

ABSTRACT

Febrico (00000007414)

OPTIMIZATION OF CONDITIONS FOR CRUDE GLUCOSAMINE PRODUCTION FROM *Penaeus Monodon* Fabr. SHELL BY *Aeromonas hydrophila*

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(xi + 50 pages: 15 figures, 7 tables, and 8 appendices)

Tiger shrimp shell (*Penaeus monodon* Fabricius) is a good source of chitin. Chitin is a polysaccharide which can be further processed into chitosan and glucosamine. N-acetylglucosamine (NAG) is one of the forms of glucosamine, can be produced by fermentation of chitin using chitinolytic microorganisms, such as bacteria or mold. The aim of this research was to determine the optimum conditions (temperature, pH and fermentation time) for NAG production by submerged fermentation from chitin of Tiger shrimp shell (*Penaeus monodon* Fabricius) waste using *Aeromonas hydrophila*. Shrimp shell of *Penaeus monodon* Fabricius were sun-dried, demineralization with HCl 1M, and deproteinized with 3.5% NaOH to produce isolation chitin. Determination of optimum temperature was performed by submerged fermentation of the isolated chitin at three different temperatures (18, 28, 37)^oC in first stage research. For second stage research determine the optimum pH (7.0, 8.0, 9.0) and fermentation period for (1, 2,3) days in the production of N-acetylglucosamine. In the first stage research, the highest NAG concentration, around an average of 8,005.00 ± 424.90 ppm, was produced at a temperature of 37^oC. The highest NAG production in the second stage research was achieved from fermentation at pH 8.0 for 2 days, resulting an average total concentration of 36,955.00 ± 333.17 ppm.

Keywords: chitin, *Aeromonas hydrophila*, N-acetylglucosamine, Tiger shrimp shell

Bibliography: 54 (1990 – 2017)