Analysis of Physical, Chemical and Microbiological Characteristics of Confectionery Wastewater and Study of Wastewater Treatment Plant

BY

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B. Sc.

Dissertation Submitted to the University of Kelaniya,

Kelaniya, Sri Lanka,

in Partial Fulfilment of the Requirement for

the Degree of Master of Science in Applied Microbiology.

ABSTRACT

Industrialisation invariably affects the environment with the by-products it generates in forms of liquid, solid or gas. The waste generated by each industry varies significantly in composition and magnitude. End-of-pipe treatment, prior to discharge has become a need and is being addressed to in recent times.

Pollution has increased to such an extent that almost all the land-locked water bodies in and around Colombo, where industrialisation has reached its zenith, are highly polluted and are beyond utilisable levels. Meantime, down stream of all the major rivers and similar flowing waters are unutilisable and ultimately these polluted waters end up in the ocean. The water table too is contaminated with ions and bacteria in numbers, far above the maximum permissible limits.

The present study evaluates the efficiency of the Wastewater Treatment Facility installed at M/s Daintee, one of the leading Confectionery manufacturers in Sri Lanka located at Lady Catherine Estate in Ratmalana.

The study was scheduled for a ten month period, whilst sampling was done during February 1999 to July 1999. Physiochemical and Biological parameters related to study the efficiency of the treatment facility were analysed.

Identification of thirty seven isolates from the effluent was performed. Among them, nineteen isolates were Gram +ve Rods whilst ten were Gram -ve Rods. Four isolates were of *Cocci* type and two filamentous forms were isolated. A large number of yeast strains were detected.

The present study disclosed that the overall efficiency of the Wastewater Treatment Plant under study had a 99% efficiency in terms of BOD removal. However, the treated effluent did not meet the standards stipulated by the Central Environmental Authority. Each unit operation and their efficiencies were studied extensively.