

**AUDIT ON WASTE GENERATION IN TEA  
BLENDING AND PACKAGING**

A dissertation submitted to the  
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## ABSTRACT

Tea blending and packing are very important steps for tea exporting procedure which are inefficient with high wastage percentages. Therefore wastage minimization in tea blending and packing processes is a must. Cleaner production is a novel waste reduction concept described as continuous application of an integrated preventive strategy to processes, products and services, to reduce wastages. The current study was conducted in Ceylon Fresh Teas (pvt) Ltd, Kohilawatta, Angoda, focusing on identifying the wastage streams in Blending and packing process and developing waste reduction options through concepts of cleaner production. Planning the assessment method and preparation of the process flow diagram to identify potential wastage streams were done in the pre assessment phase. Above identified waste streams were assessed during 45 days. Tea and packing material wastes were quantified daily by measuring the weight of the wasted products. Most significant waste streams were identified by pareto analysis. Wastage percentages of different tea grades were calculated and using Kruskal-Wallis multiple comparison method, tea grades involved with most waste generation was identified. An energy audit was conducted to calculate specific energy consumption of the process and to calculate electricity cost of 1kg of made tea. Most significant tea wastage point of production was Blending process. It was 46% from total tea waste. Annual cost of waste generated from the production process is Rs. 904,948.66. Dust and Fannings grades showed significantly higher waste percentages than other grades. Specific electricity consumption of the production process was 0.0344 kWh. Cost of electricity to produce 1kg of made tea was Rs. 1.08.

**Key Words:** Tea Blending, Cleaner Production, Waste Streams, Pareto analysis, Energy audit