



# FOOD PRODUCTION

Student Handbook

NSQF Level-1  
Class IX



**CENTRAL BOARD OF SECONDARY EDUCATION**

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110301





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# भारत का संविधान

## उद्देशिका

हम, भारत के लोग, भारत को एक सम्पूर्ण 'प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,

विचार, अभिव्यक्ति, विश्वास, धर्म

और उपासना की स्वतंत्रता,

प्रतिष्ठा और अवसर की समता

प्राप्त कराने के लिए

तथा उन सब में व्यक्ति की गरिमा

<sup>2</sup>और राष्ट्र की एकता और अखंडता

सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढसंकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई० को एतद्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

- 
1. संविधान ( बयालीसवां संशोधन ) अधिनियम, 1976 की धारा 2 द्वारा ( 3.1.1977 ) से "प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य" के स्थान पर प्रतिस्थापित।
  2. संविधान ( बयालीसवां संशोधन ) अधिनियम, 1976 की धारा 2 द्वारा ( 3.1.1977 ) से "राष्ट्र की एकता" के स्थान पर प्रतिस्थापित।
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## भाग 4 क

## मूल कर्तव्य

**51 क. मूल कर्तव्य** - भारत के प्रत्येक नागरिक का यह कर्तव्य होगा कि वह -

- (क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;
- (ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;
- (ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;
- (घ) देश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;
- (ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;
- (च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का महत्व समझे और उसका परिरक्षण करे;
- (छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी, और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणी मात्र के प्रति दयाभाव रखे;
- (ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;
- (झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;
- (ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले;
- <sup>1</sup>(ट) यदि माता-पिता या संरक्षक हैं, छह वर्ष से चौदह वर्ष तक की आयु वाले अपने, यथास्थिति, बालक या प्रतिपाल्य के लिये शिक्षा के अवसर प्रदान करे।

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1. संविधान ( छयासीवां संशोधन ) अधिनियम, 2002 की धारा 4 द्वारा प्रतिस्थापित।



# THE CONSTITUTION OF INDIA

## PREAMBLE

**WE, THE PEOPLE OF INDIA**, having solemnly resolved to constitute India into a **<sup>1</sup>SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC** and to secure to all its citizens :

**JUSTICE**, social, economic and political;

**LIBERTY** of thought, expression, belief, faith and worship;

**EQUALITY** of status and of opportunity; and to promote among them all

**FRATERNITY** assuring the dignity of the individual and the<sup>2</sup> unity and integrity of the Nation;

**IN OUR CONSTITUENT ASSEMBLY** this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

- 
1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
  2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation" (w.e.f. 3.1.1977)
- 

# THE CONSTITUTION OF INDIA

## Chapter IV A

### FUNDAMENTAL DUTIES

#### ARTICLE 51A

**Fundamental Duties** - It shall be the duty of every citizen of India-

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- <sup>1</sup>(k) to provide opportunities for education to his/her child or, as the case may be, ward between age of 6 and 14 years.

- 
1. Subs. by the Constitution (Eighty - Sixth Amendment) Act, 2002



# Preface

Since the earliest stages of human evolution man has had the desire to travel. The tourism industry is distinctly divided into two segments that of travel and hospitality. Today guests are discerning and demand the best value which has resulted in huge shift for hotels in trying to exceed customer expectations. Products and services have accordingly been redesigned.

The future workforce in the hospitality shall be young and we therefore need to introduce them to the right skills, knowledge and attitude in the formative years. Food Production is the backbone of any large hotel which determines its popularity. The **Student Handbook on Food Production for Level-1** (Class IX) aims to create interest and motivate students in the preparation of food and improving the standard of presentation.

The nutritional aspects, safety, hygiene and a professional attitude towards food preparation will help students understand the role of a chef. The book deals with right storage techniques and essential commodities required for a kitchen and its upkeep. The kitchen hierarchy will enable a young person to identify their place in the overall organisation. The teachers are requested to regularly check for achievement of learning objectives through question and practical assessments. The Board acknowledges the contribution made by the authors and I am sure it would serve the purpose of a useful resource material for students and teachers.

**Chairman, CBSE**

# Acknowledgements

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# Contents

<b>Learning Outcomes</b>	<b>viii</b>
<b>Unit-1</b>	
<b>Introduction to Hospitality Industry</b>	<b>1</b>
<b>Unit-2</b>	
<b>Career Opportunities</b>	<b>13</b>
<b>Unit-3</b>	
<b>Introduction to Kitchen</b>	<b>19</b>
<b>Unit-4</b>	
<b>Protective Clothing and its Maintenance</b>	<b>28</b>
<b>Unit-5</b>	
<b>Personal Hygiene</b>	<b>32</b>
<b>Unit-6</b>	
<b>Equipments and Kitchen Tools</b>	<b>36</b>
<b>Unit-7</b>	
<b>Culinary History</b>	<b>42</b>
<b>Unit-8</b>	
<b>Kitchen Commodities</b>	<b>45</b>
<b>Unit-9</b>	
<b>Storage of Commodities</b>	<b>73</b>
<b>Unit-10</b>	
<b>Kitchen Organization</b>	<b>78</b>



## Learning Outcomes

### Unit-1

#### Introduction to Hospitality Industry

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Hospitality</b>			
<ul style="list-style-type: none"> <li>To outline the important aspects of the hospitality field.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the meaning of hospitality sector.</li> </ul>	<ul style="list-style-type: none"> <li>Chart showing the major hospitality providers.</li> </ul>	<ul style="list-style-type: none"> <li>Power Point presentation of the different sectors.</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the role of hospitality providers.</li> </ul>		<ul style="list-style-type: none"> <li>Flip Charts on the allied fields.</li> </ul>
<b>Session-2: Operations of Five Star Hotel</b>			
<ul style="list-style-type: none"> <li>To describe the operations of the five star hotel.</li> </ul>	<ul style="list-style-type: none"> <li>List out the various operations of the five star hotel.</li> </ul>	<ul style="list-style-type: none"> <li>Chart showing the departments of the hotel industry.</li> </ul>	<ul style="list-style-type: none"> <li>Power Point Presentation of each department.</li> </ul>
	<ul style="list-style-type: none"> <li>Explain the role of the each department.</li> </ul>		<ul style="list-style-type: none"> <li>Visit to the hotel.</li> </ul>
<b>Session-3: Introduction to Allied Areas of Hospitality Industry</b>			
<ul style="list-style-type: none"> <li>Explain the allied areas and their roles.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the various allied areas of the hospitality industry.</li> </ul>	<ul style="list-style-type: none"> <li>Discussion of roles played by each allied area.</li> </ul>	<ul style="list-style-type: none"> <li>Videos on allied areas.</li> </ul>
	2. Describe the key role of each field.		2. Role play of each allied area.

### Unit-2

#### Career Opportunities

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Career Opportunities</b>			
<ul style="list-style-type: none"> <li>To outline the important aspects of career opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>To list the job opportunities in the hotel industry.</li> </ul>	<ul style="list-style-type: none"> <li>Appreciate the jobs offered by the hotel industry.</li> </ul>	<ul style="list-style-type: none"> <li>Group Discussion on job opportunities in hotel industry.</li> </ul>



Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
	<ul style="list-style-type: none"> <li>Explain the job offered based on the departments of the hotel.</li> </ul>		
<b>Session-2: Career Opportunities in Allied Areas</b>			
<ul style="list-style-type: none"> <li>To outline the important aspects of career opportunities in allied areas.</li> </ul>	<ul style="list-style-type: none"> <li>To list the job opportunities in allied areas.</li> </ul>	<ul style="list-style-type: none"> <li>Analyse the importance of jobs offered based on the levels of skill.</li> </ul>	<ul style="list-style-type: none"> <li>Group Discussion on job opportunities in allied areas.</li> </ul>
	<ul style="list-style-type: none"> <li>Explain the job offered in the allied areas.</li> </ul>		

## Unit-3

### Introduction to Kitchen

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Introduction to the Operations of a Commercial Kitchen</b>			
<ul style="list-style-type: none"> <li>Introduction to the operations of a commercial kitchen and advantages of having sections in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the fundamental of kitchen operations.</li> <li>Explain the importance of having sections in a large kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Chart showing major sections of a commercial kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Presentation: Highlight the need of having sections for smooth functioning.</li> </ul>
<ul style="list-style-type: none"> <li>List the various sections of a kitchen and their major functions.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the sections of a kitchen: Main kitchen, cold store, dish wash area, specialty kitchens, butchery, cold kitchen, bakery, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Listing various sections of the kitchen.</li> <li>Explaining major functions of each section.</li> </ul>	<ul style="list-style-type: none"> <li>Activity: Identify kitchen sections looking at picture.</li> <li>Interactive session explaining major functions of that section.</li> </ul>



Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-2: Attitude and Behaviour in the Kitchen</b>			
<ul style="list-style-type: none"> <li>Identify Attitudinal &amp; behavioural traits required to work in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Developing correct attitude and behaviour towards work in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Explaining the attitude and behavioural traits to be developed for kitchen operations.</li> </ul>	<ul style="list-style-type: none"> <li>Role play emphasizing correct behaviour during busy operations.</li> </ul>
<b>Session-3: Skills and Knowledge</b>			
<ul style="list-style-type: none"> <li>Identify skill and knowledge components to be developed for working in commercial kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Differentiate between 'skills' and 'knowledge'.</li> <li>Listing the basic skills and knowledge to be developed at foundation level.</li> </ul>	<ul style="list-style-type: none"> <li>Identify the knowledge and skill set composition required to become a professional chef.</li> </ul>	<ul style="list-style-type: none"> <li>Interactive session on the importance and inter-relation of skills and knowledge.</li> <li>Group discussion on the key areas of knowledge and skill set required by a professional chef.</li> </ul>
<b>Session-4: Ergonomics in Kitchen</b>			
<ul style="list-style-type: none"> <li>Defining Ergonomics.</li> <li>Illustrate role of Ergonomics in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Meaning of ergonomics</li> <li>Application of Ergonomics in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Techniques to minimise strains and sprains in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Demonstration of correct postures of performing daily tasks such as cutting, lifting weights etc.</li> </ul>

## Unit-4

### Protective Clothing and its Maintenance

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Importance of Protective Clothing and its Maintenance</b>			
<ul style="list-style-type: none"> <li>Understanding the importance of protective clothing.</li> </ul>	<ul style="list-style-type: none"> <li>The basic knowledge of protective clothing.</li> <li>The importance of protective clothing.</li> </ul>	<ul style="list-style-type: none"> <li>Chart out the importance of protective clothing used in the hotel industry.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>Highlight the importance of the protective clothing.</li> </ul>



Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
			Activity: <ul style="list-style-type: none"> <li>Visit to the nearest star hotel's kitchen and ask the students to make a report on protective clothing.</li> </ul>
<b>Session-2: Types of Protective Clothing</b>			
<ul style="list-style-type: none"> <li>Understanding the types of protective clothing.</li> </ul>	<ul style="list-style-type: none"> <li>The basic knowledge of types of protective clothing.</li> </ul>	<ul style="list-style-type: none"> <li>Chart out the different types of clothing used in the hotel industry.</li> <li>Explain the various types of clothing required for kitchen.</li> <li>Uses of different types of clothing.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>The different types of protective clothing.</li> </ul> Activity: <ul style="list-style-type: none"> <li>Visit to the nearest star hotel's kitchen and ask the students to make a report on types of protective clothing.</li> </ul>

## Unit-5

### Personal Hygiene

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Importance of Personal Hygiene</b>			
<ul style="list-style-type: none"> <li>Understanding the importance of personal hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>The basic knowledge of personal hygiene.</li> <li>The importance of personal hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare a chart on methods used for personal hygiene in the hotel industry.</li> <li>Explain the various uses of personal hygiene.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>Highlight the importance of personal hygiene.</li> </ul>



Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-2: Maintenance of Personal Hygiene</b>			
<ul style="list-style-type: none"> <li>Understanding the maintenance of personal hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>The basic knowledge of maintaining personal hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the various methods to maintain personal hygiene.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>Highlight the importance of maintaining personal hygiene.</li> </ul>
<b>Session-3: Hand Washing Techniques</b>			
<ul style="list-style-type: none"> <li>Understanding the different methods of hand washing .</li> </ul>	<ul style="list-style-type: none"> <li>The idea of basic knowledge of methods of hand washing.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the various methods to do the hand washing.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>Highlight the different methods of hand washing techniques.</li> </ul>

## Unit-6

### Equipment and Kitchen Tools

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Importance of Kitchen Equipments</b>			
<ul style="list-style-type: none"> <li>Understanding the importance of kitchen equipment.</li> </ul>	<ul style="list-style-type: none"> <li>The basic knowledge of kitchen equipment.</li> <li>The importance of work place hygiene and maintenance of knives.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare a chart on the different kitchen equipment- small and large.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>Highlight the importance of kitchen equipment and their types.</li> </ul>
<b>Session-2: Care and Maintenance of Equipments</b>			
<ul style="list-style-type: none"> <li>Understanding the care and maintenance of kitchen equipment.</li> </ul>	<ul style="list-style-type: none"> <li>The knowledge of care and maintenance of kitchen equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare a chart on the different methods to maintain the kitchen equipment.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>Highlight the care and maintenance of kitchen equipment.</li> </ul>
<b>Session-3: Work Place Hygiene</b>			
<ul style="list-style-type: none"> <li>Understanding the work place hygiene in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>The knowledge of work place hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the various methods to maintain the work place hygiene.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>The different methods of maintaining the work place hygiene.</li> </ul>





Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-4: Knife and its Maintenance</b>			
<ul style="list-style-type: none"> <li>Understanding the different knives their care and maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>The knowledge of kitchen knives.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare a chart on the different types of knife.</li> <li>Explain the various methods to care and maintain knives.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>Highlight the importance of knives and their types.</li> </ul>
<b>Session-5: Safety Procedure for Handling Knives</b>			
<ul style="list-style-type: none"> <li>Understanding the procedures to handle the knife safely.</li> </ul>	<ul style="list-style-type: none"> <li>The knowledge about safe handling of knife.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare a chart on the different safety procedures for handling knives.</li> </ul>	Interactive lecture: <ul style="list-style-type: none"> <li>The different methods of safety procedure for knife handling.</li> </ul>

## Unit-7

### Culinary History

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Historical Background</b>			
<ul style="list-style-type: none"> <li>To outline the important aspects of culinary history.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the evolution of food.</li> </ul>	<ul style="list-style-type: none"> <li>Appraise the influence of invasions in food evolution.</li> </ul>	<ul style="list-style-type: none"> <li>Power Point Presentation of the evolution.</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss the influence of invasions.</li> </ul>		<ul style="list-style-type: none"> <li>Flip charts on evolution.</li> </ul>
<b>Session-2: Development of Modern Cookery</b>			
<ul style="list-style-type: none"> <li>To outline the important aspects of evolution of culinary industry.</li> </ul>	<ul style="list-style-type: none"> <li>Describe the evolution of culinary industry.</li> </ul>	<ul style="list-style-type: none"> <li>Identify the key role played by chefs.</li> </ul>	<ul style="list-style-type: none"> <li>Interaction session on the role of chefs.</li> </ul>
	<ul style="list-style-type: none"> <li>List the role of chefs in its growth.</li> </ul>		



