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Effect of *Chytriomycetes hyalinus* on Industrial Wastewater Pre-Treated with Electrocoagulations in a Continuous System

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ABSTRACT

A strain of *Chytriomycetes hyalinus* fungus was applied as a pretreatment on industrial wastewater pollutant using electrocoagulations column of aluminum electrodes in a continuous system. The parameters considered in this experiment include pH, conductivity, color, turbidity, COD (Chemical Oxygen Demand), BOD (Biochemical Oxygen Demand) nitrate, nitrite, and SB (sporangia biomass). Biological and electrocoagulations treatments had the next conditions: *Chytriomycetes hyalinus* solutions 1:10, 60 min of biological treatment, 50 mL/min flow, constant ventilations, 15 min of electrocoagulations time and 3.4 A of electrical current. Color and turbidity values dropped with a 90% efficiency (2700 to170 Pt-Co; 120 to10 FAU, respectively), COD 68% (2100 to 672 mg/L), BOD₅ 70% (650 to 195 mg/L), nitrate showed an 86% (3.8 to 0.5 mg/L), finally nitrite with a 60% amount reduction (1.5 to 0.6 mg/L). For SB parameter, there was a value rising as same as the treatment time ($r^2 = 0.90$) carrying out a $y = 94.302e^{0.0356x}$ model. These results reveal a positive outcome of *Chytriomycetes hyalinus* on industrial wastewater pollutants pre-treated with aluminium electrocoagulations in a continuous system.

KEYWORDS

Chytriomycetes hyalinus; Electrocoagulations; Industrial; Wastewater

Cite this paper

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