

CODEX Standard: Food Safety and Hygiene

Dr. Jaju R.H.¹, Kadam M.L.² and Kelapure N.N.³

¹Assistant Professor, MGM College of Food Technology, Aurangabad

²Assistant Professor, MGM College of Food Technology, Aurangabad

³Assistant Professor, MGM College of Food Technology, Aurangabad

E-mail: ¹cftrhjaju@gmail.com, ²kadamml09@gmail.com, ³kelapurenn@gmail.com

Abstract—The Codex Alimentarius is a series of food standards, codes and other regulations adopted by the Codex Alimentarius Commission (CAC) that countries can use as models in their domestic food legislation and regulations, and which can be applied to international trade. The main aim is to facilitate world trade in foods through the development of food standards, codes of practice and other guidelines. The code of conduct to maintain food safety addresses Good Agricultural Practices (GAP), Good Manufacturing Practices (GMP), HACCP to control hazards with all stages of production.

1. INTRODUCTION

The name Codex Alimentarius is taken from Latin and translates literally as "food code" or "food law". It was founded in response to the world-wide recognition of the importance of international trade and the need to facilitate such trade while at the same time ensuring the quality and safety of food to protect the consumer. Codex provides the assurance that any foods produced according to its codes of hygienic practices and complying with its standards are safe and nutritious and offer adequate health protection. Food safety means assurance that food is acceptable for human consumption according to its intended use. It ensures a good, healthy and effective food chain which is made up of primary source to the final consumer with standard quality specifications.

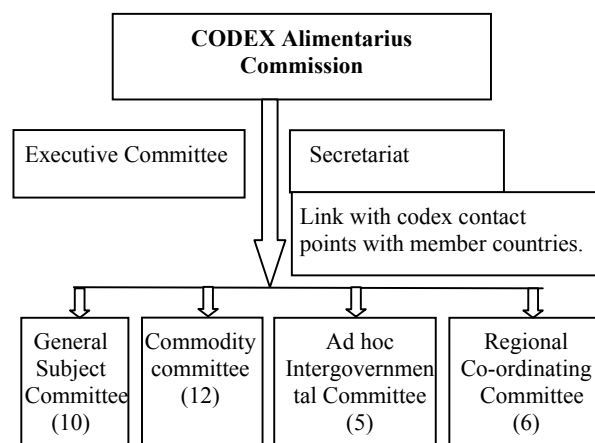
2. PURPOSE OF CODEX

- Its main purpose is to promote consumer protection.
- To facilitate world trade in foods through the development of food standards, codes of practice and other guidelines.
- To guide and promote the elaboration of definitions and requirements for foods and assist in their harmonization
- To ensure fair practices in the food trade.
- Formulation of food standards covering all the principal foods, whether processed, semi-processed or in raw form.
- To coordinate all food standards work

3. STRUCTURE OF CODEX ALIMENTARIUS COMMISSION

It consists of two main bodies i.e. Executive Committee and Secretariat. Codex Alimentarius Commission's Secretariat is at Rome. The structure of the Codex Alimentarius Commission (CAC) consists of the Commission, the Executive Committee and the subsidiary bodies. The Secretariat to the CAC is a unit within FAO's Food Quality and Standards Service in the Food and Nutrition Division, located in the FAO Headquarters office in Rome, Italy. The Codex Secretariat is also the link with national Codex Contact Points (CCP), designated by each Member, and their national Codex Coordinating Committees (NCCC), if there is one. It contains four different types of groups as described in the Table 1.

Table 1. CODEX Structure



The Secretary to the Commission is the Chief of the FAO/WHO Joint Food Standards Program with a staff consisting of one Senior Officer and five food standards officers. The WHO focal point for Codex activities is currently the Food Safety Unit, WHO Headquarters Geneva, Switzerland.

The Commission, which meets every year alternately in Rome and in Geneva, is the supreme decision making body and provides a forum for discussion and debate on all major food standards/safety issues of interest and concern to Codex Member States.

The Executive Committee of Codex comprises the Chairman, three vice Chairs and six elected representatives from the various geographical groups of Codex.

The Executive Committee meets once between Commission sessions and also once before each Commission session. During the period between Commission sessions, it acts as the executive organ of the Commission and may make interim decisions for the Commission subject to approval at the next Commission session

4. RECOMMENDED INTERNATIONAL CODE OF HYGIENE FOR FOOD SAFETY

Codex provides the assurance that any foods produced according to its codes of hygienic practices and complying with its standards are safe and nutritious and offer adequate health protection.

4.1 Code of Hygienic Practice

This code addresses Good Agricultural Practices (GAPs) and Good Manufacturing Practices (GMPs) that will help control microbial, chemical and physical hazards associated with all stages of the production of fresh fruits and vegetables from primary production to packing. The main objective is to minimize the risk of illness arising from Novo Virus, Hepatitis A Virus in foods and Advice to governments, food industry, and consumers.

