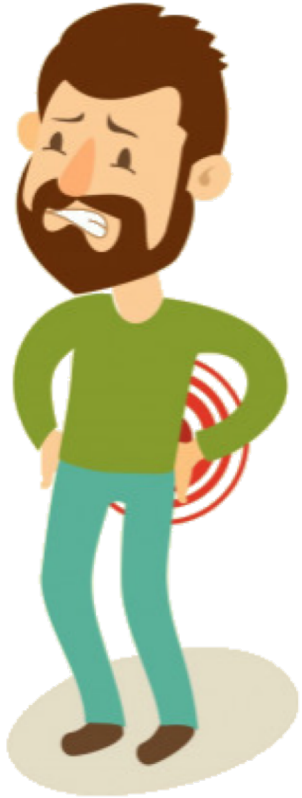
Rojanard Waramontri

Abdominal pain   Diarrhea   Fever   Nausea Vomiting   Malaise

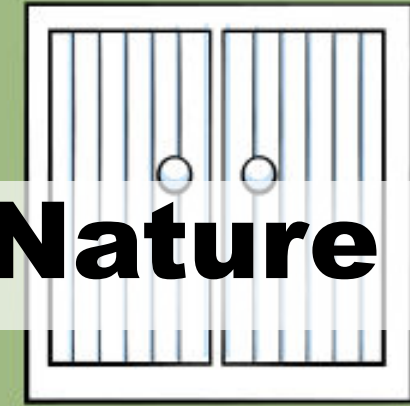"FOOD POISONING IS NOT **BAD LUCK**, IT IS **BAD MANAGEMENT**"

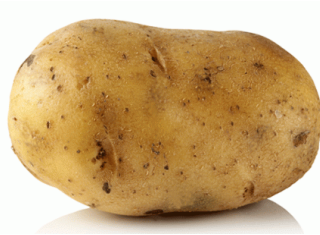Patrick Wall, CEO of the Food Safety Authority (Ireland)

Nature of HAZARDS

CHEMICAL HAZARDS

monosodium glutamate

insecticide

cyanide in potatoes

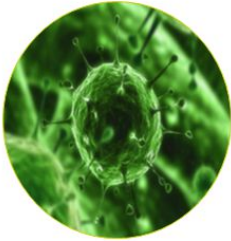Tetrodotoxin Puffer fish

Mushroom poisoning

BIOLOGICAL HAZARDS

VIRUSES

FUNGI
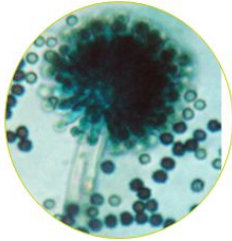
BACTERIA

PARASITES
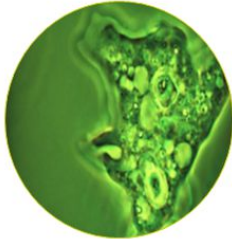
Sporeforming Bacteria (Pathogens):
• Clostridium botulinum
Proteolytic
Nonproteolytic
• Clostridium perfringens
• Bacillus cereus

Nonsporeforming Bacteria:
• Brucella abortis, B. suis
• Campylobacter spp.
• Pathogenic Escherichia coli (e.g., E. coli 0157:H7)
• Listeria monocytogenes
• Salmonella spp. (e.g., S. typhimurium, S. enteriditis)
• Shigella spp. (e.g., S. dysenteriae)
• Pathogenic Staphylococcus aureus
• Streptococcus pyogenes
• Vibrio spp. (e.g., V. cholerae, V. parahaemolyticus, V. vulnificus)
• Yersinia enterocolitica

MICROORGANISM

Relatives sizes on a logarithmic scale

| 0.1 nm | 1 nm | 10 nm | 100 nm | 1 μm | 10 μm | 100 μm | 1 mm | 10 mm | 100 mm | 1 m |

Atom

Lipids

Protein

Flu virus

Mitochondria

Bacteria

Animal cell

Plant cell

Human egg

Frog egg

Chicken egg

Ostrich egg

Adult female

Naked eye

Light microscope

Electron microscope

0 minutes	20 minutes	40 minutes	60 minutes
One bacterium	Two bacteria	Four bacteria	Eight bacteria

