– Are You Confused?

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COVERAGE

GMP
GHP
HACCP

⊙ What do we understand by GHP/ GMP & HACCP

⊙ Where do the confusions arise?

⊙ Implementation of GMP & HACCP in export & domestic sector – some experiences

GMP/GHP, HACCP, Food Safety Management Systems

- GMP/GHP - All practices regarding the conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain

- HACCP - A system which identifies, evaluates and controls hazards which are significant for food safety

- Food Safety Management Systems - A holistic system of controls that manage food safety in food business. Includes GHPs; HACCP; management systems elements & policies; and traceability/ recall systems

GMP

GHP

HACCP

GMP/ GHP

GMP

GHP

HACCP

- Primary production
- Establishment design & facilities – location, premises & rooms, equipment, facilities
- Control of operations
- Establishment: maintenance & sanitation* – maintenance & cleaning, pest control, waste management
- Personal Hygiene* – health status, illnesses, personal cleanliness, behaviour, visitors
- Transportation – design, use & maintenance
- Product information & consumer awareness – identification, prod info, labelling, consumer education
- Training

HACCP

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HACCP

- ◎ An internationally accepted methodology to reduce and manage risk

- ◎ A preventive system for food safety that addresses chemical, physical and biological risk

- ◎ Treats the production of food as a total, continuous system, assuring food safety from harvest to consumption

- ◎ 7 Principles & 12 Steps

HACCP Principles

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HACCP

- Conduct a hazard analysis

- Determine the CCPs

- Establish Critical Limits

- Establish a system to monitor Control of the CCPs

- Establish the Corrective Actions to be taken when monitoring indicates that a particular CCP is not in control

- Establish Procedures for Verification to confirm that the HACCP System is working effectively

- Establish documentation concerning all procedures and records appropriate to these Principles and their application

HACCP – 12 Steps

- Assemble HACCP Team
- Describe Product
- Identify intended Use
- Construct Flow Diagram
- Onsite Confirmation of Flow Diagram

Pre -Steps

- List all potential hazards associated with each step, conduct a hazard analysis & consider any measures to control identified hazards
- Determine the CCPs
- Establish Critical Limits for each CCP
- Establish a monitoring system for each CCP
- Establish Corrective Actions
- Establish Verification Procedures
- Establish documentation & Record Keeping

GMP

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HACCP

10 POINTS OF

CONFUSION

1. Differences between GMP & GHP

- Pre requisite progs which provide basic envt & operating conditions for production of safe food & are a prerequisite to a successful implementation of HACCP

  - **GMP** – manufacture & process controls & includes supplier control; specifications; calibration of equipment; traceability & recall; equipment designs where conditions for food safety can be achieved, maintained & monitored; lighting & ventilation systems; storage conditions; control of operations

  - **GHP** – system/ measures for maintaining hygiene & sanitation & include personal hygiene & employee health conditions, maintenance of plant & eqpt hygiene including food contact surfaces, pest control, waste disposal, water quality, toilet & hand wash facilities, prevention of cross contamination

GMP

GHP

HACCP

2. GMP Link To HACCP

➡️GMP through out the facility
HACCP process specific

➡️Low risk hazards controlled through GMP
Many hazards controlled through GMP

➡️HACCP takes care of significant hazards not controlled
by PRPs/GMPs

➡️All the pre-requisite programmes to be in place
before embarking on a HACCP prog

Relationship between GMP & HACCP

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⊙ GMP including GHP outline the measures to be taken to ensure that premises, equipment, transport and employees do not contribute to or become food safety hazards

⊙ Codex 4th revision stresses that – Prerequisite programmes to HACCP including training should be well established, fully operational & verified in order to facilitate the successful application & implementation of the HACCP system

3. Hazard Analysis & Risk Analysis

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- ◎ **Hazard Analysis**

  ➢ Identification of potential hazards & in execution of a hazard analysis, the risks are assessed for level of control to be implemented for control of hazard

  ➢ Basis – likelihood of occurrence & severity of consequences

- ◎ **Risk Analysis**

  ➢ SPS Agreement – Article 5: Countries must establish SPS measures on the basis of an appropriate assessment of the actual risks involved, &, if requested make known the factors taken into consideration, the assessment procedures used & level of risk they determined to be acceptable.

  ➢ Codex Risk Analysis - 3 components : risk assessment, risk management and risk communication

Risk Analysis

- **Risk Assessment**
  - Identify the immediate, interim & long term effect on human health
  - Covers hazard identification, hazard characterization, exposure assessment, risk characterization
- **Risk Management**
  - To establish appropriate measures of control to prevent, reduce or minimise the risks
- **Risk Communication**
  - To determine the best way to communicate the information to affected populations

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HACCP

⊙ CCP – step at which control can be applied & is essential to prevent (from introduction in product) or eliminate a food safety hazard or reduce to acceptable levels

➤ Absence of CCPs – Is it a HACCP or a GMP System?

➤ Raw material checking & testing at entry point – Is it a CCP?

➤ Which is a better system – with more or less CCPs?

➤ Control of hazards through CCP or GMP ?

