

## ABSTRACT

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### CHARACTERIZATION OF EDIBLE FILM FROM CHITOSAN AND NANO CHITOSAN SHRIMP SHELL WASTE

(xii + 50 pages: 15 figures, 5 tables, 12 appendices)

*White leg shrimp (Litopenaeus vannamei) shell waste is considered as an alternative source of chitin and chitosan. The shrimp shell waste was subjected to different soaking time (0, 24, 72, and 120 hour) in HCl 2% to produce chitosan with the highest yield and degree of deacetylation. Chitosan soaked with HCl 2% for 0 hour has the highest yield (15.89%) and highest degree of deacetylation (86.12%). The chitosan was then used for making nano chitosan. Chitosan and nano chitosan were then utilized in edible film product. Edible film products were made with various ratios of chitosan and nano chitosan (0, 0.5, 1, 1.5, and 2%). Edible films physical and mechanical characteristics such as thickness, tensile strength, elongation, and water vapor transmission were analyzed. The result showed that edible film added with 2% chitosan has highest characteristic. Thickness of the edible film is 0,17 mm, the tensile strength is 1,28 MPa, the elongation is 29,10%, and the water vapor transmission rate is 4,53 g/m<sup>2</sup>h.*

Keywords: *chitosan, edible film, nano chitosan, shrimp shell waste*

References: 77 (1983-2016)