What Bacteria Need to Grow

F   A   T

T   O   M

What Bacteria Need to Grow
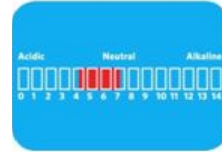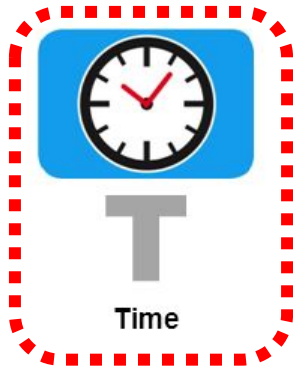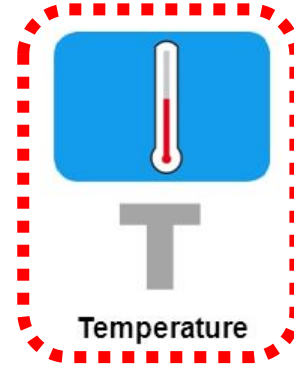
KEEP CLEAN

✓ Wash your hands before handling food and often during food preparation.
✓ Wash your hands after going to the toilet.
✓ Wash and sanitize all surfaces and equipment used for food preparation.
✓ Protect kitchen areas and food from insects, pests and other animals.

Why?

While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause food borne diseases.

SEPARATE RAW AND COOKED

✓ Separate raw meat, poultry and seafood from other foods.
✓ Use separate equipment and utensils such as knives and cutting boards for handling raw foods.
✓ Store food in containers to avoid contact between raw and prepared foods.

Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

COOK THOROUGHLY

✓ Cook food thoroughly, especially meat, poultry, eggs and seafood.
✓ Bring foods like soups and stews to boiling to make sure that they have reached 70℃. For meat and poultry, make sure that juices are clear, not pink.
✓ Reheat cooked food thoroughly.

Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70℃ can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.

KEEP FOOD AT SAFE TEMPERATUES

✓ Do not leave cooked food at room temperature for more than 2 hours.
✓ Refrigerate promptly all cooked and perishable food (preferably below 5℃).
✓ Keep cooked food piping hot (more than 60℃) prior to serving.
✓ Leftover food should not be stored in the refrigerator for longer than 3 days.
✓ Do not thaw frozen food at room temperature.

Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5℃ or above 60℃, the growth microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5℃.

USE SAFE WATER AND RAW MATERIALS

✓ Use safe water or treat it to make it safe.
✓ Select fresh and wholesome foods.
✓ Wash fruits and vegetables, especially if eaten raw.
✓ Do not use food beyond its expiry date.

Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.

AMERICANS' HAND HYGIENE HABITS

A majority of Americans are getting caught dirty-handed when it comes to their handwashing habits. A survey of 1,000 U.S. adults by SCA, a global hygiene company, uncovered that consumers understand the importance of hand hygiene but their practices may be grossly exaggerated.

71% say they practice good hand hygiene and wash their hands regularly

yet...

58% have witnessed others leaving a public restroom without washing their hands

20% witnessed restaurant employees

35% witnessed co-workers

33% witnessed friends

MORE THAN HALF do not wash their hands after riding public transportation, after using shared exercise equipment, or handling money

39% do not wash their hands after sneezing, coughing or after blowing their nose

On average, you come in contact with 300 surfaces every 30 minutes, exposing you to 840,000 germs*

*According to 2011 Tork® Report
On behalf of SCA, KRC Research conducted 1,000 online interviews among a nationally representative sample of adults in the U.S. from October 4 and October 7, 2012.

SCA
c/o Life

Source: 2011 Tork Report
Note: On behalf of SCA, KRC Research conducted 1,000 online interviews among a nationally representative sample of adults in the U.S., from Oct. 4 and Oct. 7, 2012.

1:
Damp hands and wrists
with water and soap or with
2 ml hand disinfection.

2:
Palm against palm.

3:
Right palm above the left back
of the hand and left palm above
the right back of the hand.

4:
Palm against palm with
interlaced fingers.

5:
The back of the fingers against
the opposite palm with the fingers
gribbing each other.

6:
Rotating wash of the right
thumb with left palm
and opposite.

7:
Rotating wash of right palm
with left hand fingers closed
and opposite.

8:
Rotating wash of both
wrists.

