Evaluation the use of Treated Petroleum Refinery Wastewaterfor Agriculture

Submitted By
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B.Sc. of Agricultural Sciences, Faculty of Agriculture, University, 2007Cairo

A thesis submitted in Partial Fulfillmentof
The Requirement for the Master Degree
In
Environmental Science

Department of Environmental Agricultural Science
Institute of Environmental Studies and Research
Ain Shams University

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APPROVAL SHEET

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2017

Dedication

I would like to thank my family for always believing in me, for their continuous love and their supporting me spiritually throughout my life in all my decisions.

I love them so much, and I would not have made it this far without them.

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"In the name of ALLAH, the most gracious and the most Merciful"

First of all and in all times thanks to ALLAH Almighty, the most Merciful for blessing and guiding me to Success in life

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Abstract

Petroleum refining uses relatively large quantities of water. The quantity of wastewater generated and their characteristics depend on the process configuration. The aim of this work is to study the use treated refinery wastewater in land irrigation. The study deals with characterization of treated wastewater of Cairo Oil Refinery Co and its impact on certain physico-chemical characteristics of soil and on growth, and quality of different locally grown ornamental plants.

A detailed evaluation for the use of treated petroleum refinery wastewater in irrigation of different plants, vegetative growth, production, and chemical compounds were determined. The experiment was conducted for two successive seasons of 2014 and 2015 at the Floriculture Nursery under full sunlight conditions at Horticulture Research Institute, Ornamental Plants, and Landscape Gardening Research Department, Egypt using clay loam soil and 30 cm pots.

The whole experiments showed that there were no significant differences on vegetative growth or the chemical composition and concentration of major and minor elements in all the used plants between different water sources.

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