

USE OF WHEY PROTEINS IN FOOD PACKAGING

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ABSTRACT

Packaging in food technology is commonly used materials to protect the foods against environmental conditions such as growing of microorganisms, water vapor and oxygen barrier. In general, packaging materials in food industry are plastic-based, complex, difficult to degrade in the nature and multi-layered types that can cause environmental pollution. Recently, to overcome these increasing environmental pollution problems, various attempts have been applied. Nowadays, one of these attempts is the using of edible films and coatings as food packaging material. The commonly used materials are vegetable and animal-based proteins, starch, cellulose derivatives, chitosan/chitin as edible films and coatings. On the other hand, proteins offer a wider spectrum than those polysaccharides and lipids. Among various proteins, whey proteins are the most attractive substances due to their film-forming abilities and mechanical properties such as transparency, odorless, tasteless and good gas barrier. Moreover, films and coatings obtained from whey proteins improve the functional properties of foods. They reduce the occurrence of some reactions such as lipid oxidation. However, the important disadvantage is related with their poor moisture barrier properties. In order to improve these poor properties of whey proteins various modifications to the film properties can be made by physical, chemical or biochemical processes by means of casting and/or curing process. In this article, the formulation of edible films and coatings obtained from whey proteins, their properties in previous studies were discussed. It was also given an overview of current developments in the use of whey proteins as food packaging materials.

Keywords: whey proteins, food packaging, edible films, coatings