USE OF INDUSTRIAL BY-PRODUCTS SUBSTRATES FOR CAROTENOIDS PRODUCTION BY *SPOROBOLOMYCES RUBERRIMUS*

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Carotenoids are one of the most important group of natural pigments, their classical source are vegetables but they can also be found in animals and microorganisms. The industrial production of natural carotenoids by biotechnological way, using microbial bioprocess, is presenting a significant interest. *Sporobolomyces ruberrimus*, a red yeast producing carotenoids is able to grow using industrial by-products as carbon source. The goal of this work was to evaluate the growth and carotenoids production by *Sporobolomyces ruberrimus* using sugar cane and soy molasses as carbon source. To know the composition of the waste before use in a bioprocess is very essential for the comprehension of the process and it’s results, so this work was divided into two parts. In the first one all the characterization analyses (sugar, protein, fat and humidity) of the carbon sources used were performed. In the second part, preliminary studies were conducted in erlenmeyers flasks to verify the possibility of using the industrial by-product for the yeast grow and carotenoid production. Biomass and carotenoid production was completely different according to the substrate nature. It was observed that the microbial growth and the higher carotenoids concentration was obtained with cane molasses ($\mu_{\text{max}} = 0.06 \text{ h}^{-1}$, $x_{\text{max}} = 2.78 \text{ g.l}^{-1}$ and $y_{x/s} = 21 \%$). This work showed that industrial by-products substrates can be used as small component, to stimulate biomass and carotenoid production.