## Unit-8

### Kitchen Commodities

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Kitchen Commodities</b>			
<ul style="list-style-type: none"> <li>Classifying kitchen commodities as per plant / animal origin.</li> </ul>	<ul style="list-style-type: none"> <li>Classification of various commodities used in kitchen based on origin.</li> </ul>	<ul style="list-style-type: none"> <li>Identification of commodities based on their origin and type.</li> </ul>	<ul style="list-style-type: none"> <li>Interactive session with students on various edible products obtained from plants and animals.</li> </ul>
<ul style="list-style-type: none"> <li>Identification and types of cereals, pulses, fruits, vegetables, spices and herbs.</li> </ul>	<ul style="list-style-type: none"> <li>Classification of various commodities used in kitchen and place them in correct sub-groups.</li> </ul>	<ul style="list-style-type: none"> <li>Identification of commodities with plant origin and correctly classify them in sub-groups.</li> </ul>	<ul style="list-style-type: none"> <li>Pictorial chart of different types of plant originated commodities.</li> </ul> <p>Activity:</p> <ul style="list-style-type: none"> <li>Visit to local market or identifying actual samples of various common commodities obtained from plants.</li> </ul>
<b>Session-2: Animal Origin</b>			
<ul style="list-style-type: none"> <li>Identification and types of dairy products, eggs, meats and seafood.</li> </ul>	<ul style="list-style-type: none"> <li>Classification of various commodities used in kitchen and place them in correct sub-groups.</li> </ul>	<ul style="list-style-type: none"> <li>Identification of commodities with animal origin and correctly classify them in sub-groups.</li> </ul>	<ul style="list-style-type: none"> <li>Pictorial chart of different types of animal originated commodities.</li> </ul> <p>Activity:</p> <ul style="list-style-type: none"> <li>Visit to local market or identifying actual samples of various common commodities obtained from animals.</li> </ul>



## Unit-9

### Storage of Commodities

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Perishability of a Product</b>			
<ul style="list-style-type: none"> <li>Importance of correct storage of commodities.</li> <li>Meaning of perishability.</li> <li>Defining shelf life of a commodity.</li> </ul>	<ul style="list-style-type: none"> <li>Narrate the need of correct storage of commodities.</li> <li>Write the meanings of Perishability and Shelf life of a commodity.</li> </ul>	<ul style="list-style-type: none"> <li>Appreciate the need of correct storage of commodities.</li> <li>Analyse the difference in quality of a fresh commodity than a stale one.</li> </ul>	<ul style="list-style-type: none"> <li>Interactive session on need for correct storage of kitchen commodities.</li> <li>Pictures or actual samples as to how food can deteriorate with time. Discuss how it will affect the food prepared by using these commodities.</li> </ul>
<b>Session-2 : Techniques of Storage</b>			
<ul style="list-style-type: none"> <li>List the qualities of a good storage facility.</li> <li>Storage of various kitchen commodities such as dry ingredients, vegetables and fruits, milk, eggs, meats &amp; seafood, frozen food, fats and oils, canned and bottled products.</li> </ul>	<ul style="list-style-type: none"> <li>Summarise the essentials of a good storage facility.</li> <li>Enumerate the storage conditions required for storing various kitchen commodities.</li> </ul>	<ul style="list-style-type: none"> <li>Specify the requirements of a good food store.</li> <li>Identify the conditions in which a commodity should be stored.</li> </ul>	<ul style="list-style-type: none"> <li>Interactive session on storage of common kitchen commodities.</li> </ul> <p>Activity:</p> <ul style="list-style-type: none"> <li>Store some common ingredients at room temperature for some days. Discuss if they can be kept usable for longer duration in refrigerator or freezers.</li> </ul>



## Unit-10

### Hierarchy in Kitchen

Learning Outcome	Knowledge Evaluation	Performance Evaluation	Teaching and Training Method
<b>Session-1: Kitchen Organization</b>			
<ul style="list-style-type: none"> <li>Defining organizational structure.</li> <li>Listing factors affecting organizational structure of kitchen.</li> <li>Hierarchy in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Draw a flowchart depicting organizational structure of a hotel kitchen.</li> <li>Appraise the factors that affect the organizational structure.</li> </ul>	<ul style="list-style-type: none"> <li>Develop an organizational chart for a hotel kitchen.</li> <li>Analyse the variations affecting organizational structure.</li> </ul>	<ul style="list-style-type: none"> <li>Chart on hierarchical structure of hotel kitchen.</li> <li>Interactive session on how the number of people in organizational structure differ from one organization to other.</li> </ul>
<b>Session-2: Duties and Responsibilities</b>			
<ul style="list-style-type: none"> <li>Explain the duties and responsibilities associated with each job positions in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Tabulate the duties &amp; responsibilities of each job position in kitchen.</li> </ul>	<ul style="list-style-type: none"> <li>Appraise the division of work among staff and the flow of authority from top to bottom of hierarchical structure.</li> </ul>	<ul style="list-style-type: none"> <li>Interactive session on division of work in kitchen and responsibilities associated with each job position in kitchen.</li> </ul>



## UNIT 1

# Introduction to Hospitality Industry

## Objectives

1. To outline the important aspects of Hospitality Industry.
2. To describe the operations of a five star hotel.
3. To explain the allied areas of this field.
4. To state the roles of each allied area.



## 1.1 Hospitality

The term “hospitality is a generic word which explains all the activities that are related to the services and facilities offered for tourists and travellers.

The hospitality industry is a major contributor to the nation’s economy and gives plenty of employment opportunities not only in hotel industry but also in the allied areas.



Hospitality providers include :

- ➔ Hotel Industry
- ➔ Standalone Restaurants / Chain of Restaurants / Fast foods
- ➔ Travel and Transport
- ➔ Information Technology
- ➔ Malls and Entertainments
- ➔ Heritage Sites
- ➔ Theme Parks
- ➔ Human Resource Development
- ➔ Tourism Industry and many more
- ➔ They may be either owned by the government or private sectors

### **The Hotel Industry**



Hotels provide accommodation, food and beverage and the experience of home away from home. The category of hotels will vary according to the star rating system. The star rating system is based on the facilities and services that the hotel offers to its clientele.

The facilities offered by a hotel may or may not include the following facilities.

- ➔ Room / Bathrooms
- ➔ 24 hours Services in Departments
- ➔ Radio, Television, video in Rooms
- ➔ Fax / Wi-fi



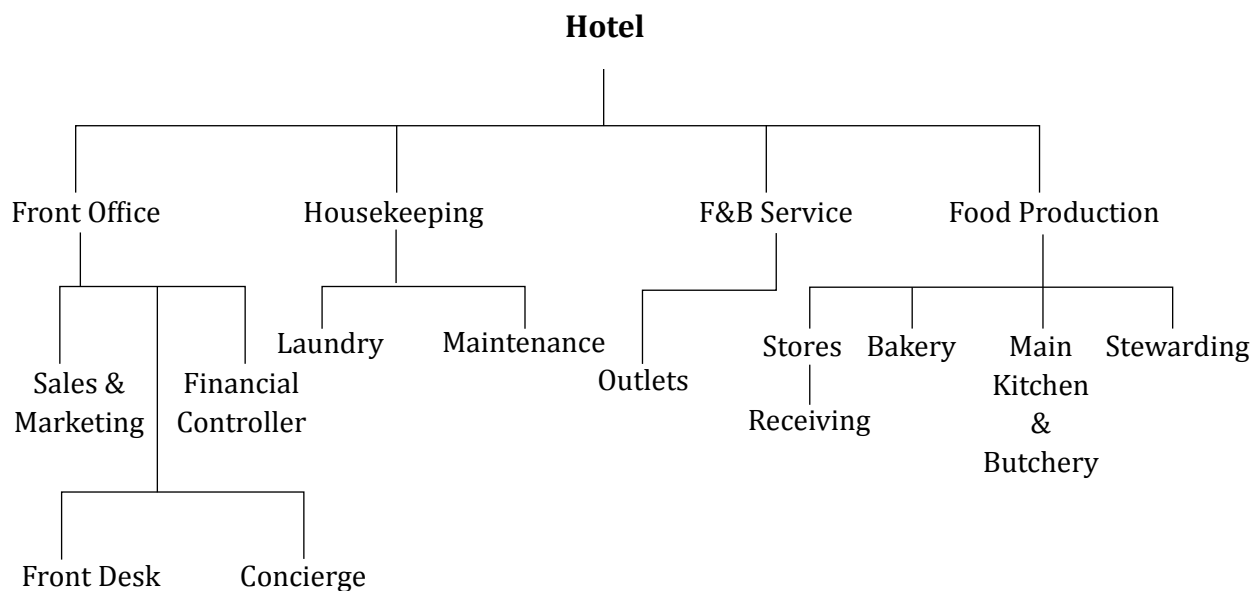


- ➡ Restaurants
- ➡ Lounges
- ➡ Bar
- ➡ Room Service
- ➡ Meetings and Conference halls
- ➡ Health Club and Gymnasium
- ➡ Swimming Pool
- ➡ Entertainment

The guest chooses their stay based on either the tariffs or facilities offered, the location of the hotel or the size of the hotel the experience it offers.

## 1.2 Operations of Five Star Hotel

The five star hotel operates under the following departments.



The hotels' different departments and their function all play a crucial role in ensuring the successful growth of the business.

### Front Office Department

This is the nerve centre of the hotel as it interacts with the guests for different needs and desires as they walk into the hotel. The front office personnel should have excellent communication skills as they face both international and domestic tourists. They have to be diligent and multi task to resolve issues that may arise.



### Concierge

Their main focus are the guests to make them loyal customers, they plan their travel routes, recommends tours, attractions found in the city and provide useful information that will positively enhance their stay. The experience they carry with them will ensure that they visit the hotel the next time as well.



### Housekeeping





This department functions like the eye of the hotel to provide the guests spotless experience. They have eye for detail and look into all the needs of the guest starting from the fluffy pillow and sheets in the rooms to the bathroom amenities and public areas.

### **Maintenance**

Requires careful planning for the smooth functioning of equipment, electricity, water in all departments. It does preventive maintenance as well. This department performs a wide range of essential tasks to help smooth operations.

### **Food and Beverage Service**



This department serves you with a smile. Be it Breakfast, Lunch or Dinner the team operates round the clock to seek satisfaction of the customers. The guest is always right and take utmost care to satisfy their needs. Stewarding department takes care of the cleanliness of the hotels cutleries and crockery's utensils used in the hotel.

### **Food Production**





The scrumptious dishes to keep the guest happy, a team works behind this spread. They work in a fast paced environment where the experience, talent of chefs pay a major role in satisfaction.

**Accounts (Financial controller):** This plays a significant role in the managing of a hotel efficiently. They provide the hotel with relevant financial data and does forecasting to ensure sustainable business. Financial recommendation like the budgets are done by this department.

**Sales and Marketing:** Creative selling is the keyword. The sales team promotes the brand and the amenities of the hotel. They negotiate and propose large business dealings. The Marketing Department is the analytical backbone of sales which increases the exposure of the hotel through advertisement. Various social media platforms are created to spread awareness of the facilities offered and the experience shared.

**Human Resource Department:** For commitment and development of the staff. It looks into the staff welfare and administration. The fixation of staff salaries compensation and taxes are some of their duties training and development of employees.

**Security Department:** This is the department which is responsible for protecting the guests and staff of the hotel. The security department does patrolling, monitoring CCTV and investigating cases.

**Purchase Department and Stores:** The main function of this department is to purchase materials and equipment from the market as per the requirements of the hotel. A liaison with the different vendors and companies for smooth supply is essential. Storing, Receiving, Issuing of the purchased items come under their purview.

### 1.3 Introduction to Allied Areas of Hospitality Industry

The hospitality industry is renowned for the variety of opportunities it unfolds. It makes the persons proficient in both knowledge and skills of the trade. The hospitality sector is so vast and made of different professions.

**Some of the key allied areas are:**

1. **Travel Agency :** It is service owned either by the private or public sectors providing travel and tourism to the public on behalf of supplier such as airlines, car rentals, cruise liners, hotels, railways and package tours. This department makes travel plans for business travelers. Some agencies specializes in commercial and business travel. These agencies serve as general sales agents for foreign travel companies and vice versa. The modern travel agency just appeared in the second half of the 19th century. Thomas cook is the pioneer which developed package tour establishing a chain of agencies in the last quarter of the 19th century.





Travel agents grew with the advent of commercial aviation in 1920's. Originally it catered to the middle and upper class customers but later with the introduction of package tours it made travel possible even for the lower middle class.



**Operations:** The travel agency sells travel products and services on behalf of the supplier and makes a commission out of each sale made.

Some companies agree on percentages for selling of packages. Travel agents have now their own travel websites with detailed information and online booking facilities. Travel Agency is a link between the supplier and clients. They provide business to the suppliers and services to the tourists at the same time. This demonstrates the importance of travel agency whose role is growing more and more in the modern world. As travellers mostly do not have time or the energy to organize their travel arrangement they prefer to make use of the travel agents. A travel agent should have a sound knowledge of the product he sells, knowledge of the customers and practices, information on health, visa and foreign exchange rules and communication skills. He should know the fares, schedules, costs, availability seasons regulations etc. They are responsible for the client's safe journey and smooth experience during travel and stay.



**Fast Food**



Foods that are prepared and dispensed quickly is known as fast foods. It started in 1950's in United States. Food is prepared quickly by using already pre-cooked or pre-prepared and when ordered it is assembled, cooked to finish and served hot. Kiosks, fast food restaurants serve this quick foods most of the fast food outlets are take always often with drive in service that lets the customers to order and pick up food from their car. Common menu items are fish and chips, hamburgers French fries, chicken nuggets, dosas, chat items, ice creams etc. Pizza is also a common fast food and some of the famous chains are (Papajohns, Dominos, Pizza Hut, Mc Donald's, KFC, Burger King, Subway are the fastest growing franchise fast food outlets). In India the concept of fastfood started as "Dhabas" and "Kalpi" popular all over the country. Nirulas in Delhi were the pioneers in fast food industry in India.

The origins of fast foods are street foods. When there was urban development fast foods sprung. In the Middle Ages London and Paris were brimming with vendors that sold cooked meat, pies, flans etc. UK had a big part in development of local vendors. The past modern fast food restaurants was of course US with the development of automobile. The concept was high volume, high speed and low cost.

#### **Fast Food Emphasis on**

- ➔ Quickness
- ➔ Uniformity
- ➔ Economical Cost



**Airlines**





Airlines provide transport services for the travelling passengers and freight as well. Airlines can be owned either private or public sectors. These companies should possess an air operating certificate or license issued by the government aviation body. Airline services can be domestic or international and operated as scheduled or charter services. An airline meal is served for the passengers. These meals are usually prepared by airline catering services. Meals are usually served in trays. Food is generally frozen and heated on the ground before take-off. Food safety is of paramount importance, any case of food poisoning amongst the passengers on the airline could have a disastrous consequence. There are approximately 600 flight kitchens world wide. The average kitchen prepares 600 to 7000 meals every day. The first recorded in flight service was offered in 1927.

Some features unique to airline catering operations are

- ➡ Customers and their needs
- ➡ Menus has to be altered to suit consumption
- ➡ It involves large scale production
- ➡ Tray services predominate flight services
- ➡ Adoption of cook chill process to improve the shelf life of the products made



**Retail**

This is a secondary catering establishment. Retail is selling consumer goods or services to customers. Distribution through multiple channels get them the profits. Retailing has become online as well using electronic payments and delivery through couriers. Retail marketing is done in departmental stores, warehouse, Boutique, convenience stores, super markets, malls etc. The famous retailers are Walmart, Reliance, Wills Lifestyle etc. Customer relations is very essential for continued patronage. The customers should receive what they desire for and



their needs to be fulfilled. The sales associate should greet the customers and make sure that he feels important giving him undivided attention and helping him find what he is looking. For retail owners it is extremely important to train his staff to provide excellent customer service and skills. They have to attract new customers with the help of their loyal customers and turn the new customers into regular. Customer service gives the business a good ongoing reputation and competitive advantage.

