

Enzymatic Decolonization of Malachite Green Dye by a Newly Isolated *Bacillus Cereus* Strain wwcp1.

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Abstract

Enzymatic decolorization of Malachite Green (MG) dye was studied using crude enzyme from a newly isolated *Bacillus cereus* strain wwcp1. 98% decolorization efficiency was achieved within 24 hours using an initial dye concentration of $1.0 \times 10^{-5}M$. Batch experimental results revealed that the decolorization process was highly dependent on contact time, initial MG concentration, aqueous solution temperature and pH. Biodegradation of MG dye was monitored spectrophotometric ally and metabolites confirmed by thin layer chromatography (TLC). The comparison of TLC chromatograms before and after decolonization confirmed that crude protease enzyme had the ability to degrade MG dye. The results provide evidence that the crude enzyme from *Bacillus cereus* strain wwcp1 is an effective and potential candidate for industrial wastewater treatment.

Keywords: Decolorization, Malachite Green Dye, *Bacillus cereus* strain wwcp1, Biodegradation, Enzyme.

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