

Isolation and characterization of polyhydroxyalkanoate producing microorganisms from molasses wastewater

Abstract

Polyhydroxyalkanoates (PHAs) are polyesters generated by numerous microorganism, where it served as a source of energy and carbon store for bacteria. These plastics are biodegradable, eco-friendly and recyclable. In the present study, 2 strains were successfully isolated and identified from molasses wastewater using staining with Nile Red A. Genotypic identification revealed that the isolates belong to species of *Pseudomonas alcaliphila* and *Pseudomonas hydrolytica*. Growth curves of both strains were constructed using POLYMATH software showed similar growth patterns and rates. The PHA accumulation of *Pseudomonas alcaliphila* and *Pseudomonas hydrolytica* were recorded at 55% and 45% of dry cell weight. The PHA functional group was further determined through Fourier Transfer InfraRed Spectroscopy (FTIR) analysis.