### Retail Emphasis on

- ➡ Customer satisfaction
- ➡ Selling of consumer goods or services through multiple channels
- ➡ Distribution of goods to all areas

### Entrepreneur



This is a person starting his own business, he develops a business plan acquiring human and other required resources and is fully responsible for its success or future. Entrepreneur chooses to be one when he has a clear line between work and private leisure time, a desire “to be my own boss”, to keep family together or to avoid the stressful urban corporate employment. Entrepreneurship is crucial for economic growth, job creativity, growth in productivity and stimulate competition personal development and for solving social problems, identifying opportunities, encrusting creativity and building new services. Entrepreneur originated in the 17<sup>th</sup> century in France. They should possess the skills of sensing opportunities, take risks in the face of uncertainties to open new markets, design new products, and develop innovative processes. With rapid changing customer demands and expectations constant innovation by business small or big is to meet and hopefully exceed these evolving demand expectations.



Hospitality industry offers wide opportunities for entrepreneurs in travel and tourism industry.

## **Others**

### **1. Learning and Development Centre**



Human Resource, Planning, implementing, coordinating the present corporate and related training programmes to ensure that all employees under the procedures of the company to fulfil their responsibilities.

### **2. Events Management**



The role of supervising and checking on the preparation and presentation at any social gatherings such as hotels, restaurants, conferences, clubs etc., to make the event a memorable one for the clients.



## Summary

Hospitality sector contributes to the overall development of a nation and offers opportunities in the hospitality field. The hotel industry provides accommodation. Food and beverage to all the guests. The hotel has so many division which looks into the utmost satisfaction of the guests as they consider “customers as god”. This is assisted by allied areas in the hospitality industry making travel and tourism a smooth experience.

## Review Questions

**Answer the following in 4 or 5 lines :**

1. Explain the term “hospitality sector”.
2. List the four major departments of the hotel and their role in the hotel industry.
3. Explain the functioning of airline catering.
4. Elaborate the role of travel agency in hospitality sector.
5. Draw a chart showing the various departments of a five star hotel.

## Practical

1. Make a collage of the various fields in the hospitality sector in groups of five each.
2. Draw a chart on departments of hotel industry and make presentation.



## UNIT 2

# Career Opportunities

### Objectives

1. To identify the career opportunities in the hospitality industry.
2. To list the designation in various fields of this sector.



### 1.1 Career Opportunities

The hospitality sector is renowned for the variety of opportunities it unfolds. It makes a person proficient in both knowledge and skills. There are various types of catering establishments providing not only food but also services that are aimed at attaching different sectors of the public, thus widening the horizon of job opportunities.

The following sectors offer various positions.

#### Hotel Industry

This industry not only requires culinary skills but also personnel in the Food and Beverage outlets, maintaining nutrition, quality control, financial controls.





Starting from four main departments the job offered are:

**Front Office Supervisors:** They are trained to perform check in / check outs, reservations, guest phone messages and any other special requests.



**Quality Managers:** He should ensure that the operations of the hospitality sector and customer service standards are being met.

**Public Relations Coordinator:** He maintains relationship through emails, phone calls etc. to office prompt and efficient services to keep the customers loyal to the company.

**Guest Relations Managers:** He has to ensure that the guests utilize the products and services offered by the company.

**Food and Beverage Managers:** He has to completely organize and manage the food and beverage outlets of the hotel.





**Executive Chef:** He has to organize and manage the food and looks constantly into the food cost to control expenses and pilferages.



**Accommodation Managers:** To look into the housekeeping department and other public areas.

### Other Job Opportunities

- Restaurant Manager
- Waiters / Head Waiters
- Sous Chef
- Chef in Charge of Each Departments of Kitchen



- Commis
- Desk Operators
- Floor Supervisors
- Training Managers

## 2.2 Career Opportunities in Allied Areas

**Travel Industry:** Travel industry implies your major groups (1) Airlines (2) Roadways (3) Railways (4) Shipping. The services offered by these modes of transport offers various job opportunities.



- Travel Agency Managers: They sell holidays and travel related products
- Inbound / Domestic Travel Operators
- Outbound Operators
- Air Ticketing Officers
- Forex Officers
- Guest Relations Officers
- Catering Managers
- Airline Stewards / Flight Attendants
- Industrial Canteen Managers
- MICE Operators
- Events Co-ordinations

### Retail Industry

This fast gaining popularity as they look to catering personnel in the following categories.

- Store Managers
- Customer Relations Officers
- Sales Associates
- Sales Executives
- Shift Managers





**Entrepreneurship:** Entrepreneurs are founders and owners of a hospitality business. Most typically a hotel, resort or restaurant, fast food, industrial or institutional catering he is the person who runs the business and also develops new products and services to keep the venture going over a period of time before he starts expanding his business.



**Food Critics and Writers:** This is a platform for discussing the food served in various restaurants which can promote the food or can be detrimental as well. Some write about the prevailing food trends and interview personalities who are successful in their career. They churn out secret recipes. They are well versed in the culinary arts and contribute their finding to newspapers, magazines and media.





## Summary

Hospitality sector is so vast it offers a wide range of job opportunities from the skilled level to management level. This sector opens the door for a person to become an entrepreneur which brings out the creativity of a person. Food critic yet another field which is gaining a lot of popularity and encourages healthy competition within restaurants for improvement. Thus the hospitality sector is one of the many untapped industry and unfolds many job opportunities for all.

## Review Questions

**Answer the following in 4 or 5 lines:**

1. Give the job opportunities related to the hotel industry.
2. Explain the job of a sales and marketing personnel.
3. List the job opportunities available in the allied areas of the hospitality sector.
4. Elaborate on the job opportunities available in the allied areas of the hospitality sector.
5. Give in detail the jobs offered by the hotel industry.

## Practical

1. Do a role play of the various job opportunities of the hospitality sector.
2. Make chart and presentation on jobs offered by each allied area.



## UNIT 3

# Introduction to Kitchen

### Objectives

1. Introduction to the operations of a commercial kitchen.
2. Advantage of having sections in a kitchen.
3. List the various sections of a kitchen and their major functions.
4. Identify skill and knowledge components to be developed for working in commercial kitchen.
5. Defining Ergonomics.
6. Role & importance of ergonomics in kitchen.

### 3.1 Introduction to the Operations of a Commercial Kitchen

#### Think About It!

A commercial kitchen is always engaged in varied activities at any given point of time. Imagine the kitchen of a restaurant in which five families are eating dinner. Each of them has ordered separate set of four dishes. The kitchen staff is responsible for cooking twenty dishes at the same time! How can a chef or even a team of chefs cope up with this much work – and this is a simple example. In most five star hotels, there are more than three restaurants, each restaurant usually have a seating of sixty or more people and about fifty dishes in the menu from which a guest can order anything.



It is thus clear that one man cannot do all the jobs. Also if every chef in the kitchen tries to prepare dish of each order what a chaos it will create.



**Fundamentals of Kitchen Operations:** The kitchen operations begin from the time when the head chef of the kitchen checks the available ingredients in the kitchen, plans for next day's sales forecast and places the order for ingredients in the purchase department. The purchase department further compiles orders from various kitchens and places the order with the supplier. The raw material is received next day. It is then given to various sections as per requirement and processed - or made ready to be cooked. The food is then cooked and served to the guest by the chefs. It is a prime responsibility of a chef to prepare hygienic and tasty food.

**Importance of Having Sections in a Kitchen:** A hotel kitchen is divided into various sections. These sections can be small or large depending on the volume and type of business. Each section has its own set of responsibility. All the sections together work as a team to fulfil the guests need and prepare food in time.

### **It is Important to Divide the Work in Sections Because:**

1. Cooking is a specialization job. Every chef cannot cook every cuisine well. For example one chef may specialize in baking the best of breads or preparing delicious sweets while the other may be best at making Indian curries. Similarly one may have expertise in handling Tandoori dishes while the other chef may have expertise in preparing Chinese dishes. The division of work in sections is important to get the best of each of the chef's expertise for tasty food and happy guests.
2. To clarify the responsibility of each chef in the kitchen and to avoid any chaos as to who does what job. The division clarifies the responsibility of each section so that work can be carried out well in time without any chaos.
3. This is also important to maintain quality and taste of the dishes. Each section has few chefs who share the responsibility of preparing a consistent quality, taste and presentation of dish to the guest. So, each time you order 'Dal Makhani' in your favourite restaurant, you get same taste! Whenever a new chef joins the team, he is introduced and taught the same preparation to maintain consistency.

### **Sections in a Kitchen**

A large commercial kitchen can be divided into many sections. Some of them are:

- a) Pre-Preparation & Cooking Area
- b) Storage Area
- c) Dish wash & Pot Wash Area
- d) Chef's Office





### a) Pre-Preparation & Cooking Area

1. **Main Kitchen:** This section is open and working 24 hours a day and caters to the orders of usually a Coffee Shop and In-room dining that is open round the clock. It occupies a large space and provides a wide range of food varieties such as Indian, continental, fast food etc. and has various subsections and a large pick-up counter. The dishes vary from time to time – breakfast, lunch and dinner. Hence, the chefs work in three shifts and complete required tasks. This kitchen acts as nerve centre of all the kitchens in the hotel.

2. **Specialization Kitchens:**

These kitchens are usually designed specially to cook a particular cuisine such as Indian, Continental, Japanese, Thai, Indian, Oriental etc. and cater to a specialty restaurant in the hotel. The layout of each varies considering



the kind of ingredients to be processed and equipment required to prepare special dishes. They are also called Satellite Kitchens.

Presently, there is also a trend of 'Show Kitchen'. This is usually a satellite kitchen which is partly or wholly visible to the guests dining in the restaurant through a partition panel. The guests can see the chefs working and preparing food while sitting in the restaurant.



3. **Butchery:** This is section which specializes in cutting of poultry, meat and all types of seafood. It is responsible for receiving and processing all types of meat products, clean and cut them as required in restaurant. It is then weighed, vacuum sealed and stored frozen till required for use.
4. **Bakery:** This section is responsible for preparing all baked products i.e. breads, biscuits, cakes, pastries, patties and a wide range of sweets such as pies, tarts, puddings etc.





5. **Larder:** This is also called 'Cold Kitchen'. This is responsible for preparing cold dishes such as salads, sandwiches, canapés, fruit platters, cold meat platters etc.



6. **Banquet Kitchen:** A banquet is a large hall which is used to hold a variety of functions as per guests need. This could be a marriage, fashion show, product launch, diplomatic dinner etc. This kitchen is responsible for preparing food in large quantities. Some range from preparing food for 50 guests while others cater to 1000 guests. Depending on the guest requirement, the menu also varies with each party. Banquet chef thus has a challenging job to prepare a wide range of dishes in widely varying quantities.



7. **Commissary:** Some hotels have a separate section altogether to clean and cut vegetables and fruits. This section is called Commissary and it is responsible for preparing vegetables and fruits ready to use in other kitchens. They peel and cut and process vegetables and fruits, pack and supply to other kitchens for cooking dishes.



## b) Storage Area

1. **Dry Store:** Cupboards and racks are there in each section to keep dry ingredients at room temperature. This may include flour, rice, pulses, cereals, jams etc.
2. **Commercial Refrigerators:** Huge refrigerators are there in kitchen to
3. **Walk-in:** A large refrigerated room where one can walk inside and store ingredients on racks. A temperature of about 4°C is maintained suitable to store fruits, vegetables, milk, eggs etc.
4. **Deep Freezers:** A room usually behind walk-





in with another door where sub-zero temperature is maintained. This is used to store meats, ice creams and other frozen products.

**c) Dish Wash & Pot Wash Area**

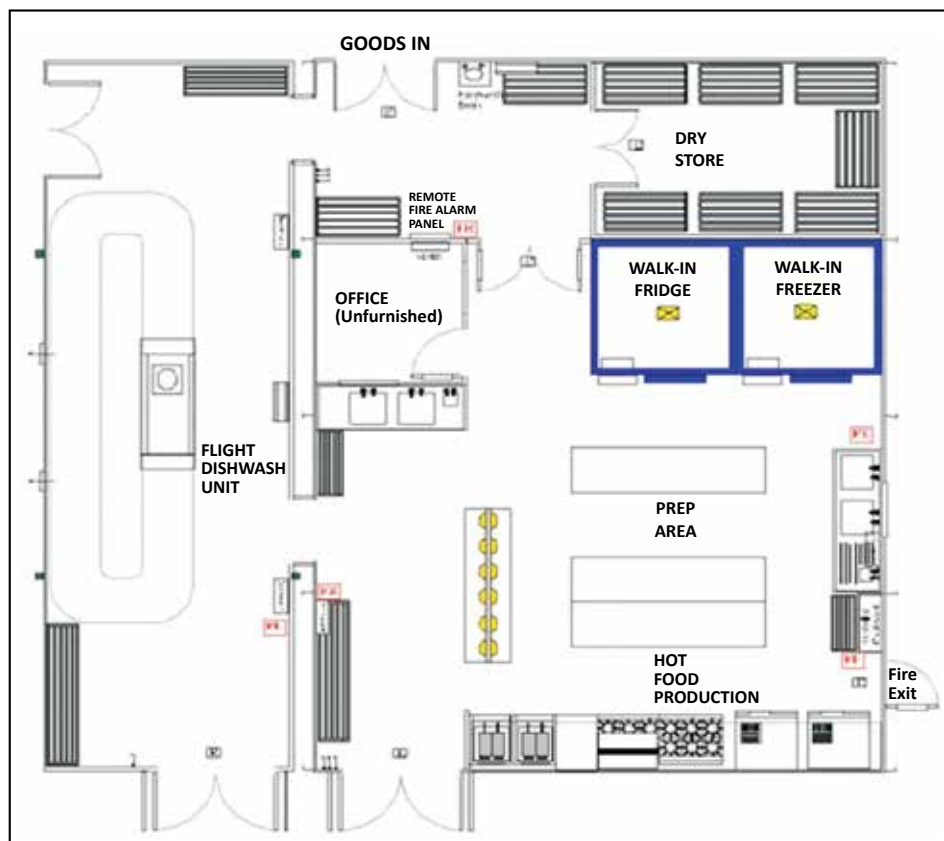
All the kitchen utensils, pots and pans must be clean and hygienic at all times. Hence, after each use they are kept in a separate pot wash area. Once cleaned, they can be kept in a pot rack and reused. Similarly, all the crockery and cutlery used in the restaurant is also kept in dish wash area. These too are cleaned and sanitized after each use. Dish washing machines are used for the task.



**d) Chef's Office**

This is an area from where the Head Chef does all his administration tasks and paperwork. It is also used to place orders to purchase department and to check food cost data.

**A Sample Kitchen Layout is Given Below:**







There are double doors at both the entry and exit points. One door is to go in and other is to come out of the kitchen. This is a safeguard against collisions and injuries.

Remember, each hotel has its own best possible layout as per their requirement. They may have some or all the sections in the kitchen. They may even have more ....for e.g. a bakery can further be divided into baking area and pastry or confectionary area as colder temperatures are needed here.

### **3.2 Attitude and Behaviour in the Kitchen**

Attitude means mind-set or approach of a person towards work and society in general. Behaviour is ones general conduct or manners. Both attitude and behaviour are inter-related. If we imbibe positive thoughts in our minds and keep a responsible attitude, it will naturally be visible in our acts, conduct and manners.

A commercial kitchen is hub of activities. Many people belonging to different regions, educational background, age groups, religion work in a kitchen. Also, during the regular shift, one is always on the toes to complete assigned tasks and responsibilities. There might also be trying times when a chef is compelled to control costs and make most judicious use of resources and ingredients given to him.

Also, cooking is a continuous life-long learning. There is no end to learning new to prepare new dishes, various ways of cooking one dish, the art of presentation etc.

For working in such circumstances one must develop some attitudinal and behavioural traits to work as a successful professional:

- ➡ To maintain personal hygiene at all times.
- ➡ To maintain workplace hygiene.
- ➡ To follow safety rules and regulations in kitchen.
- ➡ Being quality conscious.
- ➡ Following standard operating procedures.
- ➡ Being responsible, honest and committed to complete the tasks assigned.
- ➡ A good team player and being responsible for ones share of responsibility.
- ➡ A keen attitude to learn new things.
- ➡ A sound knowledge of the work assigned.
- ➡ To apply the knowledge in daily work place.
- ➡ Respecting the values of the organization.
- ➡ To continually enhance ones skill and knowledge.
- ➡ Being patient to bear the work pressure in busy times.
- ➡ Support the team members and encourage all to work better.
- ➡ To have passion for cooking.