HONEY PROCESS FLOW

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HACCP

Collection of Raw Honey → Hazards – Pesticide residues , Chloramphenicol

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Transportation in Drums /Bag in Bag to Processor

↓

Melting in Decrystallizers ($\sim35^0$ C)

↓

Filtering in Different Mesh Size → Hazards – – physical impurities like hair, plastic

↓

Settling - 12hrs & Online filter

↓

Heating under Vaccuum (<50)

↓

Packing (Bulk/Customer Packs) → Hazards – insects through GMP/ CCP

5. Verification & Validation

⊙ Validation

  ➢ Objective is to ensure that hazards identified are complete & correct & will be effectively controlled by HACCP Plan

  ➢ Requires objective evidence that all elements of HACCP Plan are effective

⊙ Verification

  ➢ Objective is to determine compliance with the HACCP system (Plan)

  ➢ Methods include – auditing, random sampling & analysis

⊙ Examples – hand swabs, pasteurization

6. Systems Elements not mentioned in HACCP – are these essential/ important?

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HACCP

- ◉ Management responsibility – mgmt commitment, food safety policy, responsibility & authority
- ◉ Document control/ record control
- ◉ Management review
- ◉ Resource Management
- ◉ Control of monitoring & measuring – methods & equipment
- ◉ Internal audits
- ◉ Improvements

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HACCP

⦿ HACCP defined as a system which identifies, evaluates & controls hazards which are significant for food safety. Basically designed to address safety

⦿ However can be applied to other aspects of food quality also (as mentioned in preamble)

"*While the application of HACCP to food safety was considered here, the concept can be applied to other aspects of food quality*"

⦿ Also apply to other industries; egs – medical, oil, explosives, drugs

8. Application to Primary Production?

- Hazards are due to environment (Cd), pests & diseases of animals & plants & from measures to control these, contaminants, hygienic conditions

- Hazards associated with primary production may or may not be eliminated or reduced to acceptable levels – depends on subsequent processing/ handling (eg e.coli in lettuce, vibrios in seafood, vd residues in animal products)

- Good practice recommendations need to be followed with the aim of ensuring food safety & wholesomeness (GAP/ GAHP) – **aim is that hazards not introduced**

9. WHO SHALL BE RESPONSIBLE?

⊙ **THE PROCESSOR**

➢ Processors are responsible for

➢ upgrading the facility

➢ designing the HACCP system

➢ Implementing it; &

➢ documenting & maintaining records

⊙ **THE GOVERNMENT**

➢ Governments are responsible for creating a scientific, technical & financial environment favorable to HACCP implementation

10. Cost Implications

⊙ Costs of consultants

⊙ Certification

⊙ Manpower time & training costs

⊙ Cost – benefit studies not available

⊙ Lack of data & studies relating to impact of HACCP on food safety - Visible benefits not evident

➢ Implemented due to external pressures (export, retail, buyers)

10 Points of Confusions!!

GMP

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HACCP

1. Difference between GHP & GMP
2. Relationship between GHP & HACCP
3. Hazard analysis & Risk analysis – difference
4. CCP – Some Issues
5. Verification & Validation
6. Aspects like calibration, internal audits are not mentioned in HACCP – are these essential/ important?
7. Can HACCP address quality or only safety?
8. Implementation in primary production
9. Whose responsibility is the implementation
10. Cost of implementation

IMPLEMENTATION IN EXPORT/ DOMESTIC SECTOR : SOME EXPERIENCES

Some Experiences

GMP
GHP
HACCP

◉ **Export**

➤ Mandatory GMP/ HACCP for fishery, dairy, egg products, poultry meat, honey

➤ No of units certified > 500

➤ Voluntary Schemes – eg Globalgap, retail, etc

◉ **Domestic Sector**

➤ Legislation – MMPO, FPO: GMP/GHP

➤ Mandatory BIS Standards – water, infant milk foods

➤ Retail

ISSUES OF CONCERN

GMP

GHP

HACCP

- Although GMP/HACCP implemented/certified – lots of gaps- deficiencies relate to implementation;

  - **GHP** & Adherence : Poor Pest Control (Birds, Flies, Insect), Poor personal Hygiene (caps, footwear, jewellery, glass bangles), unhygienic processing conditions
  - **GMP** & Continuance: Plant Layout design (sheds, m/c, Eqpt), Equipments (maintenance & calibration); Storage & transportation conditions (eg. broken thermographs); Shelf life monitoring & maintenance of control samples; Testing & control on RM/PM materials & cross contamination
  - **Traceability** lacking
  - **Poor Record keeping** w.r.t. Lot/Batch preparation details , No availability of sampling plan , On-line checks & Non availability of basic working QC lab.
  - **Legislation** - Not addressed both of importing country/ domestic – not even understood eg fumigation, Non-adherence to PCRO regulation, W&M Act

ISSUES OF CONCERN

GMP

GHP

HACCP

- Management commitment lacking
  - Systems copied
  - Lack of understanding of entire process – CCP & GMP
  - Once certified, processor neglects the system as surveillance not effective & frequent
  - Sampling procedures not correctly followed
  - Qualified personnel;
  - No commitment for food/ product safety
  - Certification important & not Implementation

HACCP or GMP??

No Need to get Confused

Important is to get started & Implement

Aim is SAFE FOOD

ANY QUESTIONS?