

Studies have identified the properties of enzymes, functionalized molecules, and compounds in food industry applications as edible coatings and encapsulations, that assure prolonged food quality and standards. These molecules present benefits of longer shelf-life by delayed deterioration and inhibition of the proliferation of spoilage and mycotoxigenic microorganisms. However, challenges of reduced nutrient levels, miniaturized size, and low chemical stability remain concerning. Chitosan polymers naturally formed from the deacetylation of shellfish shells and exoskeletons of aquatic arthropods and crustaceans offer improved benefits when functionalized into nanoparticles as nanochitosans. These polysaccharides produced by the alkalescent deacetylation of chitin, comprise a series of 2-deoxy-2 (acetylamino) glucose linked by β -(1-4) glycosidic linkages. This chapter considers the health impacts and ...