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IV PORTUGUESE-SPANISH BIOCHEMISTRY CONGRESS Póvoa de Varzim, September, 29 - October, 2, 1991

Saccharomyces cerevisiae and Zygosaccharomyces bailii : TWO DIFFERENT MODELS OF RESISTANCE TO ENVIRONMENT STRESS

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Zygosaccharomyces bailii is a common spoilage yeast typically of low pH products with high sugar content and containing weak acid preservatives. Using *S. cerevisiae* as a reference organism, the effects of ethanol, acetic acid and sorbic acid, alone or in synergism, on cell viability as well as on temperature profiles of growth and thermal death of *Z. bailii* were investigated. Those compound enhanced thermal death of *Z. bailii* in such a way that the toxic effect was reflected in the values of ΔS^\ddagger but not of ΔH^\ddagger (parallel Arrhenius plots) and the introduction of the respective entropy coefficients led to the prediction that its toxic effects were much less pronounced in this yeast than in *S. cerevisiae* . On the other hand acetic acid, in opposite to what was observed in *S. cerevisiae*, didn't induce death at low and intermediate temperatures. Ethanol, acetic acid and sorbic acid, also decreased the maximum temperature for growth of *Z. bailii* but the effect was again much less pronounced than in *S. cerevisiae* . A discussion of the results from the point of view of its implication on the resistance of *Z. bailii* to environment stress is presented.

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