

**Draft Study Material**

# **Craft Baker**

(QUALIFICATION PACK: Ref. Id. FIC/Q5002)

**SECTOR: Food Processing**  
**Grades 12**



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NCERT

**PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION**

(a constituent unit of NCERT, under MoE, Government of India)

**Shyamla Hills, Bhopal- 462 002, M.P., India**

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## **Craft Baker Grade-XII**

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### Preface

Vocational Education is a dynamic and evolving field, and ensuring that every student has access to quality learning materials is of paramount importance. The journey of the PSS Central Institute of Vocational Education (PSSCIVE) toward producing comprehensive and inclusive study material is rigorous and time-consuming, requiring thorough research, expert consultation, and publication by the National Council of Educational Research and Training (NCERT). However, the absence of finalized study material should not impede the educational progress of our students. In response to this necessity, we present the draft study material, a provisional yet comprehensive guide, designed to bridge the gap between teaching and learning, until the official version of the study material is made available by the NCERT. The draft study material provides a structured and accessible set of materials for teachers and students to utilize in the interim period. The content is aligned with the prescribed curriculum to ensure that students remain on track with their learning objectives. The contents of the modules are curated to provide continuity in education and maintain the momentum of teaching-learning in vocational education. It encompasses essential concepts and skills aligned with the curriculum and educational standards. We extend our gratitude to the academicians, vocational educators, subject matter experts, industry experts, academic consultants, and all other people who contributed their expertise and insights to the creation of the draft study material. Teachers are encouraged to use the draft modules of the study material as a guide and supplement their teaching with additional resources and activities that cater to their students' unique learning styles and needs. Collaboration and feedback are vital; therefore, we welcome suggestions for improvement, especially by the teachers, in improving upon the content of the study material. This material is copyrighted and should not be printed without the permission of the NCERT-PSSCIVE.

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Date: 20 June 2024

## **Craft Baker Grade-XII**

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# Module 1

## Food Safety Standards, Hygiene and Sanitation

### Module Overview

In this unit, we will discuss about the food quality, maintaining hygiene and sanitation, prevention of contamination in a patisserie, storage of raw, semi-processed and finished products. We will also learn about food safety standards and legislation, safety signs and waste disposal in a patisserie.

### Learning Outcomes

After completing this module, you will be able to:

- Implement practices to maintain food quality, hygiene, and sanitation in the work area, including proper cleaning protocols, personal hygiene, and preventing cross-contamination.
- Explain food safety standards and legislation, and the importance of adhering to food safety protocols to ensure consumer protection.
- Identify and interpret safety signs used in a patisserie unit, and describe effective waste disposal methods to maintain a clean and safe working environment.

### Module Structure

- Session 1: Maintaining Food Quality, Hygiene and Sanitation in the Work Area
- Session 2: Food Safety Standard and Legislation
- Session 3: Safety Signs and Waste Disposal in a Patisserie Unit

## **SESSION 1: MAINTAINING FOOD QUALITY, HYGIENE AND SANITATION IN THE WORK AREA**

### **Maintaining Food Quality in a Patisserie**

Food quality is the sum of all desirable characteristics of food that are acceptable to consumers. The determinants of food quality are classified as external and internal characteristics as shown in Fig 1.2. The absence of the nutritional qualities and possible presence of food toxins and harmful chemical additives affects adversely the quality of food, which in turn may harm the consumer



overall health. Thus, food quality control through various determinants of food quality is vital for preserving food quality.

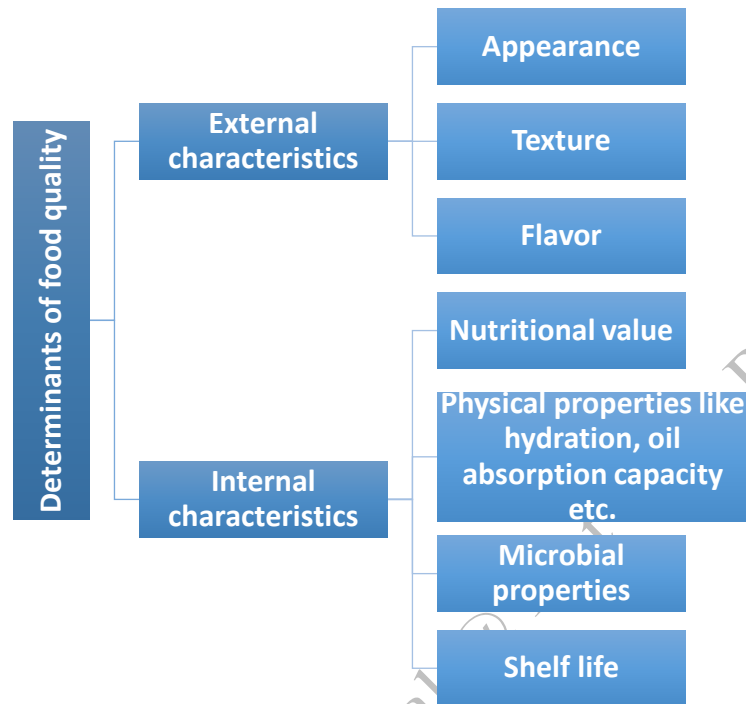


Fig. 1.1: Determinants of food quality

### Purposes of maintaining food quality in a patisserie

In patisseries, food quality control is a rigorous cycle of inspection and implementation of food safety practices. Bakery and pastry products are generally delicate, sensitive to temperature and storage conditions therefore prone to contamination and spoilage. Maintaining food quality control in a bakery and patisserie serves the following purpose as shown in below:

- To prevent food getting contaminated in commercial bakeries and patisseries where bulk handling and processing is done
- To increase the shelf life of bakery and patisserie products
- To ensuring the quality of raw materials as well as finished product
- To assess the risk involved and safety management during mass production, mass distribution and consumption
- To prevent occurrences of food-borne illnesses
- To ensure the implementation of food laws and food safety standards
- To meet the international standards of quality and safety for international trades

### **Hygiene and sanitation in a patisserie**

The concept of food hygiene means handling, preparing and storing the food in ways that the food will not cause any illness to us upon consumption. The practice of food hygiene ensures food safety by preventing contamination of food, reducing the risk of food poisoning and connected illnesses. A large number of food-borne illnesses such as diarrhea, cholera and typhoid can be caused by unsafe food. Various raw items used in bakery and patisserie such as eggs, milk, butter and cream are highly perishable. Therefore, food hygiene is of paramount importance in the field of bakery and patisserie.

Although the concepts of food hygiene and food safety are interrelated but for better understanding of the two concepts, we will first discuss food hygiene.

The maintenance of proper food hygiene in bakery and patisserie involves three basic aspects as shown below:

- Hygiene and sanitation of personnel
- Hygiene and sanitation of food handling area
- Hygiene and sanitation of utensils, equipment and tools

#### ***Hygiene and sanitation of personnel***

The first step for maintaining food hygiene is to ensure that the personnel involved in food handling have the knowledge, understanding and training in personal hygiene, food hygiene and safe food production. One of the basic objectives of maintaining personal hygiene is to break the cycle of transmission of micro-organisms by avoiding cross-contamination. Personal hygiene is achieved by ensuring the following practices:

1. Bath regularly.
2. Keep hair clean, tied back and covered with a hair net.
3. Keep nails properly trimmed at least once a week
4. Wear personal protective equipment (PPE kit).
5. Do not wear jewellery, watches etc. while handling food.
6. Use disposable spoons for tasting food.
7. Use kitchen paper towel for wiping hands and work surfaces.
8. Wash hands frequently.

**Handwashing:** As the various activities in bakery production are performed through hands and fingers, therefore proper and regular handwashing is critical

in food safety system in a bakery enterprise. One must always wash his/her hands during following activities:

1. Before handling raw foods.
2. After cleaning and wiping tables, food preparation surfaces, or equipment.
3. Sneezing, coughing or touching mouth or nose.
4. Using the toilet/ washroom.
5. Handling soiled objects, garbage or money.

The various steps for proper handwashing are shown below in Fig.1.2.

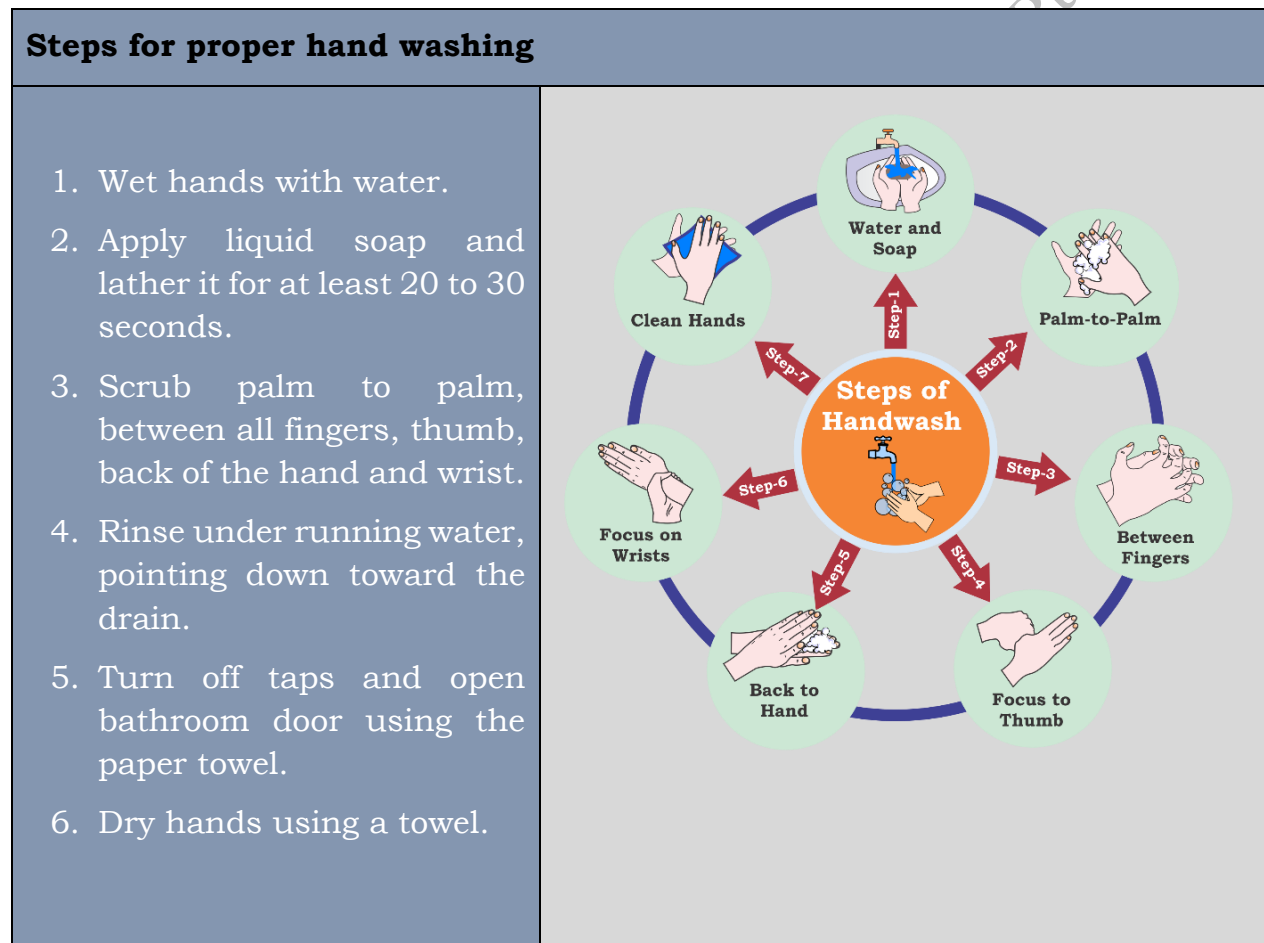


Fig. 1.2: Steps for proper hand washing

### Hygiene and sanitation of food handling area

Maintaining a clean work environment is critical in preventing foodborne illness. Harmful microorganism easily grow on unhygienic surfaces and contaminate the food and causes illness. The surfaces may outwardly look clean, but that does

not ensure that it is free of harmful microorganisms. Therefore, it is important to ensure clean and sanitized work surfaces, food handling area and equipment etc. before preparation of bakery and patisserie products. Cleaning includes both washing with cleansing agent such as soap and detergents whereas sanitization is achieved with appropriate sanitizers. Cleaning removes dirt and grease, whereas sanitization ensures removal of harmful microorganism. Chlorine based bleaching solutions, quaternary solutions (quats), and iodine solution are commonly used for sanitization in bakery industry. These sanitizers are used according to the manufacturer’s instructions using appropriate personal protective equipment.

Because all surfaces need to be cleaned and sanitized on regular basis, therefore a cleaning schedule is maintained. A cleaning schedule outlines how each surface and equipment will be cleaned with which cleaning and sanitizing agents. The cleaning schedule also has details of the person responsible, and frequency of cleaning.

**Hygiene and sanitation of utensils, equipment and tools**

Various steps of cleaning and sanitization of utensils are shown below in Table 1.1.

<b>Table 1.1: Three sinks washing method</b>			
<b>Specification</b>	<b>Wash</b>	<b>Rinse</b>	<b>Sanitize</b>
<b>Temperature</b>	110°F	110°F	180°F or
<b>Solution type</b>	Soapy Water	Clear Water	Sanitizer

Cleaning of equipment employs following two methods:

1. Clean-in-place (CIP) for the stationary and fixed equipment and
2. Clean-out-of-place (COP) for the mobile and detachable equipment

Depending upon the type of the equipment, suitable method of cleaning is adopted for cleaning of the equipment. We will discuss it in detail in Unit-2. Various steps of cleaning and sanitization of equipment are as follows:

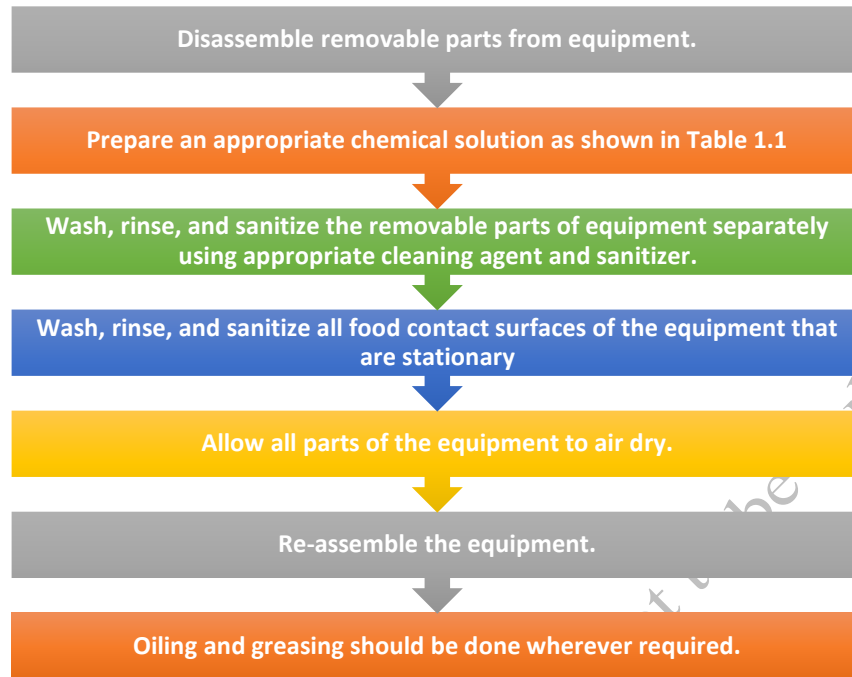


Fig. 1.3: Steps for cleaning equipment

**Table 1.2: Preparation of cleaning solution for equipment**

Chemical Solution	Concentration Level	Minimum Temperature	Minimum Immersion Time
Chlorine Solution	50 – 99 ppm	<b>100°F</b>	7 seconds
Iodine Solution	12.5-25.0 ppm	<b>68°F</b>	30 seconds
Quaternary Ammonium Solution	Manufacturer’s Recommendation	<b>75°F</b>	30 seconds

**Prevention of contamination in patisserie**

Various factors such as poor handling of food materials, unhygienic equipment, work surfaces and poor layout and design of the production unit can lead to contamination in patisserie. Therefore, potential sources of contamination need

to be identified. Prevention of contamination in patisserie is achieved through following practices:

### ***Preventing Contamination during food handling operations***

Contamination can occur during various steps of food handling operations from the time of receiving the raw ingredients to the storage, production and post production storage. Proper care and check processes to control contamination are included during the various stages of food handling as per the standard operating procedures (SOPs).

Following steps are required to prevent contamination during various food operations:

1. Raw materials are transported and received as per the Standard Purchase Specifications (SPSs) and stored as per the guidelines for these items.
2. Transport vehicles carrying raw materials along with food receiving areas and food storage areas are always sanitized.
3. Personnel handling food items are to follow personal hygiene routine.

### ***Preventing Contamination through Equipment***

1. The equipment and containers used in baking and storing patisserie products are of food grade quality and hygienically designed.
2. Packaging machines and packaging materials must be non-corrosive, non-toxic and impervious to grease.

Temperature controlled equipment such as refrigerator, chiller, proving chambers and ovens must achieve and maintain the required temperatures for heating, cooling, chilling, cooking, baking, refrigeration and freezing foods to prevent contamination.

### ***Preventing contamination through layout of patisserie unit***

To prevent contamination through proper layout of patisserie unit, the guidelines to be followed are given in Fig. 1.4.



Fig. 1.4: Guidelines for preventing contamination through layout of patisserie unit

### Storage of raw, semi-processed and finished products

Improper storage of raw, semi-processed, and finished bakery and patisserie products can always lead to contamination. Therefore, proper storage of these items is necessary.

**Storage of Raw Material**

After receipt of the raw material, next step is to store it appropriately. The storage facilities in any bakery or pastry unit is designed and constructed keeping in mind the following aspects:

1. Avoid cross-contamination amongst raw materials.
2. Permit adequate cleaning of storage area.
3. Restricted pest access and accumulation
4. Provide cold storage facility for foods that requires storage below 5°C.
5. A separate storage area is provided for holding packaging material, rejected, to be returned food items, allergic food material like peanuts and cleaning chemicals.
6. The storage containers and the shelves for raw materials must be non-toxic to prevent any chemical contamination of the raw materials.
7. All raw materials, food ingredients, food additives and packaging materials to be kept 6 inches above the floor and 18 inches away from the wall for ease of handling.

<b>Temperature for specific conditions</b>
Freezer maintained at -18°C
Refrigerators maintained at 5°C
Room temperature at 25°C
Hot holding unit maintained at 63°C or above

**Storage of semi-processed products**


Semi-finished products include creams, icings, glazes, syrups, ganache, fondants and flavours etc. They are used later for the decoration, flavour enhancement and for imparting certain taste to the bakery and patisserie products. The storage instructions for some of the semi-finished products is given in Table 1.3.

S.N.	Product	Storage instructions
	Whipped Creams	Refrigerated
	Glazes and syrups	If the glaze sets at ambient temperature, it is kept loosely covered. If it thickens, keep it in a pan of warm water. A glaze can be frozen but to recover its sheen it will need reheating



	Ganache	Stored at room temperature for up to 2 days. For storing, the entire surface of the ganache is covered with plastic wrap. The ganache is again warmed prior to use
	Fondants	It is not refrigerated or frozen but stored in an airtight container for up to 2 months at room temperature in a cool and dry place
	Custard filling	Stored in the refrigerator for up to 3 days

***Storage of finished bakery products***

S.N.	Product	Storage instructions
1.	Brownies	Stored in an airtight container or freezer storage bag.
2.	Crispy Cookies	Stored at room temperature for a week. In the refrigerator, they can be stored for up to three months.
3.	Unfrosted Cakes, Pastries, Biscuits, Muffins, Loaves	These products are allowed to cool completely in the baking container and after cooling they are wrapped in plastic sheets. Tightly wrap the individual item in the plastic. Store in the refrigerator.
4.	Frosted Cakes 	Stored in a cake keeper. Freezing of frosted cakes is not recommended.
5.	Fondants	Stored in an airtight container for up to 2 months at room temperature in a cool and dry place. It is not refrigerated or frozen.

6.	Pies	After cooling the baked pie, it is covered with a plastic wrap and stored in the refrigerator up to 3-5 days.
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**What have you learned?**

After completing this session, you are able to describe:

- the determinants of food quality
- hygiene and sanitation practices in a patisserie.
- storage of raw, semi-processed and finished products

**ACTIVITY**

1. Video demonstration on the importance of food quality standards and measures.
2. Identify stale or spoiled food in given food samples.

**CHECK YOUR PROGRESS**

**A. Multiple Choice Questions**

1. .... is the sum of all desirable characteristics of food that are acceptable to consumers
  - a) Food quality
  - b) Food spoilage
  - c) Food safety
  - d) None of the above
2. Milk is .....
  - a) Highly perishable
  - b) Semi-perishable
  - c) Non-perishable
  - d) None of the above
3. The basic objective of maintaining personal hygiene is to break the cycle of transmission of.....
  - a) oxygen
  - b) micro-organisms
  - c) light
  - d) None of the above
4. Hands should be washed with water and soap for at least:
  - a) 5 seconds
  - b) 20 seconds
  - c) 15 seconds
  - d) 10 seconds
5. CIP stands for

- a) Clean inside the place
- b) Cleaning instrument place
- c) Clean-in-place
- d) None of the above

**B. Fill in the Blanks**

1. Iodine solution is commonly used for .....in bakery industry.
2. Clean-out-of-place (COP)is employed for cleaning mobile and .....
3. Freezer is maintained at temperatures.....
4. Hot holding unit maintained at ..... or above.
5. Frosted cakes are stored in \_\_\_\_\_.

**C. Mark the statement True or False**

1. Personal hygiene practices suggest to keep nails short and clean.
2. Diarrhoea, cholera and typhoid are not caused by unsafe food.
3. Oil absorption capacity is an external characteristic of food quality determination.
4. Cleaning removes dirt and grease, whereas sanitization ensures removal of harmful microorganism.
5. Minimum immersion time for chlorine solution with 50-90 ppm is 30 seconds.

**SESSION 2: FOOD SAFETY STANDARD AND LEGISLATION****Food safety**

Food borne illnesses are caused due to consumption of food containing harmful micro-organisms which subsequently grow and multiply in the intestinal tract resulting in fatality in some untreated cases. The assurance that the particular food is safe for human consumption comes under the concept of food safety. Food safety measures ensure correct handling, preparation, and storage of food for preventing food borne illnesses like cholera, typhoid fever, tapeworm infection etc.

**Aspects of food safety**

The concept of food safety involves following aspects:

1. Protecting food from risks of contamination (microbiological, physical and chemical)
2. Preventing growth of harmful bacteria from multiplying to hazardous levels

3. Destroying harmful bacteria in the food.
4. Discarding unfit or contaminated food.

**Food Safety Hazards**

The concept of food safety also covers food safety hazards. Hazardous food has the potential to cause harm to a human life. Hazards can exist in raw materials or enter at any stage of the food production.

**Categories of food safety hazards**

Hazards are broadly classified into following 5 categories as shown in Fig. 1.5.

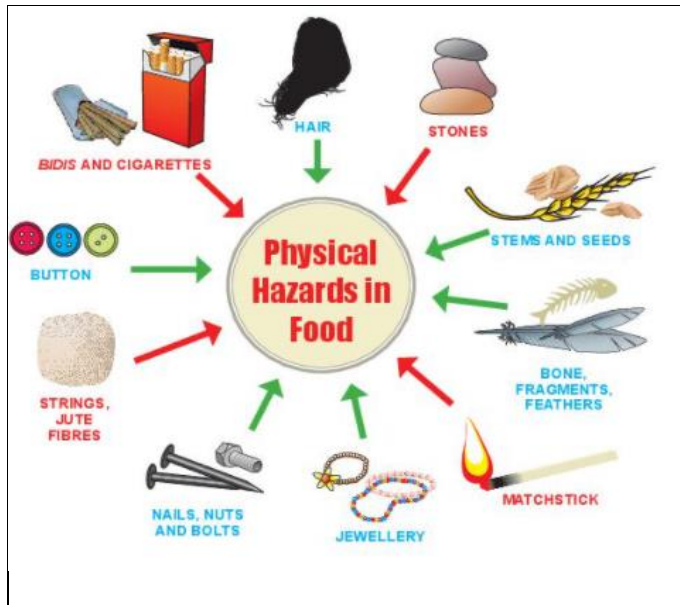


Fig. 1.5: Categories of food safety hazards

The various categories of food safety hazards are explained in Table 1.4.

**Table 1.4:** .....

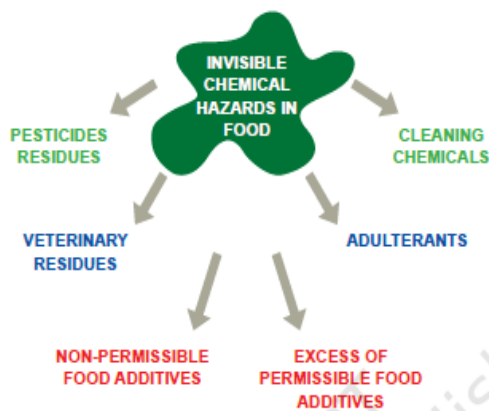
Category of hazards	Description
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**Physical hazards**

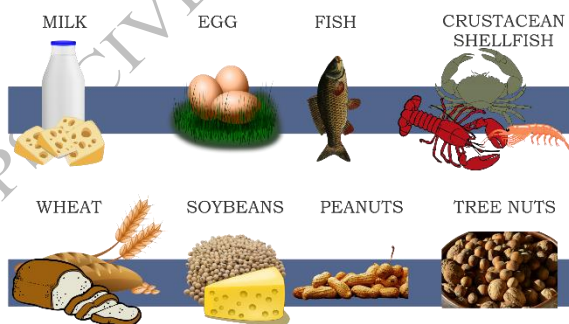
Objects like hair, threads, jute fiber, nails, bolts, jewelry, small pieces of stone etc. can cause serious injury upon consumption.

**Chemical hazards**



Chemical hazards can occur at any stage of bakery production. Cleaning agents and pesticides coming in contact with food can cause serious hazards. A food containing additives, food colors or preservatives beyond permissible limits becomes hazardous for human consumption.

**Allergenic hazards**



*Major food allergens*

Some people are allergic to certain food ingredients. Eating of allergens such as gluten, lactose, nuts, soybean and eggs may trigger allergic reactions in such people. This is called food allergy. Therefore, it is important to mention such allergens on the packaging or in the menu.

**Food adulteration**

The foreign or inferior substance added to food is known as 'adulterant'. Food adulteration is illegal practice of increasing profits by addition of foreign material (e.g. water in milk), inferior substance (e.g. chalk powder in flour, papaya seeds in pepper) and removal of vital element (e.g. removal of oil from almond seeds). Adulteration can sometimes occur unintentionally also.

**Food safety standards and legislations**

The food manufacturing units in the country are regulated by the Food Safety and Standards Authority of India (FSSAI) which is an autonomous body established under the Ministry of Health and Family Welfare, Government of India. The FSSAI has been created under the Food Safety and Standards Act, 2006. FSSAI is responsible for protecting and promoting public health through the regulation and supervision of food. Food safety license registration under FSSAI is mandatory for bakery and patisserie units.

**Food Safety Management System (FSMS)**

A food hazard or contaminant can enter the food chain at any stage, such as production, manufacture, processing, preparation, treatment, packing, transport or storage. Therefore, adequate control throughout the food chain is essential to safeguard the food. Food safety management system refers to the implementation of following:

1. Good Handling Practices
2. Good Manufacturing Practices
3. Hazard Analysis and Critical Control Point
4. ISO 9001:2000 – Quality Management System (QMS)

5. Any other practices as may be specified by regulation, for the food business

### ***Good Handling Practices (GHP)***

GHP indicates a comprehensive approach from the farm to the store or consumer, in order to identify potential sources of risk. GHP indicates what steps and procedures are needed to minimise the risk of contamination. GHP further ensures that all persons handling food follow good hygiene practices.

