

Accepted Manuscript

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PII: S0960-8524(18)31083-6
DOI: <https://doi.org/10.1016/j.biortech.2018.07.142>
Reference: BITE 20272

To appear in: *Bioresource Technology*

Received Date: 14 June 2018
Revised Date: 26 July 2018
Accepted Date: 27 July 2018

Please cite this article as: Jiang, Y., Wang, H., Zhao, C., Huang, F., Deng, L., Wang, W., Establishment of stable microalgal-bacterial consortium in liquid digestate for nutrient removal and biomass accumulation, *Bioresource Technology* (2018), doi: <https://doi.org/10.1016/j.biortech.2018.07.142>

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Establishment of stable microalgal-bacterial consortium in liquid digestate for nutrient removal and biomass accumulation

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Abstract

In this study, a microalgal-bacterial consortium (MBC) was established in liquid digestate (LD) by optimizing sequencing batch reactor (SBR) operating parameters and microalgae inoculation to address the abovementioned challenges. The bacteria from LD SBR-Activated Sludge System effluent under the optimum conditions of 25 °C, 7.0 g/L MLSS, 5 mg/L DO concentration, and 6 h hydraulic retention time with 0.5 mg/L DW *Chlorella* sp. BWY-1 could form stable MBCs outdoors in an airlift photoreactor. The stable MBC facilitates the continuous removal of nitrogen and phosphorus, promotes the accumulation of biomass and lipids, and contributes to the improvement of the sedimentation. The results from this study provided a new

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