

Abstract

The textile sector of the textile industry is a significant contributor to the Sri Lanka National Economy. Though it serves as a main contributor to industrial output, the impacts on the environment caused by this sector can be recognized in terms of the discharge of pollutants and of the consumption of water and energy which is a high cost to the industry and the environment.

This study was carried out in a textile manufacturing plant to formulate Green Productivity (GP) options in view of promoting GP in the textile industry. All the data relating to water consumption, energy consumption and waste generation of the plant were collected by undertaking a walk-through survey. The problems in those areas were encountered and causes for those problems were identified. Proper GP options were generated through numerous discussions and brain storming sessions with internal and external resource personnel.

Altogether twenty seven Green Productivity options were generated; nine options for waste reduction, eight for water conservation and ten options for energy conservation. The study highlights environmentally friendly chemical substitutions such as acetic acid by formic acid and sodium hydrosulphite by thiourea dioxide. It is estimated that COD reduction of 5000 kg/month could be achieved in the study plant with a saving of Rs. 200,000/month. In addition water savings options are dye bath reuse, bleach bath reuse, counter current washing, and final rinse reuse. Use of higher viscosity furnace oil, preheating of furnace oil by steam and insulation of jet machine surfaces are some of options to increase the efficiency of energy use.

It is very difficult to handle environmental problems relating to textile industry, which cause by the overuse of natural resources once it occurs. These problems can be eliminated by introducing "Green Productivity" approach to the textile industry.