HACCP

HAZARD

ANALYSIS

CRITICAL

CONTROL

POINT

H A C C P

Hazard Analysis and Critical Control Points or **HACCP**

a systematic **preventive** approach to food safety from **biological**, **chemical**, and **physical hazards** in production processes that can cause the finished product to be unsafe, and designs measurements to **reduce these risks to a safe level**.
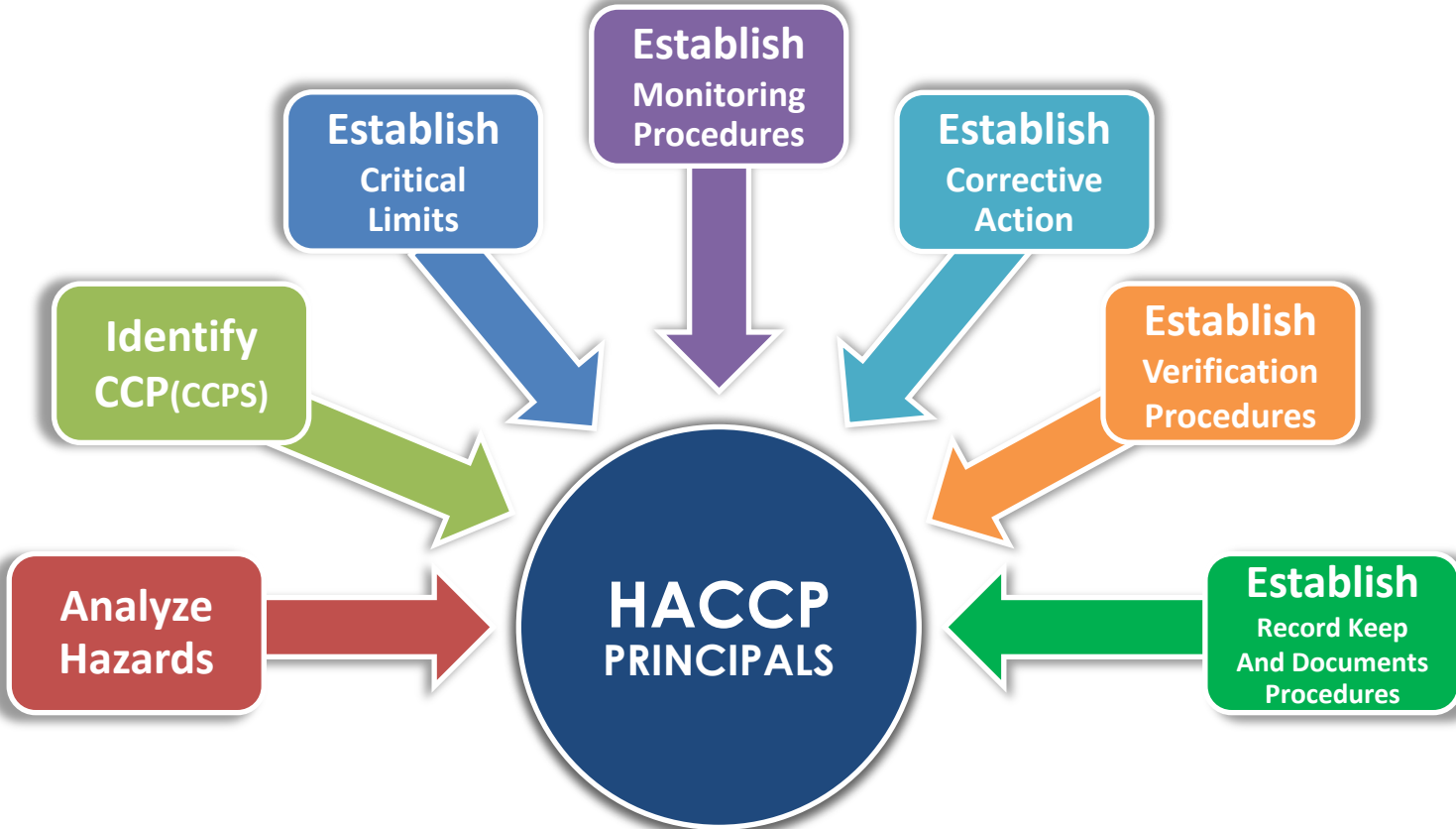
- **PREVENTIVE** not Reactive

- A Management tool used to protect against biological, chemical, and physical hazards

