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Waste date seed oil extract as an alternative feedstock for Poly(3-hydroxybutyrate) synthesis

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Highlights

- Feasibility of PHB synthesis using date seed oil as a substrate is demonstrated.
- Maximum PHB concentration of 11.8 g/l attained, 82% PHB content.
- Characterisation of the PHB product gave a melting temperature of 171°C.

Abstract

The economic production and wider utilisation of poly(3-hydroxybutyrate) (PHB) is dependent on the development of processes based on alternative, low cost and renewable feedstocks. The purpose of this study is to investigate the suitability of using waste date seed oil extract as an alternative carbon source for PHB synthesis. The extraction of date seed oil using different solvents, a chloroform, methanol mixture (MCM), hexane and petroleum ether (PE) was studied. Results indicate that the MCM gave the highest oil yield of 9.3%, whilst

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