DECOLORIZATION AND DEGRADATION OF TEXTILE DYES BY BACTERIAL

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ABSTRACT

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Wastewater is the main environmental obstacles for the development of the textile industry besides other issue like solid waste and resource waste management. Textile industry use many kinds of dyes and discharge large amounts of highly colored wastewater. This highly colored wastewater will give many impacts to aquatic life, human health and also affect the photosynthetic function in plant. It also give effects to certain forms of marine life due to the circumstances of chlorine present in the synthetic dyes. So, textile wastewater need to be treated before their discharge. Biological treatments are most preferred treatment than physicochemical approaches due to the cost effectiveness and environmental friendliness. When used biological treatment, azo dyes are degraded and reduced by various microorganisms. This research deals with the degradation and decolorization of Orange G dye by bacteria, *Pseudomonas aeruginosa*. The maximum degradation of Orange G dye is 35.64 % at 50 ppm within 1 hours at pH 7.5 and temperature 30°C. The absorbance for the degradation were analysed by using UV-Vis spectrophotometer. So, it is proved that the effective degradation of Orange G dye by bacteria is at lower temperature , lower concentration and at alkaline pH. Thus, it is the effective method for the growth of wastewater treatment methods in the textile industries.