### ***Good Manufacturing Practices (GMP)***

GMP ensure that manufacturers of patisserie units undertake proactive steps for safety of their food products. GMP prevent false labeling and help the consumer in purchasing products that are not harmful. GMP is based on following ten principles:

1. Design and construct the facilities and equipment properly
2. Following written procedures and instructions
3. Documentation of work processes
4. Validation of work processes
5. Recording step by step operating procedures
6. Monitoring facilities and equipment
7. Designing, developing and demonstrating job competence
8. Protecting food against contamination
9. Controlling components and product related processes
10. Conducting periodic audits

### ***Hazard Analysis Critical Control Point (HACCP)***

HACCP are the seven principles to identify various hazards involved in food manufacturing process. It involves identification of hazards, assessment of chances of occurrence of hazards during each step of the food chain from raw material procurement, manufacturing, distribution to usage of food products and defining the various measures for control of hazards.

The seven principles of HACCP are given in Fig. 1.6.

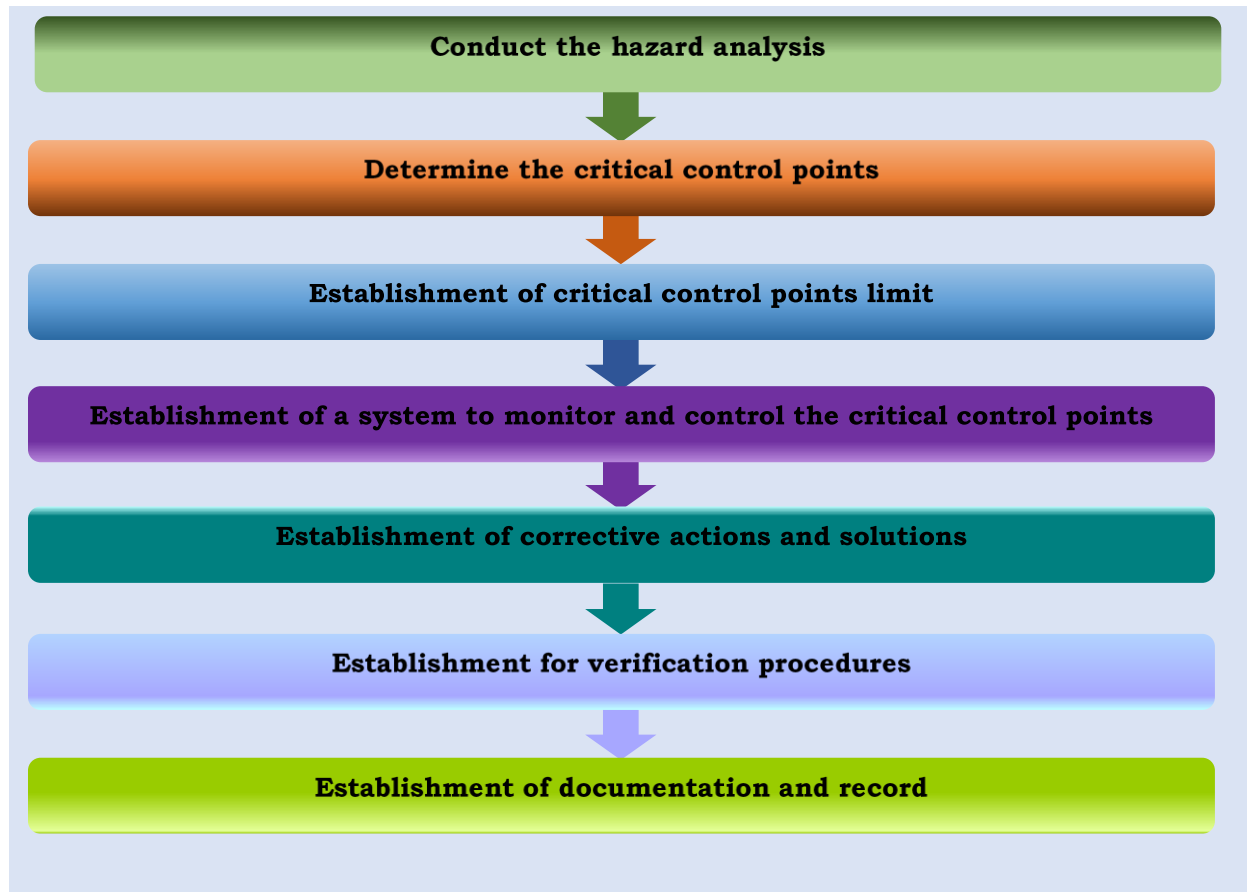
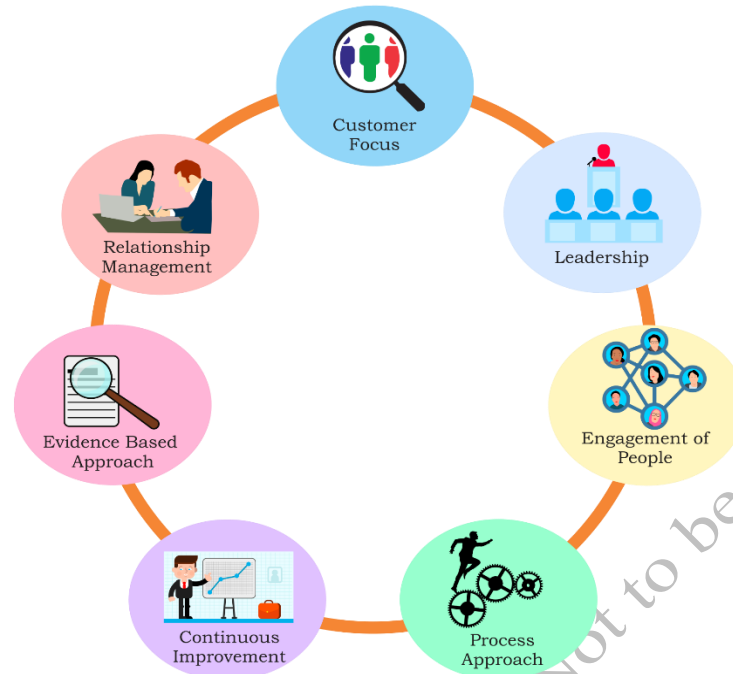


Fig. 1.6: Seven principles of HACCP

### **ISO 9001:2000 – Quality Management System (QMS)**

A management system is the set of interacting elements that allow an organization to establish policies and achieve objectives. The coordinated activities to direct and control an organization with regard to quality are called Quality Management System (QMS). The QMS refers to the managerial ability to control food safety hazards. The seven principles of quality management system are shown below in Fig 1.7.





*Fig 1.7: Principles of quality management*

These principles are briefly described here:

1. **Customer-focus:** Bakery units should understand customers' current and future needs and fulfil their expectations.
2. **Leadership:** Creating an environment where bakery staff work together to achieve the organisational goals through trust building and collective efforts.
3. **Engagement of people:** Full involvement of employees enables their abilities to be used for the organization's benefit.
4. **Process approach:** Systematic identification and management of the various processes employed within the bakery unit to obtain the desired results.
5. **Continuous improvement:** It should be a permanent objective of the bakery unit, leading to continuous improvements in the overall performance.
6. **Evidence-based approach for decision making:** Effective decisions are based on the analysis of reliable evidence, data and information.

7. **Relationship management:** Establishing strong relationship with suppliers to enhance the ability of both parties to create value.

### What have you learned?

After completing this session, you are able to describe:

- aspects of food safety
- Food safety standards and legislations in India.
- food safety management system.

### ACTIVITY

1. Draw the diagram representing principles of HACCP, GMP and QMS.
2. Video demonstration of steps of HACCP.

### CHECK YOUR PROGRESS

#### A. Fill in the Blanks

1. HACCP identifies various hazards involved in ..... process.
2. The coordinated activities to direct and control an organization with regard to quality are called.....
3. Information of ..... is mentioned on the packaging or in the menu.
4. FSSAI stands for \_\_\_\_\_.
5. FSMS stands for \_\_\_\_\_.

#### B. Multiple Choice Questions

1. Food safety aspects involves
 

a) Prevents contamination of food bacteria	b) prevents growth of harmful bacteria
c) destroy harmful bacteria	d) All of the above
2. Physical hazards include
 

a) hair, threads, jute fiber	b) microorganism
c) pesticides	d) allergens
3. The additives, food colors or preservatives beyond permissible limits are
 

a) biological hazards	b) physical hazards
c) chemical hazards	d) None of the above
4. ....is considered an allergen ingredients.

- |           |              |
|-----------|--------------|
| a) Gluten | b) Sugar     |
| c) Oil    | d) Chocolate |
5. The foreign or inferior substance added to food is known as
- |                    |                       |
|--------------------|-----------------------|
| a) adulterant      | b) supplement         |
| c) flavoring agent | d) aromatic component |

**C. Mark the statement True or False**

1. Food adulteration is not an illegal practice.
2. Personal hygiene deals with hygiene or sanitary conditions of an individual.
3. FSSAI has been created under the Food Safety and Standards Act, 2006.
4. GMP is based on ten principles.
5. HACCP is based on nine principles to identify various hazards involved in food manufacturing process.

### **SESSION 3: SAFETY SIGNS AND WASTE DISPOSAL IN A PATISSERIE UNIT**




#### **Safety Signs**






The primary importance of displaying safety signs is to prevent injury and ensure that the staff and visitors are well aware of the possible dangers and hazards in the patisserie unit. Therefore, display of the required safety signs is necessary in any patisserie unit. The five broad categories of safety signs employed in patisserie unit are shown Fig. 1.8:

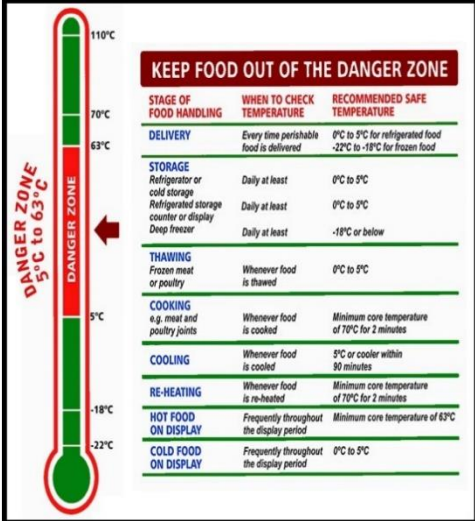







*Fig. 1.8: Types of safety signs*

**Safety signs and symbols used in food preparation areas**

S.No.	Sign/Symbol board	Description
1		<p>Used to instruct the staff to cover food with foils, wraps or lids.</p>
2		<p>This sign is placed either on or near work station to remind the staff to wear aprons to protect the uniform from getting soiled or stained.</p>
3.		<p>This sign is placed on those taps whose water is used for washing food equipment.</p>

<p>4.</p>		<p>This sign is placed on those water taps whose water and sink design is used for washing food material.</p>
<p>5.</p>		<p>Placed near entrance and workstation to remind staff and visitors to wear chef cap and hairnet etc.</p>
<p>6.</p>		<p>Placed near entrance of kitchen, wash basins and staff toilets.</p>
<p>7.</p>		<p>Used to instruct the staff for regular verification of storage temperature.</p>
<p>8.</p>		<p>Placed near water taps meant for washing hands.</p>

<p>9.</p>	 <p><b>KEEP FOOD OUT OF THE DANGER ZONE</b></p> <table border="1"> <thead> <tr> <th>STAGE OF FOOD HANDLING</th> <th>WHEN TO CHECK TEMPERATURE</th> <th>RECOMMENDED SAFE TEMPERATURE</th> </tr> </thead> <tbody> <tr> <td><b>DELIVERY</b></td> <td>Every time perishable food is delivered</td> <td>0°C to 5°C for refrigerated food -2°C to -18°C for frozen food</td> </tr> <tr> <td><b>STORAGE</b></td> <td></td> <td></td> </tr> <tr> <td>Refrigerator or cold storage</td> <td>Daily at least</td> <td>0°C to 5°C</td> </tr> <tr> <td>Refrigerated storage counter or display</td> <td>Daily at least</td> <td>0°C to 5°C</td> </tr> <tr> <td>Deep freezer</td> <td>Daily at least</td> <td>-18°C or below</td> </tr> <tr> <td><b>THAWING</b></td> <td></td> <td></td> </tr> <tr> <td>Frozen meat or poultry</td> <td>Whenever food is thawed</td> <td>0°C to 5°C</td> </tr> <tr> <td><b>COOKING</b></td> <td></td> <td></td> </tr> <tr> <td>e.g. meat and poultry joints</td> <td>Whenever food is cooked</td> <td>Minimum core temperature of 70°C for 2 minutes</td> </tr> <tr> <td><b>COOLING</b></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Whenever food is cooled</td> <td>5°C or cooler within 90 minutes</td> </tr> <tr> <td><b>RE-HEATING</b></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Whenever food is re-heated</td> <td>Minimum core temperature of 70°C for 2 minutes</td> </tr> <tr> <td><b>HOT FOOD ON DISPLAY</b></td> <td>Frequently throughout the display period</td> <td>Minimum core temperature of 63°C</td> </tr> <tr> <td><b>COLD FOOD ON DISPLAY</b></td> <td>Frequently throughout the display period</td> <td>0°C to 5°C</td> </tr> </tbody> </table>	STAGE OF FOOD HANDLING	WHEN TO CHECK TEMPERATURE	RECOMMENDED SAFE TEMPERATURE	<b>DELIVERY</b>	Every time perishable food is delivered	0°C to 5°C for refrigerated food -2°C to -18°C for frozen food	<b>STORAGE</b>			Refrigerator or cold storage	Daily at least	0°C to 5°C	Refrigerated storage counter or display	Daily at least	0°C to 5°C	Deep freezer	Daily at least	-18°C or below	<b>THAWING</b>			Frozen meat or poultry	Whenever food is thawed	0°C to 5°C	<b>COOKING</b>			e.g. meat and poultry joints	Whenever food is cooked	Minimum core temperature of 70°C for 2 minutes	<b>COOLING</b>				Whenever food is cooled	5°C or cooler within 90 minutes	<b>RE-HEATING</b>				Whenever food is re-heated	Minimum core temperature of 70°C for 2 minutes	<b>HOT FOOD ON DISPLAY</b>	Frequently throughout the display period	Minimum core temperature of 63°C	<b>COLD FOOD ON DISPLAY</b>	Frequently throughout the display period	0°C to 5°C	<p>This sign is placed near walk-ins, food storage racks and workstation to cook and store food at the required temperature to prevent any food hazard.</p>
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<p>11.</p>		<p>Placed near those water taps whose water is not suitable for drinking, but can be used for washing utensils, work station, floor, etc.</p>																																																
<p>12.</p>		<p>Placed near entrance, corridors, public area, staff room, kitchen and staff canteen to prohibit people from smoking.</p>																																																

13.		Placed near water taps which supply hot water for cooking and cleaning purposes.
14.		Placed on the floor while cleaning and washing is in progress to avoid any kind accident or injury.

*Fig. 1.9: Safety signs and symbols used in food preparation areas*

### **Segregation and treatment of waste**

Patisserie units generate such waste that can be either recycled or disposed. Therefore, knowledge of waste identification, segregation, collection and final disposal of waste is necessary. Waste produced in bakeries and patisseries is segregated into following types:

#### **i. Food waste**

Food waste in bakeries and patisseries includes the following:

- Dough
- Flour
- Sugar
- Burnt and broken biscuits
- Burnt and rejected loaves
- Expired bakery products
- Cake crumbs
- Trimmings of cakes and pastry



- Food residues like fats and creams

This waste is sold to dealers in animal feeds. Precaution is taken that the waste is free of contamination of any type.

### **ii. Fats, Oil and Grease**

Patisserie units use high amount of fats, oil and grease (FOG) in food production. The waste generated from used fat and oil is generally non-toxic. It can be sold to the recyclers.

### **iii. Non-Food Waste**

The following types of non-food waste can be recycled by packaging material suppliers:

- Plastic films
- Aluminium foils
- Grease proof papers
- Wrappers
- Cartons
- Polythene material
- Sacks and packing bags
- Papers

### **iv. Non-food solid waste**

- Tin
- Glass
- Cardboard boxes
- Metallic scrap

Metallic scrap can be sold to scrap merchants.

### **v. Waste water**

In patisserie units a lot of waste water is generated from cleaning including equipment cleaning and floor washing. This water contains flour, sugar, yeast, oil and grease etc. This waste water can safely be used for watering the gardens.

Waste storages and dust bins are kept clean, free of pests and covered with lid. The collected waste is disposed off as per local regulations.

### What have you learned?

After completing this session, you are able to describe:

- aspects of food safety
- Food safety standards and legislations in India.
- food safety management system.

### ACTIVITY

1. Demonstration on disposing waste safely and correctly in a designated area.

### CHECK YOUR PROGRESS

#### A. Multiple Choice Questions

- |                                |                             |
|--------------------------------|-----------------------------|
| a) Safety signs prevent        | b) spoilage of food         |
| c) injury from possible danger | d) destroy harmful bacteria |
| e) None of the above           |                             |
1. Safety signs are broadly classified in to .....categories.
 

a) Five	b) Four
c) Three	d) Six
  2. Fire sign contain white symbol on ..... background.
 

a) Blue	b) Purple
c) Red	d) Yellow
  3. Which of the following is used near water taps which supply hot water for cooking and cleaning purposes?
 

a) Caution very hot water only	b) The sink is for food wash
c) Caution wet floor	d) All of the above
  4. To instruct the staff for regular verification of storage temperature, which of the following instruction is used
 

a) Maintain low temperature temperature	a) Check storage
c) Maintain high temperature	d) None of the above

**B. Fill in the Blanks**

1. Food waste is sold to dealer in .....
2. FOG stands for.....
3. Plastic film, aluminium foils, cartons are .....
4. Warning sign show the hazard in \_\_\_\_\_ colour on a .....coloured background.

**C. Mark the statement True or False**

1. Mandatory signs are depicted in white on blue circular background.
2. Prohibition signs are depicted in red over the prohibited action which is shown in black. True
3. Warning sign have square.
4. Prohibition sign are used to provide warning about a life-threatening hazard.
5. Prohibition signs specify behaviour or action which are not permitted.

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## Module 2

# Essentials of Patisseries

### Module Overview

In previous unit, you have learnt about the various aspects of food quality, food safety and disposal of food waste. You have also learnt about the various food safety hazards occurring during various stages of food production. Now in this unit, you will learn about the quality parameters of raw ingredients used in patisserie, tools and equipment used in patisserie production along with packaging and storage of patisserie products. You will also understand the cleaning procedures for open and closed equipment employed in patisserie.

### Learning Outcomes

After completing this module, you will be able to:

- Implement effective hygiene and sanitation practices in patisserie production, and maintaining a sanitized work environment.
- Identify and describe the tools and equipment used in patisserie production, , and understand their roles in producing high-quality patisserie products.
- Explain best practices for packaging and storage of patisserie products, including packaging materials, storage conditions, and shelf-life considerations to maintain product freshness and quality.
- Describe post-production operations in patisserie, and distribution processes to ensure efficient operations and customer satisfaction

### Module Structure

- Session 1: Maintaining Hygiene and Sanitation
- Session 2: Tools and Equipment in Patisserie Production
- Session 3: Packaging and Storage of Patisserie Products
- Session 4: Post- Production Operations

## SESSION 1: QUALITY PARAMETERS OF RAW INGREDIENTS

The quality of raw ingredients used in preparing any food item is of paramount importance. Quality parameters of raw materials used in patisserie such as flour, sugar, fat, leavening agents, eggs, flavors and condiments and creams are discussed below:

### 1.1 Flour

The type and quality of the flour is consistently maintained in patisserie production. Any change in the type and quality of the flour will result in inconsistency in the final product. The quality of flour used for making pastry products is altered or improved by addition of flour improvers, conditioners and enzymes. White flour free from husk gives bright colour and smooth texture to the dough. It is advisable to use cake flour which contains 8 to 11 % protein. If cake flour is not available, APF (all-purpose flour) can be used.

### 1.2 Sugar

Sugar imparts sweet flavour, softness, moisture, texture, crunch and colour as well as extends the shelf life of cakes and pastries. Sugar acts as a creaming agent when agitated with fat for preparing icing for cakes and pastries. The sugar particle size plays a vital role in developing the right texture in the product. For example, partially undissolved sugar gives lesser spread to cookie dough and causes surface cracking and recrystallization of sugar.

#### ***Quality parameters for sugars:***

- Clean and free from any foreign material and insects.
- Properly packed.
- Must be free from any moisture and stored at cool and dry place.
- Liquid sugars like invert sugar, glucose syrup must be clear, clean and free from any foreign particles or residues.
- Icing sugar must be free from lumps and percentage of corn starch must not exceed 5 %.

### 1.3 Fat

Butter is the most commonly used fat for retaining moisture, imparting flavour and providing texture to the cakes and pastries. It is also used in preparation of icings and frostings for the cakes. A good quality fat like butter containing 80% milk fat adds richness, texture and aromatic taste to the bakery products.

Replacing butter with shortening or margarine reduces the cost of production but the quality of the pastry products is compromised.

Butter is hard and brittle when cold and becomes very soft at room temperature and can melt easily. Therefore, handling of laminated dough made with butter is more difficult in comparison to the dough made with shortening or margarine due to tough, elastic and waxy texture of the shortening and margarine.

### **Quality parameters for fats**

- Properly packed when received
- Free from any dark spots
- Free from foul smell and rancidity
- Have shelf life of minimum 6 months
- Free from any sediments and foreign material

### **1.4 Leavening agents**

Leavening agents are used to obtain volume, shape and texture. These agents produce gases that helps the dough to rise. The gases released need to be retained in the bakery product until the structure is firm enough to hold shape due to coagulation of proteins and gelatinization of starches in the dough or batter.

Three types of leavening agents used in bakery production are yeast, eggs and chemical leaveners such as ammonium bicarbonate, sodium bicarbonate (baking powder), potassium bicarbonate and sodium carbonate.

### **Quality parameters of leaveners**

- ✓ Chemical leaveners must be in powder form and free flowing.
- ✓ Chemical leaveners must be free from any moisture.
- ✓ Packets of dry yeast and chemical leaveners must be sealed and free from any cuts.
- ✓ Must be within expiry date.
- ✓ Branded leaveners give better and consistent results.

### **1.5 Eggs**

The egg consists of yolk, white and shell. The yolk is mainly composed of fat in the form of phospholipids, triglycerides and cholesterol. The white portion in

The leaveners must be used in appropriate quantities.

No usage of leavening agent or using lesser amount will result in dense and heavy products.

Right quantity of leavening agent will result in desired product outcome.

Excess use of leavening agent will cause the product loose its volume and collapse.

fresh eggs consist of proteins in the form of albumin, small amounts of sugar and minerals. Egg white is thicker when fresh and starts to become thin and watery as the egg becomes old. Therefore, use of fresh eggs is recommended in a large variety of patisseries. Eggs affect the texture and volume of the product by their actions as emulsifier, leavening agent, binding agent and moistening agent.

### **Quality parameters of eggs**

- Choose right form of an egg as per the recipe, i.e., fresh, frozen or in powdered form.
- The usage of eggs is different in different recipes. Hence, it is important to follow the standard recipe for a particular product.
- If frozen eggs are used, they are pasteurized to avoid any cross contamination.
- Powdered egg white (albumin) is used in making of meringues, marshmallow and other confectionery.
- Powdered egg yolk (lecithin) is used as emulsifier in cakes and sponges.

### **1.6. Flavoring agents**

Flavouring agent are additives that are used to enhance taste and aroma of in patisserie products. A large variety of natural extracts such as vanilla bean extracts, cocoa extracts and artificial essences such as strawberry essence, pineapple essence and vanilla essence are used to impart desirable flavor in the patisserie products.

### **Quality parameters for flavouring agents**

- Must be of trusted brands.
- The packaging must be free from any leakage, sediments and within the expiry date.
- Whether the flavouring agent is natural or artificial must be described on the packaging.
- Must not have acquired any off- flavour or taste.

### **Condiments and herbs**

A variety of condiments and herbs are also used in pastry products to enhance the flavours. Cinnamon, cloves, cardamom and ginger are popularly used for flavors in cakes, pastries and cookies.

Fresh herbs and edible flowers like mint, basil, thyme, rosemary, oregano, rose, pansies and hibiscus are used as garnishes for many plated desserts, cakes and pastries.



Fig. 2.1: Muffin decorated with Pansies

### **Quality parameters for condiments and herbs**

- Condiments must be free from any bad odour, taste or texture and foreign material.
- Packaged condiments must have a shelf life of minimum 6 months
- Ensure freshness of the herbs
- Fresh herbs are crisp and vibrant in color.
- Dry herbs must retain original aroma and flavour and must be within the expiry date.

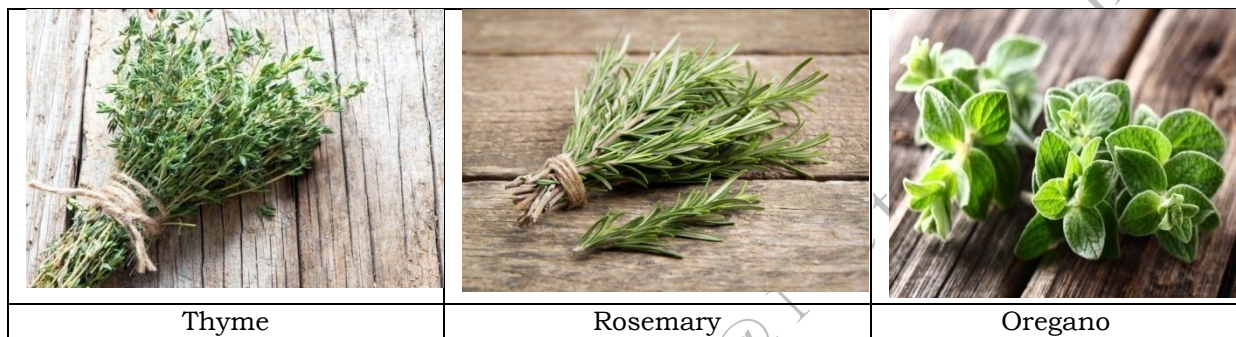


Fig. 2.2: Commonly used herbs in patisseries

## **1.7 Cream**

The cream used in patisseries can be of dairy origin or non-dairy origin. Cream is used in various forms such as cream filling, custard and frosting on cakes and pastries. To achieve the various forms, the cream is whipped as per the requirement of the recipe.

### **1.7.1 Fresh Milk based Cream ( Dairy Cream)**

It is used in making mousse, ice-creams, frosting for cakes, pastries etc. The dairy cream has less shelf life as compared to non-dairy cream. Therefore, desserts based on dairy cream are chilled and consumed within two to three days of preparation. Dairy cream is not sweet and sugar is added during whipping.

### **1.7.2 Non-Dairy Cream (Cooking Cream)**

Non-dairy cream is made with hydrogenated vegetable fats and stabilizers. It is cheaper and easy to use than dairy cream. Such cream is already sweetened during manufacturing and preferred over dairy cream because it whips faster and retains its structure when applied on cakes. It is used in preparing desserts like mousse, ganache, frosting for cakes and pastries. The non-dairy cream can be easily used for 4 to 5 days at room temperatures and can be stored for 7 to 10 days under refrigeration.



**Quality parameters for cream**

- Always procure cream with at least 35 % fat content to ensure proper whipping.
- The cream procured from the market should be in chilled condition. Warm cream will never whip up. Cold cream makes the entire process faster.
- Refrigerate the procured cream.

**What have you learned?**

After completing this session, you are able to describe:

- Types of raw ingredients used in patisserie preparations
- Quality parameters of raw ingredients

**Practical Exercise****Activity**

Collect raw materials used in patisserie and evaluate them on the basis of various respective quality parameters.

**Check Your Progress****A. Multiple Choice Questions**

1. Cake flour which contains..... percent of protein.
  - a) 7-9 %
  - b) 8 to 11 %
  - c) 11-15 %
  - d) None of the above
2. Sugar acts as a .....agent when agitated with fat

**Pastry Crafts**

- c) Moistening
  - d) Flavouring
  - a) All of the above
3. Corn starch percent in icing sugar must not exceed....
    - a) 3 %
    - b) 2 %
    - c) 5 %
    - d) 10%
  4. Leavening agent produce ..... that helps the dough to rise.
    - a) Gas
    - b) Flavours
    - c) Water
    - d) All of the above
  5. Sodium bicarbonate is commonly known as
    - a) Baking powder
    - b) Baking soda
    - c) Shortening agent
    - d) None of the above

**B. Fill in the Blanks**

1. The egg consists of yolk, white and.....

2. Non-dairy cream is made with hydrogenated vegetable fats and.....
3. Powdered egg yolk (lecithin) is used as .....in cakes and sponges. ....
4. Packaged condiments must have a shelf life of minimum.....
5. Three types of leavening agents used in bakery production are yeast, eggs and .....