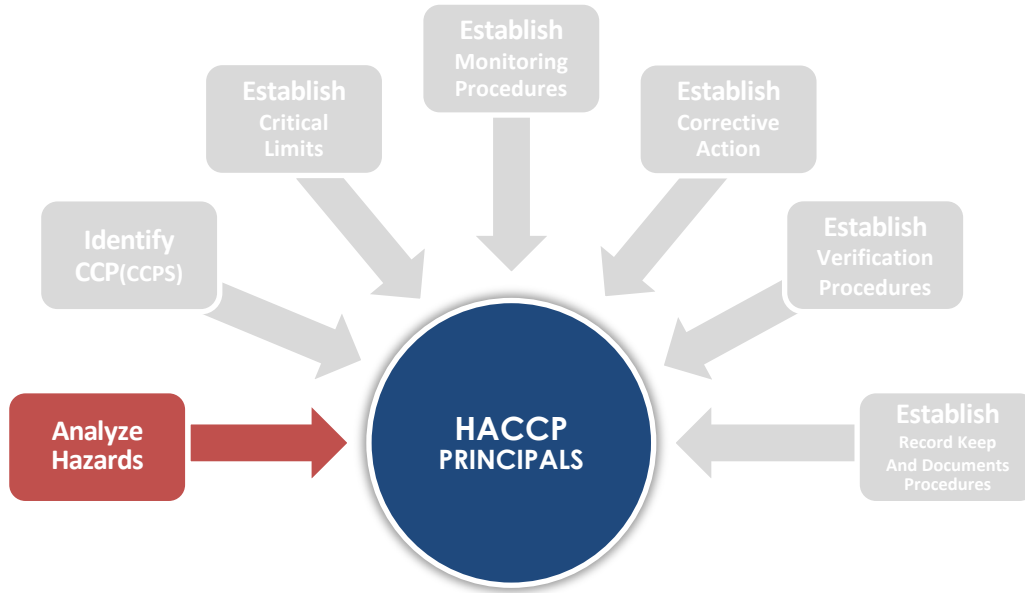- Designed to use in all segments of the food industry

BENEFITS

Principle 1 - **Conduct a Hazard Analysis**

Establish Monitoring Procedures

Establish Critical Limits

Establish Corrective Action

Identify CCP(CCPS)

Establish Verification Procedures

HACCP PRINCIPALS

Analyze Hazards

Establish Record Keep And Documents Procedures

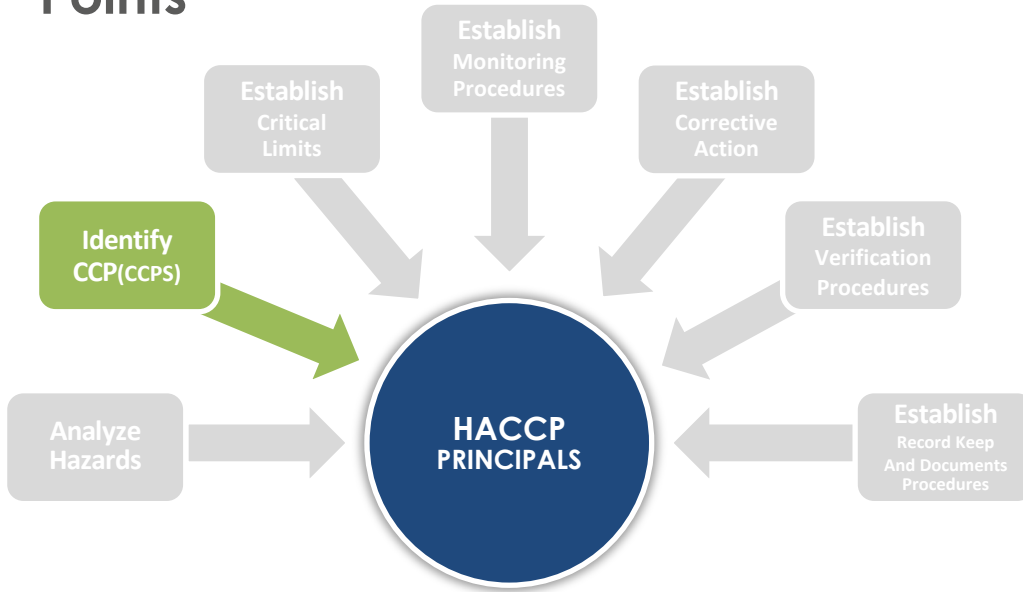The application of this principle involves **listing** the steps in the process and **identifying** where **significant hazards** are likely to **Occur**. The HACCP team will focus on hazards that can be prevented, eliminated or controlled by the HACCP plan. A justification for including or excluding the hazard is reported and possible control measures are identified.

