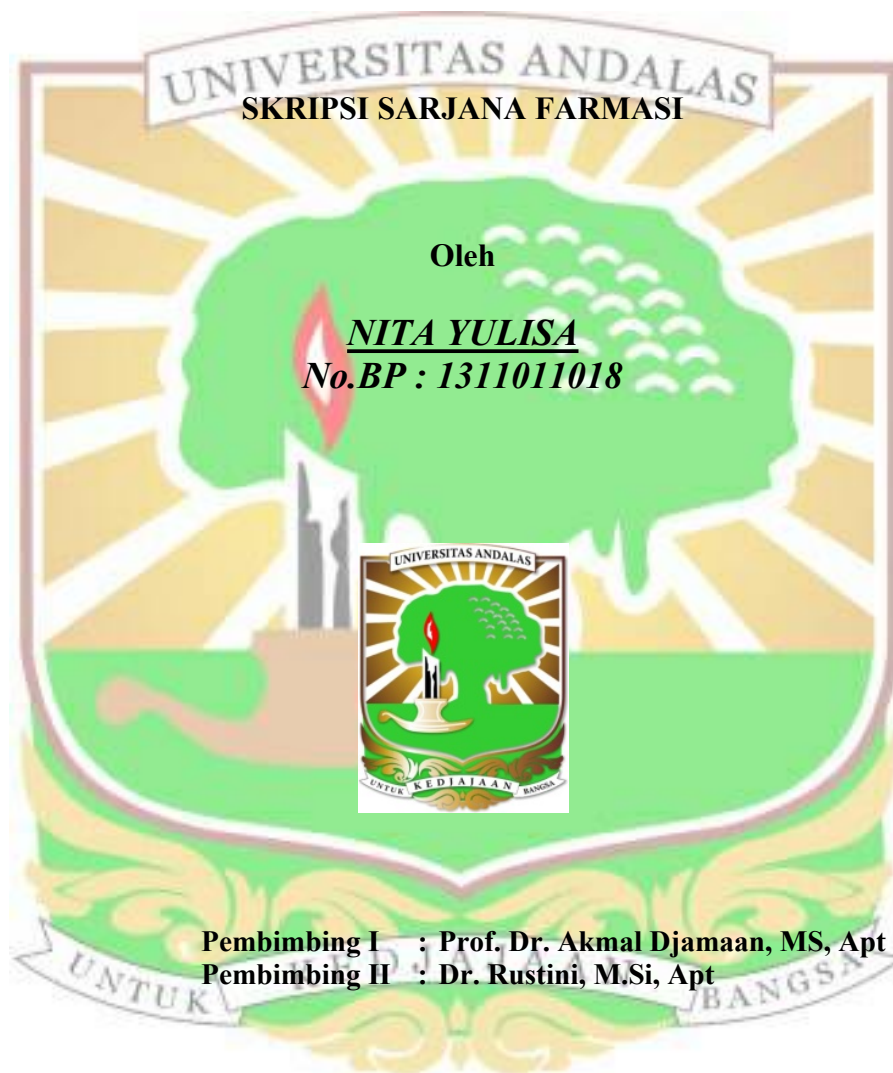


**ISOLASI, KARAKTERISASI, DAN
FERMENTASI BAKTERI PENGHASIL
BIOPOLIMER POLI(3-HIDROKSIBUTIRAT)
DARI AIR DANAU MANINJAU**



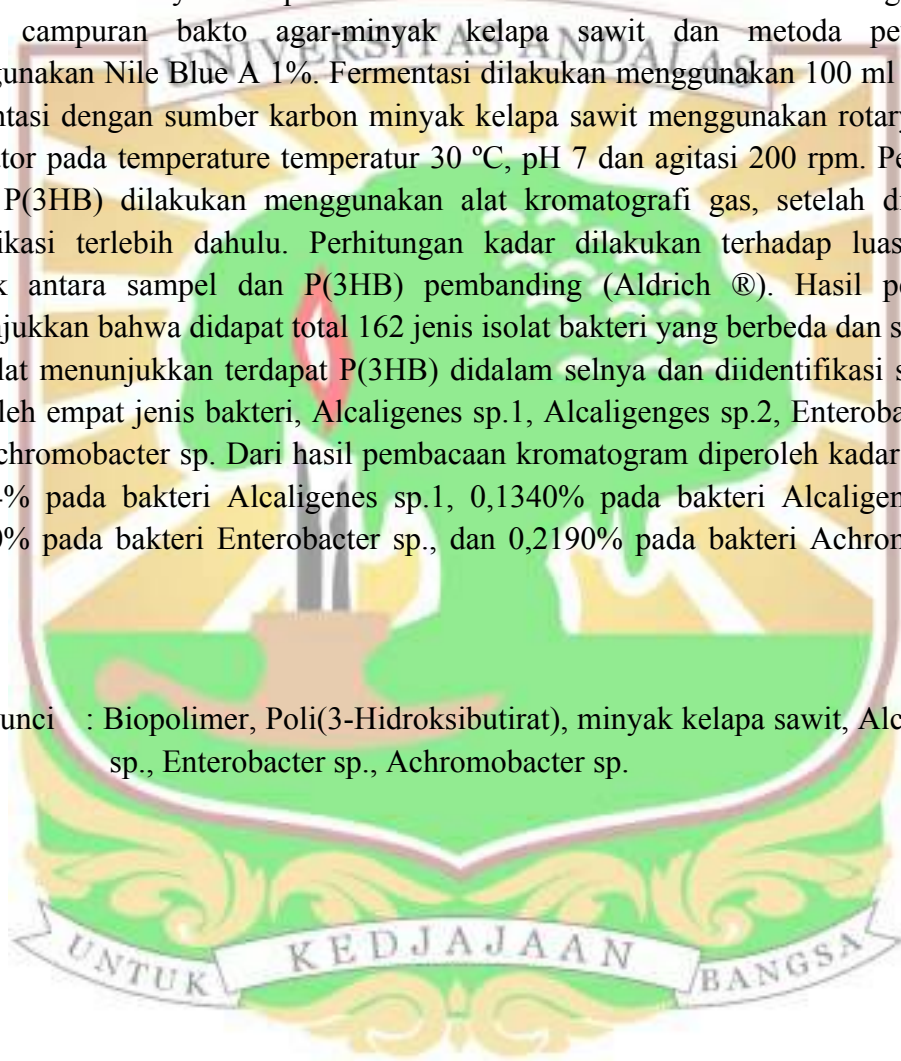
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ABSTRAK

Penelitian tentang isolasi, identifikasi dan fermentasi bakteri penghasil biopolimer Poli(3-Hidroksibutirat) dari sampel air Danau Maninjau menggunakan sumber karbon minyak kelapa sawit telah dilakukan. Metode isolasi menggunakan media campuran bakto agar-minyak kelapa sawit dan metoda pewarnaan menggunakan Nile Blue A 1%. Fermentasi dilakukan menggunakan 100 ml medium fermentasi dengan sumber karbon minyak kelapa sawit menggunakan rotary shaker incubator pada temperature temperatur 30 °C, pH 7 dan agitasi 200 rpm. Penetapan kadar P(3HB) dilakukan menggunakan alat kromatografi gas, setelah dilakukan esterifikasi terlebih dahulu. Perhitungan kadar dilakukan terhadap luas daerah puncak antara sampel dan P(3HB) pembanding (Aldrich ®). Hasil penelitian menunjukkan bahwa didapat total 162 jenis isolat bakteri yang berbeda dan sebanyak 10 isolat menunjukkan terdapat P(3HB) didalam selnya dan diidentifikasi sehingga diperoleh empat jenis bakteri, *Alcaligenes* sp.1, *Alcaligenes* sp.2, *Enterobacter* sp., dan *Achromobacter* sp. Dari hasil pembacaan kromatogram diperoleh kadar P(3HB) 0,1964% pada bakteri *Alcaligenes* sp.1, 0,1340% pada bakteri *Alcaligenes* sp.2, 0,2340% pada bakteri *Enterobacter* sp., dan 0,2190% pada bakteri *Achromobacter* sp.

