Study of Temperature Effect on Blue Methylene dye Bio-Removal Process by *Galactomyces geotrichum* KL20A

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Abstract

Pollution of natural resources is a topic of growing global attention, last years different activities have increased consumption of a variety of substances which they are toxic to the environment, recalcitrant and hard to removal. Among these substances, dyes affect the quality of the water and are used in a wide range of industrial activities such as the textile. These dyes are undesirable to the environment, due to their toxicity and mutagenic risk, in addition, they cause changes in pH, salinity, increase dissolved organic carbon (DOC), total organic carbon (TOC), chemical oxygen demand (COD), biochemical demand of oxygen (BOD), they also reduce water transparency affecting the photosynthetic activity and aquatic life.

Different traditional physical-chemical methodologies to pollutant removal have been used for the treatment of dyes (e.g. adsorption, coagulation, precipitation, filtration and oxidation); however, these methods do not solve the problem completely, since they only change phase of pollutant and sometimes could generate by products toxic. Currently, biological processes (e.g. microorganisms and their enzymes) are emerging as one promising technique to bio-removal azo dyes from water sources, since this method not only degrade the dye but it can transform pollutants into harmless products, these byproducts may be integrated to nature biogeochemical cycles and cause less environmental impact. In this work, used a strain of yeast *Galactomyces geotrychum* KL20A isolated from samples of traditional kumis collected from production center in the Valle del Cauca Colombia in order to evaluate their ability to methylene blue dye bio-removal from water samples.

Keywords: *Bio-removal, dyes azo dyes, Galactomyces geotrichum*