

Título: AVALIAÇÃO DA PRODUÇÃO DE BISSURFACTANTES POR *Pleurotus sajor-caju* UTILIZANDO ÓLEO DE SOJA COMO UMA FONTE DE CARBONO (EVALUATION OF BIOSURFACTANTS PRODUCTION BY *Pleurotus sajor-caju* USING AS SOYBEAN OIL A CARBON SOURCE)

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Abstrat: The biosurfactants are biological compounds amphiphiles produced extracellularly or as part of cell membranes of a variety of bacteria, yeast and filamentous fungi from various substances including sugars, oils and residues. Currently, the vast majority of published works on biosurfactants production is performed with bacteria, however, due to possible pathogenic nature of biosurfactants of bacterial origin, its application is not considered appropriate in the food and pharmaceutical industries. Other micro-organisms that appear in the papers are yeasts, and there are few jobs that employ filamentous fungi to produce biosurfactants. Therefore, this study aimed to evaluate the production of biosurfactants by the basidiomycete fungus *Pleurotus sajor-caju* CCB 019. A fractional factorial design (2^{6-2}) was used by varying the temperature (26 and 34°C), initial pH (3.0 and 6.0), soybean oil concentration (5 to 10% v/v), of glucose (0 to 2% w/v), KH_2PO_4 (0.6 and 3% w/v) and $(\text{NH}_4)_2\text{SO}_4$ (0.5 and 3.5% w/v) with the center point triplicate. The experiments were performed in 500 mL Erlenmeyer flasks containing 100 mL medium, shaken reciprocally at 120 min^{-1} for 14 days. An estimate of biosurfactants formation was determined by the variation of the surface tension (ΔT) of the culture medium at the initial time (T_i) and the surface tension of the culture broth at the end time (T_f) and by reducing the surface tension (RT%). It was observed that the experiment conducted at 34°C, pH 3.0, 10% soybean oil, without glucose, a nitrogen source ($(\text{NH}_4)_2\text{SO}_4$) on the top (3.5%) and 0.6% of K_2HPO_4 showed the greatest variation of the surface tension (6.20 mN/m). This is equivalent to a reduction of surface tension (RT) of 16.8%, the largest reduction of all experiments. The surface tension at the end of 14 days of fermentation with *Pleurotus sajor-caju* was 30.67 mN/m, which is a value of surface tension produced by an efficient biosurfactant, because for this it is necessary that this value is less than 35 mN/m.

Key-words: biosurfactants, *Pleurotus sajor-caju*, reduction of surface tension.

Agência fomento: FAP (Fundo de Apoio à Pesquisa) / UNIVILLE.