

Intisari

Penelitian ini bertujuan untuk mengoptimasi bakteri *Streptomyces* sp. PB-2 dalam produksi kitinase pada berbagai pH medium (5, 6, 7, 8, dan 9) dan suhu inkubasi (30°C, 40°C, dan 50°C). Parameter yang diuji meliputi produksi kitinase (U/ml) dan konsentrasi N-asetilglukosamin (NAG) dalam medium (µg/ml) serta pertumbuhan bakteri (log CFU/ml). Produksi kitinase dan konsentrasi NAG dianalisis secara kuantitatif dengan metode kolorimetri. Sedangkan pertumbuhan bakteri *Streptomyces* sp. PB-2 diuji menggunakan metode TPC (*Total Plate Count*). Hasil penelitian menunjukkan bahwa produksi kitinase oleh bakteri *Streptomyces* sp. PB-2 optimum pada pH 7 (0,0021 U/ml) di hari ke-3 inkubasi dan optimum pada suhu 30°C (0,0017 U/ml) di hari ke-6 inkubasi. Evaluasi hubungan antara produksi kitinase dan pertumbuhan bakteri *Streptomyces* sp. PB-2 menunjukkan keterkaitan atau disebut *Growth Associated Product*.

Kata kunci: Optimasi, kitinase, *Streptomyces* sp. PB-2, pH medium, suhu

Abstract

This study aimed to optimize chitinase production by *Streptomyces* sp. PB-2 at various pH medium (5, 6, 7, 8, and 9) and various incubation temperature (30°C, 40°C, and 50°C). Parameters examined included chitinase production (U/ml), the concentration of N-acetylglucosamine (NAG) in medium (µg/ml), and bacteria growth (log CFU/ml). Chitinase production and the concentration of NAG were analyzed quantitatively by colorimetric method, while the bacteria growth were measured by TPC (Total Plate Count) method. The result shows that the chitinase production by *Streptomyces* sp. PB-2 was optimum at pH 7 (0,0021 U/ml) on the day-3 incubation and optimum temperature at 30°C (0,0017 U/ml) on the day-6 incubation. Evaluation of the interaction among chitinase production and growth of *Streptomyces* sp. PB-2 shows that they were related one another or called Growth Associated Product.

Key words: Optimize, chitinase, *Streptomyces* sp. PB-2, pH medium, temperature.