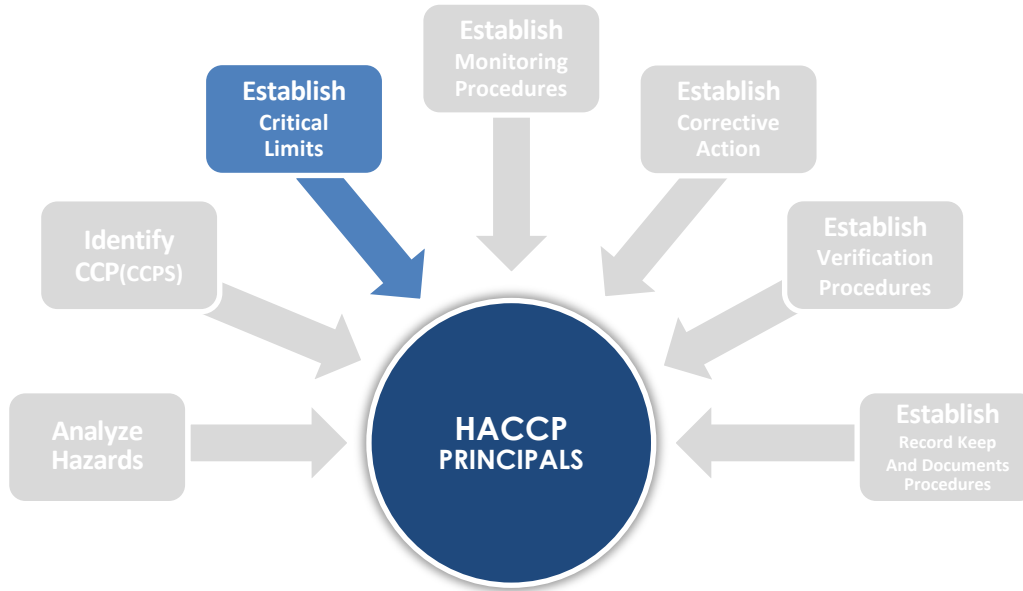# Principle 1 - Conduct a Hazard Analysis
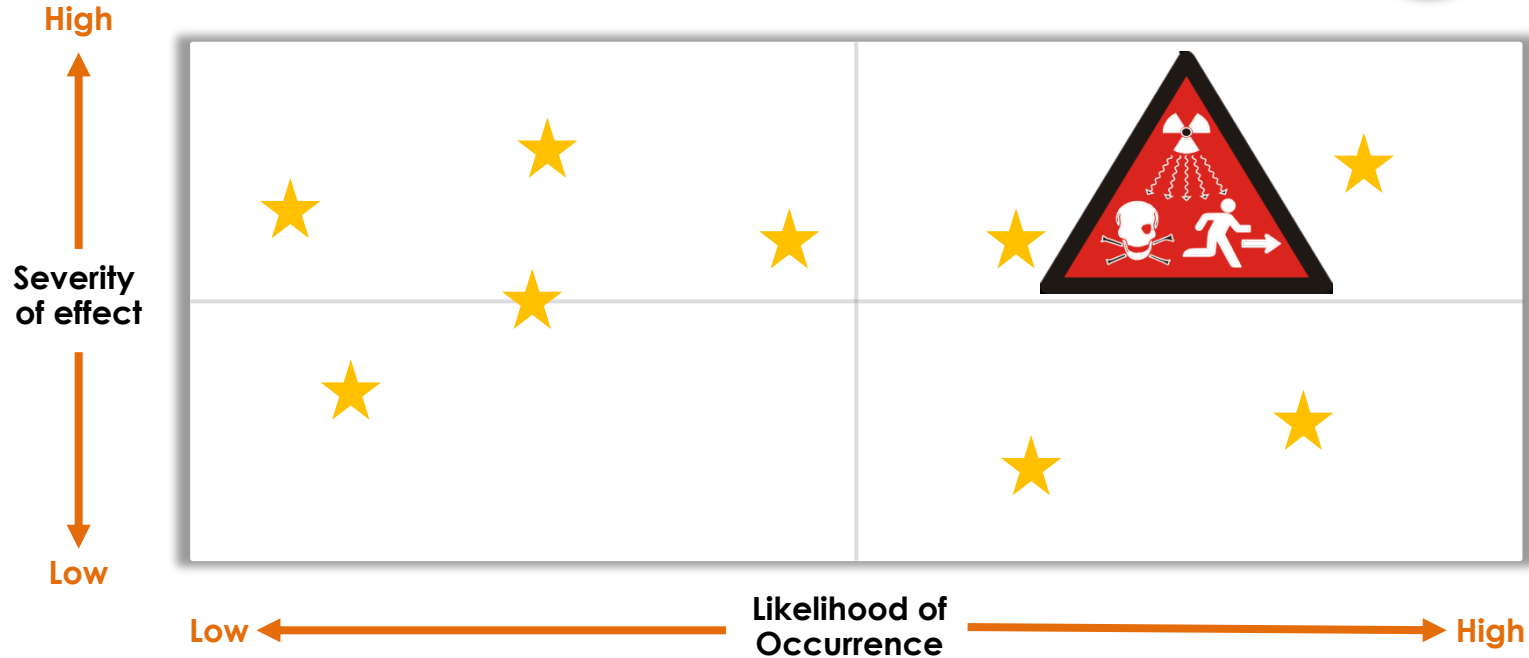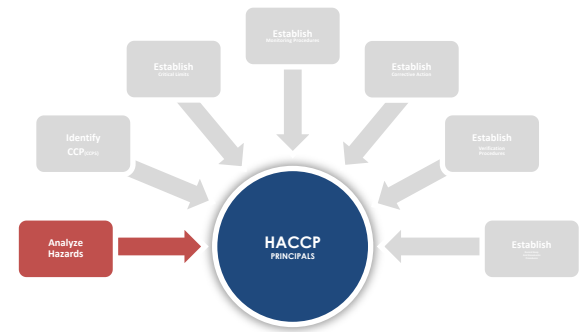
Principle 2 - Identify the Critical Control Points

