

**POTENTIAL TO USE DOMESTIC AND MUNICIPAL WASTEWATER FOR AGRICULTURE: A STUDY IN ANURADHAPURA MUNICIPAL AREA**

**K.D.S. Koralagamage and D.M.S.H. Dissanayaka**

*Department of Agricultural Engineering and Soil Science, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapuara, Sri Lanka*

Farming in the dry zone of Sri Lanka is constrained by the water scarcity. However, many industries and households generate wastewater throughout the year. Wastewater can be harvested effectively and diverted to agricultural lands. Hence, this research was conducted to study the potential of using wastewater, generated in Anuradhapura municipal area. The primary data were collected through a questionnaire survey and secondary data were collected from the National Water Supply and Drainage Board and the Department of Census and Statistics. The questionnaire survey was carried out using a randomly selected sample of 100 city dwellers and industries. Secondary data were verified using the questionnaire survey. According to the questionnaire, per capita water consumption in the city was 153 l/day, which is not significantly different ( $p > 0.05$ ) from the secondary data of the National Water Supply and Drainage Board (147 l/day). According to the results wastewater generation in the city was 1,940,533 m<sup>3</sup>/year (60% of water consumption). Domestic wastewater production was 1,226,467 m<sup>3</sup>/year (70% of domestic water usage). According to the results of the questionnaire survey, about half of the population living in the city effectively used wastewater for home gardening. However, 71% of studied sample prefers to use wastewater for agriculture. Regarding the industrial wastewater generation, about 30% of commercial firms in the city were treating wastewater before releasing into the environment, while others just directed their wastewater into drainage systems. They are also willing to establish treatment facilities in their premises with a financial support. Anuradhapura city sewer system was not well established thus wastewater was not collected properly. Hence, it can be concluded that, a considerable amount of wastewater is left without reuse and it can be effectively utilized to enhance the small scale agricultural activities with decent treatment methods and collecting systems.

**Keywords:** Agriculture, Anuradhapura, Wastewater, Water scarcity