

Application of Active Chitosan Coating Incorporated with Spirulina Extract as a Potential Food Packaging Material for Enhancing Quality and Shelf Life of Shrimp

Authors : Rafik Balti, Nourhene Zayoud, Mohamed Ben Mansour, Abdellah Arhaliass, Anthony Masse

Abstract : Application of edible films and coatings with natural active compounds for enhancing storage stability of food products is a promising active packaging approach. Shrimp are generally known as valuable seafood products around the world because of their delicacy and good nutritional. However, shrimp is highly vulnerable to quality deterioration associated with biochemical, microbiological or physical changes during postmortem storage, which results in the limited shelf life of the product. Chitosan is considered as a functional packaging component for maintaining the quality and increasing the shelf life of perishable foods. The present study was conducted to evaluate edible coating of crab chitosan containing variable levels of ethanolic extract of Spirulina on microbiological (mesophilic aerobic, psychrotrophic, lactic acid bacteria, and enterobacteriaceae), chemical (pH, TVB-N, TMA-N, PV, TBARS) and sensory (odor, color, texture, taste, and overall acceptance) properties of shrimp during refrigerated storage. Also, textural and color characteristics of coated shrimp were performed. According to the obtained results, crab chitosan in combination with Spirulina extract was very effective in order to extend the shelf life of shrimp during storage in refrigerated condition.

Keywords : food packaging, chitosan, spirulina extract, white shrimp, shelf life

Conference Title : ICESFPE 2019 : International Conference on Engineering Studies in Food Process Engineering

Conference Location : Paris, France

Conference Dates : December 30-31, 2019