**C. Mark the statement True or False**

1. Chemical leaveners must be in powder form and free flowing.
2. Excess use of leavening agent will cause the product loose its volume and collapse.
3. The white portion in fresh eggs consist of fat.
4. Dairy cream has less shelf life as compared to non-dairy cream.
5. Butter contains 50% milk fat.

**SESSION 2: TOOLS AND EQUIPMENT IN PATISSERIE PRODUCTION**

Various tools and equipment used in bakery and patisserie production. Manually preparing large quantities of patisserie products is a tedious task. Use of proper tools and equipment makes the task easy, faster and maintains the consistency of the product. The pâtissier has to assess the quantities to be produced before choosing the proper tools and equipment. Therefore, a thorough knowledge of the various tools and equipment along with their functions is necessary. The various tools and equipment used in patisserie are shown in Fig. 2.3.

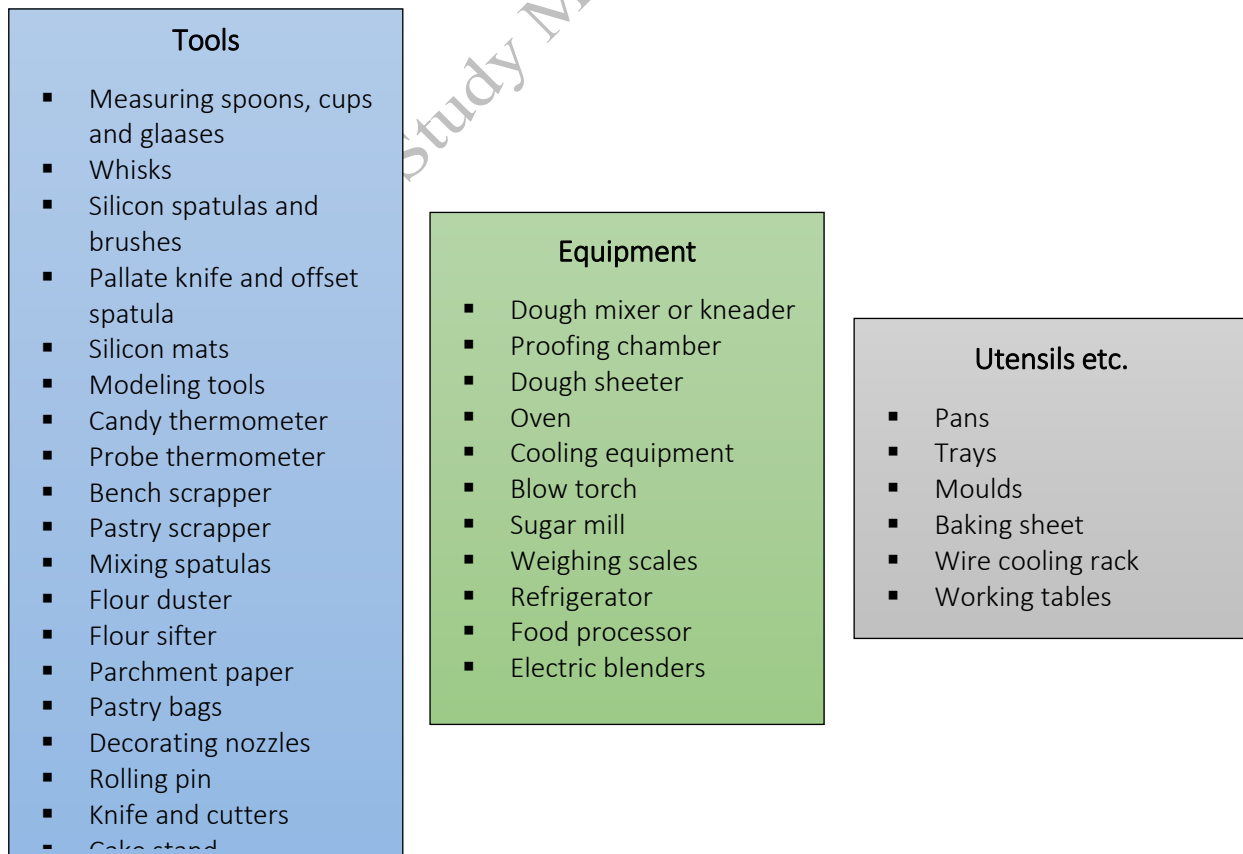


Fig. 2.3: Commonly used tools and equipment

Most of the tools and equipment shown in the above figure have been discussed in detail in class 9<sup>th</sup> textbook of “Baking Technician” and class 11<sup>th</sup> textbook of “Craft Baker”. However, a discussion of equipment widely used in patisserie is given subsequently.

**2.1 Dough mixers**

The mixing needs in bakery and patisseries differ on the basis of size of the unit, type of products being prepared and production capacity. For example, the planetary mixer is highly appropriate for mixing cake batters in a small and medium sized bakery whereas a horizontal or a continuous mixer is required for large scale production. The various types of mixers are discussed in Fig. 2.4:.

<p><b>1. Planetary Mixer</b></p> <p>The mixer has central mixing wand which rotates around a stationary bowl. It has three detachable attachments viz. dough hook, flat beater and a wire whisker. It is used for mixing frostings, cake batters, and dough for cookies.</p>	
<p><b>2. Spiral Mixer</b></p> <p>Spiral mixer is used to gently and efficiently mix the dough, allowing proper development of the gluten structure without overworking the ingredients. It has a rotating bowl that moves around a spiral-shaped blade.</p>	
<p><b>3. Horizontal Mixer</b></p> <p>Horizontal mixer is one of the most popular mixers for industrial production as it allows bulk processing of flour, sugar, dough etc. in a short duration. It is so configured that when the dough is mixed, the next batch is continually fed into the machine. The dough easily exits the machine into a trough for convenient</p>	

transport after the mixing process is complete.

**4. Continuous Mixer**

Continuous mixers have rotors within barrel, where the ingredients are incorporated at one end of the mixer and the dough leaves the mixer at the other end in a continuous flow.



Fig. 2.4: Types of mixers used in patisserie

**2.2 Proofing Chamber**

Proofing chambers provide desired temperature and humidity for production of yeast leavened pastry and other bakery products. They are used for proofing of the dough for large scale production.

**2.3 Dough Sheeters**

Dough sheeters are used for rolling dough for pastries and fondant for decorating cakes. Rolling the fondant manually for big cakes may give inconsistent results. Hence dough sheeter can ease the task and saves man power. It is also used in laminating croissant and Danish pastry doughs for maintaining right thickness of the dough and even spread of butter resulting in smooth and uniformly rolled dough.

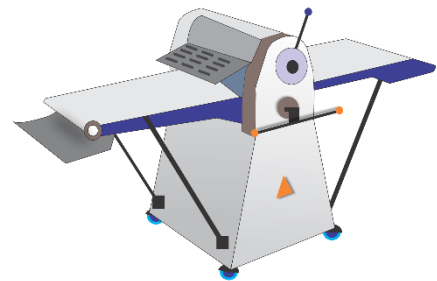


Fig. 2.5: Dough sheeter

**2.4 Ovens**

The traditional wood fired ovens were the only option available for baking in the ancient times. Now a days different types of ovens are used to bake pastry and bakery products. The industrial revolution gave a boom to the bakery and pastry sector and ever since the bakery and pastry equipment industry have continuously evolved. Let us discuss below some of the most commonly used ovens:

<p><b>1. OTG (Oven, toaster, griller)</b></p>	<p>Simple to use, operate and maintain. The OTG is affordable for small baking purposes. The oven uses radiant heat created by a stationary heating element, situated at the bottom and top of the baking chamber. The heat is then redistributed throughout the chamber for baking.</p>
<p><b>2. Deck Oven</b></p>	<p>Deck ovens are so named because they have individual decks or compartments for baking. These ovens can be of single or multiple decks. Usually baking surface is made of stone or</p>

	ceramic where the food items can be directly placed for baking. The oven can be used for dry baking as well as steam baking. It uses three methods of heat transference i.e., conduction, convection and radiation.
<b>3. Rotary Rack Oven</b>	Rack oven is used for producing high volumes of bread, bagels, and pastries.
<b>4. Conveyor Oven</b>	This oven is used for producing goods in bulk and used in industrial units. These types of ovens comprise of conveyor belts, which then moves at a desired speed through the baking chamber where the oven blows hot air of controlled intensity for a thorough and consistent baking on all sides.
<b>5. Convection Oven</b>	This oven has a fan that circulates pre-heated air around the baking chamber thereby creating uniformly distributed heat. These ovens eliminate any cold or hot spots and bake the product faster with a color uniformity.

## 2.5 Cooling equipment

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Fridges and freezers are commonly employed to store cakes and pastries. Many pâtissiers prefer preparing pastries made with mousses etc. in advance and store it in a freezer below  $-18^{\circ}\text{C}$ . These frozen products are thawed, glazed and decorated as and when the demand arises.

Cake and pastry display cabinets are kept cool using refrigeration to maintain the moisture, freshness and shelf life of the products. The display cabinets help the customer get the visual appeal of the product. Such display cabinets are equipped with cooling thermostats and humidity control. They are available in horizontal and vertical shapes.

### 2.6 Working table tops

The preparation of any recipe needs a working surface. A variety of work tables like stainless steel tables or stone top tables are used for rolling, cutting dough, and decorating the cakes.



Fig. 2.6: Working table

### 2.7 Cooling and storage racks

A shelving system is adopted for storage of products ready for prior to baking and post baking. Cooling racks with multiple trays helps a baker to properly organize the pre and post production batches of products. These racks have mobile trolleys with plain trays and grilled racks.



Fig. 2.7: Cooling and storage rack

### 2.8 Cooling requirements in patisserie

A variety of items used in preparation of cakes and pastries require freezing to keep it in usable condition for longer period of time. Raw ingredients like milk, cream, butter, cheese, spreads, sauces, chocolate garnishes, fresh fruits, fruit puree, are stored at  $3$  to  $5^{\circ}\text{C}$  to avoid spoilage of raw material.

Semi-processed products like puff pastry sheets, phyllo pastry sheets, cakes, desserts and pastries are also stored at temperature between  $-18^{\circ}\text{C}$  -  $22^{\circ}\text{C}$  to maintain freshness. Pastry shops, hotels, and cafes etc. freeze the produce to avoid waste and supply the products on demand.

For faster freezing of patisserie items, blast chillers are used. These chillers allow quick cooling of the items by blowing cold air ( -30 to °C). The low temperature of the blast chiller stops enzymatic action, oxidative reactions and microbiological growth due to less availability of free water.

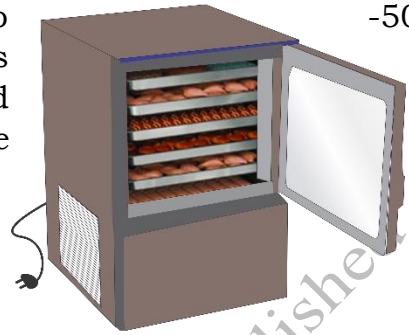


Fig. 2.8: Blast chiller

**What have you learned?**

After completing this session, you are able to describe:

- Types of tools and equipment used in patisserie preparations
- About dough mixer, dough sheeter, ovens, cooling equipment

**Activity**

1. Identify and enlist the tools and equipment available in your laboratory.

**Check Your Progress**

**A. Multiple Choice Questions**

1. .... has central mixing wand which rotates around a stationary bowl.
 

a) Planetary mixer	b) Spiral mixer
c) Horizontal mixer	d) Continuous mixer
2. ....has a rotating bowl that moves around a spiral-shaped blade
 

a) Planetary mixer	b) Spiral mixer
c) Horizontal mixer	d) Continuous mixer
3. ....have rotors within barrel.
 

a) Planetary mixer	b) Spiral mixer
c) Horizontal mixer	d) Continuous mixer
4. Proofing chambers are used for production of
 

a) Yeast leavened pastry	b) Biscuits
c) cake	d) None of the above
5. OTG stands for
 

a) Oven type griller	b) Oven, toaster, griller
c) Oven, toaster, grinder	d) None of the above

**B. Fill in the Blanks**

1. .... are used for quick freezing of patisserie items.

2. Blast chiller blow the cold air of temperature ranging from.....
3. Chocolate garnishes and fruit puree are stored at temperature between .....
4. .... are used for rolling dough for pastries and fondant.
5. Planetary mixer has three detachable attachments viz. dough hook, flat beater and a .....

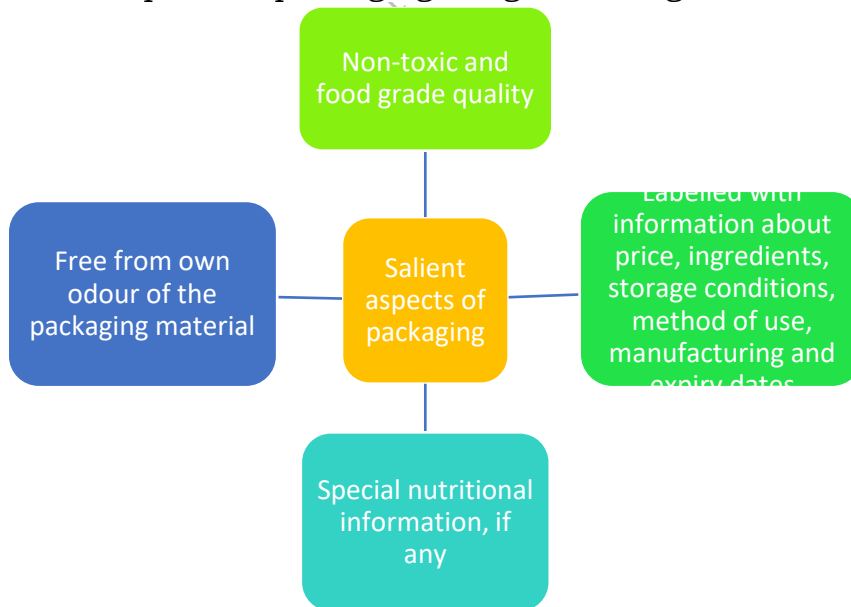
**C. Mark the statement True or False**

1. Deck oven can be used for dry baking as well as steam baking.
2. Conveyor ovens are used in small and medium sized patisseries.
3. The white portion in fresh eggs consist of fat.
4. Dairy cream has less shelf life as compared to non-dairy cream.
5. Butter contains 50% milk fat.

**SESSION 3: PACKAGING AND STORAGE OF PATISSERIE PRODUCTS**

Packaging affects shelf life, storage, transportation and branding of patisserie products. Packaging also protects the products from spoilage, direct contact with dirt and hostile effects of environment. For proper packaging of patisserie, we need to know the type of product (dry or wet), its estimated shelf life, storage and risk due to mishandling of the product.

The four salient aspects of packaging are given in Fig. 2.9.



*Salient aspects of packaging*

Fig. 2.9:



A variety of food grade packaging materials are available in the market. Appropriate packaging materials for the patisserie product is selected considering the following factors:

1. Weight and shape of the product
2. Needs of the consumer
3. Cost effectiveness
4. Sealing method
5. Storage time of the product
6. Bio-degradability and recycling potential of the packaging material

Above factors are analysed before deciding the packaging requirements of bakery and pastry products in a unit.

### **Other considerations in packaging**

1. The majority of bakery products are sold fresh and can be stored at ambient temperature.
2. Pastry products are stored under controlled refrigeration to maintain their shelf life as they tend to spoil faster. For example, products such as cream cake, mousse cake, fruit-filled tarts, pies, and pastries are stored at 3 °C to 5 °C. Packaging material for these items are rigid enough to hold and protect the delicacy and decoration of the product against physical damage. Pastry products are stored in air tight container or wrapped with food grade biodegradable plastic wrap to keep out air and other contaminants.
3. Products like breads, buns etc. are commonly packed in vapor proof packaging material or in moisture proof cellophane plastic bags. They are heat-sealed to prevent crust formation on the top of breads and thus prevent them from becoming soggy. Packaging in this manner increases the storage duration of the product and allow its easier handling.



Fig. 2.10: Bread packaging  
Image: [bread packaging - Google Search](#)

4. Preservatives and additives are used to prevent growth of mould in bakery and pastry products to increase their shelf life. These days further improvements in shelf life are achieved through modified atmosphere packaging (MAP) using CO<sub>2</sub> (Carbon dioxide) and N<sub>2</sub> (Nitrogen). MAP drastically prevents the growth of microorganisms by minimizing the oxygen

content within the food packet. This extends the shelf life of the product and increases the overall profits. For example, tea cakes, muffins, cookies, chocolate bars etc. are generally packed using MAP.

5.

**3.1 Shelf life of pastry products**

Pastry products taste best when fresh. Two major concerns in shelf life of pastry products are mould growth and staling. Mould growth is common in the bakery products and influences the shelf life of bakery and pastry products. The shelf life of some bakery and pastry products in different condition is given in Table 2.1.



Fig. 2.11: .....

**Table 2.1: Shelf life of some bakery and pastry products in different condition**

Products	Ambient Temperature	Storage In Refrigerator	Storage in Freezer
Breads (made with preservatives and improvers)	2-4 days	7-15 days	3 months
Cake bases	1-2 days	4-7 days	4 months
Fruit cake made with preservatives and improvers (without icing and frosting)	1 month	4-5 months	12 months
Cookies	2-3 weeks	2 months	8-12 months
Breakfast pastries, Danish pastry	1-2 days	5 days	2 months

**Inventory management in patisserie**

Depending upon the shelf life of the products, two popular inventory management methods used in the industry are First-In, First- Out (FIFO) and First-Expired, First- Out (FEFO).

**FIFO**

Under the FIFO method we sell the products which have arrived first in the store. Therefore, older products are placed at the front of the shelf and newer products behind them. FIFO method avoids the problem of dead stock and losses to the firm.

**FEFO**

This method is particularly helpful for perishable patisserie products. It is the expiry date which is of central concern. Therefore, such items with the shortest shelf life are placed near to the front, if not directly at the front. This is likely to entice the customer to buy them first. The benefit of FEFO method is that it allows guarantee of product quality, customer satisfaction and reputation.

### What have you learned?

After completing this session, you are able to describe:

- Aspects of Packaging
- Shelf life of patisserie products
- Inventory management in patisserie

### Practical Exercise

#### Activity

Demonstrate cooling, packing and storage process of patisserie products.

### Check Your Progress

#### A. Multiple Choice Questions

1. Packaging material should be .....
  - a) Non-toxic
  - b) Free from odour
  - c) food grade quality
  - d) All of the above
2. Fruit-filled tarts, pies, and pastries are stored at
  - a) 3-5 °C
  - b) 1-3 °C
  - c) 11-18 °C
  - d) 13-15 °C
3. breads, buns etc. are commonly packed in .....packaging material.
  - a) Vapor proof
  - b) Heat proof
  - c) Oil proof
  - d) None of the above
4. Preservatives and additives are used to prevent
  - a) Growth of mould
  - b) Gas production
  - c) vapour formation
  - d) None of the above
5. Cakes bases can be stored for 4 months when stored in
  - a) Refrigerator
  - b) Freezer
  - c) Ambient temperature
  - d) None of the above

#### B. Fill in the Blanks

1. FIFO stands for.....
2. FEFO stands for.....
3. MAP stands for .....
4. Packaged condiments must have a shelf life of minimum.....

5. FIFO method avoids the problem of .....and losses to the firm.

### C. Mark the statement True or False

1. FIFO and FEFO are the two popular inventory management methods.
2. FIFO method avoids the problem of dead stock and losses to the firm.
3. MAP uses CO<sub>2</sub> (Carbon dioxide) and N<sub>2</sub> (Nitrogen).
4. Packaging does not affect shelf life, storage, transportation and branding of patisserie products.
5. Information about expiry date of patisserie product is not required on packaging material.

## SESSION 4: POST - PRODUCTION OPERATIONS

After the desired quantity of patisserie item has been produced, the workplace along with the equipment and tools is required to be cleaned. These activities are collectively called as post-production operations. These activities are carried to prevent contamination in future batches and maintain the different tools and equipment.

During the production cycle the food material residues like flour, fat, sugar syrup etc. tend to remain in the crevices, spaces of the tools, machines used, which results in growth of microorganisms. This biological contamination may put the risk of cross contamination during the next batch of production. Hence, one must wash, rinse, sanitize and air-dry various parts of the equipment to get rid of all the dirt and grime.

Machineries and tools are divided into two categories i.e. open equipment and closed equipment. Each machine that is used in producing bakery/pastry products has a specific instruction for cleaning and upkeep. Open equipment's, are the ones which cannot be cleaned in a specific place, they must be manually dismantled, like attachments of spiral mixer, attachment of food processing machine, cutters, choppers, scales, proofers, conveyer belts, etc. such parts are washed with foam, rinsed and dried. Such equipment are cleaned using the COP (clean-out-of-place) method.

Closed equipment are the ones which comes with securely fitted components, that cannot be opened to avoid any entry of dust, foreign particles etc. Such machines must be opened only by qualified engineers and maintenance personnel. For such purpose a periodic cleaning schedule is maintained and followed where these machines are serviced as per the SOPs. As discussed above these machines are used in bulk production of bakery/pastry goods and must be cleaned in its place of installation as they cannot be moved around because of their weight or additional fixtures such as being connected to the production line. Such equipment is cleaned internally by designated

personnel such as supervisor, with guided support to dry rinse, steam or vacuum only at specific area using CIP (clean-in-place) method.

#### 4.1 Cleaning Procedures for Open and Closed Equipment

The two most commonly used method for cleaning open and closed equipment are as follows:

1. Clean in place (CIP) and
2. Clean out of place (COP)

##### 4.1.1 Clean-in-place (CIP)

Clean-in-place method is carried out using rinsing with water, hot caustic and/or acid recirculation, rinsing with temperatures for disinfection, and turbulence to clean grime and bacteria from the inside shells of food production equipment like pipes, mixing tanks, pumps, valves, storage unit. It provides a straight solution for cleaning, rinsing and sanitizing.

##### **Advantages of a CIP System**

1. **Minimizes Mistakes:** Automating cleaning reduces the chance of human error that can contribute to an unsafe product.
2. **Keeps Employees Safe:** Reduces chemical exposure by containing cleaning solutions within the system.
3. **More Production Time:** As less production time is lost to cleaning, more time is spent making product.
4. **Product Quality:** Reliable and repeatable cleaning means sustainable product quality and consistency. Less contamination means fewer product recalls and higher brand confidence.
5. **Utility Savings:** Water and energy usage is reduced through repeatable cycle control.

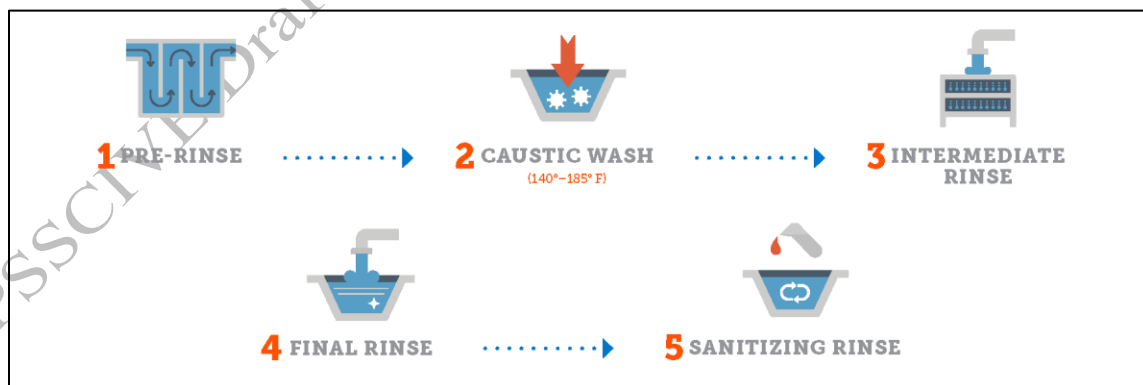


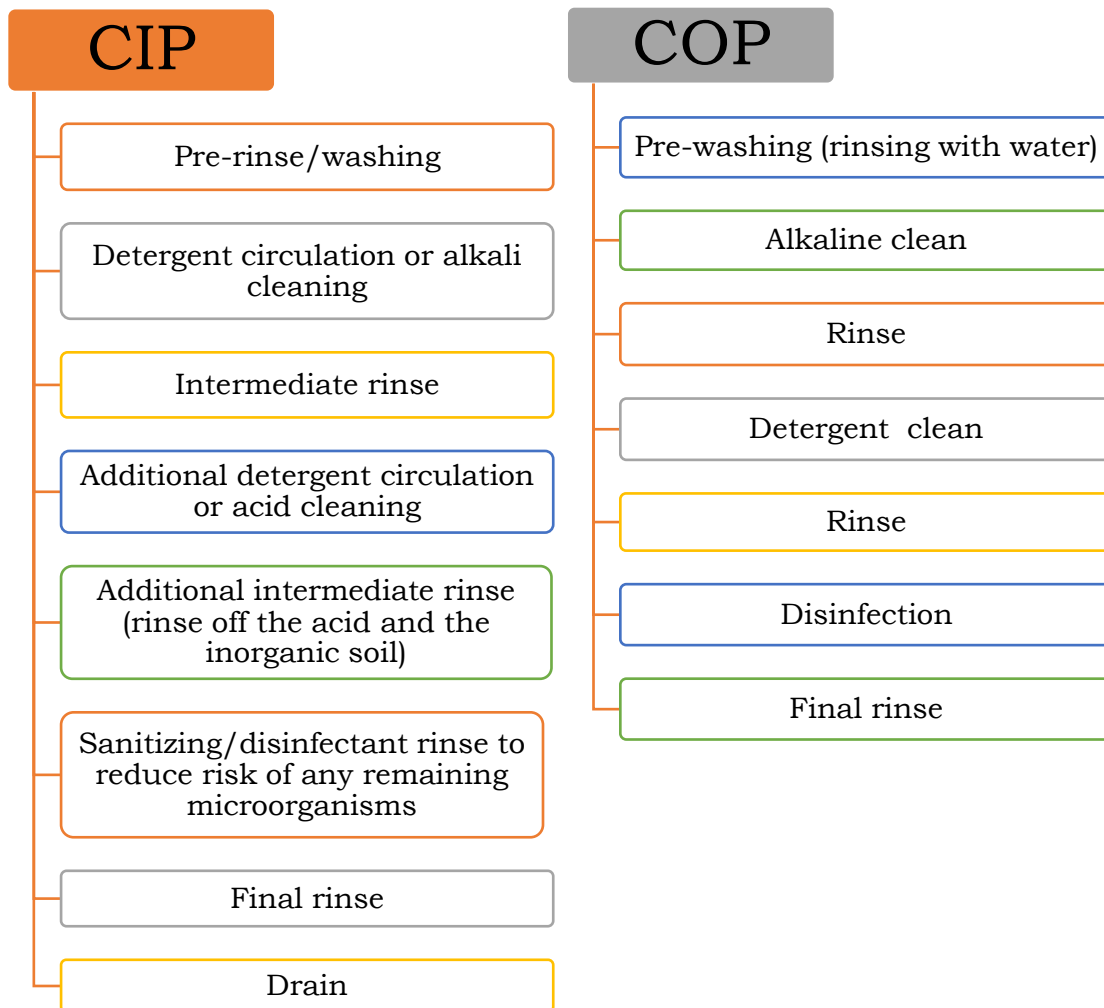
Fig. 2.12: Steps of clean-in-place

#### 4.2 A Clean-out-of-Place System

COP methods is used for equipment and utensils that cannot be cleaned where they are used and must be disassembled, and for pieces of equipment and parts that are not easy for cleaning in place. COP uses the same cleaning solutions as CIP. Automated COP requires less labor and leaves less room for human error than manual cleaning.

**Advantages to COP systems**

1. Usually, lower investment than CIP systems
2. Delivers consistent results
3. Provides a cost savings over manual cleanings, saves on time, chemical, and water usage
4. Minimizes operator exposure to high temperatures and strong chemical concentration



## What have you learned?

After completing this Session, you are able to:

- Describe the importance post production cleaning and maintenance.
- Enumerate the steps of post- production cleaning.
- Describe the CIP and COP.

