

Effects of olive mill wastewater discharge on Alteereh membrane bioreactor (MBR) facility: challenges and solutions

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Abstract: Unused reclaimed water is a wasted water resource. Currently, Palestine can show no single successful large-scale effluent reuse schemes in due to impaired effluent quality and socio-political issues. The membrane bioreactor (MBR), a novel modified activated sludge system (ASS) is a reliable and efficient technology that has become a feasible alternative to ASS for municipal and industrial wastewater treatment and reuse in Palestine. However, illicit industrial discharges of mineral and natural oils can initiate membrane fouling with consequent high operating costs. In this study, the performance of a full-scale membrane bioreactor (MBR), serving 20000 capita in Alteereh suburb of Ramallah city, was studied. During emergency operation, the MBR treatment efficacy for the removal of biological oxygen demand (BOD), total suspended solids (TSS), and total nitrogen (Tot-N) from municipal wastewater was monitored and evaluated. Obtained results demonstrate a high quality of reclaimed water pertinent to COD, TSS, and tot-N concentration (10/10/10 mg/l, respectively) under variable operation conditions. Despite irregular and sudden industrial discharges, the MBR facility in Alteereh is a reliable and efficient technology for wastewater treatment and beneficial uses of reclaimed water in Palestine.

Keywords: MBR; reclamation; water use; agricultural irrigation; land development

Introduction

This is the first paragraph – text set with no indent but justified. This is our preferred style for all first paragraphs after headings [12pt Times New Roman].

All subsequent paragraphs are indented and justified.

The Introduction section should clearly state the background and the objectives of your work. No extensive literature review is needed for an outline paper but major accomplishments with the respective literature influencing your work should be mentioned.

Material and Methods

Please include a brief description of the methods/techniques used (the principles of these methods should not be described if readers can be directed to easily accessible references or standard texts).

Results and Conclusions

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