Establish Critical Limits

Establish Monitoring Procedures

Establish Corrective Action

Establish Verification Procedures

Identify CCP(CCPS)

Establish Record Keep And Documents Procedures

Analyze Hazards

HACCP PRINCIPALS

A critical control point (CCP) is a point, step or procedure at which **control can be applied** and a **food safety hazard can be prevented, 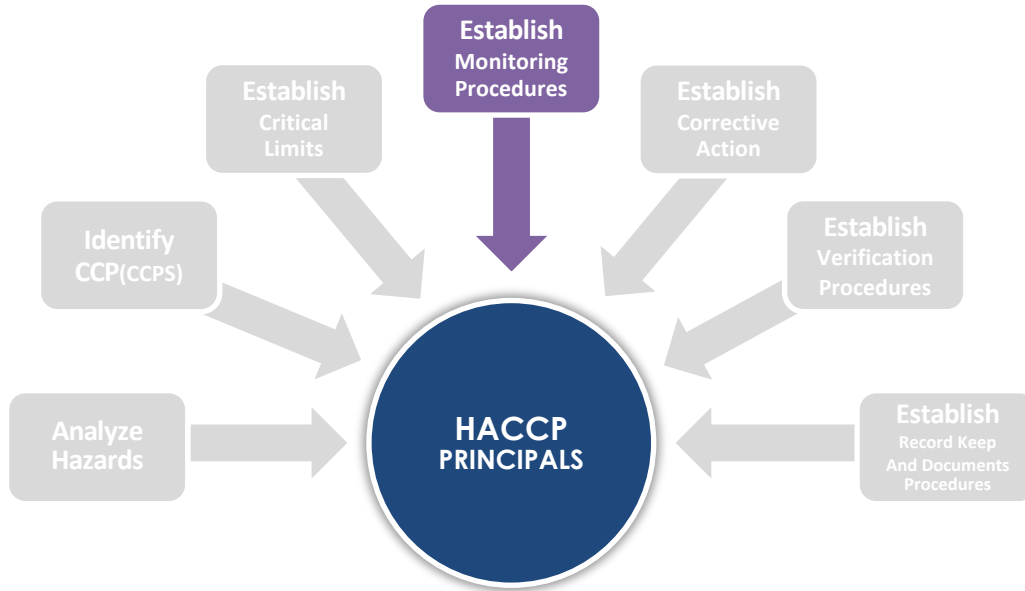eliminated or reduced to acceptable levels**. The HACCP team will use a CCP decision tree to help identify the critical control points in the process. A critical control point may control more that one food safety hazard or in some cases more than one CCP is needed to control a single hazard. The number of CCP's needed depends on the processing steps and the control needed to assure food safety.

Principle 3 - Establish Critical Limits

HACCP PRINCIPALS

- Establish Critical Limits
- Establish Monitoring Procedures
- Establish Corrective Action
- Establish Verification Procedures
- Identify CCP(CCPS)
- Analyze Hazards
- Establish Record Keep And Documents Procedures