## Check Your Progress

### A. Multiple Choice Questions

1. Machineries and tools are divided into ..... categories.
  - a) One
  - b) Three
  - c) Five
  - d) Two
2. Spiral mixer is a .....
  - a) Open equipment
  - b) Closed equipment
  - c) Small equipment
  - d) None of the above
3. Equipment which cannot be dismantled and needs to be cleaned in place are called
  - a) Open equipment
  - b) Closed equipment
  - c) Light equipment
  - d) None of the above
4. Clean-in -place method is employed for equipment which can
  - a) be dismantled
  - b) not be opened and moved
  - c) be lifted
  - d) None of the above
5. Which of the following can be cleaned using clean-out-of place method?
  - a) Cutters
  - b) Choppers
  - c) Attachment of spiral mixer
  - d) All of the above

### B. Fill in the blanks

1. CIP stands for \_\_\_\_\_.
2. COP stands for \_\_\_\_\_.
3. There are \_\_\_\_\_ steps of CIP.
4. Pipes, mixing tanks, pumps and valves are cleaned using \_\_\_\_\_ method.
5. COP requires lower investment than \_\_\_\_\_ .CIP

### C. Mark the statement True or False

1. Post production cleaning is not necessary.
2. Open equipment are the ones which can be cleaned in a specific place.
3. Closed equipment needs dismantling before cleaning.
4. Clean in place method requires is carried out using rinsing with water, hot caustic and/or acid.
5. COP uses the same cleaning solutions as CIP.

## Module 3

# Pastry Crafts

### Module Overview

products using proper ingredients and equipment to create the perfect desserts and cakes. The sector relies upon the imagination of the craft baker or pastry chef, innovations and new trends across the world. In this unit, we will discuss about the preparation and garnishing of various types of dessert and cakes popular around the world.

A dessert is generally served as an accompaniment to the meal. We are familiar with Indian desserts such as phirni, rabdi faluda, shahi tukda, kheer etc. and sweets such as gulab jamun, jalebi, laddoo etc. In this unit, we will discuss most popular desserts around the world such as crème caramel, chocolate mousse, baked Alaska etc.

### Learning Outcomes

After completing this module, you will be able to:

- Describe techniques for preparing various dessert bases, considering texture, flavor, and suitability for different desserts.
- Explain methods for preparing a variety of desserts, focusing on ingredient selection, cooking techniques, and presentation.
- Identify and demonstrate techniques for preparing garnishes used in decorating desserts.
- Describe the process of preparing basic cakes, emphasizing mixing methods, baking techniques, and achieving desired textures and flavors.



**Module Structure**

- Session 1: Preparation of Dessert Bases
- Session 2: Preparation of Desserts
- Session 3: Preparation of Garnishes for decoration of Desserts
- Session 4: Preparation of Basic Cakes

**SESSION 1: PREPARATION OF DESSERT BASES**

The most important part of a dessert is its base which is like its foundation. example custard, creams, sponges, fillings etc. A single type of dessert base can be used to make many other variations of desserts by simply changing the technique of preparation. One or more types of dessert bases can also be combined together to form another dessert.

The most commonly prepared dessert bases along with their recipe and preparation methods are explained below

**3.1 Creams**

There are variety of creams that are used in the preparation of desserts and cakes.

**3.1.1 Whipped Cream**

Whipped cream is made using chilled heavy dairy cream with a fat content 32-36% or a non-dairy cream. The cream is whipped in a chilled bowl, using a manual hand whisk, or a planetary mixer with a whisk attachment, till it becomes light and fluffy. Generally, the dairy cream doubles in volume whereas the non-dairy cream triples in volume after whipping. The dairy cream takes less time to whip as compared to non-dairy cream and hence it will curdle if it is over whipped.

<b>Recipe No. 1: Whipped cream</b>	
<b>Ingredients</b>	<b>Quantity</b>
Non-dairy whipping cream	500 ml
<p><b>Method</b></p> <ol style="list-style-type: none"> <li>1. Take the cream in a chilled mixing bowl. Make sure the cream has the temperature between 3 to 5 °C.</li> <li>2. Whip the cream using the planetary mixer, at speed 1 for 2 minutes then whip at speed 2 for 2-3 minutes or as instructed on the packet.</li> <li>3. The cream can be whipped to a stiff peak or medium stiff peak consistency.</li> </ol>	




Fig. 3.1: Whipped cream

4. In case of using dairy whipping cream add 50 gm castor sugar whilst whipping it.
5. If the consistency is loose then whip for few more minutes and if the consistency is too stiff or the cream has over whipped then simply add a few tea spoons of unwhipped cream and mix it with a spatula till the required consistency is obtained.

### 3.1.2 Chantilly Cream

Sweetened whipped cream that has been flavored with vanilla beans is referred to a Chantilly cream or crème Chantilly. This cream can be used as a filing for many pastries or for icing the cakes. The Chantilly cream can also be served along with fresh berries and fruits. In case of non-availability of fresh vanilla bean, you may use 5 ml of vanilla extract.

<b>Recipe No. 2: Creme Chantilly</b>	
<b>Ingredients</b>	<b>Quantity</b>
Dairy Whipping cream (35% fat)	500 ml
Castor Sugar	50 gm
Vanilla bean	1/4 <sup>th</sup> tsp
* In case of using sweetened non- dairy cream do not add sugar.	
<b>Method</b>	
<ol style="list-style-type: none"> <li>1. Put all the ingredients in a chilled mixing bowl. Make sure the cream has the temperature between 3-5 degree C.</li> <li>2. Whip the cream at speed 1 for 2 minutes then whip at speed 2 for 2-3 minutes or as instructed on the packet.</li> <li>3. The dairy cream is whipped to a stiff peak or medium stiff peak consistency.</li> </ol>	
	
<p><i>Fig. 3.2: Crème chantilly</i></p>	

### 3.1.3 Pastry cream

This is a cooked cream made using milk, egg yolks or whole eggs, sugar, corn starch/custard powder or flour. It is also referred to as crème pâtissier. This is a classical French cream used in a many French desserts, cakes and pastries. It is used as a filling in Choux pastry (Éclair, cream puffs, swans etc.) individual cakes and pastries, raisin swirl, flan and can be used as a base for other desserts.

<b>Recipe No. 3: Pastry cream</b>	
<b>Ingredients</b>	<b>Quantity</b>

Milk full cream	500 ml
Castor Sugar	40gm + 40g
Castor Sugar (2 parts)	
Vanilla extract	10 ml
Whole eggs (broken)	100 g
Corn flour	25 g
Flour	25 g
Unsalted butter (softened)	50 g

**Method**

1. Add milk, 40 g of the sugar and vanilla extract in a saucepan. Bring this mixture to a boil over medium heat.
2. Meanwhile whisk the egg and remaining 40 g of sugar together until thickened.
3. Sift the corn flour and flour into the egg and sugar mixture and whisk until combined.
4. Add boiled milk over the egg mixture in a slow and steady stream, keep whisking it continuously until the entire milk is mixed.
5. Now cook this egg mixture on a medium heat and keep whisking the mixture continuously until the sauce thickens to a creamy smooth texture.
6. Remove the saucepan from heat, once the desired consistency is achieved. Add diced butter and whisk till emulsified.
7. Transfer the cream in a flat dish and immediately cover the surface of the cream with a plastic film.
8. This cream is stored between 3 - 5 degree C and must be used within 2 days.



*Fig. 3.3: Pastry cream*

Covering the pastry cream with a plastic film helps in keeping the texture smooth as it prevents skin formation on the surface.

**3.1.4 Butter cream**

This cream is made by beating butter and icing sugar using a paddle attachment in a planetary dough mixer. This cream is used for layering and icing cakes and pastries, filling cream rolls, making designer piping etc. It can be flavored and colored as desired. It must be kept in air tight container and can be stored for up to 15 days in the refrigerator and 2-3 days at room temperature (22 to 24 deg C). Italian, Swiss, French etc. are other variations of the butter cream. A recipe of butter cream in detail is given below:

<b>Recipe No.4: Butter cream</b>	
<b>Ingredients</b>	<b>Quantity</b>
Butter unsalted	1000 ml
Sugar icing	500 g

Vanilla extract	20 ml
<p><b>Method</b></p> <ol style="list-style-type: none"> <li>1. Cream the butter using a pedal attachment of mixer on a low speed for 1 minute.</li> <li>2. Meanwhile sieve the icing sugar 2-3 times.</li> <li>3. While the machine is running on a low speed, start pouring the sugar into the butter, spoon by spoon until all the sugar is dissolved. Do it slowly and not at once. Increase the speed to 2 and beat it till pale in color and fluffy in texture.</li> <li>4. Now add the vanilla extract and mix well.</li> <li>5. Keep the cream undisturbed at least for 1 hour before using.</li> <li>6. Cover and refrigerate the cream for future usage.</li> </ol>	



Fig. 3.4: Butter cream

Allow the refrigerated butter cream to come to room temperature (22 to 24 deg C) and smoothen it with a spatula before using.

<b>Recipe No. 5: Italian butter cream</b>	
<b>Ingredients</b>	<b>Quantity</b>
Egg white	225 g
Sugar	250 g
Water	200 g
Butter unsalted	750 g
Salt	0.5 g
<p><b>Method</b></p> <ol style="list-style-type: none"> <li>1. Prepare the sugar syrup first. Add sugar and water in a pan and cook till it reaches 117 °C and a soft boil stage. Check the temperature using a candy/ probe thermometer.</li> <li>2. Simultaneously prepare meringue by whipping the egg whites for 15 seconds. Add salt little by little, increase the speed and whip the egg whites and salt mixture at speed number 3 or high till fluffy and light consistency is achieved.</li> <li>3. Once the egg whites are fluffy, reduce the speed of the mixer to 1 and pour the prepared sugar syrup in the mixer. Now increase the mixer speed to 3 and continue to whip until the meringue is light and fluffy and at a temperature of 35 - 36 °C.</li> <li>4. Now add room temperature butter in small batches and continue whipping at high speed until all the butter has been used. Initially the mixture collapses in volume but continued whipping for few minutes will again form the cream.</li> </ol>	



Fig. 3.5: Italian butter

5. This butter cream has marshmallow feel and smooth texture.
6. Apart from layering cakes, it can be used as a filling for tart shells, making cream buns or cream rolls, doing designer piping on various cakes and pastries.

### 3.1.5 Diplomat cream

This cream is a derivative of pastry cream and is made by combining pastry cream with whipped cream and gelatin to obtain stable structure.

<b>Recipe No. 6: Diplomat cream</b>	
<b>Ingredients</b>	<b>Quantity</b>
Pastry cream	400 g
Whipped cream without sugar	250 g
Gelatin powder	3 g
Water	15 ml
<b>Method</b>	
<ol style="list-style-type: none"> <li>1. Bloom the gelatin powder in 15 ml water for 10 minutes.</li> <li>2. Prepare the pastry cream as mentioned above in recipe no. 3.</li> <li>3. Melt the gelatin over the double boiler or in a microwave.</li> <li>4. Add the melted gelatin to the warm pastry cream and whisk well to mix the gelatin evenly.</li> <li>5. Cover the surface with the plastic film and chill it in the refrigerator for few hours.</li> <li>6. After few hours fold the chilled whipped cream into the pastry cream until smooth consistency is obtained.</li> <li>7. Add flavor and color as required.</li> <li>8. This cream is used as filling or base in entremets, individual cakes and pastries, tarts and tartlets.</li> </ol>	




Fig. 3.6: Diplomat cream

### 3.2 Custards

Traditionally, custards are made by boiling milk with sugar and thickened with whole eggs or egg yolks. These custards can also be served as sauces or used as a base for making desserts such as bavarois, mousse, souffle etc. Custards can also be made without eggs using proprietary custard powder or corn starch as thickening agent.

#### 3.2.1 Crème anglaise

It is an egg-based custard made using eggs, sugar and milk. Crème anglaise is also known as vanilla sauce, English cream and Bavarian crème.

<b>Recipe No. 7: Crème Anglaise</b>	
<b>Ingredients</b>	<b>Quantity</b>
Milk	500 ml
Egg yolk	120 g
Sugar	75 g
Vanilla extract	10 ml
<b>Method</b>	
<ol style="list-style-type: none"> <li>1. Combine the milk, vanilla and half of the sugar in a sauce pan and bring to a boil over low heat.</li> <li>2. Meanwhile whisk the remaining sugar with yolk in a bowl until creamy and lightly thickened.</li> <li>3. When the milk comes to a boil, pour little over the yolk and mix well. Place the remaining milk back on the flame. Now pour the yolk mixture on the milk and stir to mix well and cook this custard on medium heat until the temperature reaches 83 °C. Do not over heat or else the custard will split.</li> <li>4. Strain the custard through a fine mesh strainer into a small bowl.</li> <li>5. Cool on a bed of ice and stir continuously to prevent skin formation on top.</li> </ol>	
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>To check the doneness of the custard, Dip the spoon into the custard. If the custard coats the back of the spoon evenly without dripping then it is ready to be used.</p> </div>	
	
<p><i>Fig. 3.7: Crème anglaise</i></p>	

### 3.2.2 Eggless custard

Eggless custards are made by boiling milk and sugar and are thickened by using custard powder.

<b>Recipe No 8: Eggless custard</b>	
<b>Ingredients</b>	<b>Quantity</b>
Milk	500 ml
Custard powder	30 g
Sugar	75 g
Vanilla extract	10 ml

**Method**

1. Combine the milk, vanilla and the sugar in a sauce pan and bring to a boil over low heat.
2. When the milk comes to a boil, pour little over the custard and mix well. Pour the remaining milk on the custard mixture and stir to mix well and cook this custard on medium heat until the temperature reaches 83 °C.
3. The custard will thicken and turn into a smooth, shiny sauce.
4. Draw a line with your finger through the custard on the spatula and if the line stays visible the custard is ready.
5. Strain the custard through a fine mesh strainer into a small bowl.
6. Cool on a bed of ice and stir continuously to prevent skin formation on top.
7. This custard is used for preparing eggless mousses, Bavarian cream, French butter cream and also used as a sauce for desserts.



Fig. 3.8: Eggless custard

**3.3 Dessert sauces**

Many desserts are complimented with a neutral or contrasting sauces. Sauces add texture, color, nutrition and flavor to the dessert. The sauces also enhance the visual appeal of the desserts. Let us discuss below some of the most common sauces used in desserts.

**3.3.1 Vanilla sauce**

Vanilla sauce or crème anglaise are same in taste and appearance. Crème anglaise is cooked for a slightly longer time and vanilla sauce is a bit thinner than the crème anglaise. However, both can be used to serve along with the desserts like apple pie, ice cream, pan cakes, fruits etc. Refer to the recipe of crème Anglaise in above section.



Fig. 3.9: Vanilla sauce

**3.3.2 Chocolate sauce**

Chocolate based sauces are most popular as they can be used with variety of desserts. It can be served as toppings for an ice cream or as an accompaniment with chocolate brownie and it can also be used as a plating sauce for serving a chocolate-based dessert. Chocolate sauce is also used as a garnish/ topping for chocolate milk-shakes and cold coffee.



Fig. 3.10: Chocolate sauce

<b>Recipe No.9: Dark Chocolate Sauce</b>	
<b>Ingredients</b>	<b>Quantity</b>
Dark Chocolate	500 gm
Cooking cream	400 ml
<b>Method</b>	
<ol style="list-style-type: none"> <li>1. Chop the chocolate into small pieces. Boil the cream, cool it down to 80 degree C, pour the hot cream over the chopped chocolate.</li> <li>2. Let the mixture rest for 3-5 minutes.</li> <li>3. After 5 minutes stir the chocolate and cream together with a whisk till completely dissolved.</li> <li>4. Store in a clean and dry container. Refrigerated sauce can be used for 7-10 days.</li> </ol>	

### 3.3.3 Fruit compote

Fruit compote as the name suggests is made out of one variety or many varieties of fresh fruits that are stewed along with sugar, honey, water, fruit juice or spices. It can be flavored according to the recipe and the purpose that it will be used for. For examples apples are flavored with cinnamon and used as accompaniments with pancakes. Whole frozen berries can also be used in case fresh berries are not available.



Fig. 3.11: Fruit compote

<b>Recipe No. 10: Mixed berry compote</b>	
<b>Ingredients</b>	<b>Quantity</b>
Raspberry	100 g
Blueberry	100 g
Black Berry	100 g
Red Currant	200 g
Strawberry	200 g
Castor sugar	300 ml
Water	1 pc
Vanilla pod	1 g
Pectin	



Castor sugar	50 g
<p><b>Method</b></p> <ol style="list-style-type: none"> <li>1. Wash all the berries properly.</li> <li>2. Mix 50 gm castor sugar with 1 gm pectin and keep aside.</li> <li>3. In a pot, place all the berries, castor sugar, vanilla, water and turn on the heat. As the temperature reaches 40 degree C, stir in the sugar pectin mixture.</li> <li>4. Bring the mixture to a boil until it reaches 110 degree C (check with candy thermometer) and thickens a bit.</li> <li>5. Once cooked, allow to rest for 30 minutes then strain the excess juice out of the compote using a juice strainer.</li> <li>6. The compote can now be stored in a sterilized container and refrigerated. The strained juice can be used as a sauce for plating desserts.</li> </ol>	

### 3.3.4 Coulis

It is made from pureeing cooked fruits and vegetables, which are strained to obtain a smooth sauce called coulis. For example, if the above recipe of berry compote is pureed and strained it will result in a berry coulis.



Fig. 3.12: Coulis

### 3.4 Pie or Tart Crust

A pie shell or tart is a base which is made from short crust pastry dough which is also known as sweet paste or sable. This paste or dough is made by using ingredients such as butter, sugar, flour and egg or milk. It is used in preparing desserts like apple pie, fruit tart, lemon meringue tart etc.

Recipe No. 11: Sweet paste dough	
Ingredients	Quantity
Refined flour	250 g
Icing sugar	120 g
Butter	130 g
Whole eggs	50 g
Salt	1 g

**Method**

1. Lightly whisk the egg and salt in a mixing bowl.
2. Sift the flour and icing sugar together.
3. Add diced cold butter into the flour and rub with your fingertips until a coarse sandy texture is obtained.
4. Make a well in center of the coarse dough and pour in the beaten egg. Using a pastry scraper draw the dough towards the center and gently mix the egg in.
5. Lightly combine the dough till it comes together. Ensure that the dough is not overmixed as it will lose its shortening properties.
6. Shape the dough into a ball. Flatten it slightly, cover with a plastic wrap and refrigerate for at least 2 hours.
7. Once ready, pin the dough to a desired thickness and spread it over tart shells.
8. Now shape individual tart shells with your thumbs and fingers by pressing the dough gently into the tart shell and scraping off the excess dough with a flat knife. Dock the tarts to remove any air pocket.



Fig. 3.13: Sweet paste dough

Bake in the oven at 170 degree for 12-14 minutes until crisp. Some pies/ tarts are baked without any fillings, this is known as blind baking of the tarts. Whilst in few cases the pie or the tart is baked with the fillings. For an example in case of an apple pie, the tart mould is filled with apples pie mixture and then baked.

If the prepared tarts shells are refrigerated for couple of hours before baking, they will retain their shape.

**3.5 Choux Pastry**

Choux pastry is also referred to as pâte à choux. It is a paste made out of flour, butter, milk, water and eggs. This is in form of a paste that needs to be cooked twice, once whilst making the paste and later after piping the paste on the baking sheet. It is used in preparing French desserts like Eclairs, Paris Brest, Swans and profiteroles which are hollow pastries filled with vanilla cream, diplomat cream, Chantilly cream etc.

<b>Recipe No. 12: Choux pastry butter</b>	
<b>Ingredients</b>	<b>Quantity</b>
Water	125 ml
Milk	125 ml
Unsalted Butter diced	125 g
Flour sieved	150 g
Eggs	250 g
Salt	3 g
	5 g

Sugar	50 g
<b>Egg Wash</b>	
Eggs	50 g
Egg yolks	50 ml
Milk	
<b>Vanilla Filling</b>	200 g
Whipped Cream	20 ml
Vanilla	100 gm
Pastry Cream	

**Method - Choux Pastry:**

1. Heat the water, milk, salt, sugar and butter in a sauce pan. Once the butter is melted completely, bring to a fast boil.
2. Remove from heat and pour in all the flour and mix with a wooden spatula.
3. Return the pan to the flame and on a medium heat, start cooking the dough until it leaves the sides of the pan and comes together as a ball of a dough
4. Put this dough in a mixing bowl. Stir for few minutes to cool it down. Once cooled to 50 degree C, start adding the eggs one by one while continuously mixing the dough to incorporate the eggs resulting a in a paste.



Fig. 3.14: Choux pastry butter

5. To check the consistency of the paste, run your spatula through the middle of the dough and it should close up slowly. If not then add little more eggs.
6. Transfer the paste in a piping bag fitted with a plain/star nozzle depending on the final product
7. Set the oven temperature to 180 degree C. Line a baking tray with silicon sheet or parchment paper
8. To Make Eclairs - Pipe the paste in straight line about 12-14 cm long leaving 2-3-inch space between each piping. Glaze with egg wash and then bake at 180 degree for 30-35 minutes.
9. To Make Profiteroles - Pipe the paste in a shape of a ball moving your hands in circular motion on the tray of around 2 inch diameter and leaving around 2-3 inch gap between e ach piping. Glaze with egg wash and bake at 180 degree for 25-30 minutes.
10. To make Paris Brest - Pipe the paste in a circular motion in a shape of a ring or inflated tube. Apply egg wash and sprinkle some almond flakes. Bake at 170 degree for 30-35 minutes



Fig. 3.15: .....

11. To make Swan - Pipe the paste in a shape of tear drop by applying pressure on the piping bag and then suddenly pulling the piping bag towards yourself. The tail end will be thinner than the head. Now using a thin round tube nozzle of 3 mm diameter, pipe the mouth and neck of the swan as shown in the Fig. 3.16. Bake the swan neck at 160 degree for 12-14 minutes. Bake the swan body at 180 degree for 25-30 minutes



Fig. 3.16: .....

**Method - Finishing**

1. **For Éclair**-Cut through the éclair shell or make a hole in the bottom/side and pipe the filling inside.
2. **For Profiteroles or Choux Buns**-Make a hole under the choux bun and fill the cream.

**For Swan** - Cut the swan body as shown in the Fig. 3.16. Fill the cream, attach the wings and neck

**Method for egg wash**

Mix all the eggs and milk together, whisk it and strain it.

**Method- for filling**

Whip the cream with vanilla extract. Fold in the pastry cream.



**What have you learned?**

After completing this session, you are able to:

- describe the importance of personal hygiene and sanitation of the Craft Baker.
- describe Food standards and regulations in India.
- discuss food safety management system.

**Practical Exercise**

**Activity**

1. Prepare choux pastry (Éclair, profiteroles and swans), fruit tart, lemon meringue tart, Apple Pie.
2. Prepare Tiramisu, chocolate mousse and cold soufflé.

## Check Your Progress

### A. Multiple choice questions

- A pie shell or tart is a base which is made from short crust pastry dough.
  - short crust pastry dough
  - laminated pastry dough
  - fermented dough
  - none of the above
- Choux pastry is also referred to as
  - Coulis
  - pâte à choux
  - Butter cream
  - Tart
- Profiteroles, eclairs and swans are prepared using
  - Sweet paste dough
  - Choux pastry batter
  - Coulis
  - Fruit compote
- Dairy cream doubles in volume whereas the non-dairy cream .....in volume after whipping.
  - triples
  - remain same
  - doubles
  - None of the above
- Pastry cream is a classical ....
  - Italian cream
  - Swiss cream
  - French cream
  - None of the above

### B. Fill in the Blanks

- Italian cream, Swiss cream and French cream are variations of the \_\_\_\_\_.
- \_\_\_\_\_ is used to check the temperature of the sugar syrup.
- \_\_\_\_\_ is made by combining pastry cream with whipped cream and gelatin.
- \_\_\_\_\_ is also known as vanilla sauce, English cream and Bavarian crème.
- \_\_\_\_\_ is made from pureeing cooked fruits and vegetables, which are strained to obtain a smooth sauce.

### C. Mark the statement True or False

- A dessert is generally served as an accompaniment to the meal.
- Phirni, rabdi, faluda and shahi tukda* are Indian desserts.
- Whipped cream is made using chilled heavy dairy cream with a fat content 20-26%.
- Crème Chantilly is a sweetened whipped cream flavored with vanilla beans.
- Crème Chantilly is also referred as crème pâtissier.

## SESSION 2: PREPARATION OF DESSERTS

There is a popular phrase in English “All is well that ends well”, and this saying holds true for the desserts. A well presented dessert leaves sweet memories in the mind of the consumers and therefore it becomes most important to make the desserts look appealing and interesting at the same time. In this section we will learn about making varieties of desserts using the bases discussed above and using appropriate garnishes. There is a range of desserts prepared internationally, however in this section we will cover popular desserts which are

served in most of the restaurant and hotels of our country. Desserts such as chocolate mousse, soufflés, crème brulee and tiramisu can be seen on almost any dessert meal.

**Mousse**


A mousse is light and airy textured dessert typically made with whipped egg whites, whipped cream, or both, and flavored with one or more of chocolate, coffee, caramel, puréed fruits, or various herbs and spices, such as mint or vanilla. A mousse can be sweet or savory.



Fig. 3.17: .....

**Vanilla mousse**

It is a light and airy dessert made using eggs, sugar, whipped cream and gelatin. It can be eaten as it is or can be layered between sponge, biscuit, crust etc.

Recipe No. 13: Vanilla mousse		
Ingredients	Quantity	
<b>Vanilla Mousse Base</b>		
Egg yolk	120 g	
Sugar castor	75 g	
Milk	25 ml	
Whipped cream	500 g	
Gelatin	34 g	
Vanilla extract	20 ml	
Vanilla seed	0.5 g	
<b>Vanilla Sponge/ Plain white sponge</b>		
Corn flour	30 g	
Flour	73g	
Sugar castor	90 g	
Whole Egg	150 g	
Butter	23 g	

Vanilla extract	10 ml	
<b>Garnish</b>		
White chocolate couverture	200 gm	

**Method: Sponge**

1. Preheat the oven at 210 degree C.
2. Line a baking tray with grease proof paper.
3. Place the egg and sugar and in a mixing bowl with whisk attachment.
4. Whisk the egg and sugar at medium speed till light and fluffy.
5. Meanwhile sift the flour and corn flour together until well mixed. Once the egg has whipped to a stiff stage, fold in flour mixture slowly in a cut and fold method.
6. Melt the butter in a microwave.
7. Finally fold in the butter into flour mixture and spread the mixture over the tray.
8. Place the tray in preheated oven and bake at 210 degree for 10-12 minutes or until a toothpick comes out clean when inserted into sponge and removed after 10 seconds.

**Preparing the dessert cups or glasses**

1. Take 8 to 10 numbers of any 100 ml glass of your choice.
2. Now cut few sponge discs with the help of a round cutter. If the sponge is too thick then slice it into 5 mm thick sponge discs. Cover with plastic wrap and keep aside.

**Mousse**

1. Whip the chilled cream till soft peak is achieved and keep it refrigerated.
2. Take egg, milk, vanilla extract and sugar in a mixing bowl and whisk the entire mixture until mixed well.
3. Place another pan with water in it on the stove at medium heat, this is called a double boiler. Allow the water to heat up.
4. Meanwhile bloom the gelatin in 25 gm of water for 10 -15 minutes.
5. Place the bowl of eggs on the double boiler pan, make sure the bowl does not touch the water in the pan. If the water is too much then reduce it. With the help of a whisk start whipping the mixture till it turns pale and thick. This mixture is called Sabayon. It takes around 10-15 minutes to cook a small batch of sabayon. Keep removing from heat from time to time to control the heat or else the sabayon will curdle.
6. Place the gelatin in the microwave and heat at full power for 30 seconds until its dissolved and without any sediments
7. Once the gelatin is melted, pour it into the sabayon and mix well.
8. Remove the sabayon from the heat and allow it to cool down.
9. Now take out the the cream from the fridge.

10. Take around 50 gm of whipped cream and fold it into the sabayon. Mix well and then take another 50 gm of the cream and mix well. This will reduce the sabayon temperature and allow the mixture to blend with the rest of the cream easily.
11. Take the sabayon and cream mixture and pour on top of the remaining cream and fold with your hands using cut and fold method
12. The mousse is now ready to be piped into glasses.


