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Title:	Epipremnum aureum is a promising plant candidate for developing nature-based technologies for nutrients removal from wastewaters
Authors:	Yadav, Ravi K. (/jspui/browse?type=author&value=Yadav%2C+Ravi+K.) Sahoo, Siddhant (/jspui/browse?type=author&value=Sahoo%2C+Siddhant) Patil, Sunil A. (/jspui/browse?type=author&value=Patil%2C+Sunil+A.)
Keywords:	Nature-based solution Money plant Phytoremediation Domestic wastewater Greywater Secondary effluent
Issue Date:	2021
Publisher:	Elsevier
Citation:	Journal of Environmental Chemical Engineering, 9(5), 106134.
Abstract:	Ecofriendly and economic nature-based technologies that use plants as a key system component are becoming feasible for wastewater treatment. Epipremnum aureum is considered a promising plant candidate due to its robustness, easy propagation, perennial growth, fibrous roots, growth with minimal nutrients and light, and phytoremediation potential from the air and water media. This study aimed to systemically evaluate the nutrients removal capability of E. aureum from different waste streams. Within 30 days incubation period, E. aureum achieved removal (in mg/gplant biomass) of 6.0 ± 0.6 , 4.8 ± 0.4 and 3.5 ± 0.2 for total nitrogen and 0.31 ± 0.05 , 0.30 ± 0.04 and 0.27 ± 0.09 for total phosphorous from primary treated domestic wastewater, secondary effluent, and greywater, respectively. The majority of removal occurred within the initial 15 days. Linked to the nutrient removal, there was the highest growth and leaf chlorophyll content in domestic wastewater (5.2 ± 0.2 g and 0.9 ± 0.1 mg/gtissue), followed by secondary effluent (4.1 ± 0.3 g and 0.9 ± 0.1 mg/gtissue) and minimum in greywater (1.5 ± 0.1 g and 0.6 ± 0.1 mg/gtissue). Mixing showed no significant effect on nutrients removal, while static conditions favored TN removal. E. aureum showed preferential uptake of ammonium than nitrate during the initial growth stages. These results support using E. aureum in nature-based technologies for nutrients removal from different wastewaters.
Description:	Only IISER Mohali authors are available in the record.
URI:	https://doi.org/10.1016/j.jece.2021.106134 (https://doi.org/10.1016/j.jece.2021.106134) http://hdl.handle.net/123456789/4368 (http://hdl.handle.net/123456789/4368)
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