HEAVY METALS ACCUMULATION IN SOIL AND PLANTS IRRIGATED WITH THE WASTEWATER OF THE TENTH OF RAMADAN CITY, EGYPT

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Abstract:
The wastewater of the Tenth of Ramadan City is disposed in three poorly protected and incompletely lined oxidation ponds, which receive wastewater from both industrial waste effluents and domestic sewage. Overflow of these ponds; discharged through artificial ditches into Wadi El-Watan. These discharge and the wastewater effluents of the oxidation ponds are used for irrigation of new reclaimed areas.

Seven water samples were collected from the wastewater used for irrigation of the new reclaimed lands. Twelve soil samples were selected form the cultivated areas close to the ponds and Wadi El-Watan, in addition to eight plants representing forage collected from these locations. Water, soil and plant samples were analyzed for Cu, Fe, Mn and Zn.

Significantly increased amounts of the heavy metals (Cu, Fe, Mn, and Zn) are recorded in the examined soil samples and forage irrigated with wastewater. These heavy metals could represent a potential threat for the cultivated plants and for the livestock and humans.

Keywords:
Heavy metal accumulations, soils, plants, wastewater irrigation, the Tenth of Ramadan City.

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References:
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