A critical limit (CL) is the **maximum and/or minimum value** to which a biological, chemical, or physical parameter must be controlled at a CCP to prevent, eliminate, or reduce to an acceptable level the occurrence of a food safety hazard. The critical limit is usually a measure such as time, temperature, water activity (Aw), pH, weight, or some other measure that is based on scientific literature and/or regulatory standards.
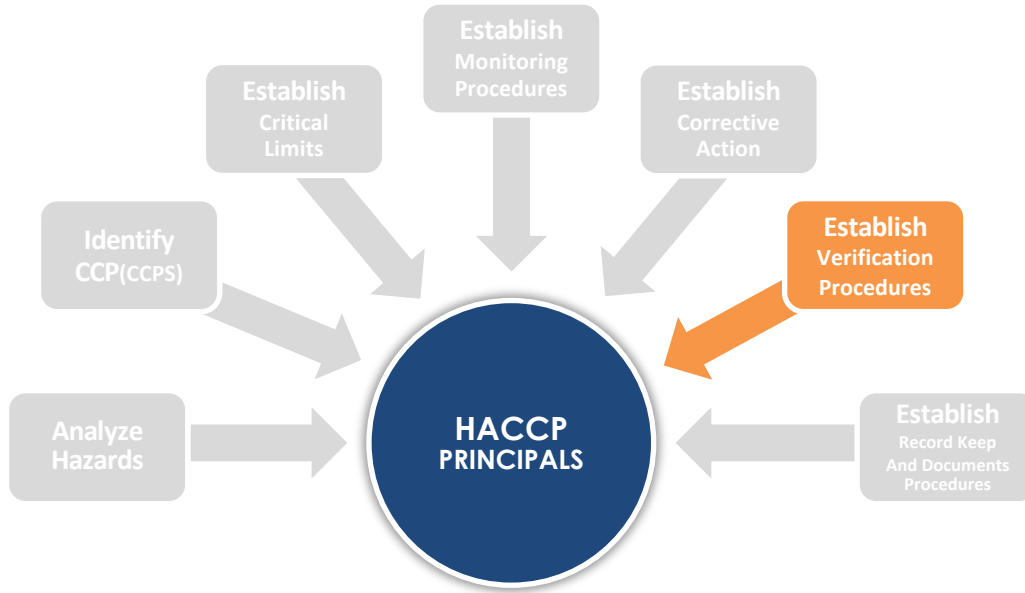
Principle 4 - Monitor CCP

Establish Monitoring Procedures

Establish Critical Limits

Establish Corrective Action

Identify CCP(CCPS)

Establish Verification Procedures

Analyze Hazards

HACCP PRINCIPALS

Establish Record Keep And Documents Procedures

The HACCP team will describe **monitoring procedures** for the measurement of the critical limit at each critical control point. Monitoring procedures should **describe how the measurement will be taken**, when the measurement is taken, who is responsible for the measurement and how frequently the measurement is taken during production.

Principle 5 - Establish Corrective Action
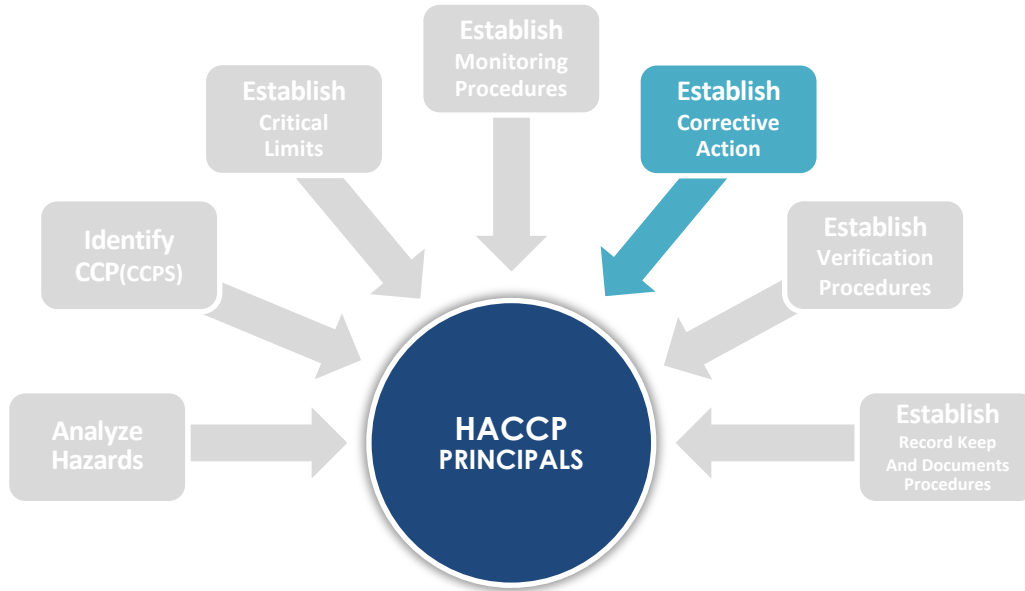
Corrective actions are the **procedures that are followed when a deviation in a critical limit occurs.** The HACCP team will identify the steps that will be taken to prevent potentially hazardous food from entering the food chain and the steps that are needed to correct the process. This usually includes identification of the problems and the steps taken to assure that the problem will not occur again.

