



ELSEVIER

Contents lists available at ScienceDirect

Data in Brief

journal homepage: www.elsevier.com/locate/dib



Data Article

Data on wastewater treatment plant by using wetland method, Babol, Iran

Yousef Dadban Shahamat^a, Hosseinali Asgharnia^{b,*},
Laleh R. Kalankesh^c, Mehdi hosanpour^d

^a Environmental Health Research Center, Golestan University of Medical Sciences, Gorgan, Iran

^b Department of Environmental Health Engineering, Babol University of Medical Sciences, Babol, Iran

^c Department of Environmental Health Science, Student Research Committee, Health Sciences Research Center, School of Public Health, Mazandaran University of Medical Sciences, Sari, Iran

^d Department of Environment and Energy, West Tehran Branch, Islamic Azad University, Tehran, Iran

ARTICLE INFO

Article history:

Received 30 September 2017

Received in revised form

11 December 2017

Accepted 14 December 2017

Available online 20 December 2017

Keywords:

BOD

Babol

COD

Horizontal subsurface flow wetland

TSS

TSD

ABSTRACT

Date in this paper highlights the applications of constructed horizontal surface flow (HF-CW) wetland with two different local plants (*Louis latifolia* and *Phragmites -australis (Cav.) Trin*) at the wastewater treatment plant in Babol city. This system was designed as an advanced treatment unit in field scale after the treatment plant. Parameters such as Total Dissolved Solid (TDS), Total Suspended Solid (TSS), Turbidity, Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD), were investigated. The result shows that treatment efficiency increases with the passage of time. The efficiency of *Phragmites* planted setups in open environment was fairly good for all studied parameters (28.6% of TDS, 94.4% for TSS, 79.8% for turbidity, 93.7% for BOD and 82.6% for COD). The efficiency of the *latifolia* set up was also good, but lower than that of *Phragmites* (26.5% of TDS, 76.9% for TSS, 71.5% for turbidity, 79.1 for BOD and 68.8% for COD). In brief, the obtained dates show that using local plants in (HF-CW) wetland

* Corresponding author.

E-mail address: ehaamin2@gmail.com (H. Asgharnia).

not only effectively reduces various contaminants from the effluent of the wastewater according to *Effluent Guideline regulations* (WHO & EPA), but it is also a cost-effective and environmentally friendly method. Also, it was calculated that in full scale operation [time (1 day) and a depth (0.3 m)], 8 ha of wetland was needed.

© 2018 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license

(<http://creativecommons.org/licenses/by/4.0/>).

Specifications Table

Subject area	<i>Environmental Engineering</i>
More specific subject area	<i>advanced treatment of wastewater</i>
Type of data	<i>Table, graph, figure</i>
How data was acquired	<i>All data obtained, such as (TDS, TSS, Turbidity, BOD, COD), were performed following standard test protocols as presented in Standard Methods for the Examination of Water and Wastewater.</i>
Data format	<i>analyzed</i>
Experimental factors	<i>These experimental setups were run in an open environment near field scale constructed wetland. Three parallel troughs were built. Two troughs were planted with buds of <i>Louis latifolia</i> and <i>Phragmites</i>, respectively, and the third one was controlled trough. Samples were collected daily and transferred to the laboratory for testing. A total of 120 samples was collected to measure the TSS, TDS, Turbidity, BOD and COD according Standard Methods for the Examination of Water and Wastewater.</i>
Experimental features	<i>The performance efficiency of each setup was studied. For two setups <i>Louis latifolia</i> and <i>Phragmites</i> vegetated efficiency was recorded and compared with control through.</i>
Data source location	<i>Babol university of Medical Science, Mazandaran, Iran</i>
Data accessibility	<i>Data are accessible with the article</i>

Value of the data

- Data were described with changes in TDS, TSS, Turbidity, BOD and COD in the effluent wastewater of Babol city, by the application of the wetland process.
- Data shows that wetland plants such as *Louis latifolia* and *Phragmites*, which are native to the north of Iran can be used as a cost-effective source to improve the quality of the treated effluent.
- Data of this study can be used to design the wetland for removal of a wide range of pollutants in wastewater treatment.
- Data are important for the discharge of effluents to the environment, especially resource water, aqueous and agriculture.

1. Data

The data in [Table 1](#) show the characteristics as well as the efficiency of *L. latifolia* and *Phragmites* plants in the removal of contaminants in effluent wastewater during the different Hydraulic Retention Time (HRT). This result can be compared with that of the unvegetated trough.

Download English Version:

<https://daneshyari.com/en/article/6597334>

Download Persian Version:

<https://daneshyari.com/article/6597334>

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