### 3.3 Skills and Knowledge

Knowledge literally means know-how or understanding the fundamentals of a particular field. It may be electrical engineering, trade or commerce or Food.

On the other hand skills are an application of knowledge gained. It is the ability to apply the knowledge at work to get the desired outcome.

Both are equally important part of food production. A chef must know his ingredients and their taste, varieties available, season in which they are available, changes that take place on application of heat or cold, cooking in acidic or alkaline medium etc. Unless a chef knows his ingredients well, he cannot make best use of them.

Similarly, the chef should also know about equipment used in kitchen. These equipment are an essential part of a commercial kitchen. They speed up the work, make it easy and also help in maintaining consistent quality. A chef must also have knowledge of market prices and costs of ingredients and dishes. A hotel is after all a business which survives on profits. A major chunk of cost is food cost. Hence, controlling food cost is an important part of being a chef. A chef in modern time is a chef, sales executive, cost controller, entrepreneur, artist and scientist.

If a person is able to gain the knowledge and also apply it practically, then this profession has no dearth.

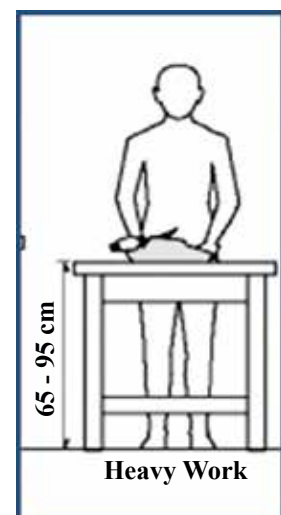
### 3.4 Ergonomics in Kitchen

Ergonomics is the science of work in relation to the individual. By learning and following some simple techniques one can increase one's productivity, efficiency, safety and comfort at work place. It reduces stress, increases job satisfaction and helps in preventing injuries.

Following are brief notes on how to apply ergonomics in a commercial kitchen:

- ➔ Always maintain straight back posture while cutting vegetables or cooking. Do not bend the back for long hours.
- ➔ Do not use blunt knives. They require more force to cut and cause fatigues and sprains. More force can also tilt the knife causing cuts and injuries.

If we fold our arm and rest the hand straight on the table from elbow to palm, that is elbow level. A work that requires downward force such as cutting and chopping is best done below the elbow level.





➔ While lifting a heavy pot or box, squat on the floor and grip the weight. Keep it close to body and get up with a smooth motion without jerks. When a turn is to be taken, do not twist the back, instead move with feet.

➔ Use suitable equipment following safety procedures required to use it.

➔ Use well-oiled trolleys loaded to permissible capacity to carry things from one place to another.

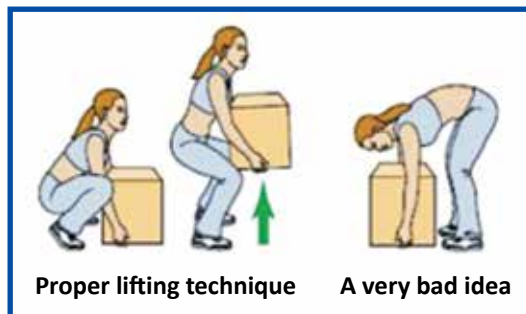
➔ Never run in a kitchen in haste. Even in urgency walk fast but carefully.

➔ Keep the work area clean at all times. Spillages of oil or water can cause slips and injuries.

➔ Always wear protective clothing and suitable antiskid shoes.

➔ Never carry hot oil or water. Let it cool and then transport.

➔ Allow hot equipment to cool before cleaning.



Remember, it is good to employ correct procedures rather than curing injuries and dealing with accidents.

## Summary

A commercial kitchen is divided into various sections which work in coordination with each other to ensure timely preparation of food for guest. The four major sections in a kitchen are Pre-preparation & preparation area, Storage area, Pot wash & dish wash and Chef's office. A person needs to have both theoretical knowledge and hands-on practical skill to be a successful professional chef. While working, one should ensure safe practices to prevent accidents and injuries.

## I. Review Questions

**Answer the following :**

1. Describe the importance of having sections in a large commercial kitchen.
2. Define Ergonomics. Why is it important?
3. Explain the role of correct attitude and behaviour in kitchen.
4. Differentiate between skill and knowledge. How are they interrelated in kitchen?





## II. Match the following :

### Column A

- a) Chinese kitchen
- b) Butchery
- c) Larder
- d) Commissary
- e) Bakery
- f) Banquet
- g) Main kitchen

### Column B

- Cookies
- Vegetable & Fruits
- Round the clock work
- Specialty kitchen
- Sandwiches
- Coffee shop
- Fish

## III. Discuss in Class:

Kitchen may become a dangerous place to work if one is not careful. Discuss the ways to prevent injuries and accidents in kitchen.

### Practical

1. Collect pictures of various sections of a kitchen. Identify each of them and list their major functions.
2. Draw or collect pictures of ways that help to make work in kitchen safe and easy.



## UNIT 4

# Protective Clothing and its Maintenance

## Objectives

1. To know about the protective clothing.
2. To be aware of the importance of protective clothing.
3. To know about the types of protective clothing.

## Introduction to the Protective Clothing

It is very necessary to understand about the Protective Clothing in the Food Production Department.

## Definition

The protective clothing can be defined as the clothing which can be especially designed, fabricated or treated to protect the kitchen personnel against the different situations occurred and hazards caused by the sudden and extreme changes in physical, environmental conditions and also dangerous working conditions etc.

## 4.1 Importance of Protective Clothing & its Maintenance

The importance of protective clothing is as follows :

- ➡ To prevent from any injury
- ➡ To avoid the damage occurred to clothes from grease and oil etc
- ➡ To prevent any type of injury from contaminations
- ➡ To have an identification of the personnel too
- ➡ To protect the wearer from any infections
- ➡ Helps to protect from different radiations also in some of the cases
- ➡ To prevent body contact from fomits

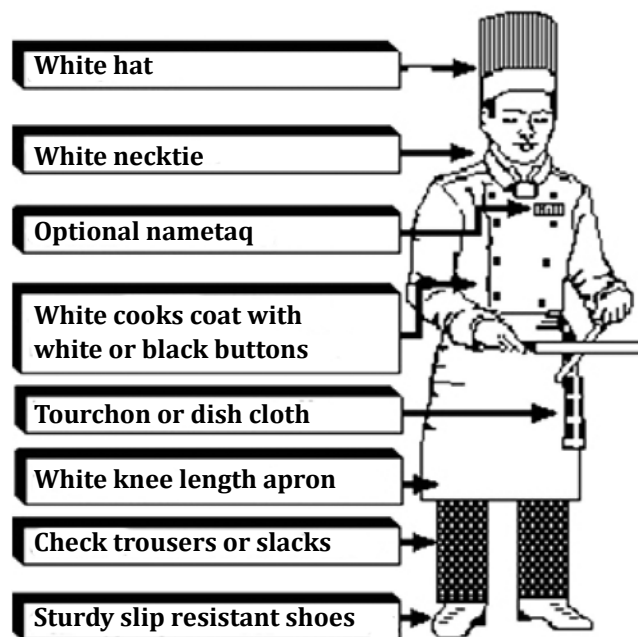
## 4.2 Types of Protective Clothing

There are different requirements of the protective clothing in different trades.



We are going to discuss the clothing required for the food production personnel:

- A white hat
- A white necktie
- A nametag (optional)
- A white chef coat
- A dish cloth
- A white apron (knee length)
- A check trouser
- A slip resistant shoes



## White Hat

It is one of the most important part of the protective clothing. It is generally designed in such a way to maintain the hygiene while working.

The white hat will help in protecting the hair from smoke and oil in the kitchen. It allows the air to circulate on top of the head. It absorbs the perspiration from forehead and avoids hair falls too. It is mandatory for any of the food production personnel to wear the cap while working in the kitchen.

## White Necktie

The necktie is second protective clothing required for the food production personnel. It can be of any colour which sometimes, reveals about the designation of the personnel too. The necktie



is generally a large triangular light cloth material which has to be folded and worn by the food production personnel and it can be knot like a normal tie. In modern air conditioned kitchen, the necktie might not be used but it is always regarded as respect by professionals. The actual purpose to wear this is for absorption of perspiration and guard the neck from drafts.

### **The Nametag**

It is an optional part of the clothing of kitchen personnel. It is generally worn on the left of chef coat by the kitchen personnel.

### **The White Chef Coat**

The most important protective clothing for any kitchen personnel is the chef coat. It can be different colours but white colour is preferred as it is very easy to identify any stains on it.

The chef coat protects the most sensitive part of the human body, the chest and arms. It protects the body from heat of stoves and splashes from boiling liquids. The double breasted chef coat also protects the body from extreme cold which the kitchen personnel faces while entering the deep freezer room or walk-in room. The four layer cloth of the chef coat and full sleeved can protect from heat source and front body.

### **A White Apron**

The apron is designed to protect the lower body from the different accidents which can occur in the kitchen while working. It is worn around the waist and sometimes hanged from the neck. It is very convenient to change the apron. So it also allows the kitchen personnel to help him in keeping clean.

### **A Dish Cloth**

It is kind of a tea towel it is very helpful in protecting the kitchen personnel from heat while handling hot pans and pots. It is neatly folded and hanged on left side of the waist. It should be always dry, particularly while using for hot pans and pots.

### **A Check Trouser**

Trouser is the protective clothing which should be comfortable to wear. It protects the lower part of the body which is not guarded by the apron also up to the knee. It can be of different pattern but the check pattern is common in the hospitality industry.

### **A Pair of Shoes (Slip Resistant)**

Shoes are very necessary for the protection of the food production personnel. It should be non slippery, comfortable, protective toes and should not absorb water.



## Summary

The students will come to know about the protective clothing and their importance. They will also learn the types of protective clothing.

### I. Review Questions

**Answer the following :**

1. Prepare a list of the important part of the protective clothing and draw a chart of it.
2. Submit the chart to your teacher for assessment.

### II. Assessment

**A. Fill in the blanks :**

1. The shoes used in kitchen should be ..... .
2. The apron used for the kitchen personnel should be up to the length of ..... .
3. Nametag is an ..... part of the uniform.

**B. State whether true or false :**

1. The chef coat should be double breasted.
2. The shoes used in kitchen should be of cotton.
3. Apron protects the head part of the kitchen personnel.

## Practical

1. The different parts of kitchen uniform can be discussed one by one. The students can be asked to prepare a chart or draw different parts of the uniform on a chart paper.



## UNIT 5

# Personal Hygiene

### Objectives

1. To learn the importance of personal hygiene.
2. To understand the maintaining of personal hygiene.
3. To learn the hand washing techniques.

### 5.1 Importance of Personal Hygiene

It is very important for any food production personnel to maintain the personal hygiene. It is important due to so many reasons:

- ➡ It can be due to the personal reasons
- ➡ It can be for the social health
- ➡ It is the way of living a good life too

If we can maintain a good personal hygiene than it will help us to prevent the development of different infections and also the spread of illness and bad odour. The importance of personal hygiene should be taught in the early age. The health problems are the result of poor personal hygiene.

### 5.2 Maintenance of Personal Hygiene

Personal hygiene is about keeping our body, our teeth, our hair, our clothes and also our genital area clean. It is one of the mechanisms which is used for breaking the cycle of disease transmission. It will also help the individual to have a good aesthetic value by the people he/she is living with. Personal hygiene is therefore can be explained as a measure taken at individual level which will promote personal cleanliness which will avoid the transmission of diseases from source to susceptible hosts is prevented.

Many health problems will raise due to the poor hygiene behaviour of people.

Following are the points are necessary for maintaining the personal hygiene:





## Body Image

The person having depression and neglected feel will have low self esteem which is also applicable while maintaining the personal hygiene. The well maintained, hygienic body will also have charming personality and attractive impression on others and also gives confidence to.

## Social Reasons

By ensuring that our body is clean and well presented, we become more assured of projecting a positive body image that reflects our personalities.

## Health Reasons

Always a poor hygiene will lead to a poor health. If any type of injury is not treated properly than due to bad hygiene it can lead to infections. Some of the infections are tend to spread so they should be treated on time.

## Psychological Reasons

A well presented person will have a confident behavior and will impress others too.

Maintaining a hygienic practice helps to reduce the risks of ill health.

## 5.3 Hand Washing Techniques

Washing of hands is the most necessary part of the personal hygiene. Now a question comes in our mind that when we should wash our hands?

We should wash our hands:



### Before

- ➔ **Starting to Work:** When we are going to start any work which is related to the production than it is very necessary to wash the hands. it can be done with any good hand washing liquid and then wipe your hands before the start of job .

### After

- ➔ **Handling Raw Ingredients :** There are so many raw ingredients , which are purchased with dust and dirt like sometimes we find soil attached with the root vegetables, onion also have dist on it and similar with all the raw materials. So its very necessary to wash hands after handling the raw ingredients.



- ➔ **Smoking, Eating or Drinking:** Its very necessary for a food production personnel to wash hands after the meals or after drink. It is compulsory to wash hands after smoking as it can lead to contamination also.
- ➔ **Using a Handkerchief or Tissue:** Washing the hands after using the a handkerchief and the tissue is very necessary as they might contain some germs which can lead to the contamination.
- ➔ **Hing Any Part of Your Body:** Our body contain lots of minute germs which are not visible with the naked eyes. So if any of the food production personnel touches any part of the body he/she should wash hands after touching any part of the body.
- ➔ **Cleaning or Taking Out Garbage:** While cleaning or taking out the garbage, we come in contact with harmful microorganisms , so it is very well suggested that after cleaning or taking out the garbage the food production personal should wash the hand with hand washing liquid soap.
- ➔ **Using the Washroom:** While working in the production area the kitchen personnel come in contact with the washroom which can lead to contamination also. It is very much required that he should wash hands properly with water and soap after using the washroom.

Washing hands is a very good way to reduce the chance of contaminating food with the bacteria. Warm water is always good to use for washing hands and its very necessary to wash the back portion of the hands, wrists and also between the fingers. The hands should be dried properly after every wash of hands. In case of wearing disposable gloves , they should be changed regularly , after an interval of time or depending on the type of use.

### Summary

This chapter will help to learn importance of personal hygiene. The students can learn the different aspects of personal hygiene. The students will be able to understand the different techniques of washing hands.

## I. Review Questions

**Answer the following :**

1. Prepare a chart on different hand washing techniques.
2. Submit the chart to your teacher for assessment.

## II. Assessment

**A. Fill in the blanks :**

1. The washing of hands is necessary ..... and ..... going to washroom.



2. The ..... is most important part of the body which helps in maintaining the personal hygiene .
3. Nametag is an ..... part of the uniform.

**B. State whether true or false:**

1. The chef coat should be double breasted.
2. The shoes used in kitchen should be of cotton.
3. Apron protects the head part of the kitchen personnel.

**Practical**

1. The students can be demonstrated about the different hand washing techniques. They can be asked to prepare some charts related to this.



## UNIT 6

# Equipments and Kitchen Tools

### Objective

1. Making the students know about the kitchen equipments.
2. To find the care & maintenance of equipments.
3. Discussing the work place hygiene.
4. To make the awareness about the different types of knives.
5. The students should be able to find the safety procedures for handling knives.



### 6.1 Importance of Kitchen Equipments

**Introduction to the Kitchen Equipments:** Kitchen equipments can be defined as the cooking tools which will help in making the cooking effective and quick. The type, size and amount of these equipment will be depending upon the type of menu which is provided and the quantity for which the cooking will take place.

