

**ABSTRAK PENELITIAN BERBASIS PROGRAM STUDI
(PRODI)
TAHUN 2013**



Lembaga Penelitian dan Pengabdian Masyarakat (LP2M)
Universitas Hasanuddin
Kampus Unhas Tamalanrea
Jln. Perintis Kemerdekaan KM. 10 Makassar
Telp. : 0411 587032, , 582500, 588888 Fax.(0411) 587032, 584024
Website : <http://www.unhas.ac.id/lppm> email : lp2m@unhas.ac.id

**POTENSI BAKTERI DARI LIMBAH PABRIK GULA SEBAGAI
PENGHASIL BAHAN BAKU BIOPLASTIK TERDEGRADASI
(POLY- -HIDROKSIBUTIRAT)**

Isolation And Characterization Of Bacteria From Waste Sugar Mill Arasoe-
Kab.Bone As Raw Material Producing Bioplastics Degraded (Poly- -
Hydroxybutyrate)

Nur Haedar* , Risco B. Gobel, Ruslan Umar Dan Ambeng
Jurusan Biologi FMIPA Unhas
*Email: Nda.Nawir@gmail.Com

Abstrak

Poli- -hidroksibutirat (PHB) merupakan bahan baku plastik terdegradasi yang dapat dihasilkan oleh mikroorganismenya dalam kondisi lingkungan yang kaya akan sumber karbohidrat. Penelitian ini bertujuan untuk memperoleh isolat penghasil PHB dari pabrik gula. Penentuan akumulasi PHB secara kualitatif menggunakan pewarna *Sudan Black* dan kuantitatif menggunakan spektrofotometer.

Hasil isolasi bakteri dari limbah dan tanah pabrik Gula Arasoe, Takalar dan Camming diperoleh 36 isolat yang mampu mengakumulasi PHB diantaranya 11 isolat diperoleh dari pabrik gula Arasoe, 18 isolat dari pabrik gula Takalar dan 7 isolat dari pabrik gula Camming.

Seleksi secara kuantitatif menunjukkan kemampuan bakteri menghasilkan PHB berkisar 6,38%-67,08% (mg berat PHB/mg berat kering sel) dengan menggunakan glukosa sebagai sumber karbon selama 72 jam inkubasi. Tiga isolat yakni BA9, BB7 dan TC4 mampu menghasilkan PHB diatas kontrol *B. megaterium* (58,44%), masing-masing sebesar 67,08%, 67,94% dan 65,98%. Hasil karakterisasi terhadap isolat BA9, BB7 dan TC4 menunjukkan maka BA9 tergolong genus *Bacillus*, BB7 tergolong genus *Pseudomonas* dan TC4 tergolong genus *Micrococcus*.

Kata Kunci: bioplastik, poly- -hidroksibutirat, limbah pabrik gula

Abstrak

Plastic is a material widely used in everyday life but difficult to degrade in the environment that would cause environmental problems. One solution to this problem is to find a plastic material that easily degraded in the environment. Poly- β -hydroxybutyrate (PHB) is a polymer which is easily degraded and can be produced by microorganisms especially bacteria under conditions of excess carbon source. This study aims to obtain bacterial isolates from Arasoe sugar factory waste that potentially produce PHB. Isolation of bacteria from sewage plants conducted using SPC method. NA medium with 1% glucose addition were use to grow the isolated bacteria. Qualitative selection methods using reagents Sudan Black were use to selected the isolates. Result showed that PHB-producing bacteria isolated from sugar factory waste Arasoe with SPC method obtained that the highest number of bacterial colonies were found on the ground and the lowest of the dregs. From 43 isolates that had been purified and obtained qualitatively, 11 isolates were able to accumulate PHB.

Key words: bioplastic, poly- β -hidroksibutirat, sugar mill waste

