**IV SIMPOSIO INTERNACIONAL “SEGURIDAD TECNOLÓGICA Y AMBIENTAL**

**BIODEGRADACIÓN Y DETOXIFICACIÓN DE EFLUENTES INDUSTRIALES POR GANODERMA WEBERIANUM B-18 INMOBILIZADA EN BIOREACTOR DE LECHO EMPACADO**

***BIODEGRADATION AND DETOXIFICATION OF INDUSTRIAL EFFLUENTS BY GANODERMA WEBERIANUM B-18 IMMOBILIZED IN PACKED-BED BIOREACTOR***

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***Abstract****: Synthetic dyes, which are extensively used for dyeing and printing in various industries are of primary importance to textile industries .Wastewaters from these industries pose a threat to the general environment and also to human health since some dyes are toxic, mutagenic and potentially carcinogenic. The diversity and complex molecular structures of dyes make wastewater from textile industries problematic to be treated by conventional physical and chemical technologies. Therefore, innovative treatment technologies need to be explored. White-rot fungi are considered to be promising biotechnological tools to complement or replace the current technologies for the treatment of effluents from textile production plants. The aim of this work was to investigate the decolorization capacity of Ganoderma weberianum B-18 in solid state fermentation with sugarcane bagasse as a substrate and ligninolytic inducer as well as to decolorize and detoxify industrial effluents by this strain in a laboratory scale packed-bed bio-reactor. The results demonstrated that G. weberianum B-18 indeed showed to possess decolorization capacity in solid state fermentation with sugarcane bagasse supplemented with synthetic dyes. Moreover, fungal biomass of G. weberianum B-18 immobilized in sugarcane bagasse in a packed-bed bioreactor was shown to efficiently decolorize and detoxify different dyes and authentic industrial effluents in semi-continuous conditions. In this decolorization process, laccase enzymes secreted by the fungus played the main role. Hence, a packed-bed reactor with G. weberianum B-18 immobilized in sugarcane bagasse seems to be a suitable system for the further development of an efficient bioprocess for large-scale treatment of dye-containing wastewaters*

**Palabras Claves:** Detoxificación, Ganoderma weberianum; lacasa, bioreactor de lecho empacado, fermentación en estado sólido, colorantes sintéticos

***Key words:*** *Detoxification; Ganoderma weberianum; laccase; packed-bed bioreactor; solid state fermentation; sugarcane bagasse; synthetic dye*