

TITLE: POTENTIAL OF SPECIFIC HYDROCARBONS DEGRADATION BY BACTERIA ISOLATED FROM CONTAMINATED SOIL AND RESIDUE

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ABSTRACT:

Accidents involving oil spills and their derivatives that contaminate watercourses and compromising biodiversity are frequent. That problem occurs from the fuel stations of our cities to Attartica, where diesel oil is used for the generation of electric energy in research stations. One of the techniques used for the decontamination of environments such soils are the bioaugmentation, that are based in the application of a consortium of bacteria that are capable to degrade a range of oil hydrocarbons. The objective of this work was to select bacteria isolated from contaminated Antarctic soils and contaminated residues of gas station in relation to the ability to grow using N-heptane and Toluene as sole carbon source. The screening of the potentially degrading bacteria was performed using two collections of 100 bacteria isolated in Bushnell Haas medium (BH) supplemented with diesel oil as carbon source. The BACO collection containing bacteria isolated from Antarctic soil contaminated with diesel oil, whereas the BACOP collection containing bacteria isolated from residues of a gas station located in Sete Lagoas city. The screening was performed using glass tubes containing 5mL of BH medium supplemented with 1% of N-heptane or Toluene. The tubes were taken vertically in shaker at 150 rpm during 48 hours. The tubes that presented bacterial growth are considered positive. For the BACOP bacterial collection, 8 presented potential to degrade N-Heptane and 3 presented potential to degrade Toluene. For the BACO collection, 14 presented potential to degrade N-heptane and 4 presented potential to degrade Toluene. In the next steps of the work the bacteria of the collections will be tested in relation to the ability to grow using other hydrocarbons as sole carbon source, so that consortia can be step up in the future.

Keywords: bacteria, hydrocarbons, degradation, soil

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