TITLE: TOLERANCE OF YEASTS IN SELENIUM-ENRICHED MEDIUM

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The enrichment of the medium with selenium appears as an alternative to add value to this excess. Selenium is an essential micronutrient in human and animal life, rich in food, such as: Brazil nuts, red meat, eggs and beans. It is involved in some processes in the human body, such as the immune system, hormonal activation, disease prevention and, above all, in the antioxidant action through the enzyme glutathione peroxidase (responsible for the detoxification of organic and inorganic peroxides). The level of selenium intake considered to be toxic to the body is very limited to the beneficial content, so it was believed for a long time that this compound was toxic to humans. Its inorganic form can be absorbed by the yeast *Saccharomyces cerevisiae*, which has the ability to convert it to organic form (selenomethionine and selenocysteine) and generate antioxidant enzymes, thus decreasing the chances of intoxication by inorganic forms. In view of this, a tolerance test was carried out so that it could identify the maximum concentration, which the yeast would resist and grow in culture medium enriched with sodium selenite. The volume of 100 µL a diluted suspension 10^{-5} of yeast was inoculated into petri dish surface in the YEPD medium, enriched at the different concentrations: 60 µg mL^{-1} (T1); 70 µg mL^{-1} (T2); 80 µg mL^{-1} (T3); 90 µg mL^{-1} (T4); 120 µg mL^{-1} (T5) and 240 µg mL^{-1} (T6) sodium selenite, in parallel with the control 0 µg mL^{-1} (T0), with the YEPD medium without enrichment, for 48 hours at a temperature of 30 ° C ± 2 ° C in a BOD oven (Biochemical Oxygen Demand) with air circulation, analyzing the parameters of survival, growth and time. After 48 hours of growth, only the T1 plates obtained colonies growth and even a better development when compared to the control plates. The other treatments with sodium selenite did not obtain visible growth of colonies. Thus, in conclusion, in medium with the concentration of 60 µg mL^{-1}, the yeast possibly developed adaptation mechanisms for its growth.

Keywords: micronutrient, sodium selenite, antioxidant and glutathione peroxidase.

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