

# Food Additives

\* A variety of chemicals may be found in our food which have gained entry either intentionally or unintentionally.

\* Intentional additives are those chemical substances which have been purposefully added to food to perform a specific function such as:-

- 1) Increasing shelf life
- 2) Modifying its texture
- 3) Improving its flavour

\* Unintentional additives are those chemical substances which find their way into food through a certain stage in manufacture or handling of food.

For e.g fertilizer and pesticides residue from farm, lubricants from food processing equipment and chemicals from packaging materials.

## **Definitions**

\* Food Additives are chemical substances which are not food items by themselves but are intentionally added to food to improve the overall quality.

\*Some additives have been used by our ancestors. E.g salting bacon, preparing pickles with vinegar and Sulphur dioxide for wine making.

### **Function of Food Additives :-**

1. Preserve Flavour
2. Enhance taste
3. Improve acceptability and appearance
4. Maintain nutritional quality
5. Enhancing quality
6. Aid in food processing

Food Additives are grouped into different categories on the basis of the function they perform. The different categories are as follows :-

- |                           |                |
|---------------------------|----------------|
| 1) Preservatives          | 6) Emulsifiers |
| 2) Antioxidants           |                |
| 3) Sweeteners             |                |
| 4) Food colour and Flavor |                |

## 5) Stabilizer

### **1) Preservatives**

Food deteriorate because of microbial action, enzymatic action or chemical reactions. The main function of Preservatives is to inhibit the growth and activity of microorganism. Preservatives are used in many products giving a long shelf life.

### **2) Antioxidants**

These compounds are used to prevent oxidative rancidity of fats in food. They preserve organoleptic and nutritive value.

For e.g butylated hydroxyanisole (BHA), Butylated hydroxy toluene (BHT) or tertiary butyl hydroquinone (TBHQ) are added to the oil in which snacks are fried to prevent the unsaturated from turning rancid.

### **3) Artificial sweetner**

They are also called non-nutritive sweetner as they do not provide any calories or provide negligible calories as compared to sugar.

Low calorie sweetner are available as sugar substitute in food and beverage.

For e.g of artificial sweetner are cyclamate, aspartame, dulcin, saccharin, sucralose, ace sulfame k.

### **4) Food Colours**

Coloring agent used in food processing industry include natural coloring matter, certified food dyes and derived colour

\* Natural colour pigment such as anthocyanin, carotenoid, betalins, curcumin, chlorophyll and caramel are safe to use in any amounts.

Permitted synthetic colour by Food and drug administration are :-

1. Red-----Ponceau4, carmoisine, erythrosine

2.Yellow--Taryrazine, sunset yellow FCF

3.Blue- - - Indigo carmine, brilliant blue FCF

4.Green---Fast green FCF

## 5) Stabilizer

These additives are used to increase the viscosity of the food and to stabilize the texture of food system like foams, emulsions, and suspension.

e.g gums, starch, dextrin, agar, gelatin and pectin are used in ice cream, jellies, pudding, salad dressing, and chocolate beverages. They stabilize the food system by increasing the viscosity of the system.

## 6) Emulsifying Agents

Emulsifier are added to stabilize emulsions by Enhancing the formation of small droplets and reducing the rate at which droplets come together.

Emulsifying agent have both hydrophilic and hydrophobic groups and get attracted to water and oil at the interphase of the two liquid, thereby preventing the emulsions from breaking or water and oil from separating out.

Emulsifying Agent may be natural or synthetic. Natural Emulsifying agent present in food are lecithin in egg yolk and caseinogens in milk. Synthetic Emulsifying agent are glyceryl mono stearate (GMS), stearyl tartarate and polyoxyethylene mono-stearate.