#### Types of Equipments

**Large Equipments:** Cooking range, electric oven, bone saw machine, deep fat fryer, buffalo chopper, salamander, kitchen table etc.





**Medium Size Equipments:** Peeler, blender, mixer, mincer etc.



**Small Size Equipments :** Pan, wok, spoon , ladle, grater, masher, pots etc.



## 6.2 Care and Maintenance of Equipments

It is necessary to understand how to care for the equipments and how to maintain them. Following are the details for few of them, how to maintain and care the equipments:

- ➔ Deep fat fryer should be free from debris and it should be ensured that the fat is disposed properly after frying, the fat used in fryer should be filtered properly.
- ➔ Ovens should be preheated before baking and should be checked inside before turning it off or on. Water should not be sprayed in ovens.
- ➔ Clean the dough sheeter with a moist cloth after the use. The machine should be fully disconnected before starting the cleaning process.
- ➔ Avoid excess water use in microwaves while cleaning, don't press any button while it is functioning.
- ➔ The pulveriser should be cleaned properly after every use , where the attachments should be detached and it should be dried properly before storage.
- ➔ The kitchen personnel should be trained properly, how to handle the machine and how to clean it also.
- ➔ Before using the flat top grill , make sure that the surface is cleaned and correct temperature is there.
- ➔ While cleaning the steam kettles use hot soapy water on the inner and we cloth on the outer.



### 6.3 Work Place Hygiene

Regular cleaning at workplaces, equipments and devices should be carried out to ensure the adequate level of workplace hygiene. A designated person should be appointed to to oversee such operations. there should be maintaining of hygiene at all the work place. As it is going to be effective for all the work. We have already discussed about the hygiene in the previous chapters too.

- ➔ At the work place , there should be proper arrangement for the washing of any perishable food item like- fruits, vegetables etc.
- ➔ After the work is complete the kitchen should be thoroughly cleaned.
- ➔ There should be cleaning done after every shift, and there is also provision for weekly cleaning process, where each and everything has to be cleaned.
- ➔ It is preferred to do the weekly cleaning on the day when there is minimum of work .
- ➔ All the kitchen personnel should visit the doctor for periodical check up so that there should not be any effect by the communicative disease, if any, in the working of the kitchen.
- ➔ Rubbish or waste should be kept in suitable containers or litter-bins which are located at convenient locations in the workplace. The containers should be emptied daily, preferably near the end of each working day.
- ➔ Ventilation is the process of supplying and removing air by natural or mechanical means to and from a workplace.
- ➔ It is essential to ensure that adequate ventilation is provided to a workplace, especially in an enclosed building.
- ➔ In the case of activities that cause exposure to air-borne contaminants, special control measures or facilities should be considered.
- ➔ An effective drainage system should be provided so that water can be removed and drained quickly from the floor. This prevents the floor from causing slips and accidents, and reduces the flourishing growth of mould and other micro-organisms.
- ➔ Suitable and sufficient sanitary conveniences and wash basins should be provided at readily accessible places.

### 6.4 Knife and its Maintenance

Apart from the tools discussed above, various kinds of knives are used in the kitchen. There are different kinds of knives used for different types of cuttings. Many other kinds of knives are used for specific purpose, for decorating fruits and vegetables, for opening oyster shells etc.

**Straight Edged Knives :** Small (paring, turning, filleting, boning) large (chopping, pallet, carving knife and fork).

**Serrated Edged Knives and Saws**





## Types of Knives



## 6.5 Safety Procedure for Handling Knives

### How to withdraw a Knife from its Sheath Safely



Right



Wrong



## Tips for Safe Knife Use

- If you are new to knives, take small, measured pieces of wood off to start with.
- Always be aware of where the fingers are and cut away from yourself and others in a clutter free area.
- Never cut a piece of wood with your holding hand in the way of the blade's direction of travel
- Prevent injury to self and others (carrying, handling), ensure quality of finished product, improved efficiency (time, waste)

## Holding of Knife

How to hold a Chef Knife



## Clean, Maintain and Store of Knives



## Sharpening of Knife

Appropriate washing/drying techniques, sharpening, safe and secure storage is required for the knives. It is well said that a sharp knife will cut the commodities but a blunt knife will cut the hand. The knife used should be sharpened properly or else it will cut the hand. The knife should be stored at safe place after using.



## Summary

This chapter is making the students aware the kitchen equipment, care and maintenance of the kitchen equipments. It also deals with the work place hygiene . The students would be able to find the safety procedures.

### I. Review Questions

**Answer the following :**

1. Prepare a chart on different types of knives.
2. Submit the chart to your teacher for assessment.

### II. Assessment

**A. Fill in the blanks:**

- 1 Walk-in-fridge is considered to be the ..... equipment .
2. Oven is classified as ..... type of equipment.
3. Measuring spoon is classified as ..... equipment.

**B. State whether true or false:**

1. The cleaning of kitchen should be done daily after cooking is over.
2. The fish knife will be used to cut all the fruits.
3. Hygiene at working place is not necessary.

## Practical

1. The students can make collection of different knives and they can be demonstrated about the uses of different uses of these knives.
2. They can also make the list of small, medium and small equipment on a chart.

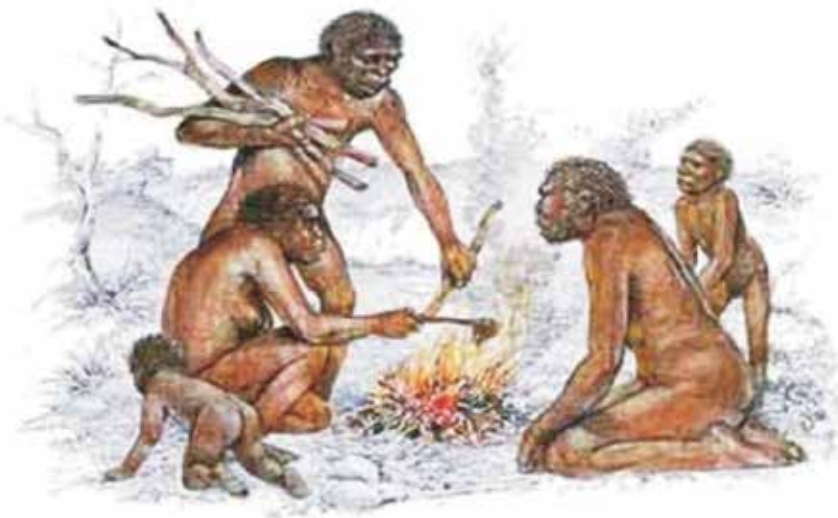


## UNIT 7

# Culinary History

## Objectives

1. To explain the historical background of the culinary field.
2. To describe the evolution of food.



## 7.1 Historical Background

The origin of cooking or the advent of cooking played an important role in evolution of human beings. It is believed by most of the anthropologists that cooking fires developed 1.8 to 2.3 million or 2,50,000 years ago when the primitive human first tasted meat that was cooked





due to the forest fire. He felt he was able to chew and digest the meat when it was cooked. Palaeolithic period was spit roasting of meat, a method of cooking, where food was suspended with support directly on to the flame. This was the only culinary technique they discovered. The Neolithic period saw the introduction of pottery, cooking techniques improved. The Romans were the first to introduce flat bread. They used crackled kernels and water to make a paste and flattened this on the hot stone.

**The Early Civilization :** Mesopotamians, Aryans, Egyptians, Greeks and Romans developed the culinary techniques with the introduction of equipment, domestication of livestock, cultivation and travelling. Preservation of food was done by salting or smoking to improve shelf life.

The invasions of France by the Romans and then by the Scandinavians and North Africa were predominant factors in culinary growth. The Greeks and Romans created the basics of modern cookery by fine tuning culinary preparations. They not only refined the preparation techniques they introduced new tools and equipment. Invasions and wars influenced the food habits to a large extent. In India the Turkish, Mughal invasion and wars influenced the food in certain states. British occupancy influenced the continental food served in India.

Religion like Buddhism, Christianity, Islam, Hinduism, Sikhism, Jainism and Zoroastrianism brought about vegetarianism and non-vegetarianism.

## 7.2 Development of Modern Cookery

Food no longer stays as a basic necessity it has evolved into an artistic work and offers job opportunities due to its growth. The following factors developed food.

- ➡ Economic Growth
- ➡ Industrialization
- ➡ Tourism
- ➡ Modernization
- ➡ New Equipment

In the 17<sup>th</sup> and 18<sup>th</sup> century food was famous in Europe due to the cooking techniques and standardization when compared with other world. In the 19<sup>th</sup> century was the age of nationalism where the cuisine gave an identity. With the movement of food from and to Europe due to travel there was change in the society causing growth in food catering.

**Industrialization:** This was the turning point where production, marketing and standardization was introduced in bulk. This led to innovations and the birth of food as catering business.

**Tourism:** People travelling from one destination to another learnt the cooking techniques from the local chefs. People were open to sharing ideas and technology which influenced the further growth.

**Modernization:** Chef Antonin Careme in the 17<sup>th</sup> and 18<sup>th</sup> century introduced art and science while creating his food. He was the first to record recipes in a standard manner. Chef Maitre





Auguste Escoffier in the 20<sup>th</sup> century was regarded as the emperor of the world's kitchen. He shaped the modern menu and introduced the kitchen Brigade, pushing the food industry into a profitable profession. He standardised recipes and menus, making it universal. Till date, chefs follow his book 'Le Guide Culinaire' as guidelines. Chefs later on introduced their ideas and made food a complete delight. Today, media plays an important role in its never-ending growth of creativity and innovation.



**Chef Marie-Antoine Carême**



**Chef Escoffier**

### **Summary**

The greatest discovery made by the early man was fire, which led to food evolution. This brought about better quality, many innovations, and creativity. The art and science of cooking food was considered, and the outcome of the food was its evolution. The upsurge in the market with better quality food items that was standardized due to bulk production during the industrial revolution was a breakthrough. This evolution helped in the betterment of products and continuous growth in the food industry.

### **Review Questions**

**Answer the following :**

1. Explain the role of Chef Escoffier in culinary history.
2. Describe the growth of food during industrial revolution.
3. List the various invasions which influenced food evolution.
4. Elaborate the historical background of food.
5. Write about the evolution of culinary industry in the mid-17 and 18 centuries.

### **Practical**

1. Make a pictorial chart depicting the evolution of food.
2. Make presentations on the evolution of your regional cuisine.





## UNIT 8

# Kitchen Commodities

## Objectives

1. Classification kitchen commodities.
2. Identification of various groups of commodities such as cereals, pulses, fruits, vegetables, spices, herbs, fats and oils, dairy products, eggs, meats and seafood and their role in food.

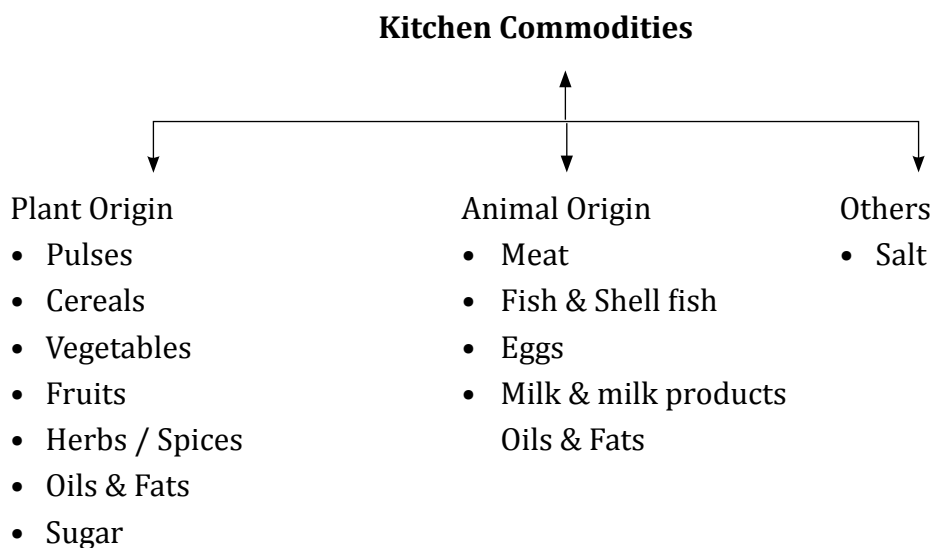
## 8.1 Kitchen Commodities

The raw materials and ingredients used in kitchen to prepare various dishes are called kitchen commodities.

### Importance

It is important for a chef to identify the variety of ingredients used in kitchen. It is also important to know and understand the variety of each of them and their taste, colour, texture, nutritional value and nature of product that results when cooked by different methods.

Kitchen commodities can be classified as per their origin – Plant or Animals.





## Plant Origin

### Pulses

A pulse is an annual leguminous crop which yields seeds within a pod. Pulses are an important source of proteins in diet. They contain about 20 – 25% protein by weight. They contain no cholesterol and little fat or sodium. Pulses also provide iron, magnesium, phosphorus, zinc and other minerals, which play a variety of roles in maintaining good health.

The seeds are dried and milled to ultimately result in the product we get in market as 'Dal'. There are numerous varieties of pulses grown and eaten in the world. However, some common varieties of pulses eaten in India are:



#### a) **Black Gram (Urad Dal)**

This dal is available in three forms in market:

- ➔ As whole black seed called Urad sabut or Mah ki dal which is used in dishes such as Dal Makhani.
- ➔ The split form is used in preparing khichdi or dals.
- ➔ The de-skinned form called urad dhuli is used in many south Indian preparations such as vada, dosa and idli. It is also cooked on its own as dal.





**b) Green gram (Moong)**

This dal is also available in three forms in market:

- ➔ As whole green seed called Moongsabut dal which can be cooked on its own or sprouted to prepare salads.
- ➔ The split form is used to prepare khichdi or dal.
- ➔ The de-skinned form is considered to be easy to digest and light and usually takes on seasoning and spices well.

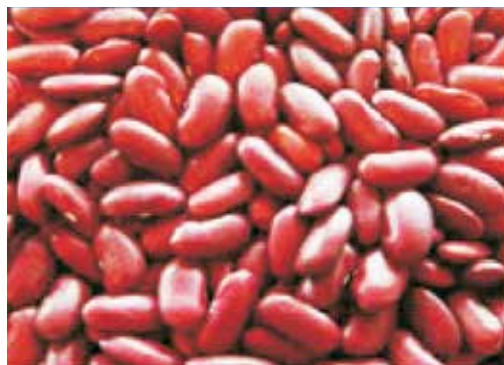
**c) Bengal Gram (Chana Dal)**

This is a versatile dried split yellow coloured lentil which when cooked gives a creamy texture, nutty flavour and is added to a lot of vegetable dishes as well.



**d) Red Kidney Beans (Rajma)**

Red kidney beans are an integral part of meal in North India. They are cooked on their own with tempering and popularly eaten with rice.



**e) Cowpea (Lobia)**

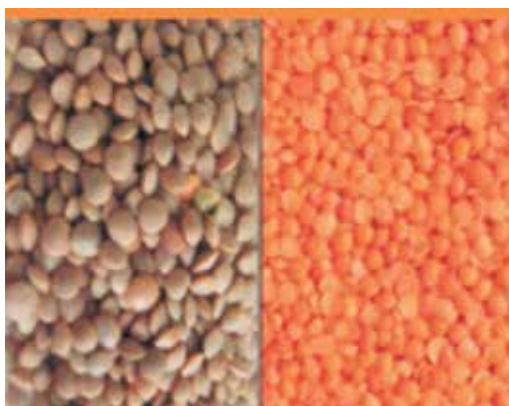
Similar to red kidney beans but little smaller and of cream colour with a big black eye, they are also boiled to prepare salads or eaten after tempering as dal along with meal.



**f) Red Gram (Masoori Dal)**

This dal is available in two forms in market:

- ➔ Whole grey coloured disc shaped dal known as masoorsabut dal.
- ➔ Split red coloured dal known as masoordhuli dal.



