

## The Role and Impact of Food Additives in Our Daily Diet

Kagana Sruthi\*

Department of Food Sciences, Centurion University Technology and Management, Bhubaneswar, Orissa, India

### DESCRIPTON

Food additives are substances that are added to food to improve its appearance, flavor, texture, or shelf life. They have been used for centuries to preserve and enhance food, and are an integral part of the modern food industry. While many food additives are safe and have been approved for use by regulatory agencies, some have been associated with adverse health effects. This has led to concerns about the safety of food additives and the need for regulation to ensure that they are used safely.

### Types

There are many different types of food additives, each with its own function. Some common food additives include preservatives, sweeteners, emulsifiers, thickeners, and flavorings [1]. Preservatives are used to prevent food from spoiling and to extend its shelf life. Sweeteners are used to add sweetness to food without adding calories. Emulsifiers are used to help mix ingredients that would otherwise separate, such as oil and water. Thickeners are used to add texture and thickness to foods, such as soups and sauces. Flavorings are used to enhance the taste of food.

Food additives can also be derived from natural sources. For example, carrageenan is a natural thickener that is derived from seaweed. It is commonly used in dairy products, such as ice cream and yogurt, to improve their texture [2]. While carrageenan has been deemed safe by regulatory agencies, some people have reported experiencing adverse reactions to it, such as digestive problems.

One of the most controversial food additives is artificial sweeteners. These are synthetic chemicals that are used to add sweetness to food without adding calories. They are commonly used in diet sodas, sugar-free gum, and other low-calorie foods [3]. There has been much debate about the safety of artificial sweeteners, with some studies suggesting that they may be linked to cancer, obesity, and other health problems. However, most regulatory agencies, including the FDA, have deemed artificial sweeteners safe for use in food.

Another controversial food additive is Monosodium Glutamate (MSG). MSG is a flavor enhancer that is commonly used in Asian cuisine and processed foods [4]. Some people have reported experiencing adverse reactions to MSG, such as headaches, nausea, and flushing. However, most studies have not found a clear link between MSG and adverse health effects. The FDA considers MSG to be safe for most people to consume.

### Benefits

The use of food additives is regulated by government agencies around the world. In the United States, the Food and Drug Administration (FDA) is responsible for regulating the use of food additives [5]. The FDA reviews scientific studies and data to determine the safety of food additives before they can be used in food. The agency sets limits on the amount of food additives that can be used in food and requires manufacturers to list all of the additives used on the food label.

### Safety risk and assesment

However, despite the benefits of food additives, there are also concerns about their safety and potential health risks. Some studies have linked certain food additives to allergic reactions, hyperactivity in children, cancer, and other health problems. For example, some people may be allergic to sulfites, which are commonly used as preservatives in wine, beer, and dried fruit [6]. MSG has been associated with a condition called "Chinese restaurant syndrome," which causes headaches, sweating, and flushing in some people. And some artificial food colors, such as Red 40 and Yellow 5, have been linked to hyperactivity and ADHD in children.

To address these concerns, regulatory agencies such as the US Food and Drug Administration (FDA) and the European Food Safety Authority (EFSA) have established safety standards for food additives. Before a food additive can be approved for use, it must undergo rigorous testing to determine its safety. The testing includes animal studies, human studies, and exposure assessments to determine the amount of the additive that can be safely consumed. The safety standards are based on the principle of "reasonable certainty of no harm," which means that a food

**Correspondence to:** Kagana Sruthi, Department of Food Sciences, Centurion University Technology and Management, Bhubaneswar, Orissa, India, E-mail: KaganaSruthi@gmail.com

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additive must be proven safe at the levels at which it is intended to be used in food.

In addition to safety standards, regulatory agencies also require food additives to be labeled on food packaging. This allows consumers to make informed choices about the foods they eat and avoid any additives they may be sensitive to. The labeling requirements vary by country, but generally include the name of the additive, its function, and its concentration in the food.

Despite these regulatory measures, there is still debate among scientists, policymakers, and consumer groups about the safety of food additives. Some argue that the safety standards are not stringent enough and that more research is needed to fully understand the long-term effects of food additives on health. Others argue that the benefits of food additives outweigh the risks and that removing them from food would result in less appealing, less nutritious, and more expensive food options.

While many food additives are safe, some have been associated with health risks. For example, some studies have suggested that high levels of sodium nitrate, a preservative commonly used in processed meats, may be linked to an increased risk of cancer. As a result, some health experts recommend limiting the consumption of processed meats.

Ultimately, the decision to use food additives is a balancing act between the benefits and risks. While food additives serve important functions in processed foods, their safety must be carefully evaluated to ensure that they do not pose unnecessary risks to human health. Consumers also have a role to play in this process by educating themselves about food additives and making informed choices about the foods they eat.

Another example is BHA and BHT, which are synthetic antioxidants commonly used to preserve fats and oils in processed foods [7]. Some studies have suggested that these additives may be linked to cancer and other health problems. While regulatory agencies have deemed BHA and BHT safe for use in food, some health experts recommend limiting their consumption.

## CONCLUSION

In conclusion, food additives are an integral part of the modern food technology. It is important to note that the safety of food additives is not always clear-cut. While some additives have been associated with adverse health effects, the risk of harm may depend on the amount consumed, the frequency of consumption, and other factors. It is also worth noting that some people may be more sensitive to certain food additives than others.

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