

**Azizah, B., 2014, Penapisan Mikroba Kitinolitik dari Cairan Fermentasi Sampah Organik Serta Uji Aktivitas Katalitiknya, Skripsi ini dibawah bimbingan Dr. Purkan, S.Si., M.Si dan Dr. Sri Sumarsih, M.Si, Departemen Kimia, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.**

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## ABSTRAK

Enzim kitinase banyak digunakan dalam bidang medis, makanan, bioteknologi dan lingkungan. Banyaknya kebutuhan enzim kitinase dapat diperoleh dengan teknologi produksi yang sederhana. Penelitian ini bertujuan untuk isolasi mikroba kitinolitik dari cairan fermentasi sampah organik, produksi dan uji aktivitas enzim kitinase serta mengetahui karakteristik dari enzim kitinase. Isolasi mikroba telah dilakukan dengan metode *spread plate*. Aktivitas kitinase ditentukan secara kualitatif dengan pengukuran indeks kitinolitik dan secara kuantitatif dengan pengukuran absorbansi menggunakan Spektrofotometer UV-Vis pada panjang gelombang 660 nm berdasarkan banyaknya substrat kitin yang dihidrolisis oleh enzim kitinase. Pada penelitian ini telah didapatkan 4 isolat dengan isolat A1 memiliki indeks kitinolitik terbesar 1,21. Dari identifikasi bakteri, isolat A1 telah diketahui sebagai bakteri *Pseudomonas pseudomallei*. Enzim dengan aktivitas kitinolitik optimum dapat diproduksi dengan inkubasi selama 18 jam dengan kadar molase 0,5% dan menghasilkan aktivitas sebesar 2,4800 U/mL. Karakteristik enzim kitinase optimum pada pH 6 dan suhu 50°C dengan aktivitas sebesar 7,0329 U/mL.

*Kata kunci: Bakteri kitinolitik, Kitinase, Sampah organik, Molase, Karakterisasi*

**Azizah, B., 2014, Isolation of Chitinolytic Microbe from Liquid Fermentation of Organic Waste and Analysis its Catalytic Activity, This Thesis under Guidance of Dr. Purkan, S.Si., M.Si and Dr. Sri Sumarsih, M.Si, Department of Chemistry, Faculty of Science and Technology, Airlangga University, Surabaya.**

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### ABSTRACT

Chitinase enzyme widely used in the medical field, food, biotechnology and environment. To the number of requirement of chitinase enzyme can be obtained with simple production technology. The purposes of this study were to isolate chitinolytic microbe that produce chitinase enzyme from liquid fermentation of organic waste, to produce and to determine activity assay of chitinase enzyme and also to characterize chitinase enzyme. Isolation of microbe has been done by spread plate method. Chitinase activity conducted on qualitative assay by chitinolytic index and quantitative measurement has been used by UV-Vis Spectrophotometer at wavelength of 660 nm based on the amount of substrate hydrolyzed chitin by chitinase enzyme. The result can be obtained 4 isolates and A1 has the highest chitinolytic index of 1,21. From identification of bacteria, isolate A1 has been known as *Pseudomonas pseudomallei*. Enzyme that produce chitinase optimum can be obtained at 18 hours for incubation time with concentration of molasses 0,5% and has activity of enzyme 2,4800 U/mL. Characterization of chitinase enzyme optimum at pH 6, temperature at 50°C and has activity of enzyme 7,0329 U/mL.

*Keywords: Chitinolytic microbe, Chitinase, Organic waste, Molasses, Characterization*