

**Title: ENDOPHYTIC BACTERIUM ISOLATED OF HOSTS PRESENT IN CONTAMINATED AREAS BY MERCURY IN PANTANAL MATO-GROSSENSE**

**Authors:** <sup>1</sup>Mello, I.S., <sup>1</sup>Pietro-Souza, W., Liotti, R. G., Pereira, J.M.C., <sup>2</sup>Bichara, K. P.A., <sup>2</sup>Silva, G. F., <sup>1</sup>Almeida, E. G., <sup>1</sup>Soares, M. A.

**Institution:** <sup>1</sup>UFMT – Universidade Federal de Mato Grosso (Av. Fernando Corrêa da Costa, nº 2367, Cuiabá - MT - 78060-900). <sup>2</sup>CPAA - Embrapa Amazônia Ocidental (Rodovia AM-10, Km 29, Manaus/AM- Brasil - 69010-970).

**Resume:**

The mercury is a contaminant in gold mining in the city of Poconé. This heavy metal is a toxic in different organisms and affect the human by bioaccumulation process causing a serie of cronic diseases. Mercury can be easily absorbed by plants and be accumulated in the human body through the food chain. The hypothesis is microorganism that is in association with plants, that survive in contaminated areas with mercury, provide greater resistance to contaminant and possibly an increased frequency of colonization. In this way, the aim of this study was to isolate endophytic bacterium that exhibit resistance to mercury. For this, roots of two species of plants (*Aeschynomene fluminensis* and *Polygonum cf acuminatum*) were collected in contaminated environments (C) and uncontaminated (UC) by mercury in Pantanal at Poconé/MT. The roots were disinfected (alcohol 70% for 3 min and sodium hypochlorite 1,5% for 7 min). Fragments were transferred to Petri plates containing LB solid medium supplemented with 30 mg.mL<sup>-1</sup> of mercury. It was evaluated the frequency of colonization (FC) daily and the values were subject to analysis of variance. The strains with different morphological characteristics were purified and stored in 15% glycerol/-20°C. The FC independently of plant species analyzed (Teste Tukey). FC was higher in roots collected in contaminated area (41.88%, p=0,0006) in compare to uncontaminated area (14,12%). We have isolated 18 and 13 strains of contaminated and uncontaminated areas, respectively. Most of these strains were obtained from *P. acuminatus*. The data confirm our hypothesis that plants in contaminated areas have more FC of endophytic bacteria resistant to mercury and the population of these bacteria is directly proportional to the level of mercury contamination in the environment. The characterization, identification and the phytoremediation assays are being done.

**Key words:** Isolation, tolerance, contaminant.

**Agência Fomento:** CNPq, Capes and FAPEMAT.