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Project Report on

"EFFECT OF DOMESTIC WASTEWATER ON SOIL PROPERTIES AROUND TREATMENT PLANT"

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ABSTRACT

Irrigation with wastewater is a form of recycling that is practiced in many developing countries. In this study, an attempt is made to assess the effect of wastewater on soil properties and soil fertility.

Four wastewater samples around Kesare treatment plant in Mysore city were collected. Seven soil samples from wastewater irrigated farm lands were collected from a depth of 0-15 cm and one soil sample was collected from adjacent farm land not irrigated with wastewater for the sake of comparisons in the study. The study indicated that the wastewater samples analyzed were neutral in reaction and marginally safe for irrigation from the point of view of Electrical Conductivity and Sodium Absorption Ratio.

The wastewater application has resulted in decreased Bulk Density from 1.47 to 1.2g/cc and increased the porosity from 40 to 50 percent. Soil fertility with respect to soil available Nitrogen and Potassium content increased with wastewater application soil micronutrients like Iron, Manganese, Zinc and Copper also increased in soils due to wastewater. The heavy metal content in the soil samples namely Chromium and Lead were within safe limits for plant growth while Cadmium content in two soil samples showed cause for concern with slightly above concentration than normal standards.

It can be concluded from the study that, wastewater irrigation continuously for more than nine years has not resulted in any adverse effects on soil properties.