The scope is Applicable to all foods (with focus on RTE foods). Training on personal hygiene to workers engaged in food growing or processing, directly or indirectly in contact with foods.

There are Eight (08) hygiene specific requirements or principles as shown in Fig 1.

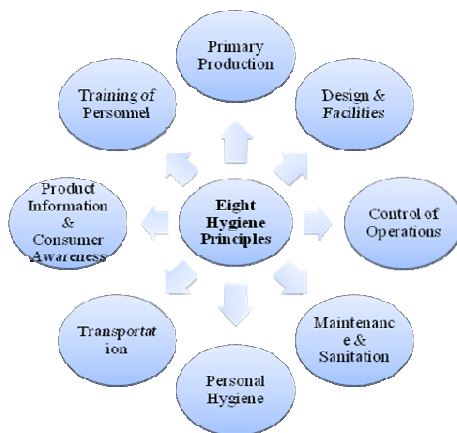


Figure 1: Hygiene Specific Requirements

The GMP may be treated as generic pre-requisite to HACCP.

4.2 Ideal Approach of Food Safety

The main approach of food safety is to get collective practices like Good Agriculture practices subsequently followed by hygienic practices, good manufacturing practices and HACCP. It is well organized and described in the Fig. 2.

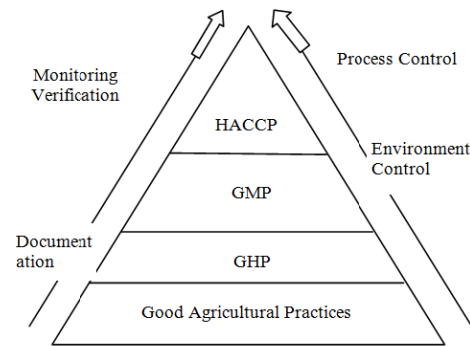


Figure 2. Food Safety Approach

4.3 General principles of food hygiene

Codex standards ensure product is safe internationally Identify the essential principles of food hygiene applicable throughout the food chain ensuring that food is safe and suitable for human consumption. Codex focuses on risk-based inspection and certification systems. Recommend a HACCP-based approach as a means to enhance food safety. HACCP has been defined by CODEX. HACCP based on standards operating procedures are developed by NFSMI (National Food Service Management Institute).

HACCP Principles: There are **Seven (07)** HACCP principles.

Principle 1: Conduct Hazard Analysis.

Principle 2: Determine the Critical Control Points (CCP's).

Principle 3: Establish Critical limit(s).

Principle 4: Establish a system to monitor control of the CCP.

Principle 5: Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control.

Principle 6: Establish procedures for verification to confirm that the HACCP system is working effectively.

Principle 7: Establish documentation concerning all procedures and records appropriate to these principles and their application.

It provides guidance for specific codes to amplify the hygiene requirements specific to those areas. The Codex Committee on Food Hygiene addresses GAPs and GMPs that will help control microbial, chemical, and physical hazards associated with all stages of the production of fresh fruits and vegetables

from primary production to packaging. The IS standard for GMP and GHP are as:

IS 16020 : 2012 is for GHP.

IS 16021 : 2012 is for GMP.

4.4 Roles of Governments, Industry, and Consumers

- a) Governments can consider the contents of this document and decide how best they should encourage the implementation of these general principles to:
- ✓ Protect consumers adequately from illness or injury caused by food.
 - ✓ Provide assurance that food is suitable for human consumption.
 - ✓ Maintain confidence in internationally traded food.
 - ✓ Provide health education programmes which effectively communicate the principles of food hygiene to industry and consumers.
- b) Industry should apply the hygienic practices set out in this document to:
- ✓ Provide food which is safe and suitable for consumption.
 - ✓ Ensure that consumers have clear and easily-understood information, by way of labeling and other appropriate means.
 - ✓ Maintain confidence in internationally traded food.
- c) Consumers should recognize their role by following relevant instructions and applying appropriate food hygiene measures.

4.5 Personnel hygiene and food handling practices

All persons working in a food plant should maintain a high degree of personal cleanliness while on duty. Clothing including suitable headdress should be appropriate to the duties being performed and should be kept clean.

Hands should be washed as often as necessary to conform to hygienic operating practices. Spitting, eating and the use of tobacco or chewing gum should be prohibited in food handling areas. All necessary precautions should be taken to prevent the contamination of the food product or ingredients with any foreign substance.

Minor cuts and abrasions on the hands should be appropriately treated and covered with a suitable waterproof dressing. Adequate first-aid facilities should be provided to meet these contingencies so that there is no contamination of the food.

Gloves used in food handling should be maintained in a sound, clean and sanitary condition; gloves should be made of an impermeable material except where their usage would be inappropriate or incompatible with the work involved.