*Non-dairy cream generally splits or curdles when it comes in contact with very hot sabayon. So ensure the temperature of the sabayon is not above 45 deg C.*

**Assembly**

1. Take a piping bag with a plain tip nozzle. Pour the mousse mixture into the piping bag.
2. Pipe the mousse into the glasses till half. Place the disc of sponge on the mousse and pipe another layer of mousse till it fills the glass leaving 1 cm of space from the rim.
3. Lightly tap the base of the glass on your palm to remove any air pocket. Place the mousse in the refrigerator.

**Finishing**

1. Melt the white chocolate in the microwave. Temper it, spread it on the acetate sheet, cut into desired shapes and refrigerate. Once set, remove from acetate sheet and keep aside.
2. Take the mousse out from the refrigerator, decorate with chocolate garnish and serve immediately.

<b>Recipe No. 14: Pineapple mousse</b>		
<b>Ingredients</b>	<b>Quantity</b>	
Vanilla mousse	500 g	
Fresh Pineapple dices	150 g	
Sugar	60 g	
Water	50 ml	
Yellow food color	2 drops	
Pineapple essence	5-6 drops	
		<p><i>Fig. 3.19: Pineapple mouse</i></p> <p>Image Credit- Bhopal Baking Co.</p>

**Method for preparation**

**Stewed Pineapple**



1. Cut the pineapple into small pieces and a few large 1X1 inch pieces for garnishing. Place it in a pan with sugar, water, yellow color and pineapple essence.
2. Cook the pineapple compote on a medium heat until tender, cool it down before use. Reserve the larger pieces for garnishing.

**Mousse Preparation**

Follow the same procedure explained above for making vanilla mousse.

**Assembly and finishing**

1. Fill the glasses with the mousse till half, pour a spoonful of pineapple compote, add some more mousse on compote and finally place the sponge.
2. Refrigerate the mousse. Follow the same finishing procedure mentioned above for the vanilla mousse.
3. Meanwhile temper white chocolate and spread on an acetate sheet. Cut in to desired shapes and refrigerate to set. Once set, remove from the acetate sheet and garnish the pineapple mousse with the chocolate garnish and the pineapple pieces.

**Soufflé**


The word soufflé is derived from the French verb “*Souffler*” which means to rise. It is a hot preparation which is served straight from the oven as the mixture rises above the height of the mould.

Soufflé can be made hot or cold and hot soufflé is served hot and a cold soufflé is served cold. It is a classic French dessert made by lightly folding stiffly beaten egg whites in the base custard of the dessert. Whipped egg whites add light and airy texture into the soufflé. A hot soufflé when baked will rise almost twice its actual height in the mould. Cold Souffle is not baked, rather egg white is folded into the base mixture comprising of cream, sabayon, gelatin and flavor. It is then allowed to set in the fridge.

**Why soufflé is served straight from the oven?**

The soufflé is aerated with whipped egg whites. The heat of the oven coagulates the protein of the egg white and holds the structure due to hot air entrapped in it. If it is allowed to rest, the air will cool down resulting in collapse of soufflé.

<b>Recipe No. 15: Hot chocolate soufflé</b>	
<b>Ingredients</b>	<b>Quantity</b>
Milk	250 ml
Egg yolk	40 g
Castor Sugar	30 g
Flour	30 g

Vanilla essence	2 drops	 <p>Fig. 3.20: Hot chocolate soufflé</p>
Pineapple essence	10 ml	
Dark chocolate	75 g	
Egg whites	180 g	

**Method**

1. Boil milk with vanilla extract and remove from stove.
2. Whisk egg yolk, 20 g of sugar, and flour together till smooth in a sauce pan.
3. Pour the hot milk over the egg mixture in small batches and keep mixing until all the milk is incorporated.
4. Bring the pan over medium heat and start cooking the mixture till the mixture thickens and forms into a pastry cream.
5. While the mixture is hot, add the chocolate chips or chopped chocolate into the pastry cream and whisk till combined
6. Once the chocolate pastry cream is ready, pour it into a storage container and cover it with plastic film on the cream surface. Allow to cool in the fridge.
7. Whip the egg whites with 10 g sugar till a stiff peak is formed.
8. Remove the pastry cream from the fridge, carefully fold in the egg whites ensuring the mixture does not collapse.
9. Pour the mixture into pre greased ramekin moulds.
10. Bake at 190 degree C for 20 minutes.

Garnish with fresh fruits and serve with a scoop of vanilla ice cream immediately.

**Chilled lemon soufflés**

Chilled soufflés are generally prepared and allowed to set in the refrigerator rather than freezer. They contain gelatin which holds the dessert together and gives it a shape. The mould for the chilled soufflé is prepared in by lining the outside with the thick plastic sheet in such a way that it rises at least a centimeter above the mould. Put the soufflé mixture in the mould and allow it to set in the refrigerator. After the souffle is set in the refrigerator the plastic sheet

is peeled off giving an imitation that the soufflé has risen above the mould.

Recipe No. 16: Chilled lemon soufflé	
Ingredients	Quantity
Lemon juice	50 ml
Lemon zest	4 no.
Castor sugar	25 g
Whipped cream	200 g
Gelatin	8 g
Water	40 ml
Egg whites	60 g



Fig. 3.21: Chilled lemon soufflé

**Method**

1. Bloom the gelatin in 40 ml water for 10 minutes.
2. Line a 2.5 inch ramekin mould of about 2 inch height with a lightly oiled acetate sheet strip so that it is higher by 1 centimeter from the mould. Cook the lemon juice and sugar together and bring to a boil. Remove the boiled mixture from heat And allow it to cool till it reaches to 35 degree C.
3. Whip the cream. Fold the juice in the cream.
4. Melt the gelatin in the microwave. Fold in the gelatin quickly but evenly.
5. Meanwhile whip the egg whites and gently fold in the soufflé mixture.
6. Pour the soufflé mixture into the prepared ramekin mould. Place it in the refrigerator for 3-4 hours until set.

**Tempering of Gelatin**  
 When melted gelatin is added into a cold mousse mixture it results in gelatin strings which will not let the mousse set properly. To avoid this add a handful of cold mixture into the melted gelatin and then incorporate with the rest of the mixture. This procedure is also known as tempering of gelatin.

**Assembly and garnish**

1. Peel off the acetate sheet strip wrap. Place the refrigerated soufflé on a dessert platter.
2. Pipe a swirl of fresh cream on top and garnish it with a slice of lemon and sprig of fresh mint.

**Crème Brulee**

It is a French classic dessert made up of egg yolks, sugar, milk, cream and any flavoring agent and is baked at low temperature for long time. It is called brulee which means burnt due to the fact that sugar is sprinkled on the baked custard and caramelized with the help of a blow torch. It can be flavored with different ingredients such as vanilla, lemon grass, tea, coffee, hazelnut etc. and can be served with a dollop of fresh cream or fruits etc.


Recipe No. 17: Vanilla crème brulee		
Ingredients	Quantity	
Milk	500 ml	
Fresh Cream	500 ml	
Castor Sugar	150 g	
Egg Yolk	240 g	
Vanilla Extract	20 ml	
Source: Google.com		

Fig. 3.22: Crème brulee

**Method**

1. Set the baking oven at 140 degree C.
2. Bring milk and cream together and to boil.
3. In a separate bowl whisk the egg yolk and sugar together till mixed well.
4. Once the milk and cream has boiled, pour a small amount over the egg yolk mixture and whisk constantly. Add more of the cream mixture and keep whisking until all the cream is poured. Add the vanilla extract.
5. Strain the mixture. Place ramekins on a baking tray, pour the mixture in remekins. Place the tray in the oven, pour hot water in the tray and push the tray inside the oven.
6. Bake at 140 degree C for 50-60 minutes. Once baked, remove from the baking tray and refrigerate till it is chilled.
7. Remove from the fridge and sprinkle castor sugar on top and spread it evenly.
8. Turn on a blow torch on a medium heat and flash it on the sugar to caremelise it to a darker colour than the regular caramel colour.
9. Garnish the crème brulee with fresh fruits and berries.

You can add any herb/ spice/ tea like lemon grass, cardamom, ginger, basil etc. at step 2 and leave it covered for 30 minutes for the flavors to infuse. Strain and reheat the mixture before using. There are certain flavors which must be mixed soon after the mixture is boiled, like hazelnut paste, peanut butter, coffee, chocolate ganache etc.

Do not point the fire at one place otherwise it will burn the sugar, Keep moving the blow torch evenly all over the sugar for an even caramel crust.

Do not over burn the sugar as it will give a bitter taste.  
Burnt sugar

**Crème caramel**

Crème caramel or caramel custard as its widely known is quite similar to a crème brulee in terms of preparing its custard. A golden caramel is first prepared and then poured into individual dariole moulds. A custard of whole eggs, milk, vanilla is then prepared and poured over the caramel and then baked in the same manner as crème brulee. After baking, it is demoulded and the caramel forms a layer of sauce on top.

Recipe No. 18: Crème caramel	
Ingredients	Quantity
Milk	500 ml
Sugar	85 g
Egg	250 g
Vanilla	10 ml
Sugar for caramel	300 g

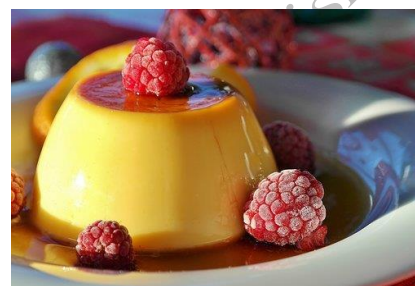


Fig. 3.23: Crème caramel

### Method

1. Cook sugar on a medium heat till it reaches 165-170 degree C. to a golden amber color. Pour this into individual moulds about 20 ml in each.
2. Set the oven at 140degree C.
3. Now whisk milk, sugar, eggs, vanilla till all the sugar is dissolved well. Strain the mixture / custard through a fine strainer. Pour the custard into individual moulds about 60 ml to 80 ml. It depends upon on the size of mould how much to pour in it.
4. Place the moulds into a deep baking tray. Place the tray in the oven and then pour hot water in it till the height of the molds. This is to ensure that the custard is baked evenly.
5. Place the custard in the oven and bake it for 60-80 minutes until firm to touch. Insert a tooth pick to check if there is liquid custard oozing out on the surface. Bake more if required.
6. Once baked, remove from the oven and leave at room temperature for few minutes. Remove from the tray and place it in the fridge to chill.
7. After 6 to 8 hours, demould from the mould by slowly pressing the custard from top and releasing it from the sides of the mold and place it inverted with caramel side up, on a plate.
8. Serve with fresh fruits, berries and crème Chantilly.

### Apple pie

It is a classic dessert made up of stewed apples stuffed in a sweet short crust pastry. The dessert is traditionally served warm with a scoop of vanilla ice cream and custard sauce.

Recipe No. 19: Apple pie	
Ingredients	Quantity
Sweet paste	200 g
Apple peeled	500 g
Cinnamon powder	2 g
Raisins	20 g
Castor sugar	150 g
Butter	50 g




Fig. 3.24: Apple pie

**Method**

**Apple mixture**

1. Peel and dice apples. Place butter in a sauce pan, put sugar and place the apple and cinnamon on top of it. Stir everything slowly till mixed. Keep the mixture on a low flame and cover the surface of apple mixture with a butter paper to trap the steam within the apples, do not cover the pan. Cook for about 10-15 minutes until apples are cooked and the mixture looks glossy.
2. Allow the mixture to cool down.

**Pie shell**

1. Set the oven temperature to 180 degrees C.
2. Meanwhile pin the sweet pastry dough to about 2 mm thickness with the help of a rolling pin. Place the sheet on a pie mold and slowly press it inside so that it can sit on the surface and sides of the mold. Press the pastry on the bottom and side to make it spread evenly. If there are any bubbles then dock the pastry to remove any air pockets.
3. With the help of the back of the knife trim the excess pastry from the edges of the mold.
4. In a plastic wrap put some rice and wrap it to make it look like a bean bag. Place this bean bag in the mold.
5. Place the molds in a baking tray and put it in the oven and bake for 12-14 minutes until 90 % baked. This is called blind baking.
6. Once baked, remove it from the oven and allow it to cool.
7. Fill the apple pie mixture in the baked shell. Roll another sheet of the pastry dough. Cut the dough into a round disc as per the diameter of the pie mould.

Cover the pie mixture with this disc. Trim the excess, apply the egg wash then make a criss cross design on top with the help of a knife.

8. Bake at 180 degrees C for 10-12 minutes until the top cover is cooked.
9. Remove from the oven, allow it to cool and then demold from the pie shell.
10. Before serving warm up the pie in the oven at 160 degree C or microwave for 25-35 seconds. Place a scoop of vanilla ice cream on top and serve with a custard sauce (ref Recipe...).

**Pine apple upside down cake**

Pineapple upside down cake is an American cake recipe that became very popular in 1920s with the advent of canned pineapple that grew very popular in America. The cake begins with melting butter with brown sugar in a thick bottom pan until it starts to caramelize. This mixture is then poured into a greased cake pan and the pineapple slices are placed on top. A buttery white tea cake or pound cake batter is then poured over the pineapple slices and the cake is then baked until deep golden brown. Then it’s turned over and served upside down with caramelized pineapple on top.

Recipe No. 20: Pineapple Upside Down Cake	
Ingredients	Quantity
<b>Topping</b>	
Butter	55 g
Brown Sugar	150 gm
Canned Pineapple	5 slice
Maraschino Cherry	14 pc
<b>Cake Batter</b>	
Flour	195 gm
Baking Powder	8 gm
Butter	113 gm
Castor sugar	200 gm
Vanilla Extract	4 gm
Egg (Seperated)	100 gm
Milk	120 ml
Cream of tartar	1 gm



Fig. 3.24: Apple pie

**Method**

**Topping**

1. Place the butter and brown sugar in a small saucepan and stir over medium heat until the butter has melted and the sugar has dissolved.

2. Continue cooking, without stirring, for a few more minutes or until bubbles just start to appear around the outside edges of the mixture (the sugar starts to caramelize). Then remove from heat, and pour into your prepared 9 inch diameter by 2 inch height cake pan.
3. Evenly arrange the pineapple slices on top of the sugar mixture. Place a maraschino cherry in the center of each pineapple slice. You can also place more cherries around the outside edge of the cake.

### **Cake butter**

1. Preheat the oven at 170 degrees C.
2. In a large bowl, sift or whisk together the flour, baking powder, and salt.
3. In the bowl of your electric stand mixer, fitted with the paddle attachment (or with a hand mixer), beat the butter, sugar, and vanilla extract until light and fluffy.
4. Separate the eggs (yolk and egg white separated)
5. Scrape down the sides and bottom of the bowl as needed. Add the egg yolks and beat until incorporated.
3. Add the flour mixture (in three additions), alternately with the milk (in two additions), ending with the dry ingredients (the batter will be thick).
4. In a clean bowl, whisk the egg whites with the cream of tartar just until the whites hold a firm peak.
5. With a large spatula gently fold the beaten egg whites into the cake batter in two additions. Pour the batter into the cake pan, smoothing the top with the back of a spoon or offset spatula.
6. Bake in preheated oven for 35 - 45 minutes, or until the top of the cake is a deep golden brown and starts to pull away from the sides of the pan (a toothpick inserted into the cake (not the pineapple) will come out clean).
7. Remove from oven and place on a wire rack to cool for about 10 minutes. Run a sharp knife around the edge of the pan and then invert the cake onto your serving plate.
8. Serve warm. This cake is best on the day it's baked. But leftovers can be covered and stored in the refrigerator for a couple of days. Reheat in the microwave.

**Note:** *Instead of canned pineapple slices, you can use 1 medium fresh pineapple. Peel, slice and core the pineapple and then cut into 1/4 inch (.5 cm) slices.*


### **Fruit tart**

A fruit tart is combination of fresh fruits, diplomat cream or cream chantilly assembled inside a sweet pastry baked tart shell. These 3 combinations give the



dessert creamy and crunchy mouth feel. Variety of fruits can be used to make this tart but one has to keep in mind that the fresh fruits complement the cream and fruits that are too watery in texture must be avoided for example watermelon and muskmelon. Watery fruits if used must be consumed immediately as prolonged storage can make the tart soggy. Fruits such as strawberry, mango, peach, apple, raspberry and blueberry etc. compliment the cream and tart shell very well and hence should be preferred.

Recipe No. 21: Fruit tart	
Ingredients	Quantity
Sweet paste	200 gm
Whipped cream	100 gm
Pastry cream	50 gm
Vanilla extract	10 ml
White chocolate	50 gm
Apple	100 gm
Mango/ strawberry	150 gm
Chopped pistachio	20 gm
Glaze gel	20 gm



*Fig. 3.25: Apple pie*

**Method**

1. Pin the sweet paste to 3 mm thickness.
2. Cut a round disc with the help of plain cutter which is slightly bigger than the diameter of the tart mold.
3. Place the disc in the tart moulds and press it gently at the bottom and move your fingers to the sides of the mould applying even pressure so that the dough spreads evenly on all sides and there are no air pockets between the dough and the tart.
4. Once done, trim off the excess dough with the help of the back of a knife.
5. Place rice bean bags in each shell and bake it blind at 170 degree C for 12-15 minutes.
6. Meanwhile whip the cream and blend it with pastry cream and vanilla extract.
7. Once the tart shell is baked, allow it to cool down. Apply the melted white chocolate inside the baked tart shells with the help of a paint brush and allow to set. This will prevent the tart from becoming soggy.
8. Pipe the cream inside the chocolate lined tart shells.
9. Cut the fruits in desired shapes and arrange on the cream aesthetically.

10. Apply cold gel glaze the edges of the tart shell with the help of paint brush.
11. Stick crushed pistachios over the edges of the tart.
12. Finally glaze the fruits on top with the cold glaze and serve immediately.

### What have you learned?

After completing this session, you are able to:

- describe preparation of desserts
- discuss and prepare mousse, souffle, brulee, apple pie, cakes and tart

### Practical Exercise

#### Activity

#### Check Your Progress

##### A. Multiple Choice Questions

1. A mousse can be ...
 

a) Sweet	b) Savory
c) Bitter	d) Sweet and salty both
2. Sabayon is made up of
 

a) Whipped cream	b) Eggs
c) Butter cream	d) Flour
3. Soufflé can be served
 

a) hot or cold both	b) cold only
c) Hot only	d) None of the above
4. The word souffle is derived from the .....verb "*Soufflir*"
 

a) French	b) Italian
c) English	d) None of the above
5. .... gives and holds the shape of chilled lemon souffles.
 

a) Lemon zest	b) Whipped cream
b) Gelatin	d) None of the above

##### B. Fill in the Blanks

1. A pineapple upside down cake has its origin from \_\_\_\_\_.
2. Crème brulee is baked at \_\_\_\_\_ temperature for long time.
3. Crème caramel is also known as \_\_\_\_\_.
4. A \_\_\_\_\_ is combination of fresh fruits, diplomat cream or cream chantilly assembled inside a sweet pastry baked tart shell.
5. \_\_\_\_\_ pastry is used for making apple pie.

##### C. Mark the statement True or False

1. *Soufflir* means to rise.

2. Crème brulee is a classic Swiss dessert.
3. Caramelization of sugar is done with the help of blow torch.
4. Fruits high in moisture content are used for fruit tart preparation.
5. Cold souffle is baked.

### SESSION 3: PREPARATION OF GARNISHES/ DECORATIONS FOR DESSERTS

Every dessert needs to be decorated or garnished to make it more attractive. The garnish and decoration must be edible and should compliment the final dessert. They can be made out of a range of ingredients such as chocolate, cream, fruits, nuts, tuille, meringue, herbs etc. Let us discuss few of the common garnishes below:

#### Chocolate cigars and slab

#### Tuille

A **tuille** is a thin arched wafer which is crisp and can be sweet or savory. It is a French word for a tile and resembles the shape of arched roof tiles. It is prepared with a mixture of flour, butter, sugar, milk and/or eggs to form into a paste. This paste is spread on a non- stick baking paper or silpat and baked. Whilst it is still hot, it is flexible but upon cooling it becomes brittle and crisp. Chefs use this as an advantage to mould it into unique shapes before it hardens. It is either rolled like a tube or curved on a pipe or even cut with cutters to make unique decorations. The thinly spread paste can also be sprinkled with sliced nuts such as almonds, cashew, peanuts or hazelnuts etc. or seeds such as poppy, sesame to make it more interesting.

#### Plain tuille

Recipe No. 22: Plain tuille	
Ingredients	Quantity
Flour	55 gm
Castor sugar	150 gm
Egg white	90 gm
Melted butter	120 gm
Vanilla extract	10 ml




Fig. 3.26: Plain tuille

**Method**

1. Beat the egg whites and sugar until sugar dissolves. Add the melted butter and mix in the flour. Add vanilla or any other flavor of choice.
2. Refrigerate the batter for 4-5 hours.
3. Set the oven to 170 degrees C.
4. Prepare a baking tray with a non-stick baking paper. Spread the batter on the silpat or a non-stick baking paper with the back of a spoon in circular motion and as thin as possible.
5. Bake in the oven at 170 degrees for 7-8 minutes until lightly golden on the sides. Do a few pieces as trials and then use the rest of the batch.
6. Once baked, remove from the oven. With the help of an offset spatula lift the tuille and place it on a rolling pin or a pipe or a curved tray to give it a shape of an arched tile.
7. This can also be shaped like a cone or a cylinder with 2 open sides. The cone and cylinder can be filled with fruits and pastry cream.
8. Baked Tuille must be stored at room temperature in an air tight container.

**Fruits**

Fruits of various types like mango, watermelon, kiwi, strawberry, blueberry, raspberry, dragon fruit, star fruit, pineapple etc. can be used to decorate any dessert, cake or pastry. It may be cut into various shapes and sizes to compliment the dish. One must be careful whilst using fresh fruits such as apple and banana as they oxidized very easily and this can make them unappetizing and unappealing.



Fig. 3.27: Fruits

You may want to brush them with lime juice or glaze them with a clear gel immediately after cutting. A combination of soft and firm fruit can add an interesting texture to the desserts.

**Nuts**

Nuts add a lot of versatility in garnishing desserts and cakes. They are primarily toasted and sprinkled on top of many desserts like ice creams, puddings etc. and are applied on the sides of a cakes too, for example cashew nibs, almond flakes, chopped hazelnuts or nibs etc. Nuts can also be used in making tuille, butterscotch which is also used to decorate the cakes. Apart from garnishing they add crunchiness or crisp texture and increase nutritional value of the dessert.



Fig. 3.28: Nuts

### Cream

Cream is essentially whipped to medium or stiff peak and then put in a piping bag fitted with a nozzle of choice. The cream is then piped over desserts or cakes to decorate it in fancy ways. Whipped cream and butter cream are commonly used in decorating cakes which can be flavored and colored as desired. These days variety of fancy piping nozzles are available in the market that can be used for decorating cup cakes and other desserts.



Fig. 3.29: Cream

### Meringue

Meringue is essentially made by whipping egg whites and sugar which can be piped directly on the dessert or piped on a baking sheet and allowed to dry in a warm oven over night. After drying it becomes light and crisp. It can then be used on various desserts and cakes to decorate it. There are three types of meringue namely Italian, French and Swiss and each of these have their own methods of preparation and application in confectionary.



Fig. 3.30: Meringue

### Italian meringue

Italian meringue is made in two stages: in the first stage egg whites are whipped with small amount of sugar, and in the second stage, a hot sugar syrup cooked

at 117 degree C is added while the egg whites are being whipped. The whipping continues until the meringue becomes stiff and cools down in the bowl. Once cooled, the meringue is folded into various other mixtures like a mousse, butter creams or used as a base for making *French macaron*. This meringue is not suitable for making dried meringues however it is mostly used in decorating Polish Brioches, baked Alaska (Ice Cream and sponge cake Coated with meringue and caremelised using a blow torch) and adding to flavoured mousses to make it *light* and airy.

Recipe No. 23: Italian meringue		
Ingredients	Quantity	
Egg white	100 gm	 <p>Fig. 3.31: Italian meringue</p> 
Castor sugar	20 gm	
Water	80 ml	
Castor sugar	180 g	
Salt	pinch	

**Method**


1. Pre heat oven to 90 degrees C. Line a baking sheet with silpat or non- stick paper. Ensure the whisk and bowl are free of any grease and water as it will spoil the meringue.
2. Dissolve the 180 g of sugar in the water and boil to 117-119 degree C (check with candy thermometer).
3. When the temperature of the syrup reaches 110 degrees C begin whisking the egg whites with 20 g of sugar and a pinch of salt in the stand mixer with a whisk attachment, at speed 3 until firm and frothy.

4. When the required temperature of the syrup is achieved, very carefully pour it over the partially whisked egg whites in a thin, steady stream, from the sides of the bowl, taking care not to let the syrup touch the whisk and keep whipping continuously until the meringue is stiff and shiny. When you lift the whisk, the mixture should hold firm peaks.
5. Reduce to speed 2 after 2 minutes and whisk for another minute or two.
6. Once the meringue is ready, use it to make macarons, mousses and other cold desserts.

**a. French meringue**

This is the easiest of all meringues to make. In the first stage, the egg white is whipped lightly with a pinch of salt, cream of tartar/ lime juice, white wine vinegar. This prevents the meringue from collapsing. Once little foaming has started the castor sugar is added spoon by spoon at regular intervals. The whipping continues till all the sugar is added and meringue doubles in volume and turns bright and shiny. It is then piped on a baking sheet and allowed to dry in a warm oven overnight. You can add colors and flavors as required. French meringue can also be used as a base for desserts such as soufflé and mousse and can also be used for creating airy sponges such as *angel cake*.

<b>Recipe No. 24: French meringue</b>	
<b>Ingredients</b>	<b>Quantity</b>
Egg white	100 gm
Castor sugar	175 gm
Salt	Pinch
White vinegar/lemon Juice	5 ml
Icing sugar	25 gm



*Fig. 3.32: French meringue*


**Method**

1. Pre heat oven to 90 degree C. Line a baking sheet with silpat or non stick paper. Ensure the whisk and bowl are free of any grease and water as it will spoil the meringue.
2. Whisk the egg white, vinegar and salt on medium speed until firm and frothy. Whisk in castor sugar spoon by spoon gradually until the entire sugar is dissolved.

3. Keep whisking until sugar has dissolved completely and whites are stiff and shiny. When you lift the whisk, the mixture should hold firm peaks.
4. Quickly and carefully fold sifted icing sugar using a flexible spatula, taking care not to deflate the meringue.
5. Spoon the meringue into piping bags fitted with a nozzle. Pipe on the tray in desired shapes. Bake in the oven at 90 degree for 2-4 hours or overnight at 50 -60 degrees C in the oven. Cool and store in an air tight container.

**b. Swiss meringue**

This meringue is made by cooking egg whites and sugar over a double boiler until warm (40-45 degree C). This process helps the sugar to dissolve quickly and is best used for making small meringues and decorations.

Recipe No. 25: Swiss meringue		
Ingredients	Quantity	
Egg white Castor sugar Icing sugar	100 gm 200 gm For dusting	

**Method**

1. Pre heat oven to 70 degree C. Line a baking sheet with silpat or non stick paper. Ensure the whisk and bowl are free of any grease and water as it will spoil the meringue.
2. Place a sauce pan with water on a medium heat.
3. Put the egg white and castor sugar in the mixing bowl and put this bowl over the double boiler. Whisk the egg white and castor sugar continuously and vigorously with a hand whisk until all the sugar is dissolved and taking care the egg whites do not get cooked due to heat. Heat the mixture upto 45 degree C.



4. Transfer the bowl to the machine and whisk at speed no 3 until whites are stiff and shiny. When you lift the whisk, the mixture should hold firm peaks.
5. Spoon the meringue into piping bags fitted with a nozzle. Pipe on the tray in desired shape and size. Dust the meringue with icing sugar and Bake in the oven at 90 degrees for 2-4 hours depending on the size or overnight at 50-60 degrees C.
6. Once done, cool and store in an air tight container. Use it to garnish desserts and cakes.



Fig. 3.34: .....

