

## Edible Food Packaging: A Hope for the Future of the Earth

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**Abstract :** When work on edible packaging began, the hope was to provide a sustainable alternative to reduce plastic consumption. Edible packaging can take the form of a coating or film that provides better protection of food. They have the potential to be a feasible alternative to traditional plastic food packaging as they can increase the shelf life of foods by reducing their respiration rate and water loss and protecting them from physical damage and microbial spoilage, preventing post-harvest loss. Edible films and coatings can extend the shelf life of the food product and improve food quality by regulating the transfer of moisture, oxygen, carbon dioxide, lipids, aroma and taste compounds in food systems. The main advantage of using edible packaging is that it reduces the amount of plastic waste produced. Another interesting advantage is that some edible food packaging elements may actually have added vitamins, probiotics and other nutrients, bioactive compounds that support technological and biological properties. Despite the use of many different biomaterials in the production of edible packaging, most of the problems experienced are similar. Among these problems: hydrophilicity, low water stability, high humidity sensitivity, poor resistance to moisture, high water vapor permeability, poor mechanical properties and machinability, fragility, insolubility, low melting point, sensitivity to pH, temperature, ionic, electro reactions, brittle and hard structure, low thermal stability, hardness, hazy film are available. Edible films have the disadvantage of being difficult to apply to the food surface due to their weak barrier and mechanical properties. One of the most important problems is that the developed films have a brittle structure, since biomaterials are generally hydrophilic in nature. Plasticizer is added to increase the flexibility of the film, and as the plasticizer content increases, the film permeability also increases. The correct choice of plasticizer for a particular biopolymer allows optimization of the mechanical properties of the film with minimal increase in film permeability. The effect of the amount and type of plasticizer in achieving the desired mechanical properties with optimum permeability is constantly being investigated by researchers. However, it should be noted that in the studies conducted so far, plasticized biofilms cannot provide high mechanical strength or good flexibility compared to synthetic polymer materials. In this review, according to the results of the researches in the literature, the disadvantages of implementing edible packaging will be revealed and possible solutions will be presented.

**Keywords :** edible packaging, biomateryal, disadvantages, production

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