Principle 6 - Verification

HACCP PRINCIPALS

- Analyze Hazards
- Identify CCP(CCPS)
- Establish Critical Limits
- Establish Monitoring Procedures
- Establish Corrective Action
- Establish Verification Procedures
- Establish Record Keep And Documents Procedures

Those activities, other than monitoring, that determine the validity of the HACCP plan and that the system is operating according to the plan. The HACCP team may identify activities such as auditing of CCP's, record review, prior shipment review, instrument calibration and product testing as part of the verification activities.

Principle 7 - Recordkeeping
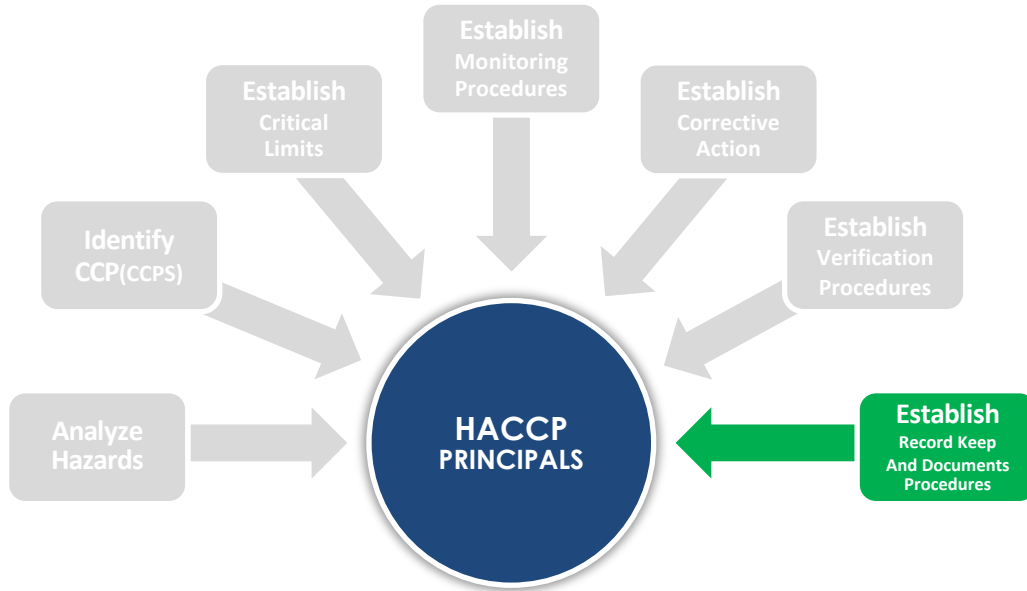
A **key component** of the HACCP plan is **recording information** that can be used to prove that the a food was **produced safely**. The records also need to include information about the HACCP plan. Record should include information on the HACCP Team, product description, flow diagrams, the hazard analysis, the CCP's identified, Critical Limits, Monitoring System, Corrective Actions, Recordkeeping Procedures, and Verification Procedures.

To Ensure
TOTAL Food Quality

Based On **4** Main Groups Of **Total Quality Management**

1. GAP : Good Agricultural Practice
2. GSP : Good Storage Practice
3. GMP: Good Manufacturing Practice
4. GHP: Good Hygiene Practice

Good Agricultural Practice

Basic Rules

- Check production for contamination

- Product must be fit for human consumption

- Not to use pesticided chemicals that are poisonous to humans

- Store food away from rodents

Good Storage Practice

SHOULD BE FOLLOWED ALL THROUGH THE ENTIRE FOOD CHAIN

Storage of food should be

- in cool dry places…to prevent mold, mildew and fungus

- in low temperatures to prevent growth of bacteria

- Prevented from rodents contaminating the food

Good Manufacturing Practice

The Place Where Food Is Prepared Should Be Designed In Ways To Minimized Contamination As Much As Possible

- Cool
- Clean
- Forbidden entrance for non-foodhandlers
- Regulate humidity (if possible)
- Surfaces the comes in contact to food must be cleaned easily
- Prevent vermins from food preparation areas

Good Hygiene Practice

Measures for FOOD HANDLERS to not contaminate the foods

Observe Personal Hygiene

- Bath daily
- Hand washing
- Wear headgear