

# Effect of Food Additives on Human Health: A Study

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## **Abstract:**

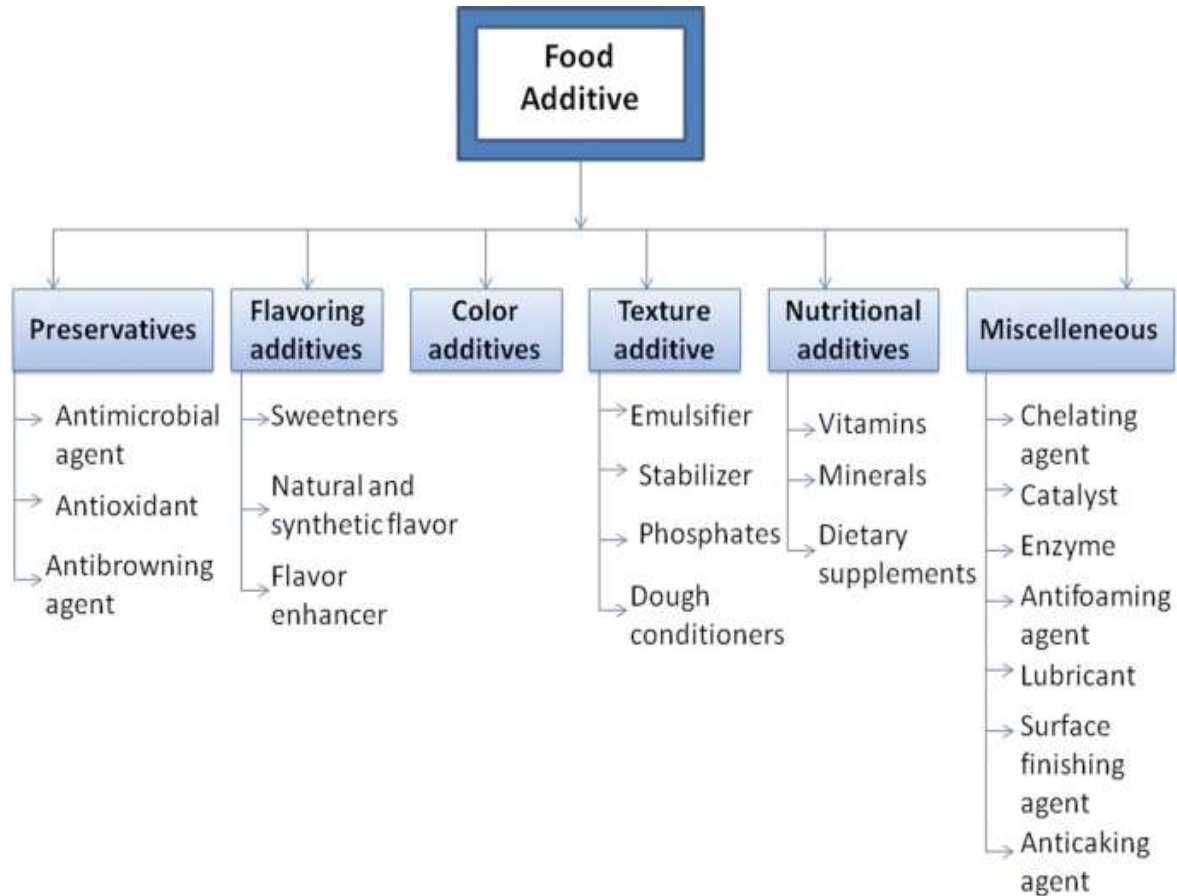
This paper studies on the effect of food additives on human health. Food additives are substances added to food to preserve flavor, enhance taste, texture, appearance, or other qualities. They play a crucial role in modern food production and consumption, ensuring food safety, extending shelf life, and improving the overall eating experience both in solid or liquid food. It is a class of food additive that help to prevent food spoilage by preventing the growth and proliferation of pathogenic microorganisms. Food additives generally consists of 6 categories namely preservatives, flavouring additives, colour additives, texture additives, nutritional additives, miscellaneous additives.

**Keywords:** Foods, additives, preservatives, shelf life, nutritional values

## **Introduction:**

Food additives are the substances that are being added in the food industries in sufficient quantity during production or processing in order to improve the deliciousness of the food. The food additives must be added in limited quantities and it should be within the limits of quality control while in preparation. They can be used directly or indirectly. Direct additives are those that are added to foods for specific purposes whereas indirect additives are added during its processing, packaging and storing process. Food additives are substances added to food to preserve flavor, enhance taste, texture, appearance, or other qualities. They play a crucial role in modern food production and consumption, ensuring food safety, extending shelf life, and improving the overall eating experience both in solid or liquid food. It is a class of food additive that help to prevent food spoilage by preventing the growth and proliferation of pathogenic microorganisms. Food additives generally consists of 6 categories namely preservatives, flavouring additives, colour additives, texture additives, nutritional additives, miscellaneous additives. With the advent of processed foods in the second half of the 20th century, many more additives have been introduced, of both natural and artificial origin (Boca Raton and Smoley, 1993).

