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MICROBIAL DECOLORIZATION OF REACTIVE AZO DYES BY *BACILLUS* SPP. UNDER ANAEROBIC CONDITION

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A bacterial strain *Bacillus* spp. with remarkable ability to decolourize the reactive azo dyes such as reactive red, reactive yellow, reactive brilliant red and reactive brilliant blue was isolated from the textile effluent contaminated site. The effluent sample was collected from local text textile industry, Ankleshwar, Gujarat, India. Static conditions with 10 g/l glucose, pH 9, temperature 37°C, 20% inoculum concentration, 50 mg/l of dye concentration, 3 g/l of NH₄NO₃, were considered to be the optimum decolourizing conditions. *Bacillus* spp. grew well in these optimum conditions, resulting in 82% decolourization extent 7 days of incubation. Phenotypic characterization and phylogenetic analysis of the 16S rRNA sequence indicated that the bacterial strain belonged to the genus *Bacillus*. UV (Ultra Violet) analysis of bacterial isolate suggested that it exhibited decolourizing activity, rather than inactive surface adsorption. This decolourization extent and facile conditions show the potential for this bacterial strain to be used in the biological treatment of textile effluent or dyes.

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