Evaluation of the performance of biofuels obtained from micro-organisms found in nature

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Funded by: Research vice-rector's Office

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The concern for the impact of the activities of man on the environment has led to seek alternatives to use hydrocarbons from petroleum fuels. One alternative is the use of biofuels derived from vegetable sources such as, for example, bioethanol, which is derived from crops such as sugar cane. However, the use of crops (sugar cane, corn, etc.) to get fuels may involve negative effects on the price of products which are also intended for human consumption. For this reason, other routes have been researched to produce biofuels. One of the alternative routes is the use of microorganisms to get biofuels.

This project had as purpose the assessment of the performance of biofuels that can be synthesized by different organisms. These microorganisms are grown in laboratory and synthesize small amounts of biofuels - mainly bioethanol -, which performance was evaluated using a small scale engine. Bioethanol-producing microorganisms were selected (*Zymomonas mobilis and Saccharomyces cerevisiae*) and culture means were determined to be used. In addition, a test bench used for the evaluation of the performance of such biofuels was built.