

Accepted Manuscript

Review

Aquatic weeds as the next generation feedstock for sustainable bioenergy production

Manpreet Kaur, Manoj Kumar, Sarita Sachdeva, S.K. Puri

PII: S0960-8524(17)32086-2

DOI: <https://doi.org/10.1016/j.biortech.2017.11.082>

Reference: BITE 19232

To appear in: *Bioresource Technology*

Received Date: 5 October 2017

Revised Date: 24 November 2017

Accepted Date: 25 November 2017

Please cite this article as: Kaur, M., Kumar, M., Sachdeva, S., Puri, S.K., Aquatic weeds as the next generation feedstock for sustainable bioenergy production, *Bioresource Technology* (2017), doi: <https://doi.org/10.1016/j.biortech.2017.11.082>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Aquatic weeds as the next generation feedstock for sustainable bioenergy production**Manpreet Kaur^a, Manoj Kumar^{b*}, Sarita Sachdeva^a, S.K. Puri^b**^a*Manav Rachna International University, Sector 43, Faridabad, Haryana 121004,**Haryana, India*^b*Indian Oil Corporation Limited (IOCL), R&D Centre, Sector 13, Faridabad 121007,**Haryana, India***Corresponding author: upretim@indianoil.in Tel: 0129-2294620***Abstract**

Increasing oil prices and depletion of existing fossil fuel reserves, combined with the continuous rise in greenhouse gas emissions, have fostered the need to explore and develop new renewable bioenergy feedstocks that do not require arable land and freshwater resources. In this regard, prolific biomass growth of invasive aquatic weeds in wastewater has gained much attention in recent years in utilizing them as a potential feedstock for bioenergy production. Aquatic weeds have an exceptionally higher reproduction rates and are rich in cellulose and hemicellulose with a very low lignin content that makes them an efficient next generation biofuel crop. Considering their potential as an effective phytoremediators, this review presents a model of integrated aquatic biomass production, phytoremediation and bioenergy generation to reduce the land, fresh water and fertilizer usage for sustainable and economical bioenergy.

Key words: Aquatic weeds, Constructed wetlands, Bioenergy, Phytoremediation, Biofuel, Feedstock

Abbreviation: MEC, Microbial electrolysis cell; CW, Constructed wetland; MFC, Microbial fuel cell

Contents

1. Introduction.....	3
2. Potential of aquatic weeds as biofuel feedstock	4

Download English Version:

<https://daneshyari.com/en/article/7068446>

Download Persian Version:

<https://daneshyari.com/article/7068446>

[Daneshyari.com](https://daneshyari.com)