D-47 Bacteria present in textile wastewater

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The textile industry has been identified as one of the major sources of environmental pollution in Sri Lanka, because individual textile processing operations dispose large quantities of untreated wastewater to the environment. The wastewater from textile manufacturing industries is required to be treated by physical, chemical and biological methods or combination of both physico-chemical and biological treatments to reduce the water pollution as much as possible. The purpose of this study was to isolate and identify the different bacteria present in textile wastewater and to determine their ability to degrade some selected textile dyes. In this study, 16 bacterial species were isolated from textile wastewater samples collected from different sources.

A special medium containing 100 mg L^{-1} of dye(Screening medium I) was used as an enrichment medium to isolate the bacteria.

Each isolated organism was identified using their morphological and biochemical characteristic features. The ability of these organisms to reduce colour of 3 textile dyes (Acid Blue 25, Reactive Blue 21 and Reactive Red 2) was investigated.

The Screening medium II was also used and at appropriate time intervals, the colour reduction was measured by spectophotometric method. Eliminating extent of dyes by each organism was also determined. Two organisms were

found to have the ability to completely reduce the colour in the culture broth containing Reactive Red 2 (100 mgL^{-1}). The 2 organisms were identified as *Pseudomonas putida* and *Bacillus pumilus* which had the ability to completely decolorise Reactive Red 2 within 6 and 10 days respectively.