

Accepted Manuscript

Removal of nutrients in saline wastewater using constructed wetlands: Plant species, influent loads and salinity levels as influencing factors

Yinxu Liang, Hui Zhu, Gary Bañuelos, Baixing Yan, Brian Shutes, Xianwei Cheng, Xin Chen



PII: S0045-6535(17)31310-3

DOI: [10.1016/j.chemosphere.2017.08.087](https://doi.org/10.1016/j.chemosphere.2017.08.087)

Reference: CHEM 19785

To appear in: *ECSN*

Received Date: 1 July 2017

Revised Date: 16 August 2017

Accepted Date: 17 August 2017

Please cite this article as: Liang, Y., Zhu, H., Bañuelos, G., Yan, B., Shutes, B., Cheng, X., Chen, X., Removal of nutrients in saline wastewater using constructed wetlands: Plant species, influent loads and salinity levels as influencing factors, *Chemosphere* (2017), doi: 10.1016/j.chemosphere.2017.08.087.

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.

1 **Removal of nutrients in saline wastewater using constructed wetlands: plant**
2 **species, influent loads and salinity levels as influencing factors**

3 Yinxiu Liang ^a, Hui Zhu ^{a,*}, Gary Bañuelos ^b, Baixing Yan ^a, Brian Shutes ^c, Xianwei Cheng ^a, Xin
4 Chen ^a

5 ^a Key Laboratory of Wetland Ecology and Environment, Northeast Institute of Geography and
6 Agroecology, Chinese Academy of Sciences, Changchun 130102, P.R. China

7 ^b USDA, Agricultural Research Service, San Joaquin Valley Agricultural Science Center, 9611 South
8 Riverbend Avenue, Parlier, CA 93648-9757, USA

9 ^c Urban Pollution Research Centre, Middlesex University, Hendon, London NW4 4BT, UK

10 *Corresponding author, email: zhuhui@iga.ac.cn

11 **Abstract**

12 This study aims to evaluate how plant species, influent loads and salinity levels
13 affect the removal of nutrients from saline wastewater using constructed wetlands
14 (CWs). CWs planted with *Canna indica* showed the greatest removal percentages
15 among the four tested species for nitrogen (N) (~ 100%) at both low and high influent
16 loads, and ~ 100% and 93.8% for phosphorus (P) at low and high influent loads,
17 respectively at an electrical conductivity (EC) of 7 mS/cm (25 □). The influence of
18 different salinity levels on plant assimilation of N and P varied with their respective
19 concentrations; salinity (e.g., EC at 7, 10 and 15 mS/cm) even enhanced plant
20 absorption of N and P under specific conditions. In conclusion, CWs planted with
21 selected species can be used for the removal of N and P under a range of different

Download English Version:

<https://daneshyari.com/en/article/5746451>

Download Persian Version:

<https://daneshyari.com/article/5746451>

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