### What have you learned?

After completing this session, you are able to:

- describe garnishes used for decorating the desserts
- discuss and prepare tuille, meringue, fruit and nuts garnishes

### Practical Exercise

#### Activity

#### Check Your Progress

##### A. Multiple Choice Questions

1. A tuile is derived from ..... word
 

a) French	b) Italian
c) English	d) None of the above
2. Lemon juice is applied on apple and banana to avoid
 

a) Ripening	b) Oxidation
c) Spoilage	d) Staling
3. Nuts add
 

a) Crunchiness	b) Nutritional value
c) crispiness	d) All of the above
4. For piping the whipped cream over desserts ..... is used
 

a) Piping nozzles	b) Piping bag
c) Spatula	d) Both a and b
5. Meringue is made by whipping egg whites and.
 

a) Sugar	b) Whipped cream
c) Gelatin	d) Chocolate

##### B. Fill in the Blanks

1. Preparation of \_\_\_\_\_ meringue is easiest of all meringues.
2. The 3 basic types of meringues are \_\_\_\_\_, \_\_\_\_\_ and Swiss.
3. A swiss meringue is first cooked over a \_\_\_\_\_ until warm.
4. \_\_\_\_\_ is done to make desserts more attractive.
5. Tuille becomes brittle and \_\_\_\_\_ after cooling.

### C. Mark the statement True or False

1. French meringue can be used for preparing airy sponges.
2. Italian meringue is made in three stages.
3. A tuille is a thin arched wafer which is crisp and can be sweet or savory.
4. After drying, meringues become soft.
5. In second stage of Italian meringue preparation, sugar syrup is cooked at 150 degree C.

## SESSION 4: PREPARATION OF BASIC CAKES

### Basic Sponge and Mousse Cakes

Cakes are a form of dessert usually made with flour, butter, sugar, eggs and cream. They are typically large in size and hence cut into pieces and served. The cut pieces from the cakes are typically pastries which are smaller portions of the whole cake. Over a period of time the process of making cakes has changed drastically ranging from very old classics which were completely hand made to modern cakes which utilize modern machines, moulds and ovens to make them. The ingredients mentioned above are typically used in making cakes, however ingredients such as fruits, fruit purees, nuts, nut paste and more such ingredients can be used to design the whole cake. A typical cake is composed of a sponge, filling, icing and a garnish. We will learn about some basic sponges and mousse cakes below.



Fig. 3.35: .....

#### a) Sponge cake

Sponge is by itself a cake which can be eaten as it is and it can also be layered and frosted with cream, fruits, nuts etc to form many other varieties of cake. Sponges are traditionally made with eggs, flour, sugar and baking powder or soda, however there are many sponges made without eggs too which are getting popular. All sponges vary in taste and texture due to different ingredients and quantities being used but the basic requirement of a sponge are same i.e. it has to be soft, light, and must have a well-knit structure.

### Recipe No. 26: Sponge


Ingredients	Quantity	
Egg yolk Castor sugar Vanilla extract Flour sifted Corn flour Egg whites Salt	200 gm 500 gm 10 ml 125 gm 125 gm 300 gm pinch	

Fig. 3.36: Sponge cake

**Method**

1. Grease baking pan of 6 inch diameter by 2 inch height. Apply butter paper at the bottom if using an aluminum mold.
2. Set the oven to 160 deg C in convection or 180 degrees C in deck oven.
3. Sift the flour 2-3 times using a fine sieve. Replace 125 gm flour with 125 gm cocoa powder if making a chocolate sponge.
4. Take a clean bowl of a stand mixer and put 10 egg yolks, sugar and vanilla in it. Whip on medium speed for 2 minutes and then increase the speed to no 3 or fast and whip till pale and ribbon consistency is obtained. Carefully fold in the flour mixture into the yolks.
5. Once done, keep the mixture aside. In another bowl of the mixer pour 10 egg whites and a pinch of salt and whip them on a high speed until stiff peaks are formed.
6. Fold the egg whites into the yolk mixture carefully ensuring not to deflate the entire mixture.


7. Once the egg whites are folded, carefully pour the mixture into prepared cake moulds and bake at 170 degrees in Convection and 180 degrees C in deck oven for 15-20 minutes. Insert a knife or toothpick into the cake to check the doneness.

Commercially a lot bakeries use cake gel while making sponge which is a stabilizer to ensure the whipped eggs do not deflate and instead of separating the eggs (yolks and whites) they can all be whipped together.

**b. Genoise sponge**

It is also referred as Genovese cake which is an Italian sponge cake named after the city Genoa in Italy. Instead of using any chemical leavening agent like baking soda or baking powder, the egg and sugar is beaten or whisked with a wire whisk in a machine on a medium to high speed to trap as much air as possible and then the flour is folded in and lastly melted butter is folded, ensuring the batter doesn't deflate. It is then baked in a pan or sheet tray.

Recipe No. 27: Vanilla genoise sponge	
Ingredients	Quantity
Egg whole	200 gm
Vanilla essence	20 ml
Grain Sugar	120 gm
Flour	120 gm
Butter unsalted	35 gm



*Fig. 3.37: Vanilla genoise sponge*

**Method**

1. Grease baking pan of 6 inch diameter by 2 inch height. Apply butter paper at the bottom if using an aluminum mold.
2. Set the oven to 160 degree C in convection or 180 degree C in deck oven.
3. Sift the flour 2-3 times using a fine sieve. Replace 30 gm flour with 30 gm cocoa powder if making a chocolate genoise.
4. Take a clean bowl of a stand mixer and put 200 gm of eggs in it.
5. Place a sauce pan with water on a medium heat to prepare a double boiler. The pan should be able to hold the base the mixer bowl. Place the mixer bowl on the pan making sure the base of the bowl is not touching the water in the pan. Put sugar and vanilla in the bowl and whisk with a hand whisker till all

the sugar dissolves and the eggs are around 40 degree in temperature or warm to touch.

6. Remove the bowl from the double boiler and fit it in the machine with a whisk attachment. Beat on a medium to high speed until light, foamy and firm. It should have doubled in size and formed ribbon consistency.
7. Remove the bowl from the machine and start adding the flour in small batches. Make sure to cut and fold the flour and not stir it in as this will deflate the egg mixture.
8. Finally pour in melted butter from the sides of the bowl and fold it gently from the sides towards the center until butter has been incorporated.
9. Pour the batter in to prepared cake tins.
10. Bake at 180 degrees in gas or deck oven and at 160 degree in convection or rotary oven for 10-15 minutes. Insert a knife or a toothpick into the sponge to check the doneness. It should be baked to a light golden brown color.
11. Remove the mould from the oven, allow to rest for 5 minutes and then gently demold the sponge.
12. Cool on a wire rack, cover with a plastic wrap and refrigerate until further use.

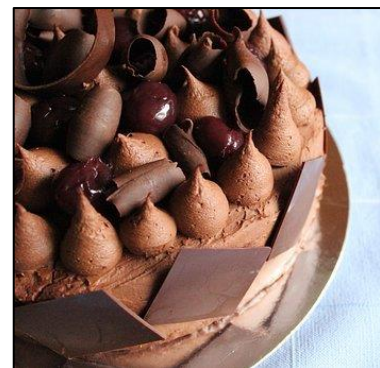
### c. Cream cakes

Cream cakes are made with a variety of sponges, which are layered with freshly whipped dairy or non- dairy creams, and flavored with jams, compotes, fruits, chocolate ganache etc. A basic vanilla cream cake is made with vanilla sponge layered with crème Chantilly and iced with more cream from top and sides. It can be garnished with variety of garnishes like nuts, chocolates, swirls of cream and sometimes fresh fruits are used to enhance the appearance.



Fig. 3.38: Vanilla fresh cream cake

The cream cakes are done in many flavors like chocolate, fresh fruits, vanilla, butter scotch, pineapple, lemon, etc. The cake should be garnished and decorated with the same or complimenting ingredients that forms the flavor of the cake.



*Fig. 3.39: Fresh cream chocolate cake*

#### **d. Butter cream cakes**

Butter cream cakes are prepared in the same way as cream cakes. Only difference is that it is layered and iced with butter cream instead of crème Chantilly. Butter cream recipe has been explained in the previous session of this unit. Butter creams are very versatile, stable, rich and low in moisture content and hence it is used when making fondant cakes. Variety of sponges such as genoise, pound cake etc. are layered with butter cream which can also be flavored or colored as per the theme. Care must be taken not to mix any water based color or flavor as they would not combine with the fat of the butter cream.

*Fig. 3.40: Vanilla cake with strawberries*

#### **Mousse cake**

Mousse cakes are made by layering various types of sponges with a creamy mousse fillings. In France, the modern trend is to layer varieties of sponges with different fillings providing a combination of different textures and tastes. Such cakes are commonly known as Entremet. They are more complex in taste, texture and technique and therefore regarded more superior than the simply layered cream or butter cream cakes.

As already discussed in this unit, mousses are made in various styles using variety of techniques and when used as a filling for an Entremet, there is no end to creativity in this area of cake. In case of chocolate mousse cake, mousse is poured or piped over a sponge which is placed in a ring or a mold and is then frozen. The freezing helps to demould the cake from the ring. The cake can now be glazed, decorated and garnished before serving. Care should be taken to defrost the cake before it is served. Let us discuss how to make a chocolate mousse cake:


Recipe No. 28: Chocolate mousse cake		
Ingredients	Quantity	
Chocolate genoise sponge	250 g of 6 inches diameter 400 g	
Chocolate Mousse (refer to the recipe given on pg 16 )		
<b>Glaze</b>		
Chocolate Couverture	100 gm	
Cooking Cream	150 gm	
<b>Garnish</b>		
Dark Chocolate	100 gm	

Fig. 3.40: Chocolate mousse cake

**Method**

**Preparing the cake rings or moulds**

1. Take a cake rings of 2 inch height and 6 inch diameter. Line the ring with plastic sheet of 2 inch height on the inner sides. Tightly apply a piece of cling wrap from one side of the ring so that it resembles a music drum. Keep the cling wrap side face down on a clean tray lined with silpat or silicon paper.
2. Now slice the sponge into two equal slices and cut with a cutter in such a manner that the diameter of the sponge is 5 ½ inches. If the sponge is too thick then slice it into 5 mm thick sponge discs. Cover with plastic wrap and keep aside.

**Assembly**

1. Take a piping bag with a plain tip nozzle. Pour the mousse mixture into the piping bag.
2. Pipe the mousse into the ring till half. Put the disc of the sponge and moisten it with sugar syrup with the help of a brush. Now pipe more chocolate mousse leaving a space of 5 mm on the top. Put the second layer of chocolate sponge disc and moisten it with sugar syrup with the help of a brush. Run a cake spatula to smoothen the surface and remove any excess mousse if any.
3. Once the ring is filled, tap the tray on the table lightly so that any air pockets are removed from the cake.
4. Place the mousse in the freezer to set over night.

**Glaze**

Prepare the chocolate glaze in the same way as the ganache. Once the ganache is ready and while it is still warm, add chunks of butter in it and blend it using a hand blender until shiny, ensuring that there are no air bubbles being created.

**Finishing**

1. Melt the dark chocolate in the microwave. Temper it, spread it on the acetate sheet, cut into squares and refrigerate. Once set, remove from acetate sheet and keep aside
2. Remove the mousse from the freezer, place the cake on the jar or a tin of a lesser diameter than the cake on a tray in such a way that the sponge is at the bottom and the mousse is on the top.
3. Carefully pull out the ring and then peel off the plastic sheet.
4. Heat the glaze if it is cold until it reaches 35-degree C. Pour the chocolate glaze on top the cake covering all the sides leaving the excess to drip off on the tray.
5. Transfer the cake on a cake board and allow defrosting for 3-4 hours.
6. Put the chocolate garnishes on the sides and on the top.

**Preparation of Classic cakes**

**a) Black forest cake**

It originates from Germany and represents the black forests of Swabia region of Germany and hence it is also known as *Schwartz Walder Kirschen Torte*. Chocolate sponge is soaked with Kirsch liqueur (cherry flavored liqueur) and morello cherry Flavored sugar syrup, then layered with vanilla Chantilly cream and morello cherries. The cake is iced with Chantilly cream from outside also and then covered with chocolate flakes or shaved chocolate to represent the black forest of Germany.

Recipe No. 29: Black forest cake	
Ingredients	Quantity
Chocolate genoise sponge	250 gm (3 slices of 2 cms thickness)
<b>Kirsch Syrup</b>	
Water	50 ml
Sugar	50 gm
Juice from Morello or sour cherries	50 ml
Or Kirsch liqueur	20 ml
Water	25 ml
<b>Chantilly Cream</b>	
Whipping cream non- dairy	200 ml
Vanilla extract	2 ml
<b>Filling and Decoration</b>	
Morello Cherries in Kirsch	150 gm
Or any sour Cherry	
Dark Chocolate shaving	150 gm



Fig. 3.41: Black forest cake



**Method*****Prepare the Kirsch Syrup***

1. Prepare the kirsch syrup by boiling water, sugar and juice from the morello cherries and allow it to cool down.
2. If using kirsch liquor (cherry liquor) then add it only after the syrup cools down.

If using frozen sour cherries, cook with equal amount of sugar, bring to a boil and strain the cherries. The residual syrup can be used as kirsch syrup.

Often Morello or maraschino cherries come packed with kirsch liquor in a glass bottle.

***Prepare Chantilly Cream***

Whip the cream and vanilla together till soft peaks and keep aside.

***Layering***

1. Slice the genoise sponge cake into 3 slices of equal thickness.
2. Place a cake board on a turn table. Place a ring of 6 inch and put the sponge inside it.
3. Put the Chantilly cream in a piping bag. Soak the sponge with the kirsch syrup with the help of a pastry brush. Pipe the cream on the sponge moving the pastry bag in a circular motion. Sprinkle sour cherries on top.
4. Place another layer of sponge and repeat the process. Finally place the third layer of the sponge and soak with the syrup.
5. Apply the whipped cream on top and smoothen with a pallette knife.
6. Refrigerate the cake in the fridge for 30 minutes. Take it out of the fridge, remove the cake ring and then apply the Chantilly cream from the sides and smoothen the cake surface.
7. Transfer the cake on a presentation cake board and decorate the cake with chocolate shavings. Pipe rosettes of whipped cream equidistant from each other and place sour cherries on each rosettes.

**b) Butter scotch cake**

Butterscotch is one of the most common cakes served in many pastry shops in our country. It is prepared by layering vanilla sponge with crème Chantilly and crushed sugar and butter caramelized cashew nuts and this flavour is also known as butterscotch. They are garnished with more butterscotch on the outside and is often layered with caramel sauce in the center.

Recipe No. 30: Butter scotch cake	
Ingredients	Quantity
Chocolate genoise sponge	250 gm 6 inch diameter
	250 gm
Chantilly cream	100 ml
<b>Simple syrup</b>	50 gm
Grain Sugar	50 ml
Water	1 slice
Lemon	
<b>Butter Scotch</b>	50 gm
Cashew nut	100 gm
Sugar	25 g
Unsalted butter	(for garnish)
Chocolate disc	(for garnish)
Fresh fruits assorted	



Fig. 3.42: Butter scotch cake

**Method**

**To make the syrup**

Prepare the simple syrup by boiling water, sugar and lemon slice and cool it down.

**To make chantilly cream**

To make Chantilly cream whip the cream and vanilla extract together till soft peaks and keep aside.

**To make butter scotch\***

1. Roast the cashew nuts in the oven at 160 degree for 8-10 minutes or until lightly browned. Cool it and keep it aside.
2. Cook the sugar until light caramel stage i.e. up to 170 degree C. Add the roasted cashew nuts and butter and mix well.
3. Now spread the caramelized nuts on a nonstick baking sheet or silpat and allow it to cool and set to firm and brittle texture. Crush the caramel with rolling pin to convert it into small chunks.

*\* You may also use readymade butterscotch nibs if available.*

**Layering**

1. Slice the genoise sponge cake into 3 slices of equal thickness.
2. Place a cake board on a turn table. Place a ring of 6 inch and put the sponge inside it.
3. Put the Chantilly cream in a piping bag. Soak the sponge with the syrup with the help of a pastry brush. Pipe the cream on the sponge moving the pastry bag in a circular motion. Sprinkle crushed butterscotch on top.
4. Place another layer of sponge and repeat the process. Finally place the third layer of sponge. Soak with the syrup and apply cream on top.

5. Refrigerate the cake in the fridge for 30 minutes. Take it out of the fridge, remove the cake ring and then apply the Chantilly cream form the sides too.
6. Finish the cake from top and the sides with the help of a spatula until smooth.
7. Transfer the cake on a presentation cake board. Finally cover the cake with some more butter scotch from the top, pipe rosettes of whipped cream and garnish with fresh fruits and chocolate disc.


<b>Recipe No. 31: Pineapple cake</b>		
<b>Ingredients</b>	<b>Quantity</b>	
Vanilla Genoise sponge	1 piece of 6 inch diameter	
Chantilly cream	100 gm	
<b>Simple syrup</b>	100 ml	
Grain Sugar	50 gm	
Water	50 ml	
Lemon	1 slice	
<b>Pineapple filling</b>		
Fresh pineapple	200 gm	
Sugar	100 gm	
Water Or Canned pineapple	50 ml	
<b>Garnish</b>		
Toasted almond flakes and pineapple chunks		

Fig. 3.43: Pineapple cake

**Method**

**To make the syrup**

Prepare the simple syrup by boiling water, sugar and lemon slice and cool it down.

**To make Chantilly Cream**

To make Chantilly cream whip the cream and vanilla extract together till soft peaks and keep aside.

**Pineapple filling**

1. You can use readymade Pineapple filling or chop canned pineapple slices. You can also make your own pineapple compote by using fresh pineapple.
2. To make pineapple compote, peel and dice a fully ripened pineapple into ½ inch cubes. Place it in a sauce pan with sugar and 50 ml water. Boil till it softens and thickens a bit. Allow to cool in the refrigerator.

**Layering**

1. Slice the genoise sponge cake into 3 equal slices.
2. Place a cake board on a turn table. Place a ring of 6 inch and put the sponge inside it.
3. Put the Chantilly cream in a piping bag fitted with a plain nozzle.

4. Soak the sponge with the simple syrup with the help of a pastry brush. Pipe the cream on the sponge moving the pastry bag in a circular motion. Sprinkle diced canned pineapple or pineapple compote on top.
5. Place another layer of sponge and repeat the process. Finally place the third layer of sponge. Soak with the syrup and apply the Chantilly cream on top.
6. Refrigerate the cake in the fridge for 30 minutes. Take it out of the fridge, remove the cake ring and then apply the Chantilly cream form the sides too.
7. Finish the cake from top and the sides with the help of a spatula until smooth.
8. Transfer the cake on a presentation cake board.
9. Pipe rosettes of whipped cream and garnish with pineapple chunks and toasted almond flakes on the sides.


Recipe No: 32 Chocolate truffle cake		
Ingredients	Quantity	
Dark chocolate Couverture (55 %)	230 gm	
<b>Ganache</b> Cooking Cream	200 gm	
<b>Layering</b> Chocolate sponge	200 gm	
Simple syrup	50 ml	
<b>Glaze</b> Chocolate Couverture(55 %)	100 gm	
Cooking Cream	150 gm	
Unsalted Butter	25 gm	
<b>Garnish</b> Dark chocolate	100 gm	

Fig. 3.44: Chocolate truffle cake

**Method**

**Ganache**

1. Chop the chocolate and place it in a bowl. Boil the cream and cool it to 80 degree C. and pour it over the chocolate. Cover for 5 minutes and then whisk it till smooth and shiny.
2. Allow the Ganache to cool till thick at room temperature.

**Layering**

1. Slice the chocolate sponge in to 3 equal slices. Place a 6 inch ring on a cake board, put one slice of the sponge.
2. Put the ganache in a piping bag fitted with a plain nozzle.
3. Soak the sponge with the simple syrup with the help of a pastry brush.
4. Pipe the ganache in a circular motion on the sponge. Place another layer of sponge and repeat the process. Place the third layer of the sponge and finally apply the ganache on the top of the sponge.
5. Refrigerate the cake for 30 minutes in the fridge. Remove the cake from the fridge and carefully remove the ring. Apply more ganache on the side and with the help of a spatula finish it till smooth and even. Keep the cake in the fridge again to set.

6. Prepare the chocolate glaze same as the ganache. Once the ganache is ready and while it is still warm, add chunks of butter in it and blend it using a hand blender until shiny, ensuring that there are no air bubbles being created.
7. Remove the cake from the fridge. Place a tin or a glass jar of a lesser diameter than the cake on a tray. Heat the glaze if it is cold to 35 degree C. Pour the chocolate glaze on top the cake covering the top and all the sides. Leaving the excess to drip off on the tray.
8. Transfer the cake on a presentation cake board and apply chocolate square garnish on the sides and on the top.

**1. Chocolate Mousse Cake**

It is a light and rich dessert made out of eggs, sugar, whipped cream, chocolate and gelatin. It can be eaten as it is or can be layered between sponge, biscuit crusts etc.

<b>Recipe No. 32: Chocolate mousse cake</b>	
<b>Ingredients</b>	<b>Quantity</b>
<b>Mousse Base</b>	
Egg yolk	120 gm
Sugar castor	75 gm
Milk	25 ml
Whipped cream	500 gm
Gelatine	15 gm
Chocolate Couverture	400 gm
<b>Sponge</b>	
Corn Flour	30 gm
Flour	60 gm
Cocoa powder	13 gm
Sugar castor	150 gm
Butter	23 gm
<b>Glaze</b>	
Chocolate Couverture	100 gm
Cooking Cream	150 gm
<b>Garnish</b>	
Dark Chocolate	100 gm



Fig. 3.45: Chocolate mousse cake

**Method**

**Sponge**

1. Set the oven temperature at 210 degree C. Line a baking tray with grease proof paper
2. Place the egg and sugar and in a mixing bowl with whisk attachment
3. Whisk the egg and sugar at medium speed till light and fluffy
4. Meanwhile sift the flour, cocoa and corn flour together until well mixed

5. Melt the butter in a microwave
6. Once the egg has whipped to a stiff stage, fold in flour mixture slowly in a cut and fold method
7. Finally fold in the butter and spread the mixture over the tray
8. Bake at 210 degree for 10-12 minutes or until a toothpick comes out clean when inserted and removed after 10 seconds

### **Preparing the cake rings or moulds**

1. Take 2 cake rings of 2 inch height and 6 inch diameter. Line the rings with plastic sheets of 2 inch height on the inner sides. Tightly apply a piece of cling wrap from one side of the ring so that it resembles a music drum. Keep the cling wrap side face down on a clean tray lined with silpat or silicon paper.
2. Now cut few sponges with the help of same cutter. If the sponge is too thick then slice it into 5 mm thick sponge discs. Cover with plastic wrap and keep aside.

### **Mousse**

1. Whip the chilled cream till soft peak. Keep it in a cool area or refrigerated.
2. Place the egg, milk, vanilla extract and sugar in a mixing bowl, whisk the entire mixture to mix well. Place another pan with water in it on the stove at medium heat, this is called a double boiler. Allow the water to heat up.
3. Meanwhile soak the gelatin in 150 gm of water for 1- -15 minutes
4. Place the bowl of eggs on the double boiler pan, make sure the bowl does not touch the water in the pan. If the water is too much then reduce it. With the help of a whisk start whipping the mixture till it turns light, fluffy and thick. This mixture is called Sabayon. It takes around 10-15 minutes to cook a small batch of sabayon. Keep removing from heat from time to time to control the heat or else the sabayon will curdle.
5. Place the gelatin in the microwave and heat at full power for 30 seconds until its dissolved and clear from sediments
6. Melt the chocolate in the microwave. At full power heat the dark chocolate for 30 seconds at a time. Keep stirring at every thirty seconds of heating until the chocolate is melted
7. Once the gelatin is melted, pour it into the ready sabayon and mix well.
8. Remove the sabayon from the heat. Place chilled whipped cream in a separate bowl

*Note- Non dairy cream generally splits or curdles when it comes in contact with very hot sabayon. So ensure sabayon is not over 55 deg C.*

9. Take around 50 gm of whipped cream and fold it into the sabayon. Mix well and then take another 50 gm of the cream and mix well. This will reduce the

sabayon temperature and allow the mixture to blend with the rest of the cream easily.

10. Take the entire mixture and pour on top of the remaining cream and fold with your hands in cut and fold method
11. Once the entire sabayon is mixed with the cream, it is time for the chocolate to be folded.
12. The chocolate should be warm to touch and should not be cold or at room temperature.

Note- if the chocolate is at room temperature then while folding the same in the cream mixture it will further reduce the chocolate temperature and the chocolate may set into small chunks all over the cream and not mix well.

13. Fold the chocolate into 200 gm cream mixture first. Mix it well. Now fold this mixture properly into the remaining cream. The mousse is now ready to be piped into rings.

### **Assembly**

1. Take a piping bag with a plain tip nozzle. Pour the mousse mixture into the piping bag.
2. Pipe the mousse into the rings till the top leaving a space of 5 mm on the top. Once all the rings are filled, tap the tray on the table lightly so that any air pocket is removed from the cake. Insert the sponge base on top of each mousse ring. Run a cake spatula to smoothen the surface and remove any excess cream.
3. Place the mousse in the freezer to set over night.

### **Glaze**

Prepare the chocolate glaze same as the ganache. Once the ganache is ready and while it is still warm, add chunks of butter in it and blend it using a whisk slowly and not vigorously ensuring there are no air bubbles being created.

### **Finishing**

1. Melt the dark chocolate in the microwave. Temper it, spread it on the acetate sheet, cut into squares and refrigerate. Once set, remove from acetate sheet and keep aside
2. Remove the mousse from the freezer, pull out the rings and then peel off the plastic sheets. Place a tin or a glass jar of a lesser diameter than the cake on a tray. Place the cake on the jar.
3. Heat the glaze if it's cold until it reaches 35 deg C. Pour the chocolate glaze on top the cake covering all the sides leaving the excess to drip off on the tray.
4. Transfer the cake on a cake board and allow defrosting for 3-4 hours.

5. Put the chocolate garnishes on the sides and on top.

### What have you learned?

After completing this session, you are able to:

- describe basic types of cakes
- prepare various types of cakes

## Practical Exercise

### Activity

## Check Your Progress

### A. Multiple Choice Questions

1. Cake gel is used as a
  - a) Stabilizer
  - b) Sweetener
  - c) Preservative
  - d) None of the above
2. Genovese cake is another name of
  - a) Sponge cake
  - b) Genoise cake
  - c) Cream cake
  - d) Butter cream cake
3. Mousse cakes are commonly known as
  - a) Vanilla cake
  - b) Chocolate cake
  - c) Entremet
  - d) Sponges
4. Black forest cake is iced with .....cream
  - a) Gelatin
  - b) Chantilly
  - c) Vanilla cream
  - d) Butter cream
5. Kirsch liquor is a
  - a) Cherry flavored liquor
  - b) Cream
  - c) Gelatin
  - d) Chocolate mousse

### B. Fill in the Blanks

1. Black Forest cake is also known as \_\_\_\_\_ torte in Germany.
2. Fresh cream cakes consist of \_\_\_\_\_, \_\_\_\_\_ and a \_\_\_\_\_ of choice as key ingredient
3. Butter cream is used in \_\_\_\_\_, and \_\_\_\_\_ a cake.
4. A \_\_\_\_\_ is generally poured over a cake to give it a mirror like effect.

### C. Mark the statement True or False

1. Butterscotch is prepared by layering chocolate genoise sponge.
2. Dark chocolate is used for garnishing chocolate truffle cake.
3. Ganache is prepared with chocolate and cream.
4. Chantilly cream is a mixture of whipped cream and vanilla extract.
5. Caramelized almonds are used in butterscotch cake.



# Module 4

## Chocolate Craft

### Module Overview

Chocolate has a very important role in patisserie production. It is used for imparting its unique flavor, taste and texture. Chocolate is also used for garnishing and decoration purposes. In this unit, you will learn about the various aspects of chocolate crafts such as types of chocolates, their methods of preparation, tempering of chocolates, faults in tempering of chocolates, tools employed in chocolate crafts and various chocolate-based patisserie products.

### Learning Outcomes

After completing this module, you will be able to:

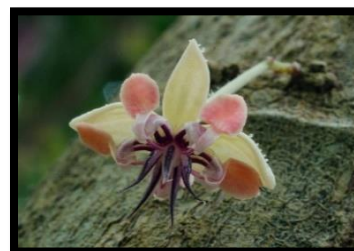
- Explain the basics of chocolate crafts, including tempering chocolate, molding techniques, and creating chocolate decorations and figures.
- Describe various chocolate-based products, and understand their ingredients, preparation methods, and presentation techniques.

