**FOOD ADDITIVES**

Food additives be define as any substances or a mixture of substances, other than basic food stuff, which is present in food as a result of any aspect of production,processing,storage or packaging.

In other way food additives are the substances which are added to food by the manufacturers to facilitate processing or to improve appearance, texture flavor &keeping quality. It added to food for maintaining or improving nutritional qualities.

**Why are additives used for foods?**

Additives perform a variety of useful functions in food that are often taken for granted.

1. Additives keep food wholesome & appealing while an route to markets sometime thousand of time away from where it is grown or manufactured.
2. Ti improved the nutritional values of certain foods & makes them more appealing by improving there taste, texture, consistency or colour.

**What are the functions of food additives?**

* To maintain products consistency
* To maintain or improve nutritional values.
* To maintain palatability & wholesomeness.
* To improve flavour or impart desired colour.
* **To** provide leavening or control acidity / alkalinity.

Different country has different laws to which food additives can be used & in which food. In India, the Preservation of food adulteration (PFA) acts & rules specify the amount & name of food additives which can be used in certain foods.

**Functional role of different additives** – any properties aside from the nutritional values that influences usefulness of ingredients in the food. It plays a major role in the physical behavior of food & food ingredients during there preparation.

**The functional role of different food additives classified as per Codex Alimentarius.**

**Different classes or types of food additives**

1. **Antioxidants** - A substances when added to food prevents oxidative deterioration of food. According to PFA rules, this dose not includes substances like sugar, oil, herbs & spices. Under Rule 59, no antioxidant other than lecithin, ascorbic acid, tocopherol shall be added to any food.

Example –

Dry mixture of rasgollas & vadas may contain butylated hydroxyanisole (BHA) not exceeding 0.02 percent calculated on the basis of fat content.

Ready to eat dry breakfast cereals may contain BHA not exceeding 0.005

 Percentage.

 Ready to drink infant milk contain lecithin & ascrobly palmitate maximum limit of 0.5g/100ml &1mg/100mlrespectively.

1. **Preservatives - A** substances when added to food arrest the activity of microorganisms & stop decomposition of food. In India , preservatives have been grouped into two classes **-**

 **Class I preservatives** – common salt, honey, spices, sugar vinegar, edible vegetable oil etc.

  **Class II preservatives -** Sodium benzoate, potassium metaby sulfide)

(KMS), benzoic acid etc.Specially used in squashes, fruit syrups, jam, juices, marmalades etc.

1. **Food colours –** Plays an important partin its acceptance by the consumer.Few other reasons of added colour to food include:
* To provide a colourful identity to food.
* To protect the nutrients such as vitamins& flavours that may be affected by sunlight.
* To provide an appealing variety of foods to consumers.
* To bring variation in food.

Colouring matter in food may be classified into two groups :

**Natural colour –** caramel, saffron, turmeric etc

**Synthetic colour -** (permitted for us **in India**) sunset yellow FCF,brilliant blue FCF,carmoisine,fast green FCF etc.

**Used in** ice cream, frozen desert, flavoured milk, biscuits, custard powder, jelly crystal etc.

 None permitted colours causes health effects.

 Example – metanin yellow causes cancer, stomach ache etc

 Liver chromate causes anaemia, paralysis etc.

1. **Flavouring agents** – It includes flavor substances.

 **Natural flavor** – normal flavor of food items.

 **Artificial flavor** – flavor obtained by chemically .Monosodium glutamate, commonly known as ajinomoto .

1. **Emulsifying & stabilizing agents-** Substances which are capable of facilitating a uniform dispersion of oil & fat in aqueous media, or reverse stabilizing such emulsions are known as emulsifying & stabilizing agents.

**Example –** dextrin, sorbitol, pectin, lecithin, monoglyceridessodium citrate gelatin etc. commercial production of bread, confectionery, icecream, chocolate, soft drinks etc.

1. **Anti-caking agent** – These are anhydrous substances that can pick up moisture without themselves becoming wet & these are added to products such as table salt & dry mixes (souppowder,garlic& onion powder , fruit powder) to a maximum level of 2 percent.

Example – permitted for us **in INDIA** –

* Carbonates of calcium & magnesium.
* Phosphates of calcium & magnesium.
* Calcium, potassium or sodium. Etc.
1. **Buffering agents (acids, bases & salt) –** These are materials used to counter acidic& alkaline changes during storage & processing of the food, thus improved the flavor & increased the stability of the food.

Permitted to add **in India** are – acetic acid used in the beverages & soft drinks, calcium oxide in specified dairy products, ammonium phosphate monobasic added as bread improver in flour, ammonium carbonate as leavening agent for baked food & confectioneries, citric acid & malic acid in miscellaneous foods.

1. **Anti-foaming agent –** While deep frying you must have noticed that some oils, especially, unrefined oil like mustered oil tend to produced lot of foam. The anti-foaming agents are added to retards deteriorative changes & foaming height during heating of edible oil.

**In India** –Dimethl polysiloxane used as anti-foaming agents.

1. **Sweetening Agents –**Sweeteners are common ingredient of different dishes. The noncalori sweeteners may be natural or synthetic. Natural sweeteners found in tropical plant & fruits. Artificial sweeteners are saccharin, aspartame, & acesulfame potassium are commonly used in India.
2. **Enzymes & leavening agents –** It plays an important role in various aspects of food processing. Used in making of bread, chocolates, soya sauce etc.Chemical leavening agents are sodium bicarbonates.