

Evaluating the role of treated wastewater in enhancing soil moisture and nutrient uptake in cereal crops

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Introduction

In recent years, the increasing demand for freshwater and the growing pressures of climate change and population growth have led to a search for sustainable water management practices. Treated wastewater (TWW) is a potential source of water for agricultural use, but its application requires careful evaluation of its effects on soil moisture and nutrient uptake in cereal crops. This study aims to assess the role of TWW in enhancing soil moisture and nutrient uptake in cereal crops under different conditions.

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increasing agricultural productivity. In cereal crops like wheat, maize, and rice, these nutrients are critical for optimizing yield, reducing crop stress, and ensuring food security [8,9].

is study also explores the environmental impacts of using treated wastewater in agriculture. Although treated wastewater can

and rotation with freshwater irrigation, can help prevent the negative effects of excessive nutrient buildup or salinity.

In conclusion, the use of treated wastewater in agriculture, particularly for cereal crops, shows great promise as a sustainable water management strategy. It enhances water use efficiency, improves soil fertility, and contributes to increased crop yields. However, its adoption requires careful consideration of local conditions, including soil type, crop selection, and wastewater quality. Future research should focus on refining wastewater treatment processes, optimizing irrigation practices, and assessing the long-term effects of treated wastewater on soil health to ensure its safe and effective use in agriculture. If managed correctly, treated wastewater could become an essential tool in addressing water scarcity and enhancing food security in regions facing water challenges.

Conflict of interest

None

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None

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