

## **Abstract**

Reactive oxygen species are derived from molecular oxygen used in respiration and they are capable of damaging cellular components, including proteins, lipids and DNA. Oxidative stress is caused by an imbalance between production of reactive oxygen species and the ability of biological system to detoxify reactive intermediates or to repair the inflicted damages. The purpose of this paper is the determination of the antioxidant potential in saprophytic fungus *Rhizopus nigricans*. It was determined the influence of carbon sources, represented by grinded cereal caryopses, and their concentration from culture medium on the fungus capacity to synthesize antioxidant enzymes like catalase and peroxidase. Enzymatic assays were performed at three time intervals: 5, 10 and 15 days, using both fungus mycelium and culture liquid. After analyzing the results we can point out a correlation between the nature and concentration of carbon source, the age of fungal culture and the production of oxidoreductases. In the first time period catalase and peroxidase production is maintained at low levels, but with depletion of nutrients and accumulation of toxic metabolic byproducts a significant increase takes place in the second time period. The last time period corresponds with the entering in decline phase of culture and with drastic decrease in production of both enzymes.

**Key words:** catalase, peroxidase, oxidative stress, *Rhizopus nigricans*, cereal caryopses.