

**TITLE:** ISOLATION AND MORPHOLOGICAL IDENTIFICATION OF FILAMENTOUS FUNGI FROM TEXTILE INDUSTRY WASTE SAMPLES

**AUTHORS:** BATISTA, E.<sup>1</sup>; GARCIA, P.E.;<sup>1</sup> JEAN-BAPTISTE, J.;<sup>1</sup> OTTONI, J.R.;<sup>2</sup> PASSARINI, M.R.Z.;<sup>1</sup>

**INSTITUTION:** <sup>1</sup>UNIVERSIDADE FEDERAL DA INTEGRAÇÃO LATINO-AMERICANA, INSTITUTO LATINO AMERICANO DE CIÊNCIAS DA VIDA E DA NATUREZA (UNILA/ILACVN), FOZ DO IGUAÇU, PR - BRASIL

<sup>2</sup>CENTRO UNIVERSITÁRIO DINÂMICA DAS CATARATAS (UDC), FOZ DO IGUAÇU, PR – BRASIL.

**ABSTRACT**

In the last years, researches aiming the discovery of new microbial *taxons* in extreme environments including soil and water impacted with xenobiotic compounds have been increasing considerably. Textile industry waste treatment plant are considered promising habitats for the recovery of microorganisms adapted to this environment. These plants employ the aerobic and anaerobic oxidation of organic substrates generated in the dyeing process such as synthetic dyes and wastes from the processing of cellulosic material found in the material fiber. In this context, the goals of the present work were to isolate and morphologically characterize filamentous fungi found in samples of textile industry waste treatment. The samples were collected in a textile industry in the city of São Miguel do Iguaçu in the State of Paraná. Filamentous fungi were isolated on PDA medium (1.0% glucose, 1.5% agar in potato broth) and preserved in 20% glycerol at -20 °C. Macro and microscopic analyzes were obtained from the evaluation of coloring and growth rates of colonies using a stereoscope, as well as characteristics of the reproductive mycelium, presence and disposition of conidia and conidiophores were analyzed. Thirty filamentous fungi were isolated, 10 (33,2%), 5 (17%), 1 (3,2%), 2 (7%), 1 (3,2%) isolates related to the genera *Penicillium*, *Aspergillus*, *Paecilomices*, *Trichoderma* and *Cladosporium*, respectively. One isolate (3,2%) was related to Zygomycetes and 10 isolates (33,2%) were related to an unidentified taxonomic group. The results suggest that textile waste samples are sources of microorganisms which can be adapted to the toxic synthetic dyes found in this environment.

**Keywords:** textile waste, microscopy, filamentous fungi, synthetic dyes.

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