**g) Chickpea (Safed Chole)**

Popularly cooked in India as Pindichole or the combination of ChanaBhatoor. They can also be boiled and mixed with other ingredients to form salad or sprouted.



**h) Pigeon pea (Arhar / Tuvar)**

This dal is eaten all over India and cooked & tempered on its own or mixed with vegetables such as in Sambhar.



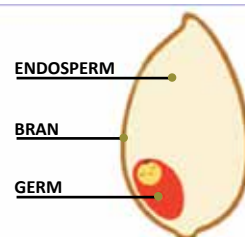
## Use of Pulses

- ➔ Pulses are cooked on their own as part of Indian meal and eaten as dal / dhal. They are simply boiled with water, salt and spices and are often tempered.
- ➔ They are also baked / fried to make an ingredient in savouries (*Namkeens*).
- ➔ Pulses can be sprouted and used as salads. They may also be just boiled and mixed with spices and other ingredients to yield a variety of salads.
- ➔ They are also soaked and grinded to prepare a wide variety of pancakes (Dosa / Chilla), vadas, bhalla etc.
- ➔ Pulses can also be soaked, made into a paste, spiced and made into dumplings called wadi or mangodi and also used to make papad / poppadums. These are sundried after preparation and can be cooked in a variety of ways later.
- ➔ Pulses can also be cooked to make desserts e.g. *pal payasam*, *moong dal halwa* etc.

## Cereals

A **cereal** is a *grass*, cultivated for the edible components of its *grain*. Cereal grains are grown in greater quantities and provide more food energy worldwide than any other type of crop- they are therefore *staple crops*. A **staple food**, is a food that is eaten routinely, and in such quantities that it constitutes a dominant portion of a standard diet in a given population, supplying a large fraction of the needs for energy-rich materials and generally a significant proportion of the intake of other nutrients as well. In their natural form (as in *whole grain*), cereals are a rich source of *vitamins*, *minerals*, *carbohydrates*, *fats*, oils, and protein. When refined by the removal of the bran (outer skin mostly fibre) and germ (contains micronutrients), the remaining *endosperm* is mostly *carbohydrate*.

Most commonly grown and eaten cereals in India are wheat and rice. However other cereals include oats, corns, maize, ragi, jowar, bajra etc. They are a rich source of carbohydrates in diet.







- a) **Wheat** : It is a rich source of carbohydrates, proteins and dietary fibre. It contains a protein **gluten** which is essential for bread making. Wheat is milled to produce semolina (sooji/ rava), Whole wheat flour, Refined flour (Maida) and even Porridge (Dalia). It is used to make rotis, cakes, biscuits, bread, pasta, noodles, breakfast cereal, idlis, upma etc.



- b) **Rice** : Eaten on its own or made into a flour. There are hundreds of varieties of rice grown in the world. Each varies in grain size and starch content. Thus each variety is unique in final appearance after cooking, aroma, texture, taste and nutritional value. Rice itself is cooked to prepare a wide variety of pulao and biryani. Rice flour is used to make roti, idli, dosa and sweets such as modak or phirni.



- c) **Maize** : Maize and cornmeal (ground dried maize) constitute a staple food in many regions of the world. It is popularly eaten in tacos & tortillas in Mexico, as Polenta in







Italy and the flour is used to prepare Punjabi Makki di Roti. It is also popular as popcorn or boiled corn snack and as breakfast cereal cornflakes. The whole cob is char grilled to be eaten as bhutta / challi in many parts of India.

- d) **Pearl Millet (Bajra)** : It is majorly grown in Rajasthan and the flour is used to prepare bajreki roti, bhakri and khakhra. It is also used as porridge and in khichdi.



- e) **Barley** : Even though wheat and barley look similar, there is difference between them - Wheat has a weaker taste whereas barley has a stronger taste. Barley has a higher fiber content than wheat and Barley can be cooked easily as rice although wheat has to be milled before cooking. Barley is thus mostly used to produce malt i.e. used in preparation of malted beverages and beer.

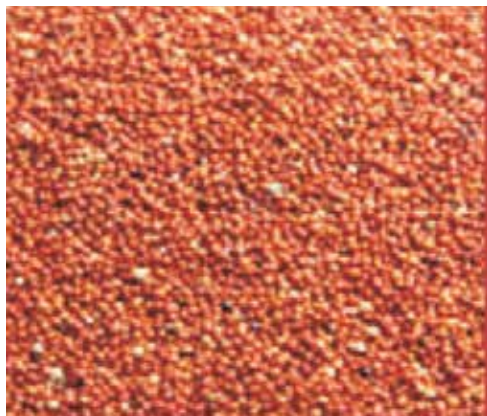


- f) **Oat** : Oats are most popular as porridge. However oat flour or oat meal is used in preparation of cookies, as breakfast cereal and to prepare oatmeal breads.







- g) **Finger Millet (Ragi)** : A cereal majorly grown in Karnataka, it is commonly consumed in many states. Ragi flour is used to prepare dosas, bhakri or rotis. It is also used to make puttu. The grain may be malted and ground and then mixed with milk, boiled water or curd.



## Vegetables






A vegetable is any part of a plant that is consumed by humans as food as part of a savoury course or meal.

The following classification is based on the part of plant being used as vegetable:



Types	Description	Examples	
Bulbs	They grow just below the surface of the ground and produce a fleshy, leafy shoot above the ground. Bulbs may contain layers or clustered segments.	Onion, Garlic, Spring Onion, Leeks, Fennel.	
Roots	They also grow below the ground as long or round shaped tap root and have green leafy shoots above the ground.	Carrot, Radish, Turnip, Beet Root.	





Types	Description	Examples	
Tubers	Tubers are various types of modified plant structures that are enlarged to store nutrients. They can be root or stem.	Potato, Sweet potato, Ginger, Elephant Yam.	
Flowers	These are edible flowers of certain plants.	Cauliflower, Broccoli, Globe Artichoke.	
Fruits	Fleshy fruits of a plant eaten as vegetables. (Please remember that this is a culinary classification. Scientifically these vegetables are fruits of a plant but in cooking we use them as vegetables).	Capsicum, Chillies, Cucumber, Egg plant (Brinjals), Pumpkin, Squash, Tomato, Gourds (Bitter gourd – Karela, Ridge gourd – Turai, Bottle gourd - Lauki).	
Leaves	Edible leaves of plants.	Cabbage, Lettuce, Mustard leaves (sarsonkasaag), Spinach (Paalak), Fenugreek leaves (methi).	
Pods	A legume that opens and contain seeds. These are the pods that are eaten while seeds are still tender and pods are green.	French Beans, Peas, Snow Pea.	



Types	Description	Examples	
Stems	The edible stalks of plants when the stalk is the main part of the vegetable	Asparagus, Celery, Kohlrabi.	
Fungi	All varieties of mushrooms fall into this category.	Button Mushrooms, Enoki, Shittake, Truffle, Oyster Mushrooms.	

## Use of Vegetables







- ➡ Vegetables form an integral part of daily meal as it is a source of vitamins, minerals and fibre. They are cooked in various combinations either as a dry preparation or with some gravy.
- ➡ Vegetables are also used to prepare snacks.
- ➡ Some vegetables are even used to prepare sweets such as ghirya, carrot halwa, petha etc.
- ➡ Cooked vegetables mixed with dressings and other ingredients form a nutritious salad. They are also added to curd to form Raitas.
- ➡ They are also used in stuffing the Breads or Pastries (e.g. quiche).
- ➡ Juices can also be extracted from vegetables and used on their own (Carrot / Beetroot/ Bottle gourd etc.) or may be in a cocktail (e.g. tomato juice in Bloody Mary).

## Fruits







Fruits are a very good source of Vitamins and Minerals essential to our health. Some common varieties of fruits are:





Name	Description	
Papaya (Papeeta)		Papaya has nutritional, digestive, and medicinal properties. Raw papaya contains enzyme 'papain' which is used as tenderizer for meats. Ripe papaya aids in digestion.
Banana (Kela)		This is most widely used fruit. Raw bananas are used as vegetable while ripe ones are used as fruits. Banana leaves are used to serve food on and flowers are used as vegetable.
Melon (Tarbooz, kharbooza)		There are many varieties such as Musk melon, Water melon, Cantaloupe and is a popular summer fruit.
Peach (Aaaru)		Peaches have a high acid content and tart flavor. Many a times they are canned in used in baked goods.
Mango (Aam)		India produces world famous Alphonso mango. It is very sweet with fibreless pulp and rich in Vitamin A and C. Apart from this there are many varieties grown all over the world.
Apple (Seb)		There are many varieties of apples grown in India. The skin of apple is rich in Vitamin A.



Name	Description	
Pear ( <i>Nashpati</i> )		Pears are consumed fresh, canned, as juice, and dried. This includes varieties such as babbughosha.
Oranges ( <i>Santara</i> )		Nagpur is famous for oranges which are sweet and has a juicy pulp. The taste of other varieties of oranges varies from sour, sweet to slightly bitter.
Sweet lime ( <i>Mausami</i> )		'Citrus fruits' i.e. oranges, lemons, limes and grapefruits are a rich source of Vitamin C which boosts our body immunity.
Pineapple ( <i>Ananas</i> )		Pineapples can be consumed fresh, cooked, juiced, and preserved.
Pomegranate ( <i>Anaar</i> )		The juice may be sweet and sour and is widely consumed. The fruit is used as garnish in many dishes.
Small fleshy fruits		These include Strawberry, Mulberry (shehtoot), Cherry, Blueberry, Grapes (Angoor), Raspberry (Rasbhari) etc








## Use of Fruits

- ➔ Fruits can be eaten on their own as a good source of nutrition.
- ➔ They can be made into fruit salads.
- ➔ Some fruits can be used for pickling e.g. Raw mango.
- ➔ Fruits are used to prepare jams, jellies, marmalade (the 'preserves') and chutneys.
- ➔ Fruits are blended with milk and other ingredients to make a vast variety of shakes, smoothies and chilled drinks.
- ➔ Fruits are widely used in flavouring and topping bakery products such as cakes, pastries, tarts etc.
- ➔ Fruits are also pureed to prepare sauces called 'Coulis'.








## Herbs

These are leaves of certain plants that usually grow in temperate climate. They are leaves of soft stemmed non –woody plants. Most of the herbs used in cooking possess some medicinal value. Apart from the nutritional value, they act as antioxidants, antiseptic, fight cough and cold, help in digestion, are anti-bacterial and support body's immune system to maintain health.

**Some of the herbs are:**

Name	Use of Fruits	
Coriander/ Cilantro (Dhaniya)		This is the most commonly used herb used in Indian Cookery. It is chopped or used whole to garnish and add flavour & aroma to many North Indian gravies and vegetables. It is also used to flavour soups.
Mint (Pudina)		This herb is refreshingly cold and used in many dishes to add fresh aroma to dishes. It is also used to aid digestion.
Basil ( <i>Tulsi</i> )		The holy basil has long been used in India for its medicinal values of curing cough and cold, as antibiotic etc. The sweet basil is popularly used in Italian cookery to flavour various dishes.








Bay leaf ( <i>Tej Patta</i> )		This strongly aromatic herb is mostly used in dried form and stored in jars. It is used to flavour gravies, rice and in many European dishes.
Curry leaves ( <i>Curry patta</i> )		Like holy basil, curry leaves are also grown in many kitchen gardens all across the country. It is used in tempering and chopped in many dishes such as sambhar, vada, curries etc.
Parsley		Mostly used in European and Mediterranean cuisines, this herb is chopped or used whole to flavour many vegetable and meat dishes.
Oregano		Used in Italian cooking to flavour many dishes such as pizzas, pastas and sauces.
Thyme		This herb is used in European cooking and is used to flavour lamb.
Fennel ( <i>Saunf</i> )		A pleasant smelling herb used in European and Mediterranean cooking. It is usually used to flavour salads or chilled drinks.
Rosemary		An aromatic herb from mint family, it is used in European cuisine to flavour meats specially lamb.





## Spices






These are the buds, fruits, flowers, bark, seeds and roots of plants and trees which are used in their natural / dried form to impart taste to food. Apart from this they also carry a wide range of medicinal properties, aroma and also may impart colour to the food. Some commonly used spices in Indian kitchen are:

Name	Description and Use	
Cumin seed ( <i>Jeera</i> )		It is used for tempering dishes. It may also be roasted and powdered and used in curd, rice etc. It may even be used to flavour cookies.
Coriander seed ( <i>Dhania</i> )		It is used whole for tempering certain dishes, roasted and powdered and put in gravies.
Caraway ( <i>Ajwain</i> )		It is used in tempering and also put in dough of Indian breads and stuffing for flavour. It is known to aid in digestion.
Turmeric ( <i>Haldi</i> )		Most commonly used as powder than whole, it is added to many dishes to impart flavour, yellow colour and antiseptic properties.
Red Chilli ( <i>Laal Mirch</i> )		It is used whole or in powdered form to impart hot flavor to the food.



Name	Description and Use	
Cinnamon ( <i>Dalchini</i> )		Cinnamon is a bark and is an ingredient of Garam Masala. It has a mild pleasant flavour used in sparing quantities in the food. It also has astringent and antifungal properties.
Clove ( <i>Laung</i> )		Used in Garam masala, this possesses antibiotic and antiseptic properties. Clove oil is used in many oral care products.
Asafoetida ( <i>Hing</i> )		This is added to many dals and vegetables and provides a typical aroma. Apart from this it is known to aid digestion and is an antibiotic.
Mustard seed ( <i>Sarson</i> )		It is used to temper many dishes and provides a characteristic taste and aroma. It may also be made into a paste and used in fish curries or in salads.
Nigella ( <i>Kalonji</i> )		More often used in pickles in combination with other spices.
Fennel seed ( <i>Saunf</i> )		It is also used in pickles, for tempering and may even be powdered to flavour many dishes. It has a pleasant aroma.



Name	Description and Use	
Mace ( <i>Javitri</i> )		This pink dried flower is an ingredient in Garam Masala and provides aroma. It encircles nutmeg and is part of the same plant.
Nutmeg ( <i>Jaiphal</i> )		It should be used in sparing quantities mostly powdered and acts as stimulant and astringent. In excessive quantities it can have narcotic effect.
Fenugreek ( <i>Methi</i> )		It is used in tempering and has a slightly bitter taste. It is known to help curing colic, dysentery and diarrhoea.
Sesame seeds ( <i>Til</i> )		It is usually roasted and may be grinded to be used as stuffing, or in sweets. It is also used to produce sesame oil.
Cardamom ( <i>Elaichi</i> )		Black cardamom is used in Garam Masala and spices up the dish. Green Cardamom is more often used to flavour sweets.

### Use of Spices

- ➡ Spices are used mainly to enhance the flavour of a dish. Usually spices are used in combination of each other and that of main ingredient to result in a tasteful dish.
- ➡ All the spices carry some medicinal properties. If used wisely, they contribute to general total health.
- ➡ They may also be used impart colour to food.





## Fats & Oils

Fats and oils both are made up of three elements: Carbon, Oxygen and Hydrogen. These elements combine together to form chains known as fatty acids. Three of these chains then join together to form a molecule known as a triglyceride. The triglyceride molecule is the basis of all oils and fats. However, oils containing a greater proportion of unsaturated fatty acids are liquid at room temperature i.e. Oils (sunflower oil, rice bran oil etc.) whereas those with higher amounts of saturated fatty acids will be solid i.e. Fats (Butter, Margarine, Desighee etc.)

Several edible vegetable and animal fats and oils are used for various purposes in cooking and food preparation. The production process of vegetable oil involves the removal of oil from plant components, typically seeds. This can be done via mechanical extraction termed “crushing” or “pressing.” The processing of vegetable oil in commercial applications is commonly done by chemical extraction, using solvent extracts, which produces higher yields and is quicker and less expensive. The extracted oil is then purified, refined or chemically altered.



