

Title: GROWTH OF *Aspergillus nidulans* IN A MEDIUM CONTAINING HEAVY METALS

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Summary:

Increase of industrial activity has intensified the release of pollutants into water, air and soil through wastewater ejected incorrectly in water bodies forming a large contamination cycle. Bioremediation is the process in which microorganisms, such as bacteria and fungi or plants are used for removal or reduction of pollutants in a given environment. It is one of the most appropriate techniques, because has relatively low cost and significant efficacy. Bacteria, yeasts and filamentous fungi are considered effective agents, due the ability to degrade a wide range of organic substances, commonly found in effluents generated by refineries and industries. Such microorganisms are found on site of contamination, and, for the most part, responsible for the own decontamination. The major heavy metals present in the soil and the products used in agriculture are Co, Cd, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Sn and Zn, some of these being found naturally in the soil and for important physiological processes plants. This study evaluated the survival of the fungus *Aspergillus nidulans* in culture media with heavy metals using the complete medium that favors the growth of this fungus with different concentrations of FeSO₄, ZnSO₄ and CuSO₄. (At concentrations 0.01 g / 150 mL⁻¹; 0.02 g / 150 mL⁻¹ and 0.005 g / 150 mL⁻¹). The inoculated plates were taken to incubator for five days at 37°C. After growth of the microorganism were measured diameters of the fungus colonies and conidia pigmentation. The growth of *Aspergillus nidulans* was observed in all plates inoculated with different types and concentrations of heavy metals, confirming the survivability of the microorganism in a medium containing heavy metal. The mechanisms by which the fungi can tolerate heavy metals are numerous, including external processes to hyphae, such as precipitation of metals, binding to the cell wall polymers, and internal processes in yeast cells, resulting in complexation of metals or compartmentalization. As *Aspergillus nidulans* has the ability to survive in different concentration of heavy metals is possible to use in bioremediation.

Key words: bioremediation, contamination, fungi, micro-organisms, complete medium