

TITLE: THE GROWING OF FILAMENTOUS FUNGI ON GASOLINE AND DIESEL IN TWO MANGROVE SWAMPS IN THE PARANAGUA ESTUARINE COMPLEX

AUTHORS: DEVAI-MORAES, E.R.; ISHII, F.K.; KOLM, H.E.

INSTITUTION: UNIVERSIDADE FEDERAL DO PARANÁ, CENTRO DE ESTUDOS DO MAR, CAIXA POSTAL 61, 83.255-000 PONTAL DO SUL, PONTAL DO PARANÁ, BRASIL.

ABSTRACT:

Fungi are fundamental in ecosystems because they decompose organic matter and they are responsible for recycling nutrients. They have a vast economic importance bringing about benefits or harms. The petroleum industry is responsible for generating great amounts of organic residues, as well as for polluting the soil, the rivers, and oceans. Here, in Brazil, about 20% of the processed petroleum is converted into gasoline for cars and 36% in diesel oil. Fungi might be an alternative to treat effluents that contain acidic compounds like phenol and other derivatives. The objective of the present work is to evaluate the potential of fungi collected in Laranjeiras(L) and Paranaguá(P) bays to degrade gasoline and diesel oil. Fifty two morphotypes that had been previously isolated (thirteen from salty water and thirty nine from fresh water) were tested. They were grown in mineral environment proposed by Cunha et al. (2001) apud Santos et al.(2008) and transplanted to mineral environment to which 0,25% of gasoline(G) or diesel oil(D) was added. The Petri dishes were incubated for the maximum of 15 days at 28°C. The colonies were inspected and measured every three days. The fresh water fungi that most grew were: *Penicillium* P3, *Trichoderma* P1, *Trichoderma* P2, *Trichoderma* P3, *Trichoderma* L2, *Trichoderma* L3, *Trichoderma* L4, and *Trichoderma* L5. The salty water fungi that grew most were: *Trichoderma* P4 and *Trichoderma* P5. *Penicillium* P3, *Trichoderma* P1, *Trichoderma* P4, *Trichoderma* L2, *Trichoderma* L3, *Trichoderma* L4 and *Trichoderma* L5 had already reached the total diameter of the Petri dish (140 mm), after six days of being inoculated. *Trichoderma* P2, *Trichoderma* P3, and *Trichoderma* P5 reached that size after nine days. It was observed that the growth halo of the fungi behave in a different way either gasoline or diesel oil is used.

Keywords: fungi, gasoline, diesel oil, Paranaguá Bay, Laranjeiras Bay

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