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Optimization of selenium enriched *Saccharomyces cerevisiae* by Response Surface Methodology (RSM)

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Abstract: Three parameters including initial sodium selenite (Na_2SeO_3) concentration, initial pH and incubation temperature were studied for the optimization of selenium enriched yeast production in molasses medium (12%) by *Saccharomyces cerevisiae* and using Response Surface Methodology (RSM) as statistical analysis. The optimum conditions for the highest biomass and Se yield were (Na2SeO3) concentration 22.5 µg/mL, pH=4 and incubation temperature=31.5˚Cwhich generated6.69g/L of biomass and 3766.07ppm of total Se yield and 3756.89ppm of organic selenium, and made the yeast *Saccharomyces cerevisiae* a promise organism for industrial selenium enriched yeast production, and the RSM a good tool for the optimization of selenium production.
Key words: Selenium, *Saccharomyces cerevisiae*. RSM, sodium selenite, yeast.

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