### Module Structure

- Session 1: Basics of Chocolate Crafts
- Session 2: Chocolate Based Products

## SESSION 1: CHOCOLATE PREPARATION

Chocolate is obtained from the cacao tree. The cacao tree belongs to the family of Sterculiaceae. Its scientific name is *Theobroma Cacao*. The generic name is derived from the Greek words *Theobroma* - *theos* meaning "god," and *broma*, meaning "food". It translates to "food of the gods". The cacao trees are delicate and need to be protected from direct sunlight therefore they are planted under the shade of tall trees. On an average single cacao tree produces 20-30 cacao pods per year, each yield only about 56 grams of dried beans. These Cacao pods are cut open on the ground, and are immediately fermented, for developing its color and flavors. Cocoa beans, are used to make chocolate, cocoa powder and cocoa butter.



Cacao Flowers



Cacao fruits on the tree






Theobroma cacao

### Types of cacaos

Cacao are majorly classified in to three varieties which are described in following Table 4.1.

Fig. 4.1: .....

**Table 4.1: Types of cacao**

Type of Cacao	Criollo	Forestero	Trinitario (Cross breed of Criollo and Forastero)
			
Country producing	Mexico, Nicaragua, Venezuela, Colombia, Madagascar and the Comoros	Ghana, Nigeria, Ivory Coast, Brazil, Costa Rica, Dominican Republic and Colombia, Venezuela	Mexico, Nicaragua, Venezuela, Colombia, Madagascar and the Comoros
Contribution in total cacao production	10%	70%	20%

Aroma	Pleasant	Acidic	Pleasant
Flavour	Mild	Bitter	Fine

### **Making chocolates from cacao beans**

The process of making chocolate starts from fermentation of cacao beans. After fermentation, the beans are dried, cleaned and then roasted. The shell of the roasted cacao bean is removed to produce cacao nibs. The nibs are then ground and conched for minimum of 72 hours to develop aroma, sheen and emulsified mixture. This produces a paste known as "cocoa liquor" or "cocoa mass" which contains 54 % cocoa butter. It is a very important stage in the making of chocolates. Any flavorings such as sugar, milk solids and stabilizing agents such as soy lecithin are added during this stage to form commercial chocolate.

Conching is carried out with the help of roller mills, discs or cylinders. It ensures even distribution of cocoa butter within chocolate and act as a "polisher" of the particles. The name arises from the shape of the vessels initially used which resembled conch shells.

The color and flavour of chocolate is influenced by the selection of cacao beans, degree of fermentation and the extent of roasting of the beans. Cocoa powder is obtained when the cocoa butter is removed from the chocolate liquor with the help of hydraulic press machines.



Conching of chocolate



Fig. 4.3: .....



Fig. 4.4: Chocolate making process

Chocolate products are mostly used in pastry in the form of bitter chocolate, sweet chocolate, milk chocolate, white chocolate, cocoa butter and cocoa powder. Apart from being used as an ingredient in pastry it is also widely used by itself to prepare chocolate confectionery products such as bonbons, pralines, truffles, panned chocolates. These confections are becoming very popular choice of consumers to buy over the counter for consumption and gifting purpose.

**Types of chocolate**

Chocolates are classified into following two categories:

- 1) Compound
- 2) Couverture

**1) Compound cacao**

Compound cacao is most commonly used as coating chocolate or as baking chocolate. It resembles to chocolate in taste and appearance but it is not pure form of chocolate. Compound cacao is made up of cocoa mass (powdered coco), vegetable fats (hydrogenated fats), sugar, soy lecithin and vanillin. It is

economical than couverture chocolate therefore, preferred by many patisserie units to make chocolate flavored confections and desserts.

## 2) Couverture

Couverture in French means “covering”. This is the purest quality of chocolate made up of cacao mass and cacao butter. Couverture is mostly used chocolate professionals and high-end confectionery industry. Table 4.2 represents the ingredients-based difference between compound and couverture chocolates:

**Table 4.2: Ingredients-based difference between compound and couverture**

Ingredient	Compound	Couverture (pure chocolate)
<b>Cocoa mass</b>	Cocoa powder	Cocoa nibs
<b>Fat</b>	Hydrogenated fat	Cocoa butter
<b>Sugar</b>	Yes	Yes
<b>Emulsifier</b>	Soya lecithin	Soya or sunflower lecithin
<b>Milk solids</b>	Present in milk and white compound	Present in milk and white chocolate
<b>Flavoring</b>	Vanillin	Vanillin or pure vanilla

## Tempering

### Tempering of the chocolates

Tempering of chocolate is an important step having higher cocoa butter content. The cocoa butter present in couverture chocolates needs to be pre-crystallised to make chocolate ready for further processing. In this process, solid form of chocolate is first melted by heating it up to 45 °C, which is then cooled down to 28 °C. Thereafter it is heated again at working temperature i.e. 31 °C for further processing. After this the tempered chocolate is poured in a mould or a frame and allowed to cool to set into firm state. It is achieved at a room temperature of 22 degrees or lesser.

#### *Tempering Vs. Melting of chocolates*

Tempering is different from melting of chocolates. Melting refers to heating and cooling of the chocolate without controlling the temperature which results in formation of uneven crystals of the chocolate. The uneven crystals in melted chocolates lead to dull appearance, blooming and white patches.

Tempering is done at controlled temperature to yield consistently small crystals, resulting in shiny, glossy appearance and texture of the chocolate.

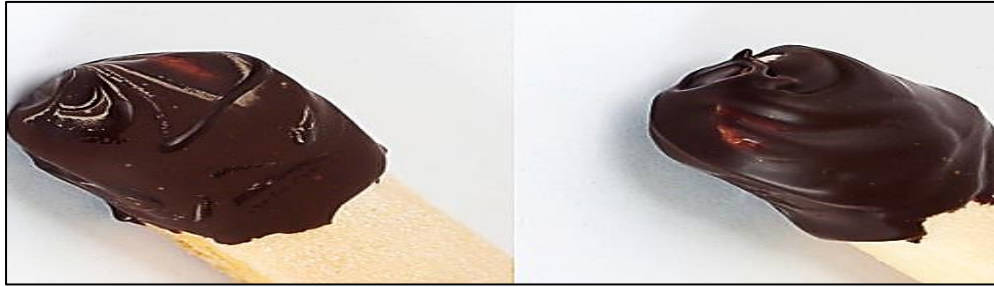


Fig. 4.5:

and tempered chocolate

Melted

### Technique of tempering chocolates

The two methods viz. tabling and seeding are employed to achieve stable and even crystallization of the final finished chocolate confection, these are discussed below:

There is no need to temper compounds as they can be easily used by melting it at temperature of 24-30°.

#### Tabling method

- Ingredients: 500g Dark chocolate chopped or callets
- Melt the chocolate to 45 degree C.
- Pour 3/4th (375g) of the chocolate on the table and retain 1/4th (125g) of it in the bowl.
- Agitate the 3/4<sup>th</sup> of the chocolate on a stone table using a steel scrapper until the temperature drops to 27 degrees C.
- On achieving the right temperature, pour back the 3/4th chocolate in the retained 1/4th chocolate bowl.
- Mix the chocolate with light hands to avoid adding any air to it and keep it for use at a stable temperature of 31 degree C for Moulding or Dipping

#### Seeding method

- Ingredients: 500g Dark chocolate chopped or callets
- Measure 3/4th (375g) of the chocolate in a bowl and melt it to 45 degree C.
- Retain 1/4th (125g) of the chocolate in the bowl, unmelted
- On achieving the temperature of 45 degree C, pour the unmelted 1/4th chocolate into the melted 3/4th chocolate.
- Agitate the chocolate until the unmelted chocolate is completely mixed, with a stable temperature achieved to 30 degree C for use

Fig. 4.6: Methods of tempering chocolate

### Tempering temperature

The tempering temperature of chocolate is dependent on the type of chocolate, cocoa butter content and other ingredients present in it.

Type of Chocolate	Melting temperature	Crystallisation temperature	Working temperature
White	45°C	27°C	28-29°C
Milk	45°C	27°C	29-30°C
Dark	45°C	27°C	30-31°C

### Characteristics of correctly tempered chocolate

A correctly tempered chocolate will have following characteristics:

1. Stable at room temperature between 23 to 25 °C
2. Have no bloom or streaks
3. Glossy and snap easily when broken
4. Will shrink appropriately and easily removable from molds or the acetate surface

### Faults in tempering of chocolate

There can be several faults in tempering that can occur while tempering a chocolate. **Chocolate often has tiny white spots, dullness and has white streaks which is called bloom.** There are three types of blooms: sugar bloom, fat bloom and grey bloom.

**Sugar bloom:** If chocolate has crusty texture, it is sugar bloom. Sugar bloom is usually the result of condensation, when it comes in contact with humidity. This happens because the sugar in the chocolate dissolves in the condensed water and as the water evaporates, the sugar comes out of solution, resulting in crystals on the surface of the chocolate. Hence giving a coarse unwanted texture on a chocolate.

**Fat bloom:** When the surface of the chocolate is oily to touch, it is a fat bloom. It happens when cocoa butter is separated from other ingredients due to lower melting point, thermal shock and improper storage. Fat bloom gives the chocolate a dull kind of matt finish and often streaks of fat may appear once the chocolate is set.

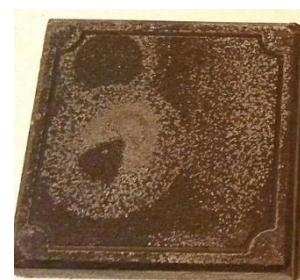


Fig. 4.6: Fat bloom

**Grey bloom:** One should have a habit of testing the chocolate after tempering by doing a temper test on a parchment paper or on knife. If the tempering is not properly done, the chocolate even if it contracts well, with no above defects may show up white streaks. This might happen due to poor agitation of cocoa fat. This leaves the chocolate with white streaks giving an appearance of being stale and defective.



Fig. 4.7: Grey bloom

**Basic chocolates preparation**

**Moulded chocolate**

Moulded chocolate is finished product ready for wrapping. The consistency of the chocolate determines the texture and appearance of the chocolate products. Chocolates are tempered before preparing any chocolate products. The different steps involved in chocolate moulding are:

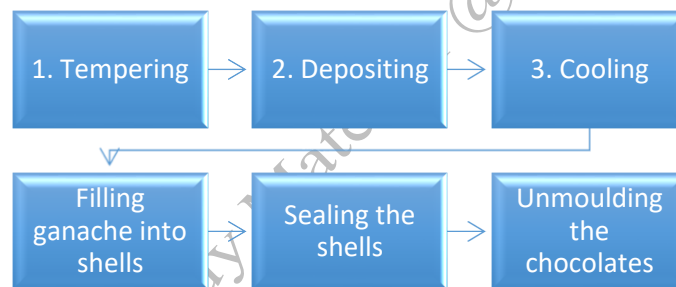


Fig. 4.8: Steps of chocolate moulding

**1. Tempering**

Chocolates are first tempered as discussed above.

**2. Depositing**

1. The mould is filled with tempered chocolate and excess chocolate is scrapped off from the top and sides of the mould.
2. Mould is firmly tapped against worktop to remove any air
3. The chocolate filled mould is inverted to remove the excess chocolate back into the bowl.
4. All sides and corners of the mould cavities are filled and evenly covered. Any excess chocolate scrapped off from the mould again.



Fig. 4.9: Inverting chocolate filled mould

**3. Cooling**



1. Chocolate is kept for 5 minutes in air-conditioned room for setting.
2. The chocolate filled mould is kept in a refrigerator at 14°C to 16°C for few minutes.

#### 4. Filling ganache into chocolate shells

1. Warm the desired filling maintaining temperature not higher than 28°C to prevent melting of chocolate shells.
2. Now fill a piping bag with a plain tip or no tip with it.
3. Pipe the filling into each chocolate shell individually till the top leaving 1.5 mm for closing it with chocolate.
4. Once the shells are filled with ganache, leave the filling to set.



Fig. 4.10: Filling chocolate shells

#### 5. Sealing the shell

1. Before capping the shells, lightly warm chocolate mould with a heat gun.
2. Apply a small quantity of tempered chocolate on top and spread it out evenly.
3. Smooth over the top and scrape off excess chocolate.
4. Tap the mould firmly against your worktop to remove any air bubbles.
5. Place it in a refrigerator at 14 to 16°C for 45 minutes for crystallization.



Fig. 4.11: Sealing chocolate shells

#### 6. Unmolding of chocolates

1. Take the mould out of the refrigerator and flex it a bit to loosen the chocolates.
2. Then turn it upside down and carefully tap it onto your worktop to release chocolates out of the mould.



Fig. 4.12: Moulded chocolate shells

**Ganache**

Chocolate combined with cream is called ganache. Ganache is a stable, fat-in-water emulsion. It must contain enough water-based ingredients to create the continuous phase of the emulsion. To obtain shiny and a well emulsified ganache, used of hand blender is recommended.



Fig. 4.13: Ganache

**Types of Ganache**

1. Cream ganache: It is combination of cream and chocolate.
2. Butter ganache: It is combination of butter and chocolate.

**Salient features of making good ganache**

1. Use good quality cream with a minimum fat content of 25%.
2. Use good quality chocolate.
3. Do not overheat the cream (not above than 50 °C) as it might result in curdling the ganache.
4. Use a hand blender to emulsify the ganache.
5. Cover the surface of the ganache with the plastic film to avoid scale formation and rest it overnight at room temperature for maturing and crystallization.

<b>1. Bar Chocolate</b>											
<b>Ingredients:</b> Tempered milk chocolate: 500 g											
<b>Methods</b>											
<ol style="list-style-type: none"> <li>1. Pour the tempered chocolate in a polycarbonate bar mould.</li> <li>2. Scrap off any excess chocolate on the surface.</li> <li>3. Cool the mould in refrigerator for 40 minutes.</li> <li>4. Take the bar mould out from the refrigerator and demold it.</li> <li>5. Keep the chocolate at room temperature (approximately 22 °C), to let the chocolate crystallize completely, before packing.</li> </ol>											
<i>Fig. 4.14: Bar chocolate</i>											
<b>2. Chocolate truffle</b>											
<b>Ingredients</b>											
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Cream 25% fat</td> <td style="text-align: right;">75 g</td> </tr> <tr> <td>Milk Chocolate (Chopped)</td> <td style="text-align: right;">75 g</td> </tr> <tr> <td>Dark chocolate (Chopped)</td> <td style="text-align: right;">75 g</td> </tr> <tr> <td>Unsalted Butter</td> <td style="text-align: right;">35 g</td> </tr> <tr> <td>Semi sweet Cocoa Powder</td> <td style="text-align: right;">120 g</td> </tr> </table>	Cream 25% fat	75 g	Milk Chocolate (Chopped)	75 g	Dark chocolate (Chopped)	75 g	Unsalted Butter	35 g	Semi sweet Cocoa Powder	120 g	
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Unsalted Butter	35 g										
Semi sweet Cocoa Powder	120 g										
<b>Methods</b>											
<ol style="list-style-type: none"> <li>1. In a heavy sauce pan heat the cream at 50 °C.</li> <li>2. Pour it over the chopped chocolate and let it rest for 5 minutes</li> </ol>											

3. Agitate the mixture lightly, add the unsalted butter and mix until homogenous and shiny.
4. Cover the ganache with a plastic wrap to avoid any sugar crystallization to form on the surface and let it rest for half an hour.
5. Agitate the ganache and fill it in a piping bag.
6. In a tray, lined with parchment paper, pipe approx. 10-12 g dollops.
7. Cover the prepared tray with a cling wrap and cool it for 2 hours in refrigerator.
8. Lastly, roll the chocolate ganache dollops using your palms lightly and roll these truffles in semisweet cocoa Powder. (Please take care of hands not being too warm while rolling the truffles, else the chocolate ganache will deform and will need to be cooled again)
9. These Chocolate truffles can be also dipped into the tempered chocolate using truffle dipping tool. Such dipped chocolates are also known as enrobed chocolates.






Fig. 4.15: Enrobed chocolates

### Storage of Chocolates

The atmosphere of the room plays a vital role in storing chocolates which should be between 8-10°C. The relative humidity levels in the work area should be around 35 to 45 %. It helps to retain its crystal structure, which is very important to keep the product at high quality standard without losing its appearance.

### Tools and equipment used in chocolate crafts

Name	Image
<p><b>Dipping tools</b> Used in dipping of chocolate truffles and chocolate pralines</p>	
<p><b>Stainless steel scrapper</b> Used to temper chocolate on marble or granite table and to remove excess chocolate from the mould</p>	
<p><b>Mixing Bowls (food grade microwavable plastic)</b> Used for mixing chocolate, warming chocolate in microwave</p>	

<p><b>Laser Thermometer</b> Used for checking the surface temperature of the ingredients and products</p>	
<p><b>Probe Thermometer</b> Used for checking the internal temperature of the ingredients and products</p>	
<p><b>Polycarbonate Moulds</b> Used to mould chocolate in variety of shapes and desired weight as per cavity size</p>	
<p><b>Chocolate Melter (Dry Heat)</b> Used to melt chocolate at desired temperature and also to store at stable temperature for use.</p>	
<p><b>Chocolate Tempering Machine</b> Used for tempering chocolate for bulk production.</p>	
<p><b>Chocolate Enrober</b> Used alongside chocolate tempering machine, for coating of pralines, biscuits etc. in large chocolate manufacturing establishment</p>	
<p><b>Panning Machine</b> Used to produce chocolate coated nuts, soft center dragees, panned chocolate</p>	

**Chocolate Mousse**

It is one of the most popular chocolate- based dessert that is light and rich in texture. It is made using eggs, sugar, whipped cream, chocolate and gelatin. It can also be made without eggs and gelatin. It can be eaten as a dessert by itself or it can be used as a filling to create varieties of desserts. The type of chocolate that will be used will determine the name of the dessert for example dark chocolate mousse, milk chocolate mousse, white chocolate mousse.


Recipe No. 33: Chocolate mousse			
Ingredients	Quantity		
<b>Mousse Base</b>			
Egg yolk	120 g		
Sugar castor	75 g		
Milk	25 ml		
Whipped cream	500 g		
Gelatin	5 g		
Dark Covertures (55 %)	400 g		
<b>Chocolate Sponge</b>			
Corn flour	30 g		
Flour	60 g		
Cocoa powder	13 g		
Sugar castor	150 g		
Melted butter	23 g		
<b>Garnish</b>			
Dark Chocolate couverture	100 g		

Fig. 4.16: Chocolate mousse

**Method**

**Sponge**

1. Set the oven temperature at 210 degree C. Line a baking tray with grease proof paper.
2. Place the egg and sugar and in a mixing bowl with whisk attachment.
3. Whisk the egg and sugar at medium speed till light and fluffy.
4. Meanwhile sift the flour, cocoa and corn flour together until well mixed
5. Melt the butter in a microwave
6. Once the eggs are whipped to a stiff peaks, fold in flour mixture slowly in a cut and fold method.
7. Finally fold in the butter and spread the mixture over the tray.
8. Bake at 210 degree for 10-12 minutes.
9. To check for the doneness, insert a toothpick for 10 seconds, if it comes out clean, sponge is done.

**Preparing the dessert cups or glasses**

1. Take 8 to 10 numbers of any 100 ml glass of your choice.

2. Now cut few sponge discs with the help of a round cutter. If the sponge is too thick then slice it into 5 mm thick sponge discs. Cover with plastic wrap and keep aside.

### **Mousse**

1. Whip the chilled cream till soft peak and keep it refrigerated.
2. Place the egg, milk, vanilla extract and sugar in a mixing bowl, whisk the entire mixture to mix well.
3. Place another pan with water in it on the stove at medium heat, this is called a double boiler. Allow the water to heat up.
4. Meanwhile bloom the gelatin in 25 gm of water for 10 -15 minutes.
5. Place the bowl of eggs on the double boiler pan, make sure the bowl does not touch the water in the pan. If the water is too much then reduce it. With the help of a whisk start whipping the mixture till it turns pale and thick. This mixture is called Sabayon. It takes around 10-15 minutes to cook a small batch of sabayon. Keep removing from heat from time to time to control the heat or else the sabayon will curdle.
6. Place the gelatin in the microwave and heat at full power for 30 seconds until its dissolved and clear from sediments
7. Melt the chocolate over a double boiler or in the microwave. At full power, heat the dark chocolate for 30 seconds at a time. Keep stirring at every thirty seconds of heating until the chocolate is melted.
8. Once the gelatin is melted, pour it into the sabayon and mix well.
9. Remove the sabayon from the heat and allow it to cool down. remove the cream from the fridge.
10. Take around 50 gm of whipped cream and fold it into the sabayon. Mix well and then take another 50 gm of the cream and mix well. This will reduce the sabayon temperature and allow the mixture to blend with the rest of the cream easily.
11. Take the entire mixture and pour on top of the remaining cream and fold with your hands in cut and fold method
12. Once the entire sabayon is mixed with the cream, it is time for the chocolate to be folded.
13. The chocolate should be warm to touch and should not be cold or at room temperature.
14. Fold the chocolate into 200 gm cream mixture first. Mix it well. Now fold this mixture into the remaining cream. The mousse is now ready to be piped into glasses.

Note: Non-dairy cream generally splits or curdles when it comes in contact with very hot sabayon. So ensure sabayon is not over 45 degree C.

Note: if the chocolate is at room temperature then while folding the same in the cream mixture it will further reduce the chocolate temperature and the chocolate may set into small chunks all over the cream and will not mix well.

**Assembly**

1. Take a piping bag with a plain tip nozzle. Pour the mousse mixture into the piping bag.
2. Pipe the mousse into the glasses till half. Place the disc of sponge on the mousse and pipe another layer of chocolate mousse till it fills the glass leaving 1 cm of space from the rim.
3. Lightly tap the base of the glass on your palm to remove any air pocket. Place the mousse in the refrigerator.

**Finishing**

1. Melt the dark chocolate in the microwave. Temper it, spread it on the acetate sheet, cut into desired shapes and refrigerate. Once set, remove from acetate sheet and keep aside.
2. Remove the mousse from the refrigerator, insert the chocolate garnish and serve immediately.

If the chocolate mousse is being set in a mould where it has to be demoulded, then increase the quantity of gelatin in the same recipe to 15 gm bloom in 75 ml of water. Keep the mousse in the freezer until set.

**Chocolate Éclair**

Éclairs are made from choux pastry or pate au choux as discussed above in choux pastry. The hollow éclair shell is filled with variety of flavored creams such as diplomat, crème fraiche, crème patisserie etc. Chocolate éclair can also be filled with a chocolate flavored cream as discussed below.

Recipe No. 34: Chocolate Éclair	
Ingredients	Quantity
Éclair shell	10 pc
Cooking Cream	50 g
Dark Chocolate chopped (55%)	55 g
Whipped cream	100 g




Fig. 4.17: Chocolate éclair

**Method**

**Chocolate Ganache**

1. Boil the cream and pour on top of the chocolate. Cover and leave it for 5 minutes. With a help of a whisk blend the cream and chocolate together to form a smooth chocolate ganache.
2. Allow to cool at room temperature for couple of hours.

**Chocolate Cream**


1. Fold the whipped cream into ganache, 1/3<sup>rd</sup> at a time and mix well.
2. Make 2 holes at the bottom of the éclair shell.

3. Insert a plain round tube nozzle in the piping bag. Fill the bag with chocolate cream and pipe the cream in the éclair.
4. You can melt some more dark chocolate and temper it (refer to the chocolate section .... Unit 3. You can also use the chocolate compound (which does not require tempering and can be used straight after melting). Then dip the top of the éclair in the chocolate. Serve at room temperature or chilled.

**Chocolate Brownies**

A brownie is a confection made out of chocolate, egg, butter, sugar, flour, and cocoa powder. Brownies come in a variety of forms and may be either fudgy or cake like, depending on their density and baking timings. They may include nuts, frosting, cream cheese, chocolate chips and other ingredients. A variation made with white sugar, white Chocolate and vanilla rather than dark chocolate in the batter is called a blond brownie or a blondie.

<b>Recipe No. 35: Walnut brownies</b>	
<b>Ingredients</b>	<b>Quantity</b>
Eggs whole	150 gm
Castor Sugar	300 gm
Vanilla extract	10 ml
Flour	125 gm
Cocoa powder	40 gm
Butter	125 gm
Dark Chocolate	150 gm
Walnuts	200 gm



*Fig. 4.18: Walnut brownies*

**Method**

1. Set the oven at 180 degree C. Line a square stainless steel frame of 7 inch by 7 inch with an aluminum foil. Tuck the foil around the ring nicely so that it does not move. Make sure to use a heavy foil or double foil it. Grease the foil from inside with butter. Place this frame on a baking tray.
2. Break the eggs, put it in a bowl of stand mixer, add sugar and vanilla extract.
3. Whip the egg mixture at a medium speed using the whisk attachment. Keep whipping till the egg and sugar are fluffy and pale in colour.
4. Combine butter and dark chocolate and melt in a microwave. Keep stirring the mixture till emulsified properly. Ensure that the mixture is not too hot.
5. Sieve the flour and cocoa powder on a baking paper. Transfer it into a bowl after sieving.




6. Mix the walnuts with handful of flour and spoonful of melted chocolate mixture to coat the nuts evenly.
7. Pour the melted chocolate and butter mixture whilst it is hot, into the egg mixture. Mix slowly at speed 1.
8. Now add the flour spoon by spoon until all is mixed well. Finally fold in the nuts. Make sure to scrape the bottom of the bowl to ensure that it is evenly mixed.
9. Pour the above mixture in a lined baking frame.
10. Bake the brownie at 180 degree C for 18-20 minutes.
11. It will be very fudgy and gooey in texture. If baked for longer time it will turn to a texture of the cake.
12. Allow the brownies to cool before cutting into desired shapes.
13. Serve it by reheating in a microwave for 15-20 seconds then topping it up with Vanilla ice cream and melted chocolate sauce.

### Chocolate lava cake

A Chocolate Lava cake is also referred as Molten Chocolate cake or soft centered molten cake. It is a very popular American dessert which is made using eggs, sugar, butter, chocolate and flour. The dessert is cooked at a high temperature for a short time leaving it with a molten center which can be seen when the dessert is cut. Sometimes salt and coffee is also added to enhance the chocolate flavor. It is generally made in individual pre-greased ramekin mould from which the dessert is carefully demoulded on the plate and served with ice cream, fresh fruits and coulis.

Recipe No. 36: Chocolate lava cake	
Ingredients	Quantity
Eggs whole	
Castor Sugar	100 gm
Egg Whites	25 gm
Castor sugar	60 gm
Salt a pinch	15 gm
Flour	38 gm
Butter unsalted	125 gm
Dark Chocolate 55%	125 gm



*Fig. 4.19: Chocolate lava cake*

### Method


1. Arrange 8 ceramic bowls of 80 ml each or aluminum dariole moulds. Grease the inside with soft butter and lightly dust with flour on the sides. This is done to prevent the cake from sticking in the moulds during baking.
2. Preheat the oven at 200 degree C.

3. Melt the butter and chocolate in a steel container over a double boiler. Whisk slowly so that they melt and blend well with each other. Leave it over the hot water pot so that the mixture remains warm.
4. Whip the eggs and 25 gm of sugar at speed 2 till light and fluffy. Change the speed to 1 and slowly pour the warm chocolate mixture on the eggs and let it mix.
5. Add the flour in a cut and fold manner to the above mixture. Don't whisk it. Use a spatula and fold in the flour.
6. Whisk the egg whites and salt in a separate bowl till lightly whipped. Increase the speed and start adding the sugar little by little till the fluffy meringue is formed.
7. Fold the meringue in the chocolate mixture in a cut and fold manner.
8. Pour the batter in greased moulds. Bake at 200 deg C for 8 minutes. The time and temperature needs to be adjusted for a perfect flow of molten chocolate based upon the type of oven being used. Do a few trials before baking the entire batch
9. Once baked immediately demould directly onto the serving plate and serve with vanilla ice cream and a garnish of fresh mint leaves.

