

Edible packaging

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Fruits and vegetables are the most utilised commodities for human consumption. They have various health-promoting compounds. The significant losses in the food processing industries have become a serious economic, nutritional and environmental problem. The waste produced is mainly composed of skin, seed, pomace and rind, which contain valuable bioactive compounds, such as polyphenols, carotenoids, dietary fibres, enzymes, vitamins and oils. The development of edible films and coatings has significantly improved the quality of food products. Biopolymers that are derived from lipids, proteins, polysaccharides and their composites can be produced from starch, vegetable oils and fats. Edible packaging from fruits and vegetables acts as a biodegradable package, thus protecting the environment. The success of edible packaging depends on the control of internal gas composition. Further, the edible films are advantageous over synthetic packaging as they may be safely consumed as part of the food product. Plasticisers are added to edible films to improve the durability and flexibility of the packaging materials. Additionally, antioxidants are added to delay the rate of the oxidation reaction. Certain modifications are also required to achieve higher water vapour barrier and moisture resistance properties comparable with those observed with synthetic polymers. The development of edible packaging from fruits and vegetables is a promising research field that combines mechanical and barrier properties of biopolymers with sensory and nutritional properties to enhance the inherent properties of the edible films. Moreover, edible films are also important in extending the shelf-life and reducing the possibility of contamination by foreign matter. Recent advances include the incorporation of antimicrobials, nutraceuticals and texture enhancers to improve the functionality and quality. The broad applications of edible packaging are a novel approach in research used to overcome the problems associated with the overproduction and seasonality of some fruits and vegetables. This problem can be easily solved by processing fresh raw materials into edible packaging materials owing to their intermediate water activity and low water content, hence making them microbiologically stable during storage. Therefore, edible films or edible food packaging are a modern technique that has revolutionised the food industry.

Keywords: Fruits, Vegetables, Edible Packaging, Quality, Biodegradable, Nutrition

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