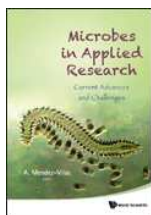


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*Agriculture, Soil, Environmental and Marine—Aquatic Microbiology***Glutathione reductase play a key role in the differential response of *Saccharomyces cerevisiae* UE-ME<sub>3</sub> and IGC-4072 to isotroturon**

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The isotroturon is a systemic herbicide applied in pre- and post-emergence control of annual grasses and broadleaved weeds in winter crops that block photosynthesis, being listed by European Union as special substance that threaten the earth surface.

Probably, can generate reactive oxygen species blocking the respiratory chain and cause oxidative stress and cell death. So, the main purpose of this study was to evaluate the effect of isotroturon on the antioxidant capacity of the wild-type *Saccharomyces cerevisiae* UE-ME<sub>3</sub> and IGC-4072 strains. The UE-ME<sub>3</sub> strain showed an adaptive response to this phenylurea, showing a growth similar to that control cells, an increase of non-protein thiols content, cell viability and glutathione antioxidant capacity, response that depend on glutathione reductase and glucose-6-phosphate dehydrogenase activities. However, the IGC-4072 strain in the presence of isotroturon showed cell death, exhibiting a poorly growth, dry weight and cell viability decrease, as well as a significant increase of free radicals scavenger (DPPH) and glutathione peroxidase activity.**Keywords:** *S. cerevisiae*; isotroturon; antioxidant capacity