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Elaboration and Physico-Chemical Characterization of Edible Films Made from Chitosan and Spray Dried Ethanolic Extracts of Propolis

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Abstract : It was necessary to establish which formulation is suitable for the preservation of aquaculture products, that why edible films were made. These were to a characterization in order to meet their morphology physicochemical and mechanical properties, optical. Six Formulations of chitosan and propolis ethanolic extract encapsulated were developed because of their activity against pathogens and due to their properties, which allows the creation waterproof polymer networks against gasses, vapor, and physical damage. In the six Formulations, the concentration of comparison material (1% w/v, 2% pv) and the bioactive concentrations (0.5% w/v, 1% w/v, 1.5% pv) were changed and the results obtained were compared with statistical and multivariate analysis methods. It was observed that the matrices showed a mayor impermeability and thickness control samples and the samples reported in the literature. Also, these films showed a notorious uniformity of the films and a bigger resistance to the physical damage compared with other edible films made of other biopolymers. However the action of some compounds had a negative effect on the mechanical properties and changed drastically the optical properties, the bioactive has an effect on Polymer Matrix and it was determined that the films with 2% w / v of chitosan and 1.5% w/v encapsulated, exhibited the best properties and suffered to a lesser extent the negative impact of immiscible substances.

Keywords : chitosan, edible films, ethanolic extract of propolis, mechanical properties, optical properties, physical characterization, scanning electron microscopy (SEM)
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