

**EFFECTIVENESS OF OPERATIONAL ASPECTS OF
COMPOST PLANTS IN
SRI LANKA**

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Department of Civil Engineering

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Thesis submitted in partial fulfillment of the requirements for the
Degree of Master of Science in Environmental Engineering and Management



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DECLARATION

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ABSTRACT

Solid waste is a major problem in Sri Lanka as it is in many other developing countries. Composting is proven to be a viable solution to address the Solid Waste Management issues the country is facing over many years due to the high content of organic matter composition available in the waste streams. More than 100 compost plants have been established in the country along with the introduction of National Solid Waste Management programme over the past few years. Nevertheless, uncertainty clouds over the long run of these compost plants due to many reasons which would ultimately lead them into failures. The objective of this research is to evaluate the factors contributing to the effectiveness of compost plants and thereby to evaluate the current situation of five selected compost plants with regards to operational aspects. The selected compost plants are currently being operated under Local Authorities in Western province and they were evaluated considering two criteria namely waste supply and compost quality. Under the first criterion effective operating level of the plants was evaluated while second criterion was focused on final compost product quality.

According to the results obtained, majority of the plants appear to be ineffective in their operation. Lack of institutional capacity in terms of technical expertise and finance is a major barrier for effective operation of compost plants. Facilitating proper training programmes among plant operators to improve their technical knowhow and introducing appropriate mechanisms for regular monitoring of process parameters are essential to ensure the effectiveness of compost plants. Strategies and practices from the successful cases could be replicated suitably in poor performing plants to address their drawbacks.



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Key Words: effectiveness, composting, solid waste, quality of compost

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LIST OF ABBREVIATIONS

BETL	Burns Environmental & Technologies (Pvt) Ltd
CEA	Central Environmental Authority
CMC	Colombo Municipal Council
C:N	Carbon: Nitrogen
EC	Electrical Conductivity
FS	Faecal Sludge
LA	Local Authority
MC	Municipal Council
NPCPWMP	National Post Consumer Plastic Waste Management Project
NPK	Nitrogen, Phosphorous and Potassium
NSWMSC	National Solid Waste Management Supporting Centre
MSW	Municipal Solid Waste
PHI	Public Health Officer
PPE	Personal Protective Equipment
PPP	Public Private Partnership
PS	Pradeshiya Sabha
SLSI	Sri Lanka Standards Institute
WP	Western Province



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