



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



HANAA ALY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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**THE EFFECT OF USING TREATED SEWAGE WATER
ON THE PRODUCTION AND QUALITY OF WOOD
FORESTRY**

Submitted By

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B.Sc. of Agricultural Science, Faculty of Agriculture, Ain Shams University, 1988

A Thesis Submitted in Partial Fulfillment
Of
The Requirement for the Master Degree
In
Environmental Sciences

Department of Environmental Agricultural Sciences
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Ain Shams University

2022

APPROVAL SHEET
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ABSTRACT

The present investigation was carried out at two sites, the first one is at experimental field in Serabium Forest Plantation, it is irrigated by sewage water, the second plantation is in Groppy nursery, using fresh water for irrigation, during two successive seasons 2018 and 2019, aimed to study the effect of irrigation with two types of water on some growth parameters, chemical composition in leaves and root of some woody trees *Corymbia citriodora*, *Cupressus sempervirens* and *Khaya senegalensis*, adding to that chemical properties of planted soil.

Collected data declared that the growth parameters increased significantly in all woody trees by using irrigation with waste water compared with the same woody trees irrigated by fresh water; Results showed significant increases in all growth parameters (the above ground biomass (main stem, stem diameter and basal area), *Khaya* gave the best results followed by *corymbia* and *Cupressus* gave the Less results.

Sewage water showed high potential for afforestation of multipurpose species of economic importance. Waste water in general and it is not recommended to use it except in planting woody trees, in the interest of the public health of citizen.

Use of treated waste water in irrigation declared pathogens in the soil surface layer.

One of the negative effects of waste water uses in irrigation, it contains heavy metal accumulating year after year in soil and the solve for this problem is planting wood trees in this soil with work as a phytoremediation for soil contaminated with heavy metal.

From results, it was concluded that effluent discharged from Ismailia sewage treatment plant to the Serabium Forest Plantation Farms is within the allowable limits of The Egyptian Law 44/2000, and WHO (2006). Based on the reduced levels of the TSS, BOD5 and total fecal coliform, it showed that the sewage treatment plant is relatively efficient in reduction of organic and nutrient loads from the sewage water. This way, treatment of sewage effluents before discharge into bodies is vital to prevent pollution and protect the entire environment and public health.

Key Words: Sewage Water, *Corymbia citriodora*, *Cupressus sempervirens*, *Khaya senegalensis*. Heavy Metal.

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