Some of the common oils extracted from plants and used in cooking are:

- a) **Mustard Oil** : This oil has a distinctive pungent taste, characteristic of all plants in the mustard family. It is traditionally used in many parts of India for cooking. The oil makes up about 30% of the mustard seeds. It can be produced from black mustard, brown mustard and white mustard.
- b) **Coconut Oil** : Coconut oil or Copra oil is an edible oil extracted from the kernel or meat of matured coconuts harvested from the coconut palm. It has various applications in food, medicine, and industry. Because of its high saturated fat content it is slow to oxidize and, thus, resistant to rancidity.
- c) **Cottonseed Oil** : Cotton seed has a similar structure to other oilseeds such as sunflower seed, having an oil-bearing kernel surrounded by a hard outer hull; in processing, the oil is extracted from the kernel. Cottonseed oil is used for salad oil, mayonnaise, salad dressing, and similar products because of its flavour stability.
- d) **Groundnut Oil** : It is often used in Chinese, South Asian and Southeast Asian cuisine. Groundnut oil has a high smoke point relative to many other cooking oils, so is commonly used for frying foods.







- e) **Soybean Oil** : Soybean oil is mostly used for frying and baking. It is also used as a condiment for salads.
- f) **Sunflower Oil** : It is the non-volatile oil compressed from sunflower seeds. Sunflower oil is commonly used in food as a frying oil, and in cosmetic formulations.
- g) **Olive Oil** : Olive oil is a fat obtained from the olive a traditional tree crop of the Mediterranean region. The oil is produced by pressing whole olives and is commonly used in cooking, cosmetics, pharmaceuticals, and soaps, and as a fuel for traditional oil lamps.
- h) **Rice Bran Oil** - Rice bran oil is the oil extracted from the hard outer brown layer of rice after rice husk is removed. It is notable for its high smoke point of (232 °C) and its mild flavour, making it suitable for high-temperature cooking methods such as stir frying and deep frying. It is popular as a cooking oil in several Asian countries.

### Use of Fats & Oils

- ➔ Both fats and oils are used as cooking medium – for tempering, frying, sautéing etc. While cooking they also impart flavour and aroma to the food.
- ➔ Oils are used in preparing dressings of the salads.
- ➔ Oils and Fats are also added to dough as shortenings. They coat the gluten proteins of flour and prevent toughness of product. The product is crumbly and soft. E.g. little oil added to poori dough to make it crumbly and soft. Similarly fats and oils are used in bakery products too.
- ➔ Some vegetable fats are used as spreads in sandwiches e.g. peanut butter.

### Sugar

Sugar is the generalized name for sweet, short-chain, soluble carbohydrates, many of which are used in food. Sugars are found in the tissues of most plants. There are various types of sugar derived from different sources. Most sugars are extracted from sugarcane and sugar beet. The juice of sugarcane or beet is collected, heated, purified, filtered and crystallized. This is the most common form of sugar we see and use at home.



However, there are various forms of sugars used in cookery. Some of them are:

- ➔ **Granulated Sugars** are used to prepare any sweet dishes. They are added to kheer, rabri, custard etc. Sugar in large quantities are also used as a preservative to prevent micro-



organisms from growing and perishable food from spoiling as in jams, marmalades, and candied fruits. Sugar is also used in baking as a food for yeast to grow and ferment bread doughs. In addition it gives the crust brown colour in cakes and breads.



- ➔ **Milled Sugars** (known as powdered sugar and confectioner's sugar) are ground to a fine powder. They are used as icing sugar in cakes, icings, or even for decoration on sweet products. They dissolve quickly in cake mixes and other products.



- ➔ **Brown Sugars** are granulated sugars with the grains coated in molasses (remaining sugarcane syrup after production of sugar) to produce a light, dark, or demerara sugar. They are used in baked goods, confectionery, and toffees.



- ➔ **Sugar Cubes** are white or brown granulated sugars lightly steamed and pressed together in block shape. They are used to sweeten drinks.





- ➔ **Caster Sugars** is the fine granulated sugar. Because caster sugar crystals are so fine, they dissolve very quickly, so are useful in meringues, custards, and mousses, and for sweetening cold drinks or cocktails. Caster sugar is also used in baking.
- ➔ **Liquid Sugars** are strong syrups consisting of 67% granulated sugar dissolved in water. They are used in the food processing of a wide range of products including beverages, ice cream, jams, and hard candy.
- ➔ **A sugar** substitute is a food additive that provides a sweettaste like that of sugar while containing significantly less **food energy**. Some sugar substitutes are natural and some are synthetic. Those that are not natural are, in general, called artificial sweeteners.

## 8.2 Animal Origin

### Meat

Meat is a general term for various animal flesh eaten as food. It is mostly composed of proteins and fat. It is very important to maintain hygiene during rearing of the animal, while butchering and also while cooking the meat. Various state laws control the butchering and selling of animals.

Meat can be classified as:

- a) Game is meat which comes from wild animals and birds that are hunted for food or sport. Game is generally classified as either feathered or furred.
  - ➔ **Furred Game** : This includes animals like Deer, Goat, Hare, Rabbit, Wild pig etc.
  - ➔ **Feathered Game** : This includes feathered birds like Pigeon, Quail, Wild goose, Pheasant, Guinea fowl, Partridge etc.
- b) Poultry is a general name applied to a range of fowl domestically bred for human consumption. The poultry family generally includes chicken, turkey, duck and geese.

### Use of Meat

- ➔ Meats are cooked along with spices, herbs and vegetables to prepare a dish complete in nutrition.
- ➔ Meats are also preserved and eaten as ham, bacon, sausages etc.
- ➔ They have a wide usage where they can be used to make salads, main dish, snacks in every cuisine in the world.



### Seafood

This is the general term for all types of fish. There are three basic categories of seafood: fish, shellfish and invertebrates.



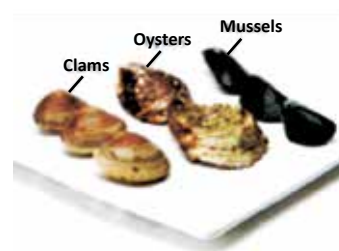
a) Fish can be divided into various sub-categories according to habitat, shape and flesh-type. According to habitat fish is divided into two categories:

- ➔ Freshwater fish are those that spend some or all of their lives in fresh water, such as rivers and lakes, with a salinity of less than 0.05%. e.g. Trout, Carp, Cod, Eel etc.
- ➔ Saltwater fish are those that spend their lives in saline sea water. E.g. Herring, Snapper, Mackerel etc.



b) Shellfish: The main difference between fish and shellfish is their skeleton. Shellfish have an external skeleton or shell. There are two main categories of shellfish:

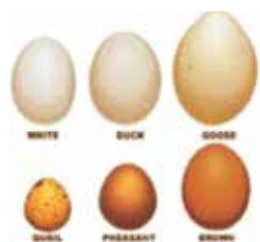
- ➔ **Crustaceans** : They have a segmented body, a chitinous exoskeleton and paired jointed limbs e.g. Crabs, Crayfish, Prawns, Scampi etc.
- ➔ **Molluscs** : They have a soft un-segmented body with a calcareous shell e.g. Clams, Oysters, Snails, Scallops, Mussels etc.



c) **Invertebrates**: Invertebrates are spineless marine animals with no outer shell. They include the squid and octopus family.

## Use

Fish is a very good source of proteins and is easy to digest. It also contains some amount of fat, minerals, vitamins and trace elements. This is the reason why fish is cooked in variety of ways such as frying, baking, grilling, poaching etc. to make numerous varieties of dishes and snacks.



In coastal regions many curries are made with fish and coconut. River water fish are also popularly used in households in various curries or simply batter fried to prepare pakodas.

## Egg

Bird eggs are a common food and one of the most versatile ingredients used in cooking. Eggs are a complete source of proteins specially essential amino acids. It also contains vitamins and minerals in significant quantities.



The most commonly used bird eggs are those from the chicken. Other varieties of eggs used in cooking are duck, goose or even quail eggs.



It is interesting to note that even fish eggs are used in both Indian and World cuisine. Fish lays thousands of tiny eggs in a jelly like form called Roe. Roe of Sturgeon fish is popularly eaten as 'Caviar' which is an expensive commodity. In India too fish eggs are used to prepare snacks and curries in coastal areas.

### Use of Egg

- ➔ Eggs are cooked on their own in a variety of ways as breakfast – poached, fried, scrambled, omelettes, boiled etc.
- ➔ Eggs are a popular ingredient in baking in cakes, cookies and desserts such as crème caramel or mousse.
- ➔ Eggs are used to make sauces Mayonnaise and Hollandaise.
- ➔ Eggs are used as binding agents in various mixtures.
- ➔ Eggs are also used to coat ingredients to give them a crispy texture.

### Milk

Milk is an emulsion of fat globules within a water-based fluid that contains dissolved carbohydrates and protein aggregates with minerals. It also contains sugar Lactose. Cow is reared specially in many countries on cattle farms to produce milk. Apart from this many other kind of livestock are reared to provide milk. This includes buffalo, goat, sheep, camel, donkey, horse, reindeer and yak.



Most of the milk we get packaged from market is either cow or buffalo milk. To increase shelf life of milk it is often pasteurized. Pasteurization is a process in which milk is heated to at least 63°C for 30 minutes OR 71.5°C for 15 seconds (HTST - High temperature Short Time) so that harmful microorganisms are killed. It is then refrigerated. Whether pasteurized or not, the dairies print expiry dates on each container or packet after which it should be discarded.

Milk may also be homogenized. This is a treatment that prevents a cream layer from separating out of the milk. The milk is pumped at high pressures through very narrow tubes, breaking up the fat globules through turbulence. A greater number of smaller particles possess more total surface area than a smaller number of larger ones, and the original fat globule membranes cannot completely cover them. Homogenized milk tastes blander but feels creamier in the mouth than un-homogenized milk. It is whiter and more resistant to developing off flavours.

### Varieties of Milk

- ➔ **Full Cream Milk :** The milk which has minimum milk fat 6% and minimum milk solids (not fat) 9%





- ➔ **Toned Milk** : The milk which has minimum milk fat 3 % and minimum milk solids (not fat) 8.5%
- ➔ **Double Toned** : The milk which has minimum milk fat 1.5% and minimum milk solids (not fat) 9%
- ➔ **Skimmed Milk** : The milk which has milk fat not more than .5% and minimum milk solids (not fat) 8.7%.
- ➔ **Condensed Milk** : Condensed milk is milk from which water has been removed. It is most often found in the form of sweetened condensed milk (SCM), with sugar added. Sweetened condensed milk is a very thick, sweet product which is canned.
- ➔ **Milk Powder** : Powdered milk or dried milk is a manufactured dairy product made by evaporating milk to dryness. One purpose of drying milk is to preserve it; milk powder has a far longer shelf life than liquid milk and does not need to be refrigerated, due to its low moisture content.
- ➔ **Fermented Milk** : Fermented milk products, also known as cultured milk products, are dairy foods that have been fermented with lactic acid bacteria such as Lactobacillus, Lactococcus, and Leuconostoc. The fermentation process increases the shelf-life of the product, while enhancing the taste and improving the digestibility of milk.

## Milk Products

Milk is used to make lot of products:

- a) Cream is a dairy product composed of the higher-butterfat layer skimmed from the top of milk before homogenization. In un-homogenized milk, the fat, which is less dense, will eventually rise to the top. In the industrial production of cream, this process is accelerated by using centrifuges called “separators”. It is of many types such as single cream, double cream, sour cream, clotted cream etc.
- b) Butter is a dairy product made by churning cream, to separate the butterfat from the buttermilk. It is generally used as a spread and a condiment, as well as in cooking, such as baking, sauce making, and pan frying.
- c) Curds are a dairy product obtained by introducing bacteria which consumes natural milk sugars and excretes lactic acid. This causes the milk proteins to curdle and create a sold mass. Little curd from previous batch is added as a starter as it contains necessary live bacteria.
- d) Cheese is a food derived from milk that is produced in a wide range of flavors, textures, and forms by coagulation of the milk protein casein. During production, the milk is usually acidified, and adding the enzyme rennet causes coagulation. The solids are separated and pressed into final form.







- e) Ghee is prepared by simmering butter, which is churned from cream, and removing the liquid residue. Spices can be added for flavor. The texture, color, and taste of ghee depend on the quality of the butter, source of the milk used in the process and the duration of the boiling.
- f) Chhena: It is fresh cheese made from cow milk. A crumbly and moist form of farmers cheese or paneer, it is used to make desserts such as rasgulla.
- g) Khoya is a dairy product widely used in making sweets milk thickened by heating in an open iron pan.
- h) Paneer is a fresh cheese common in Indian cuisine. It is an unaged, acid-set, non-melting farmer cheese made by curdling heated milk with lemon juice, vinegar, or any other food acids.

### Use of Milk Products

- ➔ Milk is a popular ingredient in daily diet in the form of milk itself or added to tea, coffee and cereals.
- ➔ It is used to prepare sweets such as kheer, rabri, rasmalai, custard, ice-cream etc.
- ➔ It is used to prepare numerous products used in cookery such as Butter, Ghee, Buttermilk, Curd, Cheese, Chenna etc.
- ➔ It is often used in bakery for adding nutrients, moisture and fat to the product.
- ➔ It is used in preparing sauces such as Béchamel in European cookery.
- ➔ Milk is used to prepare chilled shakes and smoothies along with fruits and other ingredients.

### Animal Fats

Many fats derived from animal tissues are used in cooking. Example:

- ➔ Lard – Fat obtained from pig.
- ➔ Suet – Fat obtained from mutton or beef.
- ➔ Poultry fat

This is added in European cuisines to cook meats, in preparing sausages, added as a shortening to pastry to give it a crumbly texture etc.



In India animal fats are used in many minced meat preparations such as kebabs.

### Salt

Salt does not contain any carbohydrates, proteins or vitamins but is essential in itself to life. Salt is the most common kitchen commodity. Technically table salt is a mineral primarily sodium chloride and is an essential ingredient of food.





Salt can be obtained from:

➔ **Rocks:** Vast sedimentary deposits which have been laid down over the millennia from the evaporation of seas and lakes. These are either mined directly, producing rock salt, or are extracted in solution by pumping water into the deposit



➔ **Brine** (Salty water such as in Oceans): Produced by drying of seawater in shallow ponds.

### Types of salt used in cooking

There is a huge variety of salts available in market. However, common ones are -

➔ **Table salt (Namak):** Salt is refined to purify it and improve its storage and handling characteristics. The natural salt is usually fortified. To prevent lump formation or caking of salt, chemical agents are added in small quantities to make it 'free flowing'. Iodine is usually added to prevent its deficiency causing Goitre or mental retardation. Salt may also be fortified with iron to prevent anemia. In some salts, even fluoride is added which prevents dental caries.



➔ **Black salt (Kala Namak):** It is actually a pinkish-grey color. It has a strong sulphuric smell. Black salt is more hygroscopic than common salt and tends to absorb moisture pretty fast. Store it away from moisture and keeping the cap of the bottle or jar tightly closed. Black salt is used in preparing snacks, chaats, chutneys, raitas and is used as a flavouring for many fried snacks, by sprinkling it as a topping. It is sprinkled on fruits too.



➔ **Rock salt (Sendha Namak):** Rock salt is obtained from the rock, mountains and from the vast beds of dried up ancient lakes and seas. These beds may be hundreds of metres deep. Rock salt is normally colourless to yellow in colour but may also be in various hues of blue and pink, depending on the impurities in it. This salt is mostly used in preparing food during fasting.

### Use of Salt

- ➔ Salt is required to give taste to a dish.
- ➔ It is added to breads in small quantities to control fermentation and helps in production of breads.
- ➔ Salt added to water makes the water boil at a higher temperature, thus reducing cooking time.



