

## PRESERVATION OF FOOD

L.No	Title of Lesson	SKILLS	Activity
5	Preservation of Food	Critical and Creative Thinking, Problem Solving and Decision Making	Importance and methods of food preservation

### Summary

Food is said to be spoilt when it is no longer fit for eating. It changes in colour, gives off bad smell and shows signs of fermentation. Spoilage can occur because of:

- **Microorganisms:** These are naturally present in food or in the air surrounding the food. Air, moisture and room temperature help them grow and multiply.
- **Enzymes:** These are naturally present in food. When given a longer duration to act they spoil the food.
- **Insects, worms and rodents:** When food is left carelessly it may be attacked by them.

Food kept safe in a special place until needed for consumption is called **food storage**. The time for which a food can be kept fresh is called its **shelf life**. According to its shelf life, food may be termed as **perishable** e.g. carrots; **semi-perishables** e.g. *suji*; **non-perishables** e.g. cereals.

**Preservation** is a technique which is practiced to keep food safe for a long time, retain quality and prevent decomposition or fermentation. It increases the shelf life and makes food available during the off-season. There are many methods of preservation—low temperature, high temperature, use of preservatives and dehydration. The selection of the food preservation method depends upon the food item to be preserved.

### Did You Know?

You must have noticed that fruits kept in the refrigerator for a long time begin to rot. Do you know why this happens?

Ans. It happens as the enzymes present in the fruits get more time to act on them.

e.g. raw apple → action of enzymes → ripe apple  
apple → action of enzymes → rotten apple

### Build Your Understanding

Your uncle sends you a big bag of fenugreek from his farm. How will you prevent it from getting spoilt?

Yes, dehydrate it! Leafy vegetables have a lot of moisture in them and are very voluminous thereby causing two problems—quick spoilage and storage difficulty. Dehydration reduces its water content keeping it safe from being spoilt and also reduces bulk making it easy to store.

### Maximize your marks

- Learn the importance and principles of food preservation.
- Learn the methods of preserving foods at home.
- For better understanding, practically conduct the activities mentioned in the chapter.

### What's Important to Know?

#### Importance of food preservation

- Takes care of excess produce that reduces wastage.
- Makes seasonal food available throughout the year e.g. mango pulp.
- Adds variety to our meals like chutney, papads and pickles.
- Food items are transported to places where they are not grown or available e.g. warm regions of the country can enjoy the preserved form of apples transported from the colder regions of the country.
- Transportation and storage is easier e.g. fenugreek when preserved reduces in weight and volume. It becomes convenient to store and transport.

#### Principles of food preservation

- **Killing microorganisms:** Processes such as boiling of milk at home, pasteurization of milk and canning kill the undesirable microorganisms in food.
- **Preventing or delaying the action of microorganisms by:**
  - Providing a protective covering e.g. use of polythene bags and aluminium foil for storage
  - Raising the temperature of food by heating will give them a longer life
  - Lowering the temperature e.g. frozen food items
  - Adding chemicals such as the prescribed amount of sodium benzoate helps in preserving tomato sauce
- **Stopping the action of enzymes:** Mild heat treatment e.g. blanching of vegetables before freezing.

### Method of Food Preservation

Method	Action
<b>Low temperature</b>	Slows down microbial and enzyme action e.g. refrigeration, cold storage and freezing. The lower the temperature, the longer the food can be preserved e.g. frozen peas.
<b>High temperature</b>	Enzymes and most microorganisms are destroyed by <ul style="list-style-type: none"> <li>• <b>Pasteurization</b> e.g. milk</li> <li>• <b>Sterilization</b> e.g. pressure cooker</li> </ul>
<b>Use of preservatives</b>	<b>Natural preservatives</b> <ul style="list-style-type: none"> <li>• Salt e.g. pickle</li> <li>• Sugar e.g. jam</li> <li>• Acids like lemon juice, vinegar and citric acid e.g. sauce</li> <li>• Oil and spices e.g. pickle</li> </ul>
<b>Chemical preservatives</b>	e.g. sodium benzoate in tomato sauce and potassium metabisulphite in squashes.
<b>Dehydration</b>	Difficult for microorganisms to grow. Some food items are dried in their natural form e.g. fenugreek. Some can be partially cooked and then dried e.g. potato chips.

### Extend Your Horizon

Milk is available in three different forms in the market. Explain to your friend the principles of preservation used in each of these methods.

### Maximize your marks

1. How will you ensure daily intake of amla, even though amlas are not available throughout the year?
2. What is a good way of storing spices? Give reasons for your answer.