

THESIS
POLLUTION MEASUREMENT OF LAHORE CANAL WATER AND ITS
EFFECT ON SOIL HYDRAULIC PROPERTIES

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ABSTRACT

POLLUTION MEASUREMENT OF LAHORE CANAL WATER AND ITS EFFECT ON SOIL HYDRAULIC PROPERTIES

Water pollution is a major problem of Pakistan because it has direct impact on the health of human beings and crops. Lahore Canal water is being used for irrigation and a source of ground water recharge. Industrial activities and housing colonies dump their refuse/waste and dispose some of their sewage into this canal at about 38 points within the city limits and cause pollution. For the best use of Lahore Canal water, pollution concentration and the effect of this water on soil hydraulic properties needs to be studied.

For this purpose water samples from twenty three sites and soil samples from three sites were collected along the Lahore Canal from within the Lahore city limits starting from B.R.B.D. canal to Thoker Niaz Baig. To assess the water quality various parameters were used, such as pH value, electrical conductivity, total dissolved solid, calcium plus magnesium, sodium and potassium, sodium adsorption ratio, biological oxygen demand (BOD), and chemical oxygen demand (COD).

Soil analysis included particle size by (sieve analysis and hydrometer test), moisture content and saturated hydraulic conductivity.

The results showed that at B.R.B.D. site the water quality is excellent for both agricultural and aquatic life. For the reach from Jallo Park to Mall Road, all the abadies/colonies and industries situated on both sides of the canal dump their waste water and garbage into the canal. This results in increase in BOD and COD values which are maximum at the locations of Herbuns Pura, Mughal Pura, Dharam Pura, and Thoker Niaz Baig.

It was also concluded that the soil hydraulic conductivity is reduced as the pollution concentration increased in the canal water. Its hydraulic conductivity and moisture content are highly favorable for rapid movement of pollutants present in the canal.

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