

SCREENING OF ETHANOL PRODUCING YEASTS FROM LAGERSTROEMIA INDICA FLOWERS

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RESUMO

Ethanol production has increased in the last decade and since bioethanol can be obtained from renewable resources, it is interesting to identify new potential yeast strains. Plant flowers are a rich source of carbohydrates and they can harbor a great diversity of fermenting yeasts. It is of interest to find new ethanol producing strains in order to improve industrial bioprocesses for different applications. In the present study we aimed to analyze the potential and fermentative capacity for ethanol production by yeasts isolated from flowers of *Lagerstroemia Indica*, popularly known as resedá. Flowers of *L. indica* were collected and weighed, approximately 1g, immediately submitted to maceration with sterile distilled water and the homogenate was plated in a proper medium containing chloramphenicol. Plates were incubated at 28°C for up to 72 hours and the resulting colonies were isolated and confirmed as yeasts. Yeast isolates were subjected to carbohydrate assimilation and fermentation tests, and evaluated for ethanol production potential. Fermentation test was performed for 24 hours at 30°C, initial inoculum of 5×10^5 cells/ml, in supplemented YPD liquid medium (10% de dextrose, 1% de yeast extract, 2% de peptone, 0,25 g/L de $(\text{NH}_4)_2\text{SO}_4$, 2 g/L de KH_2PO_4 e 2 g/L de MgSO_4). *Saccharomyces cerevisiae* was used as control strain. At the end of the experiment, the number of cells was estimated and the supernatant was subjected to quantification of glucose and ethanol on HPLC. Twenty-two samples of yeasts were isolated from the flowers of the *L. indica* plant. Initially, seven isolates were screened and of these, three produced detectable ethanol at the time of the experiment. All isolates presented a lower growth rate compared to control, which may have influenced ethanol production since its concentration varied from 0.2013 mg/L to 0.3517 mg/L, about six times less than the control strain. However, when comparing ethanol production by number of cells, yeast isolates produced half of the control, a good amount if we consider that they are natural strains not yet adapted for the industrial fermentation process. Studies focusing on the discovery of new ethanol fermenting yeasts should be encouraged since there is a great need for new clean energy sources.

PALAVRAS-CHAVE: Ethanol, Flowers, Lagerstroemia indica, Yeasts.

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