ABSTRAK

Penelitian mengenai penentuan konsentrasi minyak kelapa sawit dan waktu fermentasi bioplastik poli(3-hidroksibutirat) menggunakan bakteri Bacillus sp. UAAC 21501 telah dilaksanakan di Laboratorium Bioteknologi Biota Sumatera, Universitas Andalas. Fermentasi dilakukan dalam labu erlenmeyer volume 250 ml menggunakan *rotary shaker incubator* pada temperatur 50 ºC, pH 7 dan agitasi 200 rpm dengan variasi waktu fermentasi dan konsentrasi serta jenis minyak kelapa sawit. Kandungan P(3HB) yang terakumulasi dalam sel bakteri ditentukan dengan alat kromatografi gas. Hasil percobaan menunjukkan bahwa kondisi optimum fermentasi menggunakan minyak kelapa sawit olahan (PO) pada konsentrasi 0,5 g/ 100 ml selama waktu fermentasi 48 jam, dengan jumlah biomassa 262 mg/ 100 ml, kandungan P(3HB) 0,0595 mg/20 mg atau sebesar 0,298% b/b.

ABSTRACT

Research on determining the concentration of palm oil and fermentation time of bioplastic poly (3-hydroxybutyrate) by using bacteria *Bacillus* sp. UAAC 21501 have been carried out at the Laboratory Biotechnology of Biota Sumatra, Andalas University. Fermentation process was conducted in 250 ml erlenmeyer using a rotary shaker incubator at temperature of 50 ºC, pH 7 and agitation rate of 200 rpm with variations in the fermentation time, the concentration and type of palm oil. The content of P(3HB) accumulated in bacterial cells was determined by gas chromatography. The experimental results showed that the optimum fermentation conditions using source carbon palm olein (PO) at a concentration of 0,5 g/100 ml during fermentation time of 48 hours, with the amount of biomass 262 mg/100 ml, the content of P(3HB) 0,0595 mg/20 mg or 0,298 % w/w.