**Types of food additives and their functions**



**Preservative Additives :** Preservatives are categorized into two groups such as Antioxidants and Antimicrobials. An anti-oxidant is a compound which is added to fats and fat containing compounds to delay oxidation and prevent some types of cell damage. An antioxidant should not increase an unpleasant odour, flavour or colour to the food in which it is present. It should be beneficial in low concentrations and should be fat soluble, whereas Antimicrobials used to prevent the spoilage of food that is caused by microorganisms. These include vinegar, salt, calcium propionate and sorbic acid that are used in products such as baked foods, salad dressings, cheese and pickled foods.

**Flavouring Additives:** A flavoring additive is used to improve the taste or smell of food. It changes the perceptual impression of food as determined primarily by the chemoreceptors of the gustatory and olfactory systems. Food flavours enhance taste through natural extracts, spices, and synthetic compounds, commonly categorized into fruit, floral, spice, and dessert profiles.

**Colour Additives :** Food industries used to add to types of additives in colour such as natural and synthetic. They help to add colour to the food. These colouring agents include the stabilizers, colour retention agents etc. These are added during the process of preparation in order to make the food look more attractive. It is an important sensory characteristics of food.

**Texture Additives :** Texture additives are food ingredients designed to enhance mouthfeel, stabilize mixtures, and prevent ingredients like oil and water from separating. Emulsifiers bind opposing elements, while texture additives (thickeners/gelling agents) adjust viscosity. Emulsifiers, thickeners, and stabilizers are significant food additives that improve the texture, stability, and sensory characteristics of food products.

**Nutritional Additives :** Nutritional additives are vitamins, minerals, amino acids, and fatty acids added to food to restore nutrients lost during processing, correct dietary deficiencies, or improve the overall nutritional quality of a food substitute.

**Miscellaneous Additives :** Miscellaneous food additives are a "catch-all" category for specialized substances that do not fit into primary classifications like flavors or preservatives. They are primarily processing aids and agents used to maintain product quality, improve physical texture, and facilitate large-scale manufacturing. These are normally available in anti caking agents, anti foaming agents, hemectants.

Additives are used in food with an objective to maintain consistency, to enhance nutritional value, to enrich deliciousness and to control acidity.

### **Purpose of using additives**

1. **In order to maintain consistency:** Emulsifiers helps to give a consistent texture and helps to control them from separating and give smooth and uniform texture. Anticaking agents acts as a free flowing agents they help the substances such as salt to flow freely.
2. **To maintain and enhance nutritional value:** Vitamins and minerals are added to many common foods such as milk, flour, grains and margarine for those who may be deficient in diet or loss of appetite. All products containing extra nutrients should be properly labeled.
3. **To maintain deliciousness and enrichment:** Preservatives helps to reduce production, spoilage that are caused by bacteria, yeast, fungi, molds and air. Antioxidants are that type of preservatives which help fats and oils in bakery products and other food items from rancidity and maintaining flavour.
4. **To provide control acidity:** Leavening Agents release acids and when they are heated they react with baking soda to help cakes, biscuits and many other baked goods to rise during baking. Other additives helps to alter the alkalinity and acidity of foods for their proper flavour, colour and taste.

**Effect of additives on humane :** There are many side effects from using the additives in long run or some times the immediate side effects are also occur among human. Immediate effects may include headaches, change in energy level, and alterations in mental concentration, behaviour, or immune response (Pandey, and Upadhyay, 2012). Long-term effects may increase one's risk of cancer, cardiovascular disease and other degenerative conditions. Some modern synthetic preservatives have become controversial because they have been shown to cause respiratory or other health problems (Pandey, and Upadhyay, 2012). The wide use of food additives automatically effects on malnutrition in terms of high salt, sucrose and fat content consumption. Some studies reiterated that usage of synthetic preservatives and artificial colouring agents affected the human body. In some cases allergic preservatives in food cause an anaphylactic shock on human body, eventually the condition which is often serious within short span requires emergency treatment. Some studies identified that there are two chief sources of dangerous additives namely those that are put in as part of the processing operation. These contain the colours, preservatives, flavours and sweeteners, texture agents as well as processing agents. The manufacturers must mention the details on the label stating brief information, and the second one is the additives to our food is from packaging, storing and handling of food information must be included in the label. It is highly suggested that to the children below 2 years should be used only additives free food. Many foods available in the market contain different types of preservatives. These

chemicals can give rise to certain health problems. Long term usage of such additive contaminated food results to cancer, cardiovascular diseases and other degenerative conditions.

Conclusion : The food every day humane consumes is almost contains additives. It is not good for humane to consume additives added food for a long time which causes dangerous diseases.

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