ABSTRAK

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FERMENTASI BERULANG UNTUK MENGHASILKAN N-ASETILGLUKOSAMIN DARI TEPUNG CANGKANG UDANG (*Penaeus monodon*) MENGGUNAKAN *Mucor circinelloides*
Skripsi, Fakultas Sains dan Teknologi (2019)

(xiv + 43 halaman, 6 tabel, 10 gambar, 8 lampiran)

N-asetilglukosamin merupakan hasil degradasi kitin oleh enzim kitinase. Kandungan kitin pada tepung cangkang udang sebesar 15-20%. Penelitian ini bertujuan untuk memproduksi N-asetilglukosamin dari tepung cangkang udang dengan fermentasi berulang menggunakan kultur *Mucor circinelloides*. Fermentasi berulang dilakukan sebanyak 4 kali pengulangan dengan penambahan konsentrasi nutrisi ($MgSO_4$ dan Na_2HPO_4) sebanyak 0%, 25%, 50%, dan 100% pada setiap pengulangan. Fermentasi berulang menggunakan residu hasil fermentasi pada setiap pengulangan. Berdasarkan hasil uji statistik pada penelitian ini menunjukkan jumlah fermentasi berulang dan konsentrasi penambahan nutrisi berpengaruh nyata terhadap konsentrasi N-asetilglukosamin yang dihasilkan. Konsentrasi N-asetilglukosamin hasil fermentasi terbaik dengan konsentrasi penambahan nutrisi 25%. Konsentrasi N-asetilglukosamin pada setiap pengulangan fermentasi mengalami penurunan, namun kadarnya masih cukup tinggi. Konsentrasi N-asetilglukosamin hasil fermentasi pengulangan ke-1, pengulangan ke-2, pengulangan ke-3, dan pengulangan ke-4 dengan konsentrasi penambahan nutrisi 25% adalah 13998,788 ppm, 10404,848 ppm, 9411,364 ppm, dan 6011,364 ppm. Dari hasil penelitian, dapat disimpulkan bahwa jumlah fermentasi berulang dapat dilakukan sebanyak 4 pengulangan dengan penambahan nutrisi terbaik 25%.

Kata Kunci: Fermentasi Berulang, *Mucor circinelloides,* N-asetilglukosamin, Tepung Cangkang Udang.

Referensi: 59 (2001-2018)

ABSTRACT

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BACK SLOPPING FERMENTATION TO PRODUCE N-ACETYLGLUCOSAMINE FROM BLACK TIGER SHRIMP SHELL (Penaeus monodon) POWDER WITH Mucor circinelloides
Thesis, Faculty of Science and Technology (2019)

(xiv + 43 pages, 6 tables, 10 figures, 8 appendices)

N-acetylglucosamine is the result of chitin degradation by the chitinase enzyme. Chitin content in shrimp shell powder is 15-20%. This study aimed to produce N-acetylglucosamine from shrimp shell powder using Mucor circinelloides culture. Back slopping fermentation was carried out in 4 repetitions by the addition of nutrient concentrations ($MgSO_4$ and Na_2HPO_4) by 0%, 25%, 50%, and 100% in each repetition. Back slopping fermentation conducted using fermented residues in each repetition. Based on the results of statistical tests in this study showed the amount of back slopping fermentation and the concentration of adding nutrients significantly affected the concentration of N-acetylglucosamine produced. The best N-acetylglucosamine concentration was produced with addition of 25% nutrient concentration. The concentration of N-acetylglucosamine in each repetition of fermentation decreased, but the concentration was still quite high. N-acetylglucosamine concentrations from 1st repetition, 2nd repetition, 3rd repetition, and 4th repetition with 25% addition of nutrient concentrations were 13998,788 ppm, 10404,848 ppm, 9411,364 ppm and 6011,364 ppm, respectively. From the results of the study, it can be concluded that the number of back slopping fermentation can be carried out in 4 repetitions with the best nutrition addition was 25%.

Keywords: Back Slop Fermentation, Mucor circinelloides, N-acetylglucosamine, Shrimp Shell Powder.

References: 59 (2001-2018)