- ➡ Salt is also used as a preservative e.g. in pickles, hams etc.
- ➡ It is also used as a cleaning agent because of its abrasive texture and ability to remove greasy or oily stuff from pans.
- ➡ Salt also has some medicinal qualities such as it helps in relieving tired feet or removing puffiness. Sodium is essential for nerve transmissions and pH balance.

### Summary

The commodities used in kitchen can be classified according to their origin as the ones originating from plants (such as pulses, cereals, fruits, vegetables, spices, herbs and oils), animals (such as milk and milk products, meats, seafood, eggs, animal fats) and others (such as salt). There is a vast variety of these commodities that are used in the world in cooking. All are important sources of some nutrients and minerals for healthy life. Each ingredient is used in a variety of ways in cooking e.g. a fruit can be made into jam or jelly, eaten on its own or made into a sweet or shake. Thus each ingredient is unique and a chef must be able to identify the ingredient, know the varieties available and then suitably use them to prepare food.

## I. Review Questions

**Answer the following :**

1. List commodities obtained from Plants and Animals.
2. What are the major nutrients obtained from various commodities obtained from plants?
3. Classify Seafood and give examples of each category.
4. What is pasteurization?
5. What is homogenization?
6. Differentiate between Herbs and Spices.
7. List the uses of fruits in cookery.
8. Pulses and Cereals form a major part of our diet. Explain their role in our food.
9. What are different types of meats?

## II. Fill in the blanks:

1. Granulated sugar coated with molasses is called .....
2. Oils and Fats are also known as ..... in kitchen as they make the product soft and crumbly.
3. Salt added to water makes it boil at ..... thus ..... cooking time.
4. Fish eggs are a delicate commodity and roe of sturgeon fish is called .....



5. .... with higher amount of saturated fatty acids are solid at room temperature and .... with unsaturated fatty acids are liquid at room temperature.
6. .... contains enzyme papain used as a meat tenderizer.
7. .... Fruits are a group of fruits which are sour and have a high content of Vitamin C.
8. Semolina (sooji) and Porridge (Dalia) are made from.....
9. .... can be sprouted and used in salads.
10. .... is a protein found in wheat essential for bread making.

### III. Discuss in class:

To understand the nature, taste and cooking of ingredient is important for a chef. Also, each ingredient comes in various varieties that differ from each other. Take an example of rice and explore the varieties available in India. Discuss how the usage differs with varieties.

#### Practical

1. List commodities commonly available in your kitchen at home and classify them. Write their uses.



## UNIT 9

# Storage of Commodities

### Objective

1. Importance of correct storage of commodities.
2. Meaning of perishability of an ingredient.
3. Shelf life of a commodity.
4. Qualities of a good store.
5. Storage of various kitchen commodities such as dry ingredients, vegetables and fruits, milk, eggs, meats & seafood, frozen food, fats and oils, canned and bottled products.

### 9.1 Perishability of a Product

A large number and variety of ingredients are used to prepare food. The kitchen commodities vary from dry ingredients like sugar, flour, rice etc. to fresh vegetables and fruits. They also include canned or bottled products, meats, seafood, milk and milk products etc. All these food ingredients should be of required quality to get healthy, safe and tasty meal.



### Importance of Correct Storage

- ➔ Each ingredient is bought for a price. In hotel business, a large amount of money is involved in purchasing kitchen commodities. It is important that this money is used wisely and not wasted. The cost of all the ingredients used in preparing a dish is called its Food Cost. In case of wastages, spoilages or pilferages, the ingredient lost is money lost.
- ➔ All kitchen commodities are Perishable i.e. they are spoiled or get unfit for human consumption after some period of time. The time during which the ingredient can be stored and used safely is called Shelf Life of a product.
- ➔ Quality of ingredients is an important criteria to determine quality of the dish prepared using these ingredients.

All the ingredients cannot be procured from market immediately as and when they are required by chef. Therefore some quantity of ingredients is always bought in advance





and stored in kitchen or general store. Thus it becomes important for a chef to correctly understand the storage requirements of various commodities.

**Perishability of a product-** Food stuffs that are subject to decay or spoilage are called perishable products. Hence, with time and storage conditions, quality of all the food ingredients deteriorate. If such ingredients are used in cooking, they may cause diseases and may not taste well.

**Shelf life of an ingredient** is the length of time for which a commodity may be stored in required conditions (temperature, humidity etc.) without becoming unfit for use, consumption or sale.

## 9.2 Techniques of Storage

There is no exact method to determine how long a food will maintain quality and be safe to eat, because many conditions affect quality. The storage life of foods is affected by the:

- ➔ Freshness of the food when it reached the hotel from the supplier.
- ➔ Length of time and the temperature at which it was held before purchase.
- ➔ Temperature of food storage areas.
- ➔ Humidity level in food storage areas.
- ➔ Type of storage container or packaging the food is stored in.
- ➔ Characteristics of the food item.

### Qualities of a Good Store

- ➔ A store should be at a location easily accessible from receiving area as well as by kitchen department.
- ➔ Good ventilation, air circulation and sufficient lighting. It is important to have a suitable humidity control system in place as dry store such as cereals, pulses, flours etc
- ➔ Hygienic and free of pests such as flies, rats, cockroaches etc.
- ➔ Safe and with sufficient racks to store ingredients. Leaving sacks or packages on floor makes them more vulnerable to infestation by pests and makes the store untidy.
- ➔ Provision of deep freezers and refrigerators to suitably store kitchen commodities.
- ➔ An effective store keeping system to ensure FIFO system (First in First out). This system ensures that the material received first is issued first and thus used first.
- ➔ Clear labelling of 'best before' or 'expiry' dates. These should be strictly followed and ingredients must be disposed of after 'best before' dates.
- ➔ Regular cleaning schedule is followed.



## Storage of Kitchen Commodities

Foods can be classified into various groups for the purpose of storage:

- a) **Dry Ingredients** : Like cereals, pulses, sugar, flours, dry fruits, salt, spices and condiments – These should be stored in a food grade air-tight container or if pre-packed then sealed properly. They should be stored in dry (low humidity) area at room temperature. Many products may be in vacuum sealed packing, hence should be kept safe. However, prolonged storage makes them prone to infestation, loss of flavor and aroma in case of dry herbs and spices etc.
- b) **Eggs, Milk and Milk Products** : Dairy products are those commodities, which are derived from or based upon milk, and include creams, yoghurts, butter, cheese and ice cream. Eggs, milk and milk products should be stored in the refrigerator at a temperature between 3 to 4°C. Cream, yoghurts, butter, cheese and eggs should also be stored at between 3 to 4°C. The shelf life of these products will vary depending on their method of manufacturing, and chef should check individual 'use by' dates on the packaging. All dairy products need to be kept well sealed when in storage and away from strong smelling ingredients otherwise they will absorb flavor and aroma from strong smelling foods around them.
- c) **Vegetables, Fresh Herbs & Fruits** : Many vegetables need not be refrigerated and are good in dry room temperature conditions for a reasonable length of time. Depending on type of vegetable, they are stored as follows:
- ➔ **Cool and Dry** : Onion, Potatoes, Garlic, Bananas, Pineapples etc. They should be stored at about 18°C with good air circulation around them.
  - ➔ **Cool and Moist** : Most vegetables and fruits as well as fresh herbs are stored in refrigerators. They are stored at about 5°C.
  - ➔ **Warm and Dry** : Pumpkin, sweet potatoes, dried hot peppers.
- d) **Meats** : Fresh meat and poultry should be stored between 1 and 3°C. All meat and poultry should be stored on clean trays and covered with plastic wrap. Raw and cooked food should never be stored on the same tray. Meats are also cut, vacuum sealed and labeled in butchery and stored frozen at about -18°C in deep freezers.





- e) **Seafood** : Has a very short shelf life and must be stored with extra care. It should be stored at 1°C. Seafood should be wrapped in plastic film and stored in the coldest part of the cool room on a bed of crushed ice. It may also be vacuum sealed, labeled and stored frozen at -18°C in deep freezers.
- f) **Frozen Products such as ice-creams** : Ice-creams should be stored at about -18°C in deep freezers away from strong smelling ingredients. Similarly frozen vegetables or ready to eat items should also be kept in deep freezers.
- g) **Canned or Bottled Products** : Many ingredients purchased are packed in cans or bottles such as tomato ketchup, tomato puree, pickles, pineapple tins, sauces etc. These products are labeled as per storage requirements. They should be stored as per manufacturer's instructions – may be in a cool dry room, away from sunlight etc. Any leaky or puffed cans or ones with some mould growth should be immediately discarded.
- h) **Fats and Oils** : All oils should be sealed in airtight containers to prevent oxidation. They should be stored in a cool, dark place and not exposed to heat and sunlight. Most fats such as lard, butter, margarine should be refrigerated.



Thus proper food storage helps maintain food quality by retaining flavour, colour, texture and nutrients, while reducing the chance of contracting a food-borne illness.

### Summary

All the commodities used in kitchen are procured from market by paying a price which is an investment from business point of view. At the same time, they all become unfit for consumption after some time i.e. they are perishable. Hence they should be stored correctly to keep them in usable condition for a maximum period of time. Some commodities like dry ration – pulses, cereals, flours require dry and room temperature conditions while some others like milk, butter, curd, cheese etc and many vegetables and fruits require cooler temperatures. Meats, ice-creams etc need to be kept frozen. Correct storage is important to maintain the quality of ingredient from purchase to actual use.

### I. Review Questions

**Answer the following :**

1. What are the salient features of a good store?
2. What do you understand by 'Perishability' of a product?
3. What is food cost?
4. What are the factors that determine storage life of a product?



## II. How should one store the following commodities?

Commodity	Storage
Banana	
Margarine	
Whole black gram	
Turmeric powder	
Milk	
Fish	
Tomato	
Ice-cream	
Sugar	
Curd	

## III. Discuss in class:

Discuss the importance of correct storage of various commodities. Also, take any packaged commodity and discuss relevance of 'best before' or 'use by' dates.

### Practical

1. Take different types of commodities such as any pulse, potato, butter, tomato, salt and sugar etc. Keep little at room temperature. Note observations. Can these commodities be stored differently for longer shelf life? Also, explain how they should be stored to keep away from common pests such as flies, mosquitoes, cockroaches, rats, ants etc.



## UNIT 10

# Kitchen Organization

## Objectives

1. Defining Kitchen organization structure.
2. Understanding factors affecting organization structure.
3. Hierarchy in kitchen.
4. Duties and responsibilities associated with job positions.

## 10.1 Kitchen Organization

The structural hierarchy of a kitchen is known as Kitchen organization. Hierarchy refers to the flow of authority from top to bottom in an organization and with respect to the kitchen, it refers to the flow of authority commencing from executive chef and goes to the bottom i.e. Kitchen helpers.

The number of positions and also the number of employees at each position differ from hotel to hotel depending on following factors:

- ➔ The variety of dishes that are offered on the menu.
- ➔ Number of people expected to be dining in the restaurant.
- ➔ Use of convenience foods – e.g. Readymade burger patties which need to only be deep fried not prepared.
- ➔ Types of equipment available - the level of automation – e.g. if there is a machine such as a commercial food processor for cutting and chopping, less number of people are required to do the job.
- ➔ Need of skill involved at the various levels – specialization jobs e.g. a cook trained to work on tandoor.

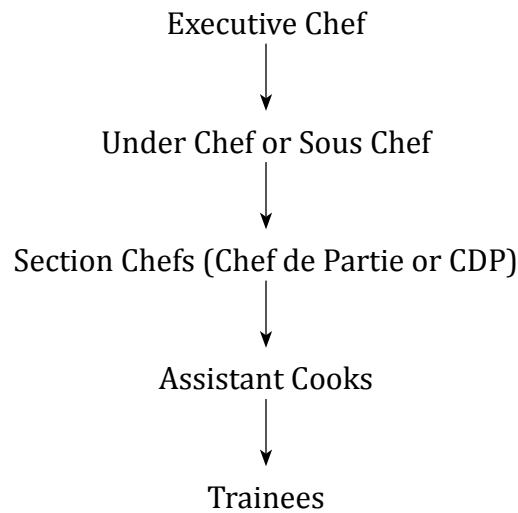


The kitchen is divided into various sub-sections and each section contributes in preparation of food.





## Hierarchy in Kitchen



The Executive Chef is the head of the kitchen department. He has a Sous Chef or Under Chef who assists him in his work and looks after everyday operations directly. The kitchen is divided into various sections and each section has a section head called CDP. The number of CDPs in each hotel varies depending on the need of the organisation. Each CDP has some assistant cooks to work under him. The assistant cooks are further divided according to seniority and experience on Commis I, Commis II and Commis III. Number of commis in a kitchen is dependant on the amount of work. Lastly there are trainees who are still learning skills to take up a career in food production department.

## 10.2 Duties and Responsibilities

### Executive Chef

The Executive Chef is a manager who is responsible for all the aspects of food production, including:

- ➡ An overall in-charge of the department and is responsible for quality of food prepared in the kitchen.
- ➡ Responsible for developing menus for new restaurant or updating old menus.
- ➡ Responsible for keeping a track on food costs and controlling them so that profit can be maximized without compensating the standard quality.
- ➡ Ensures proper and timely availability of raw materials required in liaison with purchasing department.
- ➡ Plays a significant role in selection of new staff and training them according to the hotel's standard procedures.
- ➡ Ensures that hygiene and safety practices are followed by all the employees in kitchen.



- ➔ Coordination with all other departments of the hotel to ensure smooth workflow and guest satisfaction.
- ➔ A team leader with positive attitude and managing the entire workforce effectively to the organization goal.

### **Sous Chef / Underchef**

- ➔ The direct in-charge of production operations and work as second in command to the executive chef whose job is more administrative in nature.
- ➔ Responsible for following of standard recipes, presentations and procedures in kitchen.
- ➔ Train Staff on improved work procedures, quality food production, economical usage of food materials and the attractive presentation of Food items.
- ➔ Account for the usage, consumption, spoilage and control of food stuff produced or stored under his supervision.
- ➔ Look after the function of the executive chef during his/her Absence.



### **Chef De Partie / Section Chef**

- ➔ In-charge of a section of kitchen e.g. Bakery, Indian kitchen, Chinese kitchen, Larder (cold kitchen) etc.
- ➔ Directly responsible for overall working of their section and coordination with other sections of the kitchen.
- ➔ Maintain food costs of their department – reducing wastages.
- ➔ Indenting (preparing a list of ingredients required the next day or in near future) for their department on daily basis.
- ➔ Preparing duty rosters of the staff in their section and managing leaves.
- ➔ Maintaining hygiene and safety in their departments.
- ➔ Following standard procedures and presentations.

### **Assistant Cooks**

Usually there are three levels termed as Commis I, Commis II and Commis III. They are deputed in a department and deal with carrying ingredients from stores, pre-preparations (cutting, chopping etc.), storing raw materials properly and helping the section chef in preparing and presentation of the dishes.



## Trainees

These are usually either new staff learning work or even students studying hotel management and willing to take up career in hotels.

Thus the kitchen team works together to bring the hygienic and delicious meals for the hotel guest.

### Summary

Organisational structure helps to clearly defines duties and responsibilities of each person in the organization. In hotel kitchen it moves from the overall in charge 'Executive Chef', the 'Sous Chef' and then various section heads depending on how many sections are there. Each section head further has a team of assistants to work in their sections. The hotels also have some trainees - the young aspirants who wish to learn the skill and be part of the hotel industry.

## I. Review Questions

**Answer the following :**

1. With the help of a flow chart, explain the hierarchy levels in hotel kitchen?
2. What are the factors that affect the number of employees at each level in kitchen organization?
3. What are the duties and responsibilities of Executive Chef?

## II. Discuss in class

Discuss the importance of having a hierarchy in an organization. How does it improve the workflow?

### Practical

1. Draw the organization chart of a food production department of a hotel and list the duties and responsibilities of each hierarchical level.









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