

**INVESTIGATION OF THE
WASTE WATER TREATMENT PLANT
SLUDGE DISPOSAL PRACTICES
OF THE TEXTILE INDUSTRIES IN SRI LANKA**

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ABSTRACT

Textile industry in Sri Lanka plays an important role of the country economy. In contrast textile dyeing and washing activities generate a huge amount of hazardous waste sludge through the process of wastewater treatment. Haphazard disposal of such toxic substances could adversely affect by accumulating in the environment. Hence it is vital to identify textile waste sludge disposal practices of textile dyeing and washing industries in Sri Lanka and to propose environmentally and economically sound sustainable solutions for disposing in order to minimize the environmental and health impacts.

This study examined the existing sludge disposal practices and sustainable, cost effective disposal methods with conform to environmental regulations. A questionnaire survey was conducted pertaining to textile wastewater treatment, quantity and composition of textile sludge, handling and disposal practices of textile industries in Western and Sabaragamuwa provinces of Sri Lanka. In addition, the heavy metal composition of waste sludge was investigated. This study revealed that total number of textile Industries involved in textile dyeing and washing activities in the study area was 25 and the average volume of generated sludge is 449.21 tons /month.

Further it has revealed that this sludge contains significant amounts of heavy metals. The average values of such hazardous contaminants are Arsenic 0.6 mg/kg, Cadmium 1.7 mg/kg, Lead 4.2 mg/kg, Mercury 0.7 mg/kg, Molybdenum 1.4 mg/kg, Nickel 26.0 mg/kg, and Zinc 204.7 mg/kg. The results indicated that out of 449.21 tons/month of sludge, 54% is co-processed at the cement kiln, 39% is directly dumped the sludge into environment with no treatment, 7% is used as a fuel for bio mass boilers and 0.002% is stored safely at the industry premises. Sludge production is an inevitable outcome of textile wastewater treatment however sustainable disposal methods need to be introduced as a policy for protecting the environment.