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Microbial lipid extraction by electroporation technique culturing *Lipomyces starkeyi* on palm oil mill effluent (POME)**Ahasanul Karim, Abu Yousuf, Amirul Islam and Che Ku**
Universiti Malaysia Pahang, Malaysia

Microbial lipid is considered as a substitute of traditional edible oils like plant oil, animal fat, cooking oil etcetera as feedstock of biodiesel. Oleaginous yeast strain *Lipomyces starkeyi* is a potential candidate which able to accumulate more than 25% lipid of their dry biomass. It can play a key role for simultaneous bioremediation as well as lipid accumulation from hydrocarbon enriched palm oil mill effluent (POME). The main obstacle to obtain higher lipid extraction from microbial biomass is the cell wall breakup. Therefore, the present study is intended to develop a novel cell wall disruption technique for the extraction of biomolecules from microbial biomass within a short time, with less energy input as well as eco-friendly. In this study, the electroporation (EP) technique was employed on yeast (*Lipomyces starkeyi*) biomass to disrupt their cell wall where voltage, pulse frequency and pulse width were 4 kV, 100 Hz and 0.01 s, respectively. In addition, different treatment time (2, 4, 6 min) were employed to observe the effect of cell wall disruption. Our experimental results show that the maximum lipid production was achieved by employing 6 minutes EP treatment. These results suggest that EP would be an attractive technique to the traditional microbial cell disruption that leads to significant lipid extraction.

ahsan05sust@gmail.com

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