



Evaluation of Manure Potential of Harvested Algal Biomass after Phycoremediation

Gulshan K Sharma, Shakeel A. Khan^{*}, N. Gupta

Centre for Environment Science & Climate Resilient Agriculture, Indian Agricultural Research Institute, New Delhi-110012, India

Address for Correspondence: Shakeel A. Khan; shakeel_iari@yahoo.com

ABSTRACT: Rapid pace of industrialization, population expansion and unplanned urbanization have largely contributed to the severe water pollution and soils deterioration. Facing the challenge of freshwater shortage, water reuse is the only possible way to ease the pressure of the present situation. Agriculture sector is the biggest sector which consumes 70 % of fresh water. So by irrigating agriculture field by wastewater after phycoremediation is a novel option. Phycoremediation remove excess nutrient load from wastewater and make it appropriate for irrigation. Apart from that harvested algal manure of *Chlorella minutissima* contain 3.5% N, 1.2 % P and 0.4% K. By applying obtain algal biomass in agriculture field as manure we can at least save Rs. 40,000 to 45,000/acre/year. Hence, phycoremediation has dual role in wastewater remediation as well as manure potential. Based on the biomass productivity of *C. minutissima* on wastewater and the manure potential of resulting biomass, the feasibility of integration of both the process was analyzed for 1 ha land and it could produce 305 and 120 tons of N and P respectively from sewage wastewater remediation on yearly basis. Since there is a net saving of chemical fertilizer, the associated negative impacts of using chemical fertilizer could be practically mitigated. Hence, the integration of algal biomass production vis a vis waste water treatment by phycoremediation could be a viable proposition as an energy efficient techniques. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

Conference Proceedings: International Conference on Life Sciences, Informatics, Food and Environment;
August 29- 30, 2014

Indo Global Journal of Pharmaceutical Sciences(ISSN 2249 1023 ; CODEN- IGJPAI; NLM ID: 101610675) indexed and abstracted in EMBASE(Elsevier), SCIRUS(Elsevier),CABI, CAB Abstracts, Chemical Abstract Services(CAS), American Chemical Society(ACS), Index Copernicus, EBSCO, DOAJ, Google Scholar and many more. For further details, visit <http://iglobaljournal.com>