5. INTERNATIONAL CODE OF HYGIENE FOR VARIOUS PRODUCTS

International code of hygiene for some typical products is summarized in Table 1.

Table 1: International code of Hygiene for various products

No.	Various Products	Features
1.	For Tree Nuts (Applies to almonds & walnuts and other all tree nuts)	<ul style="list-style-type: none"> ✓ This code of practice is intended to provide basic hygienic requirements for commercial shelling operations. ✓ Sanitary quality of irrigation water. ✓ Sanitary disposal of human and animal wastes.
2.	Fruits and Vegetables	<ul style="list-style-type: none"> ✓ Agricultural inputs should not contain microbial or chemical contaminants which affect safety of fruits and vegetables. ✓ Hygienic and sanitary facilities should be available to ensure that an appropriate degree of personal hygiene can be maintained. ✓ Fresh fruits and vegetables unfit for human consumption should be segregated before storage or transport.
3.	Egg and Egg products	<ul style="list-style-type: none"> ✓ Eggs should be stored at temperature 8°-15°C and relative humidity 70% - 85%, to minimize deterioration having regard to local climatic conditions. ✓ All persons working in a food plant should maintain a high degree of personal cleanliness while on duty. ✓ Eggs should be candled before breaking, within a specified time approved by the official agency having jurisdiction.
4.	Infant Food	<ul style="list-style-type: none"> ✓ The food for infants or children should be free from foreign to the extent possible in good manufacturing practice. ✓ Raw materials used for the production infants food, should not contain pesticide residues or objectionable substances in the final product produce health hazard for infants.
5.	Meat and Poultry products	<ul style="list-style-type: none"> ✓ Operation of deboning& trimming should always be carried out as rapidly as possible and meat should not be allowed to accumulate in rooms used for de-boning and trimming.

6. END PRODUCT SPECIFICATIONS:

Appropriate methods should be used for sampling, analysis, and determination to meet the following specifications.

- 1) To the extent possible in good manufacturing practice the products should be free from objectionable matter.
- 2) When tested by appropriate methods of sampling and examination,
 - ✓ The product should be free from pathogenic microorganisms; and
 - ✓ Should not contain any substances originating from microorganisms in amounts which may be toxic.
- 3) The products should comply with the provisions for food additives and contaminants laid down in Codex commodity standards and with maximum levels for pesticide residues recommended by the Codex Alimentarius Commission.

7. NCCP: NATIONAL CODEX CONTACT POINTS

"Codex India" the National Codex Contact Point (NCCP) for India, is located at the Directorate General of Health Services, Ministry of Health and Family Welfare (MOH&FW), Government of India. A National Codex Resource Centre (NCRC) was set up in 2002 as the focal office for the work of Codex in India. It was set up under the FAO Project to Strengthen the National Codex Committee.

Core Functions of NCCP (India):

1. Act as the link between the Codex Secretariat and India.
2. Keep liaison with host countries of Subsidiary bodies/Task Forces functioning under the CAC.
3. Coordinate all relevant Codex activities within the country.
4. Receive all Codex final texts (standards, codes of practice, guidelines) and working documents of Codex Sessions & ensure that these are circulated within the country.
5. Promote Codex activities throughout the country.
6. Work in close cooperation with the National Codex committee.
7. The NCCP acts as the liaison office to coordinate with concerned government.
8. Act as a channel for the exchange of information and coordination of activities with other Codex Member.

8. CONCLUSION:

Codex provides the assurance that any foods produced according to its codes of hygienic practices and complying with its standards are safe and nutritious and offer adequate health protection. The ideal approach to maintain food safety mainly includes GAP, GHP, GMP and HACCP in stepwise manner to protect the humankind. National Codex Contact Points (India) do the study and research work to solve any problem resulting from the elaboration of international food standards.

REFERENCES

- [1] Annual Report of Ministry of Food Processing 2010-11.
- [2] CODEX Alimentarius-Recommended International Code of Practice, 2011
- [3] CODEX Alimentarius standards for Fresh Fruits and Vegetables-FAO/WHO Report, 2013
- [4] Jaju R.H., *Food Laws and Regulations*, pp: 139-161, 2013.
- [5] Jevanand Rajaram, *FSSA Regulatory Framework*.
- [6] Mieke Uyttendaele, CODEX Alimentarius Guideline
- [7] Mona Malhotra, *Food Safety- FSSAI approach*, Indian Food Packer, Vol. 64, No. 4, July-August-2010.
- [8] P. K. Das, *The Food Safety and Standard Act, 2006*, Universal Law Publishing Co. Pvt. Ltd., Delhi, 2010
- [9] Procedural Manual for CODEX India, Ministry of Health and Family Welfare, Government of India, 2010
- [10] S. Mahendra Dev and Alakh N. Sharma, *Food Security in India*, Oxfam India Publication, Sept. 2010.
- [11] *The importance of Food Quality and Safety for developing countries*.-FAO Report, 2012