



**PHYSICAL AND BIOLOGICAL TREATMENT OF SIMPLE DYE USING
COIRPITH AND MARINE CYANOBACTERIUM *LYNGBYA* SP. BDU 90901**

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ABSTRACT

This study focussed on the adsorption and decolourization of simple textile dye using coir pith (physical method) and a marine cyanobacterium *Lyngbya* sp. (biological method). The removal of coloring matter present in the sample has been carried out using physical method (coir pith). This considerable amount of reduction of the coloring matter present in the sample was measured at 580nm. Decolourization capabilities of the *Lyngbya* sp. were evaluated by growth in terms of chlorophyll *a* estimation.

Keywords: Textile Dye, Cyanobacterium, Coir Pith, *Lyngbya* sp.,

Decolourization

INTRODUCTION

Dyes usually have a synthetic origin and complex aromatic structure which make them more stable and more difficult to biodegrade [1]. Some of these dyes are potentially mutagenic, carcinogenic and toxic [2]. Adsorption is well known equilibrium separation process and an effective method for water decontamination applications [3]. Coir pith can be used as a potential source for adsorption of textile dyes [4]. The coir pith method is an

effective, promising and most economical method for treating the dye effluent that comes from dyeing industries [5]. Microbial decolourization and degradation is an ecofriendly and cost- competitive alternative to chemical decomposition processes [6]. Cyanobacteria have a ubiquitous distribution but their role in functioning of ecosystem including degradation of recalcitrant compound such as dyes and dye stuffs [7]. Certain study shows that