Kata kunci : Biopolimer, Poli(3-Hidroksibutirat), minyak kelapa sawit, *Alcaligenes* sp., *Enterobacter* sp., *Achromobacter* sp.



ABSTRACT

Research on the isolation, identification and fermentation of Bacterial that produce biopolymer of Poly(3-hidroxybutirate) from the sample of Maninjau Lake's water by using palm oil as the main carbon source has been done. Isolation method uses the combination of bacto agar and palm oil as the medium and staining method using Nile Blue A 1%. Fermentation process is carried out using 100 ml of fermentation medium with palm oil as the carbon source in rotary shaker incubator at temperature of 30 °C, pH 7 and agitation rate 200 rpm. Determination of P(3HB) that accumulated in bacterial cell is done by gas chromatography, after esterification process is done before. Calculation was performed by comparing the peak area between sample and P(3HB) comparison (Aldrich®). The result showed that total 162 different bacterial isolates, and 10 of them showed P(3HB) in their cells and were identified as four type of bacteria, they are Alcaligenes sp.1, Alcaligenes sp.2, Enterobacter sp., and Achromobacter sp. From the result of chromatogram, it was founded that the content of P(3HB) was 0.1964% in Alcaligenes sp.1, 0.1340% in Alcaligenes sp.2, 0.2340% in Enterobacter sp. and 0,2190% in Achromobacter sp.

Keywords : Bioplastic, Poli(3-hidroxybutirate), Palm oil, Alcaligenes sp., Enterobacter sp., Achromobacter sp.

