

TITLE: EDIBLE COATINGS OF QUITOSANA AND *Aloe vera* (*Aloe barbadensis* Miller) IN MINIMALLY PROCESSED SHRIMP

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ABSTRACT:

Chitosan is a natural polymer, biodegradable, non-toxic polymer that has been widely used in the development of films and edible coatings for food preservation. Together with the biopolymer, bioactive substances can be added to increase their properties, as is the case with *Aloe vera*, which has well reported antioxidant and antimicrobial activity. The creation of shrimps represents an activity of great economic and social impact in Brazil. However, in natura shrimp may pose a potential risk to consumers' health because it is a food that has high water activity, pH close to neutrality and a high manipulation rate during processing, which may favor the development of microorganisms in the product. The objective of the study was to evaluate the antimicrobial activity of edible coatings of chitosan and *Aloe vera* coverings in the development of mesophilic aerobic bacteria in minimally processed shrimps during six days of refrigerated storage. The shrimps (*Litopenaeus vannamei*) were obtained at a trade fair in the municipality of Mossoró-RN and processed at the Industrial Biotechnology Laboratory, where the head and shell were removed, with subsequent washing under running water. Five treatments were applied: C (Control, without edible cover); A00 (edible cover with 100% chitosan at 1%); A05 (edible cover with 5% *Aloe vera* and 95% chitosan 1%); A15 (edible cover with 15% *Aloe vera* and 85% chitosan 1%) and A25 (edible cover with 25% *Aloe vera* and 75% chitosan 1%). The microbiological evaluation of aerobic mesophilic bacteria consisted of the surface plate technique of Plate Count Agar (PCA) on the first, third and sixth days of refrigerated storage. The results were submitted to analysis of variance (ANOVA) and the means were compared by the Tukey test at 5% of significance. At day zero there was no significant difference between the treatments and the control. However, on the third day there was a significant decrease in the count of aerobic mesophilic bacteria in the treated shrimps, to which treatments A00 and A05 presented better results. At the sixth day of storage, there was no significant difference between treatments and control. Edible coatings of chitosan and *Aloe vera* are promising alternatives in the microbial control of aerobic mesophilic bacteria in minimally processed shrimp.

Keywords: Biopolymer; Bioactive; Food Technology; Bioconservation.

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