



Different Types of Food Preservatives and its Classification

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DESCRIPTION

A preservative is a substance or chemical added to products such as food, beverages, pharmaceuticals, paints, biological samples, cosmetics, wood and many other products to prevent deterioration due to microbial growth or undesirable chemical changes. In general, preservation is carried out in two ways: chemical preservation and physical preservation. In chemical preservation, chemical compounds are added to the product. Physical preservation includes processes such as cooling and drying. Anti-corrosion additives reduce the risk of food-borne infections, reduce microbial spoilage, and preserve freshness properties and nutritional value. Some physical food preservation techniques include dehydration, UVC exposure, freeze-drying, and refrigeration. Sometimes chemical and physical preservation methods are combined.

Preservatives have been used since prehistoric times. For example, smoked meat contains phenols and other chemicals that slow spoilage. Food preservation has evolved significantly over the centuries and has contributed significantly to improving food safety. The use of preservatives other than traditional oils, salts, and colorings in food began in the late 19th century but did not become widespread until the 20th century. The use of food preservatives varies greatly from country to country. Many developing countries, which do not have strong governments to regulate food additives, either face harmful levels of preservatives in their food or have to avoid foods deemed unnatural or foreign altogether. These countries have only recently been introduced, so they have also proven useful in case studies on chemical preservatives. Urban slums in populous countries tend to have very low food knowledge despite consuming these imported foods. Food preservatives are used to ensure safety and prevent

spoilage due to microbial, physicochemical or enzymatic reactions. There are many different types of antimicrobials and antioxidants, each with their own mechanism of action.

Acidulants, organic acids and parabens are widely used antibacterial agents, but the use of natural alternatives is increasing. Antioxidants are another very important group of food additives. A clear market trend towards the introduction of natural alternatives is observed and discussed, with a particular focus on herbs, spices and their derivatives.

Preservatives currently used in food manufacturing are either derived from natural sources or manufactured synthetically. For example, natamycin (E235), a preservative widely used in cheese and sausage, which may originate from bacteria commonly found in soil. Natural preservatives can also be obtained from plants, animals, fungi and algae. Preservatives can be roughly divided into so-called antibacterial preservatives and antioxidant preservatives. However, many preservatives, such as sulfites used in wine and nitrates used in meat, perform both functions.

Antimicrobial preservatives, such as sulfur compounds like sulfites, are used to inhibit bacterial growth. B. Vinegar or brine of wine, dried fruits and vegetables. Sorbic acid can be used for a variety of purposes, including preserving potato products, cheeses, and jams. Benzoic acid and its calcium, sodium, or potassium salts are used in foods such as pickles, low-sugar jams and jellies, dressings, and seasonings. Used as an antibacterial and antifungal agent in Antioxidant preservatives are commonly used in minimally processed vegetable products where browning is a significant problem, such as ready-made salads, freshly cut fruit, and fresh juices. Ascorbic acid and citric acid can be used to prevent browning because they inhibit certain enzymes that form brown pigments in the presence of oxygen.

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