

### 13. Methods of Preserving Food

We need wheat, rice, pulses, etc. throughout the year. But their crops get ready only at certain times of the year. In order to have the grain available throughout the year, one season's crop must be stored and protected till the next season.

Different foodstuffs are produced in different places. They have to be made available in good condition to people at long distances. For example, it must be ensured that eggs, milk and milk products remain in good condition during transport from the dairy or poultry farm till they reach their users.



Different fruits and vegetables are available in abundance in different seasons. They also taste their best in that season. To prevent these large quantities of fruit and vegetables from getting spoiled and to enjoy them all year round, we make efforts to preserve them.

Various kinds of *papads*, jams and pickles, onions, fish and *masalas* are prepared and preserved for the whole year in many homes. Nowadays, we can buy such ready products in the market, too.



*Papad, kurdai*



Pickles and jams

To avoid having to go to the market for provisions again and again, we store what we need for several days in our house. If the food prepared for one meal is not finished, then, we use certain methods of keeping it from spoiling, in order to have it again the next time or the next day.

#### Can you tell?



Talk to the elderly people in your family to find the answers to the following questions, with reference to the foodstuffs mentioned below :

Milk, vegetables, grains, flours, sugar, jaggery.

- (1) When do we say that the foodstuff is spoiled? What changes are seen in it?
- (2) Is the time in which foodstuffs get spoiled different in different seasons?
- (3) Which foodstuffs spoil most quickly?

- (4) What measures are taken to keep the foodstuffs in the house in good condition, for as long as possible?

If we know the reasons why foodstuffs go bad, we would know what to do to keep them from spoiling. From the information you obtained you must have gathered the following :

- (1) In winter, i.e. in the cold weather, foodstuffs keep longer. If they are kept in a refrigerator or kept cold on ice, they keep even longer.
- (2) Grains are dried in the sun before storing. Onions and potatoes are kept to dry in the open air in summer and then stored in a dry place.
- (3) If we boil milk it does not get spoiled immediately. Curries and vegetable preparations are brought to a boil to prevent them from spoiling till the next meal.
- (4) Milk, mango pulp are foods that spoil quickly.
- (5) Our food has to be kept away from ants, cockroaches, other insects, mice, rats and cats.

### Try this.



- (1) Divide a chapati into three pieces.
- (2) Put one piece in a closed box.
- (3) Roast the second piece on a hot pan to make it crisp without charring it. Let it cool and put it in a box.
- (4) If possible, put the third piece in a box and put it in the fridge.

Observe these pieces every morning and evening for two-three days.

### What do you see ?

We see white, black or greenish fibres like cottonwool growing on the piece of chapati placed in the closed box. It also starts smelling. Whereas, for several days, we see no such changes in the crisp piece of chapati or the one that was put in the fridge.

### Why is this so ?

The cottonwool-like fibrous growth on the chapati is a kind of fungus. A fungus is a type of micro-organism.



Fungus as seen through a microscope

Spores of the fungus are present in air and water. The chapati in the box created favourable conditions for the growth of the fungus – availability of food, water, air and warmth. That is why, the fungus grew on the chapati in the box.

### Food and micro-organisms

You know that micro-organisms are present all around us in the air as well as in water. Usually, air, moisture and warmth are available where food is kept. It means that it is always possible for micro-organisms to grow rapidly in our food or foodstuffs. We cannot see them, but if they begin to grow, our food gets spoiled. Such spoiled food can cause a stomachache, diarrhoea, vomiting, etc. The nutrition value of such food is also reduced. Sometimes, it can even threaten life.

## Methods of food preservation

**Drying :** When we dry foodstuffs, their water content is lost. This method is used to preserve foodstuffs like *papads*, *kurdai*, *sandage*, wheat, daals, etc.



**Cooling :** When food is placed in a refrigerator, micro-organisms do not get the warmth they need for growth.



**Boiling :** When foodstuffs are boiled, the micro-organisms in them get destroyed.



**Placing in airtight cans :** When foodstuffs are preserved in airtight containers, the micro-organisms are first destroyed and it is ensured that water or air will not enter the foodstuff.



It means that to preserve foodstuffs, the micro-organisms in them should be destroyed. Also, they must be placed in conditions in which micro-organisms will not grow again.



**Try this.**



**Make a pickle.**

**Materials required :** A glass jar, a knife, a spoon, 7-8 lemons, a quarter bowl of salt, 2 teaspoons red chilli powder,  $1\frac{1}{2}$  bowl sugar.

**Procedure :** Clean and dry the jar. Cut each lemon into 8 pieces. Put these pieces in the jar and add salt, sugar and chilli powder. Mix the ingredients well with a dry wooden or steel spoon. Tie a clean piece of cloth over the mouth of the jar and keep it in the sun for about 10 days. Stir it every day with a clean dry spoon. Your hands too should be clean and dry. Enjoy your pickle.

**Preservatives :** Certain substances are added to jams and pickles to preserve them for a long time. They are called preservatives. Sugar, salt, asafoetida (*hing*), mustard, oil and vinegar are examples of preservatives.



### Do you know ?



Much of the variety in the tastes of our foods is due to spices. Every spice has a different flavour or taste. They have strong tastes and flavours and are therefore used in very small quantities.

Spices can be dried and stored for a long time. They can be mixed and powdered to make many different *masalas*. Different spices are obtained from specific parts of different plants.



Spices

### Always remember –



When buying food in sealed bags or boxes, make sure you check the expiry (Use before) date printed on it.

### What we have learnt –



- If pickles, jams, *papads*, etc. are made in the right season, they can be enjoyed for the whole year.
- If air, water and warmth are available, micro-organisms grow rapidly in foodstuffs. Some micro-organisms cause the foodstuffs to get spoiled.
- Drying, cooling, boiling and canning foodstuffs as also adding preservatives to them are the different methods of preserving food.

### Exercises

#### 1. What's the solution ?

- (a) The *papads* have become soft and moist.
- (b) Fruits like mangoes, amlas, guavas and vegetables like peas, onions, tomatoes, fenugreek are needed all year round. They are available in plenty only in certain seasons.

#### 2. Use your brain power !

Semolina (*shevaya*) do not get spoiled for a very long time. But *kheer* made from them spoils easily. Why is this so ?

#### 3. Find and correct the wrong statements.

- (a) When something is boiled, the micro-organisms in it are destroyed.
- (b) Our food does not get spoiled when micro-organisms begin to grow in it.

- (c) Foodstuffs dried in summer cannot be used for the rest of the year.
- (d) Foodstuffs get warmth when put in a fridge.

#### 4. Answer the following questions.

- (a) What are the different methods of preserving food ?
- (b) Why do we avoid eating food that has got spoiled ?
- (c) Why do we make jams from fruits ?
- (d) What are preservatives ?
- (e) Find out the names of the different spices. Also find out which part of their plant they are.

#### Activity

##### Visit, obtain and share information.

1. A cottage industry producing pickles, *papads*, sherbets, etc.
2. A milk-chilling plant, or a fish, fruit refrigeration/cold storage unit.