

Food Additives

Food Additive

A chemical additive is a substance or a mixture of substances, added intentionally for technological purpose during processing to enhance the qualities of the food stuff.

Functions of food additives

- Preserve or improve nutritional value of the food to make up for those likely to be lacking in a particular diet or lost during processing
- Provide aid in manufacturing, processing, preparation, packaging, transportation or storage of food
- Provide necessary ingredients or constituents for food manufactured for consumers having special dietary needs
- Facilitate modification of food products to offer novel and convenient foods
- Control physical, chemical and microbiological changes to preserve quality, palatability, wholesomeness etc.
- Enhance the keeping quality of the food

Categories of food additives

Broadly, additives can be divided into six major categories such as:

1. Preservatives
2. Nutritional additives
3. Flavoring agents
4. Coloring agents
5. Texturing agents
6. Miscellaneous agents

Preservatives

Three types of preservatives are used in food industry:

- **Antimicrobial agents:** Prevent microbial spoilage
- **Antioxidant:** Prevent oxidation of fat
- **Anti-browning agent:** Prevent both enzymatic and non-enzymatic browning reactions in foods.

Regulations for additives

In US the Food Additive Amendment to the FD & C Act passed in 1958, require FDA approval for the use of an additive prior to its inclusion in food.

The Food Additive Amendment exempted two categories of substances from the food additive regulation including

- Substances which FDA or the US Deptt. Of Agri. had determined safe for use in the specific food prior to the 1958 amendment.
- Substances Generally Recognized as Safe (GRAS) based on the extensive history of use in food before 1958.

Pakistan Standard and Quality Control Authority (PSQCA) on behalf of Govt. of Pakistan constituted various committees for the revision of food laws.

Assessment of Food Additive intake

- The safety estimation of additives is based on the evaluation of toxicity studies performed on animals, to determine a specific acceptable daily intake (ADI) for each food additive.
- In tests, researchers find the level of an additive that has no observable harmful effect. This is considered to be a safe level for humans. An acceptable daily intake is then calculated by further reducing this concentration by an additional safety factor of usually 100. For example, an additive that has no observable effect in tests at a level of 5 g/kg of food would only be allowed up to a level of 50 mg/kg.