**Chocolate Garnishes**

Chocolate garnishes are the most versatile type of decorations that compliment a wide variety of desserts and cakes. They can be made out of Couverture chocolate or chocolate compound. The Couverture chocolate needs to be tempered before it can be used for making garnishes however the chocolate compound can be melted and used directly for making the garnishes. Some of the common chocolate garnishes are discussed below.

**a. Chocolate Cigars**

<b>Recipe No. 37: Chocolate Cigar</b>		
<b>Ingredients</b>	<b>Quantity</b>	
Dark chocolate	500 gm	
<b>Equipment</b>		
Offset spatula		
Triangular scraper		
Marble slab		
Digital thermometer		

*Fig. 4.20: Chocolate cigar*


**Method**

1. Heat the chocolate in the microwave upto 45 degree C. heat in intervals of 20 seconds each until melted and smooth

2. Transfer the 2/3<sup>rd</sup> of the melted chocolate on to a marble slab and with the help of triangular scaper spread the chocolate in a to and fro motion on the slab till it reaches 28 degree C (check with a digital thermometer).
3. Transfer the cooled chocolate back in the bowl that contains 1/3<sup>rd</sup> of the remaining chocolate and mix well.
4. Now the check the temperature again. The temperature ideally should be between 31- 32 degree C, if it is lower, microwave for another 10 seconds. If the chocolate is at the temperature of 31-32 degree C, then it is tempered and ready for making garnishes.
5. Spread the tempered chocolate on the slab with the help of an offset spatula to a 2 mm thickness. Allow the chocolate to set slightly so that it is firm but not hard.
6. With even pressure, push the large scraper down the length of the chocolate to shave of long, thin cigars.
7. Store in an air tight container in the refrigerator.

The ideal working room temperature for chocolates is between 19 to 21 degree C with a relative humidity of 50%.

**b. Chocolate Squares**

Recipe No. 38: Chocolate squares	
Ingredients	Quantity
Tempered Dark Chocolate (refer method above)	500 gm
<b>Equipment</b> Angled spatula Sharp knife Marble slab Acetate sheet Steel measuring ruler Digital thermometer	
	
<p><i>Fig. 4.21: Chocolate squares</i></p>	

**Method**

1. Place an acetate sheet on the marble slab.
2. Spread the tempered chocolate on the acetate sheet in small batches with the help of an offset spatula to about 2 mm thickness.
3. Allow the chocolate to set slightly so its firm but not hard.
4. Place the ruler about 1.5 inch on the chocolate sheet from the edge of the sheet. With the help of the knife run the knife along the ruler and cut in to squares. Place another acetate sheet on top and then place a flat tray or sheet on it. Keep this in the fridge for 20 minutes.

Do not handle the chocolate garnishes with bare hands as they may melt, loose their shine and may leave fingerprints on the shiny surface.

Always use gloves before handling the same.

High temperature and moisture are two biggest enemies of the chocolates.

- Remove from the fridge, remove the tray and acetate sheet. Flip the sheet over and peel the acetate sheet away. You will get shiny little squares of garnish.

### What have you learned?

After completing this session, you are able to:

- describe types of chocolates and their usage in patisserie
- discuss types of faults occurring in chocolates, storage of chocolates, tools used in chocolate crafts
- enumerate types of chocolate based products and their method of preparation.

- Store in an air tight container in the refrigerator

### Practical Exercise

#### Activity

- Prepare chocolate mousse, ganache and chocolate lava cake.
- Prepare chocolate cigars, and chocolate squares.
- Perform tempering and melting of chocolate, observe and note down the difference in texture and appearance of the chocolates.

### Check Your Progress

#### A. Multiple Choice Questions

- Scientific name of cacao tree is
 

a) Sterculiaceae	b) Theobroma Cacao
c) Cacao	d) None of the above
- On an average single cacao tree produces 20-30 cacao pods per year, each yield only about ..... grams of dried beans.
 

a) 56	b) 67
c) 34	d) 29
- Forestero has .....flavour
 

a) Sweet	b) Bitter
c) Mild chocolate flavour	d) None of the above
- ..... is carried out with the help of roller mills, discs or cylinders.
 

a) Tempering	b) Creaming
c) Conching	d) Chocolate setting
- Cocoa powder is obtained when the ..... is removed from the chocolate liquor with the help of hydraulic press machine.
 

a) Cocoa butter	b) Sugar
c) Chocolate	d) None of the above

#### B. Fill in the Blanks

- Chocolate is obtained from the ..... tree.

2. The condensed water when reacts with sugar, which later evaporates and results in crystals on the surface of the chocolate is called..... bloom.
3. Poorly agitated cocoa fat leaves the chocolate with white streaks called as ..... bloom.
4. Ganache is a stable ..... emulsion.
5. The relative humidity levels in the chocolate room should be around ..... %.

**C. Mark the statement True or False**

1. Compound chocolate is not pure form of chocolate.
2. Couverture in italic means “covering”.
3. Tempering is done at higher temperature usually 45 °C.
4. Tempering is required for chocolates having low cocoa butter.
5. A Chocolate Lava cake is also referred as molten chocolate cake or soft centered molten cake.

PSSCIVE Draft Study Material @ Not to be Published

# Module 5

## Documentation and Record Keeping

### Module Overview

Record keeping is one of the most important aspects of professionally operated kitchen. These records help to keep the business activities on track and also serve as a documentation for auditing purpose. Earlier most of these records were recorded manually using lot of format and paper. With the advancement of the technology, many sophisticated software, now help the organization to keep the records in more efficient and organized manner. In this unit, we will talk about various forms and formats that are maintained from the point of receiving the raw materials, production and storage and sales of the products.

### Learning Outcomes

After completing this module, you will be able to:

- Demonstrate proficiency in record-keeping practices specific to patisseries, including inventory management, sales records, and financial transactions, to maintain organizational efficiency and compliance.
- Explain the concept of Enterprise Resource Planning (ERP) systems tailored for patisseries, including their benefits in streamlining operations, integrating processes, and enhancing decision-making capabilities for business growth and sustainability.

### Module Structure

- Session 1: Record Keeping
- Session 2: Enterprise Resource Planning for Patisseries

## SESSION 1: RECORD KEEPING

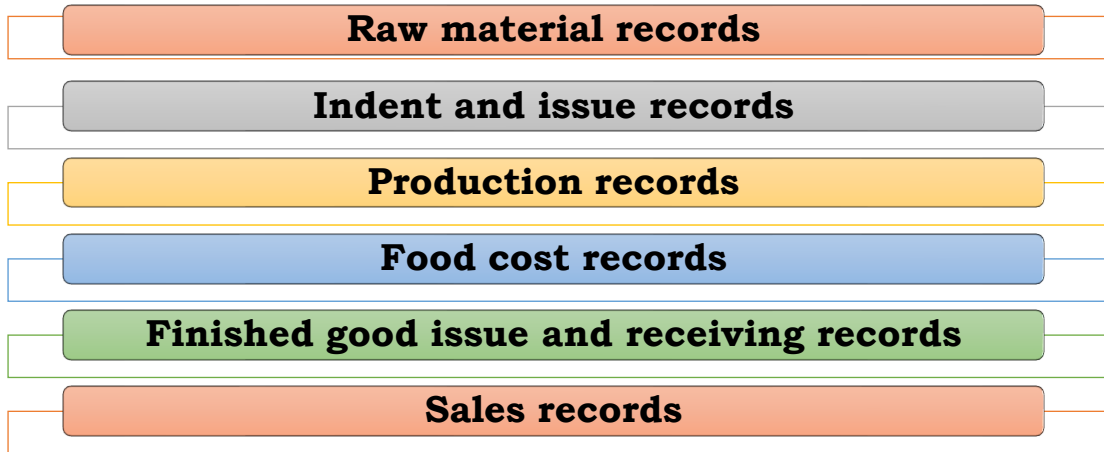
Record keeping is the systematic arrangement of documents on the basis of their nature and time. This is a continuous process and is dynamic in nature which means that the process can be modified depending on the nature of business and updating of processes.

All the documents and records are maintained in a legible manner, retained in good condition for quick and easy references. They are maintained in both

physical and digital format. Record keeping helps in minimizing the misuse of the raw material, misplacing of the product, wastages and losses.

**Types of operational records maintained in a patisserie**

Craft baker /pâtissier is required to document and maintain records of the following activities:



*Fig. 5.1: Types of operational records maintained in a patisserie*

Fig. 5.1: Types of operation records maintained for a bakery and patisserie  
 Let us discuss various types of operational records in detail:

**Documentation of raw materials**

The process of purchasing, receiving and storing of raw material is one of the most important steps to a good quality end product. It is important to document the process at each step. There are three aspects to a good quality end product:

1. Standard and consistent quality of raw materials
2. Maintaining the quality of a purchased product
3. Right processes involved during production process.

**Standard Purchase Specification**

The first and foremost requirement is to select a standard product that a pâtissier will be using in his or her kitchen. A document known as SPS or standard Purchase Specification is prepared.

The inspection of the quality of the goods ordered is done on this basis. This is an agreed specification of goods as agreed by the supplier in tenders and he is bound to provide the quality for which the rate has been fixed for. Fig 5.2 is the format of standard purchase specification.

**Standard purchase specification format**

<b>Hotel ABC</b> <b>Standard purchase specifications</b>	
Name of product: _____	
Intended use: _____	
Grade/quality: _____	
Unit: _____ price per unit _____	
Availability: seasonal/ all year round _____	
Appearance: _____	
Texture: _____	
Colour: _____	
Flavour: _____	
Packing: _____	
Size and shape: _____	
No. Per kg.: _____	
Any other requirement: _____	
<b>Signature of s &amp; p officer</b>	<b>date</b>

Fig. 5.2: Format of standard purchase specification

### Purchase Order

The procedure of purchases starts with issuing of a purchase orders (PO) to the vendor which indicates the quantity and quality of raw material required. The store in charge prepares the PO on the basis of in hand stock. A sample purchase order form that is used is given in Fig. 5.2.

### Daily Receiving Report

The Daily Receiving Report (**DRR**) is generated by the receiving department and useful for accounts and purchase department to settle bills and cross check if the order was delivered or not. The items received are as per the orders placed through purchase orders and perishable order sheets. Fig 5.4 below depicts the format for the same.



**XYZ BAKING COMAPNY**

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**PURCHASE ORDER**

Near Sargam Talkies, Zone-2, M.P. Nagar Bhopal-462016

---

**GST**

<p>PO Number : <input type="text" value="41"/></p> <p>PR Number : <input type="text" value="4245"/></p> <p>Date : <input type="text" value="12-07-2019 11:27 am"/></p> <p>Expected Delivery : <input type="text" value="19-07-2019 01:00 pm"/></p> <p>Store Name : <input type="text" value="Main Store"/></p> <p>Location : <input type="text" value="Jahan Numa Palace"/></p>	<p>Vender Name : <input type="text"/></p> <p>Address : <input type="text"/></p> <p>Contact Person : <input type="text"/></p> <p>Contact Number : <input type="text"/></p> <p>Email : <input type="text"/></p> <p>State : <input type="text"/></p> <p>GSTIN Number : <input type="text"/></p>
---	--

S. No.	Name	HSN/SAC Code	Item Code		Quantity	Sub Total	IGST	Grand Total
1.	M0 Pet Jar With Lid		1237	PC 7	40	250	50.4	330.4
2.	M1 Pet Jar With Lid		1238	PC 7.4	3000	22200	1996	26196
3.	M2 Pet Jar With Lid		1239	PC 9.5	72	684	123.12	807.12
4.								
5.								
6.								
7.								
8.								

<p>Sub Total Amount : <input type="text" value="37735"/></p> <p>Total Amount : <input type="text" value="37735"/></p> <p>Discount Amount : <input type="text" value="."/></p> <p>Total Tax : <input type="text" value="6793.3"/></p> <p>Grand Total : <input type="text" value="44999.3"/></p>	<p>Transaction charges : <input type="text" value="472"/></p> <p>Grand Total In Words : <input type="text" value="FORTY-SEVEN THOUSAND FIVE HUNDRED SEVENTY-THREE"/></p> <p>Remarks : <input type="text" value="FULL ADVANCE PAYMENT"/></p>
--	---

Purchase Manager

XYZ Baking Company, Near Sargam Talkies, Near Board Office, Zone-2, M.P. Nagar Bhopal-462016

General manager

Fig. 5.3: Example of Purchase order format

**Daily Receiving Register**

Date: \_\_\_\_\_

S. No.	Item	Quantity	Remarks

\_\_\_\_\_  
**Received By**

Fig. 5.4: DRR format

**Requisitioning raw materials for daily production**

Once the goods are received, they must be stored as per their storage requirements. In smaller establishments, there might not be a separate store

department and all the goods are directly transferred to the kitchen. Therefore, it becomes crucial for the kitchen in-charge to maintain the inventory so that there is no wastage or pilferage. In larger establishment a separate department named stores does the above work.

**Indenting and issuing**

Indent or requisition is the list of raw ingredients and supplies required by pastry kitchen for their day-to-day operation. It is done by the pâtissier/ production in-charge manually through requisition book or software on a computer.

Issue records of indented materials by pastry are maintained by store department through an issue register or software on a computer. An example of indent format/ store room requisition is given in Fig 5.5.

<b>INDENT FORM/REQUISITION FORM XYZ BAKERY</b>					
<b>Date of indent:</b>			<b>required on:</b>		
<b>indented by</b>			<b>approved by:</b>		
S. No.	Items	Quantity Ordered	Specification	Issued	Remark
<b>Received by:</b>			<b>issued by:</b>		
<b>Date and time:</b>			<b>date and time:</b>		

*Fig. 5.5: Example of indent form/ store room requisition*

Sometimes there may be slight difference between the amount ordered and amount received which needs to be recorded.

**Perpetual Inventory sheet**

The perpetual inventory sheet is a running record of the balance on hand for each raw material in pastry. This is also called as stock register. It provides a continuing record of food, raw material in hand, supplies received and raw material used. Format shown in Fig.5.5 is the example of the inventory sheet.

<b>Inventory sheet</b>							
<b>XYZ Bakery</b>							
							Date.....
S. No.	Item	Maximum par stock	Minimum par stock	Opening Stock	Stock received	Stock used	Balance
1.	Sugar Castor						

2.	Sugar Grain						
3.	Flour refined						
4.	Flour whole wheat						

Fig. 5.6: Example of perpetual inventory sheet

**Physical inventory**

Physical inventory sheet is an actual count of items in all storage areas that are counted periodically usually fortnightly or monthly basis (Table 5.6). A printed list of all inventory items is issued. After the physical count and verification of each item, the quantity is posted in the list.

The physical inventory also serves as a check against perpetual inventory records. If there are major differences between them, it should be investigated.

**Table 5.6: Example of physical inventory format**

<i>Physical Inventory format</i> <i>XYZ bakery</i>					
					Date.....
S.No.	Item	Opening Stock (closing stock of previous month)	Stock received	Stock consumed	Stock in Hand
1.	Sugar Castor				
2.	Sugar Grain				
3.	Flour refined				
4.	Flour whole wheat				

**Maintaining records of production**

The issued raw material is used for production of pastry products as per daily production plan. The produced items are recorded in a daily production sheet with batch number, date and time and quantity produced. These records help in maintaining inventory of semi-finished and finished stock in hand.

**Production scheduling sheet**

Scheduling production is an extension of the production forecast. Projections are based on the expected portions of given menu items for a given date. Schedules define the amount of each item to be prepared, time sequence, expected and actual yield, additional instructions, and employee assigned.

**Table 5.7: Example Production scheduling sheet:**

Production scheduling sheet					
Scheduled date: _____					
Product name: _____					
Assigned by: _____					
Assigned to: _____					
Recipe	Quantity Required	Stock in Hand	Actual to be Produced	Time Schedule	Comments
<b>Additional instructions:</b>					

**Maintaining records of production process**

This format is used to maintain records of food or pastry items produced on daily basis. It is recorded unit wise (numbers, kg etc.). Example of a production record format is given in Table 5.8.

**Table 5.8: Example of production record formats:**

Daily production record XYZ BAKERY						
						Date: .....
Product	Recipe no.	Weight of raw product	Weight of the finished product	Packaging units of finished goods (number)	Name of baker	Batch no.
Bread	1	5 kg	6 kg	400gm x 15 pack	XYZ....	0032
Cookies	5	5 kg	4.5 kg	100 g x 45 pack	ACD....	0035
Cake	4	5 kg	4.5 kg	450 g x 10 sponges	YZX.....	0041
<b>Shift Supervisor:</b>			<b>Production Manager/ Chef In charge:</b>			

**Standard recipe format**

The standard recipe card is one of the most important tools used for communication as well as a control for preparing the dish. It has the photograph, the list of ingredients with yield quantities and also the method of preparing the dish. This card calculates the cost of raw material used in preparing a particular dish and the cost arising out from the standard recipe



FOOD SAMPLE REPORT					
S. No.	Sample failed	Responsibility	Action taken	Target date	Remarks

**Sign of microbiologist** \_\_\_\_\_ **Sign of Executive**  
**Chef** \_\_\_\_\_

Fig. 5.8: Food Sample Report

**Temperature record format**

Pastry products must be prepared and stored at a designated temperature to avoid any contamination. The refrigerators must be maintained between 3 to 5 degree C and freezer must be maintained between -18 to -22 degree C. The frequent opening and closing of the doors of these equipment result in rise in temperatures. Therefore, it is important to randomly check the temperature of these equipment. This is usually done by the engineering department and any deviation is reported to the kitchen in-charge.

**Table 5.9: Example of temperature control record**

S. No.	Date	Time	Temp. Gauge Number	Specification/ Range allowed	Actual result	Remark	Sign

**Record maintenance of finished products**

We have already read in the previous session how a product is received, stored, issued and processed. Now we will discuss about various records that are maintained during the service of finished products. The sale of the products will determine how successful is the business aspects of any operation, therefore it is most crucial to safeguard the finished product against spoilage, misuse or pilferage. Many documents are put in place to ensure that the finished product reaches the consumer in the safest way possible.

**Finished product stock in hand and issue record format**

This format is maintained for keeping daily issue records of every finished goods to outlets or vendors for sale. A copy of it issued at the time of dispatch of finished product from the bakery kitchen or factory and handed over to the outlet as a receipt (Table 4.8).

**Table 5.10: Example of finished product stock in hand and issue record format**

<b>Finished product stock in hand and issue record</b>						
<b>ABC BAKERY</b>						
						Date: .....
<b>Product</b>	<b>Opening Stock</b>	<b>New production</b>	<b>Issue</b>	<b>Closing stock</b>	<b>Rate</b>	<b>Remark</b>
Bread						
Cookies						
Cake						
<b>Shift Supervisor:</b>					<b>Outlet Manager/ Chef In charge:</b>	

**Delivery receipt/challan**

Once the goods are delivered, the receiving shop/outlet must sign the delivery receipt/ challan. This document is the confirmation that goods have been received in proper condition.

**Table 5.11: Example of delivery receipt/challan**

<b>Delivery Receipt/challan</b>			
<b>ABC BAKERY</b>			
<b>Enterprises Name.....</b>			<b>Date .....</b>
<b>Product</b>	<b>Quantity issued</b>	<b>Rate</b>	<b>Remarks</b>
Bread			
Cookies			
Cake			
<b>Shift Supervisor:</b>		<b>Outlet Manager/ Chef In charge:</b>	

**Kitchen order ticket**

commonly known as KOT. A kitchen Order ticket is a document that is made in duplicate and handed over to the kitchen. It is a guest food order that is written down and formally communicated to the kitchen. It has necessary information such as number of guests, table number, order time and the list of food ordered by the guest. Food products must not be issued in absence of KOT as it is one of the control procedures and plays an important part in the final billing.

<b><u>KOT</u></b>				No _____	
<b>Table no</b>	<b>Pax</b>	<b>Waiter No</b>	<b>Time</b>		
<b>Qty</b>	<b>Description</b>			<b>Remarks</b>	
Signature _____					

Fig. 5.9: Format of kitchen order ticket

**Inter Kitchen Transfer (IKT)**

As the name suggests, this form is used for borrowing food stuffs or raw material from other kitchen in the same hotel. This is done for control purpose and to account for costs. For an example, if coffee shop has order for sandwiches, they would pick up bread from bakery on an IKT. F&B service team also uses this format to take food stuff like lemon, mint etc from kitchen.

<b>Kitchen Transfer</b>					
<b>From: .....</b>				<b>Dated: .....</b>	
Reg. No.	Item	Size	Quantity Transferred	Cost	
				Unit	Total



<b>Requested by</b>	<b>Delivered by</b>	<b>Received by</b>		<b>Cost controller</b>
<b>To: .....</b>				

Fig. 5.10: Inter kitchen transfer form

**Pastry shop pickup format**

<b>PASTRY SHOP PICK UP</b>		<b>Date: .....</b>	<b>Supervisors Signature:</b>			
<b>Chefs Sign: .....</b>						
Items	Units	Spec's	First Pick up	Second pick up	Returned	
<b>Breads</b>						
1.	Baguette - Plain	Pc	350g			
2.	Baguette - Olive	Pc	350g			
3.	Baguette - Rustica	Pc	350g			
4.	Rye Bread	Pc	350g			
<b>Breakfast Pastries</b>						
1.	Croissant	Pc	50g			
2.	Almond Croissant	Pc	55g			
3.	Muffin - Banana	Pc	35g			
4.	Muffin - Date	Pc	35g			
<b>Cakes</b>						
1.	New York Cheese Cake	Pc	500g per pc / 1/2 lb			
2.	Chocolate Concord	Pc	500g per pc / 1/2 lb			
3.	Malakoff Gateau	Pc	500g per pc / 1/2 lb			
4.	Wild Berry Charlotte	Pc	500g per pc / 1/2 lb			

**French Pastries**

1.	Classic Linzer Torte	Pc	60g			
2.	Espresso Crouquant	Pc	60g			
3.	Austrian Chocolate Slice	Pc	60g			
4.	Mille Feuille	Pc	60g			

**Truffles & Pralines**

1.	Dark Rum Truffle	Pkt	per 100g			
2.	Pistachio Vanilla	Pkt	per 100g			
3.	Vanilla Honey	Pkt	per 100g			
4.	Orange Marmalade	Pkt	per 100g			

**Home Made Cookies**

1.	Orange Butter	Pkt	per 100g			
2.	Short Bread Horn	Pkt	per 100g			
3.	Almond Butter	Pkt	per 100g			
4.	Chocolate Oat	Pkt	per 100g			

This sheet is filled by the service staff in-charge of pastry shop. Every morning when the pastry products are picked from the pastry kitchen, the items are picked up through this sheet. This sheet can at times have many columns stating the number of times the goods are picked up from the pastry shop. When the goods are finally returned from the pastry shop, the returned goods column is also filled up and checked by the chef. This sheet also goes to F&B controls for auditing and costing purpose.

*Fig. 5.11: Pastry shop pick up sheet*

**Sales records**

Sales record covers the total sale of the product/products on daily, monthly or annual basis.

**Sales record format**

This format is maintained for keeping daily sales records of every produced product. In this register, product issued for sale, actually sold items, its rate and income are recorded daily.

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**Table: 5.12: Example of sales record**

<b>Sales Record ABC BAKERY</b>				
				<b>Date: .....</b>
<b>Product</b>	<b>Total quantity sold</b>	<b>Rate</b>	<b>Net Sales</b>	<b>Remarks</b>
Bread				
Cookies				
Cake				
			<b>Total sale</b>	
<b>Shift Supervisor:.....</b>			<b>Outlet Manager/ Chef In charge:</b>	

### What have you learned?

After completing this Session, you are able to:

- discuss the importance of documentation and record keeping in a bakery.
- describe the types of record formats used in a bakery.
- keep records of raw materials and other needed information related to bakery.
- assess the details to be documented at production schedule.

### Practical Exercises

**Activity:**

1. Visit to any food industry/ bakery outlet for visual demonstration of record keeping.
2. Create a sample of perpetual inventory and physical inventory.
3. Create a sample of finished product stock in hand and issue record format.

### Check Your Progress

**A. Multiple Choice Questions**

1. Record keeping is .....
 

a) One time process	b) Dynamic
c) Continuous	d) B and c both
2. SPS stands for .....
 

a) Standard purchase specification	b) Standard products specification
c) Small patisserie system	d) None of the above

3. Procedure of purchases starts with issuing of a .....
  - a) Indent form
  - b) Purchase orders
  - c) Equipment
  - d) All of the above
4. Daily Receiving Report (DRR) is generated by the
  - a) Receiving department
  - b) Issuing department
  - c) Store
  - d) Finance department
5. KOT stands for
  - a) Kitchen order ticket
  - b) Kitchen open ticket
  - c) Kitchen order token
  - d) None of the above

### B. Fill in the blanks

1. \_\_\_\_\_ is the list of raw ingredients and supplies required by bakery for their day-to-day operation.
2. \_\_\_\_\_ is a process of registering various activities performed in a bakery.
3. \_\_\_\_\_ is the confirmation that goods have been received in proper condition.
4. The perpetual inventory is a running record of the balance on hand for each raw material in the bakery. This is also called as \_\_\_\_\_.
5. The refrigerators must be maintained between 3 to 5 degree C and freezer must be maintained between.....

### C. Mark the statement True or False

1. Food cost percentage is calculated as the cost of production versus sales.
2. The physical inventory also serves as a check against perpetual inventory records.
3. Sales record covers the total sale of the product/products on daily, monthly or annual basis.
4. Physical inventory sheet is an actual count of items in all storage areas that are received periodically.
5. Scheduling production is an extension of the sale forecast.

## SESSION 2: ENTERPRISE RESOURCE PLANNING FOR PATISSERIES

The pastry industry relies on accuracy and safety to ensure product consistency and consumer well-being. The right tools are needed to ensure that inventory management, recipe control, regulatory compliance, and material management planning functions properly. Enterprise resource planning (ERP) software integrates multiple business functions into one program, from accounting to traceability. Various benefits of using ERP in a bakery are illustrated below in Fig. 5.12.



Fig. 5.12: Benefits of using ERP in patisseries

## Operational uses of ERP

### Inventory management

Ingredients need to be ordered, stored, and accessed in the most efficient ways possible to lower inventory costs, wastage, and inventory write-offs.

### Recipe control

Pastry operations need control over the formulas and recipes used in production. Recipe management ensures that products are consistently made and have the same quality levels in each batch. An ERP with strong recipe management capability also allows for ease of scalability for recipes as needed.

### Regulatory compliance

Managing regulatory compliance becomes essential in pastry operations. With an ERP, patisseries can use an array of tools to rectify key compliance issues, including: processes and procedures, Sequencing, Training etc.

In the case of a recall event, the food ERP can help improve response times by easily tracing the recipes and batches.

### **Material requirements planning**

Material requirement planning (MRP) helps you optimize the procurement of raw materials and inventory levels to reduce costs and waste. With an ERP tool for MRP, companies can create purchase orders based on projected demand, open production batches, and monitor sales orders and forecasts.

### **Enhanced product sale**

An ERP helps in improving the product sale via analysing the potential customers. Thus, an ERP for pastry industry helps the patisseries in automating every task, bringing qualitative changes in product rotations, executing personalized selling.

### **Reduced operational costs**

An ERP helps in streamlining every planning and scheduling of patisserie operations. It significantly curbs down the additional expenses over the outrageous labour cost via automating every important functions and operation in the industry also in parallel reducing the overhead costs with regard to clean downs and other changeovers.

## **What have you learned?**

After completing this Session, you are able to:

- After completing this Session, you are able to:
- discuss the benefits of enterprise resource planning in a patisserie
- describe operational uses of enterprise resource planning

### **Activity**

Visit to any food industry or commercial patisseries to have visual demonstration of enterprise resource planning.

## Check Your Progress

### A. Fill in the blanks

1. Patisseries rations need control over the \_\_\_\_\_ and recipes used in production.
2. ERP stands for \_\_\_\_\_.
3. Patisseries can use an array of tools to rectify key regulatory compliance issues including process, procedures, \_\_\_\_\_.
4. \_\_\_\_\_ helps you optimize the procurement of raw materials and inventory levels to reduce costs and waste for the patisserie operation.

### B. Mark the statement True or False

1. Enterprise resource planning (ERP) software integrates multiple business functions into one program, from accounting to traceability.
2. Patisseries operations do not need control over the formulas and recipes used in production.
3. ERP do not help in reducing the wastages.
4. ERP helps in marketing of the products.

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