ABSTRACT

DETERMINATION OF OPTIMUM INCUBATION TIME OF CHITIN DEGRADATION BY CHITINASE FROM *Actinomycetes* ANL-4 USING SPECTROFOTOMETRY UV-Vis

By

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Chitin is an insoluble polymer which composed by β-1,4-N-asetil-D-glucosamine (GlcNAc) residues. Chitin can be isolated from shirmp shells through two processes, namely deproteinization and demineralization. Furthermore, chitin can be hidrolyzed as its monomers and oligomers by chitinase enzyme from *Actinomycetes* ANL-4. The aim of this research is to determine incubation time of chitin degradation by enzyme chitinases based on the amount of glucosamine which is obtained every 5 days. Chitin degradation processes used a batch fermentation during 45 days. Glucosamine from fermentation process is derivatived using phenyl isothiocyanate (PITC) to be phenyl thiourea (PTH). PTH absorbance is measured by spectrofotometry UV-Visible at λ maximum 273 nm. The results are plotted to the linear regression equation y = 0,0697x – 0,0007. The highest glucosamine yields is obtained at 15 days incubation time with yield percents 71,70 % and glucosamine content in the yield was 95,50 %. The purity of glucosamine is analyzed using HPLC-ELSD. The HPLC-ELSD glucosamine cromatogram from 15 days incubation time shown that there are two peaks at 2-3 minutes retention time, which is one dominant peak with high intensity. So it can be conclude that 15 days incubation is the optimum incubation time for chitin degraration by *Actinomycetes* ANL-4.