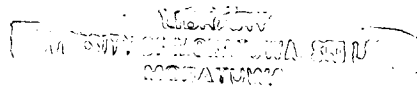


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**TECHNOLOGICAL IMPROVEMENTS IN
GARMENT DYEING & FINISHING FOR
SUSTAINABLE DEVELOPMENT**



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Abstract

Burdens to the environment with industrialization have extended to a greater extent than the assimilating capacity of it. The textile wet processing is a heavy consumer of water and energy. It also discharges environmentally hazardous substances.

But the apparel sector with their affiliated garment washing and dyeing plants is one of the main income generators in Sri Lanka. Hence the discovery of any mean to mitigate those impacts while sustaining the industry would be immensely useful.

This study has focused on two main approaches to accomplish the sustainable development in the garment dyeing facility. The approaches are maximizing Right First Time dyeing and Implementation of the Cleaner production options.

Majority of the textile dyeing plants in Sri Lanka does not maintain any statistics on Right First Time dyeing. The percentage is acutely low in Garment dyeing.

The root causes for the dyeing defects and shade variations in the dyed garments are analyzed in detail in this study. Cause and effect diagram, which is considered to be a powerful tool among seven quality tools, was used here as the tool for the analysis. Preventive measures are suggested for each root cause, subsequently.

Application of Cleaner Production options to the industry is another approach for the sustainable development. The novel technologies, which are affordable, such as Ultra low liquor ratio machines, improved efficient washing systems, were deeply reviewed in this study. Switching on to such technology changes is utmost important for industries in order to, not only for the environmental compliance but also for sustainability in competitive global market.

Modification of processes and formulas by critically analyzing them and making trials on them was another proven mean for the sustainability. Possibilities of implementing 3R-Reduce, Reuse and Recycle on water and other resources were looked into in the project. Good house keeping procedures are highlighted options in Cleaner production and some of the quantified studies have been covered in this project.

Plenty of new options in material substitutions, Process controls, new by-products etc. are also suggested for the industries to implement in order to demonstrate world-class ecologically sound performance.

Contents

	Page
1.0 Overview	1
1.1 Introduction	1
1.2 The Textile and Clothing Industry in Sri Lanka	1
1.3 Present Environmental Management in the Textile Industry	2
1.4 Challenges to the Industry	2
1.5 The Environment and Economy	4
1.6 Garment Dyeing Industry	16
2.0 Introduction	24
2.1 Purpose of Study	24
2.2 Scope	24
2.3 Objectives	25
2.4 Methodology	25
3.0 Sustainable Development	26
3.1 Evolution of Concepts	26
3.2 Environmental Management System	27
4.0 Right First Time Dyeing as a tool of Sustainable Development	34
4.1 Introduction	34
4.2 Present Status in RFT Dyeing in Sri Lankan Industry	35
4.3 Root Cause Analysis with Cause and Effect Diagrams	35
4.4 Precautions to Overcome Causes	42
5.0 Sound Environmental Performance through reduced input resource consumption and waste	56
5.1 Introduction	56
5.2 Dyes and Chemical Consumption	56
6.0 Technological Options for Sustainable Development in the process	61
6.1 Smart Rinsing vs Conventional Rinsing	61
6.2 High Temperature Rinsing vs Soaping and Neutralization	64
6.3 Mechanistic Aspects and Optimisation of Ultrasonic Washing	65

6.4	Single bath dyeing and Bio polishing	67
7.0	Sound Environmental Performance through Cleaner Production	70
7.1	Cleaner Production Options	70
7.2	Implementation of CP Options to improve the Environmental Performance	74

List of Tables

Table 1.1	List of banned, Withdrawn and restricted chemicals related to the Textile Processing
Table 1.2	International standards for Textile Effluents
Table 1.3	Summary of results provided by a study conducted for the Ratmalana Moratuwa area
Table 1.4	Estimated Total waste load from the textile manufacturing sector
Table 1.5	Major Manufacturing Groups in DFR (1990)

List of Figures

Figure 4.1	Cause and Effect diagram for dyeing defects and Shade Variations
Figure 4.2	Causes of Input materials
Figure 4.3	Causes of Equipment
Figure 4.4	Causes of Human factor
Figure 4.5	Causes of Processes and Controls
Figure 4.6	Causes of Logistics

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