Relationship between Morphology of Fungal Strain and Decolorization of Reactive Black 5

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Abstract

Color is the most obvious indicator of water pollution in dye and textile wastewater. Very low concentration of dye (less than 1 ppm for some dyes) is sufficient to be detectable and causes for environmental concern. Several chemical and physical treatments are inefficient in the removal of color and they are not economical and applicable to the treatment of various kinds of dye and textile wastewater. Biological treatment with fungal strains has been considered as the most suitable alternative for the treatment of dye and textile effluent due to its potential for achieving total color removal, easy application, low-cost, and eco-friendliness. In our previous study, we reported that white-rot fungi could decolorize several dyes efficiently based on the solid and liquid experiments, and showed the possibility of potential application for the decolorization using major enzymes. In this study, we investigated the effect of various environmental conditions (pH, temperature, media composition such as carbon, nitrogen, and phosphate sources and concentration on the decolorization efficiencies of reactive black 5 by *Funalia trogii*. To investigate the relationship between fungal morphology and decolorization, more than 30 images were processed, and